Message

From: Ex. 6 Personal Privacy (PP)
Sent: 4/21/2014 6:22:56 PM
To: Ball, Joel [ball.joel@epa.gov]
Subject: RE: Diesel Emissions Question

Flag: Follow up

Hello Joel-

Thank you for the reply.

I am pleased that you agree with my assertions on the Clean Air Act and the "specified major emissions components", which I noted in my initial email. I am fully aware that the phrase "the Administrator determines" means that parts are not automatically included; indeed I believe that this phrase means that the Administrator must review these items to determine if indeed that DO meet the criteria in the law.

As you can probably surmise from my note, I have specific concerns that EPA has failed to apply the regulations to the new Diesel SCR systems in use for the so called "clean diesel" technology, specifically BMW, but this appears to be a potential issue with other marques. Again, major emissions components, NOT IN GENERAL USE on MY1990 cars, and costing more than $200 in 1989 dollars, are failing and are NOT covered under the federal warranty.

Your statement. *"At this point, EPA has not added any components to the list of specified major emission control components and I am not aware of any analysis which has been conducted to determine if other components should be added."* Is not very assuring. Who is responsible for ensuring that the Clean Air Act is applied to these automobiles??? Can you point me to a regulatory policy guide or other publicly available document that would describe ANY aspect of the submission, review and approval of a manufacturer's warranty statement in terms of these *'specified major emission control component'*?

Someone needs to be doing the review, with a decision made one way or the other- I assume the mfg submits for certification, and the warranty is part of that certification. Is that submission accessible via FOIA? How would I request this?

I am quite familiar with the pamphlets that are available on line. You must appreciate that my initial email contains information only available from federal statutes and the Act, and we are well past pdfs of consumer information. Indeed, the pamphlet states: *"In the future, there may be other parts or components that qualify for this coverage. Check your owner's manual or warranty book for possible additional coverage"*...Unfortunately my issue is that, frankly, I don't trust the manufacturer to make this call, and based on your note I am wondering who at EPA is making sure this law is being applied.

If you are not the person who has this information, please direct me to the proper contact- I note that David Wright and Chris Nevers may be points of contact for BMW, although I am guessing that only applies for contact with the mfg, and not the public.

Thanks in advance for your help in moving this forward.

Regards-

Ex. 6 Personal Privacy (PP)

From: Ball, Joel [mailto:ball.joel@epa.gov]
Sent: Monday, April 21, 2014 7:42 AM
To: Ex. 6 Personal Privacy (PP)
Subject: RE: Diesel Emissions Question

Hello Ex. 6 Personal Privacy (PP)

Thank you for your inquiry regarding the federally required emissions warranty. As you pointed out, the Clean Air Act requires manufacturers of light duty vehicles to warranty the specified major emission control components for 8 years or 80,000 miles. The specified major emission control components only include the catalytic converters, the electronic emissions control unit or computer (ECU), and the onboard emissions diagnostic (OBD) device or computer. The Clean Air Act also allows the EPA to designate other components as specified major emission control components if the (A) the device or component was not in general use on vehicles and engines manufactured prior to the model year1990; and(B) the Administrator determines that the retail cost(exclusive of installation costs) of such device or component exceeds $200 (in 1989 dollars). This does not mean that any component that meets these 2 requirements is automatically covered under the 8 year 80,000 mile warranty. At this point, EPA has not added any components to the list of specified major emission control components and I am not aware of any analysis which has been conducted to determine if other components should be added.

The following web page provides more information regarding the federal emissions warranty requirements: www.epa.gov/obd/pubs/420f09048.pdf

I hope this information is helpful.

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
ball.joel@epa.gov

From: LaCroix, John
Sent: Friday, April 18, 2014 7:07 AM
To: Ball, Joel
Subject: FW: Diesel Emissions Question

From: Ex. 6 Personal Privacy (PP)
Sent: Thursday, April 17, 2014 7:46 PM
To: LaCroix, John
Subject: Diesel Emissions Question

Hello John-

I was surprised to find a name, email and phone number in an EPA publication regarding emissions. It invited me to contact you if I had a question, so here goes.

I have a few questions:

1. The law seems to require a "federal emissions warranty", the so called "8/80 warranty" on "Specified major emission control components". These are the commonly seen engine computer, catalytic converter, etc. HOWEVER, the law seems to further define these as "any component NOT commonly on a 1990 vehicle that would cost over $200 (in 1989 dollars) to replace". Is this true?

2. What are the criteria the EPA uses to decide if a car manufacturer has to expand past the commonly listed items?
3. Has the EPA ever required any light duty truck or passenger car to include an additional "Specified major emission control components" as described above?
4. In particular, the BMW Diesel engines appear to be demonstrating significant failures as miles increase, and the components that fail are quite unlike components in 1990 error cars. In particular the SCR fluid handling components (this is for the Urea injection process) appears to demonstrate relatively high failure rates with replacement costs (without labor) of $2000-4000. There was no car with an SCR injection system in 1990.
5. Are the records of such analysis by the EPA, on individual cars/engines, accessible by the public? Are these available via FOIA? How would I describe these records?

If you can address these questions, fantastic. If not, please direct me to the appropriate resource.

Best regards

Ex. 6 Personal Privacy (PP)

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Message

From: LaCroix, John [lacroix.john@epa.gov]
Sent: 4/18/2014 11:06:40 AM
To: Ball, Joel [ball.joel@epa.gov]
Subject: FW: Diesel Emissions Question

Flag: Follow up

From: Ex. 6 Personal Privacy (PP)
Sent: Thursday, April 17, 2014 7:46 PM
To: LaCroix, John
Subject: Diesel Emissions Question

Hello John-

I was surprised to find a name, email and phone number in an EPA publication regarding emissions. It invited me to contact you if I had a question, so here goes.

I have a few questions:

1. The law seems to require a "federal emissions warranty", the so called "8/80 warranty" on "Specified major emission control components". These are the commonly seen engine computer, catalytic converter, etc. HOWEVER, the law seems to further define these as "any component NOT commonly on a 1990 vehicle that would cost over $200 (in 1989 dollars) to replace". Is this true?
2. What are the criteria the EPA uses to decide if a car manufacturer has to expand past the commonly listed items?
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4. In particular, the BMW Diesel engines appear to be demonstrating significant failures as miles increase, and the components that fail are quite unlike components in 1990 error cars. In particular the SCR fluid handling components (this is for the Urea injection process) appears to demonstrate relatively high failure rates with replacement costs (without labor) of $2000-4000. There was no car with an SCR injection system in 1990.
5. Are the records of such analysis by the EPA, on individual cars/engines, accessible by the public? Are these available via FOIA? How would I describe these records?

If you can address these questions, fantastic. If not, please direct me to the appropriate resource.

Best regards

Ex. 6 Personal Privacy (PP)

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Message

From: Ex. 6 Personal Privacy (PP)
Sent: 4/24/2015 7:51:35 PM
To: Ball, Joel [ball.joel@epa.gov]
CC: Ex. 6 Personal Privacy (PP)
Subject: Re: BMW X5 Diesel (35d) Emission System problem

Thank you, Mr. Ball, this information was very helpful.

Ex. 6 Personal Privacy (PP)

From: "Ball, Joel" <ball.joel@epa.gov>
To: Ex. 6 Personal Privacy (PP)
Sent: Friday, April 24, 2015 3:42 PM
Subject: RE: BMW X5 Diesel (35d) Emission System problem

Hello Ex. 6 Personal Privacy (PP)

Thank you for your inquiry regarding the federal emissions warranty. The Clean Air Act requires manufactures of light duty vehicles to warranty the emissions control system performance for 2 years or 24,000 miles and 8 years or 80,000 miles for specified major emissions control components which are ONLY: 1) the catalytic converter, 2) the electronic emissions control unit or computer (ECU), and 3) the onboard emissions diagnostic (OBD) device or computer. Additionally, manufactures are required to warranty any emission control or emission related component that fails to function or functions improperly because of a defect in materials or workmanship for 2 years or 24,000 miles (8 years or 80,000 miles for specified major emissions control components) under the emissions defect warranty.

The diesel SCR catalytic converter, Diesel oxidation converter, and the Diesel Particulate Filter (DPF) are considered catalytic converters covered under the 8 year/80,000 mile warranty, however, the other components in the SCR system (e.g. exhaust sensors, DEF tank, valves, hoses, etc) are covered under the 2 year/24,000 mile warranties mentioned above.

The following web page provides more information regarding the federal emissions warranty requirements: www.epa.gov/obd/pubs/420f09048.pdf

I hope this information is helpful,

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: LaCroix, John
Sent: Thursday, April 23, 2015 12:37 PM

To: Ball, Joel
Subject: FW: BMW X5 Diesel (35d) Emission System problem

From: Ex. 6 Personal Privacy (PP)
Sent: Thursday, April 23, 2015 11:04 AM
To: LaCroix, John
Cc: Ex. 6 Personal Privacy (PP)
Subject: BMW X5 Diesel (35d) Emission System problem

Dear Mr. Lacroix,

I have been searching for a solution to a problem I have encountered with my 2009 BMW X5 35d diesel having to do with the emission system.

The vehicle was purchased in August, 2009, at a local BMW dealer in Springfield, NJ. Just before the warranty expired I noticed the check engine light had gone on. Both the Springfield dealer and another BMW dealer in Bloomfield, NJ, advised that it was triggered by an unrelated problem for a Canadian emission requirement that is not tracked (or pursued) by BMW anymore. This was within the last 2-3 years.

The vehicle performed well, but it is registered in Delaware by its owner, Ex. 6 Personal Privacy (PP) under her business name. At the five year mark, in August, 2014, Delaware required renewal of the registration. When Ex. 6 Personal Privacy (PP) took it to Delaware Motor Vehicle Services, it failed the emission inspection because the check engine light had been triggered by code " P20EE" (SCR NOx Catalyst Efficiency Below Threshold Bank 1), which is essentially an emission failure. Delaware will not register a vehicle that does not pass its inspection.

We have taken the car to a mechanic who specializes in German diesels (he has fixed our 2011 VW Jetta TDI Sportwagon), and he noticed that the bracket and gaskets were loose, but could not find fault with the SCR, and did not know if the sensors (there are two, pre and post SCR) were malfunctioning.

Since BMW does not seem interested (I have had the car in for servicing and two recalls on at least 5 occasions with the check engine light on - and I inquired about it), I know that for less than 80,000 miles only the Catalytic Converter, ECU (Emissions Control Unit) and OBD (Onboard emissions diagnostic device orcomputer), are covered, according to the EPA pamphlet. What, if anything, is covered for this diesel engined vehicle?

I am concerned that the dealer will charge us $3,000 to replace the SCR and both sensors, although the vehicle operates normally and I don't smell anything from the exhaust (as I did from our Jetta TDI when the EGR needed servicing).

Sincerely,

Ex. 6 Personal Privacy (PP)

Message

From: Pugliese, Holly [pugliese.holly@epa.gov]
Sent: 3/17/2015 5:49:42 PM
To: Ball, Joel [ball.joel@epa.gov]
Subject: RE: previous recall page
Attachments: 420b10007a.pdf; 420b07003.pdf

Here are two of the docs for 2009 and 2006 that were on that page. I think what you are looking for is in these docs...hopefully

Holly Pugliese
Office of Transportation and Air Quality
US EPA
pugliese.holly@epa.gov

From: Ball, Joel
Sent: Tuesday, March 17, 2015 1:21 PM
To: Pugliese, Holly
Subject: RE: previous recall page

nope

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Pugliese, Holly
Sent: Tuesday, March 17, 2015 1:21 PM
To: Ball, Joel
Subject: RE: previous recall page

It does for me but try this

Ex. 4 CBI

Holly Pugliese
Office of Transportation and Air Quality
US EPA
pugliese.holly@epa.gov

From: Ball, Joel
Sent: Tuesday, March 17, 2015 1:20 PM
To: Pugliese, Holly
Subject: RE: previous recall page

Hi Holly,

The link does not seem to work for me

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Pugliese, Holly
Sent: Tuesday, March 17, 2015 1:18 PM
To: Ball, Joel
Subject: previous recall page

Joel, here is the previous recall page. Let me know if you have any questions.

Ex. 4 CBI

Holly Pugliese
Office of Transportation and Air Quality
US EPA
pugliese.holly@epa.gov

2009 Annual Summary of Emission-Related Recall and Voluntary Service Campaigns Performed on Light-Duty Vehicles and Light-Duty Trucks

United States
Environmental Protection
Agency

2009 Annual Summary of Emission-Related Recall and Voluntary Service Campaigns Performed on Light-Duty Vehicles and Light-Duty Trucks

Compliance and Innovative Strategies Division
Office of Transportation and Air Quality
U.S. Environmental Protection Agency

United States
Environmental Protection
Agency

EPA420-B-10-007a
April 2010

ED_002825_00000345-00002

United States
Environmental Protection
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INTRODUCTION

Federal regulations require motor vehicle manufacturers to report to EPA all recalls that affect emission-related components or systems. The following report briefly describes light-duty vehicle recalls reported to EPA that affect emission-related components or systems. Note that some of the recalls listed in this report fix problems that do not impact emission control performance even though they involve the repair or replacement of emission-related parts. Manufacturers voluntarily recall vehicles for various reasons, such as safety or customer satisfaction, but if they affect emission-related parts, they still must be reported to EPA. They are all considered "emission-related" for the purposes of this report.

This report is divided into two sections. The first section is titled, "Emission-Related Recalls". These are the typical recalls where the manufacturer recommends that the owner bring the car in for repair under the recall. In this case, the owner should not wait until the problem is apparent before getting the vehicle fixed. The second section titled, "Emission-Related Voluntary Service Campaigns". Under EPA rules, these are still considered recalls, but are listed separately because the manufacturer is telling the owner to bring the car in for repair only if the problem is apparent (such as a warning light, noise, drive problem, etc.). There is usually a warranty extension associated with these types of recalls. Note that the manufacturer might not call a voluntary service campaign a "recall" in the owner or dealer notifications.

Recalls can be initiated voluntarily by the manufacturer or can be ordered by EPA. Voluntary recalls could also be directly influenced by EPA. Influenced recalls are those where EPA has had a direct role in convincing the manufacturer to voluntarily recall the vehicles. Because EPA is fairly successful at influencing recalls, ordered recalls are extremely rare. This report indicates these categories in the "Type" column. A "V" designation is a voluntary recall without direct EPA influence, an "I" designation is a voluntary recall that was directly influenced by EPA, a "VSC" designation is a voluntary service campaign not directly influenced by EPA, and an "I-VSC" designation is a voluntary service campaign directly influenced by EPA. If there is an ordered recall, the type will be designated with an "O".

It should also be noted that recalls may not include all of the vehicles in the described year, model, and engine family. Some recalls are specific to subsets of these categories because the problem or defect only affects part of a production run. The specific vehicles subject to a recall are identified by the manufacturer in the technical service bulletins provided to the repair facilities. These are usually listings based on the Vehicle Identification Number, or VIN, that is stamped on each vehicle. You should direct any questions regarding your vehicle's inclusion in a recall to the dealer repair facility. If there are still issues or problems, direct these to EPA at the e-mail address: vehicle-recalls@epa.

Abbreviations and Acronyms

Acronym/Term:	Definition:
CARB	California Air Resources Board
CFV	Clean Fuel Vehicle
DTC	Diagnostic Trouble Code
ECU	Engine Control Unit
ECM	Engine Control Module
EGR	Exhaust Gas Recirculation
MIL	Malfunction Indicator Light
MY	Model Year
NHTSA	National Highway Traffic Safety Administration
NLEV	National Low Emission Vehicle
OBD	On-Board Diagnostics
PCM	Powertrain Control Module
TCM	Transmission Control Module
TSB	Technical Service Bulletin
VECI	Vehicle Emission Control Information
VERR	Voluntary Emissions Recall Report

Recall Type:	Definition:
O	Ordered by EPA
V	Voluntary Recall by Manufacturer
VSC	Voluntary Service Campaign by Manufacturer
I	Manufacturer voluntary action with EPA Influence

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Section 1: Emission-Related Recalls

New recalls received after 4th Quarter 2009:

Manufacturer	EPA#
Bentley	3461
BMW	3765
Chrysler	3748 3802
GM	3624
Honda (Amended)	3750
Hyundai	3591
Jaguar	3536
Kia	3592
Mitsubishi	3897
Nissan	3799 3903
Subaru	3754 3850 3894
VW	3697 3727

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2009 Emissions-Related Recall Campaigns through December 2009

Mfr.	Mfr. Recall Number	EPA#	Type	Owner Notification	MY	Vehicle or Engine Class	Engine Family	Problem Description	Affected Vehicles	Total Number of Vehicles Recalled
Bentley	SC09/06 (Report received 1/27/2010)	3461	V	10/26/2009	2004 2005 2006 2007	Continental GT Continental GT Continental GT, Flying Spur Continental GT, GTC, Flying Spur	4BEXV06.0501 5BEXV06.0501 6BEXV06.0501 7BEXV06.0501	Some vehicles may have ignition coils that could malfunction under certain conditions. If this happens, either the Malfunction Indicator Lamp (MIL) will illuminate and/or the malfunction may cause the vehicle to exceed emission standards. **Remedy:** This problem can be remedied by replacing the ignition coils with one which is of the latest design.	805 3,693 4,959 2,343	11,800
BMW	08E-A03	3313	V	5/1/2009	2002 2003 2004 2005 2006	M3, M3 Cabrio, M Roadster, M Coupe M3, M3 Cabrio M3, M3 Cabrio M3, M3 Cabrio M3, M3 Cabrio	2BMXV03.2S54 3BMXV03.2S54 4BMXV03.2S54 5BMXV03.2S54 6BMXV03.2S54	Certain vehicles have a software error such that the Digital Motor Electronics (DME) programming may cause the Onboard Diagnostic (OBD) to erroneously evaluate the emissions performance of the catalytic converter and causing the "Service Engine Soon" light to illuminate prematurely. **Remedy:** BMW will reprogram the DME control module with an improved version of the software.	10,404 8,964 8,632 5,471 4,394	37,865
BMW	09E-A01	3688	V	5/20/2009	2007 2008	Mini Cooper	7BMXV01.6UL2 8BMXV01.6UL2	On certain Mini vehicles the catalytic converter may deteriorate causing an increased level of vehicle emissions. **Remedy:** Mini will inspect, and if necessary, replace the catalytic converter with an improved version.	14,880 650	15,530
BMW	09E-A02	3765	V	9/29/2009	2009	335d	9BMXV03.0M57	Particulate matter filters with the wrong ceramic substrates were installed on a small number of vehicles. **Remedy:** Dealers will inspect and, if necessary, replace the diesel particulate filter with an improved version.	440	440
Chrysler	2008-44E H43	3640	V	2/1/2009	2009	Dodge Caliber SRT4	9CRXV02.42P0	The original Vehicle Emissions Control Label (VECI) does not include the required identifier for vehicles built with a turbocharged engine. **Remedy:** Chrysler is sending corrected VECI labels to vehicle owners to be applied to the affected vehicles.	140	140
Chrysler	2009-03E J04	3698	V	3/11/2009	2009	Dodge RAM 1500	9CRXT05.74P1	An inapplicable Vehicle Emissions Control Information (VECI) label was affixed to some Ram 1500 vehicles. **Remedy:** Chrysler will conduct a voluntary emissions recall (J04) to replace the VECI label on the affected vehicles.	597	597
Chrysler	2009-04E J03	3699	V	3/19/2009	2009	Chrysler Sebring, Dodge Avenger Chrysler Sebring, Dodge Avenger Dodge Nitro Dodge Grand Caravan, Chrysler Town & Country, VW Routan Dodge Grand Caravan, Chrysler Town & Country, VW Routan	9CRXV02.7JNA 9CRXV02.7BR0 9CRXV04.02P0 9CRXV04.0CR0 9CRXV04.0TN0	On certain vehicles equipped with 2.7L and 4.0L engines the Positive Crankcase Ventilation (PCV) valve may have an incorrect flow characteristic. Two shipments of PCV valves from the Tier 2 supplier consisted of mixed stock. **Remedy:** Chrysler will conduct a voluntary emissions recall (J03) to inspect the potentially affected vehicles and to replace any incorrect PCV valves found.	793 343 30 407 897	2,470
Chrysler	2009-05E J02	3700	V	3/20/2009	2009	Chrysler Sebring, Dodge Avenger	9CRXV02.4UP0	Certain vehicles intended for sale in the United States territories of Puerto Rico and the Virgin Islands may have been built with a flexible fuel capable fuel pump module instead of the standard fuel pump module. This fuel pump may not be compatible with the instrument cluster software and overstates the fuel level by 1/4 tank. The vehicle could run out of fuel unexpectedly as a result. **Remedy:** Chrysler will conduct a recall (J02) to replace the fuel pump module. This recall is safety-related as well as emission-related.	91	91
Chrysler	2009-06E J05	3701	V	4/8/2009	2007	Dodge RAM	7CRXT0287P80	The Powertrain Control Module (PCM) may not be able to detect a completely blocked Exhaust Gas Recirculation (EGR) valve or passage. Without this ability a blocked valve or passage may cause the engine to emit nitrogen oxides at levels which may exceed California Emissions Standards. **Remedy:** Chrysler dealers will reprogram your vehicle's Powertrain Control Module.	10,069	10,069

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2009 Emissions-Related Recall Campaigns through December 2009

Mfr.	Mfr. Recall Number	EPA#	Type	Owner Notification	MY	Vehicle or Engine Class	Engine Family	Problem Description	Affected Vehicles	Total Number of Vehicles Recalled
Chrysler	2009-10-E H45	3732	V	4/6/2009	2005	Dodge Durango	5CRXT03.75S0 5CRXT04.75J0 5CRXT04.76U0 5CRXT05.75J1	The fuel tank inlet check valve may stick in the open position. This can cause fuel to spill out of the filler tube when the vehicle is being refueled. Fuel in the presence of an ignition source can result in a fire. **Remedy:** Chrysler dealers will test the vehicle's inlet check valve and replace the fuel tank if necessary. This recall is safety-related as well as emission-related.	2,187 1,720 6,069 9,104	19,080
Chrysler	2009-13-E J16	3755	V	6/5/2009	2007	Chrysler Pacifica	7CRXB0241M80	The Powertrain Control Module (PCM) on these vehicles may not adequately control nitrogen oxide emission levels under certain operating conditions. **Remedy:** Chrysler dealers will reprogram the vehicle's PCM.	9,954	9,954
Chrysler	2009-01-E J18	3694	V	7/7/2009	2003 2004	Concorde, 300M, Dodge Intrepid	3CRXV03.5VD0 4CRXV03.5VM0	A defect in the camshaft position sensor software could ultimately cause damage to the catalytic converters. **Remedy:** Chrysler will update the Powertrain Control Module (PCM) calibration to prevent damage to the catalytic converters.	30,119 46,833	76,952
Chrysler	2009-21-E J23	3852	V	9/25/2009	2009	Dodge Journey	9CRXV02.4UP0	Some vehicles were produced with a fuel Flow Control Valve (FCV) and Powertrain Control Module (PCM) software intended for vehicles without FCV. Over time this may cause the FCV to fail. A failed FCV could cause engine damage. **Remedy:** Chrysler dealers will replace the PCM.	8	8
Chrysler	2009-12-E (J06)	3748	V	10/19/2009	2009	Dodge Ram	9CRXT03.71P0 9CRXT03.7CR1 9CRXT04.71PA 9CRXT05.74P1 9CRXT05.7VP1	The windshield washer fluid level sensor may leak allowing washer fluid to wick through the wiring harness to the ambient temperature sensor. This can damage the ambient temperature sensor and cause illumination of the MIL or may result in non-functional low washer fluid warning lamp. **Remedy:** Chrysler will replace the washer fluid sensor, ambient temperature sensor and install a wiring harness overlay package.	622 71 4,000 11,302 5	16,000
Chrysler	2009-01a-E (J18)	3802	V	7/7/2009	2003 2004	Chrysler Concorde/300M, Dodge Intrepid	3CRXV03.5VD0 4CRXV03.5VM0	The catalytic converters on these vehicles may become damaged from continued operation in "limp-in" mode following a camshaft position sensor fault. **Remedy:** Chrysler dealers will reprogram the Powertrain Control Module (PCM).	30,119 46,883	77,002
General Motors	MW335 08411	3796	V	5/18/2009	2009	Chevrolet Colorado, GMC Canyon	9GMXT02.9189 9GMXT03.7187 9GMXT05.3376 9GMXT05.3373 9GMXT06.2375 9GMXT02.9190 9GMXT03.7188 9GMXT05.3377	The fuel system control modules on certain vehicles may have a condition in which an adhesive separation of the Room Temperature Vulcanizing seal may allow water to seep into the module. Water in the module could cause a short; illuminate the MIL; make the engine hard to start (or not start), or stall. **Remedy:** GM will install a new fuel system control module. This recall is safety-related as well as emission-related.	4,392 2,612 373 4,184 3,682 1,884 1,115 105	27,180
						Chevrolet Avalanche/Tahoe/Suburban, GMC Yukon	9GMXT05.3380 9GMXT05.3381		67 2,081	
						Chevrolet Tahoe, GMC Yukon, Cadillac Escalade	9GMXT06.2374		1,969	
						Chevrolet Avalanche/Tahoe/Suburban, GMC Yukon	9GMXT05.3384		829	
						Chevrolet Tahoe Hybrid, GMC Yukon Hybrid, Cadillac Escapade Hybrid	9GMXT06.0392		3,842	
						Chevrolet Avalanche/Suburban,	9GMXT06.0382		45	

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2009 Emissions-Related Recall Campaigns through December 2009

Mfr.	Mfr. Recall Number	EPA#	Type	Owner Notification	MY	Vehicle or Engine Class	Engine Family	Problem Description	Affected Vehicles	Total Number of Vehicles Recalled
General Motors	MW343 09102	3816	V	6/1/2009	2008 2009	Chevy Tahoe Hybrid, GMC Yukon Hybrid Chevy Tahoe/Silverado Hybrid, GMC Yukon/Sierra Hybrid, Cadillac Escalade Hybrid	8GMXT06.0392 9GMXT06.0392	On these hybrid vehicles, the current battery voltage reading, which determines battery charge, may be incorrect. This could cause a Service Engine light to illuminate and the vehicle may shut down at low speeds when the vehicle is attempting to transition from electric mode to gasoline engine mode. The vehicle can be restarted, however, it will likely continue to shut down until the voltage error is corrected. **Remedy:** GM dealers will reprogram hybrid-related modules.	8,505 9,848	18,353
General Motors	08285	3624	V	9/29/2008 (Recv'd VERR 2/3/2009)	2009	Saturn Outlook, Buick Enclave, GMC Acadia	9GMXT03.6151	Some vehicles may have been built with a section of the fuel tank seam that was not formed in accordance with the manufacturing specifications, possiblly causing evaporative emission leaks. **Remedy:** GM dealers will inspect, and if necessary, replace the fuel tank. This recall is safety-related as well as emission-related.	884	884
Honda/Acura	09-005-00 SB09-053	3750	V	7/30/2009	2007 2008 2009	Odyssey/Pilot Odyssey Odyssey	7HNXT03.5VKR 8HNXT03.54KR 9HNXT03.5J29	A transmission judder (vibration) may sometimes be felt between 20-45 MPH. If the software is not reprogrammed the judder can increase over time. **Remedy:** Dealers will reprogram the software used to control the transmission to minimize the vibration.	208,080 136,117 59,395	403,592
Honda/Acura	09-005-01 (Report received 1/12/2010)	3750	V	12/14/2009	2005 2006	Acura MDX	5HNXT03.55B4 6HNXT03.5RKR	A transmission judder (vibration) may sometimes be felt between 20-45 MPH. If the software is not reprogrammed the judder can increase over time. **Remedy:** Dealers will reprogram the software used to control the transmission to minimize the vibration.	60,336 51,381	111,717
Honda/Acura	09-004	3751	V	6/19/2009	2009	Civic Hybrid	9HNXV01.3CDH	In areas where there is extreme cold, the Integrated Motor Assist (IMA) battery monitoring system may incorrectly indicate a problem with the IMA battery. If the monitoring system causes the check engine light and IMA indicator light stay on, the IMA motor will not operate and the vehicle will run with the gas engine only. **Remedy:** Dealers will reprogram the IMA battery monitoring system software.	2,872	2,872
Hyundai	086	3591	V	9/1/2008 (Rec'd VERR 2/11/2009)	2008	Elantra	8HYXV02.0HW5 8HYXV02.0HPC	The fuel pump motor may not have the proper uniform internal electrical surface contact. This may cause the fuel pump to produce less pumping pressure that required to supply the fuel injection system. Poor engine starting and hesitation may result. **Remedy:** Hyundai dealers will replace the vehicle's fuel pump subassembly. This recall is safety-related as well as emission-related.	40,519 25,095	65,614
Jaguar	J004	3536	V	12/1/2008 (Rec'd VERR 10/30/2009)	2004 2005 2006 2007	S-Type, X-Type, XK8, XKR, S-Type, XJ8, XJR S-Type, X-Type, XK8, XJ8, VDP, XKFi, Super V8, XJR X-Type, XK8, XKFi X-Type	4JCXV03.0DNE 4JCXV03.0DNG 4JCXV04.2DN9 4JCXV04.2DNF 4JCXV04.2DSA 4JCXV04.2DSB 5JCXV03.0DNE 5JCXV03.0DNE 5JCXV03.0DNE 5JCXV04.2DN9 5JCXV04.2DNF 5JCXV04.2DSA 5JCXV04.2DSB 6JCXV03.0DNH 6JCXV03.0DNH 6JCXV04.2DSA 7JCXV03.0DNH	The On-Board Diagnostics (OBD) system may not correctly detect tailpipe or evaporative emissions failures and provide the applicable warnings to the driver. **Remedy:** Dealers will reconfigure Engine Control Module (ECM) and, where appropriate, the Transmission Control Module (TCM).	5,276 24,800 991 17,637 564 2,664 8,862 6,064 5,208 1,755 10,520 724 2,346 5,981 1,462 710 3,017	98,581

ED_002825_00000345-00008

2009 Emissions-Related Recall Campaigns through December 2009

Mfr.	Mfr. Recall Number	EPA#	Type	Owner Notification	MY	Vehicle or Engine Class	Engine Family	Problem Description	Affected Vehicles	Total Number of Vehicles Recalled
Kia	SC074	3592	V	9/16/2008 (Rec'd VERR 2/11/2009)	2008 2009	Rondo	8KMXV02.4UW5 9KMXV02.4UW5	The fuel pump may not operate properly resulting in not enough fuel getting to the engine on some vehicles equipped with 2.4L engines. Poor engine starting, hesitation and other impairments may result and check engine light may illuminate. **Remedy:** Kia dealers will replace the vehicle's fuel pump sub-assembly with an improved part. This recall is safety-related as well as emission-related.	2,915 3,765	6,680
Land Rover	P012	3533	V	1/2/2009	2005 2006	LR3	5LRXT04.0001 6LRXT04.0001	A deficiency in the engine management software could cause an increase in nitrogen oxides emission levels. **Remedy:** A Voluntary Emissions Recall (P012) was issued to correct the engine management system calibration at no charge to the owners.	1,341 5,274	6,615
Mercedes-Benz	2009-060005	3838	V	8/1/2009	2005 2006 2007	SLK 350 ML/R 350 SLK 350 SLK/C 280, SLK/CLK 350 CLK350 SLK/C 280, SLK/CLK 350 C230 C280 C280	5MBXV03.5LTR 6MBXT03.5LTR 6MBXV02.5U2A 6MBXV02.5U2A 7MBXB03.5BN4 7MBXB03.5U2A 7MBXV02.5U2A 7MBXV03.0U2A 7MBXV03.5U2A	The fuel tank diagnosis system in certain vehicles may have been inadvertently deactivated during service, due to a software error. **Remedy:** Dealers will recode the Software Calibration Number (SCN) in affected vehicles.	6,481 971 2,288 6,587 4 7 98 186 1	16,623
Mitsubishi	SR-09-004	3897	V	9/29/2009	2008 2009	Lancer Evolution Lancer Ralliart/Sportback	8MTXV02.0GRB 9MTXV02.0GRB	A defect exists in the manner in which the fuel return pipe is attached to the engine. This may cause a stress crack to develop at the fixed portion of the fuel pipe. If this stress crack develops, fuel leakage may occur. **Remedy:** The dealership will install a new fuel return pipe with additional attachment brackets to better control pipe vibration. This recall is safety-related as well as emission-related.	5,416 1,466	6,882
Nissan/Infiniti	NE-03-05-09	3716	V	3/23/2009	2008 2009	Altima Hybrid	8NSXV02.5G3A 9NSXV02.5G3A	Due to a software irregularity, the Vehicle Identification Number (VIN) programmed in the Engine Control Module (ECM) may be overwritten. If this repair is not completed the vehicle will not complete an emissions Inspection/Maintenance test. **Remedy:** Nissan dealers will reprogram the ECM in the vehicles.	8,546 5,161	13,707
Nissan/Infiniti	R0902	3799	V	7/20/2009	2003 2004 2005 2006 2007	Murano	3NSXT03.5C7B 4NSXT03.5G7A 5NSXT03.5G7A 6NSXT03.5G7C 7NSXT03.5G7B	Under certain conditions the intake duct may separate from the resonator. This could cause minor idle fluctuation or poor acceleration. If this occurs and the vehicle continues to be driven without service the engine may stall while driving. **Remedy:** Nissan will replace the air intake duct with an updated part and replace the air duct clamps. This recall is safety-related as well as emission-related	53,255 63,187 71,613 77,320 94,290	359,665
Nissan/Infiniti	NE-10-6-9	3903	V	11/2/2009	2010	Versa	ANSXV01.8G4A ANSXV01.8G1A	These vehicles are equipped with an improperly functioning on-board diagnostics system that may in some situations not illuminate a MIL when a malfunction exists. **Remedy:** Nissan will reprogram the Engine Control Module (ECM).	608 5,708	6,316
Subaru	WVI-19 (45-state) WVH-18 (5-state)	3417	V	6/19/2009	2005	Legacy, Outback	5FJXX02.5NKR	Under certain unique driving patterns, such as repeated acceleration/deceleration and/or continuous uphill driving at higher speeds the vehicle's catalytic converter may develop internal temperatures that exceed design parameters. If left uncorrected, this condition may eventually degrade the efficiency of the converter. **Remedy:** Subaru dealers will modify the Engine Control Module software logic to improve management of temperature within the catalytic converter.	31,098	31,098

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2009 Emissions-Related Recall Campaigns through December 2009

Mfr.	Mfr. Recall Number	EPA#	Type	Owner Notification	MY	Vehicle or Engine Class	Engine Family	Problem Description	Affected Vehicles	Total Number of Vehicles Recalled
Subaru	WVL-22	3754	V	10/23/2009	2005 2006 2007 2008	Forester, Impreza, Saab 9-2X Linear Forester, Impreza Forester, Impreza Forester	5FJXX02.5MJS 6FJXX02.5MTC 7FJXB02.5MTC 8FJXV02.5MTC	The one-way fuel valve located in the fuel tank may not perform as intended and could cause a condition that may damage the catalytic converter. **Remedy:** The one-way valve must be permanently removed from the fuel tank.	66,624 68,426 45,060 13,354	193,464
Subaru	WVJ-20	3850	V	10/23/2009	2005 2006	Baja, Baja Turbo	5FJXX02.5MJS 5FJXX02.5PGT 6FJXT02.5MJS 6FJXX02.5PGT	The plastic outlet pipe on the fuel pump may develop cracks and potentially cause a fuel leak. **Remedy:** Subaru will replace the fuel pump bracket which contains the outlet pipe. This recall is safety-related as well as emission-related.	4,822 3,560 5,837 1,913	16,132
Subaru	WVM-23	3894	V	10/23/2009	2006 2007 2008 2009 2010	Legacy, Outback Legacy, Outback, Forester Forester	6FJXX02.5NVD 7FJXB02.5NVD 8FJXB02.5NVD 8FJXB02.5NVJ 9FJXJ02.5NVD AFJXJ02.5NVD	Under certain severe driving patterns, such as high speed highway uphill driving and/or accelerating with high engine revolutions, the efficiency of the catalytic converter may begin to degrade beyond design parameters. **Remedy:** Subaru has developed a modification to the Engine Control Module (ECM) software logic that will improve management of the catalytic converter.	18,780 22,209 20,665 21,522 86,230 18,478	187,884
Toyota/Lexus	9LA	3693	V	2/2/2009	2006 2007 2008	Lexus IS250 Lexus IS350 Lexus GS300 Lexus IS250 Lexus IS350 Lexus GS300 Lexus IS250 Lexus IS350 Lexus GS300	6TYXV02.5PEA 6TYXV03.5PEB 6TYXV03.0WMB 7TYXV02.5BEA 7TYXV03.5BEB 7TYXV04.6BEA 8TYXV02.5BEA 8TYXV03.5BEB 8TYXV04.6BEA	These vehicles are equipped with aluminum Fuel Delivery Pipes (fuel rails). Lexus has determined that ethanol fuels with a low moisture content will corrode the internal surface of the fuel rails. As this condition progresses the Malfunction Indicator Light (MIL) may illuminate. Over time, the corrosion will create a pinhole resulting in fuel leakage. In the worst case fuel leakage in the presence of an ignition source could result in a fire. **Remedy:** Lexus dealers will replaced the involved Fuel Delivery Pipes with newly designed ones. This recall is safety-related as well as emission-related.	34,600 15,500 43,700 48,100 32,700 35,200 3,200 400 1,200	214,600
Toyota/Lexus	T-SB-0180-09	2198	V	8/7/2009	2001 2002 2003	Prius	1TYXV01.5LJ1 2TYXV01.5LJ1 3TYXV01.5LH1	Certain vehicles may exhibit low engine power or failure to start and a Malfunction Indicator Lamp (MIL) illumination due to Throttle Body carbon deposit build up. **Remedy:** Toyota dealers will clean the throttle body.	15,800 22,750 12,450	51,000
Volkswagen/Audi	28E6/R8	2789	V	7/24/2009	2004 2005 2006	GTI, Jetta, Beetle Passat Touareg GTI, Jetta, Beetle Passat Beetle, Golf	4VWXV01.9236 4VWXV02.0234 4VWXV05.0235 5VWXV01.9236 5VWXV02.0234 6VWXV01.9236	Diesel vehicles ceramic glow plugs may experience glow plug failures, as indicated by a Malfunction Indicator Light (MIL). **Remedy:** Dealerships will inspect and, if necessary, update engine glow plugs to metal glow plugs.	19,267 3,222 563 13,778 8,842 2	45,674
Volkswagen/Audi	24P9/P5	3704	I	7/24/2009	2004 2005 2006	Jetta, Beetle, Golf	4VWZV01.9236 5VWZV01.9236 6VWZV01.9236	The electronic control module (ECM) software can cause affected vehicles to exceed emissions standards. **Remedy:** Dealers will update the ECM software in affected vehicles.	11,251 6,927 2,329	20,507
Volkswagen/Audi	20P6/S2	3727	V	5/31/2009	2006 2007 2008 2009 2010	A3 Quattro A3 Quattro VW R32, Audi A3 Quattro and TT TT and A3 Quattro TT and A3 Quattro TT and A3 Quattro	6VWXV03.2535 7VWXV03.2535 8VWXV03.2535 9VWXV03.2535 9ADXV02.03UA AADXV02.03UA	Under certain conditions, the fuel tank ventilation valve may not remain fully closed causing liquid fuel to enter the venting system. This may cause the evaporative emission canister to saturate with fuel increasing evaporative emissions and causing a fire risk. **Remedy:** Dealers will install an improved fuel tank ventilation valve assembly kit on vehicles equipped with 3.2L engines. This recall is safety-related as well as emission-related.	1,307 1,197 4,051 525 2,794 337	10,211

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2009 Emissions-Related Recall Campaigns through December 2009

Mfr.	Mfr. Recall Number	EPA#	Type	Owner Notification	MY	Vehicle or Engine Class	Engine Family	Problem Description	Affected Vehicles	Total Number of Vehicles Recalled
Volkswagen/Audi	J1-28F2 P1-28F3	3697	V	10/23/2009	2004 2005 2006	Passat, W8 Jetta Jetta Audi TT Jetta, GTI, Passatt & A3 Audi TT Audi TT A3 Quattro Jetta Jetta, Rabbitt, Beetle Jetta, Rabbitt, Beetle	4VWXV04.0229 5VWXV02.5253 5VWXV02.5257 5VWXV03.2220 6ADXV02.0366 6ADXV01.8346 6VWXV03.2220 6VWXV03.2535 6VWXT03.2275 6VWXV02.5253 6VWXV02.5257	Some vehicles may have ignition coils that could malfunction under certain conditions. If this happens the Malfunction Indicator Lamp (MIL) will illuminate. **Remedy:** Dealers will inspect and, if necessary, install new ignition coils.	478 29,359 14,636 1,196 85,559 723 476 1,307 7,810 81,028 31,956	444,265
					2007	Q7, Touareg Jetta, GTI, Passatt & A3 A6 and A4 Quattro A6 and A8 RS4 S6 and S8 Q7 and Touareg A3 Quattro Jetta, Rabbitt, Beetle Jetta, Rabbitt, Beetle Passat	7ADXT04.2358 7ADXV02.0366 7ADXV03.1374 7ADXV04.2365 7ADXV04.2375 7ADXV05.2385 7VWXT03.6276 7VWXV03.2535 7VWXV02.5253 7VWXV02.5257 7VWXV03.6246		8,644 60,192 10,569 3,373 1,225 1,239 16,832 888 57,386 25,871 3,518	
								Total number of Vehicles affected by Recall Campaigns:		**2,626,314**

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Section 2: Emission-Related Voluntary Service Campaigns

New Voluntary Service Campaigns during 4th Quarter 2009:

Manufacturer	EPA#
BMW	3468

ED_002825_00000345-00012

2009 Emissions-Related Voluntary Service Campaigns through December 2009

Mfr.	Mfr. Recall Number	EPA#	Type	Owner Notification	MY	Vehicle or Engine Class	Engine Family	Problem Description	Affected Vehicles	Total Number of Vehicles Recalled
BMW	09E-W01	3646	VSC	5/20/2009	2007 2008	335i,335xi,335Ci	7BMXV03.0N54 8BMXV03.0N54	There is a potential problem that could affect the durability of the high-pressure fuel pump. **Remedy:** BMW will extend the emissions warranty for the high-pressure fuel pump to 10 years or 120,000 miles whichever comes first.	45,000 73,500	118,500
BMW	09E-W02	3468	VSC	8/31/2009	2004 2005 2006	Mini Cooper, S Mini Cooper Mini Cooper	4MBXV01.6R50 5MBXV01.6R50 6MBXV01.6R50	Variations in the crimping process may lead to an electrical failure (open circuit) inside the oxygen sensor. **Remedy:** Mini will extend the emissions warranty for the oxygen sensor to 10 years or 100,000 miles and replace the oxygen sensor with an improved version within the new warranty period if the original fails.	31,200 47,600 51,400	130,200
General Motors	08300	3756	VSC	6/1/2009	2006 2007	Pontiac Solstice Pontiac Solstice,Sky	6GMXV02.4031 7GMXV02.4031	Some vehicles equipped with a 2.4L engine may have a condition where the Malfunction Indicator Lamp (MIL) illuminates and/or there is a lack of engine power. This may be caused by failure of the catalytic converter. **Remedy:** General Motors is providing owners with a warranty extension for the catalytic converter. If this condition occurs within 10 years of the date the vehicle was placed into service or 120,000 miles whichever comes first it will be repaired at no charge.	18,748 24,147	42,895

Total number of Vehicles affected by Voluntary Service Campaigns: 291,595

SUMMARY

Total number of Vehicles affected by Recalls and Voluntary Service Campaigns: 2,917,909

Total number of Voluntary Recalls: 39

Total number of Voluntary Service Campaigns: 3

Total number of Recalls and Voluntary Service Campaigns: 42

ED_002825_00000345-00013

Message

From: Fernandez, Antonio [fernandez.antonio@epa.gov]
Sent: 3/17/2015 4:14:45 PM
To: Wright, DavidA [Wright.DavidA@epa.gov]; Dalton, Joel [Dalton.Joel@epa.gov]; Ball, Joel [ball.joel@epa.gov]
Subject: SCR equipped diesel NH3 and N2O data
Attachments: CRC Final Report_AVFL-17b.pdf

This report had all of the big 3 diesels. The HD trucks are masked but based on CO2 results, they are vehicles 2,5, and 6. Vehicle 2 has high NH3 compared with the other 2 (page 65) and vehicle 5 has high N2O compared with vehicle 6 (page 71).

Tony

Message

From: Ball, Joel [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=92AF2AB6F5274BC597249D04358EF25F-BALL, JOEL]
Sent: 6/5/2015 1:19:34 PM
To: Ex. 6 Personal Privacy (PP)
Subject: RE: Emissions Warranty

Hello Ex. 6 Personal Privacy (PP)

Thank you for your inquiry regarding the federally required emissions warranty. The Clean Air Act requires manufactures of light duty vehicles to warranty the emissions control system performance for 2 years or 24,000 miles and 8 years or 80,000 miles for specified major emissions control components which **Only** include the catalytic converter, the electronic emissions control unit or computer (ECU), and the onboard emissions diagnostic (OBD) device or computer. Additionally, manufactures are required to warranty any emission control or emission related component that fails to function or functions improperly because of a defect in materials, or workmanship, for 2 years or 24,000 miles (8 years or 80,000 miles for specified major emissions control components) under the emissions design and defect warranty. The following web page provides more information regarding the federal emissions warranty requirements: www.epa.gov/obd/pubs/420f09048.pdf

The components you mentioned below are covered by the 2 years or 24,000 miles federal emissions warranty.

I hope this information is helpful.

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: LaCroix, John
Sent: Wednesday, June 03, 2015 6:37 AM
To: Ball, Joel
Subject: FW: Emissions Warranty

John LaCroix
Senior Environmental Employment (SEE)
Cooperative with the Compliance Division
USEPA
734-214-4463

From: Ex. 6 Personal Privacy (PP)
Sent: Tuesday, June 02, 2015 4:56 PM
To: LaCroix, John
Subject: Emissions Warranty

June 2, 2010

Mr. Lacroix,

I live in Florida and last year purchased a used 2010 BMW x35d (Diesel) SUV from an Orlando CarMax dealership. The car was originally sold new in Austin, TX. While the car was still in Texas, I have since discovered, it was recalled and serviced at BMW of Austin in June of 2012 for BMW recall # 11E-A03 – a recall related to problems with "SCR Catalyst, EGR Valve and/or DEF Mixer and ECU Software Flash". Fast forward to the spring of 2015 -

Approximately 3 months ago, after the service due lights started flashing, I paid the BMW dealership in Winter Park, FL approximately $2000+ to replace diesel emissions fluid mixing tank. Prior to that I paid a local foreign auto mechanic $400+ to replace the diesel emissions fluid mixing valve – which did not solve the problem.

The service lights came back on again last week and I am now told by the Winter Park BMW dealership that I need a new catalytic converter installed. My SUV has less than 71,000 miles on it.

Is it possible that my car and the work I have both had done and still need to have done are covered under the Design and Defect portion of the Federal Emissions Warranty laws? The car, to my knowledge, has never failed an emissions test. These not even required in Florida and I wouldn't know where to get one if directed to do so.

No one at the BMW Dealership Service Department mentioned anything to me about the Federal Emissions Warranty. Is this because the program does not apply to my vehicle in the state of Florida (?) or – possibly some other reason?

Your feedback would be appreciated.

Thank you,

Ex. 6 Personal Privacy (PP)

Message

From: Ball, Joel [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=92AF2AB6F5274BC597249D04358EF25F-BALL, JOEL]
Sent: 4/24/2014 6:44:10 PM
To: Wehrly, Linc [wehrly.linc@epa.gov]
Subject: FW: Diesel Emissions Question

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Ex. 6 Personal Privacy (PP)
Sent: Monday, April 21, 2014 2:23 PM
To: Ball, Joel
Subject: RE: Diesel Emissions Question

Hello Joel-

Thank you for the reply.

I am pleased that you agree with my assertions on the Clean Air Act and the "specified major emissions components", which I noted in my initial email. I am fully aware that the phrase "the Administrator determines" means that parts are not automatically included; indeed I believe that this phrase means that the Administrator must review these items to determine if indeed that DO meet the criteria in the law.

As you can probably surmise from my note, I have specific concerns that EPA has failed to apply the regulations to the new Diesel SCR systems in use for the so called "clean diesel" technology, specifically BMW, but this appears to be a potential issue with other marques. Again, major emissions components, NOT IN GENERAL USE on MY1990 cars, and costing more than $200 in 1989 dollars, are failing and are NOT covered under the federal warranty.

Your statement. *"At this point, EPA has not added any components to the list of specified major emission control components and I am not aware of any analysis which has been conducted to determine if other components should be added."* Is not very assuring. Who is responsible for ensuring that the Clean Air Act is applied to these automobiles??? Can you point me to a regulatory policy guide or other publicly available document that would describe ANY aspect of the submission, review and approval of a manufacturer's warranty statement in terms of these *'specified major emission control component'*?

Someone needs to be doing the review, with a decision made one way or the other- I assume the mfg submits for certification, and the warranty is part of that certification. Is that submission accessible via FOIA? How would I request this?

I am quite familiar with the pamphlets that are available on line. You must appreciate that my initial email contains information only available from federal statutes and the Act, and we are well past pdfs of consumer information. Indeed, the pamphlet states: *"In the future, there may be other parts or components that qualify for this coverage. Check your owner's manual or warranty book for possible additional coverage"*...Unfortunately my issue is that, frankly, I don't trust the manufacturer to make this call, and based on your note I am wondering who at EPA is making sure this law is being applied.

If you are not the person who has this information, please direct me to the proper contact- I note that David Wright and Chris Nevers may be points of contact for BMW, although I am guessing that only applies for contact with the mfg, and not the public.

Thanks in advance for your help in moving this forward.

Regards-

Ex. 6 Personal Privacy (PP)

From: Ball, Joel [mailto:ball.joel@epa.gov]
Sent: Monday, April 21, 2014 7:42 AM
To: Ex. 6 Personal Privacy (PP)
Subject: RE: Diesel Emissions Question

Hello Ex. 6 Personal Privacy (PP)

Thank you for your inquiry regarding the federally required emissions warranty. As you pointed out, the Clean Air Act requires manufacturers of light duty vehicles to warranty the specified major emission control components for 8 years or 80,000 miles. The specified major emission control components only include the catalytic converters, the electronic emissions control unit or computer (ECU), and the onboard emissions diagnostic (OBD) device or computer. The Clean Air Act also allows the EPA to designate other components as specified major emission control components if the (A) the device or component was not in general use on vehicles and engines manufactured prior to the model year1990; and(B) the Administrator determines that the retail cost(exclusive of installation costs) of such device or component exceeds $200 (in 1989 dollars). This does not mean that any component that meets these 2 requirements is automatically covered under the 8 year 80,000 mile warranty. At this point, EPA has not added any components to the list of specified major emission control components and I am not aware of any analysis which has been conducted to determine if other components should be added.

The following web page provides more information regarding the federal emissions warranty requirements: www.epa.gov/obd/pubs/420f09048.pdf

I hope this information is helpful.

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
ball.joel@epa.gov

From: LaCroix, John
Sent: Friday, April 18, 2014 7:07 AM
To: Ball, Joel
Subject: FW: Diesel Emissions Question

From: Ex. 6 Personal Privacy (PP)
Sent: Thursday, April 17, 2014 7:46 PM
To: LaCroix, John
Subject: Diesel Emissions Question

Hello John-

I was surprised to find a name, email and phone number in an EPA publication regarding emissions. It invited me to contact you if I had a question, so here goes.

I have a few questions:

1. The law seems to require a "federal emissions warranty", the so called "8/80 warranty" on "Specified major emission control components". These are the commonly seen engine computer, catalytic converter, etc. HOWEVER, the law seems to further define these as "any component NOT commonly on a 1990 vehicle that would cost over $200 (in 1989 dollars) to replace". Is this true?
2. What are the criteria the EPA uses to decide if a car manufacturer has to expand past the commonly listed items?
3. Has the EPA ever required any light duty truck or passenger car to include an additional "Specified major emission control components" as described above?
4. In particular, the BMW Diesel engines appear to be demonstrating significant failures as miles increase, and the components that fail are quite unlike components in 1990 error cars. In particular the SCR fluid handling components (this is for the Urea injection process) appears to demonstrate relatively high failure rates with replacement costs (without labor) of $2000-4000. There was no car with an SCR injection system in 1990.
5. Are the records of such analysis by the EPA, on individual cars/engines, accessible by the public? Are these available via FOIA? How would I describe these records?

If you can address these questions, fantastic. If not, please direct me to the appropriate resource.

Best regards

Ex. 6 Personal Privacy (PP)

avast

This email is free from viruses and malware because avast! Antivirus protection is active.

avast

This email is free from viruses and malware because avast! Antivirus protection is active.

Message

From: Ball, Joel [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=92AF2AB6F5274BC597249D04358EF25F-BALL, JOEL]
Sent: 4/24/2014 7:08:45 PM
To: Wehrly, Linc [wehrly.linc@epa.gov]
Subject: FW: Diesel Emissions Question

I added some comments in red text below

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Ex. 6 Personal Privacy (PP)
Sent: Monday, April 21, 2014 2:23 PM
To: Ball, Joel
Subject: RE: Diesel Emissions Question

Hello Joel-

Thank you for the reply.

I am pleased that you agree with my assertions on the Clean Air Act and the "specified major emissions components", which I noted in my initial email. I am fully aware that the phrase "the Administrator determines" means that parts are not automatically included; indeed I believe that this phrase means that the Administrator must review these items to determine if indeed that DO meet the criteria in the law.

As you can probably surmise from my note, I have specific concerns that EPA has failed to apply the regulations to the new Diesel SCR systems in use for the so called "clean diesel" technology, specifically BMW, but this appears to be a potential issue with other marques. Again, major emissions components, NOT IN GENERAL USE on MY1990 cars, and costing more than $200 in 1989 dollars, are failing and are NOT covered under the federal warranty.

Your statement. *"At this point, EPA has not added any components to the list of specified major emission control components and I am not aware of any analysis which has been conducted to determine if other components should be added."* Is not very assuring. Who is responsible for ensuring that the Clean Air Act is applied to these automobiles??? Of coarse the Clear air act is being applied to these vehicles. As far as adding new components to the specified major emissions component warranty, this would require a rule making which would involve several organizations within the EPA. OTAQ would be the lead.

Can you point me to a regulatory policy guide or other publicly available document that would describe ANY aspect of the submission, review and approval of a manufacturer's warranty statement in terms of these *'specified major emission control component'*? I am not aware of any.

Someone needs to be doing the review, with a decision made one way or the other- I assume the mfg submits for certification, and the warranty is part of that certification. Yes, a manufacturer is required to submit an application for certification. The owners manuals and warranty information are required to be submitted upon request from the agency. The review of these document is to insure compliance to the current regulation.

Is that submission accessible via FOIA? Yes

How would I request this? You can contact Fred Hart by email at hart.frederick@epa.gov

I am quite familiar with the pamphlets that are available on line. You must appreciate that my initial email contains information only available from federal statutes and the Act, and we are well past pdfs of consumer information. Indeed, the pamphlet states: *"In the future, there may be other parts or components that qualify for this coverage. Check your owner's manual or warranty book for possible additional coverage"*...Unfortunately my issue is that, frankly, I don't trust the manufacturer to make this call, and based on your note I am wondering who at EPA is making sure this law is being applied.

If you are not the person who has this information, please direct me to the proper contact- I note that David Wright and Chris Nevers may be points of contact for BMW, although I am guessing that only applies for contact with the mfg, and not the public.

Thanks in advance for your help in moving this forward.

Regards-

Ex. 6 Personal Privacy (PP)

From: Ball, Joel [mailto:ball.joel@epa.gov]
Sent: Monday, April 21, 2014 7:42 AM
To: Ex. 6 Personal Privacy (PP)
Subject: RE: Diesel Emissions Question

Hello Ex. 6 Personal Privacy (PP)

Thank you for your inquiry regarding the federally required emissions warranty. As you pointed out, the Clean Air Act requires manufacturers of light duty vehicles to warranty the specified major emission control components for 8 years or 80,000 miles. The specified major emission control components only include the catalytic converters, the electronic emissions control unit or computer (ECU), and the onboard emissions diagnostic (OBD) device or computer. The Clean Air Act also allows the EPA to designate other components as specified major emission control components if the (A) the device or component was not in general use on vehicles and engines manufactured prior to the model year1990; and(B) the Administrator determines that the retail cost(exclusive of installation costs) of such device or component exceeds $200 (in 1989 dollars). This does not mean that any component that meets these 2 requirements is automatically covered under the 8 year 80,000 mile warranty. At this point, EPA has not added any components to the list of specified major emission control components and I am not aware of any analysis which has been conducted to determine if other components should be added.

The following web page provides more information regarding the federal emissions warranty requirements: www.epa.gov/obd/pubs/420f09048.pdf

I hope this information is helpful.

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
ball.joel@epa.gov

From: LaCroix, John
Sent: Friday, April 18, 2014 7:07 AM
To: Ball, Joel
Subject: FW: Diesel Emissions Question

From: Ex. 6 Personal Privacy (PP)
Sent: Thursday, April 17, 2014 7:46 PM
To: LaCroix, John
Subject: Diesel Emissions Question

Hello John-

I was surprised to find a name, email and phone number in an EPA publication regarding emissions. It invited me to contact you if I had a question, so here goes.

I have a few questions:

1. The law seems to require a "federal emissions warranty", the so called "8/80 warranty" on "Specified major emission control components". These are the commonly seen engine computer, catalytic converter, etc. HOWEVER, the law seems to further define these as "any component NOT commonly on a 1990 vehicle that would cost over $200 (in 1989 dollars) to replace". Is this true?
2. What are the criteria the EPA uses to decide if a car manufacturer has to expand past the commonly listed items?
3. Has the EPA ever required any light duty truck or passenger car to include an additional "Specified major emission control components" as described above?
4. In particular, the BMW Diesel engines appear to be demonstrating significant failures as miles increase, and the components that fail are quite unlike components in 1990 error cars. In particular the SCR fluid handling components (this is for the Urea injection process) appears to demonstrate relatively high failure rates with replacement costs (without labor) of $2000-4000. There was no car with an SCR injection system in 1990.
5. Are the records of such analysis by the EPA, on individual cars/engines, accessible by the public? Are these available via FOIA? How would I describe these records?

If you can address these questions, fantastic. If not, please direct me to the appropriate resource.

Best regards

Ex. 6 Personal Privacy (PP)

---

avast

This email is free from viruses and malware because avast! Antivirus protection is active.

---

avast

This email is free from viruses and malware because avast! Antivirus protection is active.

Message

From: Ball, Joel [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=92AF2AB6F5274BC597249D04358EF25F-BALL, JOEL]
Sent: 4/21/2014 2:41:30 PM
To: Ex. 6 Personal Privacy (PP)
Subject: RE: Diesel Emissions Question

Hello Ex. 6 Personal Privacy (PP)

Thank you for your inquiry regarding the federally required emissions warranty. As you pointed out, the Clean Air Act requires manufacturers of light duty vehicles to warranty the specified major emission control components for 8 years or 80,000 miles. The specified major emission control components only include the catalytic converters, the electronic emissions control unit or computer (ECU), and the onboard emissions diagnostic (OBD) device or computer. The Clean Air Act also allows the EPA to designate other components as specified major emission control components if the (A) the device or component was not in general use on vehicles and engines manufactured prior to the model year1990; and(B) the Administrator determines that the retail cost(exclusive of installation costs) of such device or component exceeds $200 (in 1989 dollars). This does not mean that any component that meets these 2 requirements is automatically covered under the 8 year 80,000 mile warranty. At this point, EPA has not added any components to the list of specified major emission control components and I am not aware of any analysis which has been conducted to determine if other components should be added.

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I hope this information is helpful.

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
ball.joel@epa.gov

From: LaCroix, John
Sent: Friday, April 18, 2014 7:07 AM
To: Ball, Joel
Subject: FW: Diesel Emissions Question

From: Ex. 6 Personal Privacy (PP)
Sent: Thursday, April 17, 2014 7:46 PM
To: LaCroix, John
Subject: Diesel Emissions Question

Hello John-

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1. The law seems to require a "federal emissions warranty", the so called "8/80 warranty" on "Specified major emission control components". These are the commonly seen engine computer, catalytic converter, etc. HOWEVER, the law seems to further define these as "any component NOT commonly on a 1990 vehicle that would cost over $200 (in 1989 dollars) to replace". Is this true?
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Best regards

Ex. 6 Personal Privacy (PP)

avast This email is free from viruses and malware because avast! Antivirus protection is active.

Message

From: Ball, Joel [Ball.Joel@epa.gov]
Sent: 2/7/2013 3:16:56 PM
To: Peace.OUwague@bmwnaext.com
CC: Pidgeon, Bill [pidgeon.bill@epa.gov]
Subject: Re: BMW IUVP seeking your advice

I have extended the end date for 2011 low mileage IUVP submissions to Feb 28, 2013. Please go ahead and re-submit the data.

Best regards,

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: <Peace.OUwague@bmwnaext.com>

To: Joel Ball/AA/USEPA/US@EPA
Date: 02/07/2013 10:11 AM
Subject: BMW IUVP seeking your advice

Hi Joel,

I made a submission via verify on 1/30/2013 for test group BBMXV03.0M57 (diesel engine) for 2011 low mileage program, and the submission returned business rule IV-BR24 indicating that the submission can only be accepted within an allowed time range. I immediately contacted verify help desk about it and was told verify should be accepting 2011 low mileage data until 1/30/2013 and that they are looking into the issue. Please can you advice me on how I can go about submitting this data?

Many thanks,

Peace O Uwague

BMW of North America, LLC
Peace O Uwague
IUVP and Test Planning Engineer
Environmental Engineering, EG-8-US-21
300 Chestnut Ridge Road, Bldg 150
Woodcliff Lake, NJ 07677-7731

Tel: 201-571-5426
Cell: 646-591-4174
Mail: mailto:peace.ouwague@bmwnaext.com

-----Original Message-----
From: Vincent E Coleman [mailto:vcoleman2@csc.com] On Behalf Of Verify Help Desk
Sent: Tuesday, February 05, 2013 2:14 PM
To: OUwague Peace, (Peace.OUwague@bmwnaext.com)
Subject: Re: FW: BMW 2011 LM Diesel vehicle (HLP-3564)

Hello Mr. Uwague,

I apologize for the delay. Yes, I was able to confirm that the submission was rejected on 1/30 because of the following business rule. The latest allowed submission date for MY 2011 low mileage was 1/30/2013. I have documented this issue in Verify-16122.

IV-BR24 - IUVP Vehicle Information can only be accepted within the allowed time range of submissions for the Model Year (IV-8) and Mileage Category (IV-20).</TransactionMessageText>

Please contact your EPA Cert Rep and let them know that your submission was made on 1/30 the last accepted day for MY 2011 low mileage; however, your submission returned business rule IV-BR24 indicating that your submission can only be accepted within the allowed time range.

Vincent

Verify Help Desk
Staffed by Computer Sciences Corporation,
Contractor to the Environmental Protection Agency

This is a PRIVATE message. If you are not the intended recipient, please delete without copying and kindly advise us by e-mail of the mistake in delivery. NOTE: Regardless of content, this e-mail shall not operate to bind CSC to any order or other contract unless pursuant to explicit written agreement or government initiative expressly permitting the use of e-mail for such purpose.

Message

From: Ball, Joel [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=92AF2AB6F5274BC597249D04358EF25F-BALL, JOEL]
Sent: 9/30/2013 3:57:32 PM
To: Ex. 6 Personal Privacy (PP)
Subject: RE: 2012 bmw x5 emission recall
Attachments: CBMXT04.4E71.pdf

Here is the FOIA version of the application for the test group number you provided me.

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Ex. 6 Personal Privacy (PP)
Sent: Sunday, September 22, 2013 1:26 PM
To: Ball, Joel
Subject: Re: 2012 bmw x5 emission recall

Joel, Group # CBMXT04,4E71 Thanks a lot. Ex. 6 Personal Privacy (PP)

-----Original Message-----
From: Ball, Joel <ball.joel@epa.gov>
To: Ex. 6 Personal Privacy (PP)
Sent: Fri, Sep 20, 2013 8:04 am
Subject: RE: 2012 bmw x5 emission recall

Hello Ex. 6 Personal Privacy (PP)

I am not aware of any law or regulation which requires a manufacture to provide that type of information to a vehicle owner. Manufacturers are required, however, to provide some of the information you might be looking for to EPA in the application for certification. I have not been able to put me fingers on the info for a 2012 MY BMW X5 just yet but if you send me the test group info (which can be found on the under hood VECI label) I could sent you the FOIA (public) version of the document. It might have the info you are looking for.

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
ball.joel@epa.gov

From: Ex. 6 Personal Privacy (PP)
Sent: Monday, September 16, 2013 11:59 AM
To: Ball, Joel
Subject: 2012 bmw x5 emission recall

Dear Joel, I emailed you a few months ago about the car having increased idle speed after the emission recall reprogarmming. I've been round and round with the dealer and bmw NA, and basically they said it meetes bmw specs and live with it. I've asked them for the engine specs prior to and after reprograming, they refused to provide them to me. Are they required to provide a customer infromation on his vehicle when they modify it, or can the dealer and BMW NA stonewall? Thanks for you input. It has always been informative. Ex. 6 Personal Privacy (PP)

Message

From: Ex. 6 Personal Privacy (PP)
Sent: 2/28/2018 7:23:26 AM
To: Ball, Joel [ball.joel@epa.gov]
Subject: 2012 BMW X5 DIESEL

Dear Mr. Ball:

Your contact information was given to me by the EPA CleanDiesel Helpline when I shared my concern regarding emissions warranty issues for the above stated vehicle.

In recent independent on-road emission (ORE)tests performed on the X5 it showed it exceeded pollution of harmful gases by more than 400% of the EPA mandatory standards set for these vehicles.

I have contacted BMW to request them to buy back of this vehicle only to deny any assistance or to pursue further evaluation of the problem. Therefore, I would like to request help from you on requesting BMW to buy back my vehicle in light that this vehicle fails to pass emissions on road tests.

I am confident that you or someone from your organization can assist me in obtaining a just and efficient outcome from BMW on this delinquent matter.

Thank you for your attention.

Sincerely,

Ex. 6 Personal Privacy (PP)

Ex. 6 Personal Privacy (PP)

Message

From: Ex. 6 Personal Privacy (PP)
Sent: 12/23/2017 12:24:22 AM
To: Ball, Joel [ball.joel@epa.gov]
CC: Bunker, Byron [bunker.byron@epa.gov]; Wehrly, Linc [wehrly.linc@epa.gov]
Subject: Re: Request to cover additional parts for diesel vehicles under EPA warranty

Dear Mr Ball,

Appreciate your explanation and detailed response. I researched into many forums and BMW replaced EGR Cooler under warranty period for a number of vehicles. It is possible that this issues is not as systemic I thought it was also as you mentioned BMW would have reported defect data on these if that were the case.

Thanks
Ex. 6 Personal Privacy (PP)

Sent from my iPad

On Dec 21, 2017, at 4:31 PM, Ball, Joel <ball.joel@epa.gov> wrote:

Hello Ex. 6 Personal Privacy (PP)

Thank you for you inquiry regarding the federal Emissions warranty on your 2010 BMW X5 Diesel Vehicle. The Federal emissions warranty covers the EGR cooler on your vehicle for 2 years or 24,000 miles. As I mentioned previously, the Clean Air Act also gives EPA the authority to require recalls if a substantial number of vehicles fail to comply with emissions standards throughout their full useful life which is 10 years or 120,000 miles. However the Clean Air Act limits EPA's authority to 7 years for the purpose of determining compliance to the standards. In other words EPA cannot test vehicles that are more than 7 years old.

Additionally manufacturers are required to submit defect reports if they determine that an emissions related defect exists on 25 or more vehicles in a model year. BMW has not filed such a report relating to EGR failures on 2010 MY BMW X5 Diesel Vehicles.

Emissions recalls are only warranted when a substantial number of parts fail indicating a defect. Our review of defect reporting data from BMW does not indicate that a substantial number of vehicles are experiencing EGR cooler failures.

Best regards,

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
ball.joel@epa.gov

Begin forwarded message:

From: Ex. 6 Personal Privacy (PP)
Date: December 15, 2017 at 7:54:18 AM EST
To: Christopher Grundler <grundler.christopher@epa.gov>
Subject: Request to cover additional parts for diesel vehicles under EPA warranty

Dear Sir,
I would like to request for your attention to get response from EPA for my request below which was sent a while ago.

Any confirmation that request is being looked at or cannot be serviced will be appreciated.

Thanks
Ex. 6 Personal Privacy (PP)

Sent from my iPhone

Begin forwarded message:

> **From:** Ex. 6 Personal Privacy (PP)
> **Date:** November 17, 2017 at 8:22:59 AM EST
> **To:** "ball.joel@epa.gov" <ball.joel@epa.gov>
> **Cc:** "wehrly.linc@epa.gov" <wehrly.linc@epa.gov>
> **Subject: Re: Your EPA Inquiry - Request to cover additional parts for diesel vehicles under EPA warranty**
> **Reply-To:** Ex. 6 Personal Privacy (PP)
> Ex. 6 Personal Privacy (PP)
>
> Dear Sir.
> I wanted to inquire about my request below. I do understand the process takes a while however any update on this will appreciated.
>
> Thanks
> Ex. 6 Personal Privacy (PP)
>
> Sent from Yahoo Mail on Android
>
> On Fri, Sep 22, 2017 at 1:38 PM, Amit Chadha
> Ex. 6 Personal Privacy (PP)
>
> > Dear Sir,
> >
> > This is regarding a 2010 X5 which had a fault with a sensor related to emissions. I had requested EPA to consider adding this part under limited warranty. I had a response from subsequently from EPA which stated that any emission related part can be covered under 120000miles/10 years if it happens frequently and above part was subsequently included in warranty with your help.
> > I have copied the response in this email below.

About six months later I am with similar situation. I have another emission part having issue as below

The EGR cooler is a component used to lower the temperature of the exhaust gases that are recirculated by the EGR system. The EGR system recirculates exhaust gases back into the engine in order to decrease cylinder temperatures and NOx emissions. With the
EGR cooler failing it is not detecting correctly causing engine performance issues like decreased power and acceleration, rough idle, and the Check Engine Light coming on. To replace it is $1460.00 + tax.

I was in contact with Dealer at Princeton BMW in conjunction with BMW NA. However I was told today that this part is not under warranty.

I strongly feel that this part also comes under same guidelines you issued earlier from EPA I have done extensive research and found this issue comes very frequently. I request you please help resolve this issue.

Thanks

Ex. 6 Personal Privacy (PP)

On Fri, Jan 27, 2017 at 11:07 AM, Ball, Joel <ball.joel@epa.gov> wrote:

Ex. 6 Personal Privacy (PP)

Thank you for you inquiry regarding the federal Emissions warranty on your 2010 BMW X5 Diesel Vehicle. The Clean Air Act requires manufacturers of light duty vehicles to provide an emissions warranty of 2 years or 24,000 miles on all emissions components. The 8 year or 80,000 miles warranty only applies to the specified major emissions control components which are the 1. CATALYTIC CONVERTER 2. ENGINE CONTROL MODULE (INCLUDING ONBOARD DIAGNOSTIC SYSTEM). However, the Clean Air Act also gives EPA the authority to require recalls if a substantial number of vehicles fail to comply with emissions standards throughout their full useful life which is 10 years or 120,000 miles.

As you have pointed out, failure of the diesel exhaust fluid tank is very common with BMW X5 diesel vehicles. As such BMW is in the process of issuing a recall for these components. As the owner of an affected vehicle, you should be receiving a notice in the mail informing you of the recall. If you have already paid for the repair, you may be eligible for reimbursement. If you do not receive a notice in the next few weeks, you can contact BMW to confirm if your vehicle is covered by the recall.

I hope this information is helpful,

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
ball.joel@epa.gov

From: EPA Office of Transportation & Air Quality
Sent: Friday, January 13, 2017 12:19 PM
To: Ball, Joel <ball.joel@epa.gov>
Cc: Wehrly, Linc <wehrly.linc@epa.gov>
Subject: Your EPA Inquiry - Request to cover additional parts for diesel vehicles under EPA warranty

-----Original Message-----

From: drupal_admin@epa.gov [mailto:drupal_admin@epa.gov]

Sent: Monday, January 09, 2017 4:01 PM

To: cleanairact <cleanairact@epa.gov>

Subject: Form submission from: Clean Air Act Overview Contact Us About the Clean Air Act form

Submitted on 01/09/2017 4:01PM

Submitted values are:

Name: Ex. 6 Personal Privacy (PP)

Email Address: Ex. 6 Personal Privacy (PP)

Comments:

Dear Sir/Madam,

This request is regarding a 2010 BMW X5 Diesel Vehicle. Currently EPA has worked out with BMW to provide a warranty to cover 80K miles or 8 years to cover the following

1. CATALYTIC CONVERTER

2. ENGINE CONTROL MODULE (INCLUDING

ONBOARD DIAGNOSTIC SYSTEM)

I would like to request EPA to include additional other parts in diesel vehicle which are also directly related to emission like Active/Passive tank and sensors to be also covered. I recently faced failure of sensor in Active tank and found out in my research that the design of the X5 is such that senor and Active tank is fused and BMW is asking for anywhere between $1500 to 2200 for replacement.

This price tag is going to discourage the customers to go for replacement and will lead to emission issues not being fixed promptly. Also checking out the forums I noticed this issue is very common with X5 diesel.

My request is since the primary function of active/passive tanks is similar to catalytic converter, there is no reason why these are kept out of warranty

b) At least this should be done till BMW comes up with a better design to reduce the replacement cost.

I have already contacted jess.cusumano@bmwna.com, craig.westbrook@bmwna.com, ludwig.willisch@bmwna.com at BMW and have not received a satisfactory response on this issue.

Hoping for help from EPA to resolve this issue.

Regards

Ex. 6 Personal Privacy (PP)

Message

From: Bunker, Byron [bunker.byron@epa.gov]
Sent: 12/21/2017 6:22:28 PM
To: Ball, Joel [ball.joel@epa.gov]; Wehrly, Linc [wehrly.linc@epa.gov]
Subject: RE: Request to cover additional parts for diesel vehicles under EPA warranty

Hi Joel,

Can you bump this up your priority list today? I would like to get some kind of follow up while Chris is still in the office this year.

Thanks,

Byron

****
Byron Bunker
Director Compliance Division
Office of Transportation and Air Quality
Environmental Protection Agency
2000 Traverwood Drive
Ann Arbor, MI 48105
Bunker.Byron@epa.gov
Phone: (734) 214-4155
Mobile: (734) 353-9623
****

From: Bunker, Byron
Sent: Friday, December 15, 2017 9:14 AM
To: Ball, Joel <ball.joel@epa.gov>; Wehrly, Linc <wehrly.linc@epa.gov>
Subject: FW: Request to cover additional parts for diesel vehicles under EPA warranty

Hi Linc and Joel,

Can you look in your inbox and see if you have the incoming note that Chris just forwarded? I assume the response is that a recall is only warranted when a substantial number of parts fail indicating a defect. Our review of defect reporting data from BMW does not indicate that a substantial number of vehicles are experiencing EGR cooler failures (presuming this is true).

Thanks,

Byron

****
Byron Bunker
Director Compliance Division
Office of Transportation and Air Quality
Environmental Protection Agency
2000 Traverwood Drive
Ann Arbor, MI 48105

Bunker.Byron@epa.gov
Phone: (734) 214-4155
Mobile: (734) 353-9623
****

From: Grundler, Christopher
Sent: Friday, December 15, 2017 9:04 AM
To: Bunker, Byron <bunker.byron@epa.gov>
Subject: Fwd: Request to cover additional parts for diesel vehicles under EPA warranty

---

Christopher Grundler, Director
Office of Transportation and Air Quality
U.S. Environmental Protection Agency
202.564.1682 (Washington DC)
734.214.4207 (Ann Arbor MI)
734.645.5221 (mobile)
www.epa.gov/otaq

Begin forwarded message:

From: Ex. 6 Personal Privacy (PP)
Date: December 15, 2017 at 7:54:18 AM EST
To: Christopher Grundler <grundler.christopher@epa.gov>
Subject: Request to cover additional parts for diesel vehicles under EPA warranty

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Any confirmation that request is being looked at or cannot be serviced will be appreciated.

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Ex. 6 Personal Privacy (PP)

Sent from my iPhone

Begin forwarded message:

From: Ex. 6 Personal Privacy (PP)
Date: November 17, 2017 at 8:22:59 AM EST
To: "ball.joel@epa.gov" <ball.joel@epa.gov>
Cc: "wehrly.linc@epa.gov" <wehrly.linc@epa.gov>
Subject: Re: Your EPA Inquiry - Request to cover additional parts for diesel vehicles under EPA warranty
Reply-To: Ex. 6 Personal Privacy (PP)

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I wanted to inquire about my request below. I do understand the process takes a while however any update on this will appreciated.

Thanks

Ex. 6 Personal Privacy (PP)

Sent from Yahoo Mail on Android

On Fri, Sep 22, 2017 at 1:38 PM, Ex. 6 Personal Privacy (PP) wrote:

Ex. 6 Personal Privacy (PP)

Dear Sir,

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Thanks

Ex. 6 Personal Privacy (PP)

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As you have pointed out, failure of the diesel exhaust fluid tank is very common with BMW X5 diesel vehicles. As such BMW is in the process of issuing a recall for these components. As the owner of an affected vehicle, you should be receiving a notice in the mail informing you of the recall. If you have already paid for the repair, you may be eligible for reimbursement. If you do not receive a notice in the next few weeks, you can contact BMW to confirm if your vehicle is covered by the recall.

I hope this information is helpful,

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
ball.joel@epa.gov

From: EPA Office of Transportation & Air Quality
Sent: Friday, January 13, 2017 12:19 PM
To: Ball, Joel <ball.joel@epa.gov>
Cc: Wehrly, Linc <wehrly.linc@epa.gov>
Subject: Your EPA Inquiry - Request to cover additional parts for diesel vehicles under EPA warranty

-----Original Message-----

From: drupal_admin@epa.gov [mailto:drupal_admin@epa.gov]

Sent: Monday, January 09, 2017 4:01 PM

To: cleanairact <cleanairact@epa.gov>

Subject: Form submission from: Clean Air Act Overview Contact Us About the Clean Air Act form

Submitted on 01/09/2017 4:01PM

Submitted values are:

Name: Ex. 6 Personal Privacy (PP)

Email Address: Ex. 6 Personal Privacy (PP)

Comments:

Dear Sir/Madam,

This request is regarding a 2010 BMW X5 Diesel Vehicle. Currently EPA has worked out with BMW to provide a warranty to cover 80K miles or 8 years to cover the following

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I would like to request EPA to include additional other parts in diesel vehicle which are also directly related to emission like Active/Passive tank and sensors to be also covered. I recently faced failure of sensor in Active tank and found out in my research that the design of the X5 is such that senor and Active tank is fused and BMW is asking for anywhere between $1500 to 2200 for replacement.

This price tag is going to discourage the customers to go for replacement and will lead to emission issues not being fixed promptly. Also checking out the forums I noticed this issue is very common with X5 diesel.

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b) At least this should be done till BMW comes up with a better design to reduce the replacement cost.

I have already contacted jess.cusumano@bmwna.com, craig.westbrook@bmwna.com, ludwig.willisch@bmwna.com at BMW and have not received a satisfactory response on this issue.

Hoping for help from EPA to resolve this issue.

Regards

Ex. 6 Personal Privacy (PP)

Message

From: Imports [Imports@epa.gov]
Sent: 5/23/2017 1:30:23 PM
To: Ball, Joel [ball.joel@epa.gov]
Subject: FW: EPA CERTIFICATE
Attachments: DSC02022.jpg; DSC02023.jpg; DSC02026.jpg; DSC02027.jpg; SOOBRACAJNA.PDF; DSC01961.jpg; DSC01954.jpg

Certificate of conformity?

Thanks,

EPA Imports Team
Jacobs Technology
Contractor to the US EPA
(on behalf of imports@epa.gov)
734-214-4100

From: Ex. 6 Personal Privacy (PP)
Sent: Tuesday, May 23, 2017 3:05 AM
To: Imports <Imports@epa.gov>
Subject: FW: EPA CERTIFICATE

Manufacturer:
BMW Manufacturing Co LLC
Manufacturer Address:
1400 Highway 101 S
Greer SC 29651-6799
Product Type:
Passenger Car
Make:
Bmw
Market:
USA
Model:
X5 35dX
Series:
X5 (E70 LCI)
Trim:
xDrive35d
Body:
Sport Utility Vehicle (SUV)/Multi Purpose Vehicle (MPV)
Drive:
4x4 - Four-wheel drive

Number of Seats:
5
Number of Doors:
4
Fuel Type - Primary:
Diesel
Engine Displacement (ccm):
2993
Engine Power (kW):
198
Engine Cylinders:
6
Engine Code:
M57N2
Number of Gears:
8
Made:
2011-03-01
Check Digit:
8
Model Year:
2009
Plant Country:
United States (USA)
Plant State:
South Carolina
Plant City:
Greer
Sequential Number:
Ex. 6 Personal Privacy (PP)

From: Ex. 6 Personal Privacy (PP)
Sent: Tuesday, May 23, 2017 8:13 AM
To: Ex. 6 Personal Privacy (PP)
Subject: FW: EPA CERTIFICATE

From: Imports [mailto:Imports@epa.gov]
Sent: Monday, May 22, 2017 4:34 PM

To: Ex. 6 Personal Privacy (PP)
Subject: RE: EPA CERTIFICATE

Please send the details of the vehicle you are requesting the certificate for. The make, model, year, engine family.

EPA Imports Team
Jacobs Technology
Contractor to the US EPA
(on behalf of imports@epa.gov)
734-214-4100

From: Ex. 6 Personal Privacy (PP)
Sent: Monday, May 22, 2017 9:49 AM
To: Imports <Imports@epa.gov>
Subject: RE: EPA CERTIFICATE

Certificate for Homologation.

From: Imports [mailto:Imports@epa.gov]
Sent: Monday, May 22, 2017 3:40 PM
To: Ex. 6 Personal Privacy (PP)
Subject: RE: EPA CERTIFICATE

Sir,

What purpose is it you need the certificate for?

EPA Imports Team
Jacobs Technology
Contractor to the US EPA
(on behalf of imports@epa.gov)
734-214-4100

From: Ex. 6 Personal Privacy (PP)
Sent: Monday, May 22, 2017 2:27 AM
To: Imports <Imports@epa.gov>
Subject: RE: EPA CERTIFICATE

Just to get a certificate of conformity.

From: Imports [mailto:Imports@epa.gov]
Sent: Friday, May 19, 2017 3:49 PM
To: Ex. 6 Personal Privacy (PP)
Subject: RE: EPA CERTIFICATE

Dear sir,

Is this a vehicle that you are trying to import, or just obtain a certificate of conformity for?

EPA Imports Team
Jacobs Technology
Contractor to the US EPA
(on behalf of imports@epa.gov)
734-214-4100

From: Ex. 6 Personal Privacy (PP)
Sent: Friday, May 19, 2017 8:50 AM
To: Imports <imports@epa.gov>
Subject: RE: EPA CERTIFICATE

Dear all,

Below is the driving license.

What other other information do you need?

From: Imports [mailto:imports@epa.gov]
Sent: Friday, May 19, 2017 2:34 PM
To: Ex. 6 Personal Privacy (PP)
Subject: RE: EPA CERTIFICATE

Dear sir,

I am going to need more information on what it is you are looking to do?

EPA Imports Team
Jacobs Technology
Contractor to the US EPA
(on behalf of imports@epa.gov)
734-214-4100

From: Ex. 6 Personal Privacy (PP)
Sent: Friday, May 19, 2017 3:53 AM
To: Imports <imports@epa.gov>
Subject: EPA CERTIFICATE

Dear all,

In addition to supply tiles from the exhaust gases from the vehicle that needs to send us a certificate EPA.

Have a nice day

Ex. 6 Personal Privacy (PP)

Ex. 6 Personal Privacy (PP)

Mon Feb 27 12:20:44 EST 2017
Pruitt.Scott@epamail.epa.gov
Fw: Filing Complaint Against BMW of North America
To: CMS.OEX@epamail.epa.gov

Assign to OAR for response. Direct reply is fine. Thanks.

- Brian

From: Ex. 6 Personal Privacy (PP)
Sent: Friday, February 24, 2017 5:57 PM
To: Pruitt, Scott
Subject: Fw: Filing Complaint Against BMW of North America

Mr. Pruitt:

Congratulations on your confirmation. I sent Ms. McCabe the email below last week and I wanted to follow up to ensure you received a copy.

Thank you for your service and your attention to this matter.

Sincerely,

Ex. 6 Personal Privacy (PP)

From Ex. 6 Personal Privacy (PP)
Sent: Wednesday, February 15, 2017 6:13 PM
To: mccabe.catherine@epa.gov
Subject: Filing Complaint Against BMW of North America

Ms. Catherine McCabe:

I hereby formally complain that BMW of North America is failing to follow the U.S. rules, and promulgations of U.S. law concerning emissions and emissions warranties. Please see the attached letter I sent to President Donald J. Trump. If you have any questions concerning my formal complaint, please do not hesitate to contact me.

Thanks and have a great day.

Sincerely,

Ex. 6 Personal Privacy (PP)

Ex. 6 Personal Privacy (PP)

February 15, 2017

President Donald J. Trump
The White House
1600 Pennsylvania Avenue NW
Washington, DC 20500
(202) 456-7890

Mr. President:

Thank you for supporting U.S. citizens in free trade while also protecting U.S. companies and U.S. workers. As a fellow Wharton School Alumni, I know your experiences and background will benefit you while serving office.

I am writing to formally file a complaint against BMW of North America for not abiding by EPA Regulations that BMW agreed to follow so BMW could import vehicles into the USA. In a nutshell, BMW agreed to EPA regulations that if BMW imported vehicles into the USA that BMW would provide an 8 year, 80,000 warranty covering all components that effect the emissions quality[1]. My 2011 BMW 335D has 2 issues that affect emissions quality and now BMW does not want to cover these issues under the warranty. This is clearly unethical corporate behavior that could be another case study at The Wharton School.

On February 13, 2017, BMW offered me 25% coverage which is absolutely unacceptable. Please level the playing field for U.S. consumers and U.S. automakers by requiring BMW to abide by the rules they agreed to upon importation of their vehicles into the USA. Please enforce EPA rules and have BMW cover my vehicle at 100% coverage, which is what BMW is required to do under USA law.

My hunch is that if you start looking into this one particular issue you will find widespread abuse by BMW. In my opinion, due to the amount of warranty work on 2 diesel BMWs that I own, I believe BMW is partaking in the same emissions shenanigans that Audi committed. This sort of behavior by foreign companies needs to end so American manufacturers can have a level playing field to compete. U.S. Manufacturers follow U.S. law. Shouldn't BMW too? Please make BMW follow U.S. law.

On a personal level, I ask that you see that BMW complies with U.S. law expeditiously because not having a vehicle is causing a hardship on my family. My wife and I have a 5-month-old newborn and, by having my 335D sit in BMW's maintenance facility, it's difficult on us.

Thank you for your time and your service to our great nation.

Ex. 6 Personal Privacy (PP)

cc: Catherine McCabe, Acting EPA Administrator
Ludwig Willisch, CEO BMW of North America
Bernhard Kuhnt, Acting CEO of BMW of North America

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1 https://nepis.epa.gov/Exe/ZyNET.exe/9101ZSGW.txt?ZyActionD=ZyDocument&Client=EPA&Index=1991%20Thru%201994&Docs=&Query=&Time=&EndTime=&SearchMethod=1&TocRestrict=n&Toc=&TocEntry=&QField=&QFieldYear=&QFieldMonth=&QFieldDay=&UseQField=&IntQFieldOp=0&ExtQFieldOp=0&XmlQuery=&File=D%3A%5CZYFILES%5CINDEX%20DATA%5C91THRU94%5CTXT%5C00000031%5C9101ZSGW.txt&User=ANONYMOUS&Password=anonymous&SortMethod=h%7C-&MaximumDocuments=1&FuzzyDegree=0&ImageQuality=r75g8/r75g8/x150y150g16/i425&Display=hpfr&DefSeekPage=x&SearchBack=ZyActionL&Back=ZyActionS&BackDesc=Results%20page&MaximumPages=1&ZyEntry=3#

Message

From: Pugliese, Holly [pugliese.holly@epa.gov]
Sent: 3/13/2017 2:31:18 PM
To: Wright, DavidA [Wright.DavidA@epa.gov]; Ball, Joel [ball.joel@epa.gov]
CC: Wehrly, Linc [wehrly.linc@epa.gov]; Pidgeon, Bill [pidgeon.bill@epa.gov]
Subject: RE: FYI BMIW control
Attachments: 17-000-4387 FYI BMW Complaint no response required.pdf

A gentler reminder that we need a response drafted for this. It is due March 14.

Holly Pugliese
Office of Transportation and Air Quality
US EPA
pugliese.holly@epa.gov

From: Pugliese, Holly
Sent: Monday, March 06, 2017 10:50 AM
To: Wright, DavidA <Wright.DavidA@epa.gov>; Ball, Joel <ball.joel@epa.gov>
Cc: Wehrly, Linc <wehrly.linc@epa.gov>; Pidgeon, Bill <pidgeon.bill@epa.gov>
Subject: RE: FYI BMIW control

Hi Guys, sorry to be the bearer of bad news, but we now need to do a formal reply to this one. The constituent followed up directly with the Administrator that he hadn't received a reply so now we need one for Byron's signature by next Tuesday.

Holly Pugliese
Office of Transportation and Air Quality
US EPA
pugliese.holly@epa.gov

From: Wright, DavidA
Sent: Thursday, February 23, 2017 9:01 AM
To: Ball, Joel <ball.joel@epa.gov>
Cc: Wehrly, Linc <wehrly.linc@epa.gov>; Pugliese, Holly <pugliese.holly@epa.gov>; Pidgeon, Bill <pidgeon.bill@epa.gov>
Subject: FW: FYI BMIW control

Joel,

As this is related to BMW warranty performance I figured you should be copied on this control.

Regards,

David

From: Pugliese, Holly
Sent: Thursday, February 23, 2017 8:57 AM
To: Wehrly, Linc <wehrly.linc@epa.gov>; Wright, DavidA <Wright.DavidA@epa.gov>
Subject: FYI BMIW control

Linc and David, this control came in as an FYI so we are not obligated to respond unless we want to. I assume you don't want to, but if you do, just let me know.

Holly Pugliese
Office of Transportation and Air Quality
US EPA
pugliese.holly@epa.gov

Wed Feb 15 17:22:37 EST 2017
Connors.Sandra@epamail.epa.gov
FW: Complaint Against BMW of North America
To: CMS.OEX@epamail.epa.gov

Sandra

Sandra L. Connors
Senior Advisor

Office of the Administrator
US Environmental Protection Agency
1200 Pennsylvania Avenue, Room 3317
Washington, DC 20460
(202)564-4231

connors.sandra@epa.gov

From: Ex. 6 Personal Privacy (PP)
Sent: Wednesday, February 15, 2017 2:50 PM
To: president@whitehouse.gov
Cc: Mccabe, Catherine <McCabe.Catherine@epa.gov>
Subject: Complaint Against BMW of North America

Mr. President:

Please see the attached formal complaint concerning violations of U.S. law being committed by BMW of North America.

Thank you for your time.

Sincerely,

Ex. 6 Personal Privacy (PP)

Ex. 6 Personal Privacy (PP)

February 15, 2017

President Donald J. Trump
The White House
1600 Pennsylvania Avenue NW
Washington, DC 20500
(202) 456-7890

Mr. President:

Thank you for supporting U.S. citizens in free trade while also protecting U.S. companies and U.S. workers. As a fellow Wharton School Alumni, I know your experiences and background will benefit you while serving office.

I am writing to formally file a complaint against BMW of North America for not abiding by EPA Regulations that BMW agreed to follow so BMW could import vehicles into the USA. In a nutshell, BMW agreed to EPA regulations that if BMW imported vehicles into the USA that BMW would provide an 8 year, 80,000 warranty covering all components that effect the emissions quality[1]. My 2011 BMW 335D has 2 issues that affect emissions quality and now BMW does not want to cover these issues under the warranty. This is clearly unethical corporate behavior that could be another case study at The Wharton School.

On February 13, 2017, BMW offered me 25% coverage which is absolutely unacceptable. Please level the playing field for U.S. consumers and U.S. automakers by requiring BMW to abide by the rules they agreed to upon importation of their vehicles into the USA. Please enforce EPA rules and have BMW cover my vehicle at 100% coverage, which is what BMW is required to do under USA law.

My hunch is that if you start looking into this one particular issue you will find widespread abuse by BMW. In my opinion, due to the amount of warranty work on 2 diesel BMWs that I own, I believe BMW is partaking in the same emissions shenanigans that Audi committed. This sort of behavior by foreign companies needs to end so American manufacturers can have a level playing field to compete. U.S. Manufacturers follow U.S. law. Shouldn't BMW too? Please make BMW follow U.S. law.

On a personal level, I ask that you see that BMW complies with U.S. law expeditiously because not having a vehicle is causing a hardship on my family. My wife and I have a 5-month-old newborn and, by having my 335D sit in BMW's maintenance facility, it's difficult on us.

Thank you for your time and your service to our great nation.

Sincerely,

Ex. 6 Personal Privacy (PP)

cc: Catherine McCabe, Acting EPA Administrator
Ludwig Willisch, CEO BMW of North America
Bernhard Kuhnt, Acting CEO of BMW of North America

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1 https://nepis.epa.gov/Exe/ZyNET.exe/9101ZSGW.txt?ZyActionD=ZyDocument&Client=EPA&Index=1991%20Thru%201994&Docs=&Query=&Time=&EndTime=&SearchMethod=1&TocRestrict=n&Toc=&TocEntry=&QField=&QFieldYear=&QFieldMonth=&QFieldDay=&UseQField=&IntQFieldOp=0&ExtQFieldOp=0&XmlQuery=&File=D%3A%5CZYFILES%5CINDEX%20DATA%5C91THRU94%5CTXT%5C00000031%5C9101ZSGW.txt&User=ANONYMOUS&Password=anonymous&SortMethod=h%7C-&MaximumDocuments=1&FuzzyDegree=0&ImageQuality=r75g8/r75g8/x150y150g16/i425&Display=hpfr&DefSeekPage=x&SearchBack=ZyActionL&Back=ZyActionS&BackDesc=Results%20page&MaximumPages=1&ZyEntry=3#

Message

From: Carlheinz.Bayer@bmwna.com [Carlheinz.Bayer@bmwna.com]
Sent: 1/24/2017 8:51:04 PM
To: Ball, Joel [ball.joel@epa.gov]
CC: Maria.V.Nizhegorodova@bmwnaext.com
Subject: RE: EDIR-09-0B-M57-0148

Sorry the other way around:
335d, SCR Tank, Status: ARB had questions about OBD relevance and were answered 1/19/17,
X5d, SCR Tank, Status: ARB approval received 1/24/17, mailing ASAP, VERR ASP after mailing

---

From: Bayer Carlheinz, EG-8-US-2
Sent: Tuesday, January 24, 2017 3:49 PM
To: Ball, Joel <ball.joel@epa.gov>
Cc: Nizhegorodova Maria, (Maria.V.Nizhegorodova@bmwnaext.com) <Maria.V.Nizhegorodova@bmwnaext.com>; Bayer Carlheinz, EG-8-US-2 <Carlheinz.Bayer@bmwna.com>
Subject: RE: EDIR-09-0B-M57-0148

Hello Joel,
The status as following:
X5 35d, SCR Tank, Status: ARB had questions about OBD relevance and were answered 1/19/17,
335 d, SCR Tank, Status: ARB approval received 1/24/17, mailing ASAP, VERR ASP after mailing
Best regards
Carlheinz

BMW of North America, LLC
Carlheinz Bayer
Manager Compliance and OBD
EG-8-US-21
200 Chestnut Ridge Road, Building 150
Woodcliff Lake, NJ 07677-7731
Tel.: (001) 201-571-5193
Mobile: (001) 201-207-4621
Fax: (001) 201-571-5479
Mail: carlheinz.bayer@bmwna.com
Web: www.bmwusa.com

From: Ball, Joel [mailto:ball.joel@epa.gov]
Sent: Thursday, January 19, 2017 10:55 AM
To: Bayer Carlheinz, EG-8-US-2 <Carlheinz.Bayer@bmwna.com>
Cc: Nizhegorodova Maria, (Maria.V.Nizhegorodova@bmwnaext.com) <Maria.V.Nizhegorodova@bmwnaext.com>
Subject: RE: EDIR-09-0B-M57-0148

Hi Carlheinz,

Thank you for the quick reply. Please let me know when you here from ARB.

Joel Ball
Light-Duty Vehicle Group

Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Carlheinz.Bayer@bmwna.com [mailto:Carlheinz.Bayer@bmwna.com]
Sent: Wednesday, January 18, 2017 5:47 PM
To: Ball, Joel <ball.joel@epa.gov>
Cc: Maria.V.Nizhegorodova@bmwnaext.com; Carlheinz.Bayer@bmwna.com
Subject: FW: EDIR-09-0B-M57-0148

Hello Joel,
ARB received the implementation plan recently but we are still in the 20 day period. After approval, we start the mailing and thereafter we'll submit the VERR.
The answers to your questions below:

From: "Ball, Joel" <ball.joel@epa.gov>
Date: January 18, 2017 at 4:17:53 PM EST
To: "Carlheinz.Bayer@bmwna.com" <Carlheinz.Bayer@bmwna.com>
Cc: "Wright, DavidA" <Wright.DavidA@epa.gov>, "Pidgeon, Bill" <pidgeon.bill@epa.gov>
Subject: EDIR-09-0B-M57-0148

Hi Carlheinz,

This EDIR indicates that "BMW will grant an emission warranty extension for SCR Reagent Tank affecting Diesel models 335d in test groups 9BMXV03.0M57 model year 2009, ABMXV03.0M57 model year 2010 and BBMXV03.0M57 model year 2011 to 10 years / 120,000 full useful life." It seems to me that this will require an owner notification and a VERR but I do not see one in the system.

- Will BMW be sending letters to the owners? *[>>>]* yes. As soon as we receive ARB approval.
- Will BMW be submitting a VERR?*[>>>]* yes, as soon as we do the mailing.
- Will owners who have already paid for this repair be reimbursed?*[>>>]* yes, that will be outlined in the SIB and in the letter to the customer
- Why aren't the X5 diesel vehicles covered by this campaign given the similar defects reported in EDIR-09/0B-M57-0051 and EDIR-0C-M57-0065*[>>>]* The X5 has it's separate warranty extension.
  We have ARB approval, the mailing is in the works and ASAP we will submit the VERR.

I recently spoke to the owner of a 2011 335d with who had this failure with less than 80,000 miles but the dealer told him that the component was out of warranty and provided him an estimate for nearly $3,000 to repair the vehicle. I will get more details from him.
[>>>] The customer will be covered by the extended warranty (if it's the SCR tank).
Best regards
Carlheinz

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

Message

From: Carlheinz.Bayer@bmwna.com [Carlheinz.Bayer@bmwna.com]
Sent: 1/18/2017 10:47:01 PM
To: Ball, Joel [ball.joel@epa.gov]
CC: Maria.V.Nizhegorodova@bmwnaext.com; Carlheinz.Bayer@bmwna.com
Subject: FW: EDIR-09-0B-M57-0148

Hello Joel,
ARB received the implementation plan recently but we are still in the 20 day period. After approval, we start the mailing and thereafter we'll submit the VERR.
The answers to your questions below:

From: "Ball, Joel" <ball.joel@epa.gov>
Date: January 18, 2017 at 4:17:53 PM EST
To: "Carlheinz.Bayer@bmwna.com" <Carlheinz.Bayer@bmwna.com>
Cc: "Wright, DavidA" <Wright.DavidA@epa.gov>, "Pidgeon, Bill" <pidgeon.bill@epa.gov>
Subject: EDIR-09-0B-M57-0148

Hi Carlheinz,

This EDIR indicates that "BMW will grant an emission warranty extension for SCR Reagent Tank affecting Diesel models 335d in test groups 9BMXV03.0M57 model year 2009, ABMXV03.0M57 model year 2010 and BBMXV03.0M57 model year 2011 to 10 years / 120,000 full useful life." It seems to me that this will require an owner notification and a VERR but I do not see one in the system.

- Will BMW be sending letters to the owners? *[>>>]* yes. As soon as we receive ARB approval.
- Will BMW be submitting a VERR?*[>>>]* yes, as soon as we do the mailing.
- Will owners who have already paid for this repair be reimbursed?*[>>>]* yes, that will be outlined in the SIB and in the letter to the customer
- Why aren't the X5 diesel vehicles covered by this campaign given the similar defects reported in EDIR-09/0B-M57-0051 and EDIR-0C-M57-0065*[>>>]* The X5 has it's separate warranty extension.
  We have ARB approval, the mailing is in the works and ASAP we will submit the VERR.

I recently spoke to the owner of a 2011 335d with who had this failure with less than 80,000 miles but the dealer told him that the component was out of warranty and provided him an estimate for nearly $3,000 to repair the vehicle. I will get more details from him.
[>>>] The customer will be covered by the extended warranty (if it's the SCR tank).
Best regards
Carlheinz

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

Message

From: EPA Office of Transportation & Air Quality [OTAQ@epa.gov]
Sent: 1/13/2017 5:19:16 PM
To: Ball, Joel [ball.joel@epa.gov]
CC: Wehrly, Linc [wehrly.linc@epa.gov]
Subject: Your EPA Inquiry - Request to cover additional parts for diesel vehicles under EPA warranty

Please note: we are cc'ing the Group Managers so that they are aware of the work being assigned to staff.

Can you answer this person's question please? If so, please respond directly to the inquirer (keep the incoming message but delete this message) at Ex. 6 Personal Privacy (PP) — and please cc "**otaq@epa.gov**" so that I can close it out on our end.

Please respond by **January 20th**. If you are not the appropriate person to respond to this, please let me know right away. If you can suggest someone else, I'd appreciate it. Thank you!

-----Original Message-----
From: drupal_admin@epa.gov [mailto:drupal_admin@epa.gov]
Sent: Monday, January 09, 2017 4:01 PM
To: cleanairact <cleanairact@epa.gov>
Subject: Form submission from: Clean Air Act Overview Contact Us About the Clean Air Act form

Submitted on 01/09/2017 4:01PM
Submitted values are:

Name: Ex. 6 Personal Privacy (PP)
Email Address: Ex. 6 Personal Privacy (PP)
Comments:
Dear Sir/Madam,

This request is regarding a 2010 BMW X5 Diesel Vehicle. Currently EPA has worked out with BMW to provide a warranty to cover 80K miles or 8 years to cover the following

1. CATALYTIC CONVERTER
2. ENGINE CONTROL MODULE (INCLUDING
ONBOARD DIAGNOSTIC SYSTEM)

I would like to request EPA to include additional other parts in diesel vehicle which are also directly related to emission like Active/Passive tank and sensors to be also covered. I recently faced failure of sensor in Active tank and found out in my research that the design of the X5 is such that senor and Active tank is fused and BMW is asking for anywhere between $1500 to 2200 for replacement.
This price tag is going to discourage the customers to go for replacement and will lead to emission issues not being fixed promptly. Also checking out the forums I noticed this issue is very common with X5 diesel.
My request is since the primary function of active/passive tanks is similar to catalytic converter, there is no reason why these are kept out of warranty
b) At least this should be done till BMW comes up with a better design to reduce the replacement cost.

I have already contacted jess.cusumano@bmwna.com, craig.westbrook@bmwna.com, ludwig.willisch@bmwna.com at BMW and have not received a satisfactory response on this issue.

Hoping for help from EPA to resolve this issue.

Regards

Ex. 6 Personal Privacy (PP)

Message

From: Gordinier, Terry [Gordinier.Terry@epa.gov]
Sent: 9/28/2016 2:30:26 PM
To: Ball, Joel [ball.joel@epa.gov]
Subject: FW: Federal emissions warranty

Hi Joel,

Would you have any advice on how I should deal with this guy?

Terry

From: Ex. 6 Personal Privacy (PP)
Sent: Wednesday, September 28, 2016 10:06 AM
To: Gordinier, Terry <Gordinier.Terry@epa.gov>
Subject: Re: Federal emissions warranty

Terry, thanks for your answer. It may not be consistent with the intent of the regulations. Was the purpose of the extended emissions warranty to make sure the emissions systems were designed to last and do their job effectively? Behind this, then, the warranties would make sure that failure of expensive components did not keep consumers from fixing the system if it broke in the first years of operation?

If so, consider that the cost I paid to have the heater element on the AdBlue nozzle replaced was $1200 - about the same as a catalytic converter and much more than the particulate filter.

Also, please note again that Mercedes covers the AdBlue system under an extended warranty and BMW also covers their "dosing unit." Even note the details of the voluntary recall to fix the dosing unit by BMW in 2012: 11E-A03_SCR_Catalyst_EGRValve_and_or_DEFMixer.pdf.

Also note that Chevrolet has diesel engines in the CRUZE and will start introducing their European diesel engine in early 2017 in the Equinox. That engine, even in Europe, uses SCR with AdBlue and has an extended warranty. In the 2017 Chevrolet warranty they have an extended warranty for the powertrain and, for diesel engines that includes the SCR and AdBlue tank; e.g.:

Diesel Engine/Components

Cylinder block and heads and all internal parts, intake and exhaust manifolds, timing gears, timing gear chain or belt and cover, flywheel, harmonic balancer, valve covers, oil pan, oil pump, water pump, fuel pump, engine mounts, seals, and gaskets. Parts of the Emissions Reduction System such as the emissions reduction fluid tank, injectors, sensors including NOx and exhaust, and the Exhaust Particulate Filter. Glow Plug Control System: Control/glow plug assembly, glow plugs, cold advance relay, and engine control module The fuel injection control module, integral oil cooler, transmission adapter plate, common fuel rails, fuel filter assembly, fuel temperature sensor, and function block.

"Diesel Gate" is all about NOX emissions and AdBlue is central to that.

You need to require VW to comply with extended warranties for the AdBlue system just like all other manufacturers apparently do.

Regards,

Ex. 6 Personal Privacy (PP)

On Tue, Sep 27, 2016 at 12:46 PM, Gordinier, Terry <Gordinier.Terry@epa.gov> wrote:

Ex. 6 Personal Privacy (PP)

Thank you for contacting the EPA with your question regarding the federal emissions warranty. The Clean Air Act requires manufacturers of light duty vehicles to warranty the emissions control system performance for 2 years or 24,000 miles, while specified major emissions control components are covered for 8 years or 80,000 miles. The specified major emissions control components include **only** the catalytic converter, the electronic emissions control unit or computer (ECU), and the onboard emissions diagnostic (OBD) device or computer. Additionally, manufacturers are required to warranty any emission control or emission related component that fails to function or functions improperly because of a defect in materials or workmanship, for 2 years or 24,000 miles (8 years or 80,000 miles for specified major emissions control components) under the emissions design and defect warranty. A manufacturer may also elect to extend the warranty on emissions components for longer than the federally mandated warranty period. The following web page provides more information regarding the federal emissions warranty requirements:
https://www3.epa.gov/obd/pubs/420f15035.pdf

Vehicle technology is constantly changing; therefore there may be emissions control components or emissions related components which do not appear on the EPA publication's list. The 2 years/24,000 mile federal emissions warranty still applies to these components. A more complete list can be found in your owner's manual/warranty booklet. The major emissions control components are specified in the Clean Air Act as the catalytic converter, the electronic emissions control unit or computer (ECU), and the onboard emissions diagnostic (OBD) device or computer. **With regard to diesel engines, the diesel SCR catalytic converter and the Diesel Particulate filter (DPF) are catalytic converters covered under the 8 year/80,000 mile warranty, however, the other components in the SCR system (e.g. exhaust sensors, DEF tank, valves, hoses, etc.) are covered under the 2 year/24,000 mile warranties mentioned above.**

If your vehicle was certified to California emissions requirements, it may have a longer warranty as well. The following web page provides more information regarding the California emissions warranty requirements: http://www.arb.ca.gov/msprog/warranty.pdf

Regards,

Terry Gordinier

Environmental Protection Agency

Light Duty Vehicle Group

Compliance Division

Ph: 734.214.4517

Email: Gordinier.Terry@epa.gov

Message

From: Garcia, Ariel [Garcia.Ariel@epa.gov]
Sent: 11/14/2016 2:17:06 PM
To: Ball, Joel [ball.joel@epa.gov]
Subject: RE: Federal Emissions Warranty coverage of SCR Catalyst

Thanks Joel.

I just wanted to make sure, since I saw that California's warranty for the SCR catalyst and NOx sensors was 7 year/70,000 mile, I wanted to make sure that the NOx Sensors on light-duty diesel vehicles were not being grouped into the "major" components covered under the federal 8 year/80,000 mile warranty.

Thanks again,

Ariel

****
Mr. Ariel Garcia
Environmental Protection Specialist, Air Quality Unit
U.S. Environmental Protection Agency
Region 1, EPA New England
5 Post Office Sq. Suite 100
Mail Code OEP05-2
Boston, MA 02109-3912

Phone: (617) 918-1660
Fax: (617) 918-0660
E-Mail: garcia.ariel@epa.gov
****

From: Ball, Joel
Sent: Monday, November 14, 2016 9:04 AM
To: Garcia, Ariel <Garcia.Ariel@epa.gov>
Subject: RE: Federal Emissions Warranty coverage of SCR Catalyst

Hi Ariel,

I got your voice mail regarding the Nox sensors. You are correct that these components are similar to oxygen sensor and are covered for 2 years or 24,000 miles under the Federal warranty.

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Garcia, Ariel
Sent: Tuesday, November 08, 2016 1:12 PM
To: Ex. 6 Personal Privacy (PP)
Subject: Federal Emissions Warranty coverage of SCR Catalyst

Hello Ex. 6 Personal Privacy (PP)

Attached is an electronic copy of the 2012 BMW X5 Service and Warranty Information Booklet. This booklet should have been provided along with your vehicle's Owner's Manual at the time of purchase.

If you look at Page 33 of the electronic version of the booklet, you will see that for your diesel BMW X5 (model:35d), the SCR Catalyst is covered under California's 7 years/70,000 mile warranty. However, look at page 28, the column on the right hand side, second paragraph reads:

"If your California registered vehicle is between 7 and 8 years old and has been driven less than 80,000 miles, then your vehicle is eligible for additional warranty coverage under the Federal Emissions Warranty."

Connecticut is one of the states that has adopted the California Low Emission Vehicle Program, and vehicles in Connecticut are identical to those in California.

The federal emissions warranty covers catalytic converters, including the SCR catalyst on diesel vehicles.

Feel free to print out this email , and anyone needing further information can call me at 617-918-1660.

Regards,

Ariel

****
Mr. Ariel Garcia
Environmental Protection Specialist, Air Quality Unit
U.S. Environmental Protection Agency
Region 1, EPA New England
5 Post Office Sq. Suite 100
Mail Code OEP05-2
Boston, MA 02109-3912

Phone: (617) 918-1660
Fax: (617) 918-0660
E-Mail: garcia.ariel@epa.gov
****

Service and
Warranty
Information
2012
X3
X3
X3
X3
The Ultimate
Driving Machine®

Owner/Driver Information:

Name _____

Address _____

_____

_____

_____

Owner/Driver Telephones:

Business _____

Home _____

Model X3, X5 & X6 _____ Year 2012 _____

VIN | | | | | | | | | | | | | | | | |

Retail/In-Service Date _____

Trim Code _____ Color Code _____

Production Date _____

License Plate Number _____

BMW Center Telephone Numbers:

Offices _____

Services _____

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2012 X3, X5 and X6 Models covered in this Booklet

X3 xDrive28i
X3 xDrive35i
X5 xDrive35i
X5 xDrive35d
X5 xDrive50i
X6 xDrive35i
X6 xDrive50i

BMW Ultimate Service™

BMW Ultimate Service leads the industry in providing owners with incredible value and peace of mind. This service includes:

- **The BMW Maintenance Program:** No-cost factory-recommended maintenance for 4 years/50,000 miles from the original in-service date, whichever comes first.
- **BMW Roadside Assistance:** No-cost 24/7 on-the-road assistance for 4 years/unlimited miles from the original in-service date. Also includes trip-interruption benefits as well as trip routing services.
- **New Vehicle Limited Warranty:** Limited coverage for defects in materials and workmanship for 4 years/50,000 miles from the original in-service date, whichever comes first. Repairs will only be made at authorized BMW SAV centers using Original BMW Parts.

Special Notes on the Diesel Engine

- At ambient temperatures below approximately 32°F, starting the engine of the X5 xDrive35d may be delayed for a few seconds while the automatic fuel preheating system is active. An indicator lamp in the instrument cluster will illuminate during this time. Start the engine only after the indicator lamp goes out.

Automatic fuel preheating indicator lamp

- Engine breaking-in: Prior to driving the first approximately 1,250 miles, do not exceed an engine speed of 3,500 rpm; avoid full-throttle acceleration and using the "kick-down" function of the transmission. After this mileage, engine speeds can be gradually increased.
- The BMW Advanced Diesel engine is designed to run only on Ultra-Low Sulfur Diesel (ULSD). This fuel designation contains a maximum of 15 parts per million (ppm) of sulfur. Service stations which dispense this fuel will have their pumps marked with this label:

- The use of biodiesel fuel is acceptable as long as the content is no higher than 5% (B5) which meets ASTM D6751 specification. If a biodiesel rated higher than B5 (such as B10 or B20) is pumped into the vehicle, damage to the fuel system components may occur.

▷ If gasoline, B10 or higher biodiesel, or any other improper fuel (i.e., low-sulfur diesel) is pumped into your diesel vehicle: at the first notion of the mistake, stop pumping and do not start the vehicle, not even to drive it away from the fuel pump. Serious engine damage can occur! Contact your BMW SAV center or Roadside Assistance immediately.

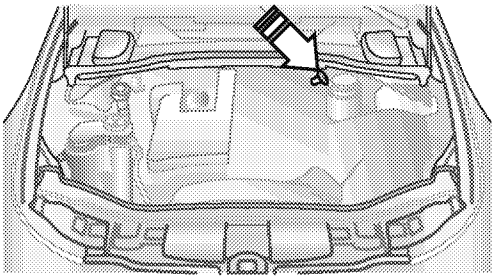
▷ The BMW X5 xDrive35d is equipped with a misfueling system which is intended to prevent gasoline from being pumped into the tank. Most automotive diesel fuel nozzles will be of the recommended diameter (24mm). When inserted into the fuel-filler neck, the fuel nozzle simultaneously presses two safety tabs located inside the fuel-filler neck; this will allow the fuel nozzle to be fully inserted for refueling.

A gasoline fuel nozzle diameter is smaller (21mm) than an automotive diesel fuel nozzle. If a gasoline fuel nozzle is inserted into the fuel-filler neck of your diesel vehicle, the smaller diameter fuel nozzle will not be able to simultaneously press the two safety tabs; this will prevent the fuel nozzle from being fully inserted into the fuel-filler neck.

▷ To allow emergency filling of diesel fuel in locations using a commercial (truck) size diesel fuel filler nozzle which is larger than the nozzle for passenger cars, and/or for filling stations which dispense diesel fuel from a non-conforming sized nozzle, a diesel misfueling bypass adapter is included in your vehicle.

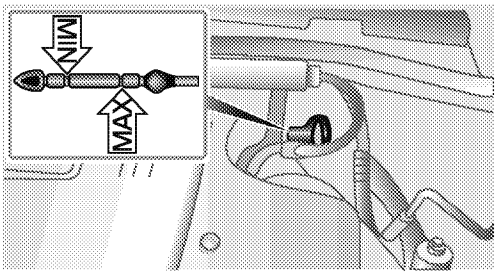
▷ The X5 xDrive35d's engine oil is different than the BMW gasoline engines. Use only "low-ash" fully synthetic oils meeting BMW's long-life rating LL-04. One such oil is Castrol SLX Professional OE SAE 5W-30 (Castrol #06070). This oil is also available at BMW SAV centers under BMW part number 07 51 0 037 195.

▷ The X5 xDrive35d is equipped with a traditional dipstick located in the engine compartment.



To check the engine oil level:

1. Park the vehicle on a level surface with the engine at operating temperature (i.e., after driving continuously for at least 7 miles).
2. Turn the engine off.
3. Wait at least 5 minutes.
4. Pull the dipstick out and wipe dry with a lint-free cloth, paper towel or similar item.
5. Carefully push the dipstick fully into the tube, then pull out again.
6. The oil level must be between the two marks.



▷ The quantity of oil between the two marks is approximately 1 quart.

▷ The X5 xDrive35d is equipped with Selective Catalyst Reduction (SCR) technology. Diesel Exhaust Fluid (DEF) is injected into the exhaust system to help reduce the emissions of nitrogen oxides (NOx). DEF is designed to last until your next oil change before it needs to be refilled. However, depending on your vehicle needs, you can run out of DEF before you reach the interval. The instrument cluster warning lamp will warn you before DEF is depleted, starting at approximately 1,000 miles.

Refill DEF indicator lamp (yellow)

Note: If you continue to drive until the mileage reaches 0, a new warning will appear (NO START IN – – – MILES). **Once this warning appears, you will only be able to restart the engine one more time if this is done within 3 minutes of last shutting it off. Beyond this time interval, the engine will not restart until DEF is refilled!**

Empty DEF indicator lamp (red)

DEF is available from your nearest BMW Service Center. Or, refer to your vehicle Owner's Manual for refilling DEF yourself.

▷ An additional warning lamp in the instrument cluster may illuminate if the diesel particulate filter requires service.

Diesel particulate filter indicator lamp

The BMW Maintenance Program

The BMW Maintenance Program is a benefit designed to help reduce the cost of ownership. The program has been devised with the following objectives: to maximize vehicle safety, reliability, and resale value by minimizing breakdowns resulting from wear, and minimizing cost and inconvenience by computing maintenance intervals based upon the specific manner in which each individual vehicle is driven.

2012 X3, X5 and X6 vehicles purchased from an authorized BMW SAV center in the United States or Puerto Rico are covered by the BMW Maintenance Program for 48 months or 50,000 miles, whichever occurs first. Coverage begins on the date of first retail sale or the date the vehicle is first placed into service as a sales demonstrator, Aftersales Mobility Program (AMP) Vehicle or company vehicle, whichever is earlier.

Any authorized BMW SAV center in the United States or Puerto Rico will perform the scheduled or additional maintenance services on your vehicle at no expense to you.

Coverage

The BMW Maintenance Program covers all factory-recommended maintenance, as determined by the Condition Based Service (CBS) system. Additional specific items that need replacement due to normal wear and tear, and that are not covered by the original New SAV Limited Warranty - such as brake pads, brake rotors and wiper blade inserts - are included, provided wear and tear exceeds BMW specifications. Any applicable adjustments required due to normal operating conditions are also included. See pages 9 - 10 of this booklet for additional information.

Exclusions from coverage include the following:

▷ Items reimbursable under your New SAV Limited Warranty

▷ Gasoline and diesel fuel

▷ Gasoline and diesel fuel additive

▷ Diesel glow plugs

▷ Diesel particulate filter

▷ Windshield washer additive (except when in conjunction with scheduled maintenance)

▷ Tires, wheel alignment, tire balance and rotation

▷ Wear and tear of soft trim items, such as: seats, carpets, moldings, headliner, door panels and all chrome trim

- ▷ Damage which results from negligence, improper operation of the vehicle, wear and tear or deterioration due to driving habits or conditions, improper repair, environmental influences, flood, accident or fire damage, road salt corrosion, alteration, installation of non-genuine BMW accessories, or use of improper, poor quality or contaminated fuel
- ▷ Altered or unreadable Vehicle Identification Number (VIN) or odometer irregularities or vehicles where the true mileage cannot be determined
- ▷ Maintenance or repair after the vehicle is deemed a total loss
- ▷ Maintenance or repairs performed by other than an authorized BMW SAV center within the United States or Puerto Rico
- ▷ "Topping off" low fluids (e.g., engine oil, antifreeze, washer fluid, etc.) except when done in conjunction with a scheduled maintenance or other required maintenance work (as outlined in the customized maintenance checklist printout) that is performed during an applicable Maintenance Program period
- ▷ Vehicles used in competitive events
- ▷ Oil changes performed outside the recommended maintenance intervals as indicated by the Condition Based Service
- ▷ DEF changes performed outside the recommended maintenance intervals as indicated by the Service Interval Display (X5 xDrive35d only)

Maintenance Upgrade Option

Please contact your authorized BMW center for information and availability on the optional Maintenance Program Upgrade for coverage up to 6 years or 100,000 miles, whichever occurs first.

Intervals

Time intervals should be followed using the maintenance interval as indicated by the Condition Based Service (CBS) display.

Maintenance intervals on motor vehicles have conventionally been specified based upon accumulated mileage. However, driving conditions have a major influence on routine maintenance requirements; distance traveled is only one of the significant factors. A vehicle driven for 50,000 miles of short trips in the city with numerous cold starts, prolonged periods of idling, stop-and-go driving, and high engine speeds during acceleration requires more frequent maintenance intervals than a vehicle driven for 50,000 miles for long distances at low engine speeds primarily at operating temperature.

The advanced technologies at BMW have led to the development of the unique BMW Condition Based Service (CBS) system which computes the actual optimum maintenance requirements based not only upon the accumulated mileage, but taking into account important factors such as high or low engine speeds, short or long trip driving.

Condition Based Service (CBS)

CBS is a further development of the Service Interval Indicator System. Sensors and sophisticated algorithms take even more detailed account of the various conditions of vehicle use.

The remaining times for selected maintenance tasks as well as any legally prescribed dates are displayed to you individually:

▷ Engine oil

▷ Brakes - front and rear separately

▷ Brake fluid

▷ Vehicle check

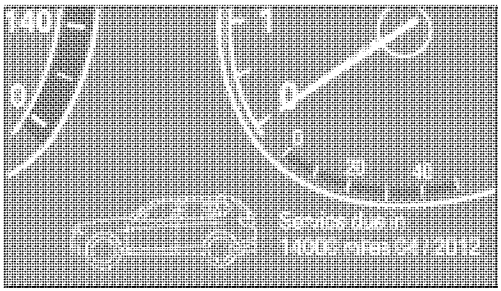
▷ Required State Inspection(s)

CBS thus determines the current and future maintenance requirements. This data can also be read from the vehicle key by your BMW Service Advisor and used to propose the optimum scope of maintenance.

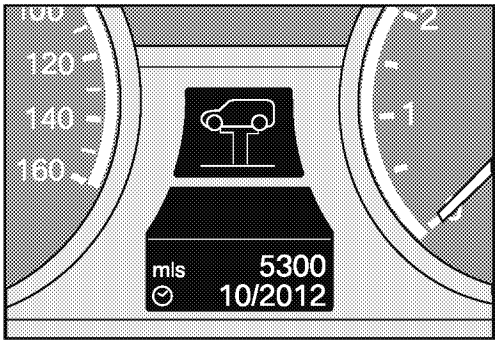
⚠ Disconnecting the battery during periods of long-term storage will interrupt the calculation of time-based services. Have all items requiring time-based maintenance, such as brake fluid and coolant, and possibly also the engine oil, brought up to date by your BMW SAV center. Also see the section on battery care on page 11 of this Booklet.◀

Service Required Display

Info Display screen contents



X3 only



X5 and X6

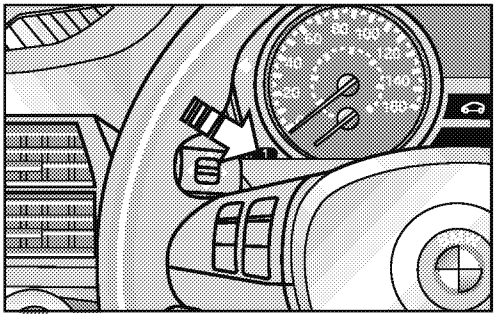
The distance remaining until your next service briefly appears when you switch on the ignition.

▷ The Info Display immediately switches to its compute mode when you press one of the two buttons in the turn signal indicator lever.◀

The distance remaining until your next service briefly appears when you switch on the ignition.

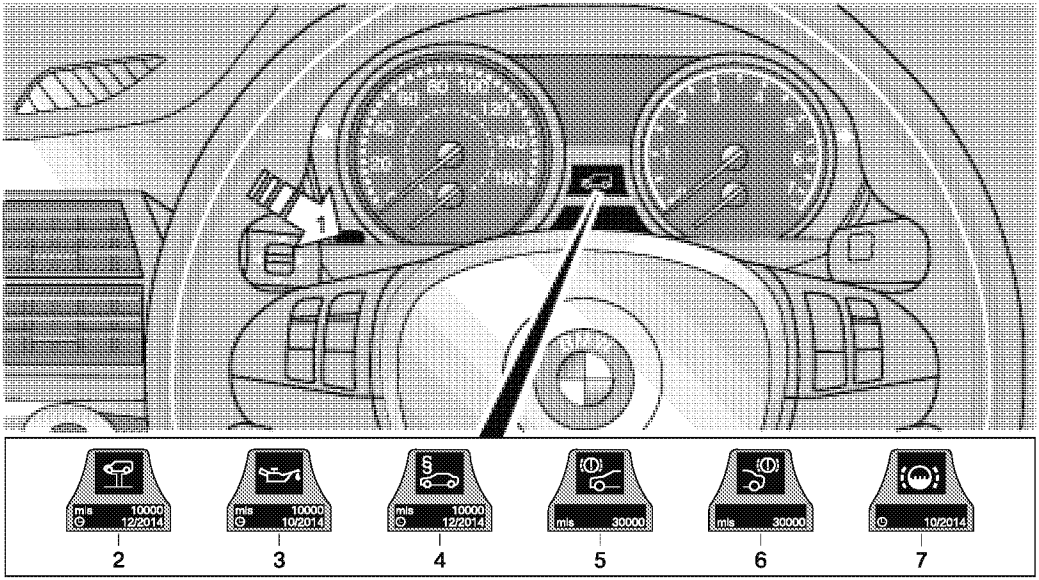
For certain maintenance operations, you can view the respective distance remaining or due date individually in the instrument cluster (X5 and X6 only; see page 6) or in the Control Display (For all models see page 7).

Info Display screens in the instrument cluster (X5 and X6 only)



Display the remaining distance or the service date for the various maintenance operations by pressing the knob in the instrument cluster for approximately five seconds. Then press the knob quickly and repeatedly to display the successive maintenance operations.

Possible displays (X5 and X6 only)



1. Button for selecting display
2. Service requirements
3. Engine oil
4. State-required safety inspection*
5. Front brake pads
6. Rear brake pads
7. Brake fluid

***Note:** The display icons for the state-required safety and emissions inspections may be deactivated by your BMW SAV center if the state in which your BMW is registered does not require them.

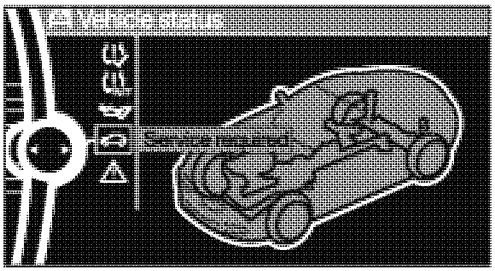
The sequence of displayed service items may vary. The data for the next service appointment is shown first.

Control Display screen contents

For models equipped with iDrive, the current Status of Service items determined by the CBS are shown in the Control Display.

You can also view additional information on the service and maintenance requirements.

1. Open the start menu.
2. Press the controller to select the i-menu.
3. Select "vehicle info" and press the controller.
4. Select "vehicle status" and press the controller.



A list of selected maintenance operations and, if applicable, inspections required by law is displayed.

You can request more detailed information on every entry.

Select the entry and press the controller.

To exit from the menu:

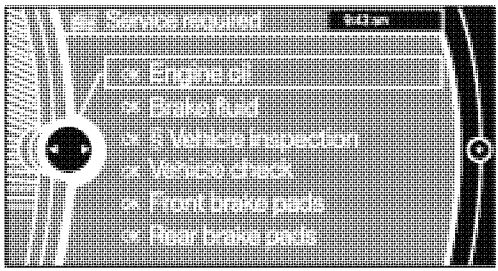
Select the ↰ arrow and press the controller.

Symbols

No service is currently required.

The deadline for service or a state inspection is approaching. Please contact your BMW SAV center for an appointment.

The service deadline has already passed.



You can request more detailed information on every entry.

Turn the controller to scroll through the list, then confirm the selected entry.

↰ Confirm to exit the list.

The current service status is automatically saved in the vehicle's ignition key. The Service Advisor at your BMW SAV center has a device called a key reader. When your Service Advisor inserts your key into the key reader, all pertinent vehicle and servicing data will be available, and a customized maintenance checklist is printed out based on the specific operations called for by the Condition Based Service.

Special Note – Maintenance Intervals

The maintenance requirements for your vehicle are determined dynamically by the Condition Based Service (CBS) system. The maintenance items stated herein reflect the latest information available at the time of the printing of this Booklet, and are subject to change.

The completion of certain subsequent maintenance items or services, as required by the New SAV Limited Warranty, will be specified at intervals computed by the BMW Condition Based Service system as follows:

▷ Oil Service: Engine oil should be changed with the engine at operating temperature.

All 2012 model year X3, X5 (except X5 xDrive35d see below) and X6 vehicles are factory-filled with BMW High Performance Synthetic oils. For these models we recommend BMW High Performance 5W-30 Synthetic Oil (BMW part number 07 51 0 017 866) for regular scheduled engine oil changes.

For gasoline engines: The synthetic oils listed below meet BMW's Long-life rating LL-01:

▷ Castrol Syntec European Formula SAE 0W-30

▷ Mobil 1 SAE 0W-40

▷ Pennzoil Platinum European Formula Ultra SAE 5W-30

▷ Valvoline SynPower SAE 5W-30

All 2012 model year X5 xDrive35d vehicles are factory-filled with a different BMW High Performance Synthetic oil than on gasoline engines. For this model we recommend BMW High Performance 5W-30 Diesel Synthetic Oil (BMW part number 07 51 0 037 195) for regular scheduled engine oil changes.

For diesel engines (X5 xDrive35d only): the synthetic oil listed below meets BMW's Long-life rating LL-04:

▷ Castrol SLX Professional OE SAE 5W-30 Fully Synthetic

BMW recommends that you check your engine oil level whenever you add fuel to your vehicle. If you need to add oil between oil changes and BMW High Performance Synthetic Oil is unavailable, you may top up the oil level with one of the following approved synthetic oils. For information on checking your engine oil level refer to your vehicle's Owner's Manual.

The choice of the right SAE grade is based on the climatic conditions in the region in which you normally drive your BMW. To best determine which SAE grade is best suited for your vehicle, contact an authorized BMW center.

If you are unable to obtain the BMW approved synthetic oil from the list above, use only a synthetic oil with an API rating of SM or higher.

The following maintenance services must be performed at the mileage/time stated (time intervals begin from the vehicle's production date):

▷ Brake Fluid Service: Change brake fluid every two years, or when specified by CBS.

▷ Oxygen Sensor Service: The oxygen sensor deteriorates strictly on a mileage basis and must therefore be replaced at the following intervals to maximize vehicle fuel economy and minimize exhaust pollution - replace at 120,000 miles (replace every 150,000 miles for the X3 xDrive28i if it is eligible for the California Emissions Warranty).

▷ Spark Plug Service (not shown in CBS): All models - replace at 60,000 miles or at every 4th Engine Oil Service.

▷ The engine coolant has a long-term rating and does not need to be changed except for system repairs.

▷ The fluids in the automatic transmission as well as in the all-wheel drive transfer case have a long-term rating and do not need to be changed except for repairs.

For your convenience, you may also wish to have your BMW SAV center perform any necessary operations to fulfill any state inspection requirements in your area, concurrent with the maintenance services specified above during other repairs. **Should you request more frequent maintenance service, the cost of these services will not be covered by the Maintenance Program.**

BMW has applied the most modern technological advances not only to the design and production of your vehicle, but also to computing of the optimum maintenance interval for your type of operations and driving style. Your BMW SAV center has made a substantial investment in unique BMW special service tools to enable BMW factory trained service technicians to perform quality repairs on your BMW in minimal time, to help maximize your satisfaction with your BMW, its longevity, and resale value.

Quality Certification I

Quality Certification I

Performed by (selling BMW center/Stamp with Code)

FREE OF CHARGE

Date _____ Mileage _____

Authorized
Signature of Service Manager _____

For a detailed list of items inspected, refer to the Quality Certification I form provided to the Owner at time of delivery. A copy of the form is on file at the selling BMW SAV center.

Fuel Quality – Gasoline

Only use fuels advertised to have adequate detergency and low alcohol (such as ethanol) content. Please refer to your owner's manual for important information on the fuel recommended for use in your vehicle. Use of fuels with insufficient detergent and/or excess alcohol can cause driveability problems that necessitate cleaning intake valves and fuel injection valves, and, when applicable, adjusting the engine idle. We suggest having this work performed by your authorized BMW center, perhaps while regular maintenance is performed. Your BMW center can also recommend a gasoline additive that will provide sufficient detergency. While this recommended unscheduled maintenance is not required in order to maintain the emission warranty, cleaning of intake valves or, when applicable, fuel injection valves, or adjustment of engine idle, necessitated by use of inappropriate fuel, it is not covered by warranty because no defect in material or workmanship or component failure is involved.

Maintenance service summary

The Condition Based Service (CBS) system will determine the requirement for performing the maintenance services described on this page and ending on page 10 (excluding items noted as "not shown in CBS"). These services may be required either individually or in conjunction with other maintenance services.

Maintenance services are performed as outlined in this section, based on intervals of either time, mileage or after performing a specified number of previous services. These intervals correspond to the latest information available when this booklet was printed. Maintenance intervals are subject to change with newer vehicles or may also apply retroactively. Your BMW SAV center will advise and perform maintenance services as required by the most recent information that applies to your vehicle.

Standard operations

Maintenance work:

▷ Verify Check Control messages.

▷ Check indicator and warning lights.

▷ Reset CBS display.

▷ Inspect tires, check tire pressure and reset Tire Pressure Monitor.

Engine oil

Maintenance work:

▷ Change the engine oil and oil filter. We recommend BMW High Performance 5W-30 Synthetic Oil P/N 07 51 0 017 866 (gasoline engines only) or P/N 07 51 0 037 195 (diesel engines only).

▷ At every 3rd engine oil change: Intake air cleaner: replace air filter element (reduce replacement interval in dusty operating conditions).

▷ At every 3rd engine oil change: Replace diesel fuel filter (X5 xDrive35d only).

▷ Top off Diesel Exhaust Fluid (X5 xDrive35d only).

Microfilter (not shown in CBS)

Maintenance work:

▷ Replace ventilation microfilter every 2 years based on the vehicle production date, or in connection with scheduled brake fluid change.

ED_002825_00000694-00013

Front brake

Maintenance work:

▷ Replace brake pads, clean brake pad contact points in calipers.

▷ Brake discs: Check surface and thickness, if necessary replace at extra charge*.

Rear brake

Maintenance work:

▷ Replace brake pads, clean brake pad contact points in calipers.

▷ Brake discs: Check surface and thickness, if necessary replace at extra charge*.

▷ Parking brake: Check condition and brake lining thickness, if necessary replace at extra charge*.

*Unless covered by Maintenance Program.

Vehicle check

Maintenance work:

▷ Check operation of horn, headlight flasher and hazard warning flashers.

▷ Check instrument and control lighting and heater/air-conditioning blower.

▷ Check lighting system: turn signals, back-up, license plate, interior (incl. map, reading lights), glovebox, luggage area lights.

▷ Safety belts: Check condition and function.

▷ Check windshield wipers and washer jet positions.

▷ Tires: Check tread depth, wear pattern, outer condition, inflation pressure (also spare tire). If necessary, correct pressure (also spare).

▷ Reset Tire Pressure Monitor.

▷ 12V Battery: Check state of charge (magic eye) and charge if required.

▷ Power steering reservoir: Check fluid level.

▷ Visually inspect all SRS airbag units for torn covers, obvious damage or attachment of stickers.

▷ Rear-view mirrors, optional rear-view camera.

▷ Engine coolant: Check fluid level and concentration.

▷ Windshield washer and intensive cleaning system: Check protection level, fluid level, top if necessary.

▷ Brake system connections and lines: Check for leaks, damage and correct positioning.

▷ Underbody, incl. all visible parts (i.e., transmission, rear axle, fuel lines, exhaust system), check for damage, leaks and corrosion.

▷ Steering components: Check for clearance, leaks, damage and wear.

▷ Final Inspection: Road test with check of

- Brakes
- Steering
- Shock absorbers (visual)
- Transmission

Brake fluid

Maintenance work:

▷ Replace brake fluid.

Spark plugs (not shown in CBS)*

Maintenance work:

▷ All models replace spark plugs at intervals of 60,000 miles or at every 4th Engine Oil Service.

*Not applicable for X5 xDrive35d.

Emission Control Maintenance Schedule

The maintenance schedule as shown is required for the proper functioning of the emission control systems for optimum vehicle performance and fuel economy.

Basic Engine	
Engine oil	As specified by CBS
Engine oil filter	As specified by CBS
Fuel System	
Air filter	Replace at every 3rd Engine Oil Service
Diesel fuel filter	Replace at every 3rd Engine Oil Service
Ignition System (except X5 xDrive35d)	
Spark plugs	Replace at intervals of 60,000 miles, or at every 4th Engine Oil Service
Emission Control Components	
Oxygen sensor	Replace at intervals of 120,000 miles
Oxygen sensor (X3 xDrive28i if eligible for the California Emissions Warranty)	Replace at intervals of 150,000 miles

12 Volt Battery Care

If your X3, X5 or X6 is driven only for short distances of less than 10 miles over a prolonged period of time, without an occasional drive at highway speeds, the engine's charging system will not maintain the battery. Insufficient use of the vehicle could result in short term starting problems and in the long term could damage the battery.

In case your X3, X5 or X6 is not operated for several weeks it is advisable to:

- ▷ consider using a proper trickle charger, following the charger manufacturer's instructions, to maintain the battery's state of charge; or
- ▷ consult your BMW SAV center regarding battery removal. Once removed, the battery must be charged and stored in a cool, dry place where it can be protected from freezing. If the battery will be stored for over 3 months, it must be recharged every 3 months, or else it will become damaged and useless.

Please consult with your BMW SAV center for further guidance and information.

Corrosion Protection

Extensive corrosion protection measures implemented by BMW now make it possible to offer a 12-year unlimited mileage anti-corrosion warranty against rust perforation on your vehicle provided that the vehicle is maintained in accordance with the provisions of the New SAV Limited Warranty as outlined in the Warranty Section of this Statement (page 21).

The major degree of corrosion protection is due to the electrophoretic dip painting process which cathodically deposits paint particles on all body parts, attracting paint particles into the minutest cavities or seams. Body parts are designed to provide optimum corrosion protection.

During manufacture, exterior body parts receive an additional corrosion protection coat. Hood, trunk, doors and other body parts with metal folds are coated with PVC and sealed from the outside.

All floor panels receive a resilient coating of PVC for maximum protection against damage due to stones, etc.

Corrosion protection materials tested over many years are applied to the surfaces of cavities and to the entire underside of the vehicle during and after assembly.

For additional information on the 12-year unlimited mileage anti-corrosion warranty see the Warranty Section of this Booklet (page 22).

Restoring corrosion protection

Please take care that anti-corrosion material is replaced when your car is repaired after body or chassis damage.

BMW NA will not accept any liability for any parts and accessories not approved by BMW.

Underbody maintenance

The underbody has to be cleaned at least once a year, in Spring, with plain water in order to remove mud, chemical sediments and other deposits. If those materials are not removed, corrosion (rust) will occur.

Your BMW SAV center will do this anti-corrosion service for you.

⚠ Do not apply additional undercoating or rust-proofing on or near the exhaust manifold, exhaust pipes, catalytic converter or heat shields. During driving, the substance used for undercoating could overheat and cause a fire.◀

BMW Roadside Assistance

The BMW Roadside Assistance Program reflects BMW's commitment to your complete satisfaction with the BMW ownership experience.

It's available for U.S. version BMWs in all 50 states, Canada, and Puerto Rico 24 hours a day, 365 days a year.

It's a valuable benefit provided to you at no additional cost. (Subject to certain limitations and exclusions noted on page 14).

The BMW Roadside Assistance Program is not a warranty and does not affect your rights under the New SAV Limited Warranty.

Services provided by a third-party business partner.

BMW Roadside Assistance Smartphone Application

The free BMW Roadside Assistance Smartphone app dispatches fast, reliable service to your BMW. For more details and to download the app for your iPhone®, BlackBerry®, Android™ or Windows Mobile® Smartphone, visit http://roadsidemobile.com/bmw

Owner's Eligibility

You are covered if your vehicle is:

- ▷ A new BMW SAV vehicle, distributed by BMW NA, and purchased at an authorized BMW SAV center, OR;
- ▷ A new BMW SAV vehicle, purchased under the BMW NA European Delivery Plan, OR;
- ▷ A new, U.S. version, BMW SAV vehicle purchased under the Diplomatic or Military Sales programs, operated in any of the 50 states, Canada and Puerto Rico.

The vehicle itself is covered when driven by any authorized driver.

Protection:
New BMWs — Protection is provided for 4 years/unlimited miles. Note: This does not affect warranty coverage which remains at 4 years/50,000 miles.
Certified Pre-Owned BMWs — 6 years/unlimited miles from the original in-service date.

Getting Started

For your convenience, a decal showing Roadside Assistance information has been affixed on the driver's side of the windshield and in the rear compartment area.

Calling For Assistance

The toll-free BMW Roadside Assistance number (1 800 332-4269) is answered by a BMW Roadside Assistance service representative. In order for you to receive quick and reliable services, it is essential that you provide detailed and accurate information to the service representative.

Be prepared to give:

- ▷ Your name
- ▷ Your complete Vehicle Identification Number (found on your vehicle registration, or on the bottom driver's side of your windshield)
- ▷ Model description of your vehicle
- ▷ License plate number of your vehicle

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- ▷ Vehicle location (including nearby crossroads/ intersections, highway mile markers, street numbers, landmarks, etc.)
- ▷ Location you are calling from (including a telephone number where you can be reached). If you are calling from a public phone, wait there for the return call. Do not leave this location without informing the Roadside Assistance service representative.
- ▷ A description of your vehicle's problem. Specific and accurate information will enable the Roadside Assistance service representative to provide the proper help.

Note: If you are using the free BMW Roadside Assistance Smartphone app, the information above is not required.

Emergency Valet Service. Should there be a need beyond BMW Roadside Assistance, Emergency Valet will provide a personal assistant who will help in every way to get you to your final destination. Emergency Valet will help you locate a rental car or taxi agency, hotel or even help procure airline reservations. In the event of an emergency, this service will assist you in getting information out to the proper party, whether it is business or personal. If we are unable to contact one of your party, the message relay service will document the information, and will make reasonable efforts to deliver the message to the message recipient.

Personal Trip Routing. Leave the planning to us. Simply give one of our Roadside Assistance service representatives a call, and we will provide you with a detailed, easy to read, computerized trip itinerary and companion map package. Please allow up to two weeks to process your request.

Services

From the information you provide, the BMW Roadside Assistance service representative will determine the type of help required.

Dispatch Service

A service provider will be dispatched to the site of your disabled vehicle.

On-Site Assistance

On-site service for vehicle disablements such as flat tires, dead batteries, and out of fuel conditions is provided up to a maximum of $100.00 per incident by BMW Roadside Assistance.

The cost for parts and fuel, when used on-site, are the responsibility of the owner/driver. The New SAV Limited Warranty does not cover any of the above on-site services.

Lock-Out

Your BMW is equipped with an advanced entry system, which cannot be bypassed by traditional locksmith methods without significant damage to your vehicle. However, in the event that you find yourself locked out, a simple telephone call to Roadside Assistance will help you get back on the road. A representative will help you find transportation or arrange towing service to the nearest BMW center. Related towing costs will be compensated up to $100.00 per incident. You, or the person driving your vehicle, are responsible for any expenses related to replacement keys.

Towing Service

In the event of a mechanical breakdown normally covered under the New SAV Limited Warranty, your vehicle will be transported (at no cost) to the nearest authorized BMW SAV center. Your vehicle is also covered in the event of an accident or collision.

If a breakdown occurs after normal business hours, your vehicle will be transported to a secure location and transported to the nearest authorized BMW SAV center on the next business day.

If you request that the vehicle be taken to a location other than the nearest authorized BMW SAV center, any additional expense will be your responsibility.

However, you may request (at no cost) to be taken to a different BMW SAV center as long as it is within 50 additional miles of the "nearest" BMW SAV center.

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Towing requests for vehicles disabled because of casualty, fire, act of God, or violation of law (federal, state or local) are provided at the expense of the owner/driver.

If it is necessary for you to have your vehicle towed through your own arrangements, **you must contact BMW Roadside Assistance for prior authorization and instructions on claim procedures.** All claims must be submitted within sixty (60) days of the disablement or occurrence, accompanied by the original receipts. Claims received after that time period may be dishonored and are subject to the full discretion of BMW Roadside Assistance. If BMW Roadside Assistance is not contacted for "prior" authorization, the maximum coverage for towing is $100.00.

Sign-and-Drive

Typically, if you are within the terms of your warranty, the services you receive under the BMW Roadside Assistance program will not require payment. In most cases, you will simply sign a receipt from the provider of services.

Trip Interruption Benefits

Trip interruption benefits are provided for mechanical breakdowns as follows:

- ▷ Breakdowns that are warranty related, and;
- ▷ Must occur in excess of 100 miles from the driver's primary residence, and;
- ▷ Repairs cannot be completed during normal business hours on the same day of breakdown.

Reimbursements will be made for meals, lodging, car rentals, and alternate transportation to bring the driver and the BMW SAV together after the vehicle has been repaired by an authorized BMW SAV center. Original receipts must accompany all reimbursement requests.

Trip interruption coverage is limited to $1,000.00 per incident, for a maximum of five days per incident.

Always contact BMW Roadside Assistance for trip interruption benefits. They will assist in making all the necessary arrangements.

Car Rental Discounts

Discounts are available from several car rental companies. Benefits may vary with each company and location, and are subject to change without notice.

Simply use the following information to receive your discount:

Avis®:
Discount Code: B769775
1 800 331-1212

Budget®:
Discount Code: T464331
1 800 527-0700

Enterprise®:
Discount Code: NA24109
1 800 RENT-A-CAR

Hertz®:
Discount Code: CDP#1646338
1 888 204-0234

Exclusions

Specifically excluded from coverage are:

- ▷ Fines, taxes, or impound towing fees caused by a violation of local or state law.
- ▷ Expenses related to extreme adverse weather conditions, including, but not limited to, floods, hurricanes and tornadoes (removal from water, snow, ice, etc.).
- ▷ Expenses for the removal of snow tires, and mounting or removal of snow chains.

Customer Assistance Information

Your satisfaction with our product and the services provided by authorized BMW SAV centers is of great importance to us. We take pride in our product, as does the BMW SAV center who services it. If you should ever have a question regarding your BMW SAV center's service or your BMW's performance, we recommend that you contact your authorized BMW SAV center.

When contacting an authorized BMW SAV center, we suggest that depending upon the nature of your contact, you discuss it with either the Sales, Service, or Parts Manager.

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As all matters are resolved at the BMW SAV center level, it is important that they be given the opportunity to provide a solution. Should you feel that you were not provided with the proper response, we urge you to contact the General Manager or BMW Center Operator.

Despite the best intentions of all parties, a misunderstanding may occur between you and your BMW SAV center. Should this occur and you require further assistance, please contact the BMW NA Customer Relations and Services Department at:

Telephone: 1 800 831-1117

Email: customerrelations@bmwusa.com

Website: www.bmwusa.com

When contacting us, we ask that you provide the following information:

- ▷ Your name, address and telephone number
- ▷ Vehicle Identification Number (last seven digits)
- ▷ Vehicle delivery date
- ▷ Vehicle mileage
- ▷ Selling BMW SAV center's name
- ▷ Servicing BMW SAV center's name
- ▷ Description of the problem

A BMW NA Customer Relations and Services Representative will carefully review all the facts involved and let you know what further action will be taken in conjunction with your BMW SAV center. Please remember: the first step in resolving a complaint is to contact the authorized BMW SAV center that performed the work on your vehicle. They have the necessary equipment and the personnel to achieve this goal.

We are confident that every effort will be made to ensure your satisfaction.

Customer Assistance – Notification

During a specific period (the earlier of 12 months or 12,000 miles, though this period varies by state), some states require us or our authorized BMW SAV center, to repair in a reasonable number of attempts, any defect or condition which substantially impairs the use, value, or safety of a new vehicle sold, leased or registered in that state.

A "reasonable number of attempts" is generally defined as (i) four or more attempts to repair the same defect (the number of attempts vary by state) or (ii) the vehicle is out of service by reason of one or more repair(s) for more than a cumulative total of 30 days (this period varies by state), except for delays created by conditions beyond our control.

If we are unable to correct a defect or condition covered by these statutes in a reasonable number of attempts, we may be obligated either to replace the vehicle or reimburse the owner/lessee in an amount equal to the purchase price or lease payments paid by the owner/lessee, less the amount directly attributable to use of the vehicle by the owner/lessee.

You should send written notification directly to BMW of North America, LLC of the existence of an alleged defect. Send written communication to the Customer Relations and Services Department address listed below.

BMW of North America, LLC
Customer Relations and Services Department
P.O. Box 1227
Westwood, NJ 07675-1227

Telephone: 1 800 831-1117

Email: customerrelations@bmwusa.com

IMPORTANT: IF THIS VEHICLE HAS A DEFECT THAT SUBSTANTIALLY AFFECTS ITS USE, VALUE OR SECURITY, OR THAT MAY CAUSE DEATH OR SERIOUS BODILY INJURY IF DRIVEN, AND WAS PURCHASED, LEASED OR REGISTERED IN NEW JERSEY, YOU MAY HAVE THE RIGHT UNDER THE LEMON LAW IN THE STATE OF NEW JERSEY TO A REFUND OF THE PRICE OF PURCHASE OR TO YOUR LEASE PAYMENTS.

Here is a summary of your rights:

1. To qualify for compensation under the New Jersey lemon law, you must give the manufacturer or your dealer opportunity to repair or correct the defect of the vehicle within the terms of protection under the lemon law, which are the first 24,000 miles of operation or two years after the date of original date of delivery or whichever comes first.

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2. If the manufacturer or your dealer cannot fix or correct the defect within a reasonable amount of time, you may have the right to return the vehicle and receive a full refund, less a discount for the use of the vehicle.

3. If it is assumed that the manufacturer or your dealer cannot repair or correct the defect and if the same defect continues to substantially exist after that the manufacturer has received a notice of the defect, sent by certified mail with return receipt, and has had a final chance to correct the defect or condition within 10 days of receiving the notice. This notice must be received by the manufacturer within the terms of protection and can only be given after (i) the manufacturer or your dealer has attempted two or more times to correct the defect; (ii) the manufacturer or your dealer has attempted, at least once, to correct the defect if the defect is one which can cause death or serious bodily injury if the vehicle is operated; or (iii) the vehicle has been out of service for repairs by a total of 20 calendar days accumulation or more, or in the case of a rolling motorized house (motorhome) 45 days or more.

4. If the same defect substantially continues to exist after the manufacturer has had the last opportunity to repair or correct the defect, you may file a claim for compensation under the New Jersey lemon law.

FOR COMPLETE INFORMATION ABOUT YOUR RIGHTS AND RESOURCES UNDER THIS LAW, INCLUDING THE MANUFACTURER'S ADDRESS FOR NOTIFICATION OF THE DEFECT, PLEASE CONTACT: NEW JERSEY DEPARTMENT OF LAW AND PUBLIC SAFETY, DIVISION OF CONSUMER AFFAIRS, LEMON LAW UNIT, POST OFFICE BOX 45026, NEWARK, NEW JERSEY 07101, PHONE NUMBER: 1 973 504-6226

IMPORTANTE: SI EL VEHÍCULO TIENE UN DEFECTO QUE AFECTE DE MANERA SUSTANCIAL SU USO, VALOR O SEGURIDAD, O QUE PUEDA CAUSAR LA MUERTE O LESIONES CORPORALES GRAVES SI SE MANEJA, Y SE COMPRÓ, ARRENDÓ O REGISTRÓ EN NUEVA JERSEY, PUEDE TENER DERECHO EN LOS TÉRMINOS DE LA LEY SOBRE DEFECTOS CONOCIDA COMO "LEMON LAW" DEL ESTADO DE NUEVA JERSEY A UN REEMBOLSO DEL PRECIO DE COMPRA O DEL PAGO DEL ARRENDAMIENTO.

Aquí le damos un sumario de sus derechos:

1. Para tener derecho a una indemnización en los términos de la "Lemon Law" de Nueva Jersey, debe dar el fabricante o a su concesionaria la oportunidad de reparar o corregir el defecto del vehículo dentro de los plazos de protección que establece esta ley, que son las primeras 24,000 millas de operación o dos años a partir de la fecha de entrega original, lo que ocurra primero.

2. Si el fabricante o su concesionaria no pueden arreglar o corregir el defecto en un plazo razonable, puede tener derecho a devolver el vehículo y recibir un reembolso íntegro, menos un descuento por el uso del vehículo.

3. Se da por sentado que el fabricante o su concesionaria no pueden reparar o corregir el defecto si el mismo defecto continúa existiendo de manera sustancial después de que el fabricante ha recibido una notificación del defecto enviada por correo certificado con acuse de recibo, y ha tenido un última oportunidad de corregir el defecto o problema en los 10 días posteriores a la recepción de la notificación. Esta notificación debe ser recibida por el fabricante dentro de los plazos de protección y sólo se puede dar después de que (i) el fabricante o su concesionaria han intentado dos o más veces corregir el defecto, (ii) el fabricante o su concesionaria han intentado, al menos una vez, corregir el defecto si este puede causar la muerte o lesiones corporales graves si se maneja el vehículo, o (iii) el vehículo ha estado fuera de servicio por reparaciones un total de 20 días calendario o más, o en el caso de una casa rodante motorizada (casa rodante), 45 días o más.

4. Si el mismo defecto sigue existiendo de manera sustancial después de que el fabricante ha tenido la última oportunidad de reparar o corregir dicho defecto, puede presentar una reclamación de indemnización en los términos de la "Lemon Law" de Nueva Jersey.

SI DESEA MÁS INFORMACIÓN ACERCA DE SUS DERECHOS Y RECURSOS EN LOS TÉRMINOS DE ESTA LEY, INCLUIDA LA DIRECCIÓN DEL FABRICANTE PARA NOTIFICACIONES DE DEFECTOS, ESTOS SON LOS DATOS DE CONTACTO: NEW JERSEY DEPARTAMENT OF LAW AND PUBLIC SAFETY, DIVISION OF CONSUMER AFFAIRS, LEMON LAW UNIT, POST OFFICE BOX 45026, NEWARK, NEW JERSEY 07101, TELÉFONO: 1 973 504-6226

BBB Auto Line

If your concern is still not resolved to your satisfaction, BMW NA offers additional assistance through BBB AUTO LINE in ARKANSAS, CALIFORNIA, GEORGIA, IDAHO, IOWA, KENTUCKY, MARYLAND, MASSACHUSETTS, MINNESOTA, PENNSYLVANIA, OHIO, and VIRGINIA. BBB AUTO LINE is a dispute resolution program administered by the Council of Better Business Bureaus. BBB AUTO LINE resolves disputes through mediation or arbitration. Mediation is an informal proceeding whereby a neutral third party (mediator) helps the parties to find an acceptable resolution. Arbitration is also an informal proceeding in which an impartial third party renders a decision after a hearing at which both parties have an opportunity to be heard. You can select mediation or arbitration or both.

The program is free of charge to you, the consumer, but there are some minimum requirements for participation in the program. Please contact BBB AUTO LINE at the address or phone number listed below for more details:

BBB AUTO LINE
4200 Wilson Boulevard, Suite 800
Arlington, VA 22203
1 800 955-5100

If you wish to use the program and you qualify for participation, you will be required to provide the following information:

▷ Your name and address

▷ The Vehicle Identification Number (VIN)

▷ The make, model and year of your vehicle

▷ A description of the problem with your vehicle

BBB AUTO LINE will also ask you for other information that may help resolve your concerns, such as the purchase price of your vehicle, any mileage at the time of purchase, the current mileage, and copies of repair orders.

BBB AUTO LINE will notify you when your claim has been filed. If you decide to arbitrate, you may attend the hearing in person or by telephone. You may bring witnesses and give supporting evidence. You may also submit your claim in writing and ask for a decision on the documents you submit, without attending a hearing. BBB AUTO LINE will usually render a decision within 40 days from the time you file your complaint. The decision is binding on BMW NA if you decide to accept it. BMW NA must comply with the decision within the time frame specified by the arbitrator.

Important: You must use BBB AUTO LINE before asserting in court any rights or remedies created by the Magnuson Moss Warranty Act, ("The Act") 15 U.S.C. Sec. 2301, et seq. You may also be required to use BBB AUTO LINE before seeking remedies under your state's Lemon Law. If you choose to seek redress by pursuing rights and remedies not created by Title 1 of Magnuson Moss Warranty Act, prior resort to the BBB AUTO LINE is not required by any provision of the Act.

California Residents

1. BMW OF NORTH AMERICA, LLC (BMW NA) participates in **BBB** AUTO LINE, a mediation/arbitration program administered by the Council of Better Business Bureaus [4200 Wilson Boulevard, Arlington, Virginia 22203] through local Better Business Bureaus. The Arbitration Certification Program of the California Department of Consumer Affairs has certified **BBB** AUTO LINE and BMW NA.

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2. If you have a problem arising under a BMW NA written warranty, we encourage you to bring it to our attention. If we are unable to resolve it, you may file a claim with **BBB** AUTO LINE. Claims must be filed with **BBB** AUTO LINE within six (6) months after the expiration of the warranty.

3. To file a claim with **BBB** AUTO LINE, call 1 800 955-5100. There is no charge for the call.

4. In order to file a claim with **BBB** AUTO LINE, you will have to provide your name and address, the brand name and Vehicle Identification Number (VIN) of your vehicle, and a statement of the nature of your problem or complaint. You will also be asked to provide: the approximate date of your acquisition of the vehicle, the vehicle's current mileage, the approximate date and mileage at the time any problem(s) were first brought to the attention of BMW NA or one of our dealers, and a statement of the relief you are seeking. There is no charge to the customer in bringing this claim.

5. **BBB** AUTO LINE staff may try to help resolve your dispute through mediation. If mediation is not successful, or if you do not wish to participate in mediation, claims within the program's jurisdiction may be presented to an arbitrator at an informal hearing. The arbitrator's decision should ordinarily be issued within 40 days from the time your complaint is filed; there may be a delay of 7 days if you did not first contact BMW NA about your problem, or a delay of up to 30 days if the arbitrator requests an inspection/report by an impartial technical expert or further investigation and report by **BBB** AUTO LINE.

6. You are required to use **BBB** AUTO LINE before asserting in court any rights or remedies conferred by California Civil Code Section 1793.22. You are not required to use **BBB** AUTO LINE before pursuing rights and remedies under any other state or federal law. You are also required to use **BBB** AUTO LINE before exercising rights or seeking remedies created by Title I of the Magnuson-Moss Warranty Act, 15 U.S.C. sec. 2301 et seq. If you choose to seek redress by pursuing rights and remedies not created by California Civil Code Section 1793.22 or Title I of the Magnuson-Moss Warranty Act, resort to **BBB** AUTO LINE is not required by those statutes.

7. California Civil Code Section 1793.2(d) requires that, if BMW NA or its representative is unable to repair a new motor vehicle to conform to the vehicle's applicable express warranty after a reasonable number of attempts, BMW NA may be required to replace or repurchase the vehicle. California Civil Code Section 1793.22(b) creates a presumption that BMW NA has had a reasonable number of attempts to conform the vehicle to its applicable express warranties if, within 18 months from delivery to the buyer or 18,000 miles on the vehicle's odometer, whichever occurs first, *one or more of the following occurs:*

   - The same nonconformity [a failure to conform to the written warranty that substantially impairs the use, value or safety of the vehicle] results in a condition that is likely to cause death or serious bodily injury if the vehicle is driven AND the nonconformity has been subject to repair two or more times by BMW NA or its agents AND the buyer or lessee has directly notified BMW NA of the need for the repair of the nonconformity; OR
   - The same nonconformity has been subject to repair 4 or more times by BMW NA or its agents AND the buyer has notified BMW NA of the need for the repair of the nonconformity; OR
   - The vehicle is out of service by reason of repair of nonconformities by BMW NA or its agents for a cumulative total of more than 30 calendar days after delivery of the vehicle to the buyer.

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NOTICE TO BMW NA AS REQUIRED ABOVE SHALL BE SENT TO THE FOLLOWING ADDRESS:

BMW of North America, LLC
Customer Relations and Services Department
P.O. Box 1227
Westwood, NJ 07675-1227
1 800 831-1117
customerrelations@bmwusa.com

8. The following remedies may be sought in **BBB** AUTO LINE: repairs, reimbursement for money paid to repair a vehicle or other expenses incurred as a result of a vehicle nonconformity, repurchase or replacement of your vehicle and compensation for damages and remedies available under BMW NA's written warranty or applicable law.

9. The following remedies may not be sought in **BBB** AUTO LINE: punitive or multiple damages, attorneys' fees, or consequential damages other than as provided in California Civil Code Section 1794(a) and (b).

10. You may reject the decision issued by a **BBB** AUTO LINE arbitrator. If you reject the decision, you will be free to pursue further legal action. The arbitrator's decision and any findings will be admissible in a court action.

11. If you accept the arbitrator's decision, BMW NA will be bound by the decision, and will comply with the decision within a reasonable time not to exceed 30 days after we receive notice of your acceptance of the decision.

12. Please call **BBB** AUTO LINE at 1 800 955-5100 for further details about the program. IDAHO Residents IMPORTANT: IF THIS VEHICLE IS DEFECTIVE, YOU MAY BE ENTITLED UNDER THE STATE'S LEMON LAW TO REPLACEMENT OF IT OR A REFUND OF ITS PURCHASE PRICE OR YOUR LEASE PAYMENTS. HOWEVER, TO BE ENTITLED TO REFUND OR REPLACEMENT, YOU MUST FIRST NOTIFY THE MANUFACTURER, ITS AGENT, OR ITS AUTHORIZED DEALER OF THE PROBLEM IN WRITING AND GIVE THEM AN OPPORTUNITY TO REPAIR THE VEHICLE. YOU ALSO HAVE A RIGHT TO SUBMIT YOUR CASE TO THE CONSUMER ARBITRATION PROGRAM WHICH THE MANUFACTURER MUST OFFER IN THIS STATE.

Special Programs

SOMETIMES BMW OF NORTH AMERICA, LLC (BMW NA) OFFERS A SPECIAL ADJUSTMENT PROGRAM TO PAY ALL OR PART OF THE COST OF CERTAIN REPAIRS BEYOND THE TERMS OF THE WARRANTY. CHECK WITH YOUR AUTHORIZED BMW SAV CENTER TO DETERMINE WHETHER ANY ADJUSTMENT PROGRAM IS APPLICABLE TO YOUR MOTOR VEHICLE.

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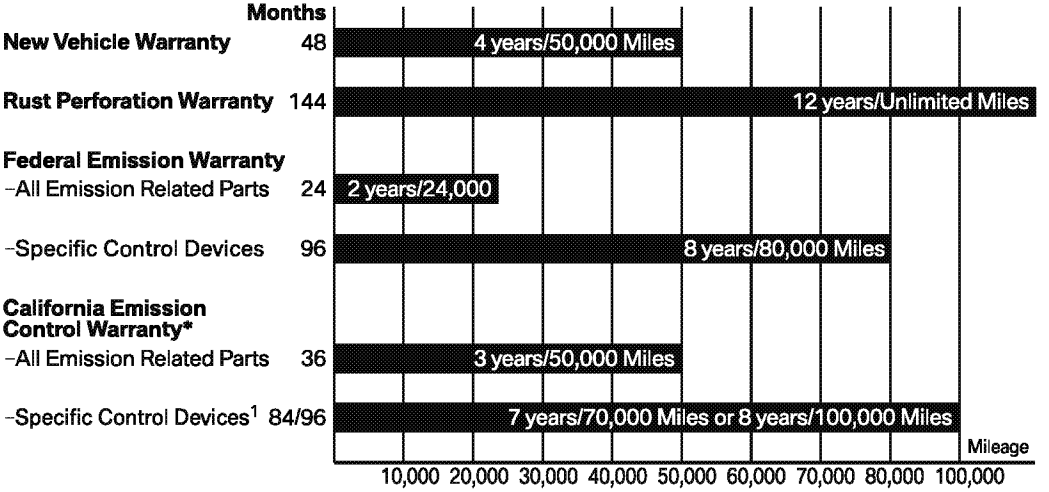
Overview of BMW Limited Warranties



*The California Emissions Control System Limited Warranty applies to all 2012 U.S.-specification BMW vehicles registered in Arizona, California, Connecticut, Maine, Maryland, Massachusetts, New Jersey, Oregon, Pennsylvania, Rhode Island, Vermont or Washington.

[1]Refer to the California Emission Warranty Parts List on page 31 for specific coverage.

Your vehicle has been specifically adapted and designed to meet the particular operating conditions and homologation requirements in your country and continental region in order to deliver the full BMW driving pleasure while the vehicle is operated under those conditions. If you wish to operate your vehicle in another country or region, you may be required to adapt your vehicle to meet different prevailing operating conditions and homologation requirements. You should also be aware of any applicable warranty limitations or exclusions for such country or region. In such case, please contact the Customer Relations and Services Department for further information.

The BMW limited warranties apply only to U.S.-specification BMW vehicles and is valid only when repairs are performed at an authorized U.S. BMW center, subject to all applicable exclusions or limitations. All other U.S.-specification programs such as Roadside Assistance and the Maintenance Programs are also valid only in the U.S.

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New SAV Limited Warranty — 2012 Models (Valid only in the U.S.A. and including Puerto Rico)

Warrantor

BMW of North America, LLC (BMW NA) warrants 2012 U.S.-specification SAVs distributed by BMW NA or sold through the BMW NA European Delivery Program against defects in materials or workmanship to the first retail purchaser, and each subsequent purchaser.

Warranty Period

The warranty period is 48 months or 50,000 miles, whichever occurs first.

Warranty Begins

Coverage begins on the date of first retail sale or the date the vehicle is first placed into service as a sales demonstrator, Aftersales Mobility Program (AMP) Vehicle or company vehicle, whichever is earlier.

Warranty Coverage

To obtain warranty service coverage, the vehicle must be brought, upon discovery of a defect in material or workmanship, to the workshop of any authorized BMW SAV center in the United States or Puerto Rico, during normal business hours. The authorized BMW SAV center will, without charge for parts or labor, either repair or replace the defective part(s) using new or authorized remanufactured parts. The decision to repair or replace said part(s) is solely the prerogative of BMW NA. Parts for which replacements are made become the property of BMW NA.

In all cases, a reasonable time must be allowed for warranty repairs to be completed after the vehicle is received by the authorized BMW SAV center.

Safety Belt Warranty - Kansas

Safety belts are covered under the New SAV Limited Warranty for defects in material or workmanship for a period of 10 years, unlimited mileage from the date of purchase. In order to be eligible for this coverage, the vehicle must be a new SAV retailed in the State of Kansas and the repair performed by an authorized BMW SAV center in Kansas.

Other Items

Wheel alignment, balancing and wiper blade inserts are covered up to 2,000 miles.

Items which are subject to wear and tear or deterioration due to driving habits or conditions, such as brake pads/linings, brake discs, clutch disc, pressure plate, filters, upholstery, trim and chrome items, paint finish, drive belts, glass, and similar items, are specifically limited to defects in material or workmanship.

This warranty does not apply to the following:

Damage which results from negligence, improper operation of the vehicle, improper repair, lack of or improper maintenance, environmental influences, flood, accident or fire damage, road salt corrosion, or use of improper or contaminated fuel.

Damage to the engine, transmission or any related component caused by improper shifting of the transmission.

Maintenance services and parts when replaced during maintenance such as spark plugs (gasoline engines only), lubricants, fluids, engine tune-up parts, replacement of filters, coolant, and refrigerant.

Failure to maintain the vehicle properly in accordance with the instructions in the Owner's Manual or the Service section of this Statement, that results in the failure of any part of the vehicle.

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Modification of the vehicle or installation of any performance accessories or components attached to the vehicle which alters the original engineering and/or operating specifications or which result in damage to the other original components, electrical interference, electrical short, radio static, water leaks and wind noise.

Tires are warranted by their respective manufacturer. See the Tire Warranty Statement on page 35.

Driving over rough or damaged road surfaces, as well as debris, curbs and other obstacles can cause serious damage to wheels, tires and suspension parts. This is more likely to occur with low-profile tires that provide less cushioning between the wheel and the road. Be careful to avoid road hazards and reduce your speed, especially if your vehicle is equipped with low-profile tires.

Non-genuine BMW Parts - While you may elect to use non-genuine BMW parts for maintenance or repair services, BMW NA is not obligated to pay for repairs that include non-genuine BMW parts or for any damage resulting from the use of non-genuine parts.

BMW NA will not accept any liability for any parts and accessories not approved by BMW.

This warranty shall be null and void if the Vehicle Identification Number (VIN) has been altered or cannot be read, if the odometer has been replaced or altered and the true mileage cannot be determined, if the vehicle has been declared a total loss or sold for salvage purposes, or if the vehicle has been used in any competitive event.

General

These warranties give you specific legal rights, and you may also have other rights which vary from state to state.

THE DURATION OF ANY IMPLIED WARRANTIES, INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY, IS LIMITED TO THE DURATION OF THE EXPRESS WARRANTIES HEREIN.

BMW NA HEREBY EXCLUDES INCIDENTAL AND CONSEQUENTIAL DAMAGES, INCLUDING LOSS OF TIME, INCONVENIENCE, OR LOSS OF USE OF THE VEHICLE, FOR ANY BREACH OF ANY EXPRESS OR IMPLIED WARRANTY, INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY, APPLICABLE TO THIS PRODUCT.

Some states do not allow limitations on how long an implied warranty lasts, or the exclusion or limitation of incidental or consequential damages, so the above limitations and exclusions may not apply to you.

Limited Warranty — Rust Perforation 2012 Models

BMW of North America, LLC (BMW NA) warrants this original vehicle against defects in materials or workmanship which will result in rust perforation of the vehicle body for a period of 12-years unlimited mileage. Coverage begins on the date of first retail sale or the date the vehicle is first placed into service as a sales demonstrator, Aftersales Mobility Program (AMP) Vehicle or company vehicle, whichever is earlier.

To obtain warranty service coverage, the vehicle must be brought, upon discovery of any rust perforation, to the workshop of any authorized BMW SAV center. This authorized BMW SAV center will, without charge for parts or labor, either repair or replace the defective part(s). The decision to repair or replace said part(s) is solely the prerogative of BMW NA. Parts for which replacements are made become the property of BMW NA.

BMW of North America, LLC (BMW NA) makes no other express warranty on this product except the New SAV Limited Warranty or the warranty as to the emission control system. THE DURATION OF ANY IMPLIED WARRANTIES, INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY, IS LIMITED TO THE DURATION OF THE EXPRESS WARRANTIES HEREIN.

BMW OF NORTH AMERICA, LLC (BMW NA) HEREBY EXCLUDES INCIDENTAL AND CONSEQUENTIAL DAMAGES, INCLUDING LOSS OF TIME, INCONVENIENCE, OR LOSS OF USE OF THE VEHICLE, FOR ANY BREACH OF ANY EXPRESS OR IMPLIED WARRANTY, INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY, APPLICABLE TO THIS PRODUCT.

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Some states do not allow limitations on how long an implied warranty lasts, or the exclusion or limitation of incidental or consequential damages, so the above limitations and exclusions may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. Any legal claim or action arising from any express or implied warranty contained herein must be brought within 12 months of the date it arises.

This warranty does not apply to damage caused by negligence, improper accident damage repairs, or improper use.

BMW NA will not accept any liability for any parts and accessories not approved by BMW.

This warranty shall be null and void if the Vehicle Identification Number (VIN) has been altered or cannot be read, if the odometer has been replaced or altered and the true mileage cannot be determined, if the SAV has been declared a total loss or sold for salvage purposes, or if the SAV has been used in any competitive event.

Federal Emissions System Defect Warranty (Valid only in the U.S.A. and including Puerto Rico)

This warranty applies only to U.S.-specification vehicles distributed by BMW of North America, LLC (BMW NA) or sold through the BMW NA European Delivery Program.

In accordance with the defect warranty provisions of section 207(b) of the Clean Air Act, BMW NA warrants to the first retail purchaser, and each subsequent purchaser, that the vehicle (a) was designed, built and equipped so as to conform, at the time of sale, with all regulations of the U.S. Environmental Protection Agency applicable at the time of manufacture and (b) is free from defects in materials and workmanship which would cause it to fail to conform with applicable regulations for a period of 2 years or 24,000 miles, whichever occurs first, except for specific emission control components (as listed on page 26), for which the warranty period is 8 years or 80,000 miles, whichever occurs first.

Coverage begins on the date of first retail sale or the date the vehicle is first placed into service as a sales demonstrator, Aftersales Mobility Program (AMP) Vehicle or company vehicle, whichever is earlier.

Warranty claims must be made as soon as reasonably possible after a defect is discovered. To make a claim, the vehicle must be brought to any authorized BMW SAV center during normal business hours.

The authorized BMW SAV center will, without charge for parts or labor (including diagnosis), either repair or replace the defective part, if any. The decision whether to repair or replace said parts is solely the prerogative of BMW NA and must be expected to correct the failure of the warranted part. Parts for which replacements are made become the property of BMW NA. In all cases, a reasonable time must be allowed for warranty repairs to be completed after the vehicle is received by the authorized BMW SAV center.

For assistance in determining which specific parts or components of your vehicle are covered under this warranty, please contact your authorized BMW SAV center.

It is the owner's responsibility to have all scheduled inspection and maintenance services performed (at the owner's expense), as prescribed in the maintenance schedule for the BMW Emission Control System. Service intervals are computed by the Onboard BMW Condition Based Service system and displayed on the instrument panel. The instructions for proper maintenance and use can be found in the Owner's Manual. It is strongly recommended that any replacement parts used for maintenance, repair or replacement of emission control systems be certified BMW Service Parts or BMW Authorized Remanufactured Parts. Without invalidating this warranty, the owner may elect to have maintenance, repair or replacement of the emission control systems performed by any automotive repair establishment, or elect to use parts other than certified BMW Service Parts. However, the cost of such service or parts will not be covered under this warranty, except in emergency situations. In an emergency situation, where an authorized BMW SAV center or a warranty replacement part is not reasonably available (within 30 days), repairs may be

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performed at any available service establishment using any equivalent part. BMW NA will reimburse the owner for such emergency repairs (including labor, parts and diagnosis not to exceed BMW NA rates for labor, parts, and diagnosis in said area) that are covered under this warranty. Replaced parts and paid invoices must be presented at an authorized BMW SAV center as a condition of reimbursement for emergency repairs not performed by an authorized BMW SAV center.

The use of replacement parts, which are not of equivalent quality, may impair the effectiveness of the emission control system. If other than certified BMW Service Parts or Authorized Remanufactured Parts are used for maintenance, repair or replacement of components affecting emission control, the owner should obtain assurances that such parts are warranted by their manufacturer to be equivalent to genuine BMW parts in performance and durability. BMW NA assumes no liability under this warranty with respect to parts other than genuine BMW parts.

However, the use of non-genuine BMW replacement parts or non-EPA certified parts does not invalidate the warranty on other components, unless non-genuine BMW parts or non-EPA certified parts cause damage to warranted parts.

What is not covered

This warranty does not cover malfunctions caused by any of the following: accident, flood, misuse, improper adjustment, modification, alteration, tampering, disconnection, improper or inadequate maintenance, for gasoline engines; the use of leaded fuel or fuels containing more than 10% ethanol, or other oxygenates with more than 2.8% oxygen by weight (i.e., more than 15% MTBE or more than 3% methanol plus an equivalent amount of co-solvent). For diesel engines, the use of leaded fuel or fuels other than as specified in the Owner's Manual.

The replacement of maintenance parts, such as spark plugs (gasoline engines only), filters and similar items used in required maintenance services, the repair or replacement of maintenance parts beyond the first required inspection/maintenance, or if the part has been replaced earlier for reasons other than it being defective.

The SAV or any part of the SAV, unless a failure causes the SAV to fail to conform to applicable emission regulations.

Any SAV on which the odometer has been replaced or altered and the true mileage cannot be determined.

The SAV, if the Vehicle Identification Number (VIN) is altered or cannot be read, or if the SAV has been declared a total loss or sold for salvage purposes.

General

These warranties give you specific legal rights, and you may also have other rights which vary from state to state.

THE DURATION OF ANY IMPLIED WARRANTIES, INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY, IS LIMITED TO THE DURATION OF THE EXPRESS WARRANTIES HEREIN.

BMW NA HEREBY EXCLUDES INCIDENTAL AND CONSEQUENTIAL DAMAGES, INCLUDING LOSS OF TIME, INCONVENIENCE, OR LOSS OF USE OF THE VEHICLE, FOR ANY BREACH OF ANY EXPRESS OR IMPLIED WARRANTY, INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY, APPLICABLE TO THIS PRODUCT.

Some states do not allow limitations on how long an implied warranty lasts, or the exclusion or limitation of incidental or consequential damages, so the above limitations and exclusions may not apply to you. Additionally, if you are a Arizona, California, Connecticut, Maine, Maryland, Massachusetts, New Jersey, Oregon, Pennsylvania, Rhode Island, Vermont or Washington resident and your vehicle is registered in that state, your vehicle is eligible for California Emissions Warranty coverage.

These federal warranty provisions also apply to all vehicles sold in all U.S. states and territories regardless of whether a state has enacted state warranty provisions that differ from the federal provisions.

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Federal Emissions Performance Warranty (Valid only in the U.S.A. and including Puerto Rico)

In those states and jurisdictions that have established periodic vehicle emissions tests to encourage proper vehicle maintenance and require the car to pass an emissions test approved by the U.S. Environmental Protection Agency and:

1. The SAV was distributed by BMW of North America, LLC (BMW NA), or sold through the BMW NA European Delivery Program; and
2. The SAV has been maintained and operated in accordance with the instructions for proper maintenance and use set forth in the Owner's Manual supplied with the SAV; and
3. The SAV fails to conform to the applicable emissions standards of the EPA as judged by an EPA approved emissions test; and
4. The failure to conform results or will result in the owner of the SAV having to bear a penalty or other sanction (including the denial of the right to use the car) under local state or federal law if the non-conformity is not remedied within a specified period of time.

Then, in accordance with the provisions of section 207(b) of the Clean Air Act, BMW NA warrants that if the SAV is eligible for coverage under this warranty, any non-conformities in the SAV, which cause it to fail an EPA-approved emissions test will, without charge for parts or labor (including diagnosis), be adjusted, repaired, or replaced, at the option of BMW NA to proper specifications, in order to make the SAV comply with applicable emissions standards. The decision to adjust, repair or replace parts is solely the prerogative of BMW NA and must reasonably be expected to correct the failure of the warranted part.

Coverage begins on the date of first retail sale or the date the vehicle is first placed into service as a sales demonstrator, Aftersales Mobility Program (AMP) Vehicle or company vehicle, whichever is earlier. This warranty continues for a period of 2 years or 24,000 miles, whichever occurs first, except for specific emissions control components (as listed on page 26), for which the warranty period is 8 years or 80,000 miles, whichever occurs first.

This warranty is made subject to the terms and conditions that apply to the Emission Control System Warranty and the New SAV Limited Warranty.

No claim under this warranty will be denied on the basis of use of a properly installed EPA certified emission part for maintenance and repair.

A vehicle manufacturer may deny an emission performance warranty claim on the basis of an uncertified replacement part used in the maintenance or repair of an vehicle only if the vehicle manufacturer presents evidence that the uncertified replacement part is either defective in materials or workmanship or not equivalent from an emission standpoint to the original equipment part.

Maintenance, replacement, or repair of emission control devices and systems may be performed by any automotive repair establishment or individual using any certified part.

Immediately after the SAV has failed an EPA approved emission short test, your claim can be made at any authorized BMW SAV center. The authorized BMW SAV center will honor or deny your claim within the time period specified by local or state laws (not to exceed 30 days), to avoid further penalties or sanctions. If the claim is denied, the authorized BMW SAV center will notify you in writing of the reason(s). The authorized BMW SAV center is required by law to honor the claim if notice of denial is not received by the owner within the specified time period.

You may obtain further information concerning the emission warranties, or report violations of warranty terms, by contacting the Director, Field Operations and Support Division (6406J), Environmental Protection Agency, 401 M Street, SW, Washington, D.C. 20460.

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The following systems are covered by the Federal Emission Performance Warranty for a period of 2 years or 24,000 miles, whichever occurs first. The specific systems may vary according to model, therefore, all of the systems listed may not be used on your vehicle. For assistance in determining which systems and specific components within these systems apply to your vehicle, please contact your authorized BMW SAV center.

AIR INDUCTION SYSTEM

FUEL METERING SYSTEM

IGNITION SYSTEM

POSITIVE CRANKCASE VENTILATION SYSTEM (PCV)

FUEL EVAPORATIVE CONTROL SYSTEM

EXHAUST SYSTEM

ENGINE EMISSION CONTROL SYSTEM

SENSORS/DEVICES

ONBOARD DIAGNOSTIC SYSTEM (OBD)

RELATED PARTS ASSOCIATED WITH THE ABOVE SYSTEMS

The following components and/or systems are/is covered under the Federal Emission Warranty for a period of 8 years or 80,000 miles, whichever occurs first.

CATALYTIC CONVERTER

ENGINE CONTROL MODULE (INCLUDING ONBOARD DIAGNOSTIC SYSTEM)

For assistance in determining coverage of the specific components of the Onboard diagnostic system, please contact your authorized BMW SAV center.

California Emission Control Warranty Statement* Your Warranty Rights and Obligations

The California Air Resources Board and BMW of North America, LLC (BMW NA) are pleased to explain the emission control system warranty on your 2012 vehicle. In California, new motor vehicles must be designed, built and equipped to meet the State's stringent anti-smog standards. BMW NA must warrant the emission control system on your vehicle for the periods of time listed below provided there has been no abuse, neglect or improper maintenance of your vehicle.

Your emission control system may include parts such as the fuel injection system, the ignition system, catalytic converter, and engine computer. Also included may be hoses, belts, connectors and other emission-related assemblies.

Where a warrantable condition exists, BMW NA will repair your vehicle at no cost to you including diagnosis, parts and labor.

Manufacturer's Warranty Coverage:

- For 3 years or 50,000 miles, whichever occurs first:

1. If your vehicle fails a Smog Check inspection, all necessary repairs and adjustments will be made by BMW NA to ensure that your vehicle passes the inspection. This is your emission control system PERFORMANCE WARRANTY.
2. If any emission-related part on your vehicle is defective, the part will be repaired or replaced by BMW NA. This is your short-term emission control system DEFECTS WARRANTY.

- For 7 years or 70,000 miles (8 years or 100,000 miles for certain models), whichever occurs first:

If an emission-related part specially noted on page 31 as having coverage for 7 years or 70,000 miles (8 years or 100,000 miles for certain models), is defective, the part will be repaired or replaced by BMW NA. This is your long-term emission control system DEFECTS WARRANTY.

Owner's Warranty Responsibilities:

- As the vehicle owner, you are responsible for the performance of the required maintenance listed in your Owner's Manual. BMW NA recommends that you retain all receipts covering maintenance on your vehicle, but BMW NA cannot deny warranty solely for the lack of receipts or for your failure to ensure the performance of all scheduled maintenance.
- You are responsible for presenting your vehicle to an authorized BMW SAV center as soon as a problem exists. The warranty repairs should be completed in a reasonable amount of time, not to exceed 30 days.
- As the vehicle owner, you should also be aware that BMW NA may deny your warranty coverage if your vehicle or part has failed due to abuse, neglect, improper maintenance or unapproved modifications.

If you have any questions regarding your warranty rights and responsibilities, you should contact:

BMW of North America, LLC
Customer Relations and Services Department
P.O. Box 1227
Westwood, NJ 07675-1227

Telephone: 1 800 831-1117

Email: customerrelations@bmwusa.com

Website: www.bmwusa.com

or the

California Air Resources Board
9528 Telstar Avenue
El Monte, CA 91731

*The California Emissions Control System Limited Warranty applies to all 2012 U.S.-specification BMW SAV vehicles registered in Arizona, California, Connecticut, Maine, Maryland, Massachusetts, New Jersey, Oregon, Pennsylvania, Rhode Island, Vermont or Washington.

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California Emission Control System Limited Warranty*

This warranty applies to California certified vehicles distributed by BMW of North America, LLC (BMW NA) or sold through the BMW NA European Delivery Program, registered and operated primarily in California.

BMW NA warrants to the original purchaser and each subsequent owner that the vehicle is:

a. designed, built and equipped so as to conform with the applicable California Air Resources Board emission standards.

b. free from defects in materials and workmanship which cause any part that can affect emissions to fail to conform with applicable requirements or to fail a California Smog Check test or EPA approved short test for a period of 3 years or 50,000 miles, whichever occurs first.

c. free from defects in materials and workmanship in emission related parts, which are contained in the California Emission Warranty Parts List on page 31, for a period of 7 years or 70,000 miles (8 years or 100,000 miles for certain models), whichever occurs first.

Coverage begins on the date of first retail sale or the date the vehicle is first placed into service as a sales demonstrator, Aftersales Mobility Program (AMP) Vehicle or company vehicle, whichever is earlier.

To obtain service under this warranty, the vehicle must be brought, upon failure of a Smog Check test or upon discovery of the defect, to the workshop of any authorized BMW SAV center, during normal business hours. The authorized BMW SAV center will honor or deny your claim within 30 days. If the claim is denied, the authorized BMW SAV center will notify you in writing of the reason(s). The authorized BMW SAV center is required by law to honor the claim if notice is not given to the owner within 30 days.

The authorized BMW SAV center will, without charge for parts or labor (including diagnosis), either adjust, repair or replace the defective part and other parts affected by the failure of the warranted part, if any. If your vehicle failed the California Smog Check test or an EPA approved short test, then BMW NA will repair your vehicle so that it will pass this test. Items that require scheduled replacement are warranted up to the replacement interval specified in the Service section of this Statement. BMW NA may repair a part in lieu of replacing it when performing warranty repairs. Parts for which replacements are made become the property of BMW NA. After 3 years or 50,000 miles, and in accordance with paragraph (c) above, such repairs are limited to the repair or replacement of those parts identified in the California Emissions Warranty List.

If your California registered vehicle is between 7 and 8 years old and has been driven less than 80,000 miles, then your vehicle is eligible for additional warranty coverage under the Federal Emissions Warranty.

A repair performed as the result of a Smog Check test failure due to a defect in a part, which is warranted for 7 years/70,000 miles (8 years or 100,000 miles for certain models), is covered.

In all cases, a reasonable time, not to exceed 30 days, must be allowed for a warranty repair to be completed, after the vehicle is received by the authorized BMW SAV center.

It is the owner's responsibility to have all required maintenance services performed (at the owner's expense), as prescribed in the maintenance schedule for the BMW Emission Control System. Service intervals are computed by the Condition Based Service system and displayed on the instrument panel.

However, BMW NA will not deny your warranty repair claims solely because you do not have maintenance records or you did not perform the required maintenance unless BMW NA demonstrates that such lack of required maintenance is a direct cause of the emission control system failure. The instructions for required maintenance and use can be found in the Owner's Manual and in the Service section of this Statement.

*The California Emissions Control System Limited Warranty applies to all 2012 U.S.-specification BMW SAV vehicles registered in Arizona, California, Connecticut, Maine, Maryland, Massachusetts, New Jersey, Oregon, Pennsylvania, Rhode Island, Vermont or Washington.

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It is strongly recommended that any replacement parts used for maintenance, repair or replacement of emission control systems be genuine BMW Service Parts or BMW Authorized Remanufactured Parts. Without invalidating this warranty, the owner may elect to have maintenance, repair or replacement of the emission control systems performed by any automotive repair establishment, or elect to use parts other than BMW Authorized Remanufactured or genuine BMW Service Parts. However, the cost of such service or parts will not be covered under this warranty, except in emergency situations. In an emergency situation, where an authorized BMW SAV center is not reasonably available or a warranty replacement part is not available within 30 days, repairs may be performed at any available service establishment or by any individual using any replacement part.

A repair not completed within 30 days constitutes an emergency. BMW NA will reimburse the owner for such emergency repairs (including labor, parts and diagnosis not to exceed BMW suggested retail price for all warranted parts replaced and labor charges based on the manufacturer's recommended time allowance for the warranty repair and the geographically appropriate hourly labor rate) that are covered under this warranty. Replaced parts and paid invoices must be presented to an authorized BMW SAV center as a condition of reimbursement for emergency repairs not performed by an authorized BMW SAV center.

The use of replacement parts, which are not of equivalent quality, may impair the effectiveness of emission control systems. If other than genuine BMW Service Parts or Authorized Remanufactured Parts are used for maintenance, repair or replacement of components affecting emission control, the owner should obtain assurances that such parts are warranted by their manufacturer to be equivalent to genuine BMW parts in performance and durability. BMW NA assumes no liability under this warranty with respect to parts other than genuine BMW parts.

However, the use of non-genuine BMW replacement parts does not invalidate the warranty on other components, unless non-genuine BMW parts cause damage to warranted parts.

What is not covered

This warranty does not cover malfunctions caused by any of the following: accident, flood, misuse, modification, alteration, tampering, disconnection, improper or inadequate maintenance, except if performed by an authorized BMW SAV center doing warranty repair work, use of leaded fuel or fuel other than as specified in the Owner's Manual.

The replacement of maintenance parts, such as spark plugs (gasoline engines only), filters and similar items used in required maintenance services or the repair or replacement of maintenance parts beyond the first replacement interval.

Any SAV on which the odometer has been replaced or altered and the true mileage cannot be determined.

The SAV, if the Vehicle Identification Number (VIN) is altered or cannot be determined, or if the SAV has been declared a total loss or sold for salvage purposes.

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General

The warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

THE DURATION OF ANY IMPLIED WARRANTIES, INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY, IS LIMITED TO THE DURATION OF THE EXPRESS WARRANTIES HEREIN.

BMW OF NORTH AMERICA, LLC (BMW NA) HEREBY EXCLUDES INCIDENTAL AND CONSEQUENTIAL DAMAGES, INCLUDING LOSS OF TIME, INCONVENIENCE, OR LOSS OF USE OF THE VEHICLE, FOR ANY BREACH OF ANY EXPRESS OR IMPLIED WARRANTY, INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY, APPLICABLE TO THIS PRODUCT.

For assistance in determining which parts are covered by this warranty, please contact your authorized BMW SAV center or the BMW NA Customer Relations and Services Department at 1 800 831-1117. You may obtain further information concerning the emissions warranty or report violations of warranty terms, by contacting Air Resources Board (ARB), Mobile Source Division, 9528 Telstar Avenue, El Monte, CA 91731. Please include the title of the BMW service department head and telephone number.

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California Emission Warranty Parts List

The following components are covered for defects by the California Emission Control System Limited Warranty for a period of 7 years or 70,000 miles, whichever comes first. For certain models, the following components are covered for a period of 8 years or 100,000 miles, whichever comes first. The period is noted in the table below:

Models:	**X3 xDrive28i**	**X3 xDrive35i**	**X5 xDrive35i X6 xDrive35i**	**X5 xDrive50i X6 xDrive50i**	**X5 xDrive35d**
Coverage:	**8 Years 100,000 miles**	**7 Years 70,000 miles**	**7 Years 70,000 miles**	**7 Years 70,000 miles**	**7 Years 70,000 miles**
Catalytic Converter, Primary		•	•	•	
Charge Air Cooler		•	•	•	•
Charge Air Duct					•
Charge Air Induction Tract		•	•		
Connection Pipe (Charge Air)					•
Crankshaft Position/RPM Sensor	•	•			
Cylinder Head Cover Gasket Set	•	•	•	•	•
Delivery Unit with In-Tank Fuel Pump					•
Delivery Unit with Pump and Filter			•	•	
Diesel Particulate Filter					•
EGR Valve (Low Pressure)					•
Engine Control Module	•	•	•	•	•
Evaporative Canister			•	•	
Exhaust Cooler For EGR					•
Exhaust Manifold				•	•

Models:	X3 xDrive28i	X3 xDrive35i	X5 xDrive35i X6 xDrive35i	X5 xDrive50i X6 xDrive50i	X5 xDrive35d
Coverage:	**8 Years 100,000 miles**	**7 Years 70,000 miles**	**7 Years 70,000 miles**	**7 Years 70,000 miles**	**7 Years 70,000 miles**
Exhaust Manifold Gasket	•	•	•	•	•
Exhaust Manifold with Catalyst	•				
Exhaust Pipe (Between DPF and SCR Catalyst)					•
Exhaust Pipe Gasket (Between Catalyst & Turbocharger)		•	•	•	
Exhaust Pipe Gasket (Between Manifold & Turbocharger)				•	•
Exhaust Pipe with Catalyst	•				
Fuel Tank			•	•	
Fuel Feed Line (To High Pressure Pump Inlet)				•	
Fuel Filler Pipe			•	•	
Fuel Supply Line	•				
Fuel Tank	•	•	•	•	
Heated Rear Oxygen Sensor (Monitor)		•			
High Pressure Fuel Pump		•	•	•	•
High Pressure Fuel Rail		•	•	•	•
High Pressure Fuel Regulating Valve					•
High Pressure Sensor, Fuel				•	

Models:	X3 xDrive28i	X3 xDrive35i	X5 xDrive35i X6 xDrive35i	X5 xDrive50i X6 xDrive50i	X5 xDrive35d
Coverage:	**8 Years 100,000 miles**	**7 Years 70,000 miles**	**7 Years 70,000 miles**	**7 Years 70,000 miles**	**7 Years 70,000 miles**
Injection Valve (Fuel Injector)		•	•	•	•
Injection Valve O-Ring				•	
Intake Manifold	•	•	•	•	•
Intake Manifold Adjuster Unit Rear	•				
Intake Manifold Gasket	•			•	
Knock Sensor	•			•	
NOx Sensor					•
Overflow Oil Line (Injector Return Line)					•
PCV Vent Hose	•				
PCV Vent Hose Connecting Line				•	
Pump Assembly with Level Sensor Right		•			
SCR Catalyst					•
SCR Filler Tube					•
SCR Pump Unit					•
SCR Reagent Reservoir					•
Tank Unit with Fuel Level Sensor, Left			•		
Thermostat				•	•
Throttle Body	•	•	•	•	•
Torque Converter	•	•	•	•	•
Transmission Control Module	•	•	•	•	•
Turbocharger		•	•	•	•
Vacuum Pump		•	•	•	•
Vacuum Reservoir				•	

Models:	X3 xDrive28i	X3 xDrive35i	X5 xDrive35i X6 xDrive35i	X5 xDrive50i X6 xDrive50i	X5 xDrive35d
Coverage:	**8 Years 100,000 miles**	**7 Years 70,000 miles**	**7 Years 70,000 miles**	**7 Years 70,000 miles**	**7 Years 70,000 miles**
Valvetronic Actuator		•	•		
Valvetronic Sensor	•				
VANOS (VVT) Adjustment Unit	•	•	•	•	
VANOS (VVT) Solenoid Valve				•	

Notice

The "National Traffic and Motor Vehicle Safety Act of 1966" requires manufacturers to be in a position to contact vehicle owners when a correction of a safety-related defect or noncompliance issue with an applicable federal motor vehicle safety standard becomes necessary.

Please see the Correcting, Updating or Changing Vehicle-Related or Ownership Information section.

Correcting, Updating or Changing Vehicle-Related or Ownership Information

To enable BMW to contact you with important vehicle product and safety updates, including vehicles with expired warranty coverage, please update your vehicle-related or ownership information by either:

▷ Logging on at www.bmwusa.com, to access your My BMW Account (create a new account as necessary)

▷ Contacting the BMW Customer Relations and Services Department at 1 800 831-1117

▷ Complete and mail the Information Change Card, located at the back of this booklet

Please have your vehicle's 17-character Vehicle Identification Number (VIN) available.

Tire Warranty Statement

Original equipment tires on new BMW vehicles are warranted by their respective manufacturer as detailed in the applicable tire manufacturer's warranty statement.

The CD ROM BMW provides in the vehicle's documents portfolio contains the warranty statements for the following original equipment tire manufacturers:

▷ Bridgestone/Firestone

▷ Continental

▷ Goodyear/Dunlop

▷ Pirelli

▷ Michelin

However, we also recommend either contacting or visiting the specific manufacturer's website to ensure that you have the most current tire warranty information.

Should you have difficulty in obtaining warranty service from a tire manufacturer, your authorized BMW dealer will assist you in resolving the situation.

Instructions for proper tire care and maintenance are contained in the Wheels and Tires section of your vehicle's Owner's Manual.

ED_002825_00000694-00039

Notes:

Notes:

Notes:

Information Change Card

Please print new owner or update your customer information

For immediate updates please contact the BMW Customer Relations Center at 1-800-831-1117, or at www.bmwusa.com/MyAccount.

Please Check One: ☐ Address Change ☐ Ownership Change

☐ Mr. ☐ Mrs. ☐ Ms. Last Name ..... First Name ..... Middle Initial .....

Address: Number ..... Street ..... Apt./Suite .....

City ..... State ..... Zip ..... AM Phone ..... PM Phone .....

Email ..... Cell Phone .....

Comments .....

VIN .....

Current Date: ...../...../.....

Date of Change of Status: ...../...../.....

Sold Privately ☐ (Print name & address of new owner above, if known)

The information provided by you will be used by BMW to update new owner and customer information. Rest assured that we will not rent or sell your personal information to anyone. To see our privacy policy please go to www.bmwusa.com/about/privacy.html or call 800-831-1117 to request a copy.

Purchased Privately	☐	Exported	☐
Traded	☐	Destroyed	☐
Lease Ended	☐	Stolen	☐
Gifted	☐	Never Owned	☐

Information Change Card

Please print new owner or update your customer information

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Please Check One: ☐ Address Change ☐ Ownership Change

☐ Mr. ☐ Mrs. ☐ Ms. Last Name ..... First Name ..... Middle Initial .....

Address: Number ..... Street ..... Apt./Suite .....

City ..... State ..... Zip ..... AM Phone ..... PM Phone .....

Email ..... Cell Phone .....

Comments .....

VIN .....

Current Date: ...../...../.....

Date of Change of Status: ...../...../.....

Sold Privately ☐ (Print name & address of new owner above, if known)

The information provided by you will be used by BMW to update new owner and customer information. Rest assured that we will not rent or sell your personal information to anyone. To see our privacy policy please go to www.bmwusa.com/about/privacy.html or call 800-831-1117 to request a copy.

Purchased Privately	☐	Exported	☐
Traded	☐	Destroyed	☐
Lease Ended	☐	Stolen	☐
Gifted	☐	Never Owned	☐

For immediate updates or if there are no cards left, please contact the BMW Customer Relations Center at: 1-800-831-1117.

NO POSTAGE NECESSARY IF MAILED IN THE UNITED STATES

BUSINESS REPLY MAIL

FIRST CLASS MAIL PERMIT NO. 131 WESTWOOD, NJ

BMW of North America, LLC
P.O. Box 1227
Westwood, NJ 07675-9868

Attn: Customer Satisfaction

For immediate updates or if there are no cards left, please contact the BMW Customer Relations Center at: 1-800-831-1117.

NO POSTAGE NECESSARY IF MAILED IN THE UNITED STATES

BUSINESS REPLY MAIL

FIRST CLASS MAIL PERMIT NO. 131 WESTWOOD, NJ

BMW of North America, LLC
P.O. Box 1227
Westwood, NJ 07675-9868

Attn: Customer Satisfaction

More about BMW

bmwusa.com
1-800-334-4BMW

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Woodcliff Lake, New Jersey 07677
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Printed in U.S.A. 12/11

SD92-412

European model shown

Message

From: Ruske, Ross [Ruske.Ross@epa.gov]
Sent: 1/12/2016 6:02:02 PM
To: Ex. 6 Personal Privacy (PP)
CC: Ball, Joel [ball.joel@epa.gov]
Subject: RE: Followup - BMW diesel inquiry

Ex. 6 Personal Privacy (PP)

I've contacted Joel Ball in our program office, The Office of Transportation and Air Quality, to find out if BMW has developed any customer support policy to cover your issue. Please copy Joel on your future correspondence.

Ross Ruske
US EPA
Air Enforcement Division
Washington, DC 20460
202-564-1033

From: Ex. 6 Personal Privacy (PP)
Sent: Tuesday, January 12, 2016 12:34 PM
To: Ruske, Ross <Ruske.Ross@epa.gov>
Subject: Followup - BMW diesel inquiry

Hi Ross,

Re: 2009 BMW 335d (diesel)

Thank you for your call yesterday. This is to confirm that I plan to send you later this week my documentation (repairs, dealer communication, emission tests) regarding the inquiry on diesel defects, emissions, and applicable warranties.

Thank you for your kind assistance.

Best,

Ex. 6 Personal Privacy (PP)

CONFIDENTIALITY NOTICE: The information contained in this message and attachments may contain confidential, privileged and or/proprietary information for the sole use of the intended recipients(s). If you are not the intended recipient and/or believe that it has been sent to you in error, do not read it. Any disclosure, copying, distribution or use of the information contained in the message and attachments is strictly prohibited. Please immediately reply to the sender that you have received the message in error. Then delete it and destroy any copies of the information. Thank you

1 Corinthians 13:4-7. Love is patient and kind; love does not envy or boast, it is not arrogant or rude. It does not insist on its own way; it is not irritable or resentful; it does not rejoice at wrongdoing, but rejoices with the truth. Love bears all things, believes all things, hopes all things, endures all things.

* The Federal Savings Institute has Employed. "The Tax Long Term Asset, Assessed, and Allowed, Finally sent for this period on the account for next session.

Message

From: Ruske, Ross [Ruske.Ross@epa.gov]
Sent: 10/15/2015 2:02:40 PM
To: Ball, Joel [ball.joel@epa.gov]
CC: Orehowsky, Gregory [Orehowsky.Gregory@epa.gov]; Wehrly, Linc [wehrly.linc@epa.gov]
Subject: RE: (CAA - FY16-135496-3714-CV) Regional Tip and/or Complaint - Alabama

Joel,

This is very helpful. Thanks for putting it all together with the explanation. Do you know what we can tell vehicle owners other than to check with their dealer for warranty coverage?

Ross

From: Ball, Joel
Sent: Thursday, October 15, 2015 9:13 AM
To: Ruske, Ross
Cc: Orehowsky, Gregory; Wehrly, Linc
Subject: RE: (CAA - FY16-135496-3714-CV) Regional Tip and/or Complaint - Alabama

Hi Ross

Many diesel manufacturers has defects involving the DEF tank. I have been tracking VW, BMW, and Mercedes specifically. The problem is the DEF tank actually incorporates several components (e.g. DEF heater, temp sensor, level sensor, quality sensor…). EPA and CARB have pushed to make it impossible to service these components individually to help prevent tampering. This means the DEF tank is both expensive and prone to failure because you need to replace the tank if any of these sub-components fail.

I have been long advocating to make these and other SCR components subject to the 8/80 warranty as allowed by the CAA but we have been told by our lawyers that would require a rule making.

I hope this helps

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Ruske, Ross
Sent: Wednesday, October 14, 2015 4:06 PM
To: Ball, Joel
Cc: Orehowsky, Gregory
Subject: RE: (CAA - FY16-135496-3714-CV) Regional Tip and/or Complaint - Alabama

Joel,

We'd be really interested in seeing the defect reports. How many manufacturers have defect reports on DEF tanks? Just BMW?

Ross

From: Ball, Joel
Sent: Wednesday, October 14, 2015 3:35 PM
To: Ruske, Ross
Subject: RE: (CAA - FY16-135496-3714-CV) Regional Tip and/or Complaint - Alabama

Hi Ross,

The DEF tank is covered by the federal emissions warranty. The warranty period is 2 years or 24,000 miles. The 8/80 only applies to the specified major emissions control components (i.e. the cat, ECU and OBD computer). I can send you the defect reports if you want them, please let me know.

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Ruske, Ross
Sent: Wednesday, October 14, 2015 2:50 PM
To: Ball, Joel
Subject: FW: (CAA - FY16-135496-3714-CV) Regional Tip and/or Complaint - Alabama

Joel,

I'm forwarding a tip on BMW's DEF tank replacement issue. Would these DEF tanks be covered by the defect warranty because they cost $1500 to replace? Is the warranty period for light-duty diesel powered vehicles 8/80?

Also, who can check for defect reports on these vehicles?

Ross

From: Ruske, Ross
Sent: Wednesday, October 14, 2015 11:55 AM
To: Ex. 6 Personal Privacy (PP)
Cc: Ex. 6 Personal Privacy (PP)
Subject: RE: (CAA - FY16-135496-3714-CV) Regional Tip and/or Complaint - Alabama

Ex. 6 Personal Privacy (PP)

Thank you for your information and concern for the BMW issue with DEF tank sensor failures. Your communication helps the EPA to prioritize the enforcement of automotive emission control systems, their durability, and manufacturer's warranty obligations.

Ross Ruske
US EPA
Air Enforcement Division
Washington, DC 20460
202-564-1033

From: Ex. 6 Personal Privacy (PP)
Sent: Friday, October 09, 2015 9:21 AM
To: Ex. 6 Personal Privacy (PP)
Cc: Ruske, Ross
Subject: RE: (CAA - FY16-135496-3714-CV) Regional Tip and/or Complaint - Alabama

Ross,

Here is an interesting tip from a citizen. It involves diesel BMWs.

From: gordon.scott@epa.gov [mailto:gordon.scott@epa.gov]
Sent: Friday, October 09, 2015 8:52 AM
To: Aspy, Dale <Aspy.Dale@epa.gov>
Subject: FWD: (CAA - FY16-135496-3714-CV) Regional Tip and/or Complaint - Alabama

10/09/2015

SUBJECT: FWD: (CAA - FY16-135496-3714-CV) Regional Tip and/or Complaint - Alabama
FROM: gordon.scott@epa.gov
TO: aspy.dale@epa.gov
CC:

Dale, Mobile sources seem to be on everyone's mind. Can you take a look at this tip & determine if there is any action that can be taken to address the concern? Thanks, Scott

-----Original Message-----

10/7/2015 10:04 AM

HQ LEAD NUMBER: FY16-135496-3714-CV

SUBJECT: Regional Tip and/or Complaint - Alabama

FROM: Ex. 6 Personal Privacy (PP)

TO: ertep.serdar@epa.gov

Name: Ex. 6 Personal Privacy (PP)

State: Ex. 6 Personal Privacy (PP)

Phone: Ex. 6 Personal Privacy (PP)

Alleged Violator's Name: BMW of North America

Alleged Violator's Address: unknown

Alleged Violator's City: unknown

Alleged Violator's State: Alabama

Alleged Violator's Zip: unknown

Tip or Complaint: BMW uses sophisticated diesel exhaust system and urea injection in their x5d and 335d whicles to meet the EPAs standard for air pollution. I own a 2011 bmw x5d with this system. Im an active member of a popular forum Ex. 6 Personal Privacy (PP) where plenty pf members are complaining about the DEF tanks temperature sensors failing and throwing the CEL on the dash. These sensors are part of the tank itself and cannot be replaced, the who tank needs to be replaced. These have a very high rate of fail, probably due to design flaws. I believe when these sensors fail there is a possibility of the system not working properly and in result releasing NOX into the air - like VW for example. This is a very big repair bill for customers to take on, upward of $1500+ to replace one of the two tanks. I feel like this should be looked into and BMW should issue a fix or a recall on this whole clean diesel system. If the light is on, it prevents the car from passing inspection. As these sensors start to fail at a higher rate, as cars get out of warranty.. people will come up with clever ways to bypass the system or eliminate the clean diesel exhaust system all together which will only release more untreated diesel exhaust gasses into the air. Please take a look into this issue and hopefully we the customers are not left with the burden of fixing this design flaw BMW has created. Thanks!

Violation Still Occurring? Yes

State DEP/DEQ/DEM Notified? No

Message

From: Ruske, Ross [Ruske.Ross@epa.gov]
Sent: 10/14/2015 8:06:25 PM
To: Ball, Joel [ball.joel@epa.gov]
CC: Orehowsky, Gregory [Orehowsky.Gregory@epa.gov]
Subject: RE: (CAA - FY16-135496-3714-CV) Regional Tip and/or Complaint - Alabama

Joel,

We'd be really interested in seeing the defect reports. How many manufacturers have defect reports on DEF tanks? Just BMW?

Ross

From: Ball, Joel
Sent: Wednesday, October 14, 2015 3:35 PM
To: Ruske, Ross
Subject: RE: (CAA - FY16-135496-3714-CV) Regional Tip and/or Complaint - Alabama

Hi Ross,

The DEF tank is covered by the federal emissions warranty. The warranty period is 2 years or 24,000 miles. The 8/80 only applies to the specified major emissions control components (i.e. the cat, ECU and OBD computer). I can send you the defect reports if you want them, please let me know.

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Ruske, Ross
Sent: Wednesday, October 14, 2015 2:50 PM
To: Ball, Joel
Subject: FW: (CAA - FY16-135496-3714-CV) Regional Tip and/or Complaint - Alabama

Joel,

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Also, who can check for defect reports on these vehicles?

Ross

From: Ruske, Ross
Sent: Wednesday, October 14, 2015 11:55 AM
To: Ex. 6 Personal Privacy (PP)

Cc: Aspy, Dale
Subject: RE: (CAA - FY16-135496-3714-CV) Regional Tip and/or Complaint - Alabama

Ex. 6 Personal Privacy (PP)

Thank you for your information and concern for the BMW issue with DEF tank sensor failures. Your communication helps the EPA to prioritize the enforcement of automotive emission control systems, their durability, and manufacturer's warranty obligations.

Ross Ruske
US EPA
Air Enforcement Division
Washington, DC 20460
202-564-1033

From: Aspy, Dale
Sent: Friday, October 09, 2015 9:21 AM
To: Gordon, Scott
Cc: Ruske, Ross
Subject: RE: (CAA - FY16-135496-3714-CV) Regional Tip and/or Complaint - Alabama

Ross,

Here is an interesting tip from a citizen. It involves diesel BMWs.

From: gordon.scott@epa.gov [mailto:gordon.scott@epa.gov]
Sent: Friday, October 09, 2015 8:52 AM
To: Aspy, Dale <Aspy.Dale@epa.gov>
Subject: FWD: (CAA - FY16-135496-3714-CV) Regional Tip and/or Complaint - Alabama

10/09/2015

SUBJECT: FWD: (CAA - FY16-135496-3714-CV) Regional Tip and/or Complaint - Alabama
FROM: gordon.scott@epa.gov
TO: aspy.dale@epa.gov
CC:

Dale, Mobile sources seem to be on everyone's mind. Can you take a look at this tip & determine if there is any action that can be taken to address the concern? Thanks, Scott

-----Original Message-----

10/7/2015 10:04 AM

HQ LEAD NUMBER: FY16-135496-3714-CV

SUBJECT: Regional Tip and/or Complaint - Alabama

FROM: Ex. 6 Personal Privacy (PP)

TO: Ex. 6 Personal Privacy (PP)

Name: Ex. 6 Personal Privacy (PP)

State: Ex. 6 Personal Privacy (PP)

Phone: Ex. 6 Personal Privacy (PP)

Alleged Violator's Name: BMW of North America

Alleged Violator's Address: unknown

Alleged Violator's City: unknown

Alleged Violator's State: Alabama

Alleged Violator's Zip: unknown

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Violation Still Occurring? Yes

State DEP/DEQ/DEM Notified? No

Message

From: Ruske, Ross [Ruske.Ross@epa.gov]
Sent: 10/14/2015 6:50:15 PM
To: Ball, Joel [ball.joel@epa.gov]
Subject: FW: (CAA - FY16-135496-3714-CV) Regional Tip and/or Complaint - Alabama

Joel,

I'm forwarding a tip on BMW's DEF tank replacement issue. Would these DEF tanks be covered by the defect warranty because they cost $1500 to replace? Is the warranty period for light-duty diesel powered vehicles 8/80?

Also, who can check for defect reports on these vehicles?

Ross

From: Ruske, Ross
Sent: Wednesday, October 14, 2015 11:55 AM
To: Ex. 6 Personal Privacy (PP)
Cc: Aspy, Dale
Subject: RE: (CAA - FY16-135496-3714-CV) Regional Tip and/or Complaint - Alabama

Ex. 6 Personal Privacy (PP)

Thank you for your information and concern for the BMW issue with DEF tank sensor failures. Your communication helps the EPA to prioritize the enforcement of automotive emission control systems, their durability, and manufacturer's warranty obligations.

Ross Ruske
US EPA
Air Enforcement Division
Washington, DC 20460
202-564-1033

From: Aspy, Dale
Sent: Friday, October 09, 2015 9:21 AM
To: Gordon, Scott
Cc: Ruske, Ross
Subject: RE: (CAA - FY16-135496-3714-CV) Regional Tip and/or Complaint - Alabama

Ross,

Here is an interesting tip from a citizen. It involves diesel BMWs.

From: gordon.scott@epa.gov [mailto:gordon.scott@epa.gov]
Sent: Friday, October 09, 2015 8:52 AM
To: Aspy, Dale <Aspy.Dale@epa.gov>
Subject: FWD: (CAA - FY16-135496-3714-CV) Regional Tip and/or Complaint - Alabama

SUBJECT: FWD: (CAA - FY16-135496-3714-CV) Regional Tip and/or Complaint - Alabama
FROM: gordon.scott@epa.gov
TO: aspy.dale@epa.gov
CC:

Dale, Mobile sources seem to be on everyone's mind. Can you take a look at this tip & determine if there is any action that can be taken to address the concern? Thanks, Scott

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HQ LEAD NUMBER: FY16-135496-3714-CV

SUBJECT: Regional Tip and/or Complaint - Alabama

FROM: Ex. 6 Personal Privacy (PP)

TO: ertep.serdar@epa.gov

Name: Ex. 6 Personal Privacy (PP)

State: Ex. 6 Personal Privacy (PP)

Phone: Ex. 6 Personal Privacy (PP)

Alleged Violator's Name: BMW of North America

Alleged Violator's Address: unknown

Alleged Violator's City: unknown

Alleged Violator's State: Alabama

Alleged Violator's Zip: unknown

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Violation Still Occurring? Yes

State DEP/DEQ/DEM Notified? No

Message

From: Danzeisen, Karen [Danzeisen.Karen@epa.gov]
Sent: 5/6/2016 8:01:52 PM
To: Ball, Joel [ball.joel@epa.gov]
Subject: Actual production volumes for diesel models/testgroups for MY2013-2015
Attachments: 2013-2015 actual sales TG model - diesel only.xlsx

Hi Joel,

Here is the data you requested (and then some). I didn't filter the result down to Mercedes only because I thought you might be interested in the others (since there aren't a lot).

Let me know if you need any changes to the dataset.

Karen

Karen E. Danzeisen
Information Technology Specialist
Office of Transportation and Air Quality
U.S. Environmental Protection Agency

danzeisen.karen@epa.gov
(734)214-4444

www.epa.gov/nvfel/

Message

From: Pugliese, Holly [pugliese.holly@epa.gov]
on behalf of ComplianceInfo [ComplianceInfo@epa.gov]
Sent: 2/19/2019 1:22:50 PM
To: Ball, Joel [ball.joel@epa.gov]
CC: Wehrly, Linc [wehrly.linc@epa.gov]
Subject: FW: Diesel Exhaust Fluid sensor - Federal emissions warranty

Hi Joel. Is this something you can respond to?

Thanks.

Holly Pugliese
Office of Transportation and Air Quality
US EPA
pugliese.holly@epa.gov

From: Ex. 6 Personal Privacy (PP)
Sent: Saturday, February 16, 2019 10:03 AM
To: ComplianceInfo <ComplianceInfo@epa.gov>
Subject: Diesel Exhaust Fluid sensor - Federal emissions warranty

Hello,
I have a BMW X5 with 65,000 miles. A component of the SCR, specifically DEF passive tank sensor has failed. BMW tells me that they would cover the active tank and not the passive tank. However, both are connected and part of the SCR emissions system. Would that be covered under Federal emissions warranty?
I appreciate your time.
--
Thanks,
Ex. 6 Personal Privacy (PP)

Message

From: Ex. 6 Personal Privacy (PP)
Sent: 10/11/2015 11:55:06 AM
To: Ball, Joel [ball.joel@epa.gov]
Subject: RE: Emissions equipment warranty/recall, specifically regarding BMW Diesel

Joel:

Thank you very much for the reply- I'm sure your dept is very busy, esp given the recent events involving VW and diesel emissions.
BMW has offered to "Goodwill" this repair at no charge to me, and I am more than satisified with this response.
I do have some remaining concerns, and responses in red below.

Regards,
Ex. 6 Personal Privacy (PP)

From: Ball, Joel [mailto:ball.joel@epa.gov]
Sent: Friday, October 09, 2015 4:08 PM
To: Ex. 6 Personal Privacy (PP)
Subject: RE: Emissions equipment warranty/recall, specifically regarding BMW Diesel

Hello Ex. 6 Personal Privacy (PP)

Thank you for contacting EPA with your question regarding the federal emissions warranty. I will try to answer your questions:

1) If my vehicle is equipped with CA emission controls [and was not an option to order without], why is the CA emissions warranty coverage not in effect regardless of state boundary? If I resided in my previous residence in MD, I would not have a $2500 out of pocket expense for an emissions component.

   Many manufacturers produce vehicles which are certified for sale in all 50 states, meaning the same vehicle meets both the California and Federal emissions requirements. Some states have adopted the California emissions regulations. The California emissions warranty may apply in those states but not in the states which have not adopted the California requirements.

2) The entire function of the SCR catalyst/reagent/tank system is emission control/reduction and performs no other function with regard to vehicle propulsion or control- why is this not covered under the longer term emissions warranty?

   The Clean Air Act requires manufactures of light duty vehicles to warranty the emissions control system for 2 years or 24,000 miles and to additionally warranty the specified major emissions control components are covered for 8 years or 80,000 miles. The specified major emissions control components **only** include the catalytic converter, the electronic emissions control unit or computer (ECU), and the onboard emissions diagnostic (OBD) device or computer. The components you mentioned are not included in the specified major emissions control components.

I would ask your dept to review this coverage and definition under "major emissions control components" and how it relates to the SCR systems in diesel vehicles.
If my vehicle is rendered IMMOBILE by the failure of an emissions control component, and the failure of such component causes the vehicle to no longer operate within it's regulated emissions parameters, how can you not define that component as major?

3) If this is a frequent enough occurrence to create a part shortage/backlog from the manufacturer, why is this not covered under a manufacturer recall as it is obviously caused by a design flaw and/or manufacturing defect? [I would not expect an emissions related component to fail at 4yrs/50k miles, and the vehicle is in excellent condition/repair otherwise]

   EPA has the authority to require a recall if a substantial number of vehicles fail to comply with the emissions regulations within the useful life. BMW has filed an emissions defect report involving the DEF tank on this model, however the failure rate has not risen to level to warrant a recall at this time. EPA will continue to monitor this situation. I recommend that you keep a record of any repairs you pay for, if these components become the subject of a future recall you may be eligible for a reimbursement.

I have heard that the DEF tanks were backlogged to the order of 980 units in July of this year [unconfirmed], and my service advisor informed me 10/8/15 that 200 units were just shipped by BMW Germany last week.
Total North American sales of the 335d model was approximately 11,000 units.
I would think the failure of 200/1000, much less 1000/11000, would warrant a recall.
[Short of a major rear end collision I see little need for replacement of the tank other than failure].

I hope this information is helpful,

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
ball.joel@epa.gov

From: Ex. 6 Personal Privacy (PP)
Sent: Tuesday, October 06, 2015 2:17 PM
To: Ball, Joel
Subject: Emissions equipment warranty/recall, specifically regarding BMW Diesel

Joel:

I have several questions arising from an emissions system failure on my 2011 BMW 335d [diesel] sedan.
This car is equipped with a SCR catalyst and DEF tank/metering system.
My car has activated the SES light and is indicating the vehicle will no longer start in less than 1000 miles [currently ~700] unless the system is repaired.
My local BMW dealer has informed me that the DEF tank [SCR reagent reservoir] requires replacement and is out of federal emissions warranty [car is a 2011 with 52k miles, federal emissions warranty is 2yrs/24k]
This is apparently a frequent enough occurrence that the part is backordered from BMW Germany and isnt readily available.
I was also informed that as I do not live in CA [or CT/ME/MD/MA/NJ/NM/OR/PA/RI/VT/WA] this emissions part is not covered under the CA emissions warranty that would extend to 7yrs/70k miles, although the vehicle will currently fail NC state inspection as the SES light is activated [as well as have increased NOx emissions until repaired or be incapacitated if not performed].

I have multiple concerns with this:

1) If my vehicle is equipped with CA emission controls [and was not an option to order without], why is the CA emissions warranty coverage not in effect regardless of state boundary? If I resided in my previous residence in MD, I would not have a $2500 out of pocket expense for an emissions component.

2) The entire function of the SCR catalyst/reagent/tank system is emission control/reduction and performs no other function with regard to vehicle propulsion or control- why is this not covered under the longer term emissions warranty?
3) If this is a frequent enough occurrence to create a part shortage/backlog from the manufacturer, why is this not covered under a manufacturer recall as it is obviously caused by a design flaw and/or manufacturing defect? [I would not expect an emissions related component to fail at 4yrs/50k miles, and the vehicle is in excellent condition/repair otherwise]

Thanks for any information/assistance you can provide.

Regards,

Ex. 6 Personal Privacy (PP)

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Message

From: Pidgeon, Bill [pidgeon.bill@epa.gov]
Sent: 10/9/2015 7:18:24 PM
To: Ball, Joel [ball.joel@epa.gov]
Subject: FW: Recalls regarding 2011 Bmw 335d

FYI

-----Original Message-----
From: Pugliese, Holly On Behalf Of ComplianceInfo
Sent: Wednesday, September 16, 2015 7:40 AM
To: Pidgeon, Bill
Subject: FW: Recalls regarding 2011 Bmw 335d

Hi Bill. Can you look into this please and let me know if we have anything? Thanks.

Holly Pugliese
Office of Transportation and Air Quality US EPA pugliese.holly@epa.gov

-----Original Message-----
From: Gmail Ex. 6 Personal Privacy (PP)
Sent: Tuesday, September 15, 2015 8:11 PM
To: ComplianceInfo
Subject: Recalls regarding 2011 Bmw 335d

Hi

Trying to find out if my 2011 Bmw 335d diesel has any emissions recalls. Hope to hear back soon. Thank you. Vin is Ex. 6 Personal Privacy (PP) in case you need it.

Message

From: Yang, Ching-Shih [Yang.Ching-Shih@epa.gov]
Sent: 3/14/2019 2:02:27 PM
To: Berry, Laura [berry.laura@epa.gov]
CC: Zaremski, Sara [zaremski.sara@epa.gov]; Wehrly, Linc [wehrly.linc@epa.gov]; Pidgeon, Bill [pidgeon.bill@epa.gov]; Ball, Joel [ball.joel@epa.gov]
Subject: Updated LD recalls by MFR figure
Attachments: LD Recalls by MFR compliance report figure 3_14_2019.xlsx

Hi,

The updated LD recalls by MFR figure is attached (with the underlying data). As a reminder, this version is done using the year of the initial owner notification date as the recall year. As suspected, the large 2015 recall number is no longer there. Please take a look and let me know if there are any questions or if anything else is needed.

Thanks, Ching-shih

Message

From: Pidgeon, Bill [pidgeon.bill@epa.gov]
Sent: 11/30/2015 3:17:09 PM
To: Wright, DavidA [Wright.DavidA@epa.gov]; Snyder, Jim [Snyder.Jim@epa.gov]; Ball, Joel [ball.joel@epa.gov]; Dalton, Joel [Dalton.Joel@epa.gov]; Wehrly, Linc [wehrly.linc@epa.gov]; Sohacki, Lynn [sohacki.lynn@epa.gov]; Anderson, Tom [Anderson.Tom@epa.gov]; Ott, William [ott.william@epa.gov]
Subject: Request for Comments: §86.000-7 Information Request - Subject was: RE: Manufacturer VERR Number 14E-W01 versus DR as #0074
Attachments: Request for Comments 86.000-7 Information Request RE Manufacturer VERR Number 14E-W01 versus DR as 0074.docx

All,

I'm requesting help with this THIRD attempt to get information from BMW (Thomas Hofmann) regarding a DR and associated VERR. I threaten to refer the issue to OECA, which I've never resorted to before, so your comments will be appreciated.

I've responded to two emails from 20111 BMW diesel owners asking whether their vehicles are covered by the recall. Not sure, but I think Joel Ball also has heard from a owner(s) on this issue?

The attached Word file should be more efficient for comments rather than the email version below. The email chain is included below.

Thanks,
Bill

Hi Thomas,

The information you provided (email of 9/30/15 responding to my email of 9/25/15) was inadequate regarding BMW's decision to limit the 335d recall to the 2010MY when the DR states that the 2011MY has 4x the Potential Number Affected and the 2011MY X5 xDrive 35d has 6x the Potential Number Affected, as shown in this table:

Test Group	Model	Total Production	Potential Number Affected	Actual Number Identified
ABMXV03.0M57	335d	1723	1723	345
BBMXV03.0M57	335d	7044	7044	634
BBMXT03.0M57	X5 xDrive 35d	10417	10417	834

In the email you sent on Wednesday, September 30, 2015 5:46 PM, in response to my email sent on Friday, September 25, 2015 2:56 PM, responding to my request for more information, you stated:

> BMW has established a committee in Munich that is responsible for these decisions. I am not party to that committee.
> I can only infer that the committee considered the recall text at 42 USC §7541(c) and concluded that:
> * a "substantial number" of 2010 335d models have the defect or will develop the defect during their useful life, and that
> * a "substantial number" of 2011 335d and 2011 X5 35d do not have the defect or will not develop the defect during their useful life.

So, I am modifying my information request to the following:

1. What was the failure rate of the Model Year 2010 Test Group ABMXV03.0M57 in the 335d?
2. What was the failure rate of the Model Year 2011 Test Group BMXV03.0M57 in the 335d?
3. What was the failure rate of the Model Year 2011 Test Group BMXV03.0M57 in the X5 xDrive 35d?
4. Please explain how the failure rate is determined.
5. Provide the BMW determined "substantial number" of 2010 335d models that have the defect or will develop the defect during their useful life.
6. Provide the BMW determined "substantial number" of 2011 335d and 2011 X5 35d that do not have the defect or will not develop the defect during their useful life.
7. Provide the methodology BMW used to determine the "substantial number" asked for in numbers 5 & 6.
8. Did BMW install the affected throttle body part number 11717804384 in any other test groups or vehicle models in addition to those discussed in BMW DR 0074?
9. Given the number of potentially affected vehicles listed above, or preferably updated numbers, please explain how BMW determined that the recall was limited to the 2010 335d, and not the other affected 2011MY vehicles, unless that's obvious from the answers to preceding questions.

As you probably know, §86.000-7 requires BMW to provide relevant information to EPA, as stated below:

> §86.000-7 Maintenance of records; submittal of information; right of entry.
> (h) (6) EPA may void ab initio a certificate for a vehicle certified to Tier 1 certification standards or to the respective evaporative and/or refueling test procedure and accompanying evaporative and/or refueling standards as set forth or otherwise referenced in §86.098-10 for which the manufacturer fails to retain the records required in this section or to provide such information to the Administrator upon request.

This is EPA's **third** request for information regarding Manufacturer VERR Number 14E-W01 and DR #0074. If you are not the proper BMW contact for this information request, please provide the contact information for the proper BMW contact. If BMW does not adequately respond to this third information request, we will refer this issue to EPA's Office of Enforcement and Compliance Assurance.

Best wishes,
Bill Pidgeon

From: Thomas.Hofmann@bmwna.com [mailto:Thomas.Hofmann@bmwna.com]
Sent: Wednesday, September 30, 2015 5:46 PM
To: Pidgeon, Bill <pidgeon.bill@epa.gov>
Cc: Wright, DavidA <Wright.DavidA@epa.gov>; Pugliese, Holly <pugliese.holly@epa.gov>
Subject: RE: Manufacturer VERR Number 14E-W01 versus DR as #0074

Hello Bill

In response to your questions:

1. Regarding your question why BMW decided to limit the warranty extension to the 2010 335d, I do not know firsthand how this decision was made.
BMW has established a committee in Munich that is responsible for these decisions. I am not party to that committee.
I can only infer that the committee considered the recall text at 42 USC §7541(c) and concluded that:
* a "substantial number" of 2010 335d models have the defect or will develop the defect during their useful life, and that

* a "substantial number" of 2011 335d and 2011 X5 35d do not have the defect or will not develop the defect during their useful life

2. No, you do not have my "permission to tell the owner of the 2011MY 335d, that his car may have the defect described below ..."
I do not have the authority to revise or expand coverage of the existing warranty extension.
BMW has given that authority to the above-mentioned committee.

best regards,
Tom

From: Pidgeon, Bill [mailto:pidgeon.bill@epa.gov]
Sent: Friday, September 25, 2015 2:56 PM
To: Hofmann Thomas, EG-8-US-22
Cc: Wright, DavidA; Pugliese, Holly
Subject: RE: Manufacturer VERR Number 14E-W01 versus DR as #0074

Hi Thomas,

Thanks for getting back to me.

DR 0074 says: Emissions increase possible, emissions may exceed the standard.

So, please explain why "failures were more concentrated" allows BMW to limit the recall to the 2010 335d, when the 2011 models also may exceed the standards.

Also, do I have your permission to tell the owner of the 2011MY 335d, that his car may have the defect described below, and BMW has extended the warranty to repair vehicles with this defect at no cost to the owner, and that the 2011 X5 35d is also covered by the extended warranty?

> The affected part number 11717804384 relates to the Throttle Body. In about 99% of all cases the component throttle body was replaced due to a short circuit caused by oxidation at the throttle body actuator or due to a stuck throttle body due to internal corrosion of the shaft bearing. In case one of these malfunctions is detected, a fault code is stored including MIL illumination.

Thanks,
Bill
****
William M. Pidgeon
Mechanical Engineer
U.S. Environmental Protection Agency
Compliance Division, N69
2000 Traverwood Drive
Ann Arbor, MI 48105-2195
pidgeon.bill@epa.gov
Phone: 734-214-4416
Fax: 734-214-4869

From: Thomas.Hofmann@bmwna.com [mailto:Thomas.Hofmann@bmwna.com]
Sent: Thursday, September 24, 2015 11:27 PM
To: Pidgeon, Bill

Cc: Wright, DavidA; Pugliese, Holly
Subject: RE: Manufacturer VERR Number 14E-W01 versus DR as #0074

Hello Bill

Sorry for the delay in responding.

DR 0074 covered the throttle body as used in three diesel applications (2010 335d, 2011 335d and 2011 X5 35d).
The failures were more concentrated among the 2010 335d than the other two applications.
For this reason, the responsible committee decided to extend the emissions warranty on the throttle body for that particular model/application.***[BP]*** My understanding is that the

To avoid any similar confusion in the future, should BMW submit separate DR's for each test group?

kind regards,
Tom

From: Pidgeon, Bill [mailto:pidgeon.bill@epa.gov]
Sent: Wednesday, September 23, 2015 1:34 PM
To: Hofmann Thomas, EG-8-US-22
Cc: Wright, DavidA; Pugliese, Holly
Subject: RE: Manufacturer VERR Number 14E-W01 versus DR as #0074

Hi Thomas,

Would you let me know when you'll be able to respond to the email I sent last week.

Thanks,
Bill

From: Pidgeon, Bill
Sent: Wednesday, September 16, 2015 8:41 AM
To: Thomas.Hofmann@bmwna.com
Cc: David A. Wright; Pugliese, Holly
Subject: Manufacturer VERR Number 14E-W01 versus DR as #0074

Hi Thomas,

I found Manufacturer VERR Number 14E-W01 (EPA VERR# 1411) for the BMW 2010MY 335d which listed the related DR as #0074. This DR includes two 2011MY models, the 335d and the X5 xDrive 35d, which are not discussed in the VERR.

This came to my attention because an owner of a 2011MY 335d contacted us and inquired if there were any emission recalls for his vehicle. Given the discrepancy between the VERR and the DR, I'm not sure how to answer his question. So, would you explain why the VERR does not include the 2011MY models, yet DR 0074 says they are affected.

Best wishes,
Bill
****
William M. Pidgeon
Mechanical Engineer

U.S. Environmental Protection Agency
Compliance Division, N69
2000 Traverwood Drive
Ann Arbor, MI 48105-2195
pidgeon.bill@epa.gov
Phone: 734-214-4416
Fax: 734-214-4869

Message

From: Ex. 6 Personal Privacy (PP)
Sent: 10/6/2015 6:17:25 PM
To: Ball, Joel [ball.joel@epa.gov]
Subject: Emissions equipment warranty/recall, specifically regarding BMW Diesel
Attachments: 2011BMW335d_emissionswarranty.jpg; 2011BMW335d_emissionswarranty2.jpg

Flag: Follow up

Joel:

I have several questions arising from an emissions system failure on my 2011 BMW 335d [diesel] sedan.
This car is equipped with a SCR catalyst and DEF tank/metering system.
My car has activated the SES light and is indicating the vehicle will no longer start in less than 1000 miles [currently ~700] unless the system is repaired.
My local [NC] BMW dealer has informed me that the DEF tank [SCR reagent reservoir] requires replacement and is out of federal emissions warranty [car is a 2011 with 52k miles, federal emissions warranty is 2yrs/24k]
This is apparently a frequent enough occurrence that the part is backordered from BMW Germany and isnt readily available.
I was also informed that as I do not live in CA [or CT/ME/MD/MA/NJ/NM/OR/PA/RI/VT/WA] this emissions part is not covered under the CA emissions warranty that would extend to 7yrs/70k miles, although the vehicle will currently fail NC state inspection as the SES light is activated [as well as have increased NOx emissions until repaired or be incapacitated if not performed].

I have multiple concerns with this:

1) If my vehicle is equipped with CA emission controls [and was not an option to order without], why is the CA emissions warranty coverage not in effect regardless of state boundary? If I resided in my previous residence in MD, I would not have a $2500 out of pocket expense for an emissions component.
2) The entire function of the SCR catalyst/reagent/tank system is emission control/reduction and performs no other function with regard to vehicle propulsion or control- why is this not covered under the longer term emissions warranty?
3) If this is a frequent enough occurrence to create a part shortage/backlog from the manufacturer, why is this not covered under a manufacturer recall as it is obviously caused by a design flaw and/or manufacturing defect? [I would not expect an emissions related component to fail at 4yrs/50k miles, and the vehicle is in excellent condition/repair otherwise]

Thanks for any information/assistance you can provide.

Regards,

Ex. 6 Personal Privacy (PP)

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Message

From: Ball, Joel [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=92AF2AB6F5274BC597249D04358EF25F-BALL, JOEL]
Sent: 1/19/2017 3:55:19 PM
To: Carlheinz.Bayer@bmwna.com
CC: Maria.V.Nizhegorodova@bmwnaext.com
Subject: RE: EDIR-09-0B-M57-0148

Hi Carlheinz,

Thank you for the quick reply. Please let me know when you here from ARB.

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Carlheinz.Bayer@bmwna.com [mailto:Carlheinz.Bayer@bmwna.com]
Sent: Wednesday, January 18, 2017 5:47 PM
To: Ball, Joel <ball.joel@epa.gov>
Cc: Maria.V.Nizhegorodova@bmwnaext.com; Carlheinz.Bayer@bmwna.com
Subject: FW: EDIR-09-0B-M57-0148

Hello Joel,
ARB received the implementation plan recently but we are still in the 20 day period. After approval, we start the mailing and thereafter we'll submit the VERR.
The answers to your questions below:

From: "Ball, Joel" <ball.joel@epa.gov>
Date: January 18, 2017 at 4:17:53 PM EST
To: "Carlheinz.Bayer@bmwna.com" <Carlheinz.Bayer@bmwna.com>
Cc: "Wright, DavidA" <Wright.DavidA@epa.gov>, "Pidgeon, Bill" <pidgeon.bill@epa.gov>
Subject: EDIR-09-0B-M57-0148

Hi Carlheinz,

This EDIR indicates that "BMW will grant an emission warranty extension for SCR Reagent Tank affecting Diesel models 335d in test groups 9BMXV03.0M57 model year 2009, ABMXV03.0M57 model year 2010 and BBMXV03.0M57 model year 2011 to 10 years / 120,000 full useful life." It seems to me that this will require an owner notification and a VERR but I do not see one in the system.

- Will BMW be sending letters to the owners? *[>>>]* yes. As soon as we receive ARB approval.
- Will BMW be submitting a VERR?*[>>>]* yes, as soon as we do the mailing.
- Will owners who have already paid for this repair be reimbursed?*[>>>]* yes, that will be outlined in the SIB and in the letter to the customer
- Why aren't the X5 diesel vehicles covered by this campaign given the similar defects reported in EDIR-09/0B-M57-0051 and EDIR-0C-M57-0065*[>>>]* The X5 has it's separate warranty extension.
  We have ARB approval, the mailing is in the works and ASAP we will submit the VERR.

I recently spoke to the owner of a 2011 335d with who had this failure with less than 80,000 miles but the dealer told him that the component was out of warranty and provided him an estimate for nearly $3,000 to repair the vehicle. I will get more details from him.

[>>>] The customer will be covered by the extended warranty (if it's the SCR tank).

Best regards

Carlheinz

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

Message

From: Ball, Joel [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=92AF2AB6F5274BC597249D04358EF25F-BALL, JOEL]
Sent: 1/18/2017 9:17:53 PM
To: Carlheinz.Bayer@bmwna.com
CC: Wright, DavidA [Wright.DavidA@epa.gov]; Pidgeon, Bill [pidgeon.bill@epa.gov]
Subject: EDIR-09-0B-M57-0148

Hi Carlheinz,

This EDIR indicates that "BMW will grant an emission warranty extension for SCR Reagent Tank affecting Diesel models 335d in test groups 9BMXV03.0M57 model year 2009, ABMXV03.0M57 model year 2010 and BBMXV03.0M57 model year 2011 to 10 years / 120,000 full useful life." It seems to me that this will require an owner notification and a VERR but I do not see one in the system.

- Will BMW be sending letters to the owners?
- Will BMW be submitting a VERR?
- Will owners who have already paid for this repair be reimbursed?
- Why aren't the X5 diesel vehicles covered by this campaign given the similar defects reported in EDIR-09/0B-M57-0051 and EDIR-0C-M57-0065

I recently spoke to the owner of a 2011 335d with who had this failure with less than 80,000 miles but the dealer told him that the component was out of warranty and provided him an estimate for nearly $3,000 to repair the vehicle. I will get more details from him.

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

Message

From: Ball, Joel [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=92AF2AB6F5274BC597249D04358EF25F-BALL, JOEL]
Sent: 10/16/2015 12:03:31 PM
To: Ruske, Ross [Ruske.Ross@epa.gov]
CC: Orehowsky, Gregory [Orehowsky.Gregory@epa.gov]; Wehrly, Linc [wehrly.linc@epa.gov]
Subject: RE: (CAA - FY16-135496-3714-CV) Regional Tip and/or Complaint - Alabama

This is what I typically say: remember this only applies to light duty vehicles heavy duty has their own warranty requirements, generally everything is 5/50,000 for light heavy duty and 5/100,000 for heavy heavy duty

Thank you for your inquiry regarding the federally required emissions warranty. The Clean Air Act requires manufactures of light duty vehicles to warranty the emissions control system performance for 2 years or 24,000 miles and 8 years or 80,000 miles for specified major emissions control components which are the catalytic converter, the electronic emissions control unit or computer (ECU), and the onboard emissions diagnostic (OBD) device or computer. Additionally, manufactures are required to warranty any emission control or emission related component that fails to function or functions improperly because of a defect in materials, or workmanship, for 2 years or 24,000 miles (8 years or 80,000 miles for specified major emissions control components) under the emissions design and defect warranty.

Vehicle technology is constantly changing; therefore there may be emissions control components or emissions related components which do not appear on the fact sheet you referenced. The 2 years/24,000 mile federal emissions warranty still applies to these components. A more complete list can be found in your owner's manual/warranty booklet. The specified major emissions control components are specified in the Clean Air Act as the catalytic converter, the electronic emissions control unit or computer (ECU), and the onboard emissions diagnostic (OBD) device or computer. The diesel SCR catalytic converter and Diesel particulate filter are considered to be catalytic converters covered under the 8 year/80,000 mile warranty, however, the other components in the SCR system (e.g. exhaust sensors, DEF tank, valves, hoses) are covered under the 2 year/24,000 mile warranties mentioned above.

I hope this information is helpful,

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Ruske, Ross
Sent: Thursday, October 15, 2015 10:03 AM
To: Ball, Joel
Cc: Orehowsky, Gregory; Wehrly, Linc
Subject: RE: (CAA - FY16-135496-3714-CV) Regional Tip and/or Complaint - Alabama

Joel,

This is very helpful. Thanks for putting it all together with the explanation. Do you know what we can tell vehicle owners other than to check with their dealer for warranty coverage?

Ross

From: Ball, Joel
Sent: Thursday, October 15, 2015 9:13 AM
To: Ruske, Ross
Cc: Orehowsky, Gregory; Wehrly, Linc
Subject: RE: (CAA - FY16-135496-3714-CV) Regional Tip and/or Complaint - Alabama

Hi Ross

Many diesel manufacturers has defects involving the DEF tank. I have been tracking VW, BMW, and Mercedes specifically. The problem is the DEF tank actually incorporates several components (e.g. DEF heater, temp sensor, level sensor, quality sensor...). EPA and CARB have pushed to make it impossible to service these components individually to help prevent tampering. This means the DEF tank is both expensive and prone to failure because you need to replace the tank if any of these sub-components fail.

I have been long advocating to make these and other SCR components subject to the 8/80 warranty as allowed by the CAA but we have been told by our lawyers that would require a rule making.

I hope this helps

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Ruske, Ross
Sent: Wednesday, October 14, 2015 4:06 PM
To: Ball, Joel
Cc: Orehowsky, Gregory
Subject: RE: (CAA - FY16-135496-3714-CV) Regional Tip and/or Complaint - Alabama

Joel,

We'd be really interested in seeing the defect reports. How many manufacturers have defect reports on DEF tanks? Just BMW?

Ross

From: Ball, Joel
Sent: Wednesday, October 14, 2015 3:35 PM
To: Ruske, Ross
Subject: RE: (CAA - FY16-135496-3714-CV) Regional Tip and/or Complaint - Alabama

Hi Ross,

The DEF tank is covered by the federal emissions warranty. The warranty period is 2 years or 24,000 miles. The 8/80 only applies to the specified major emissions control components (i.e. the cat, ECU and OBD computer). I can send you the defect reports if you want them, please let me know.

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency

(734) 214-4238
ball.joel@epa.gov

From: Ruske, Ross
Sent: Wednesday, October 14, 2015 2:50 PM
To: Ball, Joel
Subject: FW: (CAA - FY16-135496-3714-CV) Regional Tip and/or Complaint - Alabama

Joel,

I'm forwarding a tip on BMW's DEF tank replacement issue. Would these DEF tanks be covered by the defect warranty because they cost $1500 to replace? Is the warranty period for light-duty diesel powered vehicles 8/80?

Also, who can check for defect reports on these vehicles?

Ross

From: Ruske, Ross
Sent: Wednesday, October 14, 2015 11:55 AM
To: Ex. 6 Personal Privacy (PP)
Cc: Aspy, Dale
Subject: RE: (CAA - FY16-135496-3714-CV) Regional Tip and/or Complaint - Alabama

Ex. 6 Personal Privacy (PP)

Thank you for your information and concern for the BMW issue with DEF tank sensor failures. Your communication helps the EPA to prioritize the enforcement of automotive emission control systems, their durability, and manufacturer's warranty obligations.

Ross Ruske
US EPA
Air Enforcement Division
Washington, DC 20460
202-564-1033

From: Aspy, Dale
Sent: Friday, October 09, 2015 9:21 AM
To: Gordon, Scott
Cc: Ruske, Ross
Subject: RE: (CAA - FY16-135496-3714-CV) Regional Tip and/or Complaint - Alabama

Ross,

Here is an interesting tip from a citizen. It involves diesel BMWs.

From: gordon.scott@epa.gov [mailto:gordon.scott@epa.gov]
Sent: Friday, October 09, 2015 8:52 AM
To: Aspy, Dale <Aspy.Dale@epa.gov>
Subject: FWD: (CAA - FY16-135496-3714-CV) Regional Tip and/or Complaint - Alabama

10/09/2015

SUBJECT: FWD: (CAA - FY16-135496-3714-CV) Regional Tip and/or Complaint - Alabama
FROM: gordon.scott@epa.gov
TO: aspy.dale@epa.gov
CC:

Dale, Mobile sources seem to be on everyone's mind. Can you take a look at this tip & determine if there is any action that can be taken to address the concern? Thanks, Scott

-----Original Message-----

10/7/2015 10:04 AM

HQ LEAD NUMBER: FY16-135496-3714-CV

SUBJECT: Regional Tip and/or Complaint - Alabama

FROM: Ex. 6 Personal Privacy (PP)

TO: ertep.serdar@epa.gov

Name: Ex. 6 Personal Privacy (PP)

State: New York

Phone: Ex. 6 Personal Privacy (PP)

Alleged Violator's Name: BMW of North America

Alleged Violator's Address: unknown

Alleged Violator's City: unknown

Alleged Violator's State: Alabama

Alleged Violator's Zip: unknown

Tip or Complaint: BMW uses sophisticated diesel exhaust system and urea injection in their x5d and 335d whicles to meet the EPAs standard for air pollution. I own a 2011 bmw x5d with this system. Im an active member of a popular forum Ex. 6 Personal Privacy (PP) where plenty pf members are complaining about the DEF tanks temperature sensors failing and throwing the CEL on the dash. These sensors are part of the tank itself and cannot be replaced, the who tank needs to be replaced. These have a very high rate of fail, probably due to design flaws. I believe when these sensors fail there is a possibility of the system not working properly and in result releasing NOX into the air - like VW for example. This is a very big repair bill for customers to take on, upward of $1500+ to replace one of the two tanks. I feel like this should be looked into and BMW should issue a fix or a recall on this whole clean diesel system. If the light is on, it prevents the car from passing inspection. As these sensors start to fail at a higher rate, as cars get out of warranty.. people will come up with clever ways to bypass the system or eliminate the clean diesel exhaust system all together which will only release more untreated diesel exhaust gasses into the air. Please take a look into this issue and hopefully we the customers are not left with the burden of fixing this design flaw BMW has created. Thanks!

Violation Still Occurring? Yes

State DEP/DEQ/DEM Notified? No

Message

From: Ball, Joel [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=92AF2AB6F5274BC597249D04358EF25F-BALL, JOEL]
Sent: 5/9/2016 7:05:27 PM
To: Wehrly, Linc [wehrly.linc@epa.gov]; Wright, DavidA [Wright.DavidA@epa.gov]
Subject: RE: 2013-2015 diesel actual sales correction
Attachments: Copy of 2013-2015 actual sales TG model - diesel only.xlsx

Had a typo on the chart titles

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Ball, Joel
Sent: Monday, May 09, 2016 3:02 PM
To: Wehrly, Linc <wehrly.linc@epa.gov>; Wright, DavidA <Wright.DavidA@epa.gov>
Subject: 2013-2015 diesel actual sales

FYI

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

Message

From: Ball, Joel [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=92AF2AB6F5274BC597249D04358EF25F-BALL, JOEL]
Sent: 5/9/2016 7:02:31 PM
To: Wehrly, Linc [wehrly.linc@epa.gov]; Wright, DavidA [Wright.DavidA@epa.gov]
Subject: 2013-2015 diesel actual sales
Attachments: Copy of 2013-2015 actual sales TG model - diesel only.xlsx

FYI

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

Message

From: Ball, Joel [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=92AF2AB6F5274BC597249D04358EF25F-BALL, JOEL]
Sent: 5/26/2017 1:57:39 PM
To: Wright, DavidA [Wright.DavidA@epa.gov]
CC: Imports [Imports@epa.gov]
Subject: FW: EPA CERTIFICATE
Attachments: DSC02022.jpg; DSC02023.jpg; DSC02026.jpg; DSC02027.jpg; SOOBRACAJNA.PDF; DSC01961.jpg; DSC01954.jpg

Can you provide the certificate? I'm not sure if there is enough detail without the test group/evap family numbers.

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Imports
Sent: Tuesday, May 23, 2017 9:30 AM
To: Ball, Joel <ball.joel@epa.gov>
Subject: FW: EPA CERTIFICATE

Certificate of conformity?

Thanks,

EPA Imports Team
Jacobs Technology
Contractor to the US EPA
(on behalf of imports@epa.gov)
734-214-4100

From Ex. 6 Personal Privacy (PP)
Sent: Tuesday, May 23, 2017 3:05 AM
To: Imports <Imports@epa.gov>
Subject: FW: EPA CERTIFICATE

Manufacturer:
BMW Manufacturing Co LLC
Manufacturer Address:
1400 Highway 101 S
Greer SC 29651-6799
Product Type:
Passenger Car
Make:
Bmw
Market:

USA
Model:
X5 35dX
Series:
X5 (E70 LCI)
Trim:
xDrive35d
Body:
Sport Utility Vehicle (SUV)/Multi Purpose Vehicle (MPV)
Drive:
4x4 - Four-wheel drive
Number of Seats:
5
Number of Doors:
4
Fuel Type - Primary:
Diesel
Engine Displacement (ccm):
2993
Engine Power (kW):
198
Engine Cylinders:
6
Engine Code:
M57N2
Number of Gears:
8
Made:
2011-03-01
Check Digit:
8
Model Year:
2009
Plant Country:
United States (USA)
Plant State:
South Carolina
Plant City:
Greer
Sequential Number:

Ex. 6 Personal Privacy (PP)

From: Ex. 6 Personal Privacy (PP)
Sent: Tuesday, May 23, 2017 8:13 AM
To: Ex. 6 Personal Privacy (PP)
Subject: FW: EPA CERTIFICATE

From: Imports [mailto:Imports@epa.gov]
Sent: Monday, May 22, 2017 4:34 PM
To: Ex. 6 Personal Privacy (PP)
Subject: RE: EPA CERTIFICATE

Please send the details of the vehicle you are requesting the certificate for. The make, model, year, engine family.

EPA Imports Team
Jacobs Technology
Contractor to the US EPA
(on behalf of imports@epa.gov)
734-214-4100

From: Ex. 6 Personal Privacy (PP)
Sent: Monday, May 22, 2017 9:49 AM
To: Imports <Imports@epa.gov>
Subject: RE: EPA CERTIFICATE

Certificate for Homologation.

From: Imports [mailto:Imports@epa.gov]
Sent: Monday, May 22, 2017 3:40 PM
To: Ex. 6 Personal Privacy (PP)
Subject: RE: EPA CERTIFICATE

Sir,

What purpose is it you need the certificate for?

EPA Imports Team
Jacobs Technology
Contractor to the US EPA
(on behalf of imports@epa.gov)
734-214-4100

From: Ex. 6 Personal Privacy (PP)
Sent: Monday, May 22, 2017 2:27 AM
To: Imports <Imports@epa.gov>
Subject: RE: EPA CERTIFICATE

Just to get a certificate of conformity.

From: Imports [mailto:Imports@epa.gov]
Sent: Friday, May 19, 2017 3:49 PM
To: Ex. 6 Personal Privacy (PP)
Subject: RE: EPA CERTIFICATE

Dear sir,

Is this a vehicle that you are trying to import, or just obtain a certificate of conformity for?

EPA Imports Team
Jacobs Technology
Contractor to the US EPA
(on behalf of imports@epa.gov)
734-214-4100

From: Ex. 6 Personal Privacy (PP)
Sent: Friday, May 19, 2017 8:50 AM
To: Imports <Imports@epa.gov>
Subject: RE: EPA CERTIFICATE

Dear all,

Below is the driving license.

What other other information do you need?

From: Imports [mailto:Imports@epa.gov]
Sent: Friday, May 19, 2017 2:34 PM
To: Ex. 6 Personal Privacy (PP)
Subject: RE: EPA CERTIFICATE

Dear sir,

I am going to need more information on what it is you are looking to do?

EPA Imports Team
Jacobs Technology
Contractor to the US EPA
(on behalf of imports@epa.gov)
734-214-4100

From: Ex. 6 Personal Privacy (PP)
Sent: Friday, May 19, 2017 3:53 AM
To: Imports <Imports@epa.gov>
Subject: EPA CERTIFICATE

Dear all,

In addition to supply tiles from the exhaust gases from the vehicle that needs to send us a certificate EPA.

Have a nice day

Ex. 6 Personal Privacy (PP)

Message

From: Ball, Joel [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=92AF2AB6F5274BC597249D04358EF25F-BALL, JOEL]
Sent: 10/15/2015 1:12:50 PM
To: Ruske, Ross [Ruske.Ross@epa.gov]
CC: Orehowsky, Gregory [Orehowsky.Gregory@epa.gov]; Wehrly, Linc [wehrly.linc@epa.gov]
Subject: RE: (CAA - FY16-135496-3714-CV) Regional Tip and/or Complaint - Alabama
Attachments: GM_1258.pdf; audi_0062.pdf; audi_0016.pdf; Mercedes_1409.pdf; Mercedes_1210.pdf; GM_1108.pdf; audi_0069.pdf; BMW_0065.pdf; BMW_0052.pdf; BMW_0051.pdf; VW_0036.pdf; Audi_004.pdf

Hi Ross

Many diesel manufacturers has defects involving the DEF tank. I have been tracking VW, BMW, and Mercedes specifically. The problem is the DEF tank actually incorporates several components (e.g. DEF heater, temp sensor, level sensor, quality sensor...). EPA and CARB have pushed to make it impossible to service these components individually to help prevent tampering. This means the DEF tank is both expensive and prone to failure because you need to replace the tank if any of these sub-components fail.

I have been long advocating to make these and other SCR components subject to the 8/80 warranty as allowed by the CAA but we have been told by our lawyers that would require a rule making.

I hope this helps

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Ruske, Ross
Sent: Wednesday, October 14, 2015 4:06 PM
To: Ball, Joel
Cc: Orehowsky, Gregory
Subject: RE: (CAA - FY16-135496-3714-CV) Regional Tip and/or Complaint - Alabama

Joel,

We'd be really interested in seeing the defect reports. How many manufacturers have defect reports on DEF tanks? Just BMW?

Ross

From: Ball, Joel
Sent: Wednesday, October 14, 2015 3:35 PM
To: Ruske, Ross
Subject: RE: (CAA - FY16-135496-3714-CV) Regional Tip and/or Complaint - Alabama

Hi Ross,

The DEF tank is covered by the federal emissions warranty. The warranty period is 2 years or 24,000 miles. The 8/80 only applies to the specified major emissions control components (i.e. the cat, ECU and OBD computer). I can send you the defect reports if you want them, please let me know.

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Ruske, Ross
Sent: Wednesday, October 14, 2015 2:50 PM
To: Ball, Joel
Subject: FW: (CAA - FY16-135496-3714-CV) Regional Tip and/or Complaint - Alabama

Joel,

I'm forwarding a tip on BMW's DEF tank replacement issue. Would these DEF tanks be covered by the defect warranty because they cost $1500 to replace? Is the warranty period for light-duty diesel powered vehicles 8/80?

Also, who can check for defect reports on these vehicles?

Ross

From: Ruske, Ross
Sent: Wednesday, October 14, 2015 11:55 AM
To: Ex. 6 Personal Privacy (PP)
Cc: Aspy, Dale
Subject: RE: (CAA - FY16-135496-3714-CV) Regional Tip and/or Complaint - Alabama

Ex. 6 Personal Privacy (PP)

Thank you for your information and concern for the BMW issue with DEF tank sensor failures. Your communication helps the EPA to prioritize the enforcement of automotive emission control systems, their durability, and manufacturer's warranty obligations.

Ross Ruske
US EPA
Air Enforcement Division
Washington, DC 20460
202-564-1033

From: Aspy, Dale
Sent: Friday, October 09, 2015 9:21 AM
To: Gordon, Scott
Cc: Ruske, Ross
Subject: RE: (CAA - FY16-135496-3714-CV) Regional Tip and/or Complaint - Alabama

Ross,

Here is an interesting tip from a citizen. It involves diesel BMWs.

From: gordon.scott@epa.gov [mailto:gordon.scott@epa.gov]
Sent: Friday, October 09, 2015 8:52 AM
To: Aspy, Dale <Aspy.Dale@epa.gov>
Subject: FWD: (CAA - FY16-135496-3714-CV) Regional Tip and/or Complaint - Alabama

10/09/2015

SUBJECT: FWD: (CAA - FY16-135496-3714-CV) Regional Tip and/or Complaint - Alabama
FROM: gordon.scott@epa.gov
TO: aspy.dale@epa.gov
CC:

Dale, Mobile sources seem to be on everyone's mind. Can you take a look at this tip & determine if there is any action that can be taken to address the concern? Thanks, Scott

-----Original Message-----

10/7/2015 10:04 AM

HQ LEAD NUMBER: FY16-135496-3714-CV

SUBJECT: Regional Tip and/or Complaint - Alabama

FROM: Ex. 6 Personal Privacy (PP)

TO: ertep.serdar@epa.gov

Name Ex. 6 Personal Privacy (PP)

State: New York

Phone Ex. 6 Personal Privacy (PP)

Alleged Violator's Name: BMW of North America

Alleged Violator's Address: unknown

Alleged Violator's City: unknown

Alleged Violator's State: Alabama

Alleged Violator's Zip: unknown

Tip or Complaint: BMW uses sophisticated diesel exhaust system and urea injection in their x5d and 335d whicles to meet the EPAs standard for air pollution. I own a 2011 bmw x5d with this system. Im an active member of a popular forum Ex. 6 Personal Privacy (PP) where plenty pf members are complaining about the DEF tanks temperature sensors failing and throwing the CEL on the dash. These sensors are part of the tank itself and cannot be replaced, the who tank needs to be replaced. These have a very high rate of fail, probably due to design flaws. I believe when these

sensors fail there is a possibility of the system not working properly and in result releasing NOX into the air - like VW for example. This is a very big repair bill for customers to take on, upward of $1500+ to replace one of the two tanks. I feel like this should be looked into and BMW should issue a fix or a recall on this whole clean diesel system. If the light is on, it prevents the car from passing inspection. As these sensors start to fail at a higher rate, as cars get out of warranty.. people will come up with clever ways to bypass the system or eliminate the clean diesel exhaust system all together which will only release more untreated diesel exhaust gasses into the air. Please take a look into this issue and hopefully we the customers are not left with the burden of fixing this design flaw BMW has created. Thanks!

Violation Still Occurring? Yes

State DEP/DEQ/DEM Notified? No

Message

From: Ball, Joel [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=92AF2AB6F5274BC597249D04358EF25F-BALL, JOEL]
Sent: 10/14/2015 7:34:51 PM
To: Ruske, Ross [Ruske.Ross@epa.gov]
Subject: RE: (CAA - FY16-135496-3714-CV) Regional Tip and/or Complaint - Alabama

Hi Ross,

The DEF tank is covered by the federal emissions warranty. The warranty period is 2 years or 24,000 miles. The 8/80 only applies to the specified major emissions control components (i.e. the cat, ECU and OBD computer). I can send you the defect reports if you want them, please let me know.

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Ruske, Ross
Sent: Wednesday, October 14, 2015 2:50 PM
To: Ball, Joel
Subject: FW: (CAA - FY16-135496-3714-CV) Regional Tip and/or Complaint - Alabama

Joel,

I'm forwarding a tip on BMW's DEF tank replacement issue. Would these DEF tanks be covered by the defect warranty because they cost $1500 to replace? Is the warranty period for light-duty diesel powered vehicles 8/80?

Also, who can check for defect reports on these vehicles?

Ross

From: Ruske, Ross
Sent: Wednesday, October 14, 2015 11:55 AM
To: Ex. 6 Personal Privacy (PP)
Cc: Aspy, Dale
Subject: RE: (CAA - FY16-135496-3714-CV) Regional Tip and/or Complaint - Alabama

Ex. 6 Personal Privacy (PP)

Thank you for your information and concern for the BMW issue with DEF tank sensor failures. Your communication helps the EPA to prioritize the enforcement of automotive emission control systems, their durability, and manufacturer's warranty obligations.

Ross Ruske
US EPA
Air Enforcement Division
Washington, DC 20460

202-564-1033

From: Aspy, Dale
Sent: Friday, October 09, 2015 9:21 AM
To: Gordon, Scott
Cc: Ruske, Ross
Subject: RE: (CAA - FY16-135496-3714-CV) Regional Tip and/or Complaint - Alabama

Ross,

Here is an interesting tip from a citizen. It involves diesel BMWs.

From: gordon.scott@epa.gov [mailto:gordon.scott@epa.gov]
Sent: Friday, October 09, 2015 8:52 AM
To: Aspy, Dale <Aspy.Dale@epa.gov>
Subject: FWD: (CAA - FY16-135496-3714-CV) Regional Tip and/or Complaint - Alabama

10/09/2015

SUBJECT: FWD: (CAA - FY16-135496-3714-CV) Regional Tip and/or Complaint - Alabama
FROM: gordon.scott@epa.gov
TO: aspy.dale@epa.gov
CC:

Dale, Mobile sources seem to be on everyone's mind. Can you take a look at this tip & determine if there is any action that can be taken to address the concern? Thanks, Scott

-----Original Message-----

10/7/2015 10:04 AM

HQ LEAD NUMBER: FY16-135496-3714-CV

SUBJECT: Regional Tip and/or Complaint - Alabama

FROM: Ex. 6 Personal Privacy (PP)

TO: ertep.serdar@epa.gov

Name: Ex. 6 Personal Privacy (PP)

State: New York

Phone: Ex. 6 Personal Privacy (PP)

Alleged Violator's Name: BMW of North America

Alleged Violator's Address: unknown

Alleged Violator's City: unknown

Alleged Violator's State: Alabama

Alleged Violator's Zip: unknown

Tip or Complaint: BMW uses sophisticated diesel exhaust system and urea injection in their x5d and 335d whicles to meet the EPAs standard for air pollution. I own a 2011 bmw x5d with this system. Im an active member of a popular forum Ex. 6 Personal Privacy (PP) where plenty pf members are complaining about the DEF tanks temperature sensors failing and throwing the CEL on the dash. These sensors are part of the tank itself and cannot be replaced, the who tank needs to be replaced. These have a very high rate of fail, probably due to design flaws. I believe when these sensors fail there is a possibility of the system not working properly and in result releasing NOX into the air - like VW for example. This is a very big repair bill for customers to take on, upward of $1500+ to replace one of the two tanks. I feel like this should be looked into and BMW should issue a fix or a recall on this whole clean diesel system. If the light is on, it prevents the car from passing inspection. As these sensors start to fail at a higher rate, as cars get out of warranty.. people will come up with clever ways to bypass the system or eliminate the clean diesel exhaust system all together which will only release more untreated diesel exhaust gasses into the air. Please take a look into this issue and hopefully we the customers are not left with the burden of fixing this design flaw BMW has created. Thanks!

Violation Still Occurring? Yes

State DEP/DEQ/DEM Notified? No

Message

From: Ball, Joel [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=92AF2AB6F5274BC597249D04358EF25F-BALL, JOEL]
Sent: 10/9/2015 8:08:43 PM
To: Pidgeon, Bill [pidgeon.bill@epa.gov]; Wright, DavidA [Wright.DavidA@epa.gov]
Subject: FW: Emissions equipment warranty/recall, specifically regarding BMW Diesel

FYI

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
(734) 214-4238
ball.joel@epa.gov

From: Ball, Joel
Sent: Friday, October 09, 2015 4:08 PM
To: Ex. 6 Personal Privacy (PP)
Subject: RE: Emissions equipment warranty/recall, specifically regarding BMW Diesel

Hello Ex. 6 Personal Privacy (PP)

Thank you for contacting EPA with your question regarding the federal emissions warranty. I will try to answer your questions:

1) If my vehicle is equipped with CA emission controls [and was not an option to order without], why is the CA emissions warranty coverage not in effect regardless of state boundary? If I resided in my previous residence in MD, I would not have a $2500 out of pocket expense for an emissions component.

   Many manufacturers produce vehicles which are certified for sale in all 50 states, meaning the same vehicle meets both the California and Federal emissions requirements. Some states have adopted the California emissions regulations. The California emissions warranty may apply in those states but not in the states which have not adopted the California requirements.

2) The entire function of the SCR catalyst/reagent/tank system is emission control/reduction and performs no other function with regard to vehicle propulsion or control- why is this not covered under the longer term emissions warranty?

   The Clean Air Act requires manufactures of light duty vehicles to warranty the emissions control system for 2 years or 24,000 miles and to additionally warranty the specified major emissions control components are covered for 8 years or 80,000 miles. The specified major emissions control components **only** include the catalytic converter, the electronic emissions control unit or computer (ECU), and the onboard emissions diagnostic (OBD) device or computer. The components you mentioned are not included in the specified major emissions control components.

3) If this is a frequent enough occurrence to create a part shortage/backlog from the manufacturer, why is this not covered under a manufacturer recall as it is obviously caused by a design flaw and/or manufacturing defect? [I would not expect an emissions related component to fail at 4yrs/50k miles, and the vehicle is in excellent condition/repair otherwise]

   EPA has the authority to require a recall if a substantial number of vehicles fail to comply with the emissions regulations within the useful life. BMW has filed an emissions defect report involving the DEF tank on this

model, however the failure rate has not risen to level to warrant a recall at this time. EPA will continue to monitor this situation. I recommend that you keep a record of any repairs you pay for, if these components become the subject of a future recall you may be eligible for a reimbursement.

I hope this information is helpful,

Joel Ball
Light-Duty Vehicle Group
Compliance Division
United States Environmental Protection Agency
ball.joel@epa.gov

From: Ex. 6 Personal Privacy (PP)
Sent: Tuesday, October 06, 2015 2:17 PM
To: Ball, Joel
Subject: Emissions equipment warranty/recall, specifically regarding BMW Diesel

Joel:

I have several questions arising from an emissions system failure on my 2011 BMW 335d [diesel] sedan.
This car is equipped with a SCR catalyst and DEF tank/metering system.
My car has activated the SES light and is indicating the vehicle will no longer start in less than 1000 miles [currently ~700] unless the system is repaired.
My local [NC] BMW dealer has informed me that the DEF tank [SCR reagent reservoir] requires replacement and is out of federal emissions warranty [car is a 2011 with 52k miles, federal emissions warranty is 2yrs/24k]
This is apparently a frequent enough occurrence that the part is backordered from BMW Germany and isnt readily available.
I was also informed that as I do not live in CA [or CT/ME/MD/MA/NJ/NM/OR/PA/RI/VT/WA] this emissions part is not covered under the CA emissions warranty that would extend to 7yrs/70k miles, although the vehicle will currently fail NC state inspection as the SES light is activated [as well as have increased NOx emissions until repaired or be incapacitated if not performed].

I have multiple concerns with this:

1) If my vehicle is equipped with CA emission controls [and was not an option to order without], why is the CA emissions warranty coverage not in effect regardless of state boundary? If I resided in my previous residence in MD, I would not have a $2500 out of pocket expense for an emissions component.
2) The entire function of the SCR catalyst/reagent/tank system is emission control/reduction and performs no other function with regard to vehicle propulsion or control- why is this not covered under the longer term emissions warranty?
3) If this is a frequent enough occurrence to create a part shortage/backlog from the manufacturer, why is this not covered under a manufacturer recall as it is obviously caused by a design flaw and/or manufacturing defect? [I would not expect an emissions related component to fail at 4yrs/50k miles, and the vehicle is in excellent condition/repair otherwise]

Thanks for any information/assistance you can provide.

Regards,

Ex. 6 Personal Privacy (PP)

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Message

From: Yang, Ching-Shih [Yang.Ching-Shih@epa.gov]
Sent: 12/11/2018 2:49:11 PM
To: Kochunas, Kathryn [kochunas.kathryn@epa.gov]
CC: Snyder, Jim [Snyder.Jim@epa.gov]; Ball, Joel [ball.joel@epa.gov]; Pugliese, Holly [pugliese.holly@epa.gov]
Subject: RE: IUVP industry data
Attachments: Nissan IUVP Request 12_11_2018.xlsb

Hey Kathryn,

Attached is the requested data. Please note that the VIN has been replaced with a Vehicle ID number that I generated to help them identify which records are describing the same vehicle. We do this because of concern that VIN may be considered PII. I queried for all the IUVP data with test number 1044789 and greater.

-Ching-shih

From: Kochunas, Kathryn
Sent: Tuesday, December 11, 2018 9:25 AM
To: Yang, Ching-Shih <Yang.Ching-Shih@epa.gov>
Cc: Snyder, Jim <Snyder.Jim@epa.gov>; Ball, Joel <ball.joel@epa.gov>; Pugliese, Holly <pugliese.holly@epa.gov>
Subject: FW: IUVP industry data

Ching-Shih,

Nissan is asking for IUVP industry data from January 2018 to November 2018. The most recent test number they have is 1044789. Could you help me retrieve this data for Nissan?

Thank you and regards,

Kathryn Kochunas
Compliance Engineer
Light Duty Vehicle Center
Compliance Division
Office of Transportation and Air Quality
U.S. Environmental Protection Agency

Phone: (734) 214-4215
Email: Kochunas.Kathryn@epa.gov

From: Snyder, Jim
Sent: Monday, December 10, 2018 11:14 AM
To: Kochunas, Kathryn <kochunas.kathryn@epa.gov>; Ball, Joel <ball.joel@epa.gov>
Cc: Pugliese, Holly <pugliese.holly@epa.gov>
Subject: RE: IUVP industry data

Normally I ask Ching-Shih to collect it and then forward it.
Jim

From: Kochunas, Kathryn
Sent: Friday, December 07, 2018 8:13 AM
To: Ball, Joel <ball.joel@epa.gov>

Cc: Pugliese, Holly <pugliese.holly@epa.gov>; Snyder, Jim <Snyder.Jim@epa.gov>
Subject: FW: IUVP industry data

Joel, I am not how to go about getting this data to Farrukh. It sounds like he has received it before. Any guidance on how to handle this?

Thanks,

Kathryn Kochunas
Compliance Engineer
Light Duty Vehicle Center
Compliance Division
Office of Transportation and Air Quality
U.S. Environmental Protection Agency

Phone: (734) 214-4215
Email: Kochunas.Kathryn@epa.gov

From: Khan, Farrukh <KhanF@NRD.NISSAN-USA.COM>
Sent: Friday, December 7, 2018 7:53 AM
To: Kochunas, Kathryn <kochunas.kathryn@epa.gov>
Subject: IUVP industry data

Hi Kathryn,

When you have time, can you please provide IUVP industry data from January 2018 to November 2018? We received this data last time in January (last test number 1044789).

Thanks,
Farrukh

Message

From: Zaremski, Sara [zaremski.sara@epa.gov]
Sent: 9/20/2013 8:53:12 PM
To: Bunker, Byron [bunker.byron@epa.gov]
Subject: FW: Compliance Report - Draft Final
Attachments: 8_15_13_mw 2009-2010-2011 Compliance Report Draft Final - TRACKED.docx

Latest version.

From: Wolcott, Mark
Sent: Thursday, August 15, 2013 12:01 PM
To: Zaremski, Sara
Subject: Compliance Report - Draft Final

Attached

Message

From: Grundler, Christopher [grundler.christopher@epa.gov]
Sent: 3/18/2015 4:58:54 PM
To: Bunker, Byron [bunker.byron@epa.gov]; Wehrly, Linc [wehrly.linc@epa.gov]
Subject: FW: Information for your meeting with EU Parliament rep.
Attachments: For Chris Real World Emissions ICCT.pptx; ATT00001.htm; EPA 2009-11 compliance report - 420r13006.pdf; ATT00002.htm

I mentioned this meeting to Drew. See his suggestions from below regarding additional info to provide the minister. If you agree, can you get me by 3pm a complete set of printed materials I can hand her? Maybe the entire Compliance Report with these figures noted? Lemme know what you think

From: Drew Kodjak [mailto:drew@theicct.org]
Sent: Wednesday, March 18, 2015 12:44 PM
To: Grundler, Christopher
Subject: Information for your meeting with EU Parliament rep.

Chris,

In advance of your meeting tomorrow, here are some documents and links.

ICCT has published several reports documenting the discrepancy between type approval and real world NOx emissions from new diesel passenger cars over the last several years. The link to our most recent study is below:

http://www.theicct.org/real-world-exhaust-emissions-modern-diesel-cars

I also presented this information at the annual meeting of the Diesel Technology Forum. The companies were quite interested as you might imagine. An excerpt of those slides are provided below - only a couple slides.

I also wanted to draw your attention to an excellent EPA report - 2009 - 2011 Compliance Report - that summarizes compliance and enforcement information. That Byron Bunker is a talented fellow. I relied on this report heavily in my comments on the China Clean Air Law, hopefully to good effect. I would recommend Figure 5 - compliance schedule for LD and HDVs - and Figure 15 on page 30 (recalls by OEM), and Figure 18 on page 32 showing the headroom built into compliance by OEMs to keep vehicles meeting the certification standards throughout full useful life.

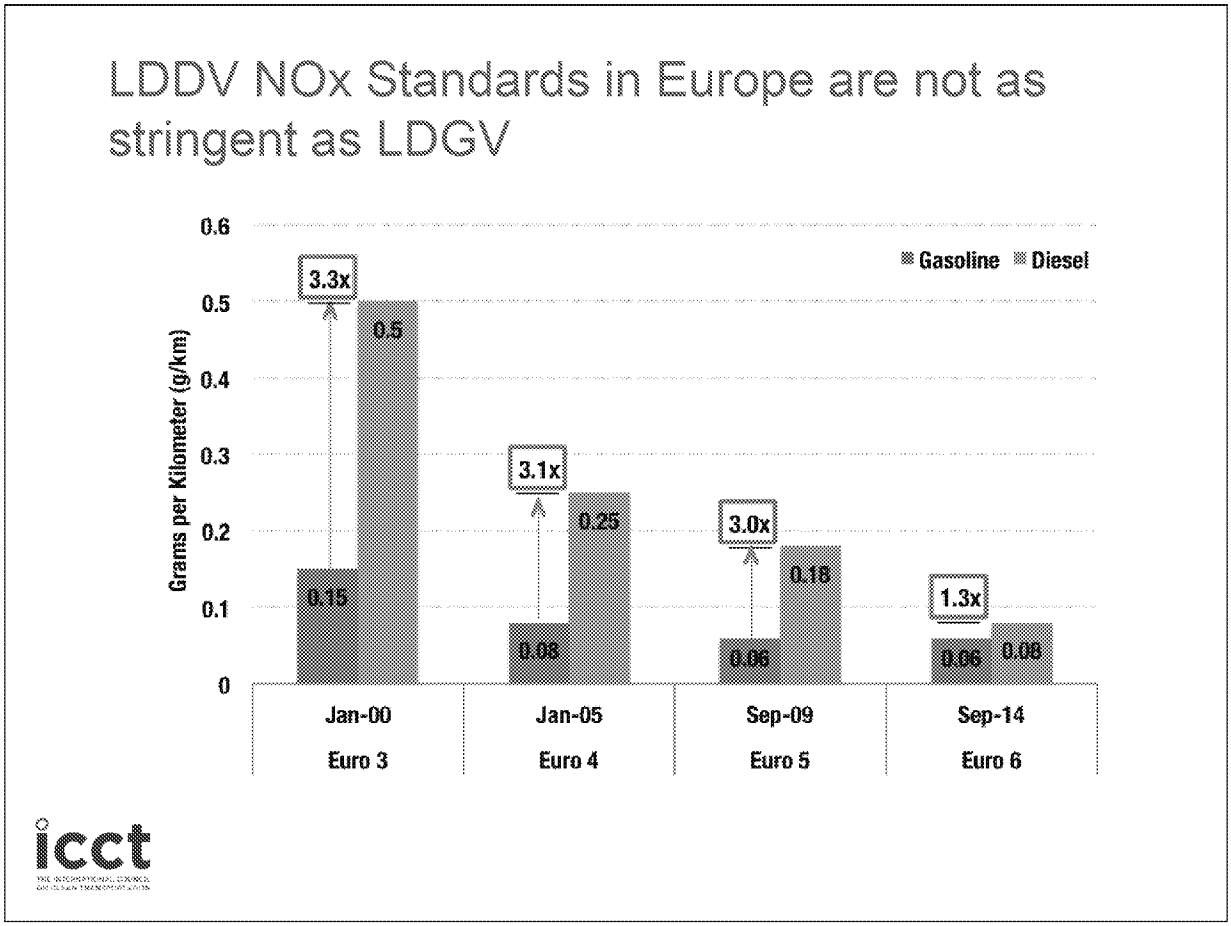
A quick search of the internet suggests that Julie Girling is reasonably progressive. She's from the UK conservative party. She appears active in the area of fuel quality and renewable fuels. She is affiliated with the Nordic Green Left, and the Group of Greens, etc. See link below

http://www.europarl.europa.eu/meps/en/96956/Julie_GIRLING_home.html;jsessionid=3963D792C729E2DF114B88B80B53BB81.node2

Real world emissions and in-use compliance

icct

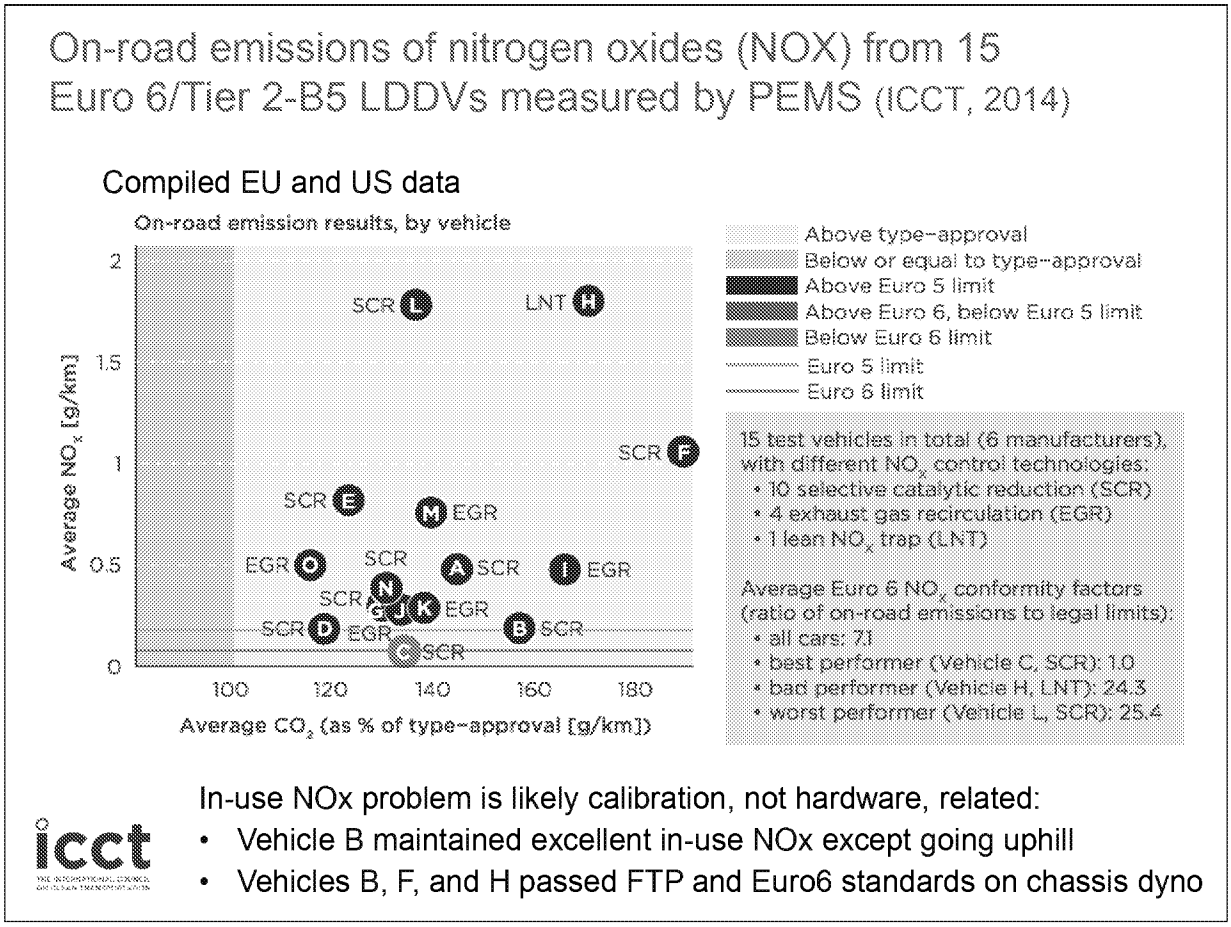
Screenshot from ICCT webpage



Standards are less stringent for diesels than for gasoline. This creates a challenge for air pollution experts and continued to image of the dirty diesel. But the gap has diminished from 3X to only 30%.

Standards regulating NOx and other exhaust emissions from passenger cars in the EU have become more stringent over time: The permissible limit for emissions of nitrogen oxides (NOx) from diesel cars declined from 500 milligrams per kilometer (mg/km) under Euro 3 (effective January 2000) to 80 mg/km under Euro 6 (effective September 2014). New passenger vehicles are certified as meeting the standards on the basis of test results obtained under laboratory conditions. But studies have suggested that on-road performance does not dependably reflect these "type-approval" results.

Diesel vehicles in the EU are allowed a much higher NOx emission level than gasoline cars. In 2000, when the Euro 3 standard was introduced, the allowed level was 0.5 g/km, more than three times as much as for gasoline vehicles. Yet, as vehicle tests show, even back then the real on-road emission levels were closer to 1.0 g/km, i.e., much more than actually allowed by the standard. Still, the vehicles received their type-approval and could be sold, as the Euro emission standards have to be met under laboratory conditions only. Over time, emission limits got stricter, and the current Euro 5 emission standard sets a limit of 0.18 g/km for NOx diesel emissions. This is still more than three times as high as for gasoline vehicles, but of course much lower than back in 2000. However, recent research suggests that the on-road emissions did not really change at all during the last decade. The values measured are in the range of 0.8 g/km, only 20% lower than in 2000 and more than four times higher than allowed by the Euro 5 emission limit.



This study, a meta-analysis of PEMS data from EU (Euro 6) and US (Tier 2 Bin 5/ULEV II) diesel passenger cars, documents the wide discrepancy that exists between official certification or type-approval emissions of nitrogen oxides (NOx) from new diesel passenger cars and actual NOX emissions from those vehicles during real-world, everyday operation.

This study analyzed the on-road emissions performance of fifteen new diesel passenger cars, twelve certified to the Euro 6 standard and three to the US equivalent (Tier 2 Bin 5), using portable emissions measurement systems (PEMS), which provide a continuous stream of vehicle data signals including emission rates, velocity, acceleration, road gradient and exhaust temperature.

Emissions were measured over 97 trips, totaling more than 140 hours of operation and 6,400 kilometers driven. The high temporal and spatial resolution of PEMS datasets permitted the analysis to link elevated NOx mass emission rates to the driving conditions that caused them.

This is the first systematic analysis of the real-world performance of modern diesel passenger cars, and the most comprehensive profile available of the on-road behavior of the latest generation of diesel passenger cars.

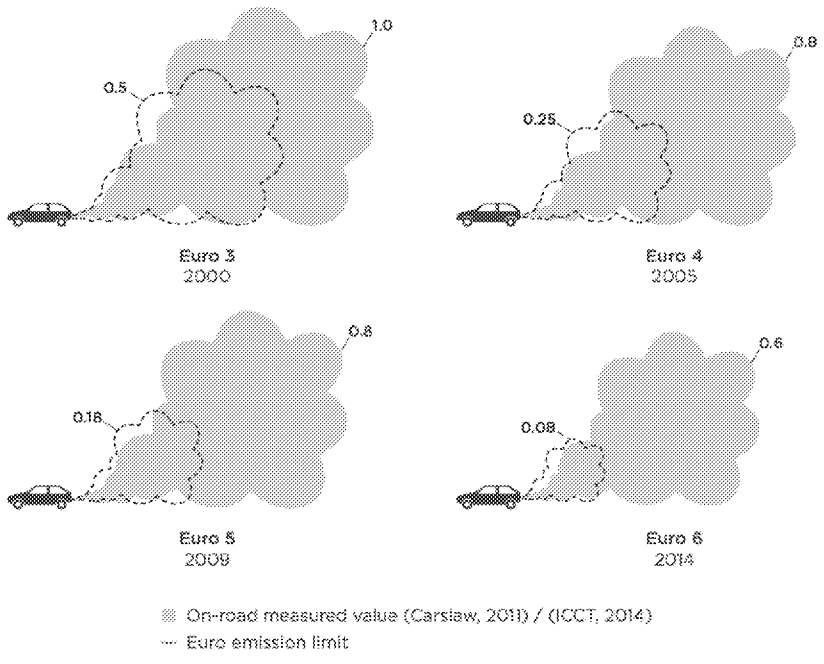
On average, real-world NOX emissions from the tested vehicles were about seven times higher than the limits set by the Euro 6 standard. If applied to the entire new vehicle fleet, this would correspond to an on-road level of about 560 mg/km of NOX (compared to the regulatory limit under Euro 6 of 80 mg/km). This is compelling evidence of a real-world NOX compliance issue for recent technology diesel passenger cars, for both the EU and US test vehicles.

The data also strongly suggest that the problem is primarily calibration related and that SCR systems are capable of maintaining low NOx under the large majority of in-use driving conditions:
Vehicle B was a BMW X5, perhaps the largest, heaviest vehicle tested. Despite this, it maintained low NOx emissions under all in-use driving conditions, except for extended uphill driving. Even though it had a higher proportion of uphill driving that any other vehicle tested, which artificially inflated its average NOx emissions, it still had the 2nd lower average NOx emissions. If this vehicle can maintain low in-use NOx emissions, there is no reason why other vehicles cannot do the same.
Vehicles B, F, and H were all tested at CARB and all passed both the FTP and Euro6 standards on the chassis dyno. This strongly

supports that the hardware was operating as designed, but the vehicles were not properly calibrated at higher loads and faster transients.

Note that the vehicles labeled “EGR” had only in-cylinder NOx controls. Thus, it is not surprising that higher loads in-use would increase NOx emissions, as engine-out NOx is directly proportional to combustion temperatures.

LDDV NOx emission limits reduced by 85% Euro 3 to Euro 6, but on-road emissions reduced only by 40%

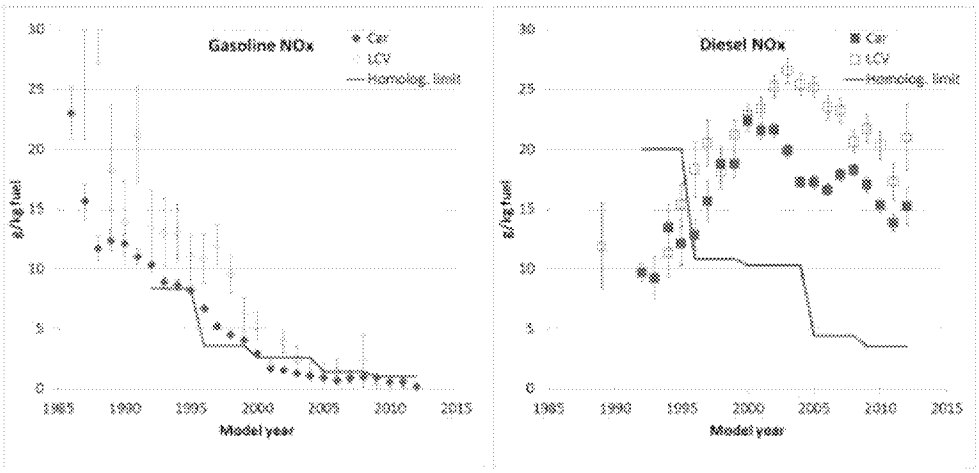


Source for Euro 3 to Euro 5: Carslaw et al. (2011). Recent evidence concerning higher NOX emissions from passenger cars and light duty vehicles. Journal of Atmosphereic Environment 45 (2011) 7053-7063.

I don't know if you want to include this. It's based upon comparing the Euro6 data from ICCT's PEMS report to earlier data from Carslaw (2011).

It makes a simple point – that NOx reductions on the test cycle have been a lot larger than reductions in the real world.

On-road emission behavior as depicted by 13 years of Remote Sensing data



Chen & Borken-Kleefeld, Real-driving emissions from cars and light commercial vehicles - Results from 13 years remote sensing at Zurich/CH Atmospheric Environment, 88:157-164 (May 2014)

icct

We report on long-term remote sensing measurements of light duty vehicle emissions at one site close to Zurich/Switzerland. The time series of annual measurements at the same site between 2000 and 2012, the same season, and virtually the same instrument is unique, probably worldwide. We analyze the development of unit exhaust emissions from model years 1985 until 2012, covering all five Euro emission limit stages in force. NOx emissions from both diesel cars and light commercial vehicles have actually increased in real-driving over time although emission limits have been progressively tightened. This behavior is explained mostly by a significant discrepancy between engine conditions during real-driving and the homologation test procedure. This discrepancy is not important for the other pollutants or for gasoline light duty vehicles, for which the emission control equipment is found working over a wide range of engine conditions. Our results confirm emission factors from the latest HBEFA model when deterioration and engine load are accounted for.

Implications

- FTP/NEDC are inadequate for diesel NOx control
  - Need higher loads and more transient operation
  - Europe adoption of WLTP starting in 2017 will help:
    - But is the WLTC adequate?
    - What about the rest of the world following Euro standards?
- In-use testing and/or defeat device requirements are essential
  - US routinely conducts in-use testing and has defeat device requirements
  - Europe in the process of adopting PEMS requirements via Real Driving Emissions (RDE) process
- US06 NOx standards are not stringent enough for light duty diesel vehicles

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6

Europe's RDE

What is it?
An amendment to Euro 6 standards to make on-board (PEMS) testing part of type-approval. Triggered by high on-road diesel NOX results
Stakeholder working group is trying to define how the tests should be conducted (boundary conditions), how the data should be analyzed and reported
Pilot phase started in 2015, implementation in 2017
Driver of changes in Diesel NOX aftertreatment; implications on small Diesel PC market

Research / references

ICCT

- **Real-world exhaust emissions from modern diesel cars.** *Published Sat, 2014.10.11* | Documents the discrepancy between type-approval and real-world NOx emissions from new diesel passenger cars. On average, on-road NOx emissions from the vehicles tested for this analysis were about seven times higher than the limits set by the Euro 6 standard.
- **Laboratory versus real world: Discrepancies in NOx emissions in the EU.** *Published Wed, 2012.11.07* | *By Peter Mock /*

Other Relevant Studies from *Atmospheric Environment*

- **Recent evidence concerning higher NO_x emissions from passenger cars and light duty vehicles**, *December 2011* / Kings College London: Remote sensing data from seven urban locations across the UK of 84,269 vehicles. For light duty diesel vehicles, it is found that NO_x emissions have changed little over 20 years or so.
- **Will Euro 6 reduce the NO_x emissions of new diesel cars? – Insights from on-road tests with Portable Emissions Measurement Systems (PEMS)**, *December 2012* / Researchers from JRC: One Euro 6 diesel car and six Euro 4–5 diesel cars with Portable Emissions Measurement Systems (PEMS). All tested cars, including the Euro 6 diesel car, exceed their NO_x emissions standards on the road by 260 ± 130%.

icct

Diesel vehicles in the EU are allowed a much higher NOx emission level than gasoline cars. In 2000, when the Euro 3 standard was introduced, the allowed level was 0.5 g/km, more than twice as much as for gasoline vehicles. Yet, as vehicle tests show, even back then the real on-road emission levels were closer to 1.0 g/km, i.e., much more than actually allowed by the standard. Still, the vehicles received their type-approval and could be sold, as the Euro emission standards have to be met under laboratory conditions only. Over time, emission limits got stricter, and the current Euro 5 emission standard sets a limit of 0.18 g/km for NOx diesel emissions. This is still more than three times as high as for gasoline vehicles, but of course much lower than back in 2000. However, recent research suggests that the on-road emissions did not really change at all during the last decade. The values measured are in the range of 0.8 g/km, only 20% lower than in 2000 and more than four times higher than allowed by the Euro 5 emission limit.

In the meantime, we Europeans may look jealously at California: there, emission limits for gasoline and diesel cars are identical, and about 75% lower than what is currently allowed for Euro 5 diesel cars in Europe. Furthermore, California also requires testing under additional driving cycles, and has greater durability requirements and in-use enforcement than Europe, resulting in better real-world emission performance. How much better exactly will be in the focus of an upcoming research project comparing on-road emissions of diesel cars in the EU and California.

Message

From: Bunker, Byron [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=DDF7BCF023D241A9A477A2DC75D5901C-BUNKER, BYRON]
Sent: 9/25/2013 6:01:12 PM
To: Stewart, Lori [Stewart.Lori@epa.gov]; Stewart, Gwen [Stewart.Gwen@epa.gov]
CC: Manners, Mary [manners.mary@epa.gov]; Wehrly, Linc [wehrly.linc@epa.gov]; Cohen, Janet [cohen.janet@epa.gov]; Zaremski, Sara [zaremski.sara@epa.gov]; Wolcott, Mark [wolcott.mark@epa.gov]
Subject: Materials for tomorrow's CD Biweekly
Attachments: 8_15_13_mw 2009-2010-2011 Compliance Report Draft Final - TRACKED.DOCX; 2009 - 2011 Compliance Report Sept 2013 for Chris Grundler.pptx

Hi Gwen,

Attached are some materials for our CD Biweekly tomorrow. Additional materials will be coming separately from Linc.

Thanks,

Byron

****

Byron Bunker
Director Compliance Division
Office of Transportation and Air Quality
Environmental Protection Agency
2000 Traverwood Drive
Ann Arbor, MI 48105
Bunker.Byron@epa.gov
Phone: (734) 214-4155
Mobile: (734) 353-9623
****

Message

From: Bunker, Byron [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=DDF7BCF023D241A9A477A2DC75D5901C-BUNKER, BYRON]
Sent: 3/18/2015 8:43:59 PM
To: Stewart, Gwen [Stewart.Gwen@epa.gov]; Shaffer, Patricia [Shaffer.Patricia@epa.gov]
CC: Grundler, Christopher [grundler.christopher@epa.gov]
Subject: OTAQ 2009-2011 Compliance Report - please print for Chris
Attachments: EPA 2009-11 compliance report - 420r13006.pdf

Importance: High

Hi Gwen,

Could you have someone print a copy of the attached report for Chris? Please have it printed 2 sided in color. If it is easy to bind, that would be a nice touch. Chris will be giving the report to a colleague of his from the European Union tomorrow.

Please also flag the following pages for him (e.g., add a post it note that extends from the report) so he can quickly page to them.

Page 14, Figure 5 - compliance schedule for LD and HDVs
Page 30, Figure 15 - recalls by OEM
Page 32, Figure 18 - Compliance Headroom

Chris will need this before noon tomorrow.

Thanks,

Byron

****
Byron Bunker
Director Compliance Division
Office of Transportation and Air Quality
Environmental Protection Agency
2000 Traverwood Drive
Ann Arbor, MI 48105
Bunker.Byron@epa.gov
Phone: (734) 214-4155
Mobile: (734) 353-9623
****

Message

From: Rademacher, Lynn [rademacher.lynn@epa.gov]
Sent: 4/2/2018 11:35:09 PM
To: Bunker, Byron [bunker.byron@epa.gov]
Subject: Re: BMW

Thank you very much, Byron!

Sent from my iPhone

On Apr 2, 2018, at 4:47 PM, Bunker, Byron <bunker.byron@epa.gov> wrote:

> Hi Lynn,
>
> Here is a link to the complaint that Hagens Berman filed recently against BMW. http://hbsscreative.com/complaints/Hagens-Berman-BMW-Emissions-Class-Action-Complaint.pdf
>
> I have only given this a cursory read, but it is focused on US vehicles and does include a more sophisticated analysis of the potential noncompliances. Our testing of newer BMW vehicles did not reveal an obvious issue, but we have not done extensive testing of the older (2012 model year) vehicle that the plaintiffs tested.
>
> We have not yet decided if we are going to investigate diesel vehicles of this vintage in more detail and if we do, what priority to give that compared to other test work. Hence, I can't give you much guidance on what potential issues your team might be interested in.
>
> I hope this helps.
>
> Thanks,
>
> Byron
>
> **********
> Byron Bunker
> Director Compliance Division
> Office of Transportation and Air Quality
> Environmental Protection Agency
> 2000 Traverwood Drive
> Ann Arbor, MI 48105
> Bunker.Byron@epa.gov
> Phone: (734) 214-4155
> Mobile: (734) 353-9623
> **********
>
> ---
>
> **From:** Rademacher, Lynn
> **Sent:** Monday, April 02, 2018 3:26 PM
> **To:** Bunker, Byron <bunker.byron@epa.gov>
> **Subject:** BMW
>
> Hello Byron.

We spoke mid-January about a couple of issues and one of them was BMW. At that time, a news article had come out about European BMW models allegedly having defeat devices. You were not aware of any impacted U.S. models. Additional articles have come out since we spoke, and according to my expert Google searches (ha!) the models in question are still solely European.

My team has asked me to check back with you to confirm that there are still no U.S. impacted models.

Thank you!

Lynn

Message

From: Pugliese, Holly [pugliese.holly@epa.gov]
Sent: 3/27/2017 1:52:00 PM
To: Bunker, Byron [bunker.byron@epa.gov]
Subject: FW: another control for your review
Attachments: AX-17-000-4953 BMW Response.docx; 17-000-4953 BMW Complaint.pdf

Hi Byron. Another nudge that I still need your review on this one.

Holly Pugliese
Office of Transportation and Air Quality
US EPA
pugliese.holly@epa.gov

From: Pugliese, Holly
Sent: Monday, March 20, 2017 9:06 AM
To: Bunker, Byron <bunker.byron@epa.gov>
Subject: FW: another control for your review

And this one.

Holly Pugliese
Office of Transportation and Air Quality
US EPA
pugliese.holly@epa.gov

From: Pugliese, Holly
Sent: Monday, March 13, 2017 1:22 PM
To: Bunker, Byron <bunker.byron@epa.gov>
Cc: Ball, Joel <ball.joel@epa.gov>; Wehrly, Linc <wehrly.linc@epa.gov>
Subject: another control for your review

Hi Byron, another one for you. If you have any questions or edits, please let us know.

Holly Pugliese
Office of Transportation and Air Quality
US EPA
pugliese.holly@epa.gov

Message

From: Charmley, William [charmley.william@epa.gov]
Sent: 9/19/2016 12:18:43 PM
To: Grundler, Christopher [grundler.christopher@epa.gov]; Olechiw, Michael [olechiw.michael@epa.gov]; Simon, Karl [Simon.Karl@epa.gov]; Bunker, Byron [bunker.byron@epa.gov]; Blubaugh, Jim [Blubaugh.Jim@epa.gov]; Cohen, Janet [cohen.janet@epa.gov]; Haugen, David [haugen.david@epa.gov]
Subject: RE: All diesel car brands in EU are even more polluting than VW
Attachments: T&E Europe, Diesel Gate Report, September 2016.pdf

Here's the actual report they released

From: Grundler, Christopher
Sent: Monday, September 19, 2016 8:11 AM
To: Charmley, William <charmley.william@epa.gov>
Cc: Olechiw, Michael <olechiw.michael@epa.gov>; Simon, Karl <Simon.Karl@epa.gov>; Bunker, Byron <bunker.byron@epa.gov>; Blubaugh, Jim <Blubaugh.Jim@epa.gov>; Cohen, Janet <cohen.janet@epa.gov>; Haugen, David <haugen.david@epa.gov>
Subject: Re: All diesel car brands in EU are even more polluting than VW

Thanks Bill. And, wow

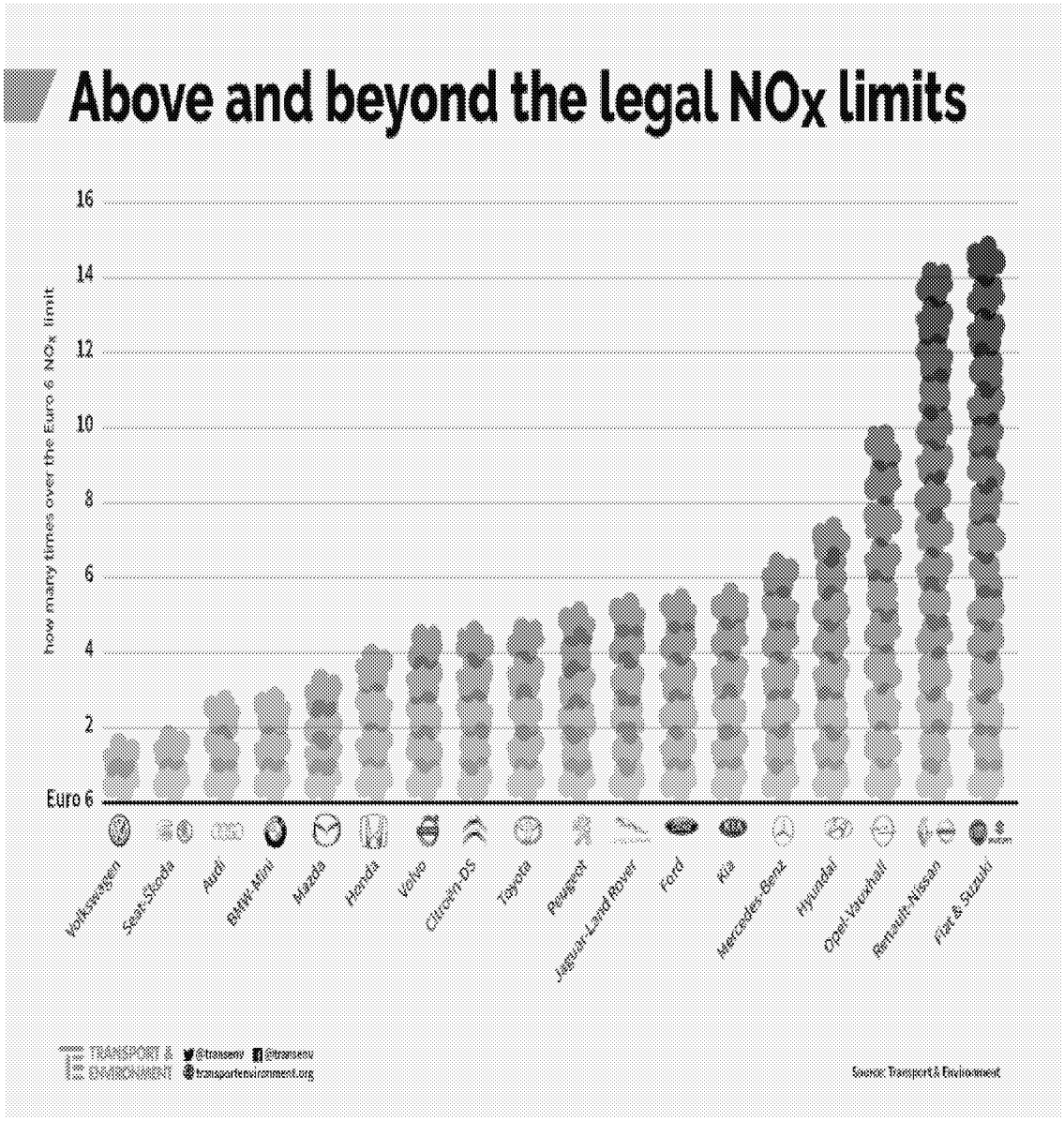
Christopher Grundler, Director
Office of Transportation and Air Quality
U.S. Environmental Protection Agency
202/564-1682 (Washington DC)
734/214-4207 (Ann Arbor MI)

On Sep 19, 2016, at 8:04 AM, Charmley, William <charmley.william@epa.gov> wrote:

> I have not read this, but given the pending trip by Chris/David/Byron/Jim to Europe I wanted to send this around.
>
> ---
>
> **From:** Transport & Environment [mailto:julia.poliscanova=transportenvironment.org@mail44.suw13.rsgsv.net] **On Behalf Of** Transport & Environment
> **Sent:** Monday, September 19, 2016 7:52 AM
> **To:** Charmley, William <charmley.william@epa.gov>
> **Subject:** All diesel car brands in EU are even more polluting than VW
>
> Dieselgate 1st anniversary View in your browser

This email contains images. Make sure you can see them.

As Dieselgate turns one year old, our new study reveals that Volkswagen is currently selling the least polluting 'Euro 6' diesel vehicles. Nonetheless, it also has the most grossly polluting Euro 5 vehicles on the road. The report *Dieselgate: Who? What? How?* also found that not one single brand complies with the latest air pollution limits for diesel cars and vans in real-world driving.



Greg Archer, clean vehicles director at T&E, said: *"One year after the US caught Volkswagen cheating, all carmakers keep selling grossly polluting diesel*

cars with the connivance of European governments. The automotive industry has captured its regulators, and European countries must now stand up for their citizens and stop this scandalous cover up. Only a recall of all harmful diesel cars will clean up our air and restore credibility in Europe's legal system."

29 million 'dirty' diesel cars and vans driving on Europe's roads today

T&E's calculations also show that today 29 million diesel cars and vans are driving on Europe's roads that we classify as 'dirty', meaning that, for Euro 5 cars, they are at least 3 times over the relevant NOx limit. Only one in four diesel vehicles registered since 2011 achieve these modest thresholds. These vehicles were approved for sale by national type approval authorities, mainly in Germany, France, the UK, Spain, Italy, Luxembourg, and the Netherlands. The largest number of 'dirty' diesels is found on French roads (5.5 million), followed by Germany (5.3 million), the UK (4.3 million), Italy (3.1 million), Spain (1.9 million) and Belgium (1.4 million).

"The true scandal of Dieselgate in Europe is national regulators turning a blind eye to the glaring evidence of test cheating with the sole purpose of protecting their national carmakers or their own business. This is killing tens of thousands of people annually. We need a European watchdog to stop EU member states protecting their national champions and to ensure the single market for vehicles operates in the interests of all citizens," Greg Archer said.

Download the full report

For more information, please contact:
Julia Poliscanova
Manager, Clean Vehicles and Air Quality
+32 (0)2 851 02 18
julia.poliscanova@transportenvironment.org

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Dieselgate: Who? What? How?

September 2016

a study by TRANSPORT & ENVIRONMENT

In house analysis by Transport & Environment
Published by Transport & Environment

For more information, contact:

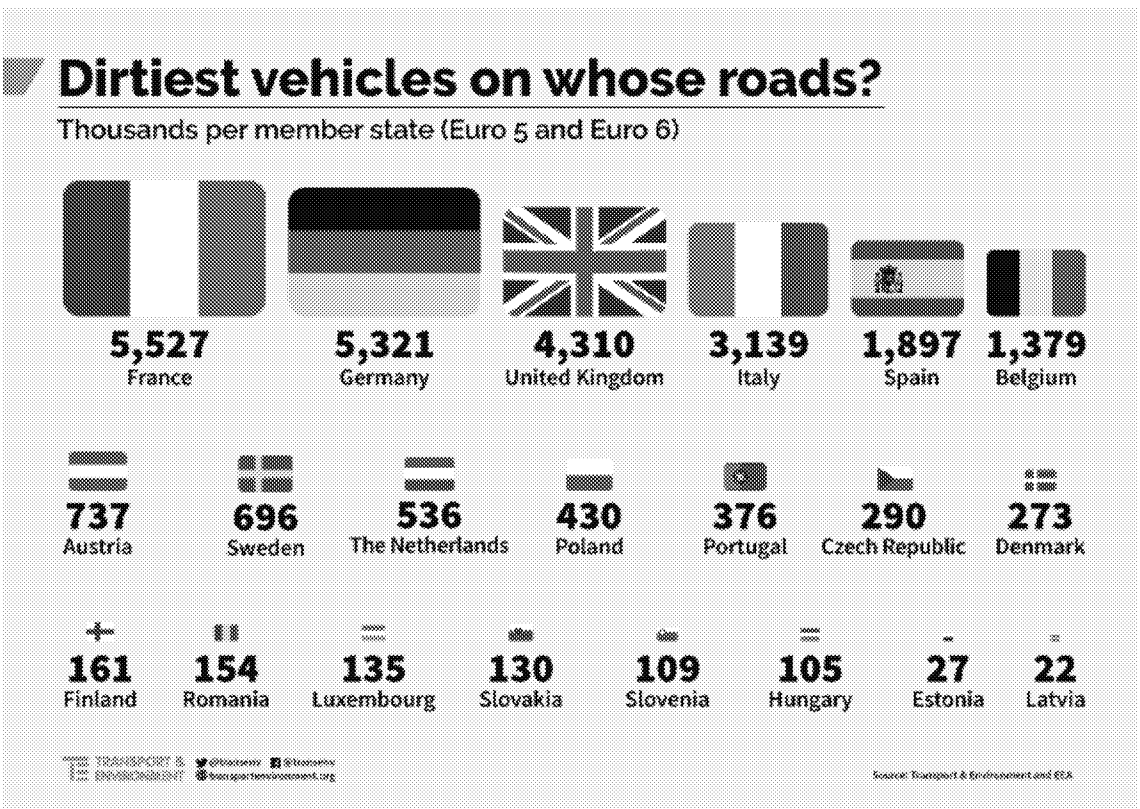
Greg Archer
Clean Vehicles Director
Transport & Environment
greg.archer@transportenvironment.org
Tel: +32 (0)2 851 02 25 / +32 (0)490 400 447 / +44 (0)79 70 371 224

ED_002825_00014897-00002

Executive Summary

This report, released on the first anniversary of the Dieselgate scandal, exposes the shocking number of dirty diesel cars on the EU's roads and the feeble regulation of cars by national authorities that have focused on protecting their own commercial interests or those of domestic carmakers. In the US, following the disclosure that VW had cheated emissions tests, justice has been swiftly and effectively delivered. This is in stark contrast to Europe where VW claims it has not acted illegally, no penalties have been levied and no compensation has been provided to customers. But the failure to penalize VW in Europe is the tip of the Dieselgate iceberg with an estimated 29 million grossly polluting modern diesel cars now in use, a number that is still growing. Over four in five cars that meet the Euro 5 standard for NOx in the laboratory (180g/1000km), and were sold between 2010-14, actually produce more than three times this level when driven on the road. Two-thirds of Euro 6 cars (most on sale since 2015) still produce more than three times the 80g/1000km limit when driven on the road. 69% of the dirty diesel cars were sold in France, Germany, Italy and the UK. These member states also approved most of the polluting diesel cars for sale.

	Estimated number of dirty diesel vehicles		Proportion of dirty vehicles of the total registered	
	Euro 5	*Euro 6*	*Euro 5*	*Euro 6*
Passenger Cars	21.4 million	4.7 million	82%	66%
Light Commercial Vehicles	2.2 million	0.7 million	62%	53%
Total	23.6 million	5.4 million	79%	64%



The manufacturers responsible for these vehicles include over: 4 million VWs; 3 million Renaults; 2 million Peugeot, Citroën, Mercedes and Audi cars.

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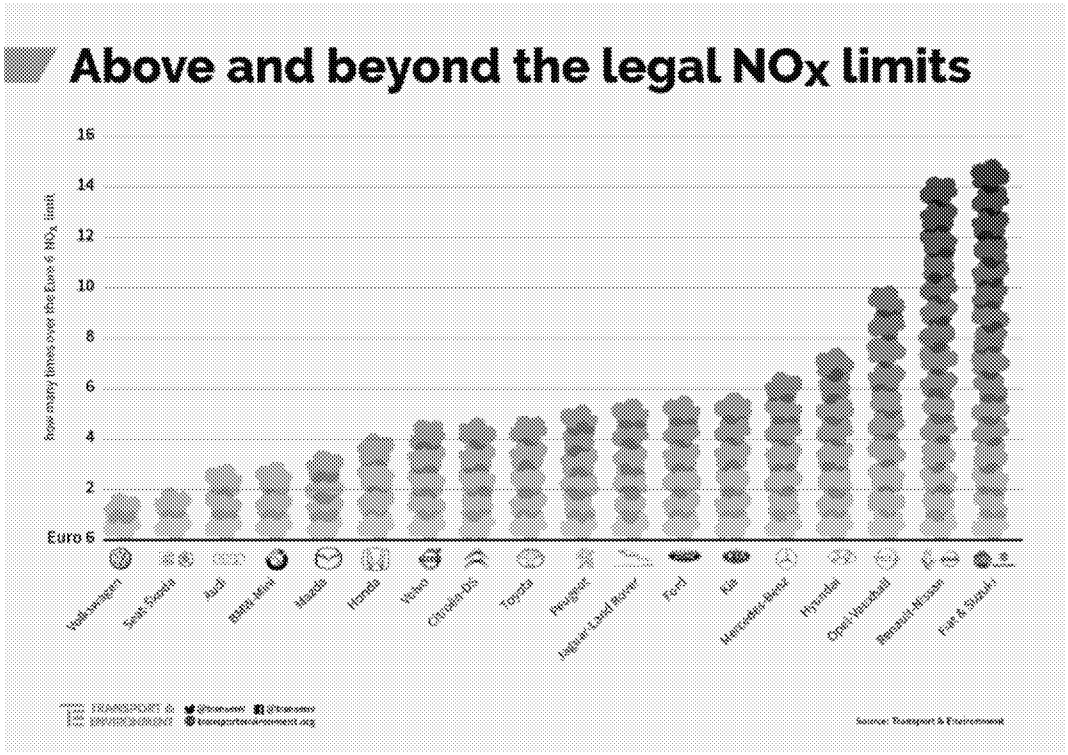

In addition to estimating the absolute numbers of dirty diesels manufactured, the report identifies which are the worst companies in terms of the level of emissions. For Euro 5 vehicles, the five worst performing companies were (in order of the highest emissions): Renault (including Dacia); Land Rover, Hyundai, Opel/Vauxhall (including Chevrolet) and Nissan. The best performing Euro 5 cars were made by (in order of lowest emissions first): Seat, Honda, BMW (including Mini), Ford and Peugeot. For current Euro 6 cars a different pattern emerges. The worst performers are: Fiat (including Alfa Romeo + Suzuki (to whom Fiat supply engines); Renault (including Nissan, Dacia and Infiniti); Opel/Vauxhall; Hyundai; and Mercedes. Somewhat counter intuitively the company producing the cleanest Euro 6 cars is VW Group with VW cars the cleanest followed by Seat, Skoda and Audi; BMW (including Mini) and Mazda. However, this cannot be claimed as evidence of VW Group 'learning its lesson'; the group brought its Euro 6 cars to market ahead of the Dieselgate scandal being exposed. VW Group's Dieselgate engines were mostly of the previous Euro 5 generation.

Dirty diesel cars are failing to operate their exhaust after-treatment systems for most of the time the car is driving, almost certainly illegally misusing a loophole in the rules governing the use of Defeat Devices. This is done partially to improve official fuel economy figures but also due to doubts about the durability of the emissions treatment systems carmakers have chosen to use. The excessive nitrogen oxides emissions that result are the principal cause of the high levels of nitrogen dioxide in cities that lead to the premature death of 72,000 EU citizens annually.

The claim by carmakers that they are allowed to turn down the exhaust controls when the car is driven on the road and operate them fully during a test is a gross misrepresentation of the regulations and such a practice is almost certainly illegal. The regulations are clear that the emission control systems should work fully during vehicles' normal use. Carmakers are required to provide type approval authorities with information on the operating strategy of the exhaust treatment system. National type approval authorities have turned a blind eye to the use of defeat devices leading to such widespread health and environmental impacts. They have done this because there is regulatory capture. Carmakers "shop around" for the best offer from the regulators that compete among themselves for type approving business. Some, for example,

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approval authorities KBA in Germany, CNRV in France and MIT in Italy, protect their national carmakers and shy away from scrutinising them too strictly. Others, like the VCA in the UK, RDW in the Netherlands or SNCH in Luxembourg see type approval as a lucrative business.

The figure shows which authority approved the 50 most polluting Euro 6 cars. It highlights that approvals are often done to support domestic manufacturers or as a business for the approval authority. This feeble system of approvals is exacerbated by technical services that are supposed to undertake tests but routinely only witness these in carmakers' own labs and are paid for their assistance. Sometimes the testing and approval organisations are even the same. Once the vehicle has been approved there is virtually no independent on-road checks to verify its performance in use due to a lack of will or resources.

Fixing the EU's failed system of vehicle approval and the resulting lethal air quality will involve a series of steps. Firstly there must be enforcement of defeat device legislation, including recall of cars. Cleaning up cars with illegal defeat devices will significantly improve air pollution in cities. If the member states will not act, the European Commission must bring infringement proceedings against countries that fail to enforce the law and coordinate an EU-wide recall programme. Secondly, there must be better tests and more of these. The new real-world driving emissions test is a step forward but details are still to be finalised and must be done quickly. Type approval tests must be complemented by far more in-service tests of cars on the road. Thirdly we need better regulators and independent oversight of their work. Regulators and testing organisations that fail to act in the public interest must be prevented from approving cars and distorting the single market. To assist with this, clearer and stronger regulations are required on both how to approve vehicles and detect defeat devices.

Ultimately Europe must end its diesel addiction. To do this diesel and petrol vehicle emissions limits should be equivalent, and member states should equalise taxes on diesel vehicles and fuel – the biases in favour of diesel must end. Electromobilty will ultimately solve the air pollution crisis in our cities; but the measures outlined in this report will make an important contribution to remediating the current problems in the short-term and also put the automotive industry on a more sustainable long-term path.

ED_002825_00014897-00005

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1. The problem with diesel cars

Published on the first anniversary of the Dieselgate scandal, this report details the causes and effects of, and the solutions to, the high levels of nitrogen oxides emissions from diesel cars. On 18 September 2015 the US Environmental Protection Agency (US EPA) announced that Volkswagen Group (VWG) was breaching its federal emissions legislation by fitting illegal software (defeat device) to cheat emissions tests. The device recognised that a vehicle was undergoing a laboratory test and lowered the emissions of nitrogen oxides (NOx) so that the vehicle achieved the strict US regulatory limit. On the road, the same vehicle produced up to 40 times more NOx emissions. VW has since admitted that the company fitted the illegal software to 11 million vehicles worldwide; 8.5 million of which are in Europe (and 500,000 in the US).

In the US justice has been swift, and meaningful penalties have been applied to compensate for the harm done and to discourage similar practices by other carmakers in future. Customers are being compensated, cars are being fixed or bought back. In the US wrongdoing by the car industry is penalised and emissions legislation met. This is not a persecution of a European company by the US Government, this is the way that things are done. US companies have been sanctioned similarly by the US EPA for other breaches of regulations.[1]

The progress in the US is in stark contrast to the EU. The German regulator Kraftfahrt-Bundesamt (KBA) has required the voluntary recall of affected cars and has agreed a programme to remediate the emissions. But there is no transparency as to exactly how the recalls will be conducted, or what the effect of the changes will be on the emissions of NOx or CO2 or the drivability of the car. No penalties have been levied on the company; VW obstinately refuses to compensate its customers and opposes a suite of cases being bought against it.[2] The European regulatory system, based on a system of 28 national type approval authorities implementing EU vehicle emissions regulations, is failing and this report shows how and explains why regulators refuse to act and how the interests of the carmaker are prioritised above those of citizens and the law. Chapter 3 explains the steps needed to fix the problems and end the regulatory capture that pervades the system.

Over the last 12 months investigations in Europe (notably the testing programmes in Germany, France and the UK) have shown that the scandal engulfing VW represents the tip of an iceberg. Most carmakers systematically manipulate cars to pass emissions tests through highly questionable and probably illegal means. This results in performance that achieves regulatory limits in a lab but exceeds these by 10 times and more when the emissions are measured on the road. Such behaviour that has been going on for at least six years and probably longer. Regulatory limits for NOx emissions are also breached by a significant margin when tested in conditions even slightly divergent from those prescribed in the EU test protocol (NEDC).[3] The principal reason for such gross exceedances is that carmakers routinely switch-off technologies that clean up the exhaust when the car is driven on the road, and only operate these fully during the narrow conditions of the tests. This is partially to improve official fuel economy figures but is also due to questions about the durability of the emissions treatment systems carmakers have used – specifically exhaust gas recirculation systems that pump hot exhaust gases with a lower oxygen content back into the cylinders to lower production of NOx. Investigations have revealed that national testing authorities have failed to scrutinise the way in which these exhaust after-treatment systems operate (despite a legal requirement for them to do so) and for a decade have turned a blind eye on this unprecedented maltreatment of emissions regulations.

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[1] US EPA database of infractions, https://www.epa.gov/enforcement/clean-air-act-vehicle-and-engine-enforcement-case-resolutions

[2] http://www.hausfeld.com/news/us/michael-hausfeld-appointed-to-plaintiffs-steering-committee-for-vw-emission

[3] Transport & Environment, https://www.transportenvironment.org/publications/dieselgate-continues-new-cheating-techniques

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Coinciding with the first anniversary of the Dieselgate scandal, this report exposes – largely using the data from national investigations – the shocking non-compliance by light-duty vehicles (LDVs) with the EU NOx emissions regulations on the road. Chapter 2 analyses the latest data on the number of highly polluting vehicles in use and sheds light on the defeat strategies employed by carmakers.

1.1. Risks of NOx exposure

Air pollution in Europe is persistently above the levels that the World Health Organisation (WHO) considers to be harmful to human health. The health risks of nitrogen dioxide (NO_2) have been extensively studied in recent years. NO_2 is a dangerous toxic gas which, when breathed in high levels for a short period, causes a range of adverse respiratory effects including airway inflammation in healthy people and increased respiratory problems in people with asthma or other pre-existing respiratory conditions. Long-term exposure is linked to contributing to lung cancer. It is also linked with a range of other abnormalities in children.

The 2015 EEA figures[4] have for the first time put the number of premature deaths caused by NO2 exceedances across Europe at 72,000 annually. The US EPA has estimated[5] that the pollutant exceedances caused solely by VW on its 500,000 vehicles with illegal software in the US caused 59 premature deaths. It is difficult to extrapolate to the EU but this would suggest that the defeat devices employed just by VW Group vehicles in the EU would lead to more than 1,000 deaths. NO2 is also a major precursor of ozone and particulate matter (in the form of nitrate aerosol).

NO_2 is both emitted by vehicles and formed from the natural conversion of other nitrogen oxides (NOx) that are also produced during combustion. NOx emissions limits are regulated for vehicles through Euro Standards, and the overall amount permitted in the air is regulated through EU ambient air pollution standards. However, it is estimated that 8 to 27% of Europe's urban population lives in areas of harmful exceedance.[6] While background concentrations and industrial emissions of NOx have decreased by an estimated 30% since 2003, the measured NO_2 annual mean concentrations in the air of cities have not followed the same downward trend. The European Environmental Agency (EEA) attributes this primarily to increased NO2 emissions from diesel vehicles, which in real-world driving conditions fail to correspond to the regulatory reductions agreed in legislation.[7] In urban areas these vehicles are responsible for the majority of NOx emissions, for example, around half of all NOx emissions in London.[8] As a result, the European Commission has opened infringement procedures for NO2 limit exceedances against 12 EU member states: Austria, Belgium, Czech Republic, Denmark, Germany, France, Hungary, Italy, Poland, Portugal, Spain, and the UK.[9]

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[4] European Environment Agency, http://www.eea.europa.eu/media/newsreleases/many-europeans-still-exposed-to-air-pollution-2015/premature-deaths-attributable-to-air-pollution

[5] *Science for Environment Policy*, http://ec.europa.eu/environment/integration/research/newsalert/pdf/emissions_from_2008_2015_vw_diesel_vehicles_fitted_with_defeat_devices_linked_to_59_premature%20deaths_444na1_en.pdf

[6] European Environment Agency, http://www.eea.europa.eu/data-and-maps/indicators/exceedance-of-air-quality-limit-3/assessment-1

[7] European Environment Agency, http://www.eea.europa.eu/themes/air/national-emission-ceilings/nec-directive-reporting-status-2015

[8] Mayor of London, 2010, *Clearing the air: The Mayor's Air Quality Strategy*

[9] Commissioner Karmenu Vella, hearing with the European Parliament's enquiry committee into the Emission Measurements in the Automotive Sector (EMIS), 12 September 2016

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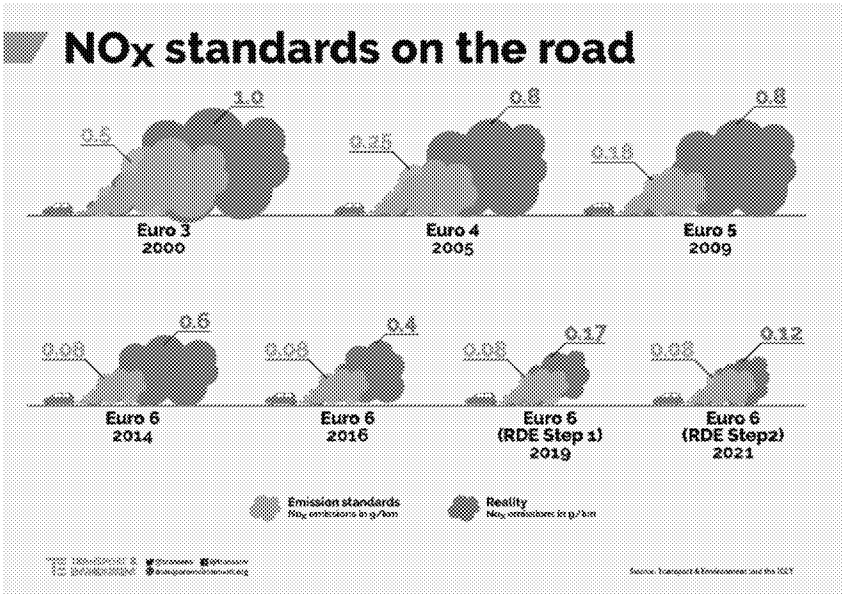
1.2. Reasons for high levels of NO_2



NOx emissions from vehicles' exhaust have been regulated across Europe since the early 1990s when the first set of Euro emission standards was introduced. The latest Euro 6 limits that allow no more than 80 mg of NOx per km on the road were agreed back in 2007 and entered force in September 2014 for new types and in September 2015 for all new vehicles. But manufacturers have consistently failed to produce diesel cars that meet these limits on the road. The gap between test and real-world performance was a factor of 2 for Euro 3 vehicles; more than 3 times for Euro 4; more than 4 times for Euro 5. When Euro 6 vehicles first entered the market in 2014 they typically produced around 600mg/km of NOx or 7.5 times the 80mg/km limit. More recent models are better, typically 5.5 times the limit (440mg/km). However, some models' exceedances are over 10 times.

There are two principal causes for the failure to meet limits on the road. First, the laboratory test procedure used to measure the pollutant and CO2 emissions in Europe today is totally unrealistic and undemanding and in no way representative of real-world driving conditions. There are too many flexibilities and loopholes in the testing protocols that allow carmakers to game the system. Secondly, the Dieselgate scandal has exposed the widespread practice of disabling emission control technologies in many conditions when the car is driven on the road. Manufacturers claim that they are utilising a legitimate loophole in the legislation. Chapter 2 of this report explains why their behaviour is not only immoral but how carmakers are incorrectly claiming use of the legal loophole – meaning that their emissions management almost certainly does not comply with Euro 5 and 6 regulations. Millions of diesel cars and vans in the EU not only produce huge levels of harmful emissions but, critically, also fail to comply with emissions regulations.

Many, but not all of the problems with the obsolete testing procedure will be resolved with the introduction of the a new real-world driving emissions (RDE) test which will be used to verify compliance with NOx emission limits from September 2017 for new types and September 2019 for all new vehicles. But some details of the RDE test are not yet complete. Notably the test has to account for the high emissions when the engine and exhaust treatment system are cold and during regeneration of the diesel particulate filter. Further work is necessary to make the new test truly representative to effectively control emissions. Furthermore in 2019 new vehicles will be permitted to emit 168mg/km during the test, falling to 120mg/km by 2021. In practice the Euro 6 limit of 80mg/km passed in 2007 will still not fully apply 14 years later as a result of watering down by EU member states under pressure from carmakers.[10]

The RDE test is much better, but will only be effective if it is properly conducted and the results independently scrutinised. The current system fails to do this with tests conducted in manufacturers' own laboratories overseen by testing services contracted by the carmaker. The results are approved by one of 28 national type approval authorities (TAAs) that are paid by the carmakers, so they lack independence and there is no oversight of their work. The regulatory capture of the system of type approval is at the

[10] https://www.transportenvironment.org/press/governments-double-and-delay-air-pollution-limits-diesel-cars

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heart of Dieselgate. Once a vehicle is approved the car can be sold EU-wide and only the authorising authority can remove the type approval or require the vehicle to be recalled. Carmakers "shop around" for the best offer from the regulators while the authorities compete among themselves for type approving business. Some, approval authorites like KBA in Germany, CNRV in France and MIT in Italy, protect their national carmakers and shy away from scrutinising them too strictly. Others, like the VCA in the UK, RDW in the Netherlands or SNCH in Luxembourg see type approval as a lucrative business that create a revenue stream and they again fail to be strict in order to maintain a flow of business and avoid upsetting their carmaker customers. All this results in a race to the bottom where carmakers choose authorities that let them pass the tests easily and where no one is overseeing the 28 TAAs to make sure they enforce the rules correctly.

The feeble system of approvals is exacerbated by the virtual absence of any clear separation of functions within the type approval system. In theory, national regulators (TAAs) should assign technical services (private companies like Dekra and TUeV Group) to carry out testing in their specialised labs to which carmakers should deliver representative vehicles. In practice, TAAs often act as both regulators and private testing services (and sometimes also as consultants to carmakers). Carmakers do most tests in their own laboratories with testing specialists "witnessing" the tests without executing them directly. Once the vehicle has been approved there is virtually no independent on-road checks to verify its performance in use due to a lack of will and resources.

In response to the Dieselgate scandal the European Commission has proposed the long-awaited reforms to vehicle approval in its Type Approval Framework Regulation (TAFR) proposed in January 2016. The reform is currently being negotiated and is expected to be finalised by the end of 2017. A tough negotiation is expected as the car industry seeks to protect its privileged relationship with national type approval authorities, and governments seek to protect either their car industries or approval agencies from effective scrutiny.

2. NO_x emissions from diesel cars

Transport & Environment has reanalysed NO_x emissions data from the national investigation reports prepared in France, Germany and the UK, and complemented this with additional information from Emissions Analytics (EA) EQUA Air Quality index[11] that grades the NO_x emissions from road tests EA has performed. In total, T&E has assembled a database of 541 tests of vehicle NO_x emissions and has extracted the evidence presented in this section to answer the following questions:

1. What are the dirtiest Diesel cars on the market today (Euro 6, sold since 2014)?
2. What are the dirtiest Diesels on the road today (Euro 5 cars sold between 2010 and 2015)?
3. How many dirty Diesel cars are on the road today?
4. How do manufacturers compare in their production of dirty Diesel cars?

2.1. What are the dirtiest new (Euro 6) diesel cars on the market today?

Previously[12], T&E identified 30 of the most polluting current (Euro 6) Diesel cars presently on sale in the EU highlighting this "Dirty 30". For this report, T&E has extended this analysis using the EQUA Air Quality Index results and has identified 52 (22 more) grossly polluting Euro 6 cars. Our analysis assesses the

[11] http://equaindex.com/equa-air-quality-index/
[12] https://www.transportenvironment.org/press/%E2%80%98dirty-30%E2%80%99-diesel-cars-mostly-approved-carmakers%E2%80%99-home-countries-%E2%80%93-report

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suspect test results for each model and explains what these show about the use of potential illegal defeat devices on these vehicles, which cause much higher emissions when the car is on the road than when it is being tested. National investigations were screening exercises designed to identify models with anomalous emissions. The EQUA Air Quality Index results are road tests conducted using Portable Emissions Measurement Systems (PEMS). The tests were not capable of determining conclusively the presence of defeat devices. For suspect vehicles, more detailed follow up is required – but none is underway. To identify the most polluting Euro 6 diesel cars, T&E filtered the results in the database we have assembled to select the worst tests by using the following criteria:

- RDE NO_x emissions over 400 mg/km (meaning 5 times the Euro 6 limit);
- On track/road NO_x emissions over 160 mg/km (2 times the Euro 6 limit);
- Widest possible selection of vehicle brands and market segments to illustrate the fullest possible spectrum of emissions problems.

The list includes: five Mercedes-Benz; four BMWs, Fords, Hyundais and Renaults; three Opel/Vauxhalls and Volvos but most major manufacturers have at least one highly polluting model. The data is notable for the low number of Volkswagen Group Euro 6 vehicles. Of the 25 tests on 8 Volkswagen models conducted in national investigations, only the Golf 2.0 TDI failed 1 test according to our thresholds (x2.4 on an on road NEDC). EA tested 7 Volkswagen models and only 1 Polo 1.4 TDI failed to meet our criteria.

Full 'Dirty 50' list of Euro 6

Brand	Model	Engine	Country of approval	Most suspicious test(s)[13]	Possible defeat strategy to examine
Audi	A8	3.0 TDI	DE	7	Thermal window (TW) + Test recognition (TR)
BMW	2 Series GT	216d	DE	2 + 7	TW + Hot restart (HR)
	5 Series VI	530d		2	
	4 Series	420d		7	TW
	X3	xDrive20d			
Citroën	C4 Picasso II	1.6 BlueHDi	FR	4	TW
Dacia	Sandero II	1.5 dCi 66 kW	FR	1 + 2 + 3 + 7	TW + HR
Fiat	500X	1.6 MultiJet	IT	7	TW
		2.0 MultiJet		6	Switch-off after 22 min
Ford	C-Max II	1.5 TDCi 88 kW 2.0 TDCi 110 kW	LU	1 + 3 + 7	TW + HR
	Focus III	1.5 TDCi	UK	5 + 7	TW + HR
	Kuga II	2.0 TDCi	LU	4	TW
	Mondeo IV		UK	5 + 7	TW + HR
Honda	CR-V IV	1.6 i-DTEC 4WD	UK	4 + 5 + 7	TW + HR
	HR-V II		BE	3	TW
Hyundai	i20 II	1.1 CRDi	UK	1 + 3 + 7	TW + HR
	i30 II	1.6 CRDi		5	TW + HR
	i40	1.7 CRDi	NL	7	TW

[13] The tests are the following: Hot NEDC on road (1), hot NEDC in lab (2), hot NEDC in a lab at 10°C (3), NEDC on track (4), hot NEDC on track (5), independent tests done by DUH (6) and RDE (7).

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	Santa Fe	2.2 CRDi	UK		
Infiniti	Q30	1.5d	UK	7	TW
Jaguar	XE	2.0d 120 kW	UK	1 + 5 + 7	TW + HR
Kia	Sportage III	1.7 CRDi	UK	5 + 7	TW + HR
Land Rover	Range Rover Evoque	2.0 TD4 132 kW	UK	1	TW + HR
Mazda	3 III	1.5d	DE	7	TW
	6 III	2.2d	UK	5	TW + HR
Mercedes-Benz	A Class III	A180d	DE	5 + 7	TW + HR
		A200d		4	TW
	C Class IV	C220d		1	TW + HR
	CLA Class	CLA200d		7	TW
	S Class VI	S350 Bluetec		1 + 2 + 3	TW + HR
	V Class III	V250d		1 + 2	TW + HR
Nissan	Qashqai II	1.6 dCi	FR	4	TW
Opel/Vauxhall	Mokka	1.6 CDTi	NL	4 + 5 + 7	TW + HR
	Zafira III	1.6 CDTi		1 + 3 + 4 + 7	TW + HR
	Insignia	2.0 CDTi	DE	1 + 3 + 5 + 7	TW + HR
Peugeot	3008	1.6 BlueHDi	FR	4 + 5 + 7	TW + HR
	5008	1.6 BlueHDi		4	TW
	508	2.0 BlueHDi			
Porsche	Macan	S Diesel	LU	1 + 3 + 7	TR + TW + HR
	Panamera	3.0 TD	LU	7	TW + TR
Renault	Captur	1.5 dCi 66 & 81 kW	FR	4	TW
	Mégane IV	1.5 dCi		7	TW + HR
	Kadjar	1.5 & 1.6 dCi		1 + 3 + 4 + 7	TW + HR
	Espace V	1.6 dCi		4 + 7	TW
Škoda	Octavia III	1.6 TDI	DE	5	TR + TW + HR
Ssangyong	Korando	220 e-XDi	ES	7	TW
	Rodius Turismo		NL		
Subaru	Forester	2.0D	LU	7	TW
Suzuki	Vitara IV	1.6 DDiS	NL	1 + 3 + 7	TW + HR
Toyota	Avensis III	2.0 D-4D	UK	5	TW + HR
Volkswagen	Polo	1.4 TDI	DE	7	TW + TR
Volvo	S60	D4	ES	7	TW
	V60	D3		1	TW + HR
	XC60	D5		7	TW

It is clear from the results that the 8.5 million Volkswagen vehicles affected by the Dieselgate scandal represent the tip of an iceberg of grossly polluting vehicles THAT IS STILL GROWING. Euro 6 cars are new models sold since this year and should represent the state of the art technology. Instead it is clear that many carmakers continue to use outdated and ineffective exhaust after-treatment systems on the cars in showrooms today. This includes premium manufacturers, e.g. Mercedes that uses a Renault engine in some smaller models. This is not a question of technology availability or unrealistic standards – there are models on the road today that achieve the emissions standards in normal use conditions:

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- BMW 3 Series VI (318d), X5 III xDrive30d, X1 II xDrive20d, 2 Series (218d & 220d), 1 Series II (118d);
- Peugeot 208 1.6 BlueHDi, 308 II 2.0 BlueHDi;
- Citroën C4 Cactus 1.6 BlueHDi, DS5 1.6 BlueHDi;
- Ford Fiesta VI 1.5 TDCi, Ecosport 1.5 TDCi;
- Mercedes-Benz C Class IV (C200d);
- Mazda 2 IV 1.5d, CX-3 1.5d, CX-5 2.2d;
- Audi Q7 II 3.0 TDI;
- Volkswagen Golf Sportsvan (2.0 TDI).

Manufacturers also successfully sell diesel cars in the US where the emissions limits are about half the levels in the EU. There is no excuse for polluting dirty Euro 6 cars and vans.

2.2. What are the dirtiest (Euro 5) diesels on the road today?

T&E has performed a similar analysis to identify the most polluting diesel cars on the road today. To compile the list T&E filtered the results of 235 RDE test results and 65 on track/road NEDC test results and identified Euro 5 tests that met the following criteria:

- RDE NO_x emissions over 540 mg/km (meaning 3 times the Euro 5 limit);
- On track/road NO_x emissions over 360 mg/km (2 times the Euro 5 limit when repeated on NEDC test);
- Widest possible selection of vehicle brands and market segments to illustrate the fullest possible spectrum of emissions problems.

It is likely that Euro 4 and older vehicles still on the road are more polluting but very few emission test results of those are available. The evidence also suggests that the introduction of Euro 5 vehicles in 2009 did not lead to any material reduction in NO_x emissions on the road. Euro 5 vehicles are typically between 2 and 6 years old. The average lifetime of a car in the EU is around 17 years – these cars will therefore be in use producing excessive NO_x emissions for more than another decade – until after 2025. This will particularly affect countries in Central and Eastern Europe where older cars are usually driven for longer.

'Dirty 40' list of Euro 5

Brand	Model	Engine	Country of approval	Most suspicious tests[14]	Possible defeat strategy to examine
Alfa Romeo	Giulietta III	2.0 JTDm 110 kW	**IT**	1 + 2 + 3	Hot Restart (HR) + Thermal Window (TW)
Audi	A1	1.6 TDI 66 kW	**LU**	4	TW + Test Recognition (TR)
	A6 IV	2.0 TDI 150 kW	**DE**	1 + 3	HR + TW + TR
Citroën	C3 II	1.4 HDi 51 kW	**FR**	4	TW
	C4 II	1.6 HDi 85 kW		5	HR + TW
	C4 Picasso II	1.6 HDi 85 kW		4	TW

[14] The tests examined are: **Test 1** - hot NEDC on road, **Test 2** - hot NEDC in lab, **Test 3** - hot NEDC in lab at 10°C, **Test 4** - NEDC on track, **Test 5** - hot NEDC on track (NEDC is New European Driving Cycle that is used to check compliance with EU emissions (CO2 + air quality) legislation in Europe).

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	C5 II	2.0 HDi 103 kW		4	TW
Dacia	Duster	1.5 dCi 81 kW	**FR**	4	TW
Fiat	Panda III	1.3 MultiJet	**IT**	1 + 2	HR + TW
Ford	Focus III	1.6 TDCi 85 kW	**UK**	4	TW
		2.0 TDCi 103 kW		1	HR + TW
	Mondeo	2.0 TDCi		5	HR + TW
Honda	CR-V IV	2.2 i-DTEC 4WD	**UK**	5	HR + TW
Hyundai	i30 II	1.6 CRDi 81 kW	**UK**	4 + 5	HR + TW
	ix35	1.7 CRDi 85 kW		5	HR + TW
		2.0 CRDi 100 kW		1 + 3	HR + TW
	Santa Fe III	2.2 CRDi 145 kW 4WD		5	HR + TW
Jeep	Cherokee IV	2.0 MultiJet 125 kW	**NL**	1 + 2 + 3 + 4	HR + TW
Kia	Sportage III	1.7 CRDi 88 kW	**UK**	4	TW
		2.0 CRDi 4WD		5	HR + TW
Land Rover	Freelander II	TD4 or SD4 4WD	**UK**	5	HR + TW
	Range Rover IV	TDV6		1 + 5	HR + TW
Mercedes-Benz	E-Class IV	E250 CDI	**DE**	5	HR + TW
Nissan	Qashqai I	1.6 dCi	**FR**	5	HR + TW
	Qashqai II	1.5 dCi	**ES**	5	HR + TW
Opel/Vauxhall	Corsa IV	1.3 CDTi	**DE**	5	HR + TW
	Astra IV	1.7 CDTi		5	HR + TW
	Insignia	2.0 CDTi		5	HR + TW
Peugeot	208	1.4 HDi 51 kW	**FR**	5	HR + TW
	807	2.0 HDi 103 kW		4	TW
Porsche	Cayenne II	Diesel	**DE**	4	TW + TR
Renault	Clio IV	1.5 dCi 66 kW	**FR**	4	TW
	Scenic III	1.5 dCi 81 kW		4	TW
		1.6 dCi		4	TW
	Laguna III	2.0 dCi 129 kW		4	TW
	Espace IV	2.0 dCi 96 kW		4	TW
Škoda	Octavia II	1.6 TDI	**UK**	5	HR + TW + TR
Toyota	Yaris III	1.4 D-4D	**UK**	4	TW
Volkswagen	Polo V	1.2 TDI	**DE**	1	HR + TW + TR
	Beetle III	2.0 TDI 103 kW		1 + 2	HR + TW + TR
	Passat VII	2.0 TDI 103 kW		1 + 2	HR + TW + TR
	Tiguan I	2.0 TDI 103 kW		4	TW + TR
	Sharan II	2.0 TDI 103 kW		4	TW + TR
Volvo	V40 II	D2	**NL**	5	HR + TW

There are models on the road that achieve the Euro 5 air pollution standards in normal use conditions including the BMW 1 Series I (116d); the Citroën C5 II (1.6 HDi) and the Toyota Auris II (2.0 D-4D). If these manufacturers were able to produce acceptable NO_x emissions on these models it begs the question why the performance of other manufacturers and models was so much worse and why approval authorities allowed such grossly polluting cars on the road.

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2.3. How many grossly polluting diesel cars are on the road today?

A typical Euro 5 car manufactured between 2009 and 2015 emits around 800 g of toxic NO_x every 1000 km driven. In contrast more modern Euro 6 cars are typically producing around 350 g/1000 km. There are also significantly more Euro 5 Diesel cars on the road today compared to Euro 6, although the numbers of the latter are growing. If we are to tackle the NO_2 pollution afflicting European cities it is important to make new cars cleaner but also clean up the grossly polluting older ones.

T&E has estimated the number of grossly polluting cars on the EU's roads and the country in which these were first registered. The analysis uses the database of vehicle sales compiled by the European Environment Agency to monitor CO_2 emissions. Information on NO_X emissions, as previously mentioned, was obtained from the three national emission investigation plus the EQUA Air Quality Index by EA. The test used by EA is similar to the RDE test procedure that will be mandatory in the EU from September 2017 and uses Portable Emissions Measurement System (PEMS) technology to measure emissions on public roads. All of these tests give a reliable overview of the emissions performance of most engines used by carmakers in Europe. For the purposes of this research, the grossly polluting vehicle is defined as meeting the following criteria:

- RDE NO_x emissions above 3 times the limit (540 mg/km for Euro 5 and 240 mg/km for Euro 6);
- On track/road NEDC NO_x emissions above twice the limit (360 mg/km for Euro 5 and 160 mg/km for Euro 6);

We separated 'dirty' vehicles into engine families that use the same engine. For instance, the 1.6-litre diesel engine developed by Fiat is used by the whole Fiat-Chrysler Group (including Alfa Romeo, Chrysler, Fiat, Jeep and Lancia in Europe); also by Suzuki and by Opel/Vauxhall, whose Combo is a clone of the Fiat Doblò. This approach enabled T&E to construct estimates of the "dirty" models and brands, while the EEA registrations database shows where these models were first registered and most probably still driven. As the registration figures in EEA databases are on an annual basis, we focused our counting process from 2011 to 2015 inclusive. The split of the vehicles between the two main categories (passenger cars and light commercial vehicles, or LCVs) respects the method used by the EEA as cars and vans have separate databases (which for vans starts in 2012 only). To understand the proportion of "dirty" vehicles, we compared the estimated number of dirty Euro 5 and Euro 6 diesel vehicles with the total number of diesel vehicles registered in the same period. It should be noted that the difference between the total number of registered vehicles and the number of identified "dirty" vehicles is not the total number of "clean" vehicles since T&E does not have a comprehensive database of all engine families' sales or NO_x emissions, especially for LCVs. Our estimates are therefore conservative. In total around 400,000 registered vehicles could not be included in the analysis because of the lack of data.

The estimates of the number of "dirty" Euro 5 and Euro 6 vehicles are summarised below:

Category	Number of suspected dirty Diesel vehicles		Total number of Diesel vehicles registered		Dirtiness ratio	
	Euro 5	*Euro 6*	*Euro 5*	*Euro 6*	*Euro 5*	*Euro 6*
Passenger Cars	21.4 million	4.7 million	26.2 million	7.1 million	82%	66%
Light Commercial Vehicles	2.2 million	0.7 million	3.5 million	1.4 million	62%	53%
Total	23.6 million	5.4 million	29.7 million	8.5 million	79%	64%

T&E estimates there are around 29 million "dirty" Euro 5 and 6 diesel vehicles (cars and vans) on the European roads, which corresponds to about 76% of all diesel vehicles registered over the 5 years

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assessed. These cars will typically be on the road for 10 – 15 years. To address the hazardous NO_2 pollution in cities and reduce the 72,000 premature deaths they cause these cars need to be cleaned up and there are strong legal arguments why carmakers should be required to do this. Included within this figure is 5.4 million "dirty" Euro 6 cars and vans. This is significantly less because the vehicles have only been marketed since 2014 and our figures only include sales in 2015 and are therefore conservative. However, each year the number of Euro 6 vehicles is increasing and the problem growing. New RDE tests introduced in 2017 will reduce emissions from these cars and vans but there is a legacy problem affecting these early Euro 6 vehicles with high emissions. Type Approval Authorities should be re-examining test results for these vehicles and recall them where they are misuse the defeat device exemption.

The table below gives an indication on how these vehicles are distributed per each EU Member State. The biggest European car markets (France, Germany, Italy and the UK) encompass about two thirds of the 'dirty' fleet. These Member States also approved most of these polluting vehicles.

Member State	Number of dirty Diesel cars on the roads for the EU27[15] (rounded figures)		
	Euro 5	*Euro 6*	*Euro 5 and Euro 6*
Austria	628,000	109,000	737,000
Belgium	1,180,000	200,000	1,380,000
Czech Republic	229,000	61,000	290,000
Denmark	229,000	44,000	273,000
Estonia	21,000	5,000	27,000
Finland	139,000	22,000	161,000
France	4,620,000	904,000	5,530,000
Germany	4,450,000	873,000	5,320,000
Hungary	84,000	21,000	105,000
Italy	2,630,000	513,000	3,140,000
Latvia	18,000	4,000	22,000
Luxembourg	114,000	21,000	135,000
Netherlands	440,000	96,000	536,000
Poland	352,000	77,000	430,000
Portugal	295,000	80,000	376,000
Romania	123,000	31,000	154,000
Slovenia	91,000	18,000	109,000
Slovakia	107,000	23,000	130,000
Spain[16]	1,420,000	475,000	1,900,000
Sweden	561,000	135,000	696,000
United Kingdom	3,460,000	849,000	4,310,000

France has the biggest number of the 'dirty' Euro 5 and 6 cars on its roads, closely followed by Germany. Indeed, the German diesel market was larger but national manufacturers sell disproportionately well in their home countries and the test results show that there are more dirty French diesels than German

[15] Bulgaria, Cyprus, Greece, Ireland, Lithuania and Malta do not appear in this table because the data quality is variable from a year to another.

[16] The estimation of dirty Euro 5 vehicles driven in Spain is underestimated because of the lack of data for 2013.

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ones[17]. This is opposite to the claims of the French Transport and Environment Minister when she launched the Commission Royal to investigate in France.

The table below lists a top down ranking of 20 biggest manufacturers with the most 'dirty' sales. It is notable that half of the 'dirty' Euro 5 fleet are manufactured by five carmakers: the two main brands of Volkswagen Group (Volkswagen and Audi) and the three French makers (Citroën, Peugeot and Renault). On average, French carmakers[18] produce a higher share of 'dirty' Euro 5 Diesel vehicles (92%) than their German competitors[19] (80%). However, this 'dirty' phenomenon concerns almost all brands sold in Europe, from domestic groups to Asian and American companies, from cost-effective models (Chevrolet, Suzuki, etc.) to premium/luxury ones (Porsche, Jaguar, etc.).

Manufacturer	Origin of the brand/parent company	Number of dirty Euro 5 Diesel vehicles sold (rounded figures)
Volkswagen	Germany	3,610,000
Renault	France	2,407,000
Peugeot	France	1,870,000
Citroën	France	1,806,000
Audi	Germany	1,799,000
Mercedes-Benz	Germany	1,605,000
Opel/Vauxhall	Germany/United States	1,498,000
Ford	United States	1,212,000
BMW-Mini	Germany	1,008,000
Nissan	Japan	865,000
Fiat-Lancia	Italy	844,000
Škoda	Czech Republic/Germany	733,000
Volvo	Sweden/China	666,000
Dacia	Romania/France	661,000
Hyundai	South Korea	584,000
Kia	South Korea	548,000
Jaguar-Land Rover	UK/India	444,000
Toyota	Japan	349,000
Seat	Spain/Germany	348,000
Alfa Romeo	Italy	192,000

For Euro 6 a different picture emerges.

Manufacturer	Origin of the brand/parent company	Number of dirty Euro 6 Diesel vehicles sold (rounded figures)
Renault	France	699,000
Mercedes-Benz	Germany	620,000
Peugeot	France	464,000
Volkswagen	Germany	446,000
BMW-Mini	Germany	410,000

[17] The distribution per manufacturer concern passenger cars and light commercial vehicles.
[18] It includes Peugeot, Citroën from PSA Group and Dacia, Nissan and Renault, as these brands use Renault's Diesel engines and are members of the same Alliance.
[19] It includes BMW and Mini, Mercedes-Benz, Opel/Vauxhall and Volkswagen Group without counting Porsche.

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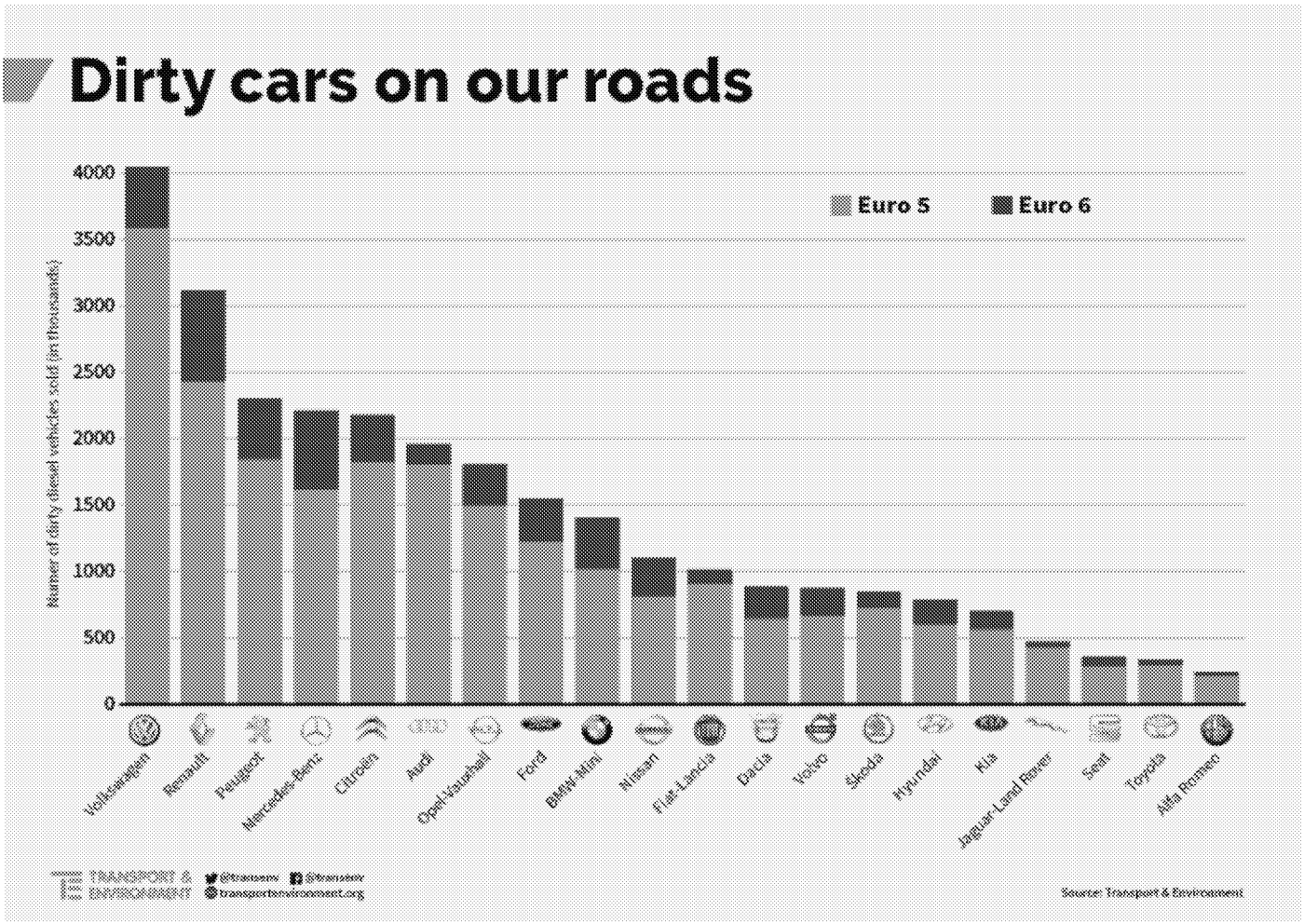
Citroën	France	379,000
Ford	United States	341,000
Opel/Vauxhall	Germany/United States	311,000
Nissan	Japan	277,000
Dacia	Romania/France	200,000
Volvo	Sweden/China	183,000
Hyundai	South Korea	165,000
Audi	Germany	163,000
Kia	South Korea	156,000
Škoda	Czech Republic/Germany	123,000
Fiat-Lancia	Italy	116,000
Seat	Spain/Germany	71,000
Jeep	United States/Italy	52,000
Honda	Japan	48,000
Jaguar-Land Rover	UK/India	40,000

Dirty Euro 5 & 6 combined



2.4. Which manufacturers produce the dirtiest Euro 5 cars?

The previous section calculated the amount of grossly polluting cars and vans in use. But how 'dirty' are different carmakers' vehicles? To get a better understanding of this aspect, T&E has developed a ranking system based on all the test results available in our NO_x database (235 RDEs and 65 on track/road NEDCs). For Euro 5 vehicles T&E's ranking uses the Emissions Analytics methodology and classifies the NO_x test results from the national investigations into the categories listed below.

Ratings by Emission Analytics[20]	NO_x emission range (mg/km)	Exceedance factor range (-)	Average exceedance factor (-)
C	120-180	0.7-1.0	0.8
D	180-250	1.0-1.4	1.2
E	250-500	1.4-2.8	2.1
F	500-750	2.8-4.2	3.5
G	750-1000	4.2-5.6	4.9
H	> 1,000	> 5.6	7.8 (RDEs) 10 (NEDCs)

For on track/road NEDC tests, T&E applied a tolerance threshold of 2 times over the Euro 5 limit; and for the RDE tests - 3. In order to use these NEDC data in combination with those for RDE a weighting factor of 1.5 has been assigned to every NEDC NO_x result to have all exceedance factors on the same scale. For the H category with NO_x emissions higher than 1,000 mg/km, the average exceedance factors used are the following:

- 7.8 for RDE tests, which corresponds to the average exceedance factor for RDE tests done by national commissions with an individual exceedance factor equal or higher than 5.6;
- 10 for NEDC tests, which corresponds to the average exceedance factor for NEDC tests done by national commissions with an individual weighted exceedance factor equal or higher than 5.6.

Once every test of each category gets its average exceedance factor, an average result per manufacturer can be calculated. Manufacturers with a test sample lower than five results are not considered in this ranking or, where possible, have been counted with their parent company to obtain a sufficient sample.

Manufacturer[21]	Average result	Size of test sample
1 Seat	3.2	8
2 Honda	3.3	8
3 BMW + Mini*	3.4	23
4 Ford	3.8	16
5 Peugeot	3.8	17

[20] The ratings A and B are not taken into account for T&E's Euro 5 ranking as no Diesel nor Diesel-hybrid vehicles got one of these ratings in Emission Analytics' index.

[21] The brands with an asterisk have been counted with their parent company to get a big enough sample. This comment concerns Alfa Romeo, Chevrolet, Dacia, Jeep and Mini.

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6	Citroën	3.9	13
7	Toyota	4.0	8
8	Audi	4.4	16
9	Škoda	4.4	12
10	Mercedes-Benz	4.6	15
11	Volkswagen	4.8	33
12	Volvo	5.6	15
13	Jaguar	5.9	6
14	Kia	6.0	11
15	Alfa Romeo* + Fiat + Jeep*	6.3	11
16	Nissan	6.6	13
17	Chevrolet* + Opel/Vauxhall	7.0	18
18	Hyundai	7.2	17
19	Land Rover	7.6	17
20	Dacia* + Renault	7.9	12

In our analysis Mazda and Smart achieved an average exceedance of less than 3 times the Euro 5 limit (2.8 both), but the size of the test sample is too small to make these brands appear in our Euro 5 ranking. In contrast Porsche and Jeep are the two brands that get the worst average (8.5 and 9.3 respectively) but are not ranked separately due to a similarly low sample size.

What the above results show is that there is widespread non-compliance with the Euro 5 NO_x emission limits across industry with none of the carmakers meeting the standard on the road. The exceedances, on average per fleet, range from 3 times the limit to almost 8 times, with the latter resulting in 1.5 g of NO_x per km on the road. European as well as Asian and American manufacturers have excessively high emissions on the road, with the Volkswagen Group vehicles fitted with the illegal defeat not performing any worse than the vehicles by other manufacturers; and even considerably better than the Euro 5 cars manufactured by Renault, Opel and Fiat.

2.5. Which manufacturers produce the dirtiest Euro 6 cars?

T&E also used the same database to identify the dirtiest Euro 6 manufacturers using the data from the national investigations and Emissions Analytics (around 150 RDE tests and 90 NEDC on track test results).

Ratings by Emission Analytics	NO_x emission range (mg/km)	Exceedance factor range[22] (-)	Average exceedance factor (-)
A	< 80	< 1.0	0.5
B	80-120	1.0-1.5	1.3
C	120-180	1.5-2.3	1.9
D	180-250	2.3-3.1	2.7
E	250-500	3.1-6.3	4.7
F	500-750	6.3-9.4	7.8
G	750-1000	9.4-12.5	10.9
H	> 1,000	> 12.5	13.5 (RDEs) 16.1 (NEDCs)

[22] The exceedance factors used in this table are related to the Euro 6 NO_x limit (80 mg/km).

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The method was identical to the one used for the Euro 5 ranking:

- NEDC test results are weighted with a 1.5 factor to have all the exceedance factors on the same scale;
- RDE results and weighted NEDC results are classified by categories (A to G), following the table above;
- for the H category, RDEs with an individual exceedance factor equal or above to 12.5 times the Euro 6 NO_x limit are assigned with the average exceedance factor of 13.5. NEDCs with an individual weighted exceedance factor equal or above to 12.5 times the Euro 6 NO_x limit are assigned with the average exceedance factor of 16.1.
- the average result is calculated for each manufacturer and potentially with its parent company if the size of the test sample is too small (below five tests).

The results, from better to worse performing, are as follows:

	Manufacturer[23]	Average result	Size of test sample
1	Volkswagen	1.8	23
2	Seat* + Škoda	2.1	8
3	Audi	2.7	15
4	BMW + Mini*	3.0	26
5	Mazda	3.6	15
6	Honda	4.3	5
7	Volvo	4.5	13
8	Citroën + DS*	4.6	8
9	Toyota	4.7	5
10	Peugeot	5.3	10
11	Jaguar + Land Rover*	5.7	13
12	Ford	5.8	15
13	Kia	5.9	6
14	Mercedes-Benz	6.4	23
15	Hyundai	7.7	8
16	Opel/Vauxhall	10.0	14
17	Dacia* + Infiniti* + Nissan* + Renault	14.4	19
18	Alfa Romeo* + Fiat* + Suzuki*	15.1	5

The dirtiest manufacturer of Euro 6 vehicles is the Fiat Chrysler Group (including Alfa Romeo). The Renault Group also performed poorly (including Nissan, Infiniti and Dacia), as does Opel/Vauxhall. Porsche also performed badly (average of 13.5) but the sample of tests is too small to include in the ranking. Surprisingly some premium manufacturers perform poorly including Mercedes (that uses some Renault engines), Infiniti and Jaguar-Land Rover. The Euro 5 models from these brands performed poorly too. The current shift to Euro 6 has been poorly delivered by Ford, Mercedes-Benz and Peugeot as their respective average results are significantly worse than for Euro 5 models. If Mercedes' models powered by Renault's diesel powertrains are not included, the average for the German premium brand would be 5.2, at the same level as Peugeot, instead of 6.4.

[23] The brands with an asterisk have been counted with their parent company to get a big enough sample. This comment concerns Alfa Romeo, Dacia, DS, Fiat, Infiniti, Land Rover, Mini, Nissan and Seat. Suzuki is counted with Alfa Romeo and Fiat because the Japanese car maker uses Fiat's Diesel engines for its models. The tested Infiniti model uses Renault's Diesel engine and not one from Mercedes-Benz, hence Infiniti is counted with its parent company, Nissan.

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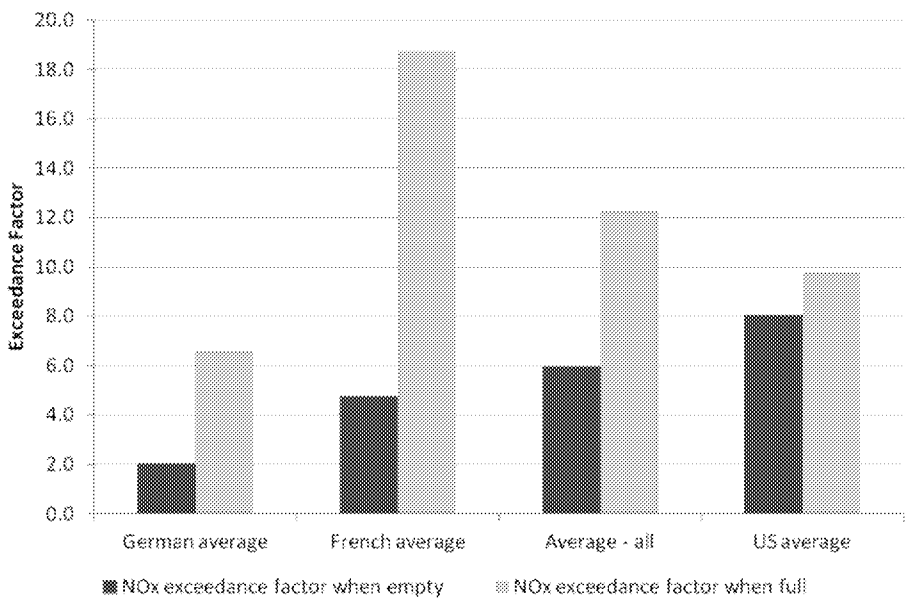
Several carmakers' Euro 6 vehicles are notably better than their Euro 5 performance. This includes Volvo and Volkswagen Group (except Porsche) that achieve typically a performance below 3 times the Euro 6 NO_x limit. There has been a considerable improvement from Volkswagen for its main brands in the transition from Euro 5 to Euro 6.

The analysis shows it is possible to get cleaner diesel vehicles on the road today with the current level of technology – it is the carmaker that chooses whether to deploy the technology and utilise it to its potential. Seat and Škoda are positioned as affordable brands of Volkswagen Group, showing that, with economies of scale, it is possible to make effective after-treatment systems and affordable cars with low emissions, if the manufacturers also have the will to calibrate their engines properly.

2.6. Dirty vans

Little data has been published to date about NO_x emissions from vans but some results are available from Emissions Analytics that has examined the effect of payload on NO_x emissions for Euro 5 LCVs[24]. For this EA has tested a small sample of Euro 5 vans on two tests: one test with an empty vehicle and one with 100% payload. The results show that the average exceedance factor is 5.9 times when empty; which raises to 12.2 times when tested with a full payload. The impact of load varied from vehicle to vehicle. For example, Volkswagen produces the cleanest van for NO_x when empty but the emissions rise to 225% of the limit when full. In contrast the Ford vans, while having high unladen emissions of 7.1 times the limit; barely increased when full (7.6 times).



A small number of vans tests were undertaken by the national investigations in Germany, France and the UK (9 tests on Euro 5 vans). On average, NO_x emissions were 9.9 times the Euro 5 limit on the road (results from 5.2 to 14 times included 3 big vans and 2 pick-up trucks). NEDC tests conducted on the road also showed very high emissions averaging 6.8 times the Euro 5 limit (results from 2.8 to 12.5 times included 4 small vans, 3 big vans and 2 pick-up trucks). These results are alarming and indicate much more investigation of van emissions is required.

[24] http://emissionsanalytics.com/cargo-weighs-heavily-for-some-lcvs/

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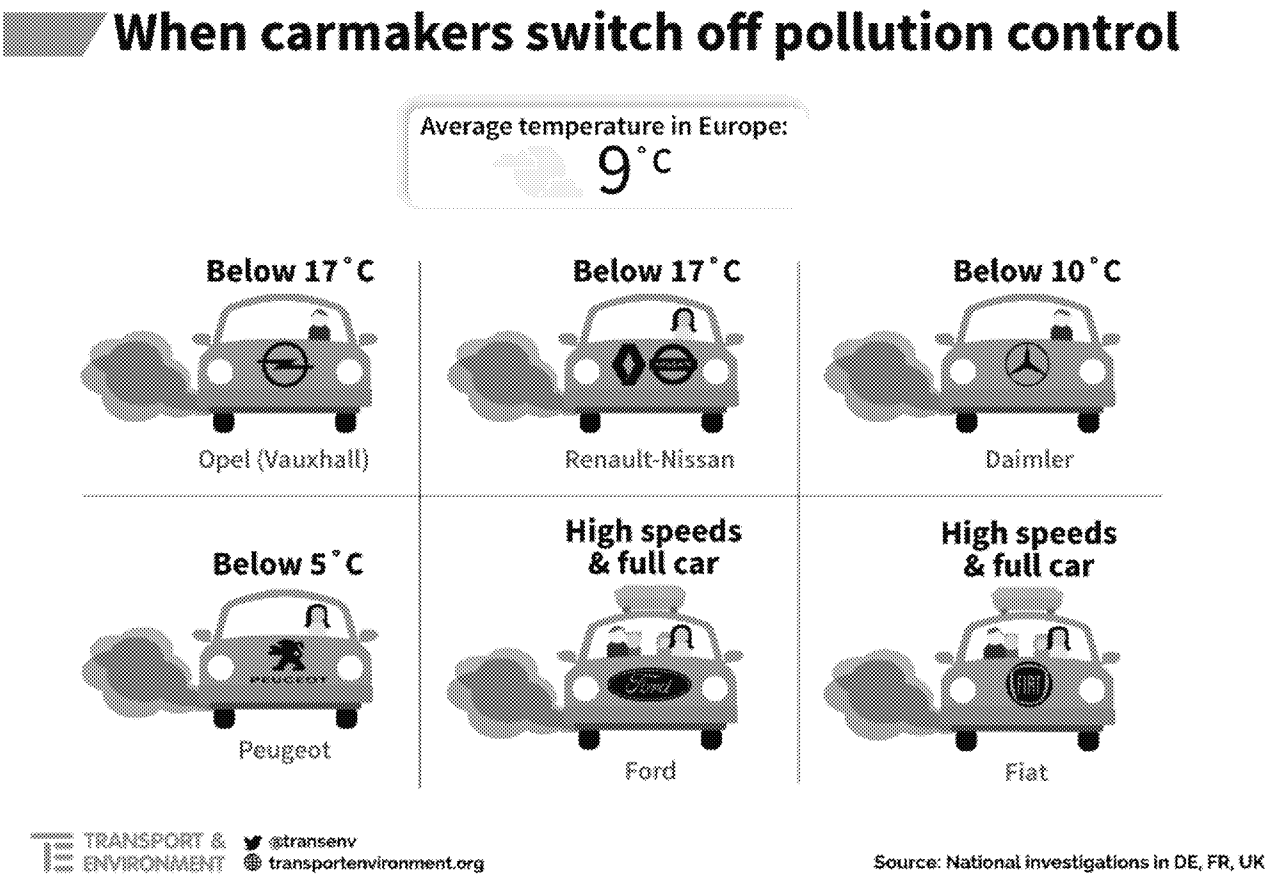
2.7. Defeat strategies and their illegality

The emissions tests reanalysed by T&E clearly point to a number of different cheating techniques used by carmakers that result cause high NO_x emissions. While these tests are not detailed enough to definitely determine the presence of illegal defeat devices, they clearly illustrate where further investigations and/or enforcement activity are needed. Techniques which significantly raise emissions on the road include the use of:

1. Thermal window defeat device
2. Hot restart defeat device
3. Cycle detection defeat device.

Almost all of the dirty models identified show the presence of a **"thermal window" defeat device**. These switch off or lower the effectiveness of the exhaust treatment systems at temperatures below those typically used during laboratory tests (23 - 29°C). Because the national testing investigations were mostly undertaken in winter and early spring, tests conducted on track or road produced high emissions highlighting that the cars were turning down or switching off the emission control systems during these tests. Manufacturers claim such behaviour is needed to protect the engine but the temperatures at which the exhaust treatment effectiveness is lowered is much higher than necessary in many models. This is demonstrated by Renault which has voluntarily agreed to extend the operating range for full functioning of its exhaust treatment system to between 5°C and 40°C from below 17°C and above 35°C for some models. Such wide thermal windows should *not* have been allowed by approval authorities and almost certainly constitute illegal defeat devices. At a minimum, further investigations are needed to determine whether the original approval was granted incorrectly; and whether the manufacturer provided incorrect or misleading information. If so, penalties should be applied and the recalls made mandatory.



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The second type of defeat device relates to **"hot restarts".** Again a high number of the dirty models on the road show much higher emissions after a hot engine restart than when the engine is cold. Manufacturers' explanation – that high emissions are generated by hotter engine temperatures and pressures experienced at warm restarts – is "bogus"[25] as the emissions generated are both a function of the combustion and effectiveness of the after-treatment that should be much better when hot, as found in data obtained by the ICCT from the EPA[26]. High warm start emissions are highly suspicious and possibly suggest that during a cold start a different and more effective engine and exhaust calibration is being used (as the EU test mandates cold starts). If so this would constitute an illegal defeat device.

In May 2016 allegations of a **third defeat device** came to light. It was reported that several tests by the German type approval authority (KBA) had found evidence that the exhaust treatment system in some Fiat models would switch itself off after 22 minutes[27]. Emissions tests normally run for around 20 minutes. Despite the Italian Transport Ministry (that approved these cars) denying the accusation, KBA are currently asking the European Commission to investigate Fiat 500X models for the presence of this defeat device. If such a device is proven it is undoubtedly illegal.

Whether or not the various defeat devices are legal in Europe has been the subject of a lengthy debate with manufacturers claiming they are using a legal loophole. Under EU law, defeat devices (defined as any sensor or equipment that senses different parameters to alter the operation of emission control systems) are banned apart from a few exemptions, including to protect the engine against damage and ensure safe operation. The Euro 5/6 Regulation 715/2007 (EC), in its article 5, stipulates the following:

1. The manufacturer shall equip vehicles so that the components likely to affect emissions are designed, constructed and assembled so as to enable the vehicle, in normal use, to comply with this Regulation and its implementing measures.
2. The use of defeat devices that reduce the effectiveness of emission control systems shall be prohibited. The prohibition shall not apply where:
    a) the need for the device is justified in terms of protecting the engine against damage or accident and for safe operation of the vehicle;
    b) the device does not function beyond the requirements of engine starting;
    c) the conditions are substantially included in the test procedures for verifying evaporative emissions and average tailpipe emissions.

It is the above derogation, notably the need to protect the engine that the majority of carmakers are using to justify the deployment of the defeat strategies described above. However, carmakers are misusing the derogation and therefore the defeat strategy is probably illegal for a number of reasons:

1. Such a defeat device must be **necessary**. In the case of a thermal window for example, ambient temperature is not the key parameter for EGR operation; the exhaust temperature is much more important and is affected by many factors in addition to the ambient temperature. In the US manufacturers are only allowed to switch off exhaust clean-up technologies when the outside temperature drops below -3°C;
2. The law clearly stipulates that the defeat device is justified if it is used to protect the **engine**, not separate components. Exhaust systems such as EGR are components and the need to protect their durability cannot be used as an argument;

[25] http://www.theicct.org/blogs/staff/emissions-test-defeat-device-problem-europe-not-about-vw
[26] Ibid.
[27] http://www.bild.de/bild-plus/geld/wirtschaft/abgas-skandal/auch-fiat-betruegt-mit-illegaler-software-45905214,var=x,view=conversionToLogin.bild.html

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3. The exemptions must be used to guarantee **safe operation of the vehicle**. A loss of durability of the EGR or another exhaust after-treatment system does not make the vehicle unsafe as this will not lead to any dangerous incident such as fire;
4. The Euro 5/6 law requires the vehicles to comply with emission standards in **normal use**, which means that the permanent durability of the technologies used to reduce emissions must be checked over a total driving distance of 160,000 km;
5. Finally, disabling emission control technologies in many real-world driving conditions goes against the very aim of the law (detailed in recitals) to **achieve air quality goals**, such as improve air quality and help comply with EU ambient air pollution limits.

To summarise, the current industry interpretation of the regulations is inappropriate and their use of defeat devices – almost certainly illegal. Emission control systems should work fully during vehicles' normal use. The above derogations are only justified if absolute necessity to protect the engine from damage/accident, not for mere component protection and durability concerns, which is currently the case because car manufacturers chose to use cheaper and less reliable materials and designs. When it comes to safety, no-one would allow a switch-off device that reduces braking effectiveness or changes the door locking system under low outdoor temperatures – same applies to emissions legislation.

In addition, the Euro 5/6 implementing measure 692/2008 further requires that: "In addition, the manufacturer shall provide the approval authority with information on the operating strategy of the exhaust gas recirculation system (EGR), including its functioning at low temperatures." It is the responsibility of the national type approval agencies to enforce the above ban and verify the legitimacy of the exemptions used. It is also their job to check the working of pollution control systems in different ambient temperatures. The defeat device ban is enforced in a much more comprehensive manner in the US. First, it is the burden of manufacturers to prove why they need to use the exemptions, who need to disclose upfront (together with technical justifications) what "legal" defeat devices they use. Second, the authorities (US EPA) have clear powers to approve or reject the use of exemptions and penalise manufacturers for false claims. Third, there is extensive technical guidelines on which to base the decisions – taking into account best available techniques, effect on emissions and various weather and engine conditions. The current legislation is clear but the Dieselgate scandal clearly shows a need to strengthen the current clauses on defeat devices to ensure the requirements are enforced by reluctant Type Approval Authorities.

3. Fixing the EU's failed system of vehicles regulation

Chapter 2 of this report highlights the staggering scale of the Dieselgate scandal in Europe. Rather than affecting some 8.5 million VW group vehicles, it is clear that the number of **excessively dirty diesel cars on the EU's roads is of the order of 29 million vehicles**. This represents over three-quarters of all diesel cars and vans registered in the EU since 2011. The vast majority of these vehicles are on the roads of France, Germany, UK, Italy, Spain and Belgium. Unsurprisingly these Member States also infringe the EU air quality standards and are where the majority of NO_2-related premature deaths occur: 21,600 in Italy; 14,100 in the UK; 10,400 in Germany; 7,700 in France; 5,900 in Spain and 2,300 in Belgium.[28]

[28] For more country-specific figures, please refer to European Environment Agency, http://www.eea.europa.eu/media/newsreleases/many-europeans-still-exposed-to-air-pollution-2015/premature-deaths-attributable-to-air-pollution

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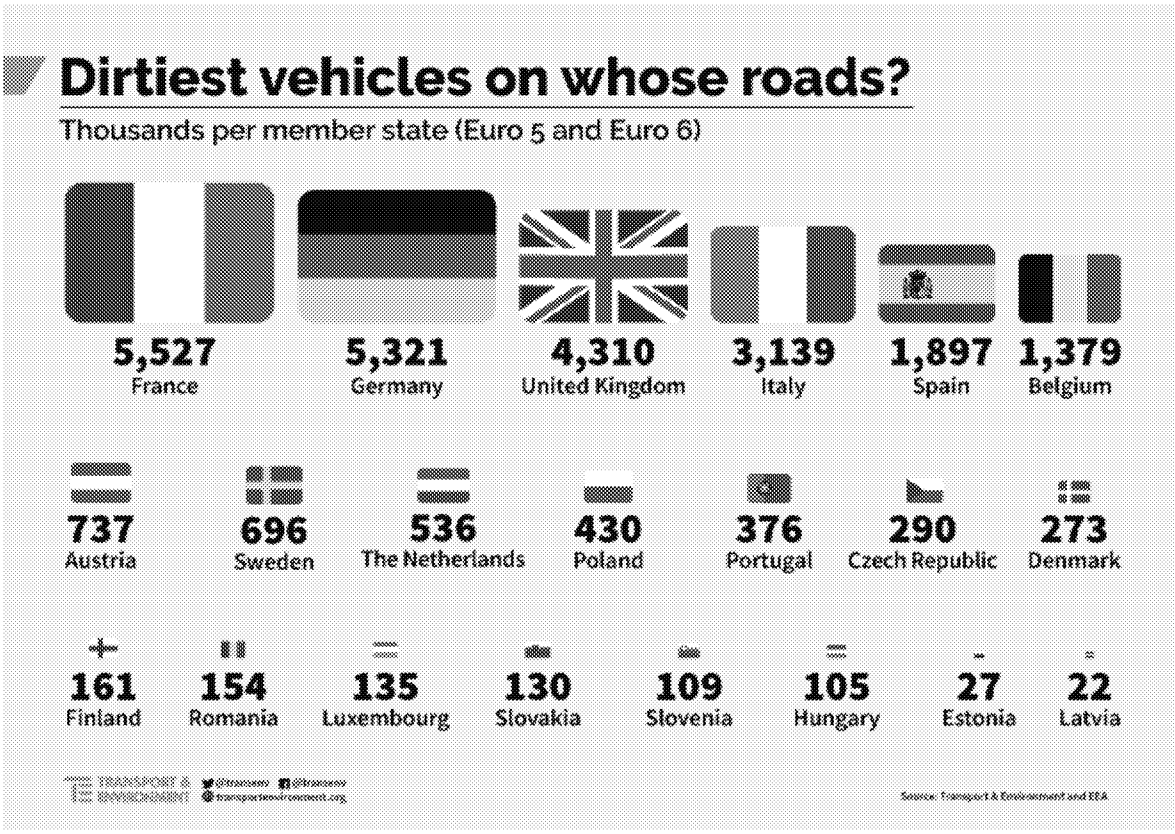

Such a regulatory failure does not have a single cause and therefore a suite of actions is needed to address the problems. The following sections explain the solutions that are grouped into the following areas for action:

1. Enforcement of defeat device legislation, including recall of cars
2. Increased adoption of city low emission zones
3. Better and more tests
4. Better regulators and independent oversight
5. Better regulations
6. Stricter NOx limits
7. Discouraging dieselization

3.1. Enforcement of defeat device legislation including recall of cars

Europe has a serious problem with nitrogen dioxide pollution leading to the premature deaths of 72,000 citizens. Action to reduce emissions from new cars will eventually lead to a clean-up of the car fleet as older vehicles are progressively replaced. However, the 17-year average lifetime of a car means progress is painfully slow.

The vast majority of the 29 million Euro 5 and 6 dirty diesel cars on the road emit high levels of NOx because their exhaust treatment systems are switched down or off most of the time – they should not be. T&E believes that manufacturers' claims that they are operating within the law are wrong. Renault and Mercedes are already voluntarily recalling some vehicles due to excessive thermal windows that switch off the exhaust treatment systems at typical European ambient temperatures – these recalls must be mandated by Type Approval Authorities for all vehicles operating such unnecessary thermal windows. If the Member States will not act, the European Commission must bring infringement proceedings against countries that fail to enforce the law.

A mass recall of dirty Euro 5 and 6 vehicles need not be excessively complicated. Software upgrades could easily be implemented to ensure the exhaust treatment systems operate in normal driving conditions as the law clearly requires. If there are durability issues manufacturers should warranty the

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exhaust system for 160,000 km, the distance that the Euro 5 and 6 legislation requires the system to operate within. If there are drivability or small fuel economy penalties, drivers should be compensated. The European Commission should coordinate an EU-wide recall to ensure fair treatment of car owners throughout the EU.

3.2. Increased adoption of city low emission zones

A mass recall and upgrade of dirty Euro 5 and 6 vehicles will make a measureable impact on NOx emissions and improve urban air quality. But in many heavily trafficked areas NO_2 limits are likely to continue to be breached. In these areas the only short term solution is to **exclude excessively polluting diesel cars from the area**. The traditional approach to do this is to ban older cars; but this report shows that there is little difference between the on-road emissions of many Euro 4, 5 and 6 cars. Blanket exemptions of Euro 6 cars permitting them to enter low emission zones freely will therefore allow many high emitting vehicles into the urban air pollution hot spots. To prevent this the design of a low emission zone should only exempt diesel cars that are clean on the road, not in lab tests. The new real-world driving emissions (RDE) test provides a basis to do this, and cities could for example only admit diesel cars as clean as gasoline models (emitting less than 60mg/km during the RDE test) as this information will in the future be publically available. Such cars are available (as they are already sold in the US) and such a local initiative would drive carmakers to produce a fleet of ultraclean diesel cars for cities to tackle the NO_2 problems they have created.

3.3. Better and more tests

The European Commission has made good progress to strengthen the system of testing cars with the introduction of the real-world driving emissions (RDE) test. There do however remain important gaps and limitations with the test protocol. There are 5 areas in which improvements are needed:

1. Cars emit much more pollution when the engine and exhaust after treatment system are cold – but the current design of the RDE tests fails to adequately take this into account. **A cold start factor** must be built into the regulation that reflects a very high proportion of short journeys made by cold cars that produce disproportionately high emissions. Such a proposal is expected to be made by the European Commission within weeks and officials must ensure it is representative of emissions in the real world.
2. The high emissions which are **generated during regeneration of diesel particulate filters** must be appropriately factored into the RDE procedure.
3. RDE tests must be **extended to all other pollutants** (starting with particles) and also to CO2 emissions and fuel efficiency as the most representative way to measure emissions.
4. The Commission must rapidly develop and bring forward proposals for **real world tests of cars to be conducted as in-service conformity checks**. Member States must also be mandated to perform an adequate number of such tests; but independent third-parties should also be empowered to verify in-use compliance. In-service tests will ensure that the emissions from a car continue to meet legal limits throughout its lifetime (defined as 160,000 km). At present, there is no systematic or independent in-service testing of cars and as a result many cars, as they age, produce much higher emissions as the exhaust treatment systems degrade.
5. The Commission must re-examine the most effective ways to measure NOx and other emissions of cars in use as part of the **system of periodic technical inspections** ('MOT' in the UK or 'controle technique' in France). The current system is obsolete and failing, and better technical solutions are now available such as measuring air pollution emissions via sensors at fixed points in the road network that can detect grossly polluting cars.

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3.4. Better regulators and independent oversight

The regulatory system used to approve vehicles today (type approval) badly lacks any independent oversight, transparency or rigour. Following the Dieselgate scandal, the European institutions are currently discussing the new proposals on the Type Approval Framework Regulation (TAFR). To be truly effective, the EU vehicle testing system must include the following:

1. To ensure the 28 type approval authorities (TAAs) enforce the EU rules consistently – and in the absence of any political will to establish an independent EU vehicle enforcement agency that will have strong powers and **oversee the work of the 28 national regulators must be introduced**. This should include regular audits of their approval procedures, a spot check of a few type approvals issued and clear sanctions in case of non-compliance. In case of continuous lack of enforcement of the EU regulations, the national regulator should be stripped of its power to issue EU-wide type approvals.
2. The **European Commission should be given powers to carry out independent re-tests of new vehicles on the road**, take remedy action against non-compliant manufacturers, including dissuasive penalties. In the absence of such independent tests, national testing authorities will continue putting economic interests of carmakers and their technical agencies over those of citizens and public health, thus failing to scrutinize the emission performance of vehicles rigorously.
3. There must be **a clear separation of powers and functions among all the actors in the type approval chain**. Independence must be re-instated throughout the type approval chain: TAAs should not act as private technical services, and carmakers must test their vehicles in independent labs done from beginning to end by specialised testing services.
4. **Vehicles put on the EU market must be checked rigorously throughout their lifetime** to ensure their emission control systems continue to work properly during continuous use in all real-world conditions. Such effective market surveillance can only be achieved if there are enough financial resources to do the checks. T&E is proposing to **levy a fee of EUR 10 on manufacturers for every new vehicle they sell in the EU** to fund an effective in-use surveillance programme. That money will cover the costs of all checks performed at national and European level.
5. Transparency should be injected into the vehicles testing system in Europe; today no one knows which car was approved where and the whole procedure is shrouded in secrecy. There should be an **online portal with all the type approval and testing data submitted to the national authorities accessible to third parties**, in a digitally searchable format. It must be clear who approved which vehicle (or its separate component) and where to ensure regulatory accountability and openness.

3.5. Better regulations

In the absence of a single EU regulator to check vehicles' compliance on the road, the EU rules should be better and more clearly defined. The flexibility of the 28 national regulators to interpret the rules must be minimized to ensure they cannot bend the rules to favour home carmakers or put their commercial interest above those of citizens.

1. The current **Type Approval Framework Directive should be turned into a Regulation** with all the responsibilities, roles and powers clearly defined. No room for maneuver should be left in the way in which the national testing authorities enforce the future regulation, including requiring rigour and consistency on how they check cars performance on the road.
2. The current **rules banning the use of defeat devices should be strengthened to include very detailed engineering guidelines** for the national testing authorities on how any exemptions are to be granted. US EPA has over years developed a set of circular guidelines, which they regularly review in line with technology developments. The EU guidelines should specify all parameters (temperature, pressure, altitude, engine design, etc.) that must be considered when justifying, approving or rejecting the use of switch off devices, and any deactivation of emission control must

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not be allowed if a carmaker is using inferior materials compared to the state-of-the-art systems on the market.

3.6. Stricter NOx limits

The current EU emission limits for NOx are at least double what they are in the US (and even weaker if compared to the Californian regulations) and allow diesel vehicles to emit 25% more pollution than equivalent petrol engines. This is an unfair advantage for a specific technology and should be swiftly closed; it does not stand scrutiny on either public health or technology availability grounds.

1. **The unnecessarily high conformity factor for NOx emissions under RDE test must be brought to 1 by 2020**. The current conformity factors allow industry to overshoot the European NOx limit of 80mg/km by 210% from 2017 and by 50% from 2020 open-endedly. These were agreed politically to give flexibility to car manufacturers, and the latest data confirms that their level was set too high and does not correspond to the technical uncertainty of the measurement equipment used in on-road tests (PEMS).

2. The Commission should, without delay, start to work on the **next set of Euro 7 standards for cars and vans to apply from 2025**. The future emission standards must be technologically neutral with the same NOx limit for all fuels. The level of the Euro 7 limits should be fixed with the aim of the WHO air quality guidelines finally being met in all urban areas across Europe.

3.7. Discouraging dieselisation

Ultimately, Europe needs to wean itself off its diesel addiction. Diesel engines are an expensive way to save carbon typically costing €2k more than a gasoline engine for modest carbon savings. In addition, emission limits for diesel and gasoline vehicles must be equivalent.

1. **Taxes on diesel cars must rise** in recognition of their higher air pollution emissions.
2. **Diesel fuel taxes should also rise** to reflect the higher energy content of the fuel. Cities must ban dirty diesels.

3.8. Concluding thoughts

12 months ago, Volkswagen claimed the cheating of emissions tests in the US was perpetrated by a handful of rogue engineers. We now know it is an endemic problem throughout the automotive industry with defeat devices systematically installed by VW Group on 11 million vehicles globally and cheating of tests by other companies exposed in Japan[29] and South Korea.[30] However, in Europe the scale of the cheating and resulting impact upon health are of an entirely different scale. **29 million grossly polluting diesel cars are on the EU's roads and will be there for more than another decade**. The high emissions are caused by companies programming their cars to turn down or off exhaust after treatment systems most of the time when the car is driven, misusing a loophole designed to protect the engine in extreme conditions. The illegality of the practice is clear and needs to be challenged by national approval authorities, or the European Commission if the authorities fail to act. The immorality of the companies that have designed their cars to grossly pollute and ignore regulations, significantly contributing to the 72,000 premature deaths from NO_2 pollution in the EU, is shameful.

Just as shameful is the refusal of national regulatory authorities to do their job and ensure vehicles properly comply with EU regulations. The EU Single Market relies on rules like these to create a level playing field for competition and ensure products are designed in a way that prevents excessive externalities like air pollution. The Single Market depends on honest and professional regulators to enforce rules. Instead, 12 months of the Dieselgate scandal have demonstrated regulatory capture by the automotive industry of national type approval authorities and their Transport Ministry masters. Either

[29] Reuters, http://www.reuters.com/article/us-mitsubishimotors-regulations-idUSKCN0XN0DV
[30] ABC news, http://www.abc.net.au/news/2016-05-17/nissan-faces-fine-for-emissions-cheating-in-south-korea/7419730

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through unhealthy business relationships or a desire by member states to give an unfair advantage to their national car companies (which in some cases they partly own); the system has been shown to be corrupt. The failure to enforce the law is the primary cause of the Dieselgate scandal in Europe; not unclear regulations as member states claim.

The European Commission is far from blameless. It took too long to develop new real world tests that should have identified and resolved some of the issues much earlier. It acceded to the demands from the Member States to weaken new NOx limits for cars and delay their introduction. It designed the type approval regulation in a way that meant no effective checks and balances were built into the system. However, the Commission has acted promptly to reform the system of type approval with good (but not sufficient) proposals to strengthen the rules. It has also made clear its intention to bring infringement proceedings against member states that fail to enforce the law on defeat devices – it now must do this and coordinate an EU-wide recall of vehicles abusing emissions regulations that will ensure air pollution limits are met earlier throughout Europe and fewer people die prematurely.[31]

Recalling grossly polluting cars will remediate some of the harm done. It will also, hopefully, encourage an essential culture change in the industry to meet the standards honestly and not seek to circumvent environmental rules designed to manage the pollution caused by their products. But for this culture change to happen the automotive industry must believe that if they cheat - they will get caught and appropriately sanctioned. In the EU the system of type approval doesn't do this. There must be rigorous checks and tests performed on cars, and audits and independent oversight to check the work of national approval authorities and technical services. Those found to be consistently failing to do their job robustly must be prevented from testing and approving vehicles and skewing the single market. There must be funds available to ensure there are sufficient independent checks on cars in use to ensure emissions are within limits. There must be a culture of openness and transparency so the industry knows wrongdoing will be exposed and not covered up. The European Parliament and Council are currently considering and amending the Commission proposal on type approval to improve the system – Dieselgate points to where improvements are needed.

Diesel does not decarbonise transport, but green electrons in electric or hydrogen cars will and the new direction of the European Commission is finally recognizing this. [32] Electromobilty will ultimately solve the air pollution crisis in our cities; but the measures outlined in this report will make an important contribution to remediating the current problems and also putting the automotive industry on a more sustainable path.

[31] Commissioner Bienkowska, at the hearing with the European Parliament's enquiry committee into the Emission Measurements in the Automotive Sector (EMIS) in Strasbourg, 12 September 2016.
[32] Politico, http://www.politico.eu/article/europe-looks-to-electric-cars-after-diesels-dead-end/

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Message

From: Grundler, Christopher [grundler.christopher@epa.gov]
Sent: 3/21/2016 2:06:46 PM
To: Cook, Leila [cook.leila@epa.gov]
CC: Charmley, William [charmley.william@epa.gov]; Bunker, Byron [bunker.byron@epa.gov]
Subject: Fwd: ICCT briefing paper on defeat devices - EMBARGOED until Tuesday
Attachments: Defeat Device Briefing Paper v3.pdf; ATT00001.htm

+Lee

Christopher Grundler, Director
Office of Transportation and Air Quality
U.S. Environmental Protection Agency
202.564.1682 (Washington)
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Begin forwarded message:

From: John German <john@theicct.org>
Date: March 21, 2016 at 9:53:06 AM EDT
To: <Grundler.Christopher@epamail.epa.gov>, Byron Bunker <bunker.byron@epa.gov>
Cc: Bill Charmley <charmley.william@epa.gov>, Rachel Muncrief <rachel@theicct.org>, Joe Schultz <joe@theicct.org>
Subject: ICCT briefing paper on defeat devices - EMBARGOED until Tuesday

Chris/Byron,

I'm writing to let you know that the ICCT will be releasing the attached briefing paper on vehicle emission control defeat devices on Tuesday; we've also just submitted it to the UK House of Commons Transport Committee for their ongoing inquiry into VW. This is the analysis that Rachel talked to Chris about when Chris was in Europe recently.

The paper aims to illuminate this paradox: VW and other automakers assert that software on some of their vehicles that would be considered an illegal defeat device in the U.S. is either not a defeat device or not prohibited as such in the European Union, even though the language defining and prohibiting defeat devices in the U.S. and EU regulations is nearly identical.

The paper summarizes the relevant provisions of the current EU and U.S. regulations, reviews what is publicly known about the automakers' positions with respect to those provisions, and contributes an independent engineering perspective where relevant. The intent is to provide context for evaluating reform proposals in Europe by spotlighting ambiguities in the EU regulation that should be corrected as part of any effort to ensure that vehicle emissions standards are met in practice and not just in theory.

We would be happy to answer any questions you might have on this.

Please note that the paper is **EMBARGOED until Tuesday, 23 March**, as we've assured the Commons Transport Committee that we will not release it until they've posted it on their own website along with other materials.

John

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THE INTERNATIONAL COUNCIL ON CLEAN TRANSPORTATION

BRIEFING

MARCH 2016

Defeat devices under the U.S. and EU passenger vehicle emissions testing regulations

One noteworthy aspect of the still-developing story concerning excess nitrogen oxide emissions from Volkswagen diesel cars is this: VW and other automakers have asserted that software managing the emissions control systems on some of their vehicles, which they acknowledge either is or would be considered an illegal defeat device under the U.S. vehicle emissions regulation, is either not a defeat device or not prohibited as such under the European Union regulation. It is noteworthy because the language defining and prohibiting defeat devices in the U.S. and EU regulations is nearly identical; the differences are minute and immaterial.

This briefing paper summarizes the relevant provisions of the current EU and U.S. regulations, reviews what is publicly known about the automakers' positions with respect to those provisions, and contributes an independent engineering perspective where that seems relevant. The intent is to provide useful context for evaluating proposals to revise and extend the regulations governing passenger vehicle type approval and real-world testing in Europe. Such a summary spotlights ambiguities in the EU regulation as it presently stands—and potentially in any regulation patterned on it, as many national vehicle emissions regulations are—that should be corrected as part of any effort to ensure that vehicle emissions standards are met in practice and not just in theory.

Prepared by Rachel Muncrief, John German, and Joe Schultz.

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U.S. AND EU REGULATIONS

A colloquial definition of an automotive defeat device would be anything intended to circumvent a vehicle emissions test. The U.S. and EU regulations are more precise.

The U.S. regulation (40 CFR §86.1803-01) defines a defeat device as follows:[1]

> *Defeat device means an auxiliary emission control device (AECD) that reduces the effectiveness of the emission control system under conditions which may reasonably be expected to be encountered in normal vehicle operation and use, unless:*
>
> *(1) Such conditions are substantially included in the Federal emission test procedure;*
>
> *(2) The need for the AECD is justified in terms of protecting the vehicle against damage or accident;*
>
> *(3) The AECD does not go beyond the requirements of engine starting; or*
>
> *(4) The AECD applies only for emergency vehicles and the need is justified in terms of preventing the vehicle from losing speed, torque, or power due to abnormal conditions of the emission control system, or in terms of preventing such abnormal conditions from occurring, during operation related to emergency response. Examples of such abnormal conditions may include excessive exhaust backpressure from an overloaded particulate trap, and running out of diesel exhaust fluid for engines that rely on urea-based selective catalytic reduction.*

It additionally defines an AECD (§86.1803-01) as:

> *any element of design which senses temperature, vehicle speed, engine RPM, transmission gear, manifold vacuum, or any other parameter for the purpose of activating, modulating, delaying, or deactivating the operation of any part of the emission control system.*

And it prohibits (§86.1809-01) the use of defeat devices:

> *(a) No new light-duty vehicle, light-duty truck, or complete heavy-duty vehicle shall be equipped with a defeat device.*

Where the U.S. regulation defines a defeat device by reference to a separately defined AECD, the European Union regulation (Regulation (EC) No 715/2007 Art. 3, par. 10) combines the two into a single definition, using nearly identical language:[2]

> *'defeat device' means any element of design which senses temperature, vehicle speed, engine speed (RPM), transmission gear, manifold vacuum or any other parameter for the purpose of activating, modulating, delaying or deactivating the operation of any part of the emission control system, that reduces the effectiveness of the emission control system under conditions which may reasonably be expected to be encountered in normal vehicle operation and use;*

---

1 Code of Federal Regulations, Title 40 Part 86 – Control of Emissions from New and In-Use Highway Vehicles and Engines. The text of the U.S. regulation is online at http://www.ecfr.gov/cgi-bin/text-idx?node=pt40.19.86&rgn=div5#se40.19.86_1809_601

2 European Commission, Regulation (EC) No 715/2007 of the European Parliament and of the council of 20 June 2007. The text of the EU regulation is online at http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2007:171:0001:0016:EN:PDF

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And, where the U.S. regulation specifies certain conditions in which an AECD shall not be considered a defeat device and then prohibits all use of defeat devices, the EU regulation (Art. 5, par. 2) prohibits all use of defeat devices but then specifies that the general prohibition shall not apply under the same conditions as are specified in the U.S. regulation for AECDs (save one, related to emergency vehicles), defined in closely similar language:[3]

> *The use of defeat devices that reduce the effectiveness of emission control systems shall be prohibited. The prohibition shall not apply where:*
>
> *(a) the need for the device is justified in terms of protecting the engine against damage or accident and for safe operation of the vehicle;*
>
> *(b) the device does not function beyond the requirements of engine starting;*
>
> *or*
>
> *(c) the conditions are substantially included in the test procedures for verifying evaporative emissions and average tailpipe emissions*

U.S. AND EU DEFEAT DEVICE ENFORCEMENT PROVISIONS

Where the U.S. and EU regulations diverge is in their provisions concerning how manufacturers obtain the exemption provided for under those carefully specified, effectively identical conditions, and in their provisions for penalizing the failure to disclose AECDs or the illegal use of defeat devices.

The U.S. regulation (§86.1844 [d][11]) requires manufacturers to submit to the EPA at the time of their application for a certificate of conformity "A list of all auxiliary emission control devices (AECD) installed on any applicable vehicles, including a justification for each AECD, the parameters they sense and control, a detailed justification of each AECD that results in a reduction in effectiveness of the emission control system, and rationale for why it is not a defeat device as defined under §86.1809." The regulation also requires manufacturers to provide, as deemed necessary by the EPA Administrator, detailed technical descriptions and calibration specifications of all emission-related components and AECDs (§86.1844-01[g][4-5]) and explicitly gives the Administrator authority to review the manufacturer's proposed justification, stating that an AECD "may be disapproved by consideration of currently available technology, whereupon the application for certification may be disapproved under §86.094-22(b) for the incorporation of a defeat device" (§86.094-21 [b][1][i][B]). This language gives clear and detailed guidelines as to the responsibility of both the manufacturer and the regulatory agency in terms of the level of detail to be provided, the timing of disclosure, and what the agency must evaluate and approve.

The EU framework regulation does not itself detail how the prohibition on the use of defeat devices, including the administration of exemptions, is to be implemented. Instead, Article 5(3) of Regulation (EC) 715/2007 empowers the Commission to adopt implementing measures setting out the "requirements for the implementation

3 Where the U.S. regulation also covers heavy-duty vehicles (among other things), the EU regulates HDVs separately, in Regulation (EC) No 595/2009. That regulation refers to defeat "strategies" rather than devices, but defines and prohibits them in substantially similar ways with similar exemptions. This briefing paper, however, will focus solely on light-duty vehicles.

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of [Article 5(2)]" (which contains the language prohibiting defeat devices) via the "regulatory procedure with scrutiny" set out in Decision 1999/468/EC of the European Council. The justification for this is set out in Recital 26 of Regulation (EC) 715/2007, which states that "Power should also be conferred on the Commission to establish specific procedures, tests and requirements for type approval, as well as a revised measurement procedure for particulates and a particle number based limit value, and to adopt measures concerning the use of defeat devices, access to vehicle repair and maintenance information and test cycles used to measure emissions. Since those measures are of general scope and are designed to supplement this Regulation by the addition of new non-essential elements, they should be adopted in accordance with the regulatory procedure with scrutiny provided for in Article 5a of Decision 1999/468/EC."

The regulatory procedure with scrutiny requires the Commission to submit a draft measure to a committee composed of Member State representatives for review, and then to the European Parliament and Council for approval. This process resulted in EC Regulation 692/2008, which addresses the directive in Regulation 715/2007 to establish specific procedures, tests and requirements for type approval, as well as a revised measurement procedure for particulates and a particle number based limit value, access to vehicle repair and maintenance information, and test cycles used to measure emissions. However, Regulation 692/2008 does not explicitly define procedures by which manufacturers will disclose defeat devices or apply for one of the exceptions to the prohibition of defeat devices; assign authority to review such an application; or describe criteria by which an application should be evaluated, and the terms under which it may be approved or denied. That is, the EU implementing regulation, 692/2008, contains no close analog to the highly specific provisions in the U.S. regulation that govern how manufacturers' compliance with the ban on defeat devices is to be scrutinized during the type-approval/certification process.

In the U.S., civil penalties for violating the vehicle emissions regulation are spelled out not just in the regulation itself but also in general law, in the U.S. Code (42 U.S.C. §7524) and the Code of Federal Regulations (40 CFR §19.4). The U.S. Environmental Protection Agency may levy civil penalties of up to $37,500 per vehicle and $3,750 per sale of defeat device.[4] The agency has a long history of penalizing both foreign and domestic manufacturers for the use of defeat devices.[5]

The EU vehicle emissions regulation (EC 715/2007, Article 13) directs the Member States to "lay down the provisions on penalties applicable for infringement by manufacturers of the provisions of this Regulation and [to] take all measures necessary to ensure that they are implemented." The regulation was adopted in 2007, and Member States were to have notified the Commission by January 2009 of those provisions. In November 2015, the European Commission began an investigation into, among other things, whether "all Member States put in place effective, proportionate and dissuasive penalties to sanction infringement of the type-approval rules." A

4 For the EPA's summary, see "Clean Air Act Vehicle and Engine Enforcement Case Resolutions," http://www.epa.gov/enforcement/clean-air-act-vehicle-and-engine-enforcement-case-resolutions. The agency also uses its "Mobile Source Civil Penalty Policy" for determining penalties in enforcement settlements, http://www.epa.gov/sites/production/files/documents/vehicleengine-penalty-policy_0.pdf.

5 Megan Geuss, "Volkswagen's emissions cheating scandal has a long, complicated history," ArsTechnica, 8 October 2015, http://arstechnica.com/cars/2015/10/volkswagens-emissions-cheating-scandal-has-a-long-complicated-history/.

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January 2016 working document summarizing the replies the Commission had received to that point reports cursory information on penalties from only 18 of the 28 member states.[6] These range from fines to withdrawal of type approval, recall and repair obligations, and prison.

THE VOLKSWAGEN CASE

In September 2015 the U.S. EPA and the California Air Resources Board announced that a number of VW 2.0L diesel vehicle models sold in the U.S. during model years 2009 to 2015 had been equipped with illegal defeat devices.[7] The EPA's Notice of Violation stated that "VW manufactured and installed software in the electronic control module (ECM) of these vehicles that sensed when the vehicle was being tested."[8] The defeat device was described as a "switch" that "senses whether the vehicle is being tested or not based on various inputs including the position of the steering wheel, vehicle speed, the duration of the engine's operation, and barometric pressure." If the ECM senses parameters that are in line with the certification test procedure the ECM adjusts the emissions control system, by using an a specific emissions control scheme, to produce compliant emissions. At other times the ECM switches to an alternative emissions control scheme which optimizes for other performance characteristics. The number of vehicles affected in the United States was approximately 500,000, and VW acknowledged that some 11 million vehicles worldwide had similar software, including more than 8 million in Europe.

The EPA issued a second notice of violation in November 2015 for VW model year 2009–2016 vehicles equipped with 3.0L diesel engines stating that "VW manufactured and installed software in the electronic control module (ECM) of each vehicle that causes the vehicle to perform differently when the vehicle is being tested for compliance with EPA emission standards than in normal operation and use."[9] While the description of the defeat device was more detailed than in the September notice of violation, in both cases the vehicles were operating under two emissions control regimes: one during emissions testing, and one at other times. The EPA described the defeat device used in the 3.0L vehicles as software that determines when the vehicle has begun the FTP 75 certification test and then employs a low-NO_x temperature-conditioning mode, varying a number of engine parameters to yield lower engine-out NO_x and higher exhaust temperatures to achieve better conversion over the emissions

6 [Commission Staff Working Document] Impact Assessment Accompanying the Proposal for a Regulation of the European Parliament and the Council on the approval and market surveillance of motor vehicles and their trailers, and of systems, components and separate technical units intended for such vehicles, European Commission, January 27, 2016, http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1453996334099&uri=SWD:2016:9:FIN. Additional analysis to complement the impact assessment: http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CONSIL:ST_5712_2016_ADD_3&from=EN

7 Bill Vlasic and Aaron M. Kessler, "It took EPA pressure to get VW to admit fault," *New York Times*, September 21, 2015, http://www.nytimes.com/2015/09/22/business/it-took-epa-pressure-to-get-vw-to-admit-fault.html; Jeff Plungis and Dana Hull, "VW's Emissions Cheating Found by Curious Clean-Air Group", Bloomberg, September 20, 2015, http://www.bloomberg.com/news/articles/2015-09-19/volkswagen-emissions-cheating-found-by-curious-clean-air-group.

8 U.S. Environmental Protection Agency, Office of Enforcement and Compliance Assurance, "Notice of Violation", September 18, 2015, http://www.epa.gov/sites/production/files/2015-10/documents/vw-nov-caa-09-18-15.pdf.

9 U.S. Environmental Protection Agency, Office of Enforcement and Compliance Assurance, "Notice of Violation", November 2, 2015, http://www.epa.gov/sites/production/files/2015-11/documents/vw-nov-2015-11-02.pdf.

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control catalyst. The software employs a timer that coincided with the time needed to run the FTP 75, after which the emissions control system switches to a different mode that immediately changes the parameters and creates much higher engine-out NO_x and lower conversion in the catalyst. The number of vehicles affected in the United States was approximately 85,000. For comparison, the number of Euro 5 and Euro 6 3.0L diesels sold by Volkswagen group in the EU is over 500,000.

All the affected VW vehicles in the U.S. were certified to the EPA's Tier 2, Bin 5 emissions standard. In the EU, they were regulated under the Euro 5 emissions standard.[10] These regulations set different NO_x emissions limits (43.5 mg/km in the U.S., 180mg/km in the EU for diesel vehicles) and require different test protocols and test cycles (the Federal Test Procedure [FTP 75] and the New European Driving Cycle [NEDC]). Exhaust aftertreatment systems are needed to meet the lower U.S. limits, and diesel vehicles in the U.S. market, including VW's, employ either selective catalytic reduction (SCR) or a lean NO_x trap (LNT), in combination with exhaust gas recirculation (EGR).[11] In the EU, EGR alone is typically sufficient to meet the NO_x emissions standard, although some Euro 5 diesel cars (including VW's SEAT Alhambra and Sharan 2.0L diesels and Golf 1.6L TDI) also use SCR or LNT. Thus, the ECM software used to change the emissions control system performance during certification testing will likely differ in some ways according to the specific emissions control technology used on a given model and the details of the certification test it is required to pass.

Volkswagen's responses to the two notices of violation in the U.S. differed, and the company has taken yet another approach in Europe. Volkswagen admitted to the EPA and CARB that it had installed and used defeat devices in its 2.0L diesel engines in the U.S. before the agencies issued the formal notice.[12] But VW initially denied that the software used in the 3.0L diesel vehicles identified in the November notice of violation constituted a defeat device, though the company did acknowledge that it had not followed the required notification and application process for an AECD under the U.S. regulation.[13]

In Europe, the most extensive public exposition thus far of VW's views on the relevant regulatory and legal questions from anyone associated with the company has come in oral and written testimony to the Transport Select Committee of Britain's House of Commons.[14] The testimony of the two witnesses, Paul Willis, managing director of

10 These standards have been succeeded by more stringent ones for later model year vehicles, Tier 3 in the U.S. and Euro 6. For details, see http://transportpolicy.net/index.php?title=US:_Light-duty:_Emissions and http://transportpolicy.net/index.php?title=EU:_Light-duty:_Emissions.

11 For explanation of these control strategies, see Manufactures of Emission Controls Association, "Emission Control Technologies for Diesel-Powered Vehicles," December 2007, http://www.meca.org/galleries/files/MECA_Diesel_White_Paper_12-07-07_final.pdf.

12 Alexander Stokiosa, "VW CEO issues statement on EPA emissions violations, apologizes for wrongdoing," Car and Driver, September 21, 2015, http://blog.caranddriver.com/vw-ceo-issues-statement-on-epa-emissions-violations-apologizes-for-wrongdoing/; U.S. Environmental Protection Agency, Office of Enforcement and Compliance Assurance, "Notice of Violation", September 18, 2015, http://www.epa.gov/sites/production/files/2015-10/documents/vw-nov-caa-09-18-15.pdf.

13 Volkswagen Press Release, "Statement on the announcement by the United States Environment Protection Agency (EPA)", November 2, 2015, http://www.volkswagenag.com/content/vwcorp/info_center/en/news/2015/11/Stellungnahme.html.

14 UK Parliament, House of Commons Select Committee on Transport, "Volkswagen Group emissions violations one-off session-publications," http://www.parliament.uk/business/committees/committees-a-z/commons-select/transport-committee/inquiries/parliament-2015/volkswagen-group-emissions-violations-15-16/publications/.

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Volkswagen UK, and Oliver Schmidt, an engineer with VW's office for group powertrain development, is carefully worded, but several key arguments concerning VW's position seem to emerge. First, that the EU regulation does not require manufacturers to "declare software." Second, that the EU regulation does not prohibit a vehicle from recognizing when it is undergoing a type-approval, or certification, test. Third, that at least under Euro 5 standards the EGR system is not part of the emissions control system, which "consists of an oxidation catalyst and a particulate trap." Fourth, that adjusting the performance of the EGR system to affect NO_x emissions when a vehicle has recognized that it is undergoing testing does not constitute a defeat device. Fifth, that the defeat device used on VW's U.S. market vehicles would have breached the EU regulation because it explicitly reduced the effectiveness of the SCR system or the LNT—i.e., was not only affecting the EGR system. Sixth, that the crucial difference between the U.S. and EU regulations is that in the U.S. "[e]very different mapping from base mapping that is not announced via an AECD application could be considered a defeat device" while (at least by implication) such an application is not necessarily required in the EU.

Volkswagen's apparent position that EGR is not part of the emission control system deserves particular emphasis, especially since exhaust gas recirculation is the primary way that NO_x emissions are controlled on Euro 5 vehicles (though a small number of Euro 5 vehicles do use LNT or SCR to control NO_x emissions). Defining the emissions control system in such a way as to exclude EGR would exempt the EGR system from a prohibition on defeat devices.

The U.S. and EU regulations differ in their approach to defining the emission control system. Although the phrase occurs hundreds of times in the U.S. regulation, it is never formally defined in the text of the regulation itself. However, the EPA defines exhaust emission control systems (plural) at length in a separate advisory document, which specifically includes exhaust gas recirculation among many other details.[15] In the EU, Regulation EC 692/2008 formally defines "emission control system" only as "in the context of the [on-board diagnostics, or OBD] system, the electronic engine management controller and any emission-related component in the exhaust or evaporative system which supplies an input to or receives an output from this controller." Even assuming that a definition specific to the OBD system would also be applicable to defeat devices, in this case the apparent specificity reduces rather than adds clarity. The OBD system monitors and reports hardware failures or deterioration, not performance—a malfunctioning NO_x sensor, for example, but not elevated NO_x emission levels—and requirements for that system's performance and testing are set out separately in Regulation 692/2008 (Annex XI). And while many components receive outputs from the EMC, including some that could belong to an EGR system, specifying "component[s] in the exhaust or evaporative system" neglects engine controls to reduce emissions, such as fuel-injection pressure and timing (which are involved in the EPA's notice of violation to VW concerning 3.0L diesel vehicles in the United States).

A definition of the emissions control system that is either overly narrow or imprecise risks permitting manufacturers to vary engine parameters that influence emissions in ways designed to tune performance differently for tests than for everyday driving. This

15 U.S. EPA, Office of Air and Waste Management, Mobile Source Air Pollution Control Advisory Circular A/C No. 20-B, 27 June 1974. Available online at https://iaspub.epa.gov/otaqpub/display_file.jsp?docid=14337&flag=1.

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is particularly important if, as VW asserts, a regulation also does not prohibit a vehicle from recognizing when it is being tested.

VW AFTERMATH: OTHER MANUFACTURERS

In the aftermath of the VW revelations, other European automakers—BMW, Renault, Daimler, Opel, and Fiat—have been accused or come under suspicion of changing the performance of vehicle emissions control systems during real-world operation. The manufacturers' public statements have not been highly detailed, but responses from Renault, Daimler, and BMW make it clear that they are relying to at least some degree on the provision in the EU regulation that exempts a device from the prohibition on defeat devices when "the need for the device is justified in terms of protecting the engine against damage or accident and for safe operation of the vehicle."

In November 2015 the German TV network ZDF had the Bern University of Applied Sciences (Switzerland) carry out tests on three Euro 5 diesel cars, including a BMW 320, for a documentary report that aired on 15 February.[16] The BMW vehicle generated 154 mg/km of NO_x during the official type-approval test on the NEDC, but when the NEDC cycle was reproduced on the road after a hot engine restart—when operating conditions did not exactly match the test protocol—NO_x emissions increased to 428 mg/km.[17] BMW provided a two-part explanation of the test results:

> *"a) For a "hot test", the vehicle has been parked at operating state temperature. Usually a few minutes pass until the actual measurement begins. During this time period (i.e. between running in the vehicle and beginning of the measurement) the engine compartment is heating up itself. During this period the boundary conditions for the engine combustion differ from the normal mode of operation. Vehicle parts (as e.g. the particulate filter) may not be allowed to be damaged and similarly the engine may not be allowed to go out under any driving conditions. For this reason the exhaust gas recirculation has to be reduced temporarily. As a result, for thermodynamic and reaction kinetic reasons the nitrogen oxides emissions increase temporarily.*
>
> *b) During the days when the BMW 320d was tested (according to the testing report it was on 29 and 30 of Oct 2015) the average temperature in Bern was around 10 degrees Celsius. Cold ambient temperatures influence the behavior of the engine. A modern engine has to react also to these kind of boundary conditions in order to avoid damage to parts such as the cooler for the exhaust gas recirculation. As a result this can again selectively lead to higher emissions."* [18]

In October 2015, the French type approval authority's technical service, UTAC, began a program to test emissions from 100 diesel vehicles. As of mid-January 2016, UTAC

16 Video available at http://www.zdf.de/ZDFmediathek/beitrag/video/2671832/Frontal21-Dokumentation-Die-Abgasluege#/beitrag/video/2671832/Frontal21-Dokumentation-Die-Abgasluege.

17 P. Comte, Y. Zimmerli, M. Güdel, J. Czerwinski, "Emissionsmessungen an einem BMW 320d Touring (Euro 5a) auf dem Rollenprüfstand und auf der Strasse", Bern University of Applied Sciences, November 2015, http://www.zdf.de/ZDF/zdfportal/blob/41471464/2/data.pdf.

18 Email correspondence between BMW and ZDF, December 2, 2015, http://www.zdf.de/ZDF/zdfportal/blob/41472726/1/data.pdf. (ICCT translation)

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had tested 22 vehicles from various manufacturers, including at least five Renault vehicles (three Euro 6 Capturs and two Espaces, one Euro 5 and one Euro 6), and found emissions exceeding the allowable limits by four to five times.[19] The French government has released only limited information, but has publically stated that it has found no evidence of technology meant to cheat emissions tests on Renault vehicles. Renault's explanation to the French government of the excess emissions has been that the emission control system on those vehicles limits the EGR system's effectiveness to permit higher engine-out NO_x emissions at ambient temperatures below 17 °C and above 35 °C in order to protect the engine.[20]

A May 2015 study done by the consultancy TNO for the Dutch Ministry of Infrastructure and the Environment found excess NO_x emissions from several Euro 6 diesel passenger vehicles[21]. In January 2016 it was revealed that one of the vehicles tested for the TNO report was the Mercedes C220.[22] Daimler's response echoed BMW's and Renault's in its focus on ambient temperatures and the regulatory exemption that provides for protection of the engine and safe operation of the vehicle.[23]

> *[These observed discrepancies] are no indication of tampering, but primarily result from divergent statutory testing conditions in the laboratory. For example, when different temperature conditions prevail, the vehicle is operated under different loads, or other auxiliary equipment, such as air conditioning or seat heating, are turned on. In addition, the exhaust aftertreatment system is regulated within legal limits based on operating conditions in order to protect the motor and to ensure the safe of operation of the vehicle. This is to comply with legal requirements that the aftertreatment system is fully functional for at least 160,000 km. [...]*
>
> *...Consideration of the ambient temperature and other data is critical to protect the motor over the full lifetime. All our engines ensure within legal limits that engine components are not damaged and that emission requirements are met over the entire lifetime.*

The public explanations from BMW, Renault, and Daimler are difficult to make sense of from an engineering perspective. Ambient temperature does not directly affect vehicle operation, the temperature of engine components, or emission control calibration. Normal engine operating temperature is typically controlled at around 90 °C by the engine coolant thermostat, and exhaust temperatures are determined

19 Émilie Massemin, "Système de contrôle de la pollution automobile est totalement défaillant," Reporterre.net, January 22, 2016, http://reporterre.net/Le-systeme-de-controle-de-la-pollution-automobile-est-totalement-defaillant; Maxime Amiot, "Antipollution: pourquoi Renault se retrouve dans la tourmente," Les Echos.fr, January 18, 2016, http://www.lesechos.fr/industrie-services/automobile/021630089187-pollution-un-autre-modele-de-renault-pointe-du-doigt-1193290.php; France Nature Environment "Commission royal des premiers résultats très alarmants," February 11, 2016, http://www.fne.asso.fr/communiques/commission-royal-des-premiers-résultats-très-alarmants.

20 Philippe Jacqué and Laetitia Van Eeckhout, "Renault constraint de s'expliquer sur les failles de son moteur diesel," LeMonde.fr, January 19, 2016, http://www.lemonde.fr/economie/article/2016/01/19/devant-la-commission-royal-renault-revele-les-failles-de-son-moteur-diesel_4849711_3234.html.

21 Kadijk, G., Mensch, P., Spreen, J.S., "Detailed investigations and real-world emission performance of Euro 6 diesel passenger cars," TNO, May 18, 2015, http://repository.tudelft.nl/view/tno/uuid%3A40da980a-4c03-4b70-a9b1-240f9ea395f5/.

22 NOS.nl, "Meer vervuilende dieselauto's bekend," January 20, 2016, http://nos.nl/artikel/2081649-meer-vervuilende-dieselauto-s-bekend.html.

23 Written exchange between Daimler and DUH, January 28, 2016, http://www.duh.de/uploads/media/Antwort_Daimler_an_DUH_280116.pdf (ICCT translation).

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primarily by the heat from combustion. More relevant indicators than ambient temperature would be, for example, engine coolant temperature, intake manifold temperature, or exhaust temperature.

Furthermore, the temperature ranges cited by Renault and BMW are narrower than any reasonable definition of normal conditions. Ambient temperatures below 17 °C (Renault's lower range) or 10 °C (BMW's) are common in Europe. The average temperature is below 17 °C in Paris 83% of the time, and below 10 °C 42% of the time; in London it is below 17 °C 75% of the time and below 10 °C 33% of the time.[24] It is in fact most important that NO_x emissions control systems work well at high ambient temperatures, as adverse health impacts from excess NO_x emissions are most acute on hot days. Thus, the changes to EGR operation after a hot restart (BMW) and above 35 °C ambient temperature (Renault) are likely to be especially problematic from a health point of view. The U.S. EPA, for comparison, considers operation at ambient temperatures 37.8 °C (100 °F) and above to be part of normal operation.[25]

Regulation 692/2008 does provide for verification of the vehicle carbon monoxide and hydrocarbon emissions at low ambient temperature, though it exempts diesel vehicles from this test. However, the section of the regulation exempting diesels from this low-temperature emissions test (Article 3, par. 9) requires that, when applying for type approval of compression ignition (i.e., diesel) vehicles:

> *manufacturers shall present to the Type Approval Authority information showing that the NO_x after treatment device reaches a sufficiently high temperature for efficient operation within 400 seconds after a cold start at -7 °C as described in the Type VI test.*
>
> *In addition, the manufacturer shall provide the Type Approval Authority with information on the operating strategy of the Exhaust Gas Recirculation (EGR) system, including information on its functioning at low temperatures.*
>
> *This information shall also include a description of any effects on emissions.*
>
> *The Type Approval Authority shall not grant type approval if the information provided is insufficient to demonstrate that the after treatment device actually reaches a sufficiently high temperature for efficient operation within the designated period of time.*

This suggests that Renault, BMW, and Daimler, prior to receiving certificates of conformity for the vehicles in question, had provided type approval authorities with information on how the EGR systems in those vehicles functioned at low ambient temperatures and the impact that had on emissions. However, under the EU regulation the information that manufacturers provide to type approval authorities is not publically available, so this cannot be confirmed.

A lack of clarity concerning what should be considered normal conditions also bears on other details besides ambient temperature. BMW indicated that

24 http://www.holiday-weather.com

25 U.S. Environmental Protection Agency, Office of Air and Radiation, Memo to heavy-duty automotive manufacturers, "Heavy-duty diesel engines controlled by onboard computers: guidance on reporting and evaluating auxiliary emission control devices and the defeat device prohibition of the clean air act", October 15, 1998, http://www3.epa.gov/otaq/cert/dearmfr/vpcd9813.pdf.

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EGR must be reduced temporarily during a "hot test" to prevent damage to the diesel particulate filter (DPF). The company's statement lacks important details: what the exact conditions are that would trigger the EGR to be reduced, why these conditions would damage the DPF, what "temporarily" means. But from an engineering perspective, starting and running a vehicle after it had recently been turned off also falls well within the bounds of normal operation. Again for purposes of comparison, the U.S. test procedure explicitly includes a 10-minute period during which the vehicle is shut off, and after which the vehicle is restarted and the test cycle repeated. That is to say, by inference, that diesel vehicles sold in the U.S. are able to prevent damage to the DPF after a hot restart without significantly increasing NO_x emissions. Similarly, Daimler's statement suggests that the use of air conditioning would require reductions in the emissions control, though a definition of normal operation that excluded the use of standard equipment would seem difficult to defend from an engineering design perspective. The U.S. EPA introduced a test cycle that turns on air conditioning during the test specifically to ensure that emissions are controlled during its use.[26]

DISCUSSION

A survey of the publicly available information that has come to light in the wake of VW's admission that it installed illegal defeat devices on diesel passenger cars in the United States, combined with a close reading of the EU and U.S. regulations, raises the possibility that manufacturers have made use of ambiguities in the regulatory provisions that prohibit vehicle emission control defeat devices in Europe—specifically, ambiguities in how exemptions from the defeat device prohibition are administered and in the definition of emission control systems.

Proposals to reform the EU regulation (or others patterned on it outside Europe) should be scrutinized to assess the degree to which they would resolve those ambiguities. In particular, three questions should be asked: (1) whether and how proposed reforms would require manufacturers to disclose the presence of defeat devices as defined in the regulation; (2) what requirements would be imposed concerning how the listed exceptions to the prohibition on defeat devices must be claimed, evaluated, and approved or rejected; and (3) whether and how proposed new regulatory text defines key terms and concepts such as normal operating conditions, normal vehicle operation and use, and emissions control system.

There are currently two proposals on the table for revising the EU vehicle emissions control regulatory system: the RDE 2nd package and the New Type Approval Framework.

Draft regulatory text for the RDE 2nd package[27] would impose additional requirements for reporting emissions control strategy during the type approval process, which would likely come into force for type approvals beginning in 2017. This text was added in direct response to the VW disclosures. Manufacturers would be required to provide an "extended documentation package" to type approval authorities that

26 See details of US light duty emissions standards and test protocol, http://transportpolicy.net/index.php?title=US:_Light-duty:_Emissions.

27 European Commission, Commission Regulation (EU) amending Regulation (EC) No 692/2008 as regards emissions from light passenger and commercial vehicles (Euro 6), 2015[draft], https://circabc.europa.eu/webdav/CircaBC/GROW/automotive/Library/comitology_committees/technical_committee/51th%20meeting%20on%2028%20October%202015/RDE%202nd%20package%20after%20TCMV.pdf.

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would include "information on the operation of all emission control strategies" as well as a "description of the fuel-system control logic, timing strategies, and switch points during all modes of operation."

While the new language represents an improvement, it does not address three important details on which the current regulation is imprecise: It does not give unequivocal guidance to Member States concerning the technical evaluation of the provided information; it does not enumerate criteria that should be used to approve or reject claimed exceptions to the defeat device prohibition; and it does not indicate how to determine which components are part of the emission control system.

In January 2016, the European Commission put forward a proposal that if approved by the European Parliament and the European Council would revise the current motor vehicle type-approval framework defined by Directive 2007/46/EC.[28] With regard to the subject of this briefing paper, the proposed new framework would require that "The approval authority and technical services shall have access to the software and algorithms of the vehicle."

The new language would contribute to making the type approval process more transparent. But, again, it does not address inexact language in the current regulatory text that appears to relate to manufacturers' public explanations of how and why they have modified vehicle emissions controls during on-road operation. Access to software and algorithms is not sufficient to make determinations on whether and how to evaluate and approve or reject claims of exception to the vehicle emissions control defeat device prohibition.

What is necessary is a thorough reporting and approval system for the use of all alternative emissions control calibrations, with a requirement to disclose the presence of "any element of design which senses temperature, vehicle speed, engine speed, transmission gear, manifold vacuum, or any other parameter for the purpose of activating, modulating, delaying or deactivating the operation of any part of the emission control system"; and which places the burden on manufacturers to prove to qualified, independent experts at a detailed technical level, prior to type approval, that this alternative calibration is necessary and that no viable alternative solutions exist.

28 The full text of the proposal and accompanying documents can be downloaded at http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1453996101816&uri=COM:2016:31:FIN. A separate impact assessment of the proposal is available at http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1453996334099&uri=SWD:2016:9:FIN.

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Message

From: Lavergne2, Josee (EC/EC) [josee.lavergne2@canada.ca]
Sent: 11/13/2015 4:32:23 PM
To: Bunker, Byron [bunker.byron@epa.gov]; Wehrly, Linc [wehrly.linc@epa.gov]
CC: Couroux, Stephane (EC/EC) [stephane.couroux@canada.ca]; Collins, Kevin (EC/EC) [kevin.collins@canada.ca]
Subject: Current - updated test plan
Attachments: Vehicle Tracking Sheet for EPA - 13Nov2015.xlsx

Bonjour Byron and Linc,

I will be at Ann Arbor next week, will it be possible for you to share with me your testing plan with respect to the defeat device issue and results of testing to date ? This will inform our future selections.

On a different matter, although our old email addresses will still work for a little while, please note our new email addresses.

See you next week,

Josée Lavergne
Manager, Vehicles and Engines Testing for Emissions Verification (VETEV)
Transportation Division
613-990-7848
Gestionnaire, Essais et vérifications des émissions pour les véhicules et les moteurs (EVEVM)
Division du transport

Message

From: Cohen, Janet [cohen.janet@epa.gov]
Sent: 3/28/2016 3:28:47 PM
To: Bunker, Byron [bunker.byron@epa.gov]
Subject: FW: VW FOIA release - Second Set of Data
Attachments: IUVP IUST Diesel since 2009 3_22_16_PII removed.xlsx

Byron -- here you go, see highlight. You are right, the request appears to cover Daimler and BMW along with VW. I did not know that the FOIA request came from Reuters. I assume it was the DOJ/OECA FOIA team that made the call on IUVP and surveillance data as being responsive but don't know that for certain either. At any rate I agree that the letter can say that the responsive information includes emissions test results from the manufacturer run In-Use Verification Program (IUVP) and the EPA run In-Use Surveillance Program (IUSP) but not data from investigatory testing.

- J. -

From: Zaremski, Sara
Sent: Monday, March 14, 2016 5:02 PM
To: Meekins, Tanya <Meekins.Tanya@epa.gov>; Suarez, Patricia <suarez.patricia@epa.gov>; Mylan, Christopher <Mylan.Christopher@epa.gov>; Birgfeld, Erin <Birgfeld.Erin@epa.gov>; Cohen, Janet <cohen.janet@epa.gov>; Valentine, Julia <Valentine.Julia@epa.gov>; Sutton, Tia <sutton.tia@epa.gov>; Sun, Lisa <Sun.Lisa@epa.gov>
Subject: VW FOIA release - Second Set of Data

All,

We have gone through the entire review process and have another set of responsive materials that have been cleared for release. The responsive materials in this case is In-Use Test data. These are emissions test results from the manufacturer run In-Use Verification Program (IUVP) and the EPA run In-Use Surveillance Program (IUSP). This is routine emission testing on the dyno. This does not include any investigative testing. The specific request was "documents on in-use emission testing, including data and emails, conducted by the EPA and/or submitted to the EPA by manufacturers Volkswagen, Daimler and BMW for light-duty diesel vehicles from 2009 until the present." There are not emails responsive to this, all the data entry goes through our IT systems. There are 2 tabs to the spreadsheet as the data came from 2 different systems. I expect some amount of preparation will also need to go into this release, so please let me know what other information would be helpful. Attached is the actual dataset.

sara

Sara Zaremski
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Compliance Division
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2000 Traverwood Drive
Ann Arbor, MI 48105

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Cell: (734) 223-0957

Message

From: Cohen, Janet [cohen.janet@epa.gov]
Sent: 1/13/2016 10:18:57 PM
To: Bunker, Byron [bunker.byron@epa.gov]
Subject: FW: VW
Attachments: 2009_FE_guide for DOE_ALL-rel dates-no-sales-8-28-08download.csv; 2010FEGuide for DOE-all rel dates-no-sales-02-22-2011public.xlsx; 2011 FEGuide1-for DOE-OK to release-no sales-1-28-2014-Rel9 macroupdateFiestaforpublic.xlsx; 2008 FE Label-fact sheet.420f06069.pdf; 2010 EPA Fuel Econ Programs-overview-420f10055.pdf; Fact sheet -2013 FE Label changes 420f11017[1]-312.pdf

Byron, fyi – Dave pulled this together for the Hill briefings on Friday. I will take a look this evening and am sending on for you to look at as well. We can talk tomorrow about whether to edit or send to Pat as is, or just keep for our own use in responding to questions. – j. -

---

From: Good, David
Sent: Wednesday, January 13, 2016 5:15 PM
To: Cohen, Janet <cohen.janet@epa.gov>
Subject: FW: VW

Janet,

As you know EPA made changes in the FE Label (window stickers on new cars and light trucks) requirements in two final rules which took effect in the 2008 and 2013 model year.

1. **2008MY FE Label Rule** – Changed the FE Label Format slightly and changed the in-use adjustment factor from 90% (City) and 78% (highway) to three formula-based adjustment factors: 1) Vehicle specific 5-cycle equation; 2) modified vehicle specific equation (uses the derived 5-cycle equation for the city FE Label value and a 3-cycle equation for the highway FE Label) or 3) derived 5-cycle equation (2-cycle equation---based on city and highway testing only).

2. **2013 MY FE Label Rule** – Changed the FE Label Format, added CO2 values, FE, GHG & Smog Ratings, etc. to FE Labels; Provided label formats for alternative fueled vehicles including EVs &PHEVs.

   Attached are 2008 and 2010 FE Label fact sheets which explain the 2008 FE Label rule changes and one 2013 Fact Sheet which explains the 2013 FE Label Rule changes.

3. **Questions about the Spreadsheets from the Datafiles available at http://www.fueleconomy.gov/feg/download.shtml:**

The FE Guide mpg values, etc. listed in "Find and Compare Cars" section of www.fueleconomy.gov are derived from the Spreadsheets except annual fuel cost is based on the current price of gasoline and other fuels in the field (not the annual fuel cost listed in the spreadsheet). The meaning of some of the columns of data in the spreadsheet are as follows:

2010 and 2011 Spreadsheets:

Column	Heading	Meaning or Comment
J	City FE (Guide) - Conventional Fuel	Adjusted City mpg as shown on FE Label (window sticker) and in the FE Guide (rounded to whole numbers & adjusted for in-use offset)
K	Hwy FE (Guide) - Conventional Fuel	Adjusted Hwy mpg
L	Comb FE (Guide) - Conventional Fuel	Adjusted Combined mpg (harmonically averaged with 55% city weighting and 45% hwy weighting)

M City Unadj FE - Conventional Fuel Unadjusted City mpg as measured on the City test cycle; also used for CAFE calculations
N Hwy Unadj FE - Conventional Fuel Unadjusted Hwy mpg as measured on the Hwy test cycle; also used for CAFE calculations
O Comb Unadj FE - Conventional Fuel Unadjusted Combined mpg; [CAFE standards are based on Corporate Average sales weighted unadjusted combined mpg.]

P City Unrd Adj FE - Conventional Fuel Unrounded Adjusted City mpg; used on www.fueleconomy.gov to calculate "personalized" mpg estimates, e.g. where customers drive 10% city and 90% highway driving.
Q Hwy Unrd Adj FE - Conventional Fuel Unrounded Adjusted Hwy mpg
R Comb Unrd Adj FE - Conventional Fuel Unrounded Adjusted Hwy mpg
AG Fuel Usage Desc - Conventional Fuel Conventional Fuel definition – as recommended to the customer for that particular vehicle
AU to BC same as above for Alternative Fuel Same as above for alternative fuel vehicles
BE Fuel2 Usage - Alternative Fuel Alternative Fuel definition – e.g. Ethanol (E85) as used for flexible fuel vehicles

2010 Spreadsheet:

Column	Heading	Meaning or Comment
M	City Unadj FE - Conventional Fuel	Same as above

2009 Spreadsheet:

Column	Heading	Meaning or Comment
L	UNRND CITY (EPA)	Same as M in the 2011 spreadsheet above for Fuel Type listed in column O
M	UNRND HWY (EPA)	Same as N in the 2011 spreadsheet above for Fuel Type listed in column O
N	UNRND COMP (EPA)	Same as O in the 2011 spreadsheet above for Fuel Type listed in column O

Fuel codes used in column O of the 2009 spreadsheet:
C = CNG
D = Diesel fuel
E = Ethanol (E85)
G = Gasoline (only 2 vehicles used G in 2009, so this is likely a data entry error)
P = Gasoline (Premium recommended to the customer)
R = Gasoline (regular grade recommended to the customer)

Note: For the 2009 and earlier spreadsheets, for flexible fuel vehicles and dual fuel vehicles, the conventional fuel and alternative fuel data are listed on two rows for the vehicle. For 2010 and later spreadsheets, for flexible and dual fuel vehicles, the conventional fuel data and alternate fuel data are listed on one row (with the header color coded where green = conventional fuel data and yellow = alternative fuel data.

Hope this helps

Dave

From: Cohen, Janet
Sent: Tuesday, January 12, 2016 2:53 PM
To: Good, David
Subject: FW: VW

Dave – please see highlighted section in attached email chain. There's a briefing with the Committee this Friday at noon. I will check with Pat about how the briefing will be organized – if appropriate it might be helpful for you to listen in. Meanwhile though, can you please either come talk to me about how to answer these questions generically or if it is easier for you, perhaps there's already a briefing or Q/A document of some kind that already exists. Thanks. – j. –

From: Haman, Patricia
Sent: Thursday, January 07, 2016 12:45 PM
To: Bunker, Byron <bunker.byron@epa.gov>; Cohen, Janet <cohen.janet@epa.gov>; Cook, Leila <cook.leila@epa.gov>; Sutton, Tia <sutton.tia@epa.gov>
Cc: Hengst, Benjamin <Hengst.Benjamin@epa.gov>; Belser, Evan <Belser.Evan@epa.gov>; Shinkman, Susan <Shinkman.Susan@epa.gov>; Kelley, Rosemarie <Kelley.Rosemarie@epa.gov>; Emmerson, Caroline <Emmerson.Caroline@epa.gov>; Folkemer, Nathaniel <Folkemer.Nathaniel@epa.gov>; Werner, Jacqueline <Werner.Jacqueline@epa.gov>; Niebling, William <Niebling.William@epa.gov>; Cyran, Carissa <Cyran.Carissa@epa.gov>
Subject: FW: VW

Hi Everyone: I spoke to Dave Berick, Senate Finance this morning. He has sent these charts over which can be found on the Fuel Economy.gov website.

He is looking for generic answers to his questions but the explanations we provide will play into their questions for VW concerning what information VW provided to claim tax credits.

He is hoping we can address the questions below when we brief him on the 15th. If you need me to clarify any of the questions before then, just let me know.

Thanks, Pat

Patricia Haman
Office of Congressional Affairs
U.S. EPA
202-564-2806

EPA reports annual vehicle fuel economy and publishes guides on www.fueleconomy.gov. In addition to the annual guides, more detailed data is posted in detailed spreadsheets (attached). We are trying to get a better understanding of how the "guide" data correlate to the detailed data. For example, what are the underlying characteristics of the spreadsheet Col. L (labeled "UNRND CITY") for MY2009, Col. M (labeled "CITY UNAD...") for MY2010, and Col. N (labeled "CITY UNAD....") for MY2011, and how do those characteristics different from what's reported as city MPG.

Thanks.

Message

From: Brad Edgar [brad.edgar@44energytech.com]
Sent: 7/31/2018 9:16:56 PM
To: Bunker, Byron [bunker.byron@epa.gov]
CC: Juston Smithers [juston.smithers@44energytech.com]
Subject: Follow Up to our phone call
Attachments: Correspondance from 44 Energy 07-31-2018.pdf; hagens_berman_bmw_emissions_amended_complaint_041918.pdf; PastedGraphic-1.tiff

Byron:

Thank you for taking my call yesterday. As follow up, we put together a letter with a couple of requests and well as a little more background on us and our test work. I've also included the legal complaint against BMW filed by our client.

Please feel free to share with your colleagues and please don't hesitate to contact me if you have questions or if you need more information.

Brad

Bradley L. Edgar, Ph.D.
CEO
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4055 Linden Street
Oakland, CA 94608

July 31, 2018

Byron:

As follow up to our phone call yesterday, we would like to make two requests:

First, if possible, could you provide a summary of the testing you performed on the BMW vehicle(s)? We are interested to know the Model, Model Year, and the conditions under which the testing was performed.

For our investigation we tested a MY 2012 BMW X5 xDrive335d with approximately 60,000 miles on it. We think it's reasonable to test vehicles approximately mid-way through their useful life as it doesn't bias the results either too far toward a new system or too far toward a heavily aged system. The BMW X5 shares a common engine platform with the 335d with the only difference being the X5 employs both high and low pressure EGR loops, while the 335d used high pressure EGR only. We know that BMW changed from the M57 platform to the N57 platform in model year 2014, in which case a NOx adsorber catalyst to the suite of emission control systems.

The attached document is the complaint filed by our client which lists additional information for the vehicle we tested. Section 4 contains details on the testing and test results. Key findings where excessive emissions occurred:

1. Cycle awareness: Simulating FTP phase 2 cycle on flat ground shows emissions compliance, while driving an arbitrary cycle comprised of similar speeds and accelerations shows factor of 10 or more increase in NOx. This test has been repeated many times and the results are highly consistent. These phase 2 NOx emissions have been verified both on the chassis dyno with an official FTP-75 and on the road. Using proprietary driver's trace software, we can drive emissions cycles on the road. In this case, our on-road FTP-75 phase 2 emissions are nearly identical to those measured on the dyno, which we feel is a strong validation of the representativeness of the PEMS testing on the road. However, when we change to an arbitrary cycle on the road with similar relative positive accelerations and average speed, the emissions increase by a factor of 10 and well above the standard. The result is that, in FTP-like conditions, the vehicle is many times the standard in a wide variety of very common conditions (flat road, moderate ambient temperatures, etc).

We also found the hot and cold start emissions to be much higher than those found during testing on the dynamometer across a wide variety of conditions.

2. Temperature window: High emissions (factor of 2-7 increase over standard) when ambient temperatures drop blow 68°F. We might presume an AECD would be approved for adjustments in ambient temperature. However, were the derated SCR dosing and the significant resulting increases NOx also disclosed?

3. Road grade: Increased emissions on road grade. As grade increases, both EGR and SCR are reduced with large increases in NOx. We understand while driving on a grade the engine works harder and emissions should increase, but not at these levels. Our thinking is that outside the load and speed points of the FTP, the manufacturer feels comfortable to derate both the SCR and the EGR in ways that are not technically justified, with resulting NOx increases that are unreasonably high.

These findings are discussed in detail in the complaint. As you pointed out, we do not have the benefit of knowing what AECDs were presented and approved. However, we believe the full emissions impact and frequency at which AECD enabled operation were likely not disclosed. We had the opportunity to examine the AECD disclosures in our Mercedes case, for example, before filing the case. The AECD disclosures for ambient temperature adjustments to the emission control system made an argument that the effect on NOx would be small. We show in that case, however, that the emissions increase by several factors. We also use our own engineering judgement and the judgement of other experts with considerable OEM experience about whether the magnitude and impacts of the adjustments are justified.

One last point, to rule out degradation or other factors, we tested the same vehicle on a chassis dynamometer, where emission values were either near or below the standard.

Second, could you provide us with a statement on the validity of PEMS testing? While we fully understand PEMS is only one of a suite of tools needed to evaluate the presence of defeat device, it is a critical and proven tool. If operated properly under a well-designed test protocol it yields useful information that cannot be gathered in any other way.

PEMS has been used by many organizations to look at real world emissions behavior and it has been central in all the recent studies and cases related to defeat devices. Examples where PEMS has played a key and primary role in examining real world emissions for comparison to certification values, include West Virginia University, TUV, and CARB. As you are aware, of course, it's also being used for RDE in Europe and for countless European studies detailing the real-world emissions problems with the fleet of European passenger cars.

In fact, CARB just announced a recall of Cummins Heavy-Duty trucks to replace a defective SCR catalyst. The announcement touts this action of the first major recall resulting from in-use testing **using PEMS**. See link for more details.
(http://www.greencarcongress.com/2018/07/20180731-arb.html >

You should be aware that we are using PEMS in a highly sophisticated way with very carefully controlled conditions that account for, among other things, road grade, ambient temperature, speed profiles, and acceleration rates. We are using PEMS in conjunction with sophisticated OBD loggers in order to collect engine and emission control system operational data. We collect and analyze dozens of engine parameters along with our PEMS data in order to interpret how the emission control system and engine are operating. Furthermore, we conduct chassis dynamometer testing certification tests to help supplement the overall dataset in order to

demonstrate vehicle compliance on the official certification cycles. We are careful to control our on-road PEMS testing so that it is directly comparable to what we find on the dyno.

Third, it would be helpful if your agency could find a way to soften the impact of that article's statement about our qualifications, which we believe to be totally inaccurate.

The "Two men and a PEMS" comment, unfortunately, is now being used to undermine our credibility. This comment is quite simply inaccurate as applied to our consulting firm and cases. The forwarded article makes the statement that, "EPA Director Grundler said attorney Berman certainly did not have the expertise and laboratory technology available to the EPA." This comment is being touted as an official position by the EPA that we are not qualified. Given that EPA has never been given a statement of our firm's qualifications, our test capabilities, or our test procedures, this comment should never have been made. It is neither "two men," nor is it simply PEMS. This is counterproductive to our shared goal of ensuring that the US fleet of passenger cars and trucks actually meet the letter and intent of the strict emission standards.

Here is a short write up on 44 Energy and our team of engineers and consultants.

Juston Smithers, the lead investigator of this work is a degreed engineer and expert in chassis dynamometer and PEMs testing with over 15 years of experience in designing and testing diesel emissions control systems. Many Executive Orders have been granted by CARB based on chassis dynamometer testing performed by Juston. Co-investigator Brad Edgar, has a Ph.D. in Mechanical Engineering with 25 years of experience in diesel emissions control systems and a recipient of the prestigious Haagen-Smit award from CARB for achievements in clean air technology. According to CARB's release accompanying the award, the co-investigator, "has pioneered important breakthroughs in developing advanced technologies to reduce diesel particulates and oxides of nitrogen." Furthermore, he has "earned a reputation as an industry leader helping to deploy the technology needed to keep California's air clean." Brad also sits on the advisory board for UC Berkeley's mechanical engineering department.

We are named on numerous US patents for inventions related to diesel emission control systems. In addition, our efforts have been assisted by other qualified professionals with extensive OEM and regulatory experience specific to the field of diesel emission control systems. We employ a staff of test engineers to operate our three PEMS systems and oversee chassis dynamometer testing. We have a number of consultants that work for us in various capacities. We contract with 3 former OEM calibration, testing, and development engineers and former highly placed CARB staff member. We leverage our many contacts at the Air Resources Board, work with UC Riverside/CE-CERT, UC Berkeley, Transportation Research Center, and Sensors Inc (the manufacturer of our three PEMS systems). And, of course, we have made good-faith efforts to share our findings with EPA staff.

Message

From: Grundler, Christopher [grundler.christopher@epa.gov]
Sent: 3/21/2016 4:01:36 PM
To: Bunker, Byron [bunker.byron@epa.gov]
CC: Cook, Leila [cook.leila@epa.gov]
Subject: Fwd: ICCT briefing paper on defeat devices - EMBARGOED until Tuesday
Attachments: Defeat Device Briefing Paper v3.pdf; ATT00001.htm

ICCT says no engineering reason why low ambient conditions should impact emissions performance

Christopher Grundler, Director
Office of Transportation and Air Quality
U.S. Environmental Protection Agency
202.564.1682 (Washington)
734.214.4207 (Ann Arbor)
www.epa.gov/otaq

Begin forwarded message:

From: John German <john@theicct.org>
Date: March 21, 2016 at 9:53:06 AM EDT
To: <Grundler.Christopher@epamail.epa.gov>, Byron Bunker <bunker.byron@epa.gov>
Cc: Bill Charmley <charmley.william@epa.gov>, Rachel Muncrief <rachel@theicct.org>, Joe Schultz <joe@theicct.org>
Subject: ICCT briefing paper on defeat devices - EMBARGOED until Tuesday

Chris/Byron,

I'm writing to let you know that the ICCT will be releasing the attached briefing paper on vehicle emission control defeat devices on Tuesday; we've also just submitted it to the UK House of Commons Transport Committee for their ongoing inquiry into VW. This is the analysis that Rachel talked to Chris about when Chris was in Europe recently.

The paper aims to illuminate this paradox: VW and other automakers assert that software on some of their vehicles that would be considered an illegal defeat device in the U.S. is either not a defeat device or not prohibited as such in the European Union, even though the language defining and prohibiting defeat devices in the U.S. and EU regulations is nearly identical.

The paper summarizes the relevant provisions of the current EU and U.S. regulations, reviews what is publicly known about the automakers' positions with respect to those provisions, and contributes an independent engineering perspective where relevant. The intent is to provide context for evaluating reform proposals in Europe by spotlighting ambiguities in the EU regulation that should be corrected as part of any effort to ensure that vehicle emissions standards are met in practice and not just in theory.

We would be happy to answer any questions you might have on this.

Please note that the paper is **EMBARGOED until Tuesday, 23 March**, as we've assured the Commons Transport Committee that we will not release it until they've posted it on their own website along with other materials.

John

Message

From: EPA Office of Transportation & Air Quality [OTAQ@epa.gov]
Sent: 9/11/2017 8:25:36 PM
To: Good, David [good.david@epa.gov]
Subject: RE: Your EPA Inquiry RE: BMW X5 diesel NOx problem & useful life [I called him]

Thanks for the explanation Dave! That was very helpful!

From: Good, David
Sent: Friday, September 08, 2017 8:01 PM
To: EPA Office of Transportation & Air Quality <OTAQ@epa.gov>
Subject: RE: Your EPA Inquiry RE: BMW X5 diesel NOx problem & useful life [I called him]

Jennifer,

The warranty coverage is specified by Congress (2/24 or the mfr's bumper-to-bumper warranty (whichever is longer); and 8/80 for catalyst & the vehicle's computer & OBD system). [Tier 3 has an optional 150K warranty (for emission control system components) that mfrs can voluntarily opt into----but it remains to be seen if any test groups will be certified to this option or not.]

EPA issues certificates based on the condition (assumption) that vehicles are designed to meet the in-use emission standards for the **useful life** years/mileage of the vehicle (e.g. 10/120K or 11/120K for Tier 2 vehicles or mostly 15/150K for Tier 3 vehicles). Technically, the emission standards apply for the useful life of the vehicles only---after a vehicle exceeds the useful life the emission stds don't apply*. The useful life is also used when EPA and mfrs test in-use vehicles. Mfrs should not recruit or test vehicles above the useful life miles for their IUVP testing program. For EPA's in-use testing programs, we normally don't recruit vehicles above 75% of useful life miles (e.g. above 90K miles for current Tier 2 vehicles with a 120K useful life).

> *When vehicles are recalled for emission problems, the recall applies to all vehicles in the recall class, regardless of whether some vehicles have exceeded the useful life years/mileage or not.

Hope this helps.

Dave

From: EPA Office of Transportation & Air Quality
Sent: Friday, September 08, 2017 3:03 PM
To: Good, David <good.david@epa.gov>
Subject: RE: Your EPA Inquiry RE: BMW X5 diesel NOx problem & useful life [I called him]

Thanks David! So if the useful life is 120,000 miles, why is the warranty coverage for fewer miles? Why aren't they the same?

From: Good, David
Sent: Friday, September 08, 2017 2:56 PM
To: EPA Office of Transportation & Air Quality <OTAQ@epa.gov>
Cc: Wehrly, Linc <wehrly.linc@epa.gov>
Subject: RE: Your EPA Inquiry RE: BMW X5 diesel NOx problem & useful life [I called him]

Jennifer,

I called this person and talked to him for 10-15 minutes---so you can close this one out.

He has 120,000 miles or so on his BMW X5, is going thru NOx sensors, is working with the BMW dealer, etc. (He said that BMW has extended warranty on NOx sensors for his vehicle). I explained how his vehicle is designed to comply with emission standards for 120,000 miles (the useful life of his vehicle); how we test vehicles up to 75% of useful life miles; etc., etc.

I explained the warranty period for catalytic converter, the computer and emission-related components---and we both agreed that his vehicle was out of warranty coverage.

I gave him my phone number---so if he has more problems he can call me.

Dave

From: EPA Office of Transportation & Air Quality
Sent: Friday, September 08, 2017 11:20 AM
To: Good, David <good.david@epa.gov>
Cc: Wehrly, Linc <wehrly.linc@epa.gov>
Subject: Your EPA Inquiry RE: BMW X5 diesel NOx problem & useful life

Please note: we are cc'ing the Group Managers so that they are aware of the work being assigned to staff.

Hi David – This inquiry is about useful life. I have a standard response for questions about warranties but I'm not sure how the useful life and warranty periods relate.

Can you answer this person's question please? If so, please respond directly to the inquirer (keep the incoming message but delete this message) at **Ex. 6 Personal Privacy (PP)** – and please cc "**otaq@epa.gov**" so that I can close it out on our end.

Please respond by **September 15th**. If you are not the appropriate person to respond to this, please let me know right away. If you can suggest someone else, I'd appreciate it. Thank you!

From: **Ex. 6 Personal Privacy (PP)**
Sent: Monday, August 28, 2017 11:57 AM
To: EPA Office of Transportation & Air Quality <OTAQ@epa.gov>
Subject: BMW X5 diesel NOx problem

I own a 2012 BMW X5 diesel and I have been having some problems with exesive NOx emissions. I want to know what is the responsibility of the manufacturer to maintain the emissions control systems. I know that the emissions control systems are to be effective for the duration of the vehicle's useful life, but I wonder what is the definition acording to EPA of useful vehicle life. Any information would be greatly appreciated.

Thank you in advance.

Ex. 6 Personal Privacy (PP)

Get Outlook for Android

Message

From: Pidgeon, Bill [pidgeon.bill@epa.gov]
Sent: 1/22/2016 8:09:00 PM
To: Good, David [good.david@epa.gov]
Subject: FW: RE: EPA Audit of 2013 and 2014MY IUVP data for 3rd quarter of 2015 - BMW Greenhouse Gas (GHG) data
Attachments: BMW_RollsRoyce_2013 IUVP_data 11-12-2015.xlsx; BMW_RollsRoyce_2014 IUVP_data 11-12-2015.xlsx

See below.

From: Pidgeon, Bill
Sent: Friday, January 22, 2016 3:06 PM
To: Peace.Uwague@bmwnaext.com
Subject: FW: RE: EPA Audit of 2013 and 2014MY IUVP data for 3rd quarter of 2015 - BMW Greenhouse Gas (GHG) data

Hi Peace,

Please see the email below.

Best wishes,
Bill

From: Good, David
Sent: Friday, January 22, 2016 10:40 AM
To: Pidgeon, Bill <pidgeon.bill@epa.gov>
Cc: Wright, DavidA <Wright.DavidA@epa.gov>; John O'Cain <John.O'Cain@arb.ca.gov>
Subject: RE: EPA Audit of 2013 and 2014MY IUVP data for 3rd quarter of 2015 - BMW Greenhouse Gas (GHG) data

Bill, please forward to the BMW IUVP representative.

Thanks

Dave

Ex. 5 Deliberative Process (DP)

Ex. 5 Deliberative Process (DP)

Thanks

Dave Good,
U.S. EPA

Message

From: Gordinier, Terry [Gordinier.Terry@epa.gov]
Sent: 3/13/2017 6:19:10 PM
To: Good, David [good.david@epa.gov]
Subject: IUVP Failures.xls
Attachments: IUVP Failures.xls

Flag: Follow up

Message

From: Good, David [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=6A0A212FAB8644B89798966A2FFF3AB8-GOOD, DAVID]
Sent: 1/20/2016 11:56:30 PM
To: Pidgeon, Bill [pidgeon.bill@epa.gov]; jocain@arb.ca.gov
CC: Wehrly, Linc [wehrly.linc@epa.gov]
Subject: RE: EPA Audit of 2013 and 2014MY IUVP data for 3rd quarter of 2015 - [EPA & CARB comments requested before I start sending these emails out to mfrs]
Attachments: BMW_RollsRoyce_2013 IUVP_data 11-12-2015.xlsx; BMW_RollsRoyce_2014 IUVP_data 11-12-2015.xlsx

Bill & John,

Here's a DRAFT IUVP GHG email message for your comments.

I plan to use this format for email messages to all mfrs. Please let me know if you have any comments or suggestions.

Thanks

Dave

Ex. 5 Deliberative Process (DP)

Ex. 5 Deliberative Process (DP)

Thanks

Dave Good,
U.S. EPA

Message

From: Good, David [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=6A0A212FAB8644B89798966A2FFF3AB8-GOOD, DAVID]
Sent: 1/21/2016 3:47:23 PM
To: Pidgeon, Bill [pidgeon.bill@epa.gov]; jocain@arb.ca.gov
CC: Wehrly, Linc [wehrly.linc@epa.gov]
Subject: FW: RE: EPA Audit of 2013 and 2014MY IUVP data for 3rd quarter of 2015 - [EPA & CARB comments requested before I start sending these emails out to mfrs] Rev1
Attachments: BMW_RollsRoyce_2013 IUVP_data 11-12-2015.xlsx; BMW_RollsRoyce_2014 IUVP_data 11-12-2015.xlsx

Bill, John & all,

I made some changes as outlined in redline text below.

Dave

From: Good, David
Sent: Wednesday, January 20, 2016 6:56 PM
To: Pidgeon, Bill; 'jocain@arb.ca.gov'
Cc: Wehrly, Linc
Subject: RE: EPA Audit of 2013 and 2014MY IUVP data for 3rd quarter of 2015 - [EPA & CARB comments requested before I start sending these emails out to mfrs]

Bill & John,

Here's a DRAFT IUVP GHG email message for your comments.

I plan to use this format for email messages to all mfrs. Please let me know if you have any comments or suggestions.

Thanks

Dave

Ex. 5 Deliberative Process (DP)

Ex. 5 Deliberative Process (DP)

Thanks

Dave Good,
U.S. EPA

Message

From: Pidgeon, Bill [pidgeon.bill@epa.gov]
Sent: 2/12/2015 9:50:17 PM
To: Good, David [good.david@epa.gov]
Subject: iuvp GHG MY2013 Data
Attachments: iuvp GHG MY2013 2015 0212.xlsx

****

William M. Pidgeon
Mechanical Engineer
U.S. Environmental Protection Agency
Compliance Division, N69
2000 Traverwood Drive
Ann Arbor, MI 48105-2195
pidgeon.bill@epa.gov
Phone: 734-214-4416
Fax: 734-214-4869

Message

From: Pidgeon, Bill [pidgeon.bill@epa.gov]
Sent: 2/12/2015 9:48:18 PM
To: Good, David [good.david@epa.gov]
Subject: iuvp GHG MY2012 Data
Attachments: iuvp GHG MY2012 2015 0212.xlsx

****

William M. Pidgeon
Mechanical Engineer
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2000 Traverwood Drive
Ann Arbor, MI 48105-2195
pidgeon.bill@epa.gov
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Fax: 734-214-4869

Message

From: Yang, Ching-Shih [Yang.Ching-Shih@epa.gov]
Sent: 6/8/2017 8:37:52 PM
To: Pidgeon, Bill [pidgeon.bill@epa.gov]; Good, David [good.david@epa.gov]
Subject: IVUP MY 2011 to 2016 as of 6_8_2017.xlsb
Attachments: IVUP MY 2011 to 2016 as of 6_8_2017.xlsb

As requested.

-Ching-shih

Message

From: Gordinier, Terry [Gordinier.Terry@epa.gov]
Sent: 6/8/2017 6:05:29 PM
To: Pidgeon, Bill [pidgeon.bill@epa.gov]; Good, David [good.david@epa.gov]
Subject: FW: IUVP data
Attachments: IUVP data 6_8.xlsb

Flag: Follow up

Terry Gordinier
Environmental Protection Agency
Light Duty Vehicle Group
Compliance Division
Ph: 734.214.4517
Email: Gordinier.Terry@epa.gov

From: Yang, Ching-Shih
Sent: Thursday, June 08, 2017 11:42 AM
To: Gordinier, Terry <Gordinier.Terry@epa.gov>
Subject: IUVP data

XLSB behaves like xlsx, but takes less space. The file would have been too large to send as xlsx, so I converted it. You can convert it back to xlsx (or to .csv if that's how they want it)

-Ching-shih

Message

From: Anderson, Tom [Anderson.Tom@epa.gov]
Sent: 1/12/2016 7:57:42 PM
To: Good, David [good.david@epa.gov]
Subject: 2014 MY CREE Failures
Attachments: MY 2014_CREE_iuvp_Failures_1-12-2016.xls

See attached

Message

From: Anderson, Tom [Anderson.Tom@epa.gov]
Sent: 11/12/2015 8:29:38 PM
To: Good, David [good.david@epa.gov]
CC: Pidgeon, Bill [pidgeon.bill@epa.gov]
Subject: 2013 and 2014 IUVP Spreadsheets
Attachments: MY 2014_CREE_iuvp_info_view.xls; MY 2013_CREE_iuvp_info_view.xls

See attached

Message

From: Anderson, Tom [Anderson.Tom@epa.gov]
Sent: 1/12/2016 7:49:34 PM
To: Good, David [good.david@epa.gov]
Subject: FW: 2013 and 2014 IUVP Spreadsheets
Attachments: MY 2014_CREE_iuvp_info_view.xls; MY 2013_CREE_iuvp_info_view.xls

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From: Anderson, Tom
Sent: Thursday, November 12, 2015 3:27 PM
To: Good, David <good.david@epa.gov>
Cc: Pidgeon, Bill <pidgeon.bill@epa.gov>
Subject: 2013 and 2014 IUVP Spreadsheets

See attached

Message

From: Danzeisen, Karen [Danzeisen.Karen@epa.gov]
Sent: 4/20/2016 9:25:39 PM
To: Kim, Daejin [daejin.kim@gatech.edu]
CC: Fearnside, Judy [Fearnside.Judy@epa.gov]; Verify [Verify@epa.gov]; Somoza, Sandra [Somoza.Sandra@epa.gov]; Good, David [good.david@epa.gov]; Guensler, Randall L [randall.guensler@ce.gatech.edu]; Liu, Haobing [haobing.liu@gatech.edu]; Xu, Yanzhi [yanzhi.xu@ce.gatech.edu]; michael.rodgers@ce.gatech.edu
Subject: RE: Question about Annual Certification Test Results & Data
Attachments: epa certification data summary 042016 -- EPA response.xlsx; 1998-2009actrr with test drive mode and carline class.piz

Hi Daejin,

I'm sorry this has taken some time to respond to, I've been away on travel.

We have responded to your questions within the EPA Comment sections on the first tab of the attached EPA certification data summary spreadsheet. In those comments you will find that I re-ran the query that I had run earlier (for model years 1998-2009) with some new fields added to the far right. I ran the query for all years at the same time, saved it as comma-delimited and then once again used WinZip to compress the file from 60MB to 2MB. Once you download the file you'll need to change the file extension from 'piz' to 'zip'.

Let me know if you have any additional questions.

Karen

Karen E. Danzeisen
Information Technology Specialist
Office of Transportation and Air Quality
U.S. Environmental Protection Agency

danzeisen.karen@epa.gov
(734)214-4444

www.epa.gov/nvfel/

From: Kim, Daejin [mailto:daejin.kim@gatech.edu]
Sent: Monday, April 11, 2016 2:19 PM
To: Danzeisen, Karen <Danzeisen.Karen@epa.gov>
Cc: Fearnside, Judy <Fearnside.Judy@epa.gov>; Verify <Verify@epa.gov>; Somoza, Sandra <Somoza.Sandra@epa.gov>; Good, David <good.david@epa.gov>; Guensler, Randall L <randall.guensler@ce.gatech.edu>; Liu, Haobing <haobing.liu@gatech.edu>; Xu, Yanzhi <yanzhi.xu@ce.gatech.edu>; michael.rodgers@ce.gatech.edu
Subject: Re: Question about Annual Certification Test Results & Data

Dear, Karen.

Firstly, I want to thank you because our research has been able to significantly advance through your help. But during our research we got some problems that we need to ask you or someone at EPA. Could you please look over our questions included in the excel file attached? For your convenience, I briefly wrote down our research purpose and questions in this email as well.

Brief description of our research:
Our research team is developing an emissions modeling framework that uses MOVES emission rates to calculate individual vehicles emissions in real time. The modeling tool requires that we match each

vehicle make, model, and model year to the applicable MOVES source-type (mainly for LDVs and LDTs). We would like to create a lookup table that uses the EPA vehicle certification test dataset to link make, model, and model year to MOVES emission rates.

PoreProblems Identified:
We re-classified those vehicle classes prior to 2010 to correspond to the current classes used from 2010 to 2016 (based on the vehicle class description) so that we could link older vehicles to MOVES emission rates. However, we are not sure that all of the re-classified vehicle classes are properly coded to correspond to the MOVES' vehicle classes. We identified four potential issues outlined below for which we would like to request input from EPA staff.

Question 1 - Matching pre-2010 vehicle classes to current vehicle classes:
In the VEH-CLASS_Description table, we re-coded the pre-2010 EPA vehicle classes to correspond to the current vehicle classes, using the vehicle class description "VEH_CLASS_DESC." Can someone please confirm that the recoding in the "VEH_CLASS_2 (based on EPA)" column looks OK?

Question 2 - Number of axles:
For some vehicles whose GVW are between 8501 to 10000, we cannot determine whether they fall into the vehicle class of "LHD <= 10k" or "LHD <= 14k." To properly assign these vehicles, we need the number of axles for each vehicle model. Is there a resource we can turn to for the number of axles?

Question 3 - LDVT and VT:
We are not sure whether the "LDVT" and "VT" of EPA's vehicle classes should be coded as "LDV" or "LDT". Our research team is thinking that they can be coded as "LDV." Can you please confirm that we should code them this way?

Thanks.

Daejin Kim

From: Danzeisen, Karen <Danzeisen.Karen@epa.gov>
Sent: Friday, March 25, 2016 10:31
To: Kim, Daejin
Cc: Fearnside, Judy; Verify; Somoza, Sandra; Good, David
Subject: RE: Question about Annual Certification Test Results & Data

Hello,

I've attached all the Certified Test Results data for the model years 1998 through 2009. Take note of these things:

1. The vehicle class codes are a little different than the later model years' files taken from our new database system. I've included the corresponding vehicle class descriptions so hopefully you can match them up.
2. Model Year 2009 was split between the old and new database systems. Most of the data was in the old system (included here).
3. I saved each model year's data in a separate comma-delimited (CSV) file and the used WinZip to compress all the files to be more manageable. I changed the file extension from '.zip' to '.piz' in case your email server blocks zipped files.

I hope this helps with your project.

Best regards,

Karen

Karen E. Danzeisen
Information Technology Specialist
Office of Transportation and Air Quality
U.S. Environmental Protection Agency

danzeisen.karen@epa.gov
(734)214-4444

www.epa.gov/nvfel/

From: Kim, Daejin [mailto:daejin.kim@gatech.edu]
Sent: Thursday, March 24, 2016 7:03 PM
To: Danzeisen, Karen <Danzeisen.Karen@epa.gov>
Cc: Fearnside, Judy <Fearnside.Judy@epa.gov>; Verify <Verify@epa.gov>; Somoza, Sandra <Somoza.Sandra@epa.gov>; Good, David <good.david@epa.gov>
Subject: Re: Question about Annual Certification Test Results & Data

Dear Danzeisen, Karen.

I appreciate your great concerns about my request. As a part of vehicle emission calculation project in our lab, we need four variables, vehicle maker, vehicle model, model year and ***vehicle class***. So, I want you to give us any datasets that include those variables. Even though the datasets could have some inaccurate information as you said, we can deal with the errors. About model years, I want you to give us as many datasets as you can give us before 2010. That is because we are dealing with all vehicle models across all model years. And I also looked at the website you suggested; it is also an excellent site to look at, but I could not find any data that I am exactly finding.

Best regards,

Daejin Kim

From: Danzeisen, Karen <Danzeisen.Karen@epa.gov>
Sent: Wednesday, March 23, 2016 18:52
To: Kim, Daejin; syncmkdj@gmail.com
Cc: Fearnside, Judy; Verify; Somoza, Sandra; Good, David
Subject: RE: Question about Annual Certification Test Results & Data

Hello Daejin,

That information did exist prior to MY2010 (with some different values) we just didn't include it in that particular dataset. Until now nobody ever requested it for those earlier years. We deployed our current computer database application in MY2010 with a different database structure that uniquely identifies emission standards/DFs more precisely (including Vehicle Class) and at the end of the emission certification process instead of the beginning. I could send you the datasets with the Vehicle Class included; but, with the disclaimer that it may not be truly accurate. Also, it wasn't a required data element so there are cases where it's not entered.

If you were still interested in this data, which model years did you need?

Also, have you looked at the EPA Fuel Economy Trends Report data (https://www3.epa.gov/otaq/fetrends-complete.htm)? There might be some information there that you are looking for.

Best regards,

Karen

Karen E. Danzeisen
Information Technology Specialist
Office of Transportation and Air Quality
U.S. Environmental Protection Agency

danzeisen.karen@epa.gov
(734)214-4444

www.epa.gov/nvfel/

From: Kim, Daejin [mailto:daejin.kim@gatech.edu]
Sent: Tuesday, March 22, 2016 9:07 PM
To: Sonntag, Darrell <Sonntag.Darrell@epa.gov>
Subject: Question about Annual Certification Test Results & Data

Dear Darrell Sonntag.

I am Daejin Kim, a Ph.D. student at Georgia Tech. I am writing this email because I think you can help me a lot. I have looked over the Annual Certification Test Results & Data, especially "Certified Vehicle Test Result Report Data" in the forms of CSV or XLS from 1999 to 2016. But I could not find "VEH_CLASS" variable before 2010. I've searched for other files as well, but I couldn't find it. Can you tell me other data sources that I can find it or the variable doesn't exist before 2010?

Thanks.

Daejin Kim

Daejin Kim

Ph.D. student, Georgia Institute of Technology
School of Civil & Environmental Engineering
790 Atlantic Drive, SEB Building, Room 207
Atlanta GA, 30332-0355
Phone: 678-707-0472
Email: daejin.kim@gatech.edu; syncmkdj@gmail.com

Message

From: Drew Kodjak [drew@theicct.org]
Sent: 11/19/2015 2:41:35 PM
To: Grundler, Christopher [grundler.christopher@epa.gov]
Subject: Good to see you Chris
Attachments: ICCT VW Oil TRAIN slides v4.pptx

Great conversation over breakfast. Very helpful. Thanks for the time.

Here is my current slide deck for the VW case. Note slide 10 showing remote sensing data for petrol and diesel light duty vehicles in Europe.

I'll send another note to Janet about Paris with my schedule and copy you.

I'll also shoot a note to Gay suggesting Alberto to step in as my proxy for the CA MSTRS meeting. I think I would be the one to suggest it to him, but I want to clear it with Gay first.

Cheers

Drew

Volkswagen's defeat device scandal . . . Challenges and opportunities

Drew Kodjak and John German

ClimateWorks Foundation's Oil Transportation Research and Intelligence Network (Oil TRAIN)
October 29, 2015

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THE INTERNATIONAL COUNCIL ON CLEAN TRANSPORTATION

I have created about 20 slides, and I've given myself about 40 minutes to run through them
My purpose is to set the tone and historical touchstones for the two days that we will spend together.

Key Messages

- Dieselgate a “wake up call” - highlighting major deficiencies in government programs to ensure compliance with emission standards.
- General presumption that more stringent standards - both emissions and efficiency - will result in lower in-use emissions and fuel consumption.
- Unfortunately, growing body of evidence that this link may be much weaker than expected.
- Lack of compliance is eroding expected improvements in air pollution and climate change emissions.
- VW scandal offers unprecedented opportunity to drive major changes in government policies and programs to ensure real world reductions.

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Timeline of Volkswagen Defeat Device Investigation and Discovery

- **2011/2012** – Joint Research Center of the European Commission releases real world emissions data on light-duty diesels; ICCT's European office concerned with elevated real world NOx emissions from Euro 4/5 passenger diesels in Europe.
- **February 2013** – ICCT contracts with West Virginia University to conduct real world emissions testing on three passenger diesel vehicles in California. CARB provides in-kind support via its test center in El Monte.
- **May 2014** – ICCT publishes its findings which show two of the three cars with 5 – 35X times the legal limit under normal driving conditions. We inform EPA, CARB, and VW.
- **December 2014** – VW agrees to a voluntary recall of passenger diesels.
- **May 2015** – CARB retests recalled vehicles and finds some improvement, but emissions are still high.
- **July-September 2015** – US EPA informs VW that it will not be granted license to sell 2016 vehicles in the US if the Agency's questions are not addressed fully. VW admits to defeat devices on September 3, 2015.
- **September 18, 2015** – US EPA, DOJ, and CARB announce a notice of violation against VW for using illegal defeat devices.
- **September 22, 2015** – VW announces that 11 million 2009-2015 diesel cars worldwide have the same "defeat device" software.
- **September 25, 2015** – US EPA and CARB issue updated requirements related to evaluation of defeat devices
- **October 7, 2015** – VW US CEO Horn discloses EPA is investigating VW emissions controls in 2016 diesels
- **October 23, 2015** – DUH releases report on Opel Zafira suspicious emission behavior

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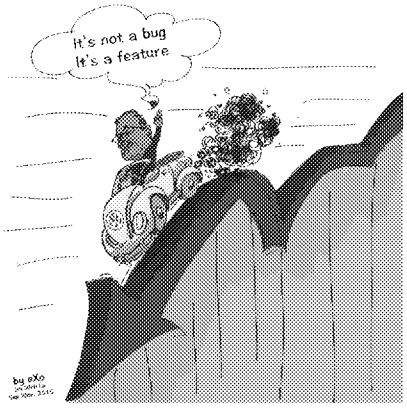
Some illustrative cartoons



'We've found the problem. You're looking at £18billion plus parts and labour'

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What the research tells us

- **NOx emissions**
- **CO2 emissions**

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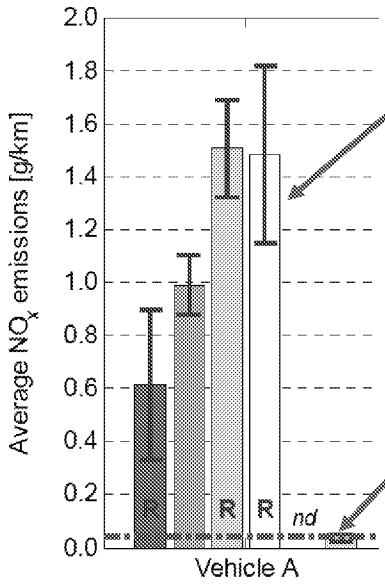
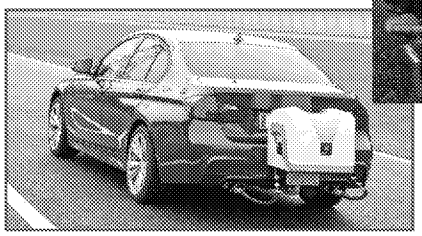
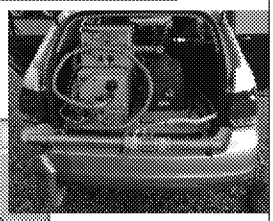
ICCT Real World Testing in California

PEMS road tests (WVU); CARB dyno tests

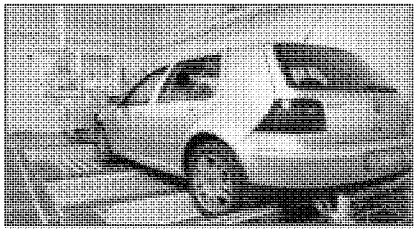


Road tests with PEMS





Chassis dyno measurements



Route 1: highway
Route 2: urban (LA)
Route 3: rural-up/downhill
Route 4: urban (San Diego)
FTP-75 'Bag-3' (Chassis Dyno)
Tier2-Bin5 Standard

Photo credit: AVL / EPMES Group
Vehicle photos unrelated to the results shown

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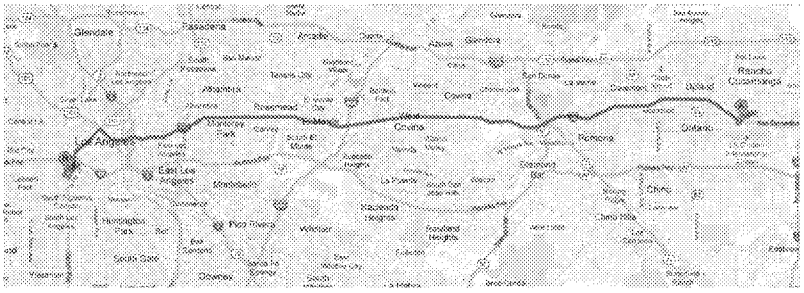
http://www.theicct.org/use-emissions-testing-light-duty-diesel-vehicles-us

ICCT / WVU Study
5 Different Testing Routes

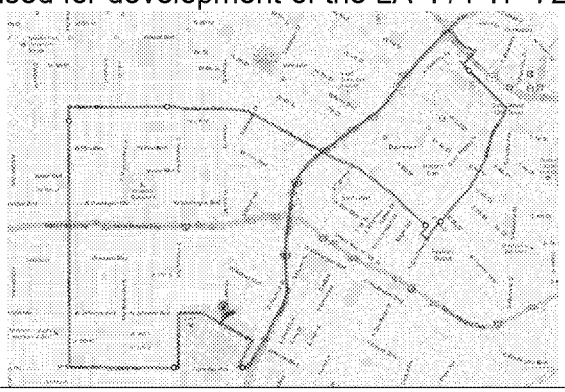
Route 1 – Highway (Los Angeles to Ontario, CA)



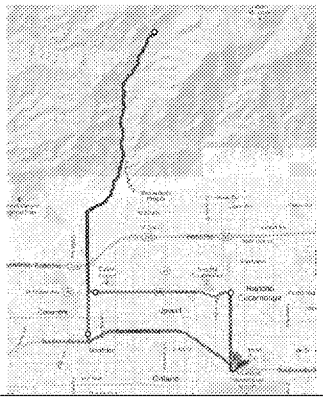
Route 4 – Urban (San Diego)

Route 5 – Urban (San Francisco)

Route 2 – Urban (Los Angeles) – similar to original route used for development of the LA-4 / FTP-72



Route 3 - Suburban and Uphill/Downhill



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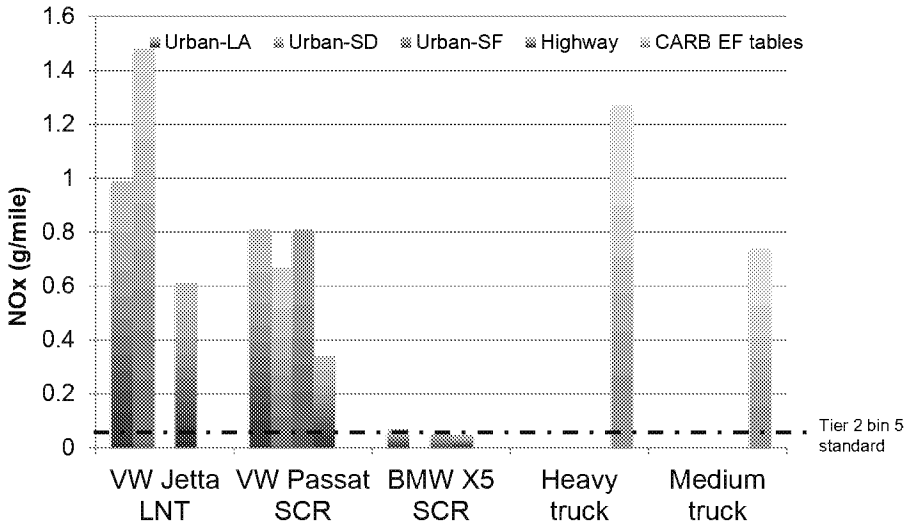
Real World NOx emissions

Jetta 15-35 times standards; Passat 5-20 times standards

- All vehicles met emission standards on FTP (not shown)
- The BMW X5 had high NOx emissions only during up/downhill driving (not shown)
- Lowest NO_x during highway driving
- Urban NOx emissions from VW Jetta similar to 80,000 GVW 18-wheeler; VW Passat similar to medium-duty truck



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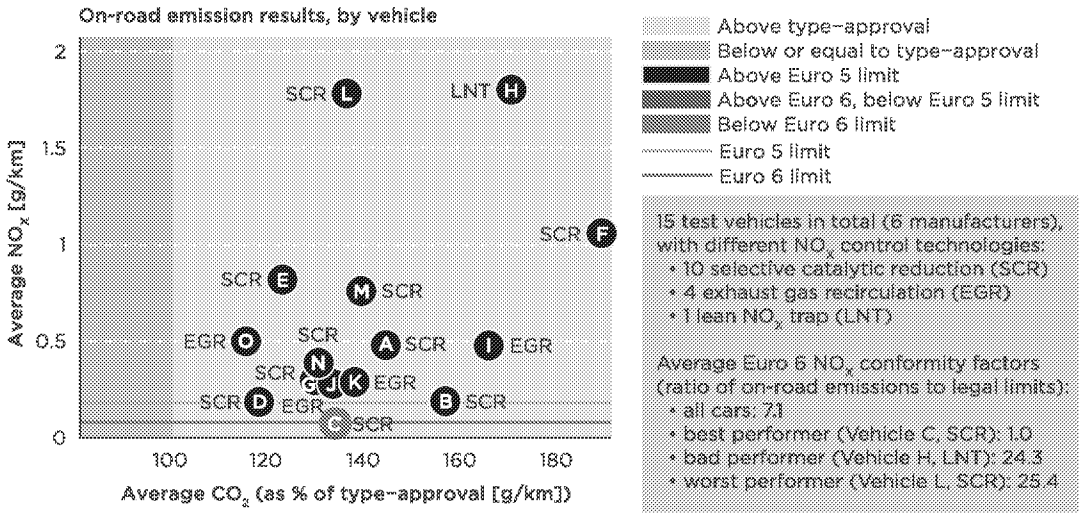
ICCT's Diesel emissions meta-study

Average real world NOx is seven times Euro6 standards

Average on-road emissions of NO_X and CO_2, by vehicle



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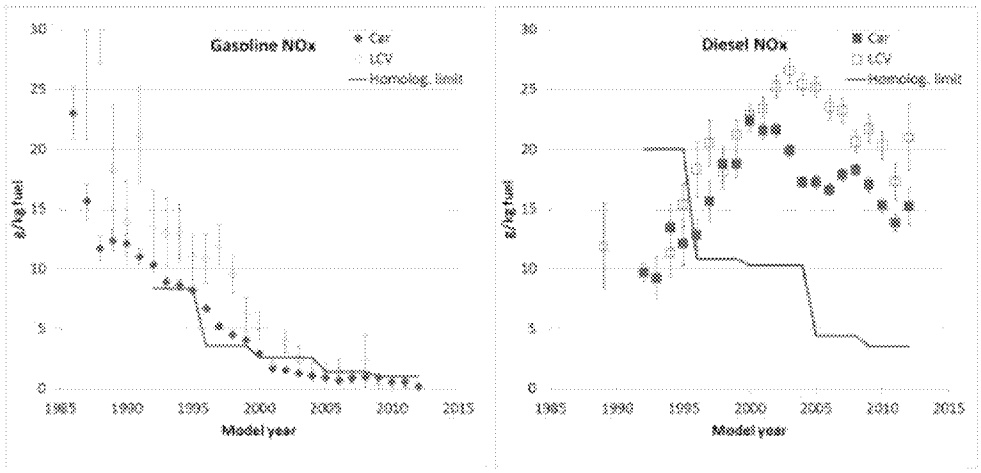
http://www.theicct.org/real-world-exhaust-emissions-modern-diesel-cars

ICCT's PEMS testing confirmed by **13 years** of Remote Sensing data



Chen & Borken-Kleefeld, Real-driving emissions from cars and light commercial vehicles - Results from 13 years remote sensing at Zurich/CH Atmospheric Environment, 88:157-164 (May 2014)

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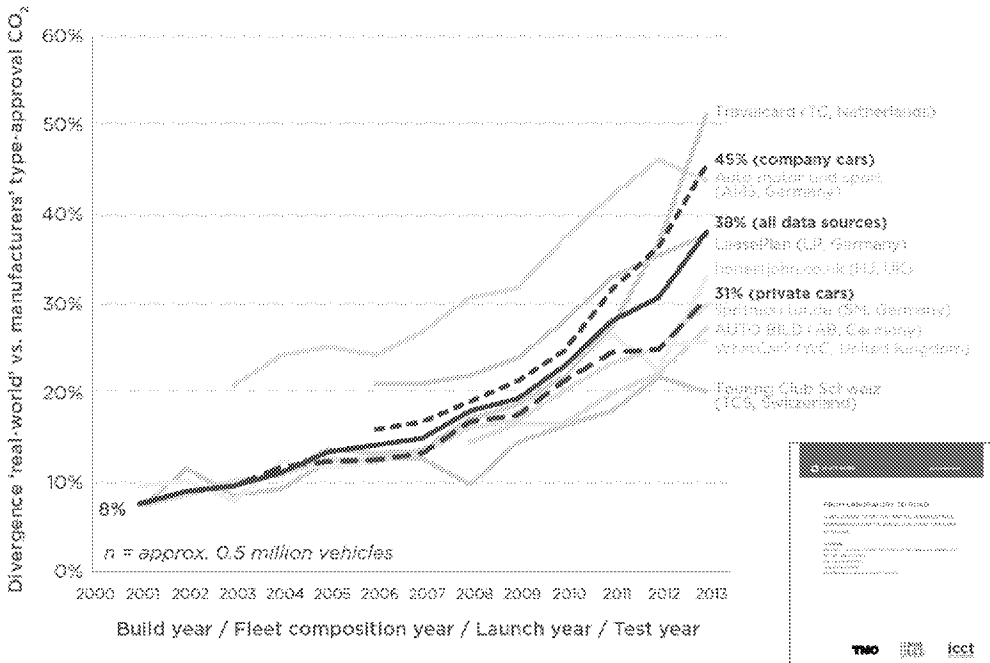
We report on long-term remote sensing measurements of light duty vehicle emissions at one site close to Zurich/Switzerland. The time series of annual measurements at the same site between 2000 and 2012, the same season, and virtually the same instrument is unique, probably worldwide. We analyze the development of unit exhaust emissions from model years 1985 until 2012, covering all five Euro emission limit stages in force. NOx emissions from both diesel cars and light commercial vehicles have actually increased in real-driving over time although emission limits have been progressively tightened. This behavior is explained mostly by a significant discrepancy between engine conditions during real-driving and the homologation test procedure. This discrepancy is not important for the other pollutants or for gasoline light duty vehicles, for which the emission control equipment is found working over a wide range of engine conditions. Our results confirm emission factors from the latest HBEFA model when deterioration and engine load are accounted for.

It's not just about NOx . . .
Real-world CO_2 in EU is 30+% higher than claimed



http://www.theicct.org/laboratory-road-2014-update

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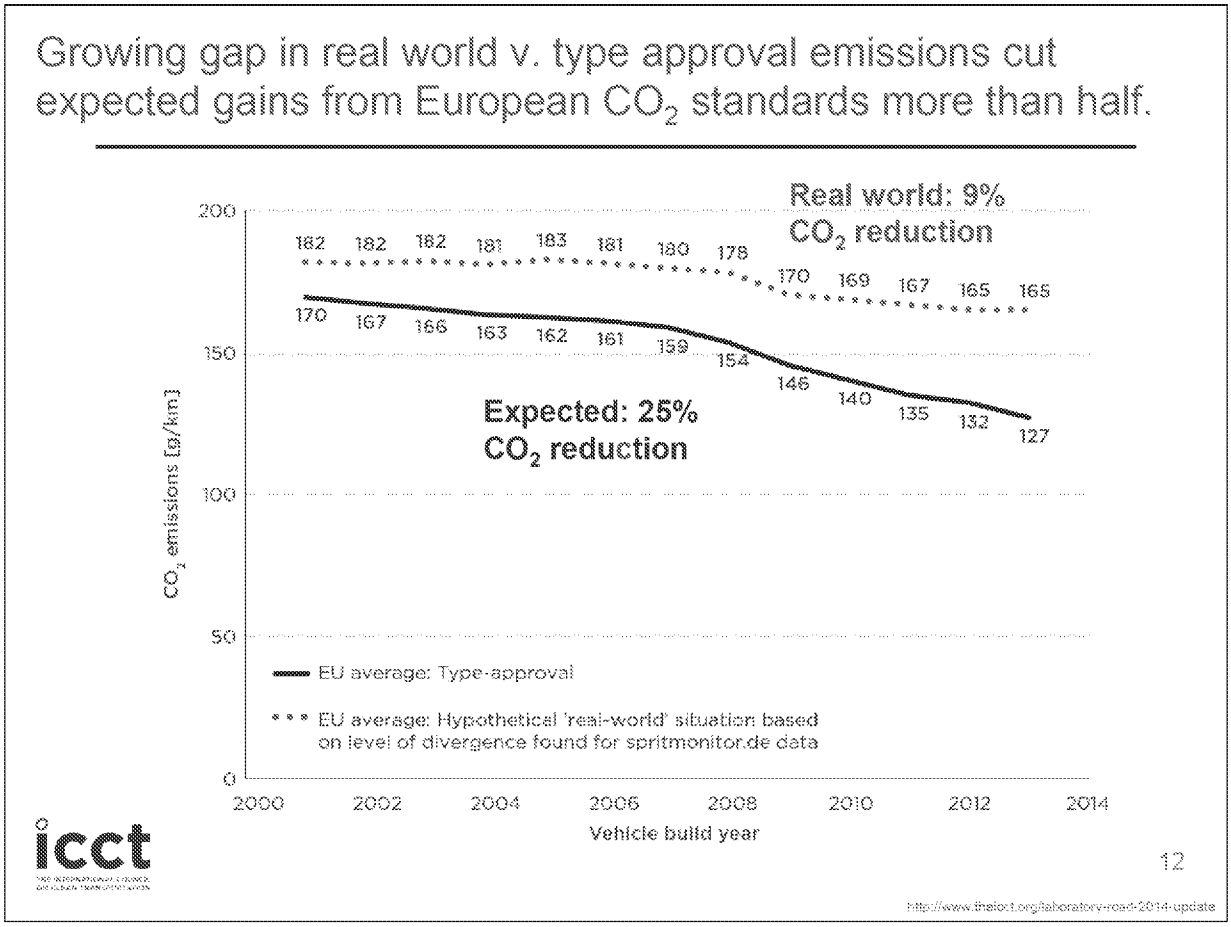

Increasing deployment of technologies that show a higher CO2 reduction benefit in the test procedure than under real-world driving conditions.
The use of parts and calibrations for testing that are not representative of in-use parts and calibrations.
Use of emission control equipment that only works properly on the test cycles and allows much higher in-use emissions.

What's next?

- **Major shortfalls in existing government programs**
- **What's next for ICCT?**

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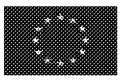
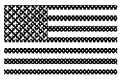
Comparison of US & EU Compliance Programs
No confirmatory testing in Europe



Manufacturer
Pre-production testing (1)
Certificate of Conformity

Manufacturer
In-use verification (2)
Test on random sample



vehicle design and build 0 km — 50,000 km — 160,000 km

Manufacturer
Pre-production testing (1)
Certificate of Conformity

Manufacturer
In-use verification (4)
tests on random sample

EPA
Conformity tests (2)
about 10% of vehicles

EPA
In-use surveillance (5)
random / selected sample

EPA
Selective Enforcement Audit + Confirmatory Road Load Testing (3)

BMW to fix fuel economy labels on Mini Coopers after U.S. EPA test

U.S. Fines Hyundai, Kia for Fuel Claims
Penalty of $100 Million Is Largest Ever, Could Set Pricey Precedent for Other Auto Makers

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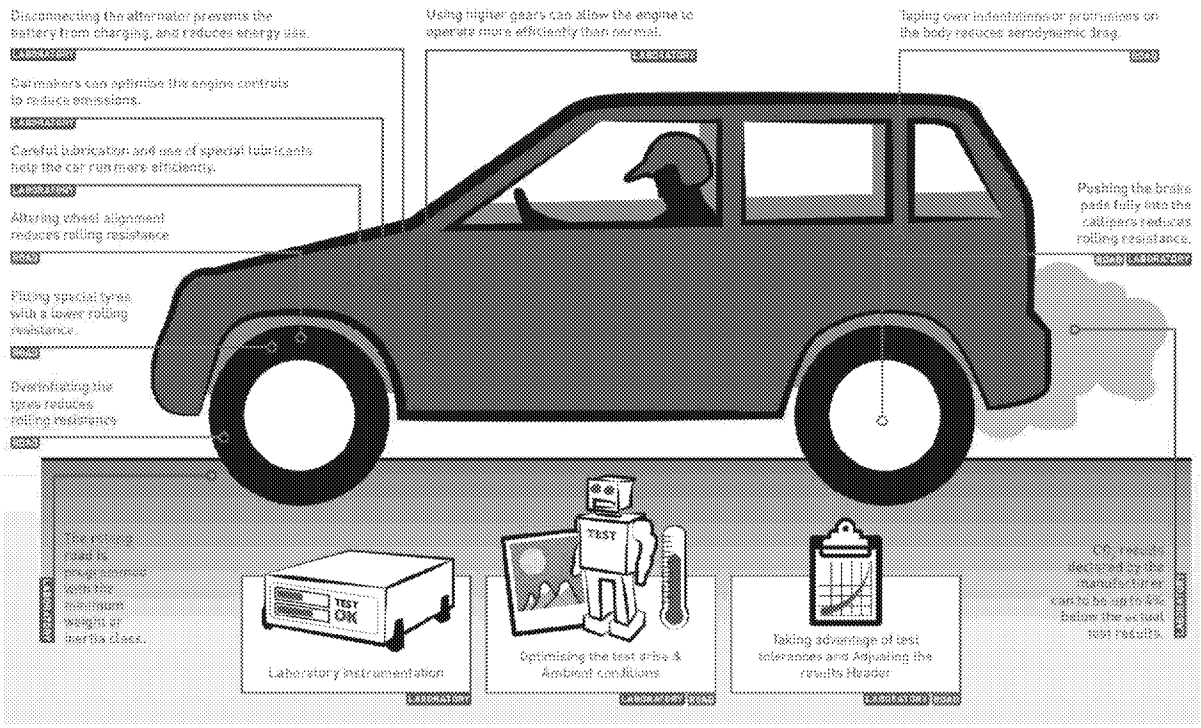
http://www.theicct.org/blogs/staff/bought-tiger-got-hello-kitty-how-fix-vehicle-fuel-economy-fraud-china

In Europe, there are many ways to optimize vehicles for the laboratory testing



Country Responses

- US: Revised defeat device requirements and conducting random testing
- Switzerland: Stopped sales of all two-liter diesel Volkswagen cars that meet its Euro V emissions standards.
- UK: Series of exchanges requesting technology support from ICCT prior to announcement of a government vehicle testing program
- Germany: Both federal government and State of Baden-Württemberg are developing vehicle testing programs
- South Korea: Announced investigations into the VW diesel car models; technical institutions and academics have contacted us.
- France: Initial stages of establishing a testing protocol
- Italy and other EU member states: Have called for inquiries
- India: Government has directed the Automotive Research Association of India (ARAI) to carry out tests on Volkswagen cars
- China: Requested information from ICCT on VW models sold in China
- Mexico: Issued a press release announcing a new in-use testing program that would be supported by the ICCT.

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What's next for the ICCT?
Multi-year strategy under development . . .

1. Defeat Device Vehicle Testing

- Respond to immediate government requests for ICCT assistance on testing
- New test methods using cheap NOx sensors, OBD fuel use data, etc., under exploration.

2. International Best Practices

- The ICCT create new metrics and compare nations against each other to create a race to the top for compliance programs.
- Expand ICCT International Council to create a network of government officials dedicated to improved compliance

3. Country programs

- Start in Europe and China, the two largest markets with major shortcomings in compliance programs, and then expand to India, Mexico, Brazil, etc . . .
- Europe is currently revamping its test cycle and procedures, but needs improvements to the RDE requirements and regional institutional reform to enable recall testing, penalties, etc.
- China is newly empowered with recall authority and major penalties, but needs a credible testing program, institutional capacity, and a culture of compliance.

4. Strategic Partnerships

- Build on existing partnerships with government regulators and influential NGOs in local markets
- Partner with association of government legal enforcement agencies
- Explore collaboration with progressive institutional investors interested in improved risk assessment on auto makers.

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About the ICCT . . .

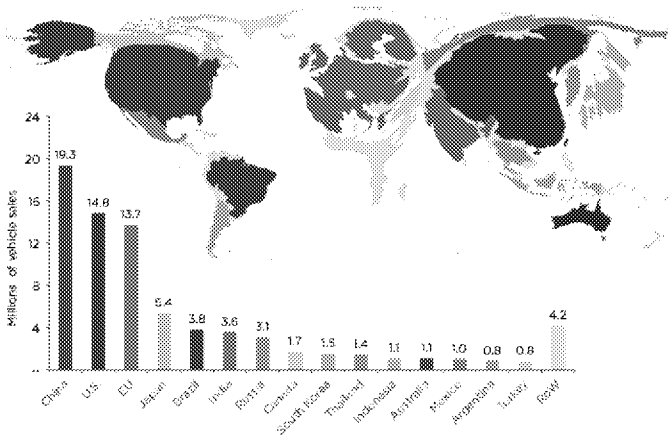
International Council Composed of top government regulators (~25) in major markets founded in 2001.

Non-profit Organization
ICCT incorporated to serve International Council, staff of 40 technical experts on vehicles and fuels, half with background / nationality outside US founded in 2005. Offices in DC, San Francisco, Berlin Germany and Beijing China

Board of Directors
Dan Greenbaum, head of Health Effects Institute, chair of ICCT board.

Funding
California philanthropies plus government grants and contracts.

Top 15 Car and Truck Markets by Sales in 2012



Mission: To dramatically improve environmental performance and efficiency of motor vehicles (cars, trucks, marine, aviation) and fuels by supporting government regulatory agencies in world's top vehicle markets.

Geographic scope: China, Europe, US, California, Japan, Brazil, India, Canada, South Korea, Indonesia, Australia, Mexico plus smaller markets by request.

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Contact Information
Background and Additional Reading

Contact Information:
Drew Kodjak, Executive Director, (Washington DC), drew@theicct.org
John German, US program co-lead (Ann Arbor), john@theicct.org
Anup Bandivadekar, Program Director (San Francisco), anup@theicct.org

Background and Additional Reading:

http://www.theicct.org/news/epas-notice-violation-clean-air-act-volkswagen-press-statement

http://theicct.org/news/faq-use-nox-emissions-diesel-passenger-cars

http://www.nytimes.com/2015/09/22/business/it-took-epa-pressure-to-get-vw-to-admit-fault.html?smid=nytcore-iphone-share&smprod=nytcore-iphone

http://www.huffingtonpost.com/margo-t-oge/the-silver-lining-in-the-vw-emissions-cloud_b_8222726.html

http://www.bbc.com/news/business-34519184

http://www.rollcall.com/news/the_volkswagen_emissions_scandal_and_the_epa_commentary-243996-1.html

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Additional slides

ICCT in the press

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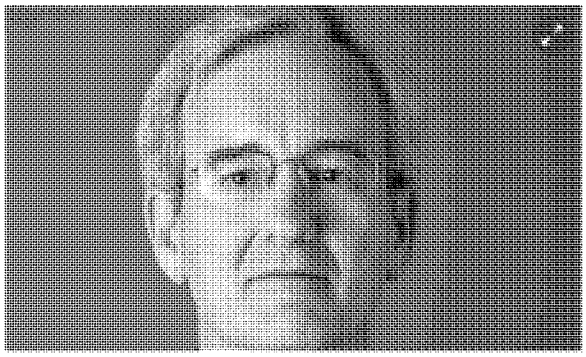
The Guardian

Saturday, September 26

Meet John German: the man who helped expose Volkswagen's emissions scandal



John German: 'VW had a chance to fix the problem, and they continued to try and cheat and do what they had done. That's just amazing.' Photograph: John German/ICCT

He's an unlikely media star, not a pop singer or reality TV contestant, but a grey-haired automotive engineer thrust into the global spotlight after he and his colleagues were credited with helping uncover one of the biggest ever corporate scandals.

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THE INTERNATIONAL COUNCIL ON CLEAN TRANSPORTATION

Le Parisien

Thursday, September 24

When we made our spring 2014 report to the US authorities, we were not expecting this to become a global scandal. And we were very surprised to later discover that the second largest car manufacturer in the world had installed defeat devices on some of its models.

75 victimes des attentats de janvier

Le Parisien

TAXES FONCIÈRES

Les impôts deviennent fous

Volkswagen : l'homme par qui le scandale est arrivé

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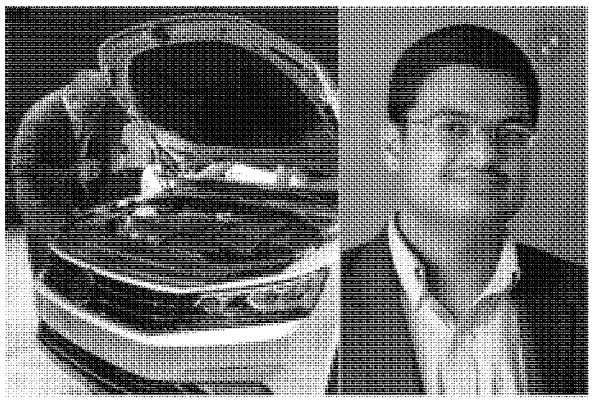
SvD NÄRINGSLIV

Wednesday, September 23

Environmental expert Anup Bandivadekar and his three colleagues revealed Volkswagen's emissions cheating. The scam includes eleven million cars and could cost VW $25 billion.



Ingenjören Anup Bandivadekar vid miljöorganisationen ICCT i San Francisco avslöjade VW:s utsläppsfusk. Foto: Reuters, ICCT

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Le Parisien

Thursday, September 24

Volkswagen : l'homme par qui le scandale est arrivé

Drew Kodjak est le directeur exécutif de l'ICCT, l'ONG américaine qui a révélé l'affaire Volkswagen. L'homme par qui le scandale est arrivé insiste ce jeudi auprès du «Parisien» - «Aujourd'hui en France» sur la nécessité de mettre en place des tests sur route pour vérifier les émissions réelles des véhicules. Interview.

The man behind the revelation surrounding VW said that “this scandal is an alarm signal for Europe.”

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Die Welt

Monday, September 28

We had expected that diesel cars in the US would be cleaner and that we could get the data and say to Europe “Why can you not do this too?"

From: André Lasme

John German (l.) und Peter Mock von der Umweltlobby ICCT gaben die Studie in Auftrag, die Unregelmäßigkeiten bei Abgaswerten von VW-Dieselfahrzeugen aufdeckte

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El País

Monday, September 30

Francisco Posada put against the wall one of the most powerful companies in the world by finding a software bug altering greenhouse gas emissions in two models of VW diesel vehicles.

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Notable Qutotes

- "Defeat devices is the extreme — it is cheating, illegal activity, but there are big issues with respect to tests and whether they are being carried out in the spirit of the regulation or just by the book." – Anup Bandivadikar, as quoted by The Hindu Business Line
- "I feel happy, but I also feel sad because there was enough data and people knew for a long time. The emissions in cities have not gone down like we expected and they could have been reduced a long time ago." – Peter Mock, as quoted by The Guardian
- "We had already shown that emissions from European diesel cars exceeded the standards in normal traffic conditions But we thought that this difference was due to a number of gaps in the European system, including the lack of a common authority to perform the tests. Our hypothesis was that in the United States, with the Clean Air Act, all cars would come out clean. " – Drew Kodjak as quoted by Le Monde
- "The International Council on Clean Transportation, a nonprofit research organization that works with governments to cut air pollution from mobile sources, and West Virginia University researchers uncovered Volkswagen's alleged use of defeat devices in research and testing over the last couple of years." – as quoted by the Wall Street Journal
- "Without vigilant enforcement, companies that comply with the standards will be placed at a competitive disadvantage. If left unchecked, that could undermine the whole regulatory framework." – John German, as quoted by DownToEarth

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Appointment

From: Wright, DavidA [Wright.DavidA@epa.gov]
Sent: 10/28/2015 12:33:47 PM
To: Wright, DavidA [Wright.DavidA@epa.gov]; Ott, William [ott.william@epa.gov]; Carlheinz.Bayer@bmwna.com; christian.cozzarini@bmw.de
CC: Wehrly, Linc [wehrly.linc@epa.gov]; Dalton, Joel [Dalton.Joel@epa.gov]

Subject: EPA/BMW diesel instrumentation Review
Location: AA-Room-Office-N66-ConfRoom/AA-OTAQ-OFFICE

Start: 10/28/2015 7:00:00 PM
End: 10/28/2015 8:00:00 PM
Show Time As: Tentative

Appointment

From: Wright, DavidA [Wright.DavidA@epa.gov]
Sent: 10/28/2015 12:33:45 PM
To: Ott, William [ott.william@epa.gov]; Carlheinz.Bayer@bmwna.com; christian.cozzarini@bmw.de
CC: Wehrly, Linc [wehrly.linc@epa.gov]; Dalton, Joel [Dalton.Joel@epa.gov]

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Location: AA-Room-Office-N66-ConfRoom/AA-OTAQ-OFFICE

Start: 10/28/2015 7:00:00 PM
End: 10/28/2015 8:00:00 PM
Show Time As: Tentative

Christian,

If you are interested in participating by phone send me an e-mail and I will provide you with the phone number for the conference room.

Regards,

David

Appointment

From: Wright, DavidA [Wright.DavidA@epa.gov]
Sent: 10/28/2015 12:33:47 PM
To: Wright, DavidA [Wright.DavidA@epa.gov]; Ott, William [ott.william@epa.gov]; Carlheinz.Bayer@bmwna.com; christian.cozzarini@bmw.de
CC: Wehrly, Linc [wehrly.linc@epa.gov]; Dalton, Joel [Dalton.Joel@epa.gov]

Subject: EPA/BMW diesel instrumentation Review
Location: AA-Room-Office-N66-ConfRoom/AA-OTAQ-OFFICE

Start: 10/28/2015 7:00:00 PM
End: 10/28/2015 8:00:00 PM
Show Time As: Tentative

Christian,

If you are interested in participating by phone send me an e-mail and I will provide you with the phone number for the conference room.

Regards,

David

Message

From: Rojeck, Tristin [rojeck.tristin@epa.gov]
Sent: 6/13/2019 3:13:21 PM
To: Ott, William [ott.william@epa.gov]
Subject: FW: Confirmatory Test Workbook
Attachments: FE Paired data for Kochunas 5_9_2019.xlsm

From: Kochunas, Kathryn
Sent: Tuesday, May 28, 2019 4:58 PM
To: Rojeck, Tristin <rojeck.tristin@epa.gov>; Kimball, Joshua <kimball.joshua@epa.gov>
Subject: Confirmatory Test Workbook

Tristin and Josh,

I've put together a macro to take the confirmatory data and sort it into a tab for each test cycle, and then link up each EPA test. The second half of the macro analyzes the data. I haven't finished putting in charts, but the HWFE Charts tab shows you what I think might be one of the better displays of the data. Please take a look at this and we can talk about what is being calculated/ where. If you have ideas on how to present the data, please do take a stab at it. We can see if there's anything notable.

Regards,

Kathryn Kochunas
Compliance Engineer
Light Duty Vehicle Center
Compliance Division
Office of Transportation and Air Quality
U.S. Environmental Protection Agency

Phone: (734) 214-4215
Email: Kochunas.Kathryn@epa.gov

Message

From: Charmley, William [charmley.william@epa.gov]
Sent: 3/29/2018 7:58:28 PM
To: Alson, Jeff [alson.jeff@epa.gov]; Simon, Karl [Simon.Karl@epa.gov]; Olechiw, Michael [olechiw.michael@epa.gov]; Moran, Robin [moran.robin@epa.gov]; Dickinson, David [Dickinson.David@epa.gov]
Subject: FW: OTAQ Daily News Brief
Attachments: CEI - ACI-Coalition-Letter-Final on the California Waiver, March 2018.pdf

Attached is the letter referenced in the article below from the Competitive Enterprise Institute and 10 other organizations requesting EPA repeal the California waiver.

From: Mylan, Christopher
Sent: Thursday, March 29, 2018 11:20 AM
To: Mylan, Christopher <Mylan.Christopher@epa.gov>
Subject: OTAQ Daily News Brief

Good Morning,

Welcome to OTAQ's daily news listserv. The OTAQ Daily News Brief compiles articles from around the world focused on our office's work; this includes everything from light-duty/heavy-duty vehicles, electric vehicles, air quality studies, aircrafts, boats and ships, to alternative fuels, and of course, climate change. If you'd like to be removed or would like to add another person to the listserv please contact Christopher Mylan at mylan.christopher@epa.gov. Feedback is welcomed. Thanks and enjoy!

Trump admin to toss Obama fines for CAFE violations

Camille von Kaenel, E&E News reporter

Siding with automakers, the Department of Transportation today dumped the proposed Obama-era fines for failing to meet fuel economy targets.

The National Highway Traffic Safety Administration posted a draft regulation on its website that would overturn a proposal for increasing civil penalties in the corporate average fuel economy (CAFE) program. Heidi King, NHTSA's deputy administrator, signed the notice yesterday, but it has yet to appear in the *Federal Register*.

The Obama-era rule would have increased fines from $5.50 to $14 for every one-tenth of a mile per gallon that manufacturers fell short of the standard.

The Alliance of Automobile Manufacturers and Global Automakers had petitioned the agency to reconsider the rule. Wade Newton, a spokesman for the alliance, said the trade group was "certainly pleased" about the proposal but reserved further comment because it is in active litigation.

U.S. drivers sue BMW over emissions-cheating allegations

GreenWire

BMW yesterday became the latest automaker to face a lawsuit from U.S. drivers over allegations of installing emissions-cheating software.

"Tens of thousands" of BMW's diesel cars made from 2009 to 2011 are polluting at up 27 times the legal limit, according to the lawsuit, filed yesterday in New Jersey federal court.

That's because BMW relied on software with algorithms designed to manipulate emissions-testing systems, the lawsuit alleges.

BMW is at least the sixth automaker accused of such cheating since 2015. The algorithms mentioned in the suit are similar to the ones Volkswagen AG has admitted to using.

Conservative groups urge Scott Pruitt to block California from setting own car pollution rules

by Josh Siegel, Washington Examiner

A coalition of conservative groups urged Environmental Protection Agency Administrator Scott Pruitt on Wednesday to revoke California's ability to set its own strict fuel-efficiency standards for vehicles.

"The EPA has a responsibility to American citizens, but not one to promote solutions that require expensive taxpayer-funded infrastructure spending and subsidies, particularly at questionable environmental gains," the groups wrote in a letter to Pruitt. "The American people deserve better, and if you do not act fast, come April 1, people across the state of California will be facing unrealistic and costly mandates which threaten their basic right to choose."

The 11 groups on the letter include the Competitive Enterprise Institute, FreedomWorks, and Americans for Tax Reform.

Automakers and 4 U.S. states promote purchase of electric vehicles

David Shepardson

NEW YORK, March 28 (Reuters) - Four U.S. states and 16 major automakers are launching a joint $1.5 million advertising campaign to prod Americans to buy electric vehicles. Automakers are investing billions of dollars to develop dozens of new EVs in the face of regulatory requirements, but face slow U.S. sales.

General Motors Co, Volkswagen AG, Toyota Motor Corp and many other companies, along with New York, Connecticut, Massachusetts and New Jersey, are backing the effort that was unveiled at the New York auto show on Wednesday.

The campaign, dubbed "Drive Change. Drive Electric," will focus on the benefits of electric cars.

German finance minister aims to avoid bans on diesel cars

Reuters Staff

BERLIN (Reuters) - Germany must do all it can to avert driving bans for diesel cars, the country's new finance minister said in an interview published on Thursday, urging cities and local communities to boost investments in charging stations for electric cars.

In an interview with the Funke Mediengruppe newspaper chain, Olaf Scholz expressed scepticism that changes in taxation - for instance, scrapping tax breaks for diesel as a fuel - would speed moves by the car industry to introduce cleaner cars.

He also rejected calls for the government to offer financial incentives to get more clean-burning diesel cars on the road and bring down emissions in heavily polluted cities.

“It is the task of industry to develop vehicles that meet existing and future rules for clean air,” Scholz told the newspaper group, adding: “We must talk seriously about how we can get more electric cars or expand public transportation.”

Message

From: Lingzhi Jin [lingzhi.jin@theicct.org]
Sent: 10/19/2016 7:42:16 PM
To: Simon, Karl [Simon.Karl@epa.gov]
CC: Hui He [hui@theicct.org]
Subject: Review of US compliance and recall program white paper
Attachments: Recall paper_ext. review draft.docx; ATT00001.htm

Flag: Flag for follow up

Dear Karl,

Greetings!

I'm writing to invite you to review the attached draft report from the ICCT: *A Historical Review of U.S. Vehicle Emission Compliance Program, and Emission Recall Cases.*

The purpose of this paper is to offer valuable experience from the US (and California) in establishing and maintaining a comprehensive and robust vehicle in-use emission compliance and enforcement system to major developing markets, including and especially China, that is lack of such mechanism. Our target audience will be regulators at central and local environmental agencies in those market, and especially in China.

The information in this paper was collected using a combination of approaches including direct interview with former and current emission regulators in the US, literature (incl. legislation and regulation) review, and data analysis.

You might recall that at the beginning of this project, we had a phone interview with you. We highly appreciate your generous support to this project, and any suggestions from you to make this paper a valuable source for regulators in other parts of the world.

We plan to publish this paper in December 2016, therefore your feedback **by Nov 8** will be highly appreciated! If you would like to review but need more time, please let us know. During your review, we'd encourage you to use track-change function in MS Word, that will help us track each individual's comments clearly.

Thank you very much, and look forward to your feedback!

Message

From: Simon, Karl [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=4D781D1AD595415DB3A4E768C2D2B3FC-SIMON, KARL]
Sent: 3/28/2016 8:32:50 PM
To: Cohen, Janet [cohen.janet@epa.gov]; Larsen, Kay [larsen.kay@epa.gov]; Blubaugh, Jim [Blubaugh.Jim@epa.gov]; Bradish, Tracey [bradish.tracey@epa.gov]
Subject: Summit ask
Attachments: 2012-2013 compliance report.pdf

All,

I believe that the sharepoint site for attendees is up. If I am not mistaken, would like to have someone push out the following note to all of them in the next few days. Can we also post the attached document there as well? Thanks

Compliance Summit Attendees,

We are looking forward to seeing everyone next week in Ann Arbor, Michigan for our compliance summit. In the interest of providing support for the meeting, we have created a web-based site for all attendees to access. On this site, we have provided information on logistics and also posted our latest compliance summary report for anyone wishing to review it for background before we get together. We also encourage anyone else wishing to share information on their programs in advance of our meeting to use this site as well. Instructions for accessing the site and how to post materials are included below.

See you next week!

Jim/Karl/whomever

Driving Innovation in Clean Transportation

Message

From: Ed Pike [epike@energy-solution.com]
Sent: 9/4/2013 4:57:48 PM
To: Wehrly, Linc [wehrly.linc@epa.gov]
CC: Cherry, Jeff [Cherry.Jeff@epa.gov]
Subject: FW: contact for US EPA coast-down testing data
Attachments: 09tstcar.xlsm; Lutsey 2012 efficiency.pdf

Dear Mr. Wehrly-

I am sure that you are very busy and I would appreciate your assistance in contacting the appropriate US EPA staff person for coast down testing. I worked at US EPA for 15 years in Region IX so I have familiarity with some federal test methods and could use help learning more about the coast-down testing data posted by US EPA. This is an important part of a research project for the South Coast AQMD on the potential to encourage low rolling resistance tires in the replacement market; we have provided draft analysis on the potential for improvement and will provide a complete report the end of next week and it would be great to check-in with US EPA staff before then.

Thanks for your assistance.

Best,
Ed

From: Ed Pike
Sent: Wednesday, August 14, 2013 8:42 AM
To: 'wehrly.linc@epa.gov'
Cc: Cherry, Jeff (Cherry.Jeff@epa.gov)
Subject: contact for US EPA coast-down testing data

Dear Mr Wehrly-

I am researching the potential for air quality and GHG reductions from low rolling resistance passenger vehicle replacement tires for the South Coast AQMD. Understanding the rolling resistance achieved in the new vehicle fleet will be a very valuable benchmark.

Jeff Cherry kindly provided your contact information for details of coast-down testing data. I would like to better understand the details of co-efficient "A", in particular the "TPF_DYN_TRK_A_MSR" and "TPF_EDYN_TRK_A_MSR" columns from the 2009 data set (attached) as well as the difference between the "target" and "set" columns the most recent data sets in order to apply the rolling resistance calculations in Nic Lutsey's paper (attached). Could you please let me know whom to contact? Thanks!

Best,
Ed

Ed Pike, PE
Senior Project Manager
Energy Solutions
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A technical analysis of model year 2011 US automobile efficiency

Nicholas Lutsey

Institute of Transportation Studies, University of California, One Shields Ave., Davis, CA 95616, USA

ARTICLE INFO

Keywords:
Automobile technology
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ABSTRACT

This paper investigates the new 2011 automobile fleet to quantify the variation in models' efficiency and underlying technology attributes. This involves analysis of test data to quantify the aerodynamic, rolling resistance, and powertrain efficiency characteristics of each model, as well as analysis to understand relationships between these and vehicle fuel consumption. The findings indicate that while vehicles are about 14% efficient on average, there is wide variation and direct evidence of dramatically improved powertrain efficiency within existing models. Existing gasoline and diesel models demonstrate improved powertrain efficiency by over 25%, hybrid gasoline-electric powertrains by over 50%, fuel cells by a factor of three, and all-electric by a factor of four as compared to the average 2011 vehicle. Advanced aerodynamic and tire rolling resistance technologies are also in evidence.
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1. Introduction

Consumers and government programs are demanding increased technical efficiency in new automobiles. Over the past 35 years, vehicle size, performance, and fuel economy have shifted according to new product offerings, the availability of new technology, fuel economy regulations, consumer trends, and fuel prices. In terms of current tends, technology developments and the implementation of standards suggest a much more rapid increase in vehicle efficiency in upcoming years. There are emerging advances in engine valvetrain and injection technologies, turbocharging, increased transmission efficiency, and overall vehicle technologies for aerodynamic, rolling resistance, and mass-reduction improvements. Advanced hybrid technologies offer further efficiency improvements. Based on the deployment of these technologies, average new vehicle fuel economy in the US would increase by about 20% from model year 2011 to meet the 2016 regulations (US Environmental Protection Agency, 2010; US Environmental Protection Agency and National Highway Traffic Safety Administration, 2010), and by another 40% by 2025 (US Environmental Protection Agency and National Highway Traffic Safety Administration, 2011).

2. Technological improvements

The potential improvements from powertrain efficiency are found because of the inefficiencies in the modern automobile's ability to convert chemical fuel energy to motive power to propel the vehicle. Improvements beyond the powertrain efficiency exist because of the ability to reduce the road load requirements from vehicle mass, aerodynamics, and tire rolling resistance. The basic energy flows and losses are generalized in Fig. 1 for standard testing cycles, where all the percentages are based on the original 100% of fuel energy that originally enters the vehicle. The percentages, however, can vary widely under different driving conditions. The flow of energy from the fuel tank to vehicle propulsion involves the pumping of fuel through a fuel delivery system, thermodynamic conversion of chemical to mechanical energy in the cylinders, loss of heat through the exhaust and cooling system, engine auxiliaries, accessories, transmission, and braking systems.

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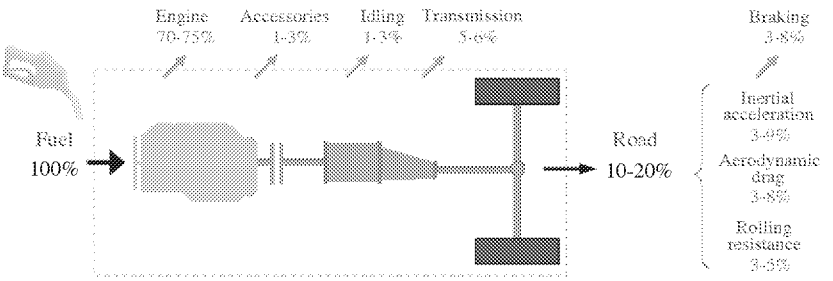

Fig. 1. Illustration of vehicle energy losses.

Typical best values for engine fuel conversion efficiency at their efficient operating points are about 30–40% (Heywood, 1988). By extension, this can represent a rough upper bound for the technical efficiency for combustion vehicles without idling, transmission, and braking losses. The powertrain efficiency, as defined here, involves efficiency from the fueling of the vehicle – through the losses of the engine, engine auxiliaries, accessories, and driveline – to provide tractive force at the wheels to overcome rolling resistance and aerodynamic drag and propel the vehicle. Analysis of vehicle fuel consumption (in units of fuel energy per distance traveled) includes the effects of both powertrain efficiency and road load requirements.

As shown in Fig. 1, accounting for various engine and drivetrain-related losses results in an approximate 10–20% vehicle powertrain efficiency under different conditions. From vehicle simulation modeling, after engine and transmission losses are accounted for, the technical vehicle efficiency is about 12–15% for urban driving, 20–24% for highway driving, and 24–30% in higher speed, aggressive driving (Kromer and Heywood, 2007; Ricardo Inc., 2008). Using a somewhat different accounting method, whereby inertial acceleration is cancelled out, results in average powertrain and braking efficiency values of about 7–9% for urban driving and 25–30% for highway driving for model year 2009 and 2010 vehicles (Hochgraf, 2011; Hochgraf and Duoba, 2010). Several studies have shown how available hybrid models, primarily via regenerative braking, offer substantial increases in efficiency over non-hybrids (Hochgraf and Duoba, 2010).

3. Analytical framework

The analysis has two main components. The first involves the use of US certification data for model year 2011 vehicles (from US Environmental Protection Agency (2011a)) to analyze the powertrain efficiency and vehicle road load factors for aerodynamics and rolling resistance on a model-by-model basis. The second component applies the powertrain efficiency and road load factors to statistical analysis to quantify the contribution of powertrain efficiency, aerodynamics, rolling resistance, mass, and powertrain sizing to vehicle fuel consumption for new 2011 models. Finally, the implications of these results are discussed in the context of future vehicle fleet technology.

The novel contribution of this assessment over previous work is to decompose the effects of powertrain efficiency, aerodynamics, rolling resistance, mass, and powertrain size with a new level of rigor based on empirical certified test data for new vehicle models. In doing so, the study incorporates previously unanalyzed emerging vehicle technologies, employs a methodologically innovative framework to disaggregate powertrain efficiency from physical vehicle characteristics, and statistically isolates the relative effects of powertrain and tractive road load factors on overall vehicle fuel consumption. Improvements from new advanced technologies, including gasoline, diesel, hybrid, electric, and fuel cell models are quantified with hard data, when previously these technologies have been compared only via vehicle simulation modeling with various analytical assumptions. Therefore, this assessment provides a greatly improved snapshot of the technology capability of existing production vehicles, highlighting the variation, potential, and laggards within the fleet. Applying the updated 2011 vehicle characteristics offers new elasticity factors for the contribution of powertrain efficiency, mass, aerodynamics, rolling resistance, and engine size on vehicle fuel consumption.

4. Results

Initially the aerodynamic, rolling resistance, and powertrain efficiency characteristics of 2011 vehicle models are evaluated based on US certification data and known physical automotive engineering relationships. As part of the US regulatory programs for fuel economy and carbon dioxide emissions, US Environmental Protection Agency (EPA) publishes the vehicle model test data that are used for annual certification. This analysis uses the EPA's certification dataset for model year 2011 vehicles (US Environmental Protection Agency, 2011a). This includes city and highway cycle fuel economy data, vehicle test weight, engine size, maximum engine power, transmission, certification fuel, and coast-down coefficients for light-duty automobiles certified for sale in the US.

In terms of filtering the dataset, only city and highway cycles are used, eliminating the more limited data on the other test cycles. Also, duplicate model entries – those with identical identification number, engine, transmission, and test weight – are

omitted, as are models with problematic and outlier data, such as blanks, zeroes, or negative values for fuel economy, rolling resistance, and aerodynamic area. This leaves 1108 separate test models.[1]

The analysis of vehicle efficiency requires the use of several basic vehicle efficiency relationships. Most generally, the vehicle's energy consumption can be measured in the amount of fuel consumed, the determination of which is relatively straightforward based on EPA data on fuel economy over the "city," or Federal Test Procedure (FTP), and "highway" drive cycles. Using fuel consumption, the inverse of fuel economy miles driven per gallon of fuel, over drive cycles for which the distance and the low heating value of the fuel are known, the fuel energy consumed over a given cycle is calculated as:

$$\begin{bmatrix}\text{Fuel energy}\\ \text{in MJ}\end{bmatrix}_{\text{test cycle}} = \begin{bmatrix}\text{Fuel consumption}\\ \text{in gallon/mile}\end{bmatrix} \cdot \begin{bmatrix}\text{Distance}\\ \text{in mi}\end{bmatrix} \cdot \begin{bmatrix}\text{Fuel energy}\\ \text{in MJ/gallon}\end{bmatrix} \tag{1}$$

The amount of energy that ultimately drives the vehicle at the wheels can be considerably less than the original energy that is consumed. The vehicle powertrain must, at a minimum, provide enough propulsion at the wheels to overcome the forces that act against it over any driving operation or, in this case, over simulated vehicle driving over test cycles. The force delivered to the wheels to propel the vehicle, the tractive road load, is approximated as the sum of the forces of aerodynamic drag, rolling resistance, inertial acceleration, and grade-climbing forces that must be overcome for the vehicle to move at a given speed and acceleration.[2]

$$\begin{bmatrix}\text{Tractive road}\\ \text{load in N}\end{bmatrix}_{\text{theoretical}} = \begin{bmatrix}\text{Aerodynamic}\\ \text{drag}\end{bmatrix} + \begin{bmatrix}\text{Rolling}\\ \text{resistance}\end{bmatrix} + \begin{bmatrix}\text{Inertial}\\ \text{acceleration}\end{bmatrix} \tag{2}$$

The components of this equation are determined by:

$$\begin{bmatrix}\text{Aerodynamic}\\ \text{drag}\end{bmatrix} = \frac{1}{2} \cdot \begin{bmatrix}\rho\text{air}\\ \text{in kg/m}^3\end{bmatrix} \cdot \begin{bmatrix}A_f\\ \text{in m}^2\end{bmatrix} \cdot [C_d] \cdot \begin{bmatrix}\text{Speed}\\ \text{in m/s}\end{bmatrix}^2 \tag{3}$$

$$\begin{bmatrix}\text{Rolling}\\ \text{resistance}\end{bmatrix} = [C_{rr}] \cdot \begin{bmatrix}\text{Mass}\\ \text{in kg}\end{bmatrix} \cdot \begin{bmatrix}\text{gravity}\\ 9.81\ \text{m/s}^2\end{bmatrix} \tag{4}$$

$$\begin{bmatrix}\text{Inertial}\\ \text{acceleration}\end{bmatrix} = [1+\delta] \cdot \begin{bmatrix}\text{Mass}\\ \text{in kg}\end{bmatrix} \cdot \begin{bmatrix}\text{acceleration}\\ \text{in m/s}^2\end{bmatrix} \tag{5}$$

Coefficients for rolling resistance (C_{rr}) and drag (C_d), can be found by experiment. Frontal area (A_F) is the vehicle's cross-sectional area as it moves through the air. There are not extensive data available for C_{rr}, C_d, and A_f, but the US EPA certification data does, through its coast-down testing (Society of Automotive Engineers, 1995), provide parameters that can be used to approximate the fundamental physical vehicle characteristics. The δ factor of 0.03 is applied to account for the required inertial acceleration for the polar moment of inertia of tires, wheels, and axles, equivalent to 3% of the vehicle mass. The density of air, ρ_{air}, is assumed to be 1.23 kg/m^3. The vehicle speed and acceleration points are directly dictated by the vehicle test cycles.

To include empirical road load factors for each of the vehicle test models, the EPA coast-down testing data are utilized. In the EPA coast-down test, the tractive road load for a given vehicle speed comes in the form of Eq. (6), with three empirical coefficients A, B, and C (in units of N, N s/m, and N s^2/m^2, respectively) for calculations here. There are two notable differences between Eqs. (2) and (6) for tractive road load. Eq. (2) has an inertial acceleration term (whereas there is no acceleration on the coast-down test). Eq. (6) has a B coefficient that is linear with speed (where there is no basic comparable theoretical term in Eq. (2)).

$$\begin{bmatrix}\text{Tractive road}\\ \text{load in N}\end{bmatrix}_{\text{vehicle coastdown}} = A + B \cdot \begin{bmatrix}\text{Speed}\\ \text{in m/s}\end{bmatrix} + C \cdot \begin{bmatrix}\text{Speed}\\ \text{in m/s}\end{bmatrix}^2 \tag{6}$$

Based on the empirically derived vehicle-speed-based road load characteristics and known inertial acceleration characteristics under test cycle conditions, the required test cycle energy is computed as in Eq. (7). This relationship utilizes the three empirical coast-down coefficients as the defining physical tractive road factors for each model over the various vehicle speeds. In all, this calculation includes four factors: the constant A term (which is functionally similar to the force of rolling resistance), the speed-linear B term (which is empirically evident though not in the theoretical Eq. (2)), the speed-squared C term (which is functionally similar to the aerodynamic drag factor), and the inertial acceleration requirements that are inherent to any test cycle with varying speed.

[1] There are several limitations of the dataset. It does do not include model-by-model sales numbers, and therefore sales-weighted averaging of the results is not possible. The data pertain to the US regulatory city and highway test cycles and therefore do not necessarily reflect real-world in-use driving conditions. The energy consumption data involve measurements at the vehicle and therefore do not include upstream life-cycle energy use from petroleum or alternative fuels.

[2] Grade is not included because there is no grade in the US city and highway drive cycle test procedures on which the fuel economy data were taken.

$$\begin{bmatrix}\text{Tractive road}\\ \text{load in N}\end{bmatrix}_{\text{test cycle}} = A + B\cdot\begin{bmatrix}\text{Speed}\\ \text{in m/s}\end{bmatrix} + C\cdot\begin{bmatrix}\text{Speed}\\ \text{in m/s}\end{bmatrix}^2 + \begin{bmatrix}\text{Inertial}\\ \text{acceleration}\\ \text{in N}\end{bmatrix} \tag{7}$$

Eq. (7) defines the required energy from the vehicle powertrain that is supplied at the wheels to accelerate the vehicle and maintain given speeds throughout each of the city and highway test cycles. To determine the powertrain efficiency over the drive cycles, the road load energy for each vehicle model is evaluated according to Eq. (7) at each moment of the city and highway drive cycles. The tractive load is multiplied by the vehicle speed to calculate the required power at the wheels at each point in the drive cycles. The tractive energy requirements throughout each second of the drive cycles' speed-versus-time traces are calculated. The tractive load energy throughout the cycle is then divided by the fuel energy consumed (Eq. (1)), to the estimated vehicle powertrain efficiency, η, over the cycle.

$$\eta_{\text{powertrain}} = \frac{\sum_{t=o}^{\text{test cycle}}\begin{bmatrix}\text{Tractive road}\\ \text{load in N}\end{bmatrix}\cdot\begin{bmatrix}\text{speed}\\ \text{in m/s}\end{bmatrix}[\text{s}]}{\begin{bmatrix}\text{Fuel energy}\\ \text{in MJ}\end{bmatrix}_{\text{test cycle}}}\cdot\left[\frac{1\ \text{MJ}}{10^6\ \text{J}}\right] \tag{8}$$

The US EPA coast-down testing coefficients are also used to estimate two particular physical attributes of each vehicle model – their aerodynamic area, C_dA_f, and their rolling resistance, C_{rr}, based on established engineering relationships (Eqs. (3) and (4)). Because coast-down coefficient A corresponds to the constant term of the road load equations, this term is used as a relative estimator for the vehicle rolling resistance. Because the coast-down coefficient C corresponds to the speed-squared road load term, it is used as a relative estimator for the vehicle aerodynamic area. As a result, the rolling resistance and the aerodynamic drag factors for each vehicle can be estimated as in Eqs. (9) and (10) based on basic engineering relationships. The aerodynamic area, $C_d\,A_f$ is not further decomposed into its two constituent parts due to lack of model-by-model data on the frontal area.

$$C_{rr} = \frac{A}{[\text{Vehicle mass in kilogram}]\cdot[\text{gravity}, 9.81\ \text{m/s}^2]} \tag{9}$$

$$C_d\cdot A_f = \frac{2\cdot C}{\rho_{\text{air}}} \tag{10}$$

Fig. 2 gives the average new 2011 vehicle model characteristics based on these relationships; all summary statistics include averages across the models but are not sales-weighted for the relative sales in the US automobile market. Tire rolling resistance values are centered around 0.008, and the aerodynamic area average is about 0.8 m^2, with a broad right-hand distribution – averages that are in line with National Research Council (2011) estimations for new vehicle characteristics. The median vehicle test weight is 1814 kg, with a broad distribution from compact cars below 1400 kg to full-size pickups above 2700 kg. Vehicle fuel economy is shown in its two constituent tests, city and highway, as well as their combination.[3]

As seen in Fig. 2, vehicles are generally operating much more efficiently on the highway cycle than on the city cycle. From the 2011 US data set, the median highway fuel economy level of 35 mpg is 57% higher (corresponding with 36% lower fuel consumption) than the median city value of 22 mpg. However, the difference in vehicles' powertrain efficiency is even larger, with the 23% average highway cycle efficiency being more than double that of the 11% average city cycle efficiency. This is due to a number of factors. Compared with the US highway test cycle, the US city cycle operation more routinely involves engine operation outside of its optimal operating speed and torque areas, more engine idling time, more frequent and greater magnitude accelerations, and more braking events where energy is typically dissipated as heat in brake pads.

In Fig. 3, the city and highway powertrain efficiencies of 2011 models are shown, highlighting particular emerging technologies with relative benefits in different types of driving. Within these data, the average vehicle efficiency of 23% on the highway cycle and 11% on the city cycle is shown. These results are similar to the powertrain efficiency estimations found by Kromer and Heywood (2007) and Ricardo Inc., 2008) among others, but differ from Hochgraf and Duoba (2010) and Hochgraf (2011) who employ analytical methods that exclude inertial acceleration in their road load calculations. The more advanced plug-in electric and fuel cell models are not shown, as their efficiency levels are well off the chart. Among most of the vehicle models, there is a definite trend whereby greater city cycle powertrain efficiency tends to match up with greater highway efficiency, although there are some differences by technology for particular models. Also called out specifically, are the hybrid, diesel, and turbocharged gasoline direct injection technologies within the data. Although these three technologies each make up small percentages of US vehicle sales they clearly indicate the leading frontier for combustion efficiency within the fleet.

The leading combustion-engine powertrains are shown with greater resolution and with selected model names labeled in Fig. 4. Certain gasoline, diesel, and hybrid technologies show the frontier within new vehicle models today for improvements in powertrain efficiency. Hybrid technology shows dramatically improved city cycle efficiency, up to a maximum level of 22%, equivalent to double the average vehicle model city efficiency. Several hybrid models also show leading edge highway

[3] Fuel consumption throughout is in US (i.e., not imperial) gallons.

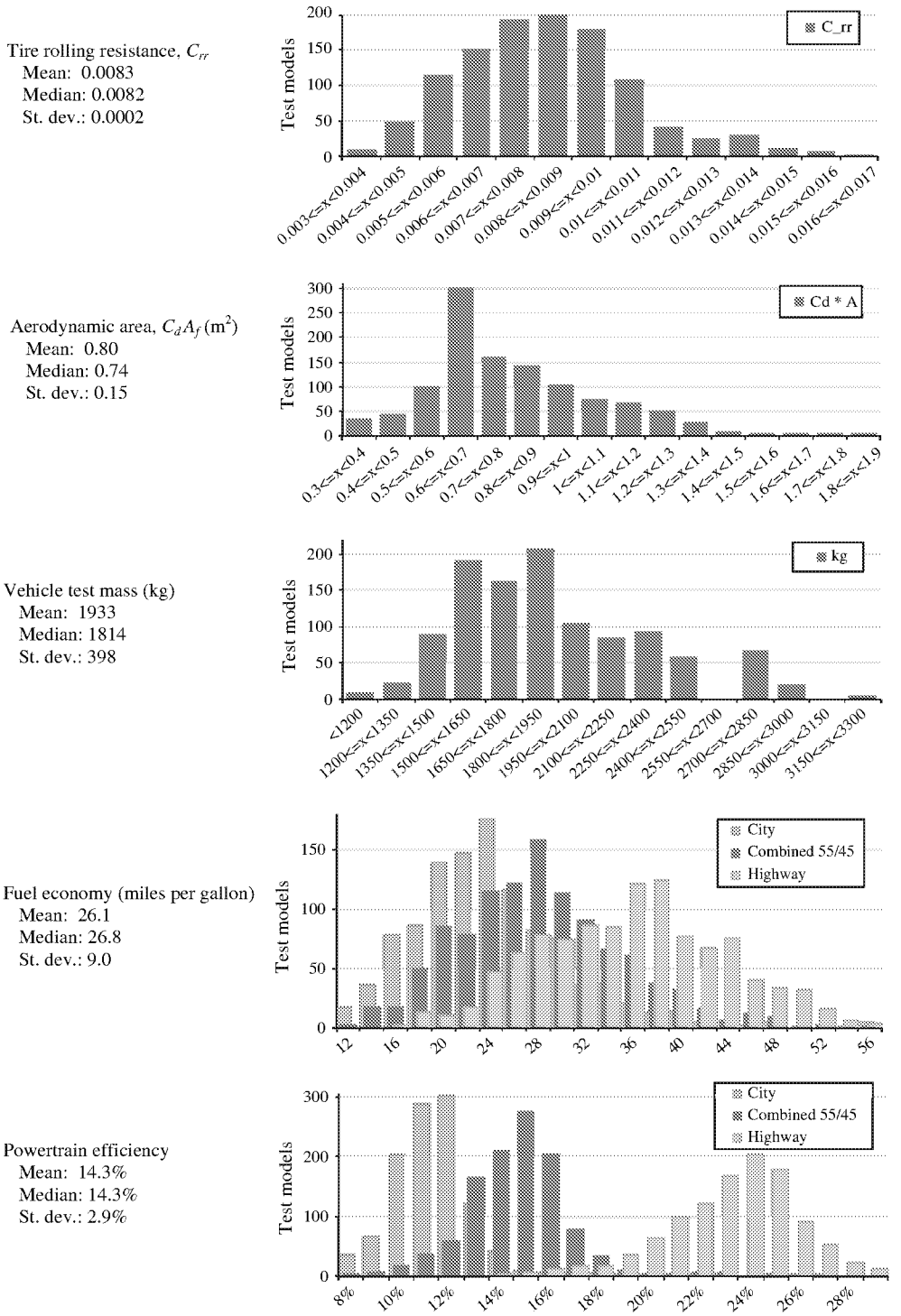

Fig. 2. Model year 2011 vehicle efficiency tire rolling resistance, aerodynamic area, vehicle mass, fuel economy, and powertrain efficiency.

efficiency levels at about 30%. Among non-hybrid technology, there are several notable technologies that illustrate major efficiency improvements from the 2011 average. In particular, turbocharged gasoline direct injection engines (e.g., the 3.5-l engine in Ford F150) and diesel engines (e.g., the 2.0-l in Volkswagen Jetta) each show leading powertrains that have 20–30% greater city and highway efficiency than the average 2011 vehicle. In fact, the leading gasoline and diesel technologies in many cases have higher powertrain efficiency on the highway cycle than hybrid models. Also, there were models

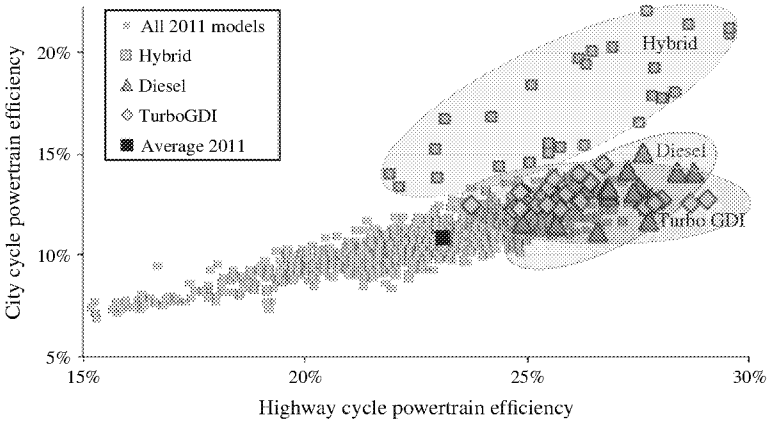

Fig. 3. City and highway drive cycle powertrain efficiency of new 2011 models, with leading hybrid, gasoline, and diesel technologies highlighted.

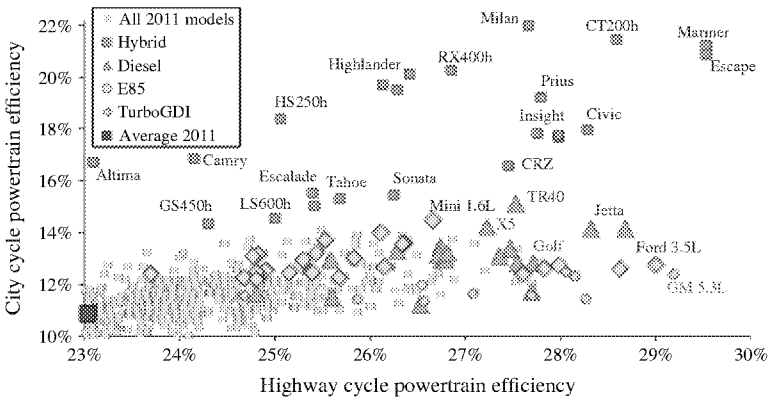

Fig. 4. Leading 2011 models' city and highway drive cycle powertrain efficiency.

tested on blended 85% ethanol 15% gasoline, or "E85," that indicated particularly high highway powertrain efficiency (e.g., the 5.3-l Chevrolet with cylinder deactivation).

As a next step, all the models are compared on their combined powertrain efficiency, based on a 55% city and 45% highway split, as assumed for official regulatory certification. Advanced electric-drive vehicle models separated themselves from conventional internal combustion models with considerably higher efficiency, as shown in Table 1. Several advanced technology models required data imputation from other EPA data sources. The Chevrolet Volt electric-only-mode data was derived from the EPA label data 360 combined (from 357 city and 374 highway) watt-hour per mile (US Environmental Protection Agency, 2011b). These label values are adjusted downward by 30%, which is EPA's maximum adjustment factor for advanced electric vehicles, to get the combined test cycle result of 250 watt-hour per mile combined. Similarly, the two fuel cell models' consumer EPA data were adjusted by 30% to estimate their test cycle values. For the Honda FCX Clarity, the fuel economy was 86 miles per kilogram hydrogen test cycle (based on 60 label) and the Mercedes F-Cell was 76 miles per kilogram test cycle (based on 53 label) (US Environmental Protection Agency, 2011c). These derived test values are nearly identical to those in Markus (2009) and Knight (2011).

Including all vehicle technology types, the most efficient vehicle model was found to be the all-electric Nissan Leaf. The Leaf is found to have an estimated 66% efficiency in using electrical grid energy to deliver tractive energy to the wheels on the combined city-highway cycle. This efficiency measure incorporates a charging efficiency (approximately 90%, per US Environmental Protection Agency and National Highway Traffic Safety Administration (2010) assumptions) for the initially charging of the battery, because the certification testing involves measured electricity "at the wall." There are also efficiency losses onboard the electric vehicle from battery discharging, power electronics, and regenerative braking, which contribute to the estimated 66% efficiency. The Chevrolet Volt is shown, assuming as EPA and SAE J2841 suggest, a 63% use of charge-depleting electric driving (and therefore 37% charge-sustaining hybrid operation), is found to have an overall harmonically averaged 30% efficiency. In addition to the battery discharge-regenerative braking-charge inefficiencies of electric vehicles,

Table 1
Ranking of highest technical powertrain efficiency of new 2011 models.

Rank	Efficiency (%)	Model	Technology
1	66	Nissan Leaf	Electric
2	42	Mercedes F-Cell	Fuel cell
3	40	Smart Fortwo ED	Electric
4	40	Honda FCX Clarity	Fuel cell
5	30	Chevrolet Volt (UF=.63) 1.4L CVT	Electric/hybrid
6	24	Ford Escape/Mariner/Fusion/Milan hybrid 2.5L CVT	Hybrid
7	24	Toyota Prius/CT 200 h 1.8L CVT	Hybrid
8	23	Toyota RX400 h/Highlander hybrid 3.5L CVT	Hybrid
10	22	Honda Insight/Civic hybrid 1.3L CVT	Hybrid
11	21	Toyota Camry/HS250 h 2.4L CVT	Hybrid
12	20	Honda CR-Z EX 1.5L CVT	Hybrid
13	19	Nissan Altima hybrid 2.5L CVT	Hybrid
14	19	GM K1500/C1500/Escalade hybrid 6L CVT	Hybrid
15	19	Mahindra TR40 Diesel 2.2L A6	Diesel
16	19	Hyundai Sonata hybrid 2.4L A6	Hybrid
17	18	Volkswagen Jetta/Golf Diesel 2L A6	Diesel, dual-clutch transmission
18	18	Mini Cooper S Countryman 1.6L M6	Turbocharged direct injection
19	18	BMW X5 xDrive35d Diesel 3L A6	Diesel
20	18	Lexus LS 600 h L 5L CVT	Hybrid
21	18	Nissan Rogue AWD SV 2.5L CVT	Continuously variable transmission
22	18	Jeep Compass/Patriot 2.4L CVT	Continuously variable transmission
23	18	Ford F-150/MKZ Supercab 3.7L A6	Twin-independent cam phasing
24	17	Ford Explorer/F150 4WD 3.5L A6	Turbocharged direct injection
25	17	Mercedes GL350/ML350 Bluetec Diesel 3L A7	Diesel
	14	Mean and median for all MY2011 models	

fuel cell stacks' electrochemical reaction losses contribute to their overall 40–45% efficiency in the low-volume demonstration Honda FCX Clarity and Mercedes F-Cell hydrogen fuel cell vehicles.

After the advanced electric-drive vehicles, hybrid models make up the majority of the US fleets' most efficient powertrains. In particular Ford, Toyota, and Honda each have several tested models from 20% to 24% powertrain efficiency on the combined US test procedure. Hyundai, Nissan, and General Motors also have high-efficiency hybrid models at 19%. After the leading hybrid models, there are diesel powertrains from Volkswagen, Mahindra, BMW, and Mercedes on the list. Several non-hybrid gasoline technologies, including turbocharged gasoline direct injection, twin-independent cam phasing, and continuously variable transmissions also made the list. Although it is commonly held that smaller vehicles are "more efficient," from this technical powertrain efficiency perspective, this is not necessarily the case; this list of leading efficiency models includes models that span from subcompact cars, to large sedans, to full size pickups and sport utility vehicles.

The results are summarized in Fig. 5 to show the combined cycle energy consumption and powertrain efficiency of the various 2011 models. The energy consumption is shown in megajoule (MJ) per distance to accommodate the electric-drive vehicles. The plot shows not only the conventional technologies and leading gasoline, diesel, and hybrid technologies – but

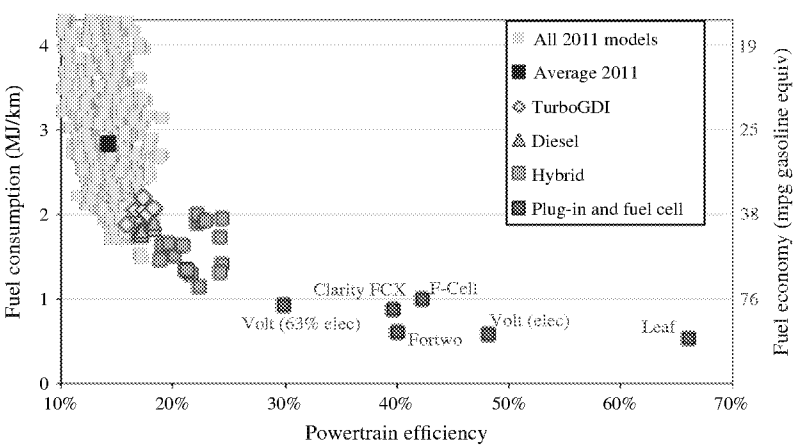

Fig. 5. Model year 2011 vehicle fuel consumption and powertrain efficiency, with advanced technology models highlighted.

Table 2
Relative efficiency of leading technologies.

Vehicle technology	Vehicle powertrain efficiency (%)	Relative efficiency to average 2011	Relative efficiency to advanced gasoline technology	Relative efficiency to hybrid technology
Average 2011	14	1.00	–	–
Advanced gasoline	18	1.27	1.00	–
Diesel	19	1.33	1.04	–
Hybrid electric-gasoline	24	1.70	1.34	1.00
Plug-in hybrid electric	30	2.09	1.64	1.23
Fuel cell	42	2.95	2.32	1.74
Electric	66	4.62	3.63	2.72

also the electric and fuel cell models that offer more dramatic efficiency gains. Moving from the upper left down and to the right are the most inefficient gasoline vehicles at 10% efficiency, the 2011 average of 14%, leading gasoline and diesel at 18%, leading hybrids at 20–24%, the plug-in hybrid electric Volt at 30%, fuel cells at 40–42%, and the all-electric Leaf at 66%. Along this efficiency progression, models are decreasing in their fuel use from laggards at 4 MJ/km (19 mpg), to the 3 MJ/km (27 mpg) average 2011 vehicle, to leading gasoline and diesel at 2 MJ/km (40–45 mpg), to hybrids around 1.5 MJ/km (50–70 mpg), to electric-drive vehicles at 0.5–1.0 MJ/km. The flattening of the fuel use versus efficiency indicates how greater energy consumption savings result from the initial efficiency improvements, than from the subsequent steps toward electric-drive technologies.

Table 2 shows the relative powertrain efficiency advantage of the different technology types over the 2011 average, the leading gasoline technology, and hybrid vehicles. These relative comparisons lead to several direct implications for the evolution of the future vehicle fleet. As the vehicle fleet moves toward compliance with future year standards, the advanced gasoline efficiency levels of today will become mainstream. US EPA and National Highway Traffic Safety Administration (2010) project that variable valve phasing, turbocharging, and direct injection will become dominant on engines and that more advanced 6–8 speed and dual-clutch transmissions will take over in the fleet as automakers comply with 2016 standards. As a result, the proliferation of such advanced gasoline technologies could greatly narrow the average efficiency gap between gasoline and diesel powertrains (i.e., from 33% to 4%). Also, the existing hybrid models would see their relative powertrain efficiency advantage shrink from 70% to 34% due to fleet-wide gasoline powertrain efficiency improvements. However, these comparisons are all based on a static snapshot in 2011; all of these technologies could improve in the future.

These relative advanced gasoline and diesel efficiency advantages also have longer-term policy implications. When advanced gasoline technologies become mainstream, electric vehicles would have an on-vehicle efficiency improvement factor of 3.6, while fuel cell technology would be about 2.3 times more efficient than the advanced gasoline vehicles. Relevant to this, alternative fuel policies like the California Low Carbon Fuel Standard utilize Energy Economy Ratio (EER) factors to account for the on-vehicle efficiency advantage of electric and fuel cell vehicles relative to gasoline, and that program utilizes EER values of 3.0 for electricity and 2.3 for hydrogen. This indicates that those values are quite low based on today's vehicles, but could be roughly correct for 2015–2020 vehicles.

The second analytical part involves a regression to decompose the separate effects of powertrain and vehicle attributes to determine models' overall fuel consumption and fuel economy characteristics based on the new 2011 vehicle fleet. A linear model is developed that builds on the technical portion by directly utilizing the model-by-model powertrain efficiency $\eta_{\text{powertrain}}$ and tractive road load factors, rolling resistance C_{rr} and aerodynamic area $C_d A_f$, that were each evaluated from the vehicle test data and engineering relationships. The database from which the vehicle attributes were drawn does not have a separate size-related variable for each model, and therefore the ability to separately regress mass and size is not available. The model was developed to regress the contribution of vehicle powertrain efficiency, aerodynamic drag, rolling resistance, vehicle mass, and engine size to vehicle fuel consumption (in MJ of energy per km).

$$\begin{bmatrix}\text{Vehicle fuel}\\ \text{consumption}\\ \text{per distance}\end{bmatrix} = f\left[\begin{pmatrix}\text{Powertrain}\\ \text{efficiency}\end{pmatrix}, \begin{pmatrix}\text{Aerodynamic}\\ \text{drag area}\end{pmatrix}, \begin{pmatrix}\text{Rolling}\\ \text{resistance}\end{pmatrix}, \begin{pmatrix}\text{Vehicle}\\ \text{mass}\end{pmatrix}, \begin{pmatrix}\text{Engine}\\ \text{Size}\end{pmatrix}\right]$$

Table 3 summarizes the results from the double-log model. It provides a good statistical fit. As a comparative benchmark, the elasticities for mass, aerodynamic area, and rolling resistance are similar to the relationships in the regulatory "lumped parameter" tool that is utilized in the US federal regulatory development for efficiency standards (US Environmental Protection Agency and National Highway Traffic Safety Administration, 2010).

The results also indicate how the use of multiples of these efficiency and road load levers simultaneously would have much larger effects. For example, increasing powertrain efficiency, reducing rolling resistance, reducing drag, reducing mass, and correspondingly reducing the engine displacement for constant performance each by 30% from their 2011 mean levels are reasonable technical possibilities for the 2020–2030 timeframe. Based on these parameters, a 30% change in all variables from their average 2011 levels would reduce vehicle fuel consumption by about 44% and increase fuel economy by about 78%.

Table 3
Modeling results.

Independent variable	Unit	Coefficient[a]	Implied effects		
			Change in independent variable	Resulting change in fuel consumption [b]	Resulting change in fuel economy [b]
Powertrain efficiency	%	−0.871	+10%	−8.7%	+9.5%
Aerodynamic area, $C_d A_f$	m^2	0.162	−10%	−1.6%	+1.7%
Rolling resistance, C_{rr}	–	0.113	−10%	−1.1%	+1.1%
Vehicle mass	kg	0.648	−10%	−6.5%	+6.9%
Engine displacement	L	0.057	−10%	−0.6%	+0.6%

[a] All variables are in log form; regression constant is −5.03; independent variables significant to $\alpha < 0.01$; $R^2 = 0.89$.
[b] "Fuel consumption" is in energy use per unit distance; "fuel economy" is in distance per unit energy consumption.

5. Conclusions

This analysis indicates that technologies are available to improve vehicle fuel consumption. The huge variation in rolling resistance, aerodynamics, and powertrain efficiency shows that there is considerable low-lying fruit for dramatically improving vehicle efficiency and also exposes the persistence of technology laggards under relatively unforceful efficiency standards. Dramatic vehicle improvements are available precisely because the modern automobile has unaddressed inefficiencies. The average vehicle in the model year 2011 fleet is 14% efficient on the combined US city-highway test procedure. Several gasoline and diesel models show 20–30% improved efficiency over the 2011 average through a combination of technologies. Hybrid technology goes much further, with a variety of different types of hybrid systems showing 40–70% powertrain efficiency improvements by offering launch assist, regenerative braking, and engine shut-off capability. Advanced electric-drive technologies (i.e., fuel cell and plug-in electric) that entirely eliminate thermodynamic efficiency losses from the vehicle increase powertrain efficiency by a factor of three or four.

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Message

From: Shumate, Dwayne [DShumate@national.aaa.com]
Sent: 9/5/2014 2:18:15 PM
To: Wehrly, Linc [wehrly.linc@epa.gov]
CC: Alson, Jeff [alson.jeff@epa.gov]
Subject: RE: Fuel Economy Data File question
Attachments: 11tstcar-2013-12-06.xlsx; Fuel economy club talking points.docx; Fuel economy EUpdates.docx; Fuel economy fact sheet.docx; Fuel economy FAQs.docx; Fuel economy member publication articles.docx; Fuel economy social media.docx; Fuel economy web copy.docx; Mileage Check.png; MPG myth.png; MPG Potential.png; Internal Research Report.docx

Hi Linc,

No problem on the response – and thanks for taking the time to craft a detailed explanation.

I am left with a couple of specific questions:

1. For our "audit" testing, if the emissions dyno work is done with "California pump gas", is there a valid correspondence to the published certification test results?
2. Referencing the 2014 FEGuide-for DOE1-release dates before .... (link), this lists city, highway and combined FE with the column headers "- Conventional Fuel"
    a. I understand that to mean these numbers to be the actual E-0 test results, less the adjustments you describe to the calculated fuel economy (test, then subtract ~10%). (Not trying to over-simplify the calculations, just put the numbers into the proper perspective.) Is this correct?
3. Referencing EPA files summarizing test info by year (attachment: 11tstcar-2013-12-06.xlsx), there are columns for who originated the test (MFR or EPA), analytically derived FE (seemingly the downfall of the C-Max), the test procedure, and the Test Fuel Type (image below)
    a. What's what in this list of fuel types? CARB Phase II is California pump gas, regular? With or without ethanol content?
    b. I like the explanation that all emissions testing is done with E-0 Indolene, but need to learn a bit more to square that with the list below

- ☑ CARB Phase II Gasoline
- ☑ CNG
- ☑ Cold CO Premium (Tier 2)
- ☑ Cold CO Regular (CERT)
- ☑ Cold CO Regular (Tier 2)
- ☑ E85 (85% Ethanol 15% EPA Unleaded Gasoline)
- ☑ Electricity
- ☑ EPA Unleaded Gasoline
- ☑ Federal Cert Diesel 7-15 PPM Sulfur
- ☑ Hydrogen 5
- ☑ LPG
- ☑ Tier 2 Cert Gasoline

Also, the media release materials are attached for your review. Avery Ash made this available to the EPA PR contact (not sure who that is, but I can find out if you like). The "Internal Research Report" is not intended for distribution outside AAA, but I included it for your review as it probably does a better job of showing how we came to some of the information that made it into the actual media materials.

Kind Regards,

Dwayne

From: Wehrly, Linc [mailto:wehrly.linc@epa.gov]
Sent: Friday, September 05, 2014 8:25 AM
To: Shumate, Dwayne
Cc: Alson, Jeff
Subject: RE: Fuel Economy Data File question

Dwayne,

I have to apologize, I drafted a response and thought I sent it to you on Wednesday, but later realized I never hit enter and at the end of the day when I logged off, the message was lost!

Here is my second attempt!

All emissions and fuel economy testing is performed using Indolene (E0) as the official test fuel. Indolene meets the Tier 2 sulfur requirements. As we discussed last week during your visit, the 5-cycle fuel economy equations not only account for the operating conditions that occur during the five different test cycles (cold, A/C, aggressive accels, high speed), but attempt to account for other conditions that do not occur on the cycles or any cycle. These include road surface, wind, road grade, tire pressure, etc. It also accounts for the national average ethanol content of fuel at that time, which was about 3% The impact of all of these various effects is an additional reduction to fuel economy of approximately 9.5%. Of that 9.5%, only about 1.5% of it is attributable to the 3% ethanol.

EPA recently published new emissions standards for light-duty vehicles called Tier 3. Tier 3 changes the test fuel from E0 to E10. Typical of new rules, there is a phase-in period, so over the 2016-2019 model year time period, new vehicles will be tested using E10. There are also plans to adjust the 5-cycle equation to remove the E3 effect in order to account for the new E10 test fuel.

You mentioned last week that AAA was going to publish a report/paper/article discussing your analysis of the MyMPG data with EPA fuel economy labels. Did that happen? Could we get a copy or draft if it hasn't been published yet?

Thanks,
Linc

Linc Wehrly
Director, Light-Duty Vehicle Center
Compliance Division
Office of Transportation and Air Quality
United States Environmental Protection Agency
(734) 214-4286
wehrly.linc@epa.gov

From: Shumate, Dwayne [mailto:DShumate@national.aaa.com]
Sent: Tuesday, September 02, 2014 11:49 AM
To: Wehrly, Linc
Cc: Alson, Jeff
Subject: Fuel Economy Data File question

Good Morning,

Thanks again for your time and expertise during AAA's visit to the NVFEL. If this inquiry is more appropriately routed elsewhere, please assist with that. I have had very good support from EPA with previous questions submitted via the website

I have a question regarding the fuel used during testing. From the facility tour, it's clear that EPA is able to accurately blend whatever is needed in terms of ethanol concentration. My understanding is that fuel economy testing is performed using E-0, but I'm not finding the data to support that.

Ultimately, I'm looking to determine the fuel that was used in testing that produced the fuel economy rating numbers. Referencing 14tstcar-2014-06-24.csv, (downloaded from here) the F150s with the EcoBoost engines are said to be tested with Fuel Type "61" "Tier 2 Cert Gasoline". Is that E-0 meeting the sulfur requirements?

Lastly, if a test is done with a different fuel (E-10 for example) than was used for the EPA testing that supports the sticker number (whether performed by the manufacturer or in-house EPA), do you have a correlation/comparison/conversion to use or is it simply not a relevant audit of the fuel economy number derivation?

Regards,

Dwayne

Dwayne Shumate
Automotive Technical Engineer
Office: 407.444.7016

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Message

From: Ed Pike [epike@energy-solution.com]
Sent: 8/20/2013 4:08:28 PM
To: Wehrly, Linc [wehrly.linc@epa.gov]
CC: Ed Pike [epike@energy-solution.com]
Subject: FW: contact for US EPA coast-down testing data
Attachments: 09tstcar.xlsm; Lutsey 2012 efficiency.pdf

Hi-

I will be sending a draft report to on low rolling resistance tires South Coast AQMD. It will be very helpful to know the best US EPA contact for cost-down testing data used to set dynamometer values based on rolling resistance.

Thanks!

Best,
Ed

From: Ed Pike
Sent: Wednesday, August 14, 2013 8:42 AM
To: 'wehrly.linc@epa.gov'
Cc: Cherry, Jeff (Cherry.Jeff@epa.gov)
Subject: contact for US EPA coast-down testing data

Dear Mr Wehrly-

I am researching the potential for air quality and GHG reductions from low rolling resistance passenger vehicle replacement tires for the South Coast AQMD. Understanding the rolling resistance achieved in the new vehicle fleet will be a very valuable benchmark.

Jeff Cherry kindly provided your contact information for details of coast-down testing data. I would like to better understand the details of co-efficient "A", in particular the "TPF_DYN_TRK_A_MSR" and "TPF_EDYN_TRK_A_MSR" columns from the 2009 data set (attached) as well as the difference between the "target" and "set" columns the most recent data sets in order to apply the rolling resistance calculations in Nic Lutsey's paper (attached). Could you please let me know whom to contact? Thanks!

Best,
Ed

Ed Pike, PE
Senior Project Manager
Energy Solutions
1610 Harrison Street
Oakland, CA 94612

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f: (510) 482-4421
www.energy-solution.com

Message

From: Alson, Jeff [alson.jeff@epa.gov]
Sent: 8/20/2013 7:47:43 PM
To: Ganss, David [ganss.david@epa.gov]; OAR-OTAQ-TCD-CASC [OAROTAQTCDCASC@epa.gov]
CC: Simon, Karl [Simon.Karl@epa.gov]; Wehrly, Linc [wehrly.linc@epa.gov]
Subject: RE: Good Business Insider article on C-max mileage

Yes, this is one of the few reporters who understands the math issue (non-linearity of fuel consumption with fuel economy) and has laid it out for the public. While most people will have to hear this over and over again before they understand and accept it, I have come to believe that we have to start educating reporters and encouraging them to write about it because otherwise this is just going to eat us alive as average mpg levels continue to increase. I took it as a small victory that we indirectly referenced the math issue in the EPA press brief released last Thursday.

From: Ganss, David
Sent: Tuesday, August 20, 2013 2:55 PM
To: OAR-OTAQ-TCD-CASC
Cc: Simon, Karl; Wehrly, Linc
Subject: Good Business Insider article on C-max mileage

BI (Green Car Reports, actually) did a good job with the discussion of the non-linearity of FE toward the end of the article. They even called it "interesting."

http://www.businessinsider.com/how-ford-got-itself-into-a-massive-gas-mileage-mess-2013-8

How Ford Got Itself Into A Massive Gas Mileage Mess

John Voelcker, Green Car Reports Aug. 20, 2013, 1:39 PM 648 2

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- Will Tesla's 2017 3rd-Generation Car Be Called The Model E?
- Toyota Yaris Hybrid-R Concept Revealed In Full, Debuts Frankfurt
- Chinese Electric Car Maker Dubs Its Top-Secret Tech 'Snowden,' After You-Know-Who
- Recall: 2009-2010 BMW X5 Diesel Crossovers Fuel Heater Issue

Ford spent nine months justifying the 47-mpg fuel-efficiency rating of its new 2013 C-Max Hybrid--before it bowed to public pressure and lowered it to 43 mpg late Thursday.

While its three latest hybrid models continue to sell well, the latest reversal draws attention to Ford's challenges when the real-world gas mileage of its cars doesn't live up to their EPA ratings.

Ford: bigger discrepancies

All buyers know by now that your mileage may vary, as the saying goes.

But the difference between real-world mileage and the ratings appears to be far higher for Ford than for Honda or Toyota.

And it's not just hybrids; there are complaints about the real-world mileage of Ford's various EcoBoost turbocharged engines as well.

So how did the C-Max mileage mess happen--and what does it mean for buyers, for the EPA gas-mileage rating system, and for Ford itself?

C-Max Hybrid not tested

Ford said during the call that it had not actually tested the gas mileage of the C-Max Hybrid, but simply used the ratings from the 2013 Fusion Hybrid mid-size sedan instead.

An EPA rule permits vehicles that use the same powertrain and are in the same weight class to use the ratings from tests of any single vehicle in the group without separate tests.

The rule reduces testing costs for automakers. Ford said it customarily tested the higher-volume vehicle among such similar models.

(One example from the early days of EPA regulation: The last MG Midget sports cars from 1976 to 1979 used the engine and transmission from the Triumph Spitfire sports car also made by the same company, meaning the lighter Midget didn't need to be separately tested.)

Surprise and questions

But few outside Ford realized that Ford had not tested the new C-Max separately; the revelation sparked a number of questions from reporters during the media teleconference.

The company is "now starting to understand hybrid variability" and "anomalies," Ford said on its conference call.

It said it has worked with the EPA, which has been investigating C-Max gas mileage, and concluded that "hybrids have a lot more variability and sensitivity to variables."

Accordingly, the company has now begun testing its C-Max models separately.

Same procedure for plug-ins

Ford noted that it had used the same approach with its C-Max Energi and Fusion Energi plug-in hybrids.

In that case, it tested the C-Max plug-in--which it expects to be the higher-volume vehicle of the pair--and used that 43-mpg rating for the Fusion Energi as well.

Had it tested the plug-in Fusion separately, Ford suggested, that car may have achieved a slightly higher rating on its own.

Industry analyst Dave Sullivan of Autopacific later asked Ford whether it had done the same for non-hybrid vehicles that are in the same weight class and use identical powertrains.

EPA statement: few clues

Many commentators have questioned whether the EPA will revisit the way it measures and certifies fuel economy for hybrid models, in light of Ford's troubles with the C-Max.

One option: The agency could revise the "adjustment factors" for hybrid vehicles.

It's already done that once, in 2007, when it re-rated a number of the earliest hybrids--including the first-generation Honda Insight, the Honda Civic Hybrid, and the Toyota Prius--to compensate for overly high ratings that weren't achieved by owners in real-world use.

A three-page EPA statement on the C-Max rating change offers few clues to what may happen in future.

It says that it expects carmakers to use high-efficiency powertrains across more vehicles in the future, and that it welcomes this trend.

The agency said it will "be working with consumer advocates, environmental organizations, and auto manufacturers to propose revised fuel economy labeling regulations to ensure that consumers are consistently given the accurate fuel economy information on which they have come to rely."

Not all MPG differences are the same

The statement also reiterates that the relabeling was "voluntary"--a point very heavily stressed by Ford--and notes that the ratings apply to all 2013 C-Max Hybrids, even including those that have been updated with new software.

It notes that the EPA's own tests showed the C-Max got "significantly lower" mileage than its rating, owing to "aerodynamic characteristics" that produced a "significant difference in fuel economy [than] the Fusion Hybrid."

But the interesting part of the EPA's statement is this:

This is a new and emerging issue caused by a combination of factors. Because high fuel economy vehicles use so little fuel per mile, relatively small changes in fuel consumption can have a surprisingly large impact on miles per gallon. Advanced manufacturing techniques are making it much easier for automakers to produce vehicles with the same engine and transmission, but with a wider variety of other design changes. The fuel economy of advanced technology vehicles, which involve sophisticated designs and control mechanisms, can be particularly sensitive to small design changes. All of these factors came together in 2013, which was the first year when manufacturers began to market families of hybrid vehicles.

To date, most high-efficiency hybrids have been used in a single vehicle, ensuring a unique and accurate label for those advanced vehicles. The Ford hybrid family is one of only two example in the industry where advanced technology vehicles with the same engine, transmission and hybrid components are used across multiple vehicle designs. EPA regulations allow but do not require automakers to generate a label for each design in this circumstance.

With the new Ford C-Max label, each vehicle design within the two high-efficiency hybrid families now has its own label.

Conventional vehicles often share the same engine and transmission across multiple products, but are far less sensitive to the variations among these products and hence have nearly identical fuel efficiency.

Consumers overly upset?

This is a point that shouldn't be understated. The difference in both fuel consumed and dollars at the pump between 43 mpg and 47 mpg is minuscule compared to an "equivalent" 4-mpg difference between, say, 10 mpg and 14 mpg.

Here's the math: Over 15,000 miles, the reduction from 47 to 43 mpg will use an extra 30 gallons of fuel. At $4 a gallon, that's an extra cost to the owner of $120 a year.

The reduction from 14 to 10 mpg uses an extra 429 gallons, at a cost of $1,716.

It's yet another example of the confusing nature of the non-linear miles-per-gallonmeasure, which is the inverse of fuel consumption--or fuel used per distance--which is how most of the rest of the world measures fuel usage.

As rated gas mileage gets higher, the importance of such differences gets lower, because the fuel savings produced by each MPG increment fall.

Does this mean that consumers are getting overly upset over differences that look large--but actually have little real-world impact?

Or are the discrepancies for Ford's new hybrids--we got only 35 mpg in a winter test of the C-Max--so great that there's a broader problem here?

Leave us your thoughts in the Comments below.

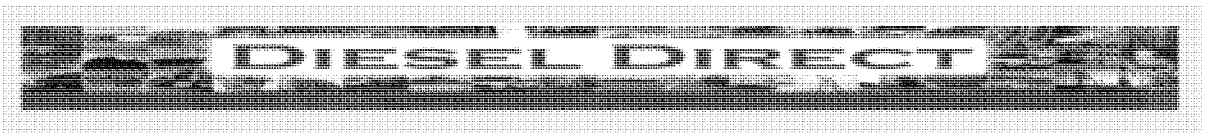
Read more: http://www.greencarreports.com/news/1086295_fords-c-max-mileage-mess-how-it-happened-and-what-it-means#ixzz2cXLhYh7u

Message

From: Cohen, Justin [Cohen.Justin@epa.gov]
Sent: 3/4/2013 8:20:58 PM
To: Alson, Jeff [alson.jeff@epa.gov]; Moran, Robin [moran.robin@epa.gov]
CC: Nam, Ed [nam.ed@epa.gov]; Wehrly, Linc [wehrly.linc@epa.gov]
Subject: FW: 2013 Breakout Year for Clean Diesel Cars, Trucks and SUVs

Thought you might enjoy perusing the sections (including the one on 54 models by 2017) on diesel penetration...

From: Diesel Technology Forum [mailto:Diesel_Technology_Forum@dieselforum.org]
Sent: Monday, March 04, 2013 3:14 PM
To: Cohen, Justin
Subject: 2013 Breakout Year for Clean Diesel Cars, Trucks and SUVs



March 4, 2013 - Special Edition

Diesel Direct is a monthly publication featuring the latest clean diesel news and activities of the Diesel Technology Forum.

DIESEL TECHNOLOGY FORUM

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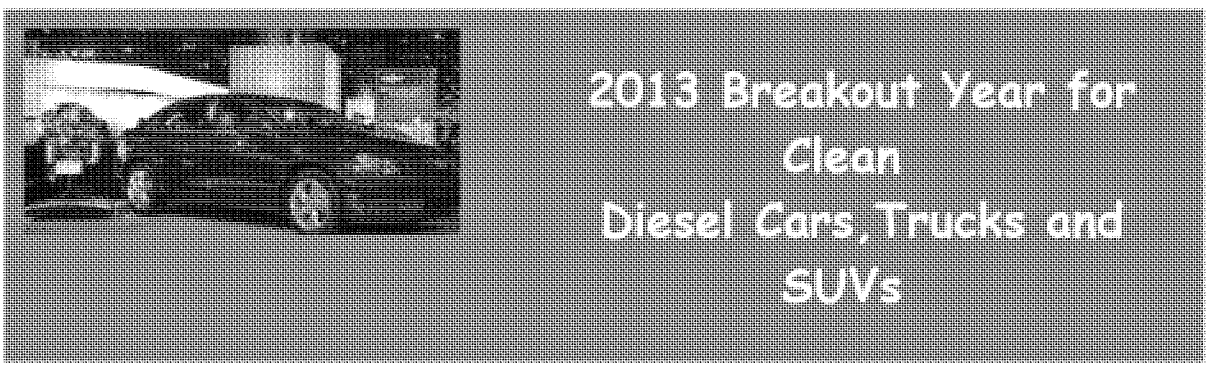


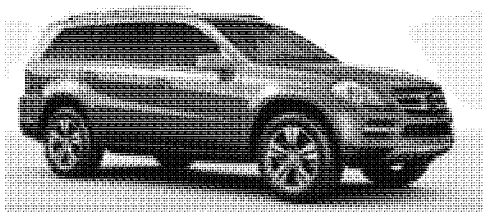
In this era of sky-high gasoline prices, Americans are increasingly looking to fuel-efficient diesel as a solution to help alleviate their pain at the pump. Diesel cars are 20 to 40 percent more efficient than gasoline cars. And because today's diesel vehicles are also clean, quiet and fun-to-drive, many consumers are learning diesel is an environmentally conscious option that does not sacrifice power or performance.

Learn more about diesel cars, trucks & SUVs.

Robert Bosch LLC, Diesel Systems North America, a global multibillion-dollar engineering and electronics automotive leader, predicts there will 54 diesel vehicle models available in the U.S. by 2017, including 22 new models in 2013. According to recent published reports, clean diesel auto sales increased by 24 percent in 2012 over 2011, while the overall U.S. auto market increased by 13.5

percent. Currently, diesel car and light-duty truck sales equal slightly more than three percent of the U.S. vehicle market but many auto analysts predict significant increases in domestic sales.

Mike Omotoso, an analyst at research firm LMC Automotive, predicts diesel's market share to climb to 7.5 percent in the next five years. Bernd Boisten, Bosch's regional president of diesel systems in North America, expects diesel's market share in North America to increase to about 10 percent by 2020.



Clean diesel has been electrifying the auto show news with big product announcements. According to USA Today, "what makes this latest shift toward diesel power seem solid is that it's coming from makers who've not been players" (**Are diesels ready to go mainstream in U.S.?**) meaning the Detroit Three and Mazda, as the first Asian manufacturer to step away from hybrids and move into the clean diesel market as diesel sales were previously dominated by German engineered vehicles from Audi, BMW, Mercedes and Volkswagen. As the U.S. moves to achieve the 54.5 mpg corporate average fuel economy (CAFE) level by 2025 mandated by the new federal greenhouse gas and fuel efficiency standards, more manufacturers are looking to clean diesel's efficiency advantages over gasoline to help them meet these standards.

Virginia Transitions to a Landmark State Fuels Tax System

State and Federal lawmakers are focusing attention on how we pay for roads. Many states and the federal government pay for roads, highways, bridges, tunnels and other pieces of transportation infrastructure mostly though fuels taxes. Many of these taxes come in the form of a flat tax on the consumption of fuel. As prices, including the cost of road maintenance and construction increase over time, fuels tax revenue does not keep pace with the demand for services. This month, the Virginia legislature passed a landmark bill that transitions Virginia from a flat consumption tax to a wholesale tax system that ties fuel taxes to wholesale fuel prices. However, the new state fuels tax structure places a slightly higher tax on diesel than gasoline that would result in an additional $20 charge to drivers of diesel cars over the estimated lifetime of the vehicle. While diesel drivers would pay slightly more at the pump relative to gasoline drivers, diesel cars still would not have to pay the $100 each year in additional taxes imposed on the drivers of hybrids, plug-in hybrids and fuel cell cars. As more and more drivers factor in fuel economy when purchasing a new car, perhaps the diesel option comes out on top for consumers weighing a new diesel versus a new hybrid purchase.

22 New Clean Diesel Vehicle Models In U.S. Expected In 2013 . . . 54 By 2017

- 2013 Audi A6 - Audi's announcement of four new models at the LA Auto Show now gives Audi a diesel option in every model.
- 2013 Audi A7
- 2013 Audi A8
- 2013 Audi Q5
- 2013 BMW 3 and 5 Series diesels
- 2013 Mercedes-Benz ML250 BlueTEC SUV powered by 4MATIC all-wheel drive.
- 2013 Volkswagen Beetle Convertible TDI Clean Diesel - The only convertible diesel vehicle in the U.S.

- 2014 Chevrolet Cruze Clean Turbo Diesel - The gasoline version of the Chevy Cruze has been extremely popular in the U.S.
- 2014 Ford Transit
- 2014 Jeep Grand Cherokee EcoDiesel
- 2014 Mazda6 SKYACTIV-D - Mazda will be the only Asian automaker to offer a diesel passenger car in the U.S.
- 2014 Ram 1500 EcoDiesel - The first and only light-duty half-ton pickup truck on the market.
- 2014 Ram ProMaster

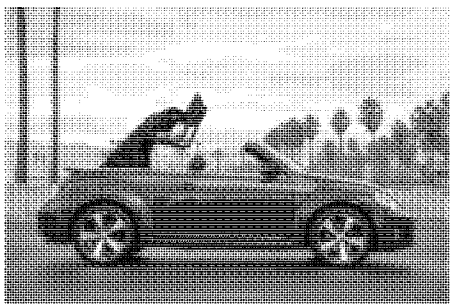
The Rumor Mill...
Mini has said they are likely to bring a diesel to the U.S. with the next wave of new models. Maybe a Jeep Wranger EcoDiesel down the road if the Jeep Grand Cherokee does well. Volkswagen potentially still has big plans for the U.S. with production of the Volkswagen CrossBlue diesel/plug-in hybrid. There are still rumblings of a Mazda CX-5 diesel in the works after the launch of the Mazda6 SKYACTIV-D.

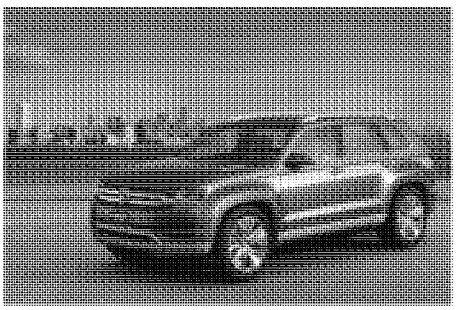
Buy a Clean Diesel Vehicle!
A new generation of clean diesel cars, light trucks and SUVs is now available and offer consumers a new choice in fuel-efficient and low-emissions technology. Clean diesel is a proven technology that is clean, quiet and fun to drive.

See a list of all the Clean Diesel Vehicles Currently Available in the U.S.

Diesel Fuel Locator
Clean diesel fuel is now available at more than half of all service stations (over 50,000 locations).

Find a diesel station near you!





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How do you keep up with the news on clean diesel? In addition to this Diesel Direct newsletter, you can be a fan of DTF's **Facebook** page, follow us on **Twitter** @DieselTechForum, or subscribe to our **YouTube** channel @DieselTechForum. Email dtf@dieselforum.org to subscribe to Diesel Direct.

Want to know more about membership in the Diesel Technology Forum? To learn more about meetings and web events coming up contact us.

Please note that some of the links in this e-mail are temporary and may move or expire in the coming weeks. Some sources may require registration or fee-based subscriptions.

The Diesel Technology Forum is a non-profit organization dedicated to promoting clean diesel technologies. Forum members include engine and vehicle manufacturers, diesel fuel refiners, and manufacturers of emissions control devices. For more information about the Forum, visit our web site at www.dieselforum.org.

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Message

From: John German [john@theicct.org]
Sent: 2/22/2013 7:12:25 PM
To: Wehrly, Linc [wehrly.linc@epa.gov]
Subject: Re: Data on diesel SCR catalyst size and composition

Thanks again, Linc.

John

On Feb 22, 2013, at 1:48 PM, "Wehrly, Linc" <wehrly.linc@epa.gov> wrote:

John,

I don't have the HD stuff except for the big pick-ups. I'll forward it to Justin Greuel, my counterpart in the HD group.

Linc

From: John German [mailto:john@theicct.org]
Sent: Friday, February 22, 2013 1:17 PM
To: Wehrly, Linc
Cc: <francisco@theicct.org> Posada
Subject: Re: Data on diesel SCR catalyst size and composition

Sorry, they would like DPF size as well.

John

On Feb 22, 2013, at 1:15 PM, John German <john@theicct.org> wrote:

Thanks again, Linc.

However, you may have created more trouble for yourselves. Our HD folks think this information is great and want to know if they can get SCR composition and size for HD diesels.

Is this feasible? I know it would be a lot more work.

John
734-355-1055

On Feb 22, 2013, at 11:07 AM, "Wehrly, Linc" <wehrly.linc@epa.gov> wrote:

Both are using Fe-Zeolite. None of the LD manufacturers use Vanadium.

From: John German [mailto:john@theicct.org]
Sent: Thursday, February 21, 2013 10:35 PM
To: Wehrly, Linc
Subject: Re: Data on diesel SCR catalyst size and composition

Great! Much appreciated.

Any info on what BMW and Mercedes are using now?

John

On Feb 21, 2013, at 1:44 PM, "Wehrly, Linc" <wehrly.linc@epa.gov> wrote:

John,

Sorry it has taken so long. Here is what I have so far:

The following are using Cu-Zeolite

VW/Audi – 2.0 L engine / 6.96L catalyst
3.0 L engine / 6.41 L catalyst

Ford 6.7L engine/6.01L catalyst

Cummins 6.7L engine/3.36L catalyst

GM 6.6L engine

BMW and Mercedes may start using it in 2014 or 2015.

Linc

From: John German [mailto:john@theicct.org]
Sent: Thursday, February 21, 2013 11:24 AM
To: Wehrly, Linc
Subject: Fwd: Data on diesel SCR catalyst size and composition

Linc???

John

Begin forwarded message:

From: John German <john@theicct.org>
Subject: Re: Data on diesel SCR catalyst size and composition
Date: February 12, 2013 10:02:38 AM EST
To: Wehrly.Linc@epamail.epa.gov

Just a friendly reminder, Linc. It is getting to the time when we need this information.

John

On Jan 28, 2013, at 2:55 PM, John German <john@theicct.org> wrote:

Thanks, Linc (ignore the email I just sent you, which crossed somewhere in cyberspace).

Yes, we only need to know if they are using vanadium, copper, or iron - don't need any more details. Except for the size of the SCR catalyst.

We are only testing light-duty vehicles, so you don't need to include the heavy-duty pickups. But we certainly wouldn't object to getting similar data for them.

Time is OK. Our testing program is starting in a couple weeks, but we need this more for post-analysis of the data. Mid-Feb. would be fine.

John
734-355-1055

On Jan 28, 2013, at 2:26 PM, Wehrly.Linc@epamail.epa.gov wrote:

John,

Thanks for the message. I am still in the Compliance Division and have been the Group Manager (Center Director) for the light-duty vehicle group since Dan Harrison retired in 2007. The job is much different than when Dan had it. Much more complicated and stressful!

You are correct that neither the EPA test car data or the certification data sets include catalyst size. I wish I could say more, but the management and oversight of both databases belongs to Sara Zaremski's group (Data Analysis and Info Center). Currently, our compliance database Verify does not require manufacturers to submit whether the SCR catalyst uses vanadium, copper-zeolite, or iron zeolite. We generally know the answer. but it is not necessarily in our database. If you can give me time, I can have one of my guys dig through some information and see what we come up with. Do you simply want to know if they are using vanadium or copper or do you want more details? Do you want this just for light-duty or also include the heavy-duty pick-ups too?

There haven't been any SCR-based light-duty diesel vehicles tested in the manufacturer IUVP program

yet, because the volumes have been too small. We haven't tested one in our in-house surveillance program yet either, but hope to do so soon, so I don't have any in-use data yet on how they are performing.

Linc

Linc Wehrly
Director, Light-Duty Vehicle Center
Compliance Division
United States Environmental Protection Agency
(734) 214-4286
wehrly.linc@epa.gov

From: John German <john@theicct.org>
To: Linc Wehrly/AA/USEPA/US@EPA
Cc: Francisco Posada <francisco@theicct.org>
Date: 01/23/2013 04:52 PM
Subject: Data on diesel SCR catalyst size and composition

Linc,

Hopefully you are still with the certification division (or whatever it is called now). Please let me know who I should talk to at EPA about diesel catalyst data, if you aren't the appropriate person.

When we did the SFTP work in the mid-1990s, I know that we compiled a list that included catalyst size (not loadings, which are confidential) and made the data public. However, I just took a look at both the EPA test car data (http://www.epa.gov/OMS/tcldata.htm) and the certification data (http://www.epa.gov/omswww/crttst.htm). Neither one includes catalyst size. It would also be extremely helpful to know if the SCR catalyst on light-duty diesels containsvanadium, copper-zeolite, or iron-zeolite.

Can we get this information from EPA? Do we need a FOIA request?

By way of background, there are some data suggesting the SCR systems on light-duty diesels in Europe are not very effective in-use, perhaps because they are vanadium-based instead of zeolite-based. In order to investigate this, ICCT is paying for PEMS testing in Europe and on matching diesels sold in the US (e.g. compare a VW Passat 2.0L diesel sold in the US with one sold in Europe).

Reinhard Kolke from ADAC (the German car club) said the difference between EU and US systems is purely a question of urea dosage, not any hardware differences at all. He recommended that we measure the volume of the SCR catalyst + the volume of the urea tank to draw some rough conclusions about differences in dosage in EU and US. Thus, it would be very helpful to know the volume of the SCR catalyst. We also aren't sure there are no hardware differences, as the vanadium-based catalysts used in Europe have poor in-use performance, so we also want to know the type of SCR catalyst that is being used.

I hope you can help us out here.

John
734-355-1055

Message

From: Wehrly, Linc [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=64E5F31CCB4841018441B3BF074842D0-WEHRLY, LINC]
Sent: 6/24/2013 6:26:28 PM
To: Hart, Frederick [hart.frederick@epa.gov]
Subject: FW: Your EPA Inquiry -- Registering 2011 MBW 335d diesel as an ILEV

Fred,

Sounds like this guy needs a certificate for a 2011 vehicle. Could you see what you could do to help.

Thanks,
Linc

Linc Wehrly
Director, Light-Duty Vehicle Center
Compliance Division
Office of Transportation and Air Quality
United States Environmental Protection Agency
(734) 214-4286
wehrly.linc@epa.gov

From: Jennifer France [mailto:France.Jennifer@epamail.epa.gov] **On Behalf Of** OTAQ@epa.gov
Sent: Monday, June 24, 2013 12:14 PM
To: Wehrly, Linc
Subject: Your EPA Inquiry -- Registering 2011 MBW 335d diesel as an ILEV

Time Sensitive

Can you or someone in your group answer this person's question please? If so, please respond directly to the inquirer (with the original message intact) at **Ex. 6 Personal Privacy (PP)** -- and please cc "**otaq@epa.gov**" so that I can close it out on our end.

We commit to responding to inquiries within **5** business days -- that will be **July 1st** for this one. If you are not the appropriate person to respond to this, please let me know right away. If you can suggest someone else, I'd appreciate it. Thank you!

----- Forwarded by Jennifer France/AA/USEPA/US on 06/24/2013 11:45 AM -----

From: **Ex. 6 Personal Privacy (PP)**
Sent: Friday, June 21, 2013 10:04 AM
To: Cherry, Jeff
Subject: Low emission vehicles

hi Jeff - my name is [redacted] I recently purchased a 2011 BMW 335d diesel having problems registering it as a low emission vehicle need some data or certification from e p a
As a I L E V thank you sir

Sent from Samsung tablet

Message

From: Wright, DavidA [Wright.DavidA@epa.gov]
Sent: 9/13/2018 10:27:50 PM
To: Wehrly, Linc [wehrly.linc@epa.gov]
Subject: FW: Question on BMW diesel sales from 2009 through 2015
Attachments: BMW diesel production 2009-2015.xlsx

I went ahead and asked BMW for their sales numbers. The SCR only vehicles are the '09 through 2013 which total 43,392 sales and the remainder (34,727 vehicles) are combined lean NOx trap and SCR aftertreatment systems.

Regards,

David

From: Thomas.Hofmann@bmwna.com [mailto:Thomas.Hofmann@bmwna.com]
Sent: Thursday, September 13, 2018 2:36 PM
To: Wright, DavidA <Wright.DavidA@epa.gov>
Subject: RE: Question on BMW diesel sales from 2009 through 2015

Hi David

I also could not find production volumes in the final applications.
I have compiled the requested production data from the CAFÉ reports for those model years.

The total production over those seven model years is 78119 units.

The details can be seen in the attached spreadsheet:

- The first tab shows the data by test group
- The second tab shows the data by model year and model

Please let me know if you have any questions or would like the data in some other format.

Kind regards,
Tom

From: Wright, DavidA [mailto:Wright.DavidA@epa.gov]
Sent: Thursday, September 13, 2018 11:15 AM
To: Hofmann Thomas, EG-8-US-2 <Thomas.Hofmann@bmwna.com>
Cc: Ott, William <ott.william@epa.gov>
Subject: Question on BMW diesel sales from 2009 through 2015

Tom,

I have been asked to come up with the number of diesels that BMW has sold in the US for the 2009 through 2015 model years. I have quickly attempted to find that number in the end of year applications, and, do not find any final sales results. I am wondering if you can point me to the location of the results in the BMW submittals that are in our system, and, if the data are not in the existing submittals I am wondering if you can provide it to me.

Thanks,

David

David Wright
Light-Duty Vehicle Center – Compliance Division
Office of Transportation and Air Quality
U.S. Environmental Protection Agency
(734) 214-4467

Message

From: Gumbs, Jason [Gumbs.Jason@epa.gov]
Sent: 11/15/2017 9:24:00 PM
To: Wright, DavidA [Wright.DavidA@epa.gov]
CC: Wehrly, Linc [wehrly.linc@epa.gov]
Subject: BMW light-duty diesel AECD / Technical description

David,

I'm trying to find BMW's technical description / AECD document for the first year that they certified a SCR vehicle. I did some digging on my own, but I couldn't locate it. I believe the first family was ABMXV03.0M57. Your assistance would be greatly appreciated.

Jason Gumbs (gumbs.jason@epa.gov)
Environmental Engineer

Fax:(202) 343-2804
(Mailing Address)
U.S. EPA Headquarters, CCD
William Jefferson Clinton Building
1200 Pennsylvania Ave. NW
Mail Code: 6405A
Washington DC 20460

Phone: (202) 343-9271
(Courier Address)
U.S. EPA Headquarters, CCD
William Jefferson Clinton Building
1200 Pennsylvania Ave. NW
Suite: 5512M
Washington DC 20004

Message

From: Wright, DavidA [Wright.DavidA@epa.gov]
Sent: 2/26/2018 8:17:30 PM
To: Wehrly, Linc [wehrly.linc@epa.gov]
Subject: FW: OTAQ Daily News Brief

Was wondering if you had seen today's news brief in particular the last item describing the issue with BMW.

Regards,

David

From: Mylan, Christopher
Sent: Monday, February 26, 2018 2:01 PM
To: Mylan, Christopher <Mylan.Christopher@epa.gov>
Subject: OTAQ Daily News Brief

Good Afternoon,

Welcome to OTAQ's daily news listserv. The OTAQ Daily News Brief compiles articles from around the world focused on our office's work; this includes everything from light-duty/heavy-duty vehicles, electric vehicles, air quality studies, aircrafts, boats and ships, to alternative fuels, and of course, climate change. If you'd like to be removed or would like to add another person to the listserv please contact Christopher Mylan at mylan.christopher@epa.gov. Feedback is welcomed. Thanks and enjoy!

BIOFUELS - Trump admin to float RFS changes to senators

Marc Heller, E&E News reporter

The Trump administration will pitch changes to federal ethanol standards in a meeting with key senators next Tuesday, sources familiar with the matter said today. Among the ideas is a directive from President Trump for U.S. EPA to move toward lifting seasonal restrictions on the sale of high-ethanol fuel, according to a petroleum industry source close to policy negotiations with Congress.

In return, the administration would seek a cap on the price of renewable fuel credits, which refiners that don't blend fuels buy to show compliance with the biofuel mandate. The move wouldn't necessarily involve an executive order but would involve formal rulemaking, industry sources said, although lobbying groups said they were short on details. The discussions stem from refining industry complaints about the high cost of renewable credits, known as Renewable Identification Numbers. Philadelphia Energy Solutions, a Pennsylvania refiner, has filed for bankruptcy protection, blaming RIN costs that were more than double the cost of payroll last year.

Expanding availability of fuel with 15 percent ethanol — up from 10 percent in most gasoline today — is a top priority for the ethanol industry. Capping prices on renewable fuel credits is the opposite: one of the industry's top ideas to fight.

Daimler Suspected of Using Diesel Defeat Device

Greg Kable | *WardsAuto*

- Some Mercedes-Benz diesel models are equipped with software that may have helped them pass emissions tests, according to a report published by German newspaper *Bild am Sonntag*.

The report, citing information *Bild Am Sonntag* says is contained in a U.S. Department of Justice investigation, reveals engineers from Mercedes-Benz parent company Daimler developed several software programs that allowed unspecified diesel models to pass U.S. emissions tests through manipulation of the engine and its selective catalytic reduction system.

The software programs are alleged to have been tailored to the specific demands of various cycles in the U.S. emissions-testing procedure, allowing the Mercedes-Benz diesels to run in an ultra-clean state but only for limited periods of time, after which the engines were switched into a so-called "dirty mode."

Mercedes-Benz is not commenting on the allegations of diesel-emissions manipulation.

The Weaponization of the EPA Is Over: An Exclusive Interview With Scott Pruitt

Rob Bluey , The Daily Signal

In his first year as administrator of the Environmental Protection Agency, Scott Pruitt has already transformed the agency in many ways. He spoke exclusively to The Daily Signal before addressing attendees at the Conservative Political Action Conference's annual Reagan Dinner. An edited transcript of the interview is below.

BMW Recalls Thousands of Diesel Cars Over Emissions

Financial Tribune

German high-end carmaker BMW on Friday recalled thousands of diesel cars for a software update, after reports it had admitted to authorities they released more harmful emissions on the road than in the lab.

BMW "noticed during internal testing that correctly programmed software was wrongly used in a few models that were not compatible", the group said in a statement.

The Munich-based company "immediately informed the relevant authorities ... therefore plans to recall 11,700 vehicles worldwide," it added, AFP reported.

Der Spiegel magazine reported earlier Friday that BMW had admitted to the vehicle licensing authority (KBA) that some of its cars included software that could mislead regulatory tests for levels of harmful nitrogen oxides.

Message

From: Yang, Ching-Shih [Yang.Ching-Shih@epa.gov]
Sent: 1/24/2018 3:08:17 PM
To: klee@stoutadvisory.com
CC: Meekins, Tanya [Meekins.Tanya@epa.gov]; Hart, Frederick [hart.frederick@epa.gov]; Wehrly, Linc [wehrly.linc@epa.gov]
Subject: HQ-2017-001296: Request for defect and recall data
Attachments: All LD Defect recall and quarterly report data 1_24_2018.xlsx

Hi Kenhee,

Please find a part of the requested data attached. Unfortunately, we're not able to give you all the defect, recall, and quarterly report data in this format for the time period that you've requested because the data at that time existed in a different system in a very different way. This data was gradually transitioned from the old system to the new around 2011. What I've attached is all the active defect, recall, and quarterly report information in the new system in the way that you've requested. For the older information, what you have from the 2015 request is the best information we can give you.

Hope that helps, Ching-shih Yang

Dear Tanya Meekins,

I work with Neil Steinkamp and Robert Levine at Stout. We submitted FOIA requests: EPA-HQ-2017-001296 and EPA-HQ-2015-006208 regarding automotive defect and recall reports. The 2017 data was formatted in a flat file for the years 2015-2016 with defect, recall and quarterly reports while the 2015 data was sent to us on DVD with individual recall reports in pdf form for the years 2000-2015.

There seems to be discrepancies in comparing the data between the two FOIA requests. Is there a chance we can get the data from the 2015 request in the same format as the 2017 request to reconcile these differences properly?

We would like to discuss this data as well. Would Linc Wehrly be the person who we would set up a call with? Thank you.

Best regards,
Kenhee Lee

STOUT
Kenhee Lee
Data Analyst, Dispute Consulting
Stout Risius Ross, LLC
120 West 45th Street, Suite 2900, New York, NY 10036
D 646.807.4236 | klee@stoutadvisory.com

RELENTLESS EXCELLENCE
stoutadvisory.com

Message

From: Cohen, Janet [cohen.janet@epa.gov]
Sent: 2/3/2017 9:00:46 PM
To: France, Jennifer [france.jennifer@epa.gov]
CC: Wehrly, Linc [wehrly.linc@epa.gov]
Subject: RE: Your EPA Inquiry RE: BMW Diesel cars prior to 2016 - is there an update on releasing test results?

Thanks for the push Jennifer, I had forgotten about this one too. I will get with Linc next week – we'll help you figure out how to respond.

- J. -

From: France, Jennifer
Sent: Friday, February 03, 2017 3:58 PM
To: Cohen, Janet <cohen.janet@epa.gov>
Cc: Wehrly, Linc <wehrly.linc@epa.gov>
Subject: RE: Your EPA Inquiry RE: BMW Diesel cars prior to 2016 - is there an update on releasing test results?

Hi Janet,

Ex. 5 Deliberative Process (DP)

Thanks!
Jennifer

From: Cohen, Janet
Sent: Thursday, January 12, 2017 4:01 PM
To: France, Jennifer <france.jennifer@epa.gov>
Cc: Wehrly, Linc <wehrly.linc@epa.gov>
Subject: RE: Your EPA Inquiry RE: BMW Diesel cars prior to 2016 - is there an update on releasing test results?

Jennifer,

Ex. 5 Deliberative Process (DP)

Ex. 5 Deliberative Process (DP)

Ex. 7(A)

- BMW 2.0L 328d MY 2016
- BMW 2.0L X3 MY 2015
- BMW 3.0L X5 MY 2013, 2015, 2016
- GM 2.0L Cruze MY 2014
- GM 2.8L Colorado/Canyon MY 2016
- Land Rover Range Rover MY 2016

Ex. 5 Deliberative Process (DP)

These vehicles are already published to the FuelEconomy.Gov website and can be found using the following link if we want to share it with reporters.

http://www.fueleconomy.gov/feg/PowerSearch.do?action=noform&year1=2017&year2=2017&minmsrpsel=0&maxmsrpsel=0&city=0&hwy=0&comb=0&YearSel=2017&make=&model=&mclass=&mclass=&vfuel=&vtype=Diesel&trany=&drive=&cyl=&MpgSel=&SortBy=City&Units=&url=SearchServlet&opt=new&minmsrp=0&maxmsrp=0&rowLimit=25&pageno=1&sortBy=Comb&tabView=0

Thanks,

Byron

****

Byron Bunker
Director Compliance Division
Office of Transportation and Air Quality
Environmental Protection Agency
2000 Traverwood Drive

Ann Arbor, MI 48105
Bunker.Byron@epa.gov
Phone: (734) 214-4155
Mobile: (734) 353-9623
****

From: McCabe, Janet
Sent: Thursday, January 12, 2017 8:32 AM
To: Bunker, Byron <bunker.byron@epa.gov>; Grundler, Christopher <grundler.christopher@epa.gov>
Cc: Birgfeld, Erin <Birgfeld.Erin@epa.gov>; Cohen, Janet <cohen.janet@epa.gov>; Wehrly, Linc <wehrly.linc@epa.gov>; Millett, John <Millett.John@epa.gov>; Conger, Nick <Conger.Nick@epa.gov>; Haman, Patricia <Haman.Patricia@epa.gov>
Subject: RE: FCA_blog_1-11-17.docx

Thanks, Byron.

Ex. 5 Deliberative Process (DP)

From: Bunker, Byron
Sent: Thursday, January 12, 2017 8:16 AM
To: McCabe, Janet <McCabe.Janet@epa.gov>; Grundler, Christopher <grundler.christopher@epa.gov>
Cc: Birgfeld, Erin <Birgfeld.Erin@epa.gov>; Cohen, Janet <cohen.janet@epa.gov>; Wehrly, Linc <wehrly.linc@epa.gov>; Millett, John <Millett.John@epa.gov>; Conger, Nick <Conger.Nick@epa.gov>; Haman, Patricia <Haman.Patricia@epa.gov>
Subject: RE: FCA_blog_1-11-17.docx
Importance: High

Hi Janet,

Ex. 5 Deliberative Process (DP)

Thanks,

Byron

EPA Certified 2017 Light-Duty Diesel Vehicle Models
2017 (15 models)

BMW – 4 models
2.0 L, 4 cylinder: 328d; 328d xDrive; 328d xDrive Sports Wagen
3.0 L, 6 cylinder: X5 xDrive 35d

GM – 4 models (all 2.8 L, 4 cylinder)
Chevrolet Colorado 2WD; 4WD
GMC Canyon 2WD, $WD

Jaguar – 5 models (all 2.0 L, 4 cylinder)
XE; XF; XE AWD; XF AWD; F-Pace

Land Rover – 2 models (all 3.0 L, 6 cylinder)

Range Rover; Range Rover Sport

Ex. 5 Deliberative Process (DP)

- J. -

From: France, Jennifer
Sent: Thursday, January 12, 2017 2:54 PM
To: Cohen, Janet <cohen.janet@epa.gov>
Subject: RE: Your EPA Inquiry RE: BMW Diesel cars prior to 2016 - is there an update on releasing test results?

Ex. 5 Deliberative Process (DP)

From: Cohen, Janet
Sent: Thursday, January 12, 2017 11:15 AM
To: France, Jennifer <france.jennifer@epa.gov>
Subject: RE: Your EPA Inquiry RE: BMW Diesel cars prior to 2016 - is there an update on releasing test results?

Use your judgment but yes. – j. -

From: France, Jennifer
Sent: Thursday, January 12, 2017 11:14 AM
To: Cohen, Janet <cohen.janet@epa.gov>
Subject: RE: Your EPA Inquiry RE: BMW Diesel cars prior to 2016 - is there an update on releasing test results?

Thanks Janet! Even though they are internal Qs&As, can I use them to respond to public inquiries?

From: Cohen, Janet
Sent: Thursday, January 12, 2017 11:13 AM
To: France, Jennifer <france.jennifer@epa.gov>
Subject: RE: Your EPA Inquiry RE: BMW Diesel cars prior to 2016 - is there an update on releasing test results?

Ex. 7(A)

From: EPA Office of Transportation & Air Quality
Sent: Thursday, January 12, 2017 10:56 AM
To: Cohen, Janet <cohen.janet@epa.gov>
Subject: Your EPA Inquiry RE: BMW Diesel cars prior to 2016 - is there an update on releasing test results?

Hi Janet – I have text from last year's original Q&A that sort of addresses this, but it doesn't really say when we are going to release the test results. Do you have an update I can use to respond to this inquiry?

Ex. 5 Deliberative Process (DP)

-----Original Message-----
From: drupal_admin@epa.gov [mailto:drupal_admin@epa.gov]
Sent: Wednesday, January 04, 2017 3:38 PM

To: EPA Office of Transportation & Air Quality <OTAQ@epa.gov>
Subject: BMW Diesel cars prior to 2016

Subject: BMW Diesel cars prior to 2016
Name: Ex. 6 Personal Privacy (PP)
Email Address: Ex. 6 Personal Privacy (PP)
Comments:
I am a long-time diesel devotee. VW is about to purchase my 2009 Jetta Sportswagen TDI -- I bought the original model and loved it -- and I want to buy a used diesel from BMW or M/B. It is my understanding other existing cars are under testing and have been for some time. Can you please update me when your results will become public? I would like to buy the car knowing there is no 'fix' required or that any required 'fix' is minor. I can wait but want to know how long the wait is likely to be.
Thanks very much, Ex. 6 Personal Privacy (PP)

Message

From: Meekins, Tanya [Meekins.Tanya@epa.gov]
Sent: 11/21/2016 3:58:44 PM
To: Hart, Frederick [hart.frederick@epa.gov]; Hurlin, David [hurlin.david@epa.gov]; Wehrly, Linc [wehrly.linc@epa.gov]; Pugliese, Holly [pugliese.holly@epa.gov]
Subject: FW: New FOIA assignment...EPA-HQ-2017-001296
Attachments: Defect and Recall Reports after 2015 11_17_2016.xlsx; CBI Defect and Recall Reports after 2015 11_17_2016.xlsx

Hi all

I'm assuming one of you will take over preparing the final response letter.

Thanks

Tanya Meekins
Office of Transportation
And Air Quality
202-564-6002

From: Yang, Ching-Shih
Sent: Friday, November 18, 2016 12:07 PM
To: Zaremski, Sara <zaremski.sara@epa.gov>; Meekins, Tanya <Meekins.Tanya@epa.gov>; Wehrly, Linc <wehrly.linc@epa.gov>; Hart, Frederick <hart.frederick@epa.gov>; Hurlin, David <hurlin.david@epa.gov>
Cc: Pugliese, Holly <pugliese.holly@epa.gov>
Subject: RE: New FOIA assignment...EPA-HQ-2017-001296

Hi,

Attached is the data requested. Please note that there are two files, one with the CBI data that should not go out, and the other with the FOI data that can be sent out to the requester. Please let me know if there is any question with this data.

-Ching-shih

From: Zaremski, Sara
Sent: Wednesday, November 16, 2016 11:24 AM
To: Meekins, Tanya <Meekins.Tanya@epa.gov>; Wehrly, Linc <wehrly.linc@epa.gov>; Hart, Frederick <hart.frederick@epa.gov>; Hurlin, David <hurlin.david@epa.gov>; Yang, Ching-Shih <Yang.Ching-Shih@epa.gov>
Cc: Pugliese, Holly <pugliese.holly@epa.gov>
Subject: RE: New FOIA assignment...EPA-HQ-2017-001296

Linc – I believe hat this falls under your group, but Ching-shih can pull the records not claimed as CBI.

Ching-Shih – can you please pull together the appropriate records? Any that are marked as CBI cannot be produced as part of the FOIA, but need to be listed so Tanya knows what has been withheld for CBI reasons.
sara

From: Meekins, Tanya
Sent: Wednesday, November 16, 2016 10:47 AM
To: Wehrly, Linc <wehrly.linc@epa.gov>; Hart, Frederick <hart.frederick@epa.gov>; Hurlin, David <hurlin.david@epa.gov>
Cc: Pugliese, Holly <pugliese.holly@epa.gov>; Zaremski, Sara <zaremski.sara@epa.gov>
Subject: New FOIA assignment...EPA-HQ-2017-001296

Hi all

Attached is a new FOIA assignment that is due by December 14th. Please send me an email to verify that this falls under your group.

Tanya Meekins
Office of Transportation
And Air Quality
202-564-6002

Message

From: Cohen, Janet [cohen.janet@epa.gov]
Sent: 5/19/2016 4:38:37 PM
To: Wehrly, Linc [wehrly.linc@epa.gov]
Subject: RE: q/as about releasing results of diesel test program

Ok, got it, thanks Linc. Was just asking in case you had something handy. No need to go through files if you don't. -- j. -

---

From: Wehrly, Linc
Sent: Thursday, May 19, 2016 12:08 PM
To: Cohen, Janet <cohen.janet@epa.gov>
Subject: RE: q/as about releasing results of diesel test program

Janet,

I'll see what I have, but I'm in the VW meeting and don't know how much I can do. I made one small change below to the Ex. 7(A)

Linc

Linc Wehrly
Director, Light-Duty Vehicle Center
Compliance Division
Office of Transportation and Air Quality
United States Environmental Protection Agency
(734) 214-4286
wehrly.linc@epa.gov

From: Cohen, Janet
Sent: Thursday, May 19, 2016 12:03 PM
To: Wehrly, Linc <wehrly.linc@epa.gov>
Subject: q/as about releasing results of diesel test program

Linc,

Ex. 5 Deliberative Process (DP)

- J. -

What vehicles are included in the program?

Ex. 7(A)

- BMW 2.0L 328d MY 2016
- BMW 2.0L X3 MY 2015
- BMW 3.0L X5 MY 2013, 2015, 2016
- GM 2.0L Cruze MY 2014
- GM 2.8L Colorado/Canyon MY 2016
- Land Rover Range Rover MY 2016

Message

From: Cohen, Janet [cohen.janet@epa.gov]
Sent: 1/7/2016 6:08:32 PM
To: Zaremski, Sara [zaremski.sara@epa.gov]; Wehrly, Linc [wehrly.linc@epa.gov]
Subject: FW: VW
Attachments: 2009_FE_guide for DOE_ALL-rel dates-no-sales-8-28-08download.csv; 2010FEGuide for DOE-all rel dates-no-sales-02-22-2011public.xlsx; 2011 FEGuide1-for DOE-OK to release-no sales-1-28-2014-Rel9 macroupdateFiestaforpublic.xlsx

Linc and Sara – we may want to pull in Dave Good and/or Bob Peavyhouse and/or TCD but I wanted to first ask you how you think we should proceed before providing our answers. – j. -

---

From: Haman, Patricia
Sent: Thursday, January 07, 2016 12:45 PM
To: Bunker, Byron <bunker.byron@epa.gov>; Cohen, Janet <cohen.janet@epa.gov>; Cook, Leila <cook.leila@epa.gov>; Sutton, Tia <sutton.tia@epa.gov>
Cc: Hengst, Benjamin <Hengst.Benjamin@epa.gov>; Belser, Evan <Belser.Evan@epa.gov>; Shinkman, Susan <Shinkman.Susan@epa.gov>; Kelley, Rosemarie <Kelley.Rosemarie@epa.gov>; Emmerson, Caroline <Emmerson.Caroline@epa.gov>; Folkemer, Nathaniel <Folkemer.Nathaniel@epa.gov>; Werner, Jacqueline <Werner.Jacqueline@epa.gov>; Niebling, William <Niebling.William@epa.gov>; Cyran, Carissa <Cyran.Carissa@epa.gov>
Subject: FW: VW

Hi Everyone: I spoke to Dave Berick, Senate Finance this morning. He has sent these charts over which can be found on the Fuel Economy.gov website.

He is looking for generic answers to his questions but the explanations we provide will play into their questions for VW concerning what information VW provided to claim tax credits.

He is hoping we can address the questions below when we brief him on the 15th. If you need me to clarify any of the questions before then, just let me know.

Thanks, Pat

Patricia Haman
Office of Congressional Affairs
U.S. EPA
202-564-2806

EPA reports annual vehicle fuel economy and publishes guides on www.fueleconomy.gov. In addition to the annual guides, more detailed data is posted in detailed spreadsheets (attached). We are trying to get a better understanding of how the "guide" data correlate to the detailed data. For example, what are the underlying characteristics of the spreadsheet Col. L (labeled "UNRND CITY") for MY2009, Col. M (labeled "CITY UNAD...") for MY2010, and Col. N (labeled "CITY UNAD....") for MY2011, and how do those characteristics different from what's reported as city MPG.

Thanks.

Message

From: Pidgeon, Bill [pidgeon.bill@epa.gov]
Sent: 10/13/2015 1:46:48 PM
To: Pugliese, Holly [pugliese.holly@epa.gov]
CC: Wehrly, Linc [wehrly.linc@epa.gov]
Subject: RE: Recalls regarding 2011 BMW 335d

Hi Holly,

Ex. 5 Deliberative Process (DP)

Bill

-----Original Message-----
From: Pugliese, Holly On Behalf Of ComplianceInfo
Sent: Wednesday, September 16, 2015 7:40 AM
To: Pidgeon, Bill
Subject: FW: Recalls regarding 2011 BMW 335d

Hi Bill. Can you look into this please and let me know if we have anything? Thanks.

Holly Pugliese
Office of Transportation and Air Quality US EPA pugliese.holly@epa.gov

-----Original Message-----
From: Gmail **Ex. 6 Personal Privacy (PP)**
Sent: Tuesday, September 15, 2015 8:11 PM
To: ComplianceInfo
Subject: Recalls regarding 2011 BMW 335d

Hi

Trying to find out if my 2011 Bmw 335d diesel has any emissions recalls. Hope to hear back soon. Thank you.
Vin is Ex. 6 Personal Privacy (PP) in case you need it.

Message

From: Wright, DavidA [Wright.DavidA@epa.gov]
Sent: 2/22/2016 10:22:40 PM
To: Wehrly, Linc [wehrly.linc@epa.gov]
Subject: FW: Quick question on your diesel vehicles

I will let you know when I hear something from BMW per this request.

Regards,

David

From: Thomas.Hofmann@bmwna.com [mailto:Thomas.Hofmann@bmwna.com]
Sent: Friday, February 19, 2016 12:04 PM
To: Wright, DavidA <Wright.DavidA@epa.gov>
Subject: RE: Quick question on your diesel vehicles

Hello David

This is a little bit beyond me technically, so I have forwarded your request to Thomas King in Munich.
He will discuss this with our diesel team/experts and prepare a response.
It will take a few days until we respond, but it is in process.

regards,
Tom

From: Wright, DavidA [mailto:Wright.DavidA@epa.gov]
Sent: Thursday, February 18, 2016 6:14 PM
To: Hofmann Thomas, EG-8-US-22 <Thomas.Hofmann@bmwna.com>
Subject: Quick question on your diesel vehicles

Tom,

A question has come up regarding how BMW uses ambient air or inlet air temperatures to modify EGR as the temperature decreases from 20 C down to -10 C. I would expect that at some point in that range BMW disables EGR, and, am wondering if you could provide us with the temperatures when it is disabled. My expectations could be wrong, and you might not have it disabled at -10 C. It would be good to know if the values are similar or different for your 4 different diesel test groups. This request is for diesels only.

Thanks,

David

David Wright
Light-Duty Vehicle Center – Compliance Division
Office of Transportation and Air Quality
U.S. Environmental Protection Agency
(734) 214-4467

Message

From: Wehrly, Linc [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=64E5F31CCB4841018441B3BF074842D0-WEHRLY, LINC]
Sent: 9/14/2018 1:05:26 PM
To: Wright, DavidA [Wright.DavidA@epa.gov]
Subject: Re: Question on BMW diesel sales from 2009 through 2015

Great! Thanks for the update.

Sent from my iPhone

On Sep 13, 2018, at 6:27 PM, Wright, DavidA <Wright.DavidA@epa.gov> wrote:

> I went ahead and asked BMW for their sales numbers. The SCR only vehicles are the '09 through 2013 which total 43,392 sales and the remainder (34,727 vehicles) are combined lean NOx trap and SCR aftertreatment systems.
>
> Regards,
>
> David
>
> ---
>
> **From:** Thomas.Hofmann@bmwna.com [mailto:Thomas.Hofmann@bmwna.com]
> **Sent:** Thursday, September 13, 2018 2:36 PM
> **To:** Wright, DavidA <Wright.DavidA@epa.gov>
> **Subject:** RE: Question on BMW diesel sales from 2009 through 2015
>
> Hi David
>
> I also could not find production volumes in the final applications.
> I have compiled the requested production data from the CAFÉ reports for those model years.
>
> The total production over those seven model years is 78119 units.
>
> The details can be seen in the attached spreadsheet:
> - The first tab shows the data by test group
> - The second tab shows the data by model year and model
>
> Please let me know if you have any questions or would like the data in some other format.
>
> Kind regards,
> Tom
>
> ---
>
> **From:** Wright, DavidA [mailto:Wright.DavidA@epa.gov]
> **Sent:** Thursday, September 13, 2018 11:15 AM
> **To:** Hofmann Thomas, EG-8-US-2 <Thomas.Hofmann@bmwna.com>
> **Cc:** Ott, William <ott.william@epa.gov>
> **Subject:** Question on BMW diesel sales from 2009 through 2015
>
> Tom,

I have been asked to come up with the number of diesels that BMW has sold in the US for the 2009 through 2015 model years. I have quickly attempted to find that number in the end of year applications, and, do not find any final sales results. I am wondering if you can point me to the location of the results in the BMW submittals that are in our system, and, if the data are not in the existing submittals I am wondering if you can provide it to me.

Thanks,

David

David Wright
Light-Duty Vehicle Center – Compliance Division
Office of Transportation and Air Quality
U.S. Environmental Protection Agency
(734) 214-4467

<BMW diesel production 2009-2015.xlsx>

Message

From: Pidgeon, Bill [pidgeon.bill@epa.gov]
Sent: 8/3/2017 9:35:06 PM
To: Wehrly, Linc [wehrly.linc@epa.gov]
Subject: IUVP and Remote Sensing Data
Attachments: IVUP MY 2011 to 2016 as of 6_8_2017.xlsb

Hi Linc,

I didn't get very far on the RSD/IUVP comparison, and I forgot to remind you my vacation starts at the end of

Ex. 6 Personal Privacy (PP)

I attached the IUVP database I was going to use, if you pass the analysis on to someone else. If there is no hurry, I'd like to work on it when I get back, but certainly understand if you need the analysis sooner. I attached the Excel spreadsheet that I started with.

The database is restricted to MY2011 to MY2016, since that's what I asked Ching-shih/Terry for a few weeks ago. I think that adding more model years would slow down the computer to a crawl. The older model years can be added later.

Below are few of the database restrictions I was going to use, but I didn't complete the list:

IUVP Database Restrictions:
Nitrogen Oxides only.
Model Years 2011 to 2016
Test Condition: As-received
Test Procedures + Fuel include:
California fuel 2-day exhaust (w/can load)
Federal fuel 2-day exhaust (w/can load)
CVS 75 and later (w/o can. load) Gasoline & Diesel
HWFE: Gasoline & Diesel
US06

My home phone is Ex. 6 Personal Privacy (PP)

Best wishes,
Bill

****
William M. Pidgeon
Mechanical Engineer
U.S. Environmental Protection Agency
Compliance Division, N02
2000 Traverwood Drive
Ann Arbor, MI 48105-2195
pidgeon.bill@epa.gov
Phone: 734-214-4416
Fax: 734-214-4869

Appointment

From: Christian.Cozzarini@bmw.de [Christian.Cozzarini@bmw.de]
Sent: 10/28/2015 5:47:25 PM
To: Wright, DavidA [Wright.DavidA@epa.gov]
CC: Carlheinz.Bayer@bmwna.com

Subject: Accepted: EPA/BMW diesel instrumentation Review
Location: AA-Room-Office-N66-ConfRoom/AA-OTAQ-OFFICE

Start: 10/28/2015 7:00:00 PM
End: 10/28/2015 8:00:00 PM
Show Time As: Busy

Recurrence: (none)

Appointment

From: Wright, DavidA [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=4F14A47C701547479B12BEE35117D0A9-WRIGHT, DAVID A.]
Sent: 10/28/2015 12:33:45 PM
To: Ott, William [ott.william@epa.gov]; Carlheinz.Bayer@bmwna.com; christian.cozzarini@bmw.de
CC: Wehrly, Linc [wehrly.linc@epa.gov]; Dalton, Joel [Dalton.Joel@epa.gov]
BCC: AA-Room-Office-N66-ConfRoom/AA-OTAQ-OFFICE [AA-Room-Office-N66-ConfRoom@epa.gov]

Subject: EPA/BMW diesel instrumentation Review
Location: AA-Room-Office-N66-ConfRoom/AA-OTAQ-OFFICE

Start: 10/28/2015 7:00:00 PM
End: 10/28/2015 8:00:00 PM
Show Time As: Tentative

Appointment

From: Wright, DavidA [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=4F14A47C701547479B12BEE35117D0A9-WRIGHT, DAVID A.]
Sent: 10/28/2015 12:33:42 PM
To: Wright, DavidA [Wright.DavidA@epa.gov]; Ott, William [ott.william@epa.gov]; Carlheinz.Bayer@bmwna.com; christian.cozzarini@bmw.de
CC: Wehrly, Linc [wehrly.linc@epa.gov]; Dalton, Joel [Dalton.Joel@epa.gov]
BCC: AA-Room-Office-N66-ConfRoom/AA-OTAQ-OFFICE [AA-Room-Office-N66-ConfRoom@epa.gov]

Subject: EPA/BMW diesel instrumentation Review
Location: AA-Room-Office-N66-ConfRoom/AA-OTAQ-OFFICE

Start: 10/28/2015 7:00:00 PM
End: 10/28/2015 8:00:00 PM
Show Time As: Busy

Appointment

From: AA-Room-Office-N66-ConfRoom/AA-OTAQ-OFFICE [AA-Room-Office-N66-ConfRoom@epa.gov]
Sent: 10/28/2015 12:33:48 PM
To: Wright, DavidA [Wright.DavidA@epa.gov]

Subject: Accepted: EPA/BMW diesel instrumentation Review
Location: AA-Room-Office-N66-ConfRoom/AA-OTAQ-OFFICE

Start: 10/28/2015 7:00:00 PM
End: 10/28/2015 8:00:00 PM

Recurrence: (none)

Your request was accepted.

Sent by Microsoft Exchange Server 2016

Appointment

From: AA-Room-Office-N66-ConfRoom/AA-OTAQ-OFFICE [AA-Room-Office-N66-ConfRoom@epa.gov]
Sent: 10/28/2015 12:33:48 PM
To: Wright, DavidA [Wright.DavidA@epa.gov]

Subject: Accepted: EPA/BMW diesel instrumentation Review
Location: AA-Room-Office-N66-ConfRoom/AA-OTAQ-OFFICE

Start: 10/28/2015 7:00:00 PM
End: 10/28/2015 8:00:00 PM

Recurrence: (none)

Message

From: Christian.Cozzarini@bmwna.com [Christian.Cozzarini@bmwna.com]
Sent: 3/18/2016 7:46:42 PM
To: Wright, DavidA [Wright.DavidA@epa.gov]
Subject: RE: X5 Diesel Measurement

Hello David,

I just wanted to follow up our last discussion on the X5 diesel testing.

Could you figure out something on OBD Mode 07 (pending fault code) or the Freeze Frame?
Did the second measurement look the same as the measurement you have sent already? Could you provide this measurement?
And finally did you decide on a retest with the road speed fan?

Sorry for bothering you again, but we are highly interested to prove our diesel vehicles are o.k.

Best regards

Christian

BMW Group
Dr. Christian Cozzarini
Department Head Environmental Engineering
Phone: +1 201 571 5177
Mobile: +1 201 370 5061
mailto: Christian.Cozzarini@bmw.de
http://www.bmwgroup.com

Bayerische Motoren Werke Aktiengesellschaft
Board of Management: Harald Krüger (Chairman),
Milagros Caiña Carreiro-Andree, Klaus Draeger,
Friedrich Eichiner, Klaus Fröhlich, Ian Robertson,
Peter Schwarzenbauer, Oliver Zipse.
Chairman of the Supervisory Board: Norbert Reithofer
Registered in Germany: München HRB 42243

From: Wright, DavidA [mailto:Wright.DavidA@epa.gov]
Sent: Monday, March 14, 2016 5:12 PM
To: Cozzarini Christian, EG-8-US-2 <Christian.Cozzarini@bmwna.com>
Cc: Wehrly, Linc <wehrly.linc@epa.gov>
Subject: RE: X5 Diesel Measurement

Christian,

We ran this test twice on the vehicle, and, therefore have another data set which shows similar operation, although it appears a trap regeneration was also triggered during that run. A MIL was not set during the testing. Not sure if the data acquisition parameters we have been provided would indicate whether a fault code was pending. There was no indication that the vehicle was in any limp home mode.

We are using the data acquisition connector provided by BMW and the ETAS software for recording parameters. No sensors have been disconnected and no other harnesses have been connected to the vehicle. At times we are powering the laptop using the 12V power supply and connecting it to the power plug in the vehicle.

Our test was performed not with the road speed fan, but, with the US06 fan. I just looked at the supplemental test data BMW entered for this vehicle and now see that the recent requests have indicated that a road speed fan is required. I also observe that the SCR temperatures on the data EPA generated also appear to be about 50 C higher than the SCR temperatures provided in the data BMW generated.

The DEF dosing value in the data I provided started at 0 and finished at 15.173.

We could re-run the tests with the road speed fan, but, that would require also getting the laptop key for the ETAS software updated. I have been hesitant to ship the laptop to Carlheinz, although, we might want to do that at this time – assuming we would want to repeat our testing with the road speed fan.

Regards,

David

David Wright
Light-Duty Vehicle Center – Compliance Division
Office of Transportation and Air Quality
U.S. Environmental Protection Agency
(734) 214-4467

From: Christian.Cozzarini@bmwna.com [mailto:Christian.Cozzarini@bmwna.com]
Sent: Monday, March 14, 2016 4:19 PM
To: Wright, DavidA <Wright.DavidA@epa.gov>
Cc: Wehrly, Linc <wehrly.linc@epa.gov>
Subject: X5 Diesel Measurement

Hello David,

I reached out to my colleagues from the diesel development in Steyr.
Attached you will find a measurement from a X5 Diesel MY16 which reflects the behavior of our diesel vehicles. We observed much lower NOx levels during the test period with approximately the same temperatures, NOX upstream, EGR rate compared to your measurements.
X3 diesel and 328d measurements should look the same.

During the discussion with Steyr some questions came up to get an idea what went wrong.

- Is this the only measurement you did or did you try it several times? Is there a pending fault code or did you erase any fault codes before the test? I assume MIL was not on. My colleagues in Steyr assume that a sensor is not working properly and the vehicle entered a kind of limp home mode.
- Did you unplug some sensors or did you put extra harnesses to sensor plugs or sockets?
- Did you use the road speed fan and position of the fan as described in our confirmatory test instructions?
- The DEF dosing graph is hard to read. Is there a table with reading from the DEF dosing available (raw data)?

I will try to call you.

Best regards

Christian

BMW Group
Dr. Christian Cozzarini
Department Head Environmental Engineering
Phone: +1 201 571 5177
Mobile: +1 201 370 5061
mailto: Christian.Cozzarini@bmw.de
http://www.bmwgroup.com

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Peter Schwarzenbauer, Oliver Zipse.
Chairman of the Supervisory Board: Norbert Reithofer
Registered in Germany: München HRB 42243

Message

From: Wright, DavidA [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=4F14A47C701547479B12BEE35117D0A9-WRIGHT, DAVID A.]
Sent: 9/4/2013 6:34:11 PM
To: Carlheinz.Bayer@bmwna.com; Gert.Barnstedt@bmw.com
CC: Mazaitis, Vincent [mazaitis.vincent@epa.gov]
Subject: BMW Diesel D001500 / 2 Prepped Today

I just spoke with Scheduling and D001500 / 2 was prepped earlier today and is scheduled to test sometime tomorrow afternoon. Let me know if you have any additional questions, or need additional information.

Regards,

David A. Wright
Light-Duty Vehicle Center, Compliance Division
National Vehicle and Fuel Emissions Laboratory
Phone: (734) 214-4467
E-mail: wright.davida@epa.gov

Appointment

From: Wright, DavidA [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=4F14A47C701547479B12BEE35117D0A9-WRIGHT, DAVID A.]
Sent: 10/28/2015 12:33:42 PM
To: Wright, DavidA [Wright.DavidA@epa.gov]; Ott, William [ott.william@epa.gov]; Carlheinz.Bayer@bmwna.com; christian.cozzarini@bmw.de
CC: Wehrly, Linc [wehrly.linc@epa.gov]; Dalton, Joel [Dalton.Joel@epa.gov]
BCC: AA-Room-Office-N66-ConfRoom/AA-OTAQ-OFFICE [AA-Room-Office-N66-ConfRoom@epa.gov]

Subject: EPA/BMW diesel instrumentation Review
Location: AA-Room-Office-N66-ConfRoom/AA-OTAQ-OFFICE

Start: 10/28/2015 7:00:00 PM
End: 10/28/2015 8:00:00 PM
Show Time As: Busy

Christian,

If you are interested in participating by phone send me an e-mail and I will provide you with the phone number for the conference room.

Regards,

David

Message

From: Christian.Cozzarini@bmwna.com [Christian.Cozzarini@bmwna.com]
Sent: 7/20/2016 3:23:09 PM
To: Wright, DavidA [Wright.DavidA@epa.gov]
Subject: Status Diesel questions & answer

Hello David,

Could you look through our answers to your last questions on the SCR dosing strategy and were you able to get a decision from your management how to proceed?

Best regards,

Christian

BMW Group
BMW of North America, LLC
Dr. Christian Cozzarini
Department Head Environmental Engineering
Phone: +1 201 571 5177
Mobile: +1 201 370 5061
mailto: Christian.Cozzarini@bmwna.com

Message

From: Carlheinz.Bayer@bmwna.com [Carlheinz.Bayer@bmwna.com]
Sent: 10/8/2015 1:00:55 PM
To: Pidgeon, Bill [pidgeon.bill@epa.gov]
CC: Thomas.Hofmann@bmwna.com; Wright, DavidA [Wright.DavidA@epa.gov]; Pugliese, Holly [pugliese.holly@epa.gov]; Morin.Adler@bmwnaext.com; Carlheinz.Bayer@bmwna.com
Subject: RE: Manufacturer VERR Number 14E-W01 versus DR as #0074
Attachments: VERR_confirmation1.pdf; FOI_BMX_VER_1411_BD_R00.pdf; VERR_confirmation.pdf; 14E-W01_Warranty_Ext_Submission-ARB.pdf

Hello Bill,
we looked into our records and believe everything looks right from our end.

See the following 4 attachments:
FOI_BMX_VER_1411_BD_R00.pdf→VERR Submission
VERR_confirmation.pdf→Proof of VERR Submission
14E-W01_Warranty_Ext_Submission-ARB.pdf→VERR Attachment (CA Implementation Plan, Customer Letter and Service Information Bulletin)
VERR_confirmation1.pdf→Proof of Attachment Submission

Please let me know if there are still issues and we will investigate further

Thanks
Carlheinz

BMW of North America, LLC
Carlheinz Bayer
Manager Compliance and OBD
EG-8-US-21
200 Chestnut Ridge Road, Building 150
Woodcliff Lake, NJ 07677-7731
Tel.: (001) 201-571-5193
Mobile: (001) 201-207-4621
Fax: (001) 201-571-5479
Mail: carlheinz.bayer@bmwna.com
Web: www.bmwusa.com

Bayerische Motoren Werke Aktiengesellschaft
Board of Management: Norbert Reithofer, Chairman,
Frank-Peter Arndt, Milagros Caiña Carreiro-Andree,
Klaus Froehlich, Klaus Draeger, Friedrich Eichiner,
Harald Krüger, Ian Robertson.
Chairman of Supervisory Board: Joachim Milberg
Registered in Germany: München HRB 42243

From: Pidgeon, Bill [mailto:pidgeon.bill@epa.gov]
Sent: Wednesday, October 07, 2015 5:04 PM
To: Bayer Carlheinz, EG-8-US-2 <Carlheinz.Bayer@bmwna.com>
Cc: Hofmann Thomas, EG-8-US-22 <Thomas.Hofmann@bmwna.com>; Wright, DavidA <Wright.DavidA@epa.gov>;

Pugliese, Holly <pugliese.holly@epa.gov>
Subject: RE: Manufacturer VERR Number 14E-W01 versus DR as #0074

Hi Carlheinz,

I would appreciate it if you would send me the Recall Plan including the Customer Notification Letter and Technical Service Bulletin.

Also, I am puzzled as to why you didn't upload these documents to the Verify database. Would you explain why these documents are not available in Verify?

Thanks,
Bill

****
William M. Pidgeon
Mechanical Engineer
U.S. Environmental Protection Agency
Compliance Division, N69
2000 Traverwood Drive
Ann Arbor, MI 48105-2195
pidgeon.bill@epa.gov
Phone: 734-214-4416
Fax: 734-214-4869

From: Thomas.Hofmann@bmwna.com [mailto:Thomas.Hofmann@bmwna.com]
Sent: Wednesday, September 30, 2015 5:46 PM
To: Pidgeon, Bill
Cc: Wright, DavidA; Pugliese, Holly
Subject: RE: Manufacturer VERR Number 14E-W01 versus DR as #0074

Hello Bill

In response to your questions:

1. Regarding your question why BMW decided to limit the warranty extension to the 2010 335d, I do not know firsthand how this decision was made.
BMW has established a committee in Munich that is responsible for these decisions. I am not party to that committee.
I can only infer that the committee considered the recall text at 42 USC §7541(c) and concluded that:
* a "substantial number" of 2010 335d models have the defect or will develop the defect during their useful life, and that
* a "substantial number" of 2011 335d and 2011 X5 35d do not have the defect or will not develop the defect during their useful life

2. No, you do not have my "permission to tell the owner of the 2011MY 335d, that his car may have the defect described below ..."
I do not have the authority to revise or expand coverage of the existing warranty extension.
BMW has given that authority to the above-mentioned committee.

best regards,
Tom

From: Pidgeon, Bill [mailto:pidgeon.bill@epa.gov]
Sent: Friday, September 25, 2015 2:56 PM
To: Hofmann Thomas, EG-8-US-22
Cc: Wright, DavidA; Pugliese, Holly
Subject: RE: Manufacturer VERR Number 14E-W01 versus DR as #0074

Hi Thomas,

Thanks for getting back to me.

DR 0074 says: Emissions increase possible, emissions may exceed the standard.

So, please explain why "failures were more concentrated" allows BMW to limit the recall to the 2010 335d, when the 2011 models also may exceed the standards.

Also, do I have your permission to tell the owner of the 2011MY 335d, that his car may have the defect described below, and BMW has extended the warranty to repair vehicles with this defect at no cost to the owner, and that the 2011 X5 35d is also covered by the extended warranty?

> The affected part number 11717804384 relates to the Throttle Body. In about 99% of all cases the component throttle body was replaced due to a short circuit caused by oxidation at the throttle body actuator or due to a stuck throttle body due to internal corrosion of the shaft bearing. In case one of these malfunctions is detected, a fault code is stored including MIL illumination.

Thanks,
Bill
****
William M. Pidgeon
Mechanical Engineer
U.S. Environmental Protection Agency
Compliance Division, N69
2000 Traverwood Drive
Ann Arbor, MI 48105-2195
pidgeon.bill@epa.gov
Phone: 734-214-4416
Fax: 734-214-4869

From: Thomas.Hofmann@bmwna.com [mailto:Thomas.Hofmann@bmwna.com]
Sent: Thursday, September 24, 2015 11:27 PM
To: Pidgeon, Bill
Cc: Wright, DavidA; Pugliese, Holly
Subject: RE: Manufacturer VERR Number 14E-W01 versus DR as #0074

Hello Bill

Sorry for the delay in responding.

DR 0074 covered the throttle body as used in three diesel applications (2010 335d, 2011 335d and 2011 X5 35d).
The failures were more concentrated among the 2010 335d than the other two applications.
For this reason, the responsible committee decided to extend the emissions warranty on the throttle body for that particular model/application.***[BP]*** My understanding is that the

To avoid any similar confusion in the future, should BMW submit separate DR's for each test group?

kind regards,
Tom

From: Pidgeon, Bill [mailto:pidgeon.bill@epa.gov]
Sent: Wednesday, September 23, 2015 1:34 PM
To: Hofmann Thomas, EG-8-US-22
Cc: Wright, DavidA; Pugliese, Holly
Subject: RE: Manufacturer VERR Number 14E-W01 versus DR as #0074

Hi Thomas,

Would you let me know when you'll be able to respond to the email I sent last week.

Thanks,
Bill

From: Pidgeon, Bill
Sent: Wednesday, September 16, 2015 8:41 AM
To: Thomas.Hofmann@bmwna.com
Cc: David A. Wright; Pugliese, Holly
Subject: Manufacturer VERR Number 14E-W01 versus DR as #0074

Hi Thomas,

I found Manufacturer VERR Number 14E-W01 (EPA VERR# 1411) for the BMW 2010MY 335d which listed the related DR as #0074. This DR includes two 2011MY models, the 335d and the X5 xDrive 35d, which are not discussed in the VERR.

This came to my attention because an owner of a 2011MY 335d contacted us and inquired if there were any emission recalls for his vehicle. Given the discrepancy between the VERR and the DR, I'm not sure how to answer his question. So, would you explain why the VERR does not include the 2011MY models, yet DR 0074 says they are affected.

Best wishes,
Bill
****
William M. Pidgeon
Mechanical Engineer
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Compliance Division, N69
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pidgeon.bill@epa.gov
Phone: 734-214-4416
Fax: 734-214-4869

BMW Group

September 5, 2014

Ms. Annette Hebert
Chief, Mobile Source Operations Division
Air Resources Board
Mobile Source Division
9480 Telstar Avenue, Suite 4
El Monte, California 91731

RE: **BMW VOLUNTARY EMISSIONS WARRANTY EXTENSION REPORT**
CAMPAIGN NUMBER: 14E-W01
Throttle Body

Dear Ms. Hebert:

On behalf of BMW, please find enclosed a Voluntary Emissions Warranty Extension Plan covering 2010 model year BMW vehicles.

Based on warranty claims and subsequent investigations, BMW determined that an emissions-related problem exists on a certain number of 2010 model year BMW 335d vehicles, the nature of which has been outlined in the enclosed Voluntary Emissions Warranty Extension Plan. The corrective action consists of extending the emissions warranty for the throttle bodies on all affected vehicles to 10 years or 120,000 miles, whichever comes first. BMW will also reimburse owners who have already replaced this part at their own expense at any time before the end of the warranty period.

Implementation of this campaign is scheduled as soon as ARB approval is received.

We respectfully ask for your approval of this voluntary recall plan, allowing us to implement this campaign as scheduled.

We respectfully ask for your approval of this voluntary recall plan, allowing us to implement this campaign as scheduled. If you have any further questions, comments or suggestions, please contact Carlheinz Bayer at (201) 571-5193 or by e-mail at "Carlheinz.Bayer@bmwna.com."

Sincerely,

Christian Cozzarini
Department Head
Environmental Engineering

Company
BMW of North America, LLC

BMW Group Company

Mailing address
P.O. Box 1227
Westwood, NJ
07675-1227

Office address
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200 Chestnut Ridge Road
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Website
bmwusa.com

Printed on Recycled Paper

BMW
VOLUNTARY EMISSIONS WARRANTY EXTENSION PLAN
AIR RESOURCES BOARD
EMISSIONS WARRANTY EXTENSION
14E-W01

1. **Affected Vehicles:**

Model Year	Test Group	Models	Vehicles Affected
2010	ABMXV03.0M57	335d	1,723

2. **Corrective Measure:**

   The corrective measure consists of extending the emissions warranty for the affected throttle bodies on all of the vehicles listed above to 10 years or 120,000 miles (equivalent to full useful life), whichever comes first. BMW will also reimburse owners who have already replaced this part at their own expense at any time before the end of the warranty period.

3. **Customer Notification:**

   BMW will use an internal customer database to obtain names and addresses of the affected vehicle owners. The vehicle owners will be notified through First Class Mail.

4. **Procedure to be followed by Vehicle Owners:**

   Customers of the affected vehicles will be asked to make an appointment with an authorized BMW center or MINI dealer, as applicable, to have the repair performed, free of charge to the customer (see attached draft customer letters).

5. **Facility to Perform Corrective Measure:**

   The repairs are conducted solely by authorized BMW centers or MINI dealers, as applicable.

6. **Customer Letter:**

   Three copies of the draft customer letters to the affected vehicle owners are attached.

7. **Parts Supply:**

   New throttle bodies (part # 11717804384) are provided to all authorized BMW centers and MINI dealers via our service network.

ED_002825_00051345-00002

8. **Service Information:**

   A copy of the draft Service Information Bulletin is attached.

9. **Fuel Economy/Drivability/Safety:**

   An increase in emissions is possible, and may exceed the standard. This repair has no adverse impact on drivability or safety.

ED_002825_00051345-00003

September 2014

This **"Important Limited Warranty Information"** applies to the BMW vehicle with the Vehicle Identification Number (VIN) of **WBANB535X55555555.**

Dear BMW Owner/Lessee:

BMW is committed to delivering the ultimate in product satisfaction to our customers.

Towards that end, BMW is extending the limited warranty for the **engine's Throttle Body** on the above reference vehicle to:

10 years/120,000 miles, whichever occurs first, as determined by your vehicle's original in-service date.

This "component-specific" limited warranty extension applies to defects in materials and workmanship and is transferable to any subsequent purchaser of your BMW vehicle. If this part has already been replaced at your expense, we will reimburse you if it was within the extended warranty period. All terms and conditions of the California Emissions Warranty, the Federal Emissions Defect Warranty and the Federal Emissions Performance Warranty all apply to this extended warranty. Warranty coverage for all other parts is not affected. Warranty terms and conditions can be found in your warranty booklet.

This is notice of a "limited warranty extension" only. This is not a notice of a Recall or Service Action.

If a repair is required during the extended limited warranty coverage period, eligible work performed by an authorized BMW center in the United States (including Puerto Rico) will be completed free of charge.

In the event your vehicle's Check Engine/Service Engine Soon warning light is illuminated, please contact your nearest authorized BMW center in the U.S. or Puerto Rico to schedule an appointment for inspection, diagnosis and repair. BMW centers have received a Service Information Bulletin informing them if this warranty extension.

Your authorized BMW center will review the scope of repair covered by the limited warranty extension. Diagnosing and repairing other unrelated issues is not covered under this warranty extension.

The integrity of our products is essential to BMW's success and our customers' trust. We are determined to exceed your expectations and hope this warranty extension further enhances your ownership experience. Should you have any questions, please call us at 1(800) 831-1117.

Sincerely,
BMW of North America, LLC

DRAFT

Previous Customer-pay Repair Reimbursement – Limited Warranty Extension

BMW of North America, LLC

September 2014

VIN WBANB535X55555555

Under this extended limited warranty, BMW of North America, LLC will provide reimbursement for eligible customer-pay repairs performed prior to the release of this customer notification.

If you previously paid for a repair that you believe would now be covered under this limited warranty extension, please submit your reimbursement request online at www.BMW-RP.com.

To initiate the online process, you will be asked to attach PDF files of the required documentation as outlined in the reimbursement checklist on the next page.

Alternatively, you may mail or fax your request and documentation to:

BMW Customer Reimbursement Center
Attention: **B-ELWR 2014 Throttle Body**
P.O. Box 561089
Dallas, TX 75356

Fax number: 877-434-2992

Please allow 4-6 weeks for processing your request.

Should you have any questions concerning this reimbursement process, please call 1-844-857-0341.

For all other questions, please contact BMW's Customer Relations and Services via email at Customerrelations@bmwusa.com or via telephone at 1-800-831-1117.

Please have your 17-character Vehicle Identification Number (VIN) available and include the VIN with all communications.

DRAFT

Previous Customer-pay Repair Reimbursement – Documentation Checklist

BMW of North America, LLC

Reimbursement is available to the BMW Owner/Lessee who incurred the expense.

When submitting a reimbursement for a previous repair, please provide **legible copies** of the following documentation and include your VIN, name, address and your preferred contact telephone number(s):

Repair Order (RO) or Invoice

This document should include the following information:

- ☐ Customer name and address
- ☐ Vehicle Identification Number ("VIN")
- ☐ The date of repair
- ☐ The mileage when the repair was performed
- ☐ Itemized breakdown of the labor charges for all repairs* including diagnosis
- ☐ Itemized breakdown of the parts, including any miscellaneous items, billed for all repairs*

*For repair orders containing multiple repair line items, only the specific line item expenses that relate to the component that is covered by this extended limited warranty will be considered for reimbursement.

Proof of Payment

Please provide a copy of at least **one** of the following items as valid proof of payment:

- ☐ Repair order (RO)/invoice stamped and dated as "PAID"
- ☐ Copy of a cancelled check
- ☐ Copy of a signed credit/debit card receipt
- ☐ Copy of a credit/debit card statement

Determining a repair's eligibility for reimbursement:

Please use the following questions to review your repair order documentation prior to submitting a reimbursement request:

1. Why was the vehicle brought into the repair facility?

2. What was the repair facility's diagnosis?

3. What did the repair facility do to correct the concern?

DRAFT

SUBJECT

M57 Diesel Engine Throttle Valve for EGR-Limited Warranty Extension to 10 Years/120,000 Miles

MODEL

E90 (3 Series Sedan)

Model Year 2010 with the M57 Diesel Engine

INFORMATION

BMW of North America, LLC ("BMW NA"), has become aware of a potential durability issue with the M57 diesel engine's Throttle Valve for EGR on model year 2010 E90 (3 Series Sedan) vehicles.

BMW is extending the limited warranty for the diesel engine's Throttle Valve for EGR on eligible vehicles to:

10 years/120,000 miles, whichever occurs first, as determined from the original in-service date.

This "component-specific" limited warranty extension applies to defects in materials and workmanship and is transferable to any subsequent purchaser of an eligible BMW vehicle.

This bulletin is notice of a "limited warranty extension" only. This is not a notice of a Recall or Service Action.

There is no immediate repair required **unless** the BMW vehicle is currently experiencing this problem.

Customer Notification Letter – Vehicle and Component-specific Warranty Extension

Even though this is **NOT** a Recall, BMW NA is sending VIN-specific customer notification letters.

This letter contains the **"Important Limited Warranty Information"** that informs these customers about their component-specific extension of the BMW New Vehicle/SAV Limited Warranty that applies to their vehicle. A sample letter is attached.

Eligible BMW Vehicles

Important note: The vehicle information listed above is for reference only.

To assist you in identifying the eligible vehicles, the DCSnet Warranty Vehicle Inquiry has been updated. Please select the "Vehicle Comment" button to display the extended warranty coverage information.

Note: Always check the DCSnet Warranty Vehicle Inquiry "Vehicle Comments" and the "Repair History (Claims)" sections first before performing any repairs.

OTHER ENGINE AND/OR ENGINE MANAGEMENT SYSTEM-RELATED SYSTEM FAULTS AND REPAIRS

The issue being addressed by this warranty extension may or may not be the root cause why a vehicle arrives at your center with check engine light illuminated along with other warning messages.

It is important, during the repair order write-up process, to review the scope of this component–specific warranty extension with your customer.

It is also important to notify the customer that diagnosing other engine and/or engine management system-related issues may be required and this diagnosis and corresponding repair work, if needed, is not covered by this warranty extension.

SITUATION

On affected vehicles, the M57 diesel engine's Throttle Valve for EGR could fail.

Symptoms include a Check Engine/Service Engine Soon warning light that is illuminated together possibility of other warning messages

PROCEDURE

If the M57 diesel engine's Throttle Valve for EGR fails during the extended warranty coverage period, perform the appropriate repair to correct the problem.

Do not perform a repair as a preventive measure.

Refer to Repair Instruction 11 71 XXX, "Removing and installing or replacing Throttle Valve" for EGR.

PARTS INFORMATION

Please refer to the Electronic Parts Catalog (EPC/ETK), using the customers VIN to locate the replacement part numbers.

Note: Only order the necessary parts, in the quantities needed, for customers' vehicles that have confirmed failures.

Also refer to EPC and the Repair Instructions for one-time use fasteners and component information.

WARRANTY INFORMATION

Eligible BMW vehicles will have a DCSnet VIN-specific "Vehicle Comment" that provides the following information:

BMW of North America, LLC has extended the M57 diesel engine's Throttle Valve for EGR limited warranty to 10 years/120,000 miles, whichever occurs first, as determined from the original in-service date.

This component's warranty extension applies to the eligible vehicles registered and operated in all 50 states (including Puerto Rico).

This component-specific extended limited warranty coverage is transferable.

The existing warranty coverage for all other parts **has not** changed.

Should the Throttle Valve for EGR fail again, the Throttle Valve for EGR is covered by the remaining portion of the extended limited warranty coverage period.

For eligible repairs, claim this work with the defect code and the KSD2 labor operations provided below.

Defect Code:	**11 71 90 98 00**	

Labor Operation:	**Labor Allowance:**	**Description:**
00 00 006	Refer to KSD2	Performing "vehicle test" (with vehicle diagnosis system – checking faults)
and		
61 21 528	Refer to KSD2	Connect an approved battery charger/power supply(indicated in KSD2 as "Charging battery")
and		
61 00 006	Work time (WT)	Performing vehicle diagnosis – test module.
and		
11 71 525	Refer to KSD2	Removing and installing or replacing throttle valve

Labor operation code 00 00 006 is a Main labor operation, the plus code labor operation is 00 00 556.

Refer to KSD2 for the corresponding flat rate unit (FRU) allowance. Enter the Chassis Number, which consists of the last 7 digits of the Vehicle Identification Number (VIN). Click on the "Search" button, and then enter the applicable flat rate labor operation in the FR code field.

Even though work time labor operation code 61 00 006 ends in "006," it is not considered a Main labor operation.

Work time (WT) labor operation 61 00 006 requires an individual punch time.

Additional work as Necessary

Labor Operation:	Labor Allowance:	Description:
11 99 000	Work time (WT)	Additional work to clean Throttle Valve for EGR-related components

Even though work time labor operation code 11 99 000 ends in "000," it is not considered a Main labor operation.

Work time (WT) labor operation 11 99 000 requires an individual punch time.

Sublet – Bulk Materials

Sublet Code 4	See sublet reimbursement calculation below	Reimbursement for repair-related bulk materials (Please do not use BMW part numbers for claim submission)

Sublet reimbursement calculation for claiming used quantities of repair-related bulk materials:

- BMW part numbers at dealer net plus handling; or
- Other materials not available through BMW and obtained locally at cost plus 20 percent.

Enter this material cost in sublet and itemize the amount in the claim comment section.

Previous Customer-pay Repairs – Limited Warranty Extension Reimbursement

As provided and outlined in the "Customer Notification" letter, under this extended limited warranty, BMW of North America, LLC will provide reimbursement for eligible customer-pay repairs that were performed prior to the release of the customer notification.

For a customer to request reimbursement for an eligible previously paid repair performed by either an authorized BMW center or independent repair shop, please have him/her submit his/her reimbursement request online at www.BMW-RP.com.

This website provides information regarding the required supporting documentation and alternative methods to submit a reimbursement request.

Appointment

From: Christian.Cozzarini@bmw.de [Christian.Cozzarini@bmw.de]
Sent: 10/28/2015 5:47:25 PM
To: Wright, DavidA [Wright.DavidA@epa.gov]
CC: Carlheinz.Bayer@bmwna.com

Subject: Accepted: EPA/BMW diesel instrumentation Review
Location: AA-Room-Office-N66-ConfRoom/AA-OTAQ-OFFICE

Start: 10/28/2015 7:00:00 PM
End: 10/28/2015 8:00:00 PM
Show Time As: Busy

Recurrence: (none)

Hello David,
Thank you!
Carlheinz is fully up to date in the process. If necessary, I can join the discussion. Please call 201 571 5177 (this is my office phone number).
Best regards
Christian

Appointment

From: Carlheinz.Bayer@bmwna.com [Carlheinz.Bayer@bmwna.com]
Sent: 10/28/2015 3:02:44 PM
To: Wright, DavidA [Wright.DavidA@epa.gov]

Subject: Accepted: EPA/BMW diesel instrumentation Review
Location: AA-Room-Office-N66-ConfRoom/AA-OTAQ-OFFICE

Start: 10/28/2015 7:00:00 PM
End: 10/28/2015 8:00:00 PM
Show Time As: Busy

Recurrence: (none)

Message

From: Healy, Stephen [healy.stephen@epa.gov]
Sent: 10/12/2016 11:44:39 AM
To: Wright, DavidA [Wright.DavidA@epa.gov]
CC: Hurlin, David [hurlin.david@epa.gov]
Subject: FW: Form submission from: Importing Vehicles and Engines Contact Us about Importing Vehicles and Engines form

David,
Here is a warranty question from a BMW diesel owner.
Thanks
Steve

From: Imports
Sent: Wednesday, October 12, 2016 7:40 AM
To: Healy, Stephen <healy.stephen@epa.gov>
Subject: FW: Form submission from: Importing Vehicles and Engines Contact Us about Importing Vehicles and Engines form

Steve,
Can you respond to the original email?

David C. Hurlin
EPA Imports Line, Exemptions
Managed by Jacobs, Contractor to the U.S. EPA
Phone: (734) 214-4098 or 4100
Fax: (734) 214-4676

From: Ex. 6 Personal Privacy (PP)
Sent: Tuesday, October 11, 2016 9:21 AM
To: Imports <Imports@epa.gov>
Subject: Re: Form submission from: Importing Vehicles and Engines Contact Us about Importing Vehicles and Engines form

The converter being the SCR? Since the urea tank is also faulty and plays a direct role in proper functioning of the SCR to meet EPA emissions stands I assume the urea tank (DEF or ad blue same thing) would also be covered. I don't see how it wouldn't. Both components in my car are failing and will not allow me to meet diesel emissions standards. My car is a 2011 with 77K miles-so it sounds like I fall under the 80K category

Thank you for your follow up,

Ex. 6 Personal Privacy (PP)

On Tue, Oct 11, 2016 at 9:15 AM, Imports <Imports@epa.gov> wrote:

Ex. 6 Personal Privacy (PP)

The 8/80,000 EPA Federal mandated warranty would only cover the PCM, ECU, and Converter for 8 years or 80,000 miles whichever occurs first.

David C. Hurlin
EPA Imports Line, Exemptions
Managed by Jacobs, Contractor to the U.S. EPA
Phone: (734) 214-4098 or 4100
Fax: (734) 214-4676

-----Original Message-----
From: drupal_admin@epa.gov [mailto:drupal_admin@epa.gov]
Sent: Thursday, October 06, 2016 5:24 PM
To: Imports <Imports@epa.gov>
Subject: Form submission from: Importing Vehicles and Engines Contact Us about Importing Vehicles and Engines form

Submitted on 10/06/2016 5:24PM
Submitted values are:

Ex. 6 Personal Privacy (PP)

Comments:
Hello,

I'm asking in regards to the 8year/80,000 mile warranty for selective emissions components on diesel vehicles. I drive a 2011 BMW 335D and have began to encounter faults and failures of these systems including, the SCR, DEF (urea) tank, and DPF. All of these components are required for my car to meet EPA emissions criteria. The vehicle manufacturer will not cover these components after 70K miles. I believe the replacement of these components if failing is 80,000 miles is covered under the branch of EPA? That would be great if I could get some information, my car is quite sick and I'm looking at a lot of money to replace emissions components that are built to fail.

Thanks! Ex. 6 Personal Privacy (PP)
Web Area: Importing Vehicles and Engines

Message

From: Carlheinz.Bayer@bmwna.com [Carlheinz.Bayer@bmwna.com]
Sent: 10/26/2015 11:30:31 AM
To: Wright, DavidA [Wright.DavidA@epa.gov]
CC: Christian.Cozzarini@bmw.de; Christoph.Bohland@bmw.com
Subject: Re: X5 Diesel Meeting/Demonstration 10/27 possible?

Hello David,
Did you have the chance to think about my proposal?
Thanks
Carlheinz

On Oct 20, 2015, at 2:43 PM, Bayer Carlheinz, EG-8-US-2 <Carlheinz.Bayer@bmwna.com> wrote:

> Hello David,
> Christoph Bohland and I will be dropping off the X5 Diesel vehicle for CT 10/27/15.
> I'd like to offer to meet and also to demonstrate on that vehicle the access points to trace the drive train can as well as the engine control module using INCA as well as a CAN tracing SW.
> Tuesday (10/27) would work best; Monday (10/26) would be an option, too.
>
> Please let me know if that works for you
> Best regards
>
> Carlheinz
>
> ---
> **BMW of North America, LLC**
> Carlheinz Bayer
> Manager Compliance and OBD
> EG-8-US-21
> 200 Chestnut Ridge Road, Building 150
> Woodcliff Lake, NJ 07677-7731
> Tel.: (001) 201-571-5193
> Mobile: (001) 201-207-4621
> Fax: (001) 201-571-5479
> Mail: carlheinz.bayer@bmwna.com
> Web: www.bmwusa.com

Message

From: Pidgeon, Bill [pidgeon.bill@epa.gov]
Sent: 11/10/2015 4:38:42 PM
To: ComplianceInfo [ComplianceInfo@epa.gov]
CC: Wright, DavidA [Wright.DavidA@epa.gov]
Subject: RE: BMW X5 Diesel Engine 2011 Model Year
Attachments: RE: Manufacturer VERR Number 14E-W01 versus DR as #0074

Hi Holly,

I attached an email from BMW explaining that the recall only applies to the 2010MY because "a "substantial number" of 2011 335d and 2011 X5 35d do not have the defect or will not develop the defect during their useful life"

I'll bug them further about it, since they list many more 2011's as "Potentially Number Affected", but they didn't explain their logic for defining "substantial number."

This is the second owner you sent me with questions related to this DR and VERR.

Bill

From: Pugliese, Holly **On Behalf Of** ComplianceInfo
Sent: Tuesday, November 10, 2015 7:46 AM
To: Wright, DavidA <Wright.DavidA@epa.gov>; Pidgeon, Bill <pidgeon.bill@epa.gov>
Subject: FW: BMW X5 Diesel Engine 2011 Model Year

Can you guys please take a look and let me know what you think?

Holly Pugliese
Office of Transportation and Air Quality
US EPA
pugliese.holly@epa.gov

From: Ex. 6 Personal Privacy (PP)
Sent: Monday, November 09, 2015 5:18 PM
To: ComplianceInfo <ComplianceInfo@epa.gov>
Subject: BMW X5 Diesel Engine 2011 Model Year

To Whom It May Concern

I recently had my 2011 BMW X5 Diesel Engine serviced. The SCR Active Tank (SCR Catalyst) failed and had to be replaced. My vehicle is no longer under warranty but BMW would not honor the BMW Voluntary Emissions Recall Campaign, Campaign No. 11E-A03. The recall campaign was because the diesel engine may fail to fully meet the U.S. Environmental Protection Agency emission control requirements. The SCR catalyst was not robust enough over increasing vehicle mileage. My mileage, is only 52,216 miles. I was alerted to the need for service by the illumination of the "Service Engine Soon Lamp".

BMW is saying that my vehicle did not fall into the 'voluntary recall' but I believe they are saying this, because where we live on the Eastern Shore of Maryland there is no emissions test requirements or vehicle inspection required with vehicle registration. As an environmentally conscientious citizen I think BMW should this vehicle for this issue. I had to pay $1500.00 to have the tank replaced. If I did not, the car eventually, according to BMW, would sense the emissions issues and would refuse to start.

Has the EPA seen this issue with other BMW Diesel owners? What can I do to have them include my vehicle in this recall?

Thank your for your help.

Ex. 6 Personal Privacy (PP)

Message

From: Thomas.Hofmann@bmwna.com [Thomas.Hofmann@bmwna.com]
Sent: 9/30/2015 9:45:46 PM
To: Pidgeon, Bill [pidgeon.bill@epa.gov]
CC: Wright, DavidA [Wright.DavidA@epa.gov]; Pugliese, Holly [pugliese.holly@epa.gov]
Subject: RE: Manufacturer VERR Number 14E-W01 versus DR as #0074

Hello Bill

In response to your questions:

1. Regarding your question why BMW decided to limit the warranty extension to the 2010 335d, I do not know firsthand how this decision was made.
BMW has established a committee in Munich that is responsible for these decisions. I am not party to that committee.
I can only infer that the committee considered the recall text at 42 USC §7541(c) and concluded that:
* a "substantial number" of 2010 335d models have the defect or will develop the defect during their useful life, and that
* a "substantial number" of 2011 335d and 2011 X5 35d do not have the defect or will not develop the defect during their useful life

2. No, you do not have my "permission to tell the owner of the 2011MY 335d, that his car may have the defect described below ..."
I do not have the authority to revise or expand coverage of the existing warranty extension.
BMW has given that authority to the above-mentioned committee.

best regards,
Tom

From: Pidgeon, Bill [mailto:pidgeon.bill@epa.gov]
Sent: Friday, September 25, 2015 2:56 PM
To: Hofmann Thomas, EG-8-US-22
Cc: Wright, DavidA; Pugliese, Holly
Subject: RE: Manufacturer VERR Number 14E-W01 versus DR as #0074

Hi Thomas,

Thanks for getting back to me.

DR 0074 says: Emissions increase possible, emissions may exceed the standard.

So, please explain why "failures were more concentrated" allows BMW to limit the recall to the 2010 335d, when the 2011 models also may exceed the standards.

Also, do I have your permission to tell the owner of the 2011MY 335d, that his car may have the defect described below, and BMW has extended the warranty to repair vehicles with this defect at no cost to the owner, and that the 2011 X5 35d is also covered by the extended warranty?

> The affected part number 11717804384 relates to the Throttle Body. In about 99% of all cases the component throttle body was replaced due to a short circuit caused by oxidation at the throttle body

actuator or due to a stuck throttle body due to internal corrosion of the shaft bearing. In case one of these malfunctions is detected, a fault code is stored including MIL illumination.

Thanks,
Bill
****
William M. Pidgeon
Mechanical Engineer
U.S. Environmental Protection Agency
Compliance Division, N69
2000 Traverwood Drive
Ann Arbor, MI 48105-2195
pidgeon.bill@epa.gov
Phone: 734-214-4416
Fax: 734-214-4869

From: Thomas.Hofmann@bmwna.com [mailto:Thomas.Hofmann@bmwna.com]
Sent: Thursday, September 24, 2015 11:27 PM
To: Pidgeon, Bill
Cc: Wright, DavidA; Pugliese, Holly
Subject: RE: Manufacturer VERR Number 14E-W01 versus DR as #0074

Hello Bill

Sorry for the delay in responding.

DR 0074 covered the throttle body as used in three diesel applications (2010 335d, 2011 335d and 2011 X5 35d).
The failures were more concentrated among the 2010 335d than the other two applications.
For this reason, the responsible committee decided to extend the emissions warranty on the throttle body for that particular model/application.***[BP]*** My understanding is that the

To avoid any similar confusion in the future, should BMW submit separate DR's for each test group?

kind regards,
Tom

From: Pidgeon, Bill [mailto:pidgeon.bill@epa.gov]
Sent: Wednesday, September 23, 2015 1:34 PM
To: Hofmann Thomas, EG-8-US-22
Cc: Wright, DavidA; Pugliese, Holly
Subject: RE: Manufacturer VERR Number 14E-W01 versus DR as #0074

Hi Thomas,

Would you let me know when you'll be able to respond to the email I sent last week.

Thanks,
Bill

From: Pidgeon, Bill
Sent: Wednesday, September 16, 2015 8:41 AM
To: Thomas.Hofmann@bmwna.com

Cc: David A. Wright; Pugliese, Holly
Subject: Manufacturer VERR Number 14E-W01 versus DR as #0074

Hi Thomas,

I found Manufacturer VERR Number 14E-W01 (EPA VERR# 1411) for the BMW 2010MY 335d which listed the related DR as #0074. This DR includes two 2011MY models, the 335d and the X5 xDrive 35d, which are not discussed in the VERR.

This came to my attention because an owner of a 2011MY 335d contacted us and inquired if there were any emission recalls for his vehicle. Given the discrepancy between the VERR and the DR, I'm not sure how to answer his question. So, would you explain why the VERR does not include the 2011MY models, yet DR 0074 says they are affected.

Best wishes,
Bill
****
William M. Pidgeon
Mechanical Engineer
U.S. Environmental Protection Agency
Compliance Division, N69
2000 Traverwood Drive
Ann Arbor, MI 48105-2195
pidgeon.bill@epa.gov
Phone: 734-214-4416
Fax: 734-214-4869

Message

From: Pugliese, Holly [pugliese.holly@epa.gov]
Sent: 8/8/2016 4:38:07 PM
To: Wright, DavidA [Wright.DavidA@epa.gov]
Subject: FW: concerned citizen call

Hi David. Someone in TCD got this call about a diesel BMW. Can you please take a look at her summary and perhaps call the guy back? Please let me know.

Holly Pugliese
Office of Transportation and Air Quality
US EPA
pugliese.holly@epa.gov

From: Terry, Astrid
Sent: Monday, August 08, 2016 8:23 AM
To: Pugliese, Holly <pugliese.holly@epa.gov>
Cc: Terry, Astrid <Terry.Astrid@epa.gov>
Subject: FW: concerned citizen call

Hi Holly

I sent the message below to Meg Patulski, my supervisor, Friday afternoon after I received a call from a concerned citizen.

Meg thinks CD might be the place to address this concern.

Could you let me know if this is something you will address or if I should be contacting somebody else?

Much appreciated

Astrid Terry
734-214-4812

From: Terry, Astrid
Sent: Friday, August 05, 2016 3:27 PM
To: Patulski, Meg <patulski.meg@epa.gov>
Subject: concerned citizen call

Meg

I took a call from a private citizen today – **Ex. 6 Personal Privacy (PP)**

He's looking for an EPA person to speak to about his concerns about his diesel BMW.

Background. He bought a new 2009 X5 model, the first year it became available in America. He also received 4 years of free maintenance/service. After 4 years, he did all the recommended maintenance himself. Part of the yearly maintenance cycle is filling up the uria/DES system. The system is designed so that when it's serviced, it resets itself to 12 month, not the actual uria level, like a low gasoline indicator on a car.

The owner's manual says to fill the DES system with 0.75 gallons of uria. After the first time of self-maintenance, the emissions systems started failing. After tons of diagnostics, it turns out that the shop manuals require 5 gallons of uria, which means that for approximately 10 months, his car was spewing NOx, as the DES wasn't operating after running out of fluid.

He's contacted his dealership, BMW-America etc and no one is taking his concerns seriously. He's thinking that now that the cars are getting older and no longer on service warranties, lots of these cars that are self-serviced now are not operating on enough uria and thus polluting the environment. He has pictures of the different manuals, showing the huge difference between required uria volumes.

I told him I would have to get back to him with a name and number.

My first thought was having him report the situation to the enforcement division here https://www.epa.gov/enforcement/report-environmental-violations . Considering the Volkswagen situation, maybe he should contact somebody from that group? So I'm asking for your help as to where I send him.

Astrid

Message

From: Wright, DavidA [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=4F14A47C701547479B12BEE35117D0A9-WRIGHT, DAVID A.]
Sent: 3/5/2018 1:35:54 PM
To: Dvorak, Victor [dvorak.victor@epa.gov]
Subject: RE: BMW CBI cert applications and AECDs

You're welcome Victor, let me know if you have any additional questions.

Regards,

David

-----Original Message-----
From: Dvorak, Victor
Sent: Monday, March 05, 2018 6:48 AM
To: Wright, DavidA <Wright.DavidA@epa.gov>
Subject: Re: BMW CBI cert applications and AECDs

Thanks for your help, David.

Sent from my iPhone

> On Mar 1, 2018, at 4:04 PM, Wright, DavidA <Wright.DavidA@epa.gov> wrote:
>
> Victor,
>
> Appended are three documents, two are from 2010 and one is from 2017. The two 2010 documents are the test group and common application for the 2010 BMW X5 with the 3L diesel. As we discussed earlier today, these applications primarily include the parameters sensed and controlled tables with an attestation that there are no defeat devices. The 2017 test group application includes the more recent disclosure describing in some detail the operation of the various emission control system including the SCR.
>
> Let me know if you have any additional questions or need any additional information.
>
> Regards,
>
> David
>
> David Wright
> Light-Duty Vehicle Center – Compliance Division Office of
> Transportation and Air Quality U.S. Environmental Protection Agency
> (734) 214-4467
>
> <2010 3L X5 CBI App ABMXT03.0M57.pdf>
> <2010 Common App CBI.pdf>
> <2017 3L X5 CBI App HBMXT03.0N57.pdf>

Message

From: Wright, DavidA [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=4F14A47C701547479B12BEE35117D0A9-WRIGHT, DAVID A.]
Sent: 3/1/2018 9:04:01 PM
To: Dvorak, Victor [dvorak.victor@epa.gov]
Subject: BMW CBI cert applications and AECDs
Attachments: 2010 3L X5 CBI App ABMXT03.0M57.pdf; 2010 Common App CBI.pdf; 2017 3L X5 CBI App HBMXT03.0N57.pdf

Victor,

Appended are three documents, two are from 2010 and one is from 2017. The two 2010 documents are the test group and common application for the 2010 BMW X5 with the 3L diesel. As we discussed earlier today, these applications primarily include the parameters sensed and controlled tables with an attestation that there are no defeat devices. The 2017 test group application includes the more recent disclosure describing in some detail the operation of the various emission control system including the SCR.

Let me know if you have any additional questions or need any additional information.

Regards,

David

David Wright
Light-Duty Vehicle Center – Compliance Division
Office of Transportation and Air Quality
U.S. Environmental Protection Agency
(734) 214-4467

Message

From: Wright, DavidA [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=4F14A47C701547479B12BEE35117D0A9-WRIGHT, DAVID A.]
Sent: 10/28/2015 3:21:23 PM
To: Carlheinz.Bayer@bmwna.com
Subject: RE: EPA/BMW diesel instrumentation Review

Carlheinz,

I will make sure we have a projector for our meeting at 3 pm.

Regards,

David

From: Carlheinz.Bayer@bmwna.com [mailto:Carlheinz.Bayer@bmwna.com]
Sent: Wednesday, October 28, 2015 9:55 AM
To: Wright, DavidA <Wright.DavidA@epa.gov>; Ott, William <ott.william@epa.gov>; Christian.Cozzarini@bmw.de
Cc: Wehrly, Linc <wehrly.linc@epa.gov>; Dalton, Joel <Dalton.Joel@epa.gov>; Carlheinz.Bayer@bmwna.com
Subject: RE: EPA/BMW diesel instrumentation Review

Hello David,
I'm anyway at the lab at 1pm today to witness the CT re-test of our MINI.
I will leave 2:45pm, the latest, to the other building.

Can you organize a projector for the meeting?

Thanks
Carlheinz

BMW of North America, LLC
Carlheinz Bayer
Manager Compliance and OBD
EG-8-US-21
200 Chestnut Ridge Road, Building 150
Woodcliff Lake, NJ 07677-7731
Tel.: (001) 201-571-5193
Mobile: (001) 201-207-4621
Fax: (001) 201-571-5479
Mail: carlheinz.bayer@bmwna.com
Web: www.bmwusa.com

-----Original Appointment-----
From: Wright, DavidA [mailto:Wright.DavidA@epa.gov]
Sent: Wednesday, October 28, 2015 8:34 AM
To: Ott, William; Bayer Carlheinz, EG-8-US-2; Cozzarini Christian, EG-8-US-2

Cc: Wehrly, Linc; Dalton, Joel
Subject: EPA/BMW diesel instrumentation Review
When: Wednesday, October 28, 2015 3:00 PM-4:00 PM (UTC-05:00) Eastern Time (US & Canada).
Where: AA-Room-Office-N66-ConfRoom/AA-OTAQ-OFFICE

Christian,

If you are interested in participating by phone send me an e-mail and I will provide you with the phone number for the conference room.

Regards,

David

Appointment

From: Wright, DavidA [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=4F14A47C701547479B12BEE35117D0A9-WRIGHT, DAVID A.]
Sent: 10/28/2015 12:33:45 PM
To: Ott, William [ott.william@epa.gov]; Carlheinz.Bayer@bmwna.com; christian.cozzarini@bmw.de
CC: Wehrly, Linc [wehrly.linc@epa.gov]; Dalton, Joel [Dalton.Joel@epa.gov]
BCC: AA-Room-Office-N66-ConfRoom/AA-OTAQ-OFFICE [AA-Room-Office-N66-ConfRoom@epa.gov]

Subject: EPA/BMW diesel instrumentation Review
Location: AA-Room-Office-N66-ConfRoom/AA-OTAQ-OFFICE

Start: 10/28/2015 7:00:00 PM
End: 10/28/2015 8:00:00 PM
Show Time As: Tentative

Christian,

If you are interested in participating by phone send me an e-mail and I will provide you with the phone number for the conference room.

Regards,

David

Message

From: Wright, DavidA [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=4F14A47C701547479B12BEE35117D0A9-WRIGHT, DAVID A.]
Sent: 9/13/2018 10:24:15 PM
To: Thomas.Hofmann@bmwna.com
Subject: RE: Question on BMW diesel sales from 2009 through 2015

Thanks Tom,

Regards,

David

David Wright
Light-Duty Vehicle Center – Compliance Division
Office of Transportation and Air Quality
U.S. Environmental Protection Agency
(734) 214-4467

From: Thomas.Hofmann@bmwna.com [mailto:Thomas.Hofmann@bmwna.com]
Sent: Thursday, September 13, 2018 2:36 PM
To: Wright, DavidA <Wright.DavidA@epa.gov>
Subject: RE: Question on BMW diesel sales from 2009 through 2015

Hi David

I also could not find production volumes in the final applications.
I have compiled the requested production data from the CAFÉ reports for those model years.

The total production over those seven model years is 78119 units.

The details can be seen in the attached spreadsheet:

- The first tab shows the data by test group
- The second tab shows the data by model year and model

Please let me know if you have any questions or would like the data in some other format.

Kind regards,
Tom

From: Wright, DavidA [mailto:Wright.DavidA@epa.gov]
Sent: Thursday, September 13, 2018 11:15 AM
To: Hofmann Thomas, EG-8-US-2 <Thomas.Hofmann@bmwna.com>
Cc: Ott, William <ott.william@epa.gov>
Subject: Question on BMW diesel sales from 2009 through 2015

Tom,

I have been asked to come up with the number of diesels that BMW has sold in the US for the 2009 through 2015 model years. I have quickly attempted to find that number in the end of year applications, and, do not find any final sales results. I am wondering if you can point me to the location of the results in the BMW submittals that are in our system, and, if the data are not in the existing submittals I am wondering if you can provide it to me.

Thanks,

David

David Wright
Light-Duty Vehicle Center – Compliance Division
Office of Transportation and Air Quality
U.S. Environmental Protection Agency
(734) 214-4467

Message

From: Thomas.Hofmann@bmwna.com [Thomas.Hofmann@bmwna.com]
Sent: 6/19/2013 8:16:15 PM
To: Wright, DavidA [Wright.DavidA@epa.gov]; Kachuen.Wong@bmwna.com
CC: Nevers, Chris [nevers.chris@epa.gov]
Subject: RE: Question about BMW DEF refill interval
Attachments: 2006_Meeting-EPA-25-07-2006.pdf

Hello David

Yes, our diesels are designed that the DEF interval matches the oil service interval.
I was not able to find the service interval information during a quick search of our Applications.
This was included on Slide 31 of a presentation we made to EPA in July 2006.
The presentation is attached; sorry it is a very large file.
This was before you or Chris were involved with BMW certification.

Yes, BMW includes vehicle maintenance for 4 years / 50000 miles, whichever comes first.
Both oil service and DEF service are covered by the maintenance plan.

Please let me know if you need further information, etc.

kind regards,
Tom

From: Wright, DavidA [mailto:Wright.DavidA@epa.gov]
Sent: Wednesday, June 19, 2013 3:01 PM
To: Hofmann Thomas, EG-8-US-22; Wong Kachuen, EG-8-US-22
Cc: Nevers, Chris
Subject: Question about BMW DEF refill interval

Tom,

I have been going through my files and have asked Chris and I do not find any document describing the BMW DEF refill interval for the SCR system. It is my understanding that the current refill intervals are tied to the oil change interval which I believe is the guidance provided by EPA; and, it is also my understanding that BMW includes vehicle maintenance for BMW customers and the DEF would be refilled during the regular oil change maintenance for your customers.

Do have anything describing this which you could provide to me, or, if my understanding is incorrect could you provide me with the correct information.

Regards,

David A. Wright
Light-Duty Vehicle Center, Compliance Division
National Vehicle and Fuel Emissions Laboratory
Phone: (734) 214-4467
E-mail: wright.davida@epa.gov

From:	Karl Simon
To:	oge.margo@epa.gov; grundler.christopher@epa.gov
Cc:	sabourin.michael@epa.gov; wehrly.linc@epa.gov; cohen.janet@epa.gov
Subject:	BMW SCR Diesel confirmatory testing
Date:	09/15/2008 10:02 AM

Last week we confirmatory tested both the diesel powered BMW 3-series sedan and X5 SUV. Both vehicles utilize SCR. Both vehicles passed, but not after some initial questions and test issues. As we have seen with most of our diesel testing, the placement of the cooling fans to simulate road conditions is a critical factor in determining whether these vehicles will pass or not.

From: Linc Wehrly
To: Allen Schaeffer
Cc: aschaeffer@dieselforum.org; gurpreet.singh@ee.doe.gov
Subject: Re: SAE G-I Session on Light Duty
Date: 02/01/2007 02:09 PM

Allen,

Thanks for getting us started. I'm busy next Wednesday and Thursday, but free the rest of the week.

Linc

Linc Wehrly
USEPA
Compliance and Innovative Strategies Division
(734) 214-4286
wehrly.linc@epa.gov

Allen Schaeffer <aschaeffer@dieselforum.org>

Allen Schaeffer
<aschaeffer@dieselforum.org>
Sent by: Allen Schaeffer
<aschaeffer@dieselforum.org>

To Linc Wehrly/AA/USEPA/US@EPA, gurpreet.singh@ee.doe.gov
cc aschaeffer@dieselforum.org
Subject SAE G-I Session on Light Duty

Received Date:
02/01/2007 01:58 PM
Transmission Date:
02/01/2007 01:58:21 PM

Linc and Gurpreet – greetings to you both. I see that we have been "chosen" to coordinate a panel on light duty clean diesel technologies for the upcoming SAE meeting in Washington in May.

We have to have our finalized panel info (i.e speaker commitments) in by Feb 15 I believe to be included in the final program so time is of the essence.

Wanted to ask about your thoughts for this panel session and particpants. Gurpreet – I could see this as potentially some of the same panel you convened at DEER last year on this same topic – the one I moderated a portion thereof. There have been a slew of product announcements or rampant speculation over the last few months for these companies, noted below. The panel session as I recall is about 1.5 hours to 2 hours in length. I'd welcome your thoughts/suggestions

on companies to include.

We could schedule a conference call next week to discuss – how are your schedules? (I'm good every day except Tuesday)

Audi -- first entry to us market with a diesel
BMW – first entry to US market with a diesel
DaimlerChrysler -- Bluetec
Ford/Land Rover – evolving to F-150
GM – Light truck
Honda -
Mazda -
Mitsubishi
Nissan
Toyota (would be intereseting because Toyota has been mum on diesel in US except for stake in Isuzu but could discuss global strategy)
VW – New products and some SCR and non-scr technology

Allen

Allen Schaeffer
Executive Director
Diesel Technology Forum
www.dieselforum.org
301-668-7230

From:	Tomoya_Abe@n.t.rd.honda.co.jp
To:	Allen Schaeffer
Cc:	'Ed Kulik'; 'Fritz Steinparzer'; 'Gurpreet Singh'; Ichiro_Sakai@ahm.honda.com; john.pinson@gm.com; 'Melissa Jena'; 'Norbert Krause'; sam.hires@cummins.com; 'Vinod Duggal'; Linc Wehrly/AA/USEPA/US@EPA; Wilhelm.Hall@bmwna.com
Subject:	Re: SAE light duty panel -- Follow up
Date:	05/23/2007 05:59 PM
Attachments:	HONDA - SAE presentation.pdf winmail.dat

Dear Mr. Schaeffer,

Thank you very much for your organization of SAE.

It was my honor to present our diesel strategy there.

I hope my presentation was helpful for all of you.

The bottom of my mail I attached pdf file of my presentation.

I'm sorry for my rate reply because of business trip.

Best regards,

Tomoya Abe

Manager, Department 2, Technology Research Division3B

HONDA R&D Co., Ltd. Automobile Center

(See attached file: HONDA - SAE presentation.pdf)

"Allen Schaeffer" <aschaeffer@dieselforum.org>
2007.05.18 23:54

宛先
'"Allen Schaeffer"' <aschaeffer@dieselforum.org>, <Wilhelm.Hall@bmwna.com>, '"Ed Kulik"' <ekulik@ford.com>, '"Norbert Krause"' <norbert.krause@vw.com>, '"Fritz Steinparzer"' <fsteinparzer@bmw.co.at>, <Ichiro_Sakai@ahm.honda.com>, <tomoya_abe@n.t.rd.honda.co.jp>, '"Vinod Duggal"' <vinod.k.duggal@cummins.com>, <sam.hires@cummins.com>, <john.pinson@gm.com>

cc
'"Gurpreet Singh"' <gurpreet.singh@ee.doe.gov>, <wehrly.linc@epamail.epa.gov>, '"Melissa Jena"' <MJena@sae.org>, "Vinod Duggal" <vinod.k.duggal@cummins.com>

件名
SAE light duty panel -- Follow up

Good morning:

On behalf of the co-organizers for this panel - Linc Wehrly at EPA and Gurpeet Singh at DOE, thank you everyone for your help in making the SAE Light Duty Diesel panel a success this past Wednesday. As I'm sure you noticed-this session was packed - with about 100 attendees at its peak - even as one of the last sessions on the last day of the meeting.

For everyone's reference I deleted all the presentations off the laptop at the session.

For those who would like to make their presentation available to those who

might request it via the SAE Website - please send a PDF file of it to Melissa Jena (mjena@sae.org); I'd appreciate a copy as well.

Thanks again for your time and investment in SAE and in helping to promote the great work going on in clean diesel technology.

Allen

Allen Schaeffer

Executive Director

Diesel Technology Forum

www.dieselforum.org

301-668-7230

Experience Clean Diesel Technology

From: Allen Schaeffer [mailto:aschaeffer@dieselforum.org]
Sent: Friday, May 04, 2007 8:13 AM
To: Wilhelm.Hall@bmwna.com; 'Ed Kulik'; Norbert Krause; Fritz Steinparzer; Ichiro_Sakai@ahm.honda.com; tomoya_abe@n.t.rd.honda.co.jp; Vinod Duggal; Klaus-Peter Schindler; sam.hires@cummins.com; john.pinson@gm.com
Cc: Gurpreet Singh; wehrly.linc@epamail.epa.gov; 'Melissa Jena'; 'Allen Schaeffer'
Subject: IMPORTANT SAE light duty panel -- May 16 Info and deadlines, requests Response required
Importance: High

Good morning everyone.

Thank you all again for agreeing to speak to the SAE Government Industry meeting. We're less than two weeks away from the SAE Government Industry meeting - Light Duty Diesel Panel Presentation, and on behalf of my fellow co-organizers Gurpreet Singh and Linc Wehrly I just wanted to remind everyone of a few important obligations you have leading up to the session:

1. The session is on WEDNESDAY MAY 16 From 1:00pm to 3:00 pm

2. The location is Washington DC- L'Enfant Plaza Hotel (http://www.sae.org/events/gim/) -- Ballroom B - this is on the main conference level directly across from the registration area. It is a good sized room that will likely have 75-100 attendees, based on my past years experience.

3. Please arrive to the meeting room by 1230 pm with your presentations on a memory stick so they can be loaded onto the laptop. If you have a complicated presentation with embedded video etc - please come a few minutes before that.

4. Attached are the SAE Standard Presentation Template and Bio forms; please fill out the bio form and email it back to me before Monday May 14.

5. Don't forget to register for the meeting itself by clicking on the link above.

6. A laptop and LCD Projector are standard equipment. If you need something other than that you must fill out the AV form and send it back to Melissa ASAP.

7. Please remember the SAE Guidelines for presentations - noted below.

8. TIME OF YOUR PRESENTATION: We have two short opening presentations from DOE and EPA (5-7 mins max each). That will leave approximately 12 minutes max for each presenter, allowing for transitions etc. If you can help adhere to this timeframe or come in at 10 minutes we'll have some time for questions. Shorter is better and questions and dialogue from the audience will help enrich the session for everyone. If you're planning on plugging in your laptop instead of providing the presentation on memory stick-please stick to 10 minutes for your remarks due to extra transition time.

9. Please send via email a copy your presentation by Friday May 11 to the organizers of this session:

aschaeffer@dieselforum.org; gurpreet.singh@ee.doe.gov; and wehrly.linc@epamail.epa.gov

10. On the Record-Open to the Media: The plans are to operate the session as open to the media, and all presenters "on the record". If any of you prefers not to be quoted by the media attending this session - please indicate so to me in advance ASAP-either via email or before the meeting, and I will make that announcement before your presentation. I've also attached the email from Melissa Jena at SAE below which you should have received several weeks ago.

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Gupreet Singh (DOE)

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Tomoya Abe (Honda)

Fritz Steinparzer (BMW)

Norbert Krause/Klaus-Peter Schindler (VW) (Are both of you speaking or just one?)

Finally -- If you need to reach me onsite that day -- call me at 301-514-9046 (cell) or stop by the Diesel Technology Forum booth in the exhibit area and speak to one of our folks who can track me down.

Thanks again for all your help here , and I look forward to seeing all of you in a few weeks.

Session Description: Light Duty Diesel technology: This session will explore new technologies for light-duty diesels and the technological hurdles and marketing strategies that are underway to gain consumer acceptance for diesel engines. Vehicle manufactures will reveal their plans on introducing diesel engines to the U.S. market.

TO: Speakers and Session Organizers,

The technical program including dates and times for the Government/Industry Meeting can be found on the website at http://www.sae.org/events/gim/ then click on technical session schedule. The following items (Audiovisual and Waiver Forms) are due to SAE by April 23.

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If you have any questions about your participation, please contact me.

Sincerely,

Melissa Jena

Program Specialist

SAE International

400 Commonwealth Dr.

Warrendale, PA 15096

TP: 724-772-4008

Allen Schaeffer

Executive Director

Diesel Technology Forum

<http://www.dieselforum.org> www.dieselforum.org

301-668-7230

Experience Clean Diesel Technology

From: Allen Schaeffer [mailto:aschaeffer@dieselforum.org]
Sent: Monday, February 12, 2007 5:37 PM
To: Wilhelm.Hall@bmwna.com; Dave.Buchko@bmwna.com; 'Kuhlman, Jeff';

john.h.stang@cummins.com; Edward B. Cohen; Norbert Krause; David Geanacopoulos; ichiro_sakai@ahm.honda.com; ekulik@ford.com
Cc: Gurpreet.Singh@EE.DOE.GOV; wehrly.linc@epa.gov; 'Allen Schaeffer'
Subject: Response Requested SAE Panel light Duty diesel -- SAE Govt Industry
Wash DC May 16
Importance: High

Thank you everyone for considering this request to participate in an upcoming SAE panel on light duty diesel engines. On behalf of the Co-organizers for this session -- Linc Wehrly of EPA and Gurpreet Singh of DOE, we appreciate your help.

As I mentioned in an earlier email, I am co-organizer for a technical panel session on light duty diesel vehicles at the upcoming Society of Automotive Engineers (SAE) annual government industry meeting in Washington, I would like to invite you to make a presentation at this session about Honda's view
of light duty diesel technology. The session is Wednesday May 16 from 1:00 to 3:00 pm; your presentation will likely be in the 10-15 minute range depending on the final panel line up.

We'd hope to hear about your views of the potential for diesel in the US Market and specific information about any product offerings that you'd like to make, and any other diesel related remarks. The audience will be a mix of
industry folks as well as Congressional staff, Department of Energy, EPA, and other government agency folks.

Thank you in advance for helping to advance this request within your company. We need responses by Thursday Feb 14 to make the printed program-that means name and title for each company participating as well as contact information.

More information on the session is included below.

<
http://www.sae.org/servlets/techSession?EVT_NAME=G20&GROUP_CD=TSESS&SCHED_N
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http://www.sae.org/servlets/techSession?EVT_NAME=G20&GROUP_CD=TSESS&SCHED_NU

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Allen

Allen Schaeffer

Allen Schaeffer

Executive Director

Diesel Technology Forum

<http://www.dieselforum.org> www.dieselforum.org

301-668-7230

(See attached file: winmail.dat)

*Japanese
このメールには機密情報が含まれる可能性があります
内容の転送 コピー プリント等 取り扱いには十分ご注意下さい
また このメールを間違って受信された場合は 直ちに送信者まで
お知らせいただき 受信されたメールを削除下さい

*English
The information contained in this email message
may be confidential information.
Please be careful if you forward, copy or print this message.
If you have received this email in error, please immediately
advise the sender by return email and delete the message.

Good morning:
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Melissa Jena
Program Specialist
SAE International
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Warrendale, PA 15096
TP: 724-772-4008

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Cc: Gurpreet.Singh@EE.DOE.GOV; wehrly.linc@epa.gov; 'Allen Schaeffer'
Subject: Response Requested SAE Panel light Duty diesel -- SAE Govt Industry Wash DC May 16
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Allen

Allen Schaeffer

Allen Schaeffer
Executive Director
Diesel Technology Forum
www.dieselforum.org
301-668-7230

From: Linc Wehrly
To: Ching-Shih Yang
Cc: Janet Cohen
Subject: Another News article
Date: 07/24/2007 08:16 AM

Ching-shih,

Another story for the library.

Linc

Minis with stop-start due in September

Diesel version of entry-premium car to match CO2 of Prius

Luca Ciferri
Automotive News Europe
July 23, 2007

TURIN – Beginning in August, Mini will provide stop-start and regenerative braking on all its gasoline and diesel hatchbacks with manual transmissions, supplier sources told *Automotive News Europe*.

As a result, the diesel-powered Mini Cooper's CO2 emissions will match those of the Toyota Prius.

The low-emission Minis will debut in September at the IAA in Frankfurt and go on sale shortly after the show.

According to the sources, Robert Bosch will supply the stop-start and regenerative braking systems to the Mini.

Bosch already supplies stop-start to the 1 series from Mini parent BMW. The Munich-based automaker also will debut stop-start on the its 3-series range at the IAA.

Currently, the 109hp 1.6-liter Mini Cooper diesel emits 118 grams per kilometer. With stop-start and regenerative braking, the CO2 from that version of the entry-premium car will fall 12 percent to 104g/km.

The Prius with a 113hp 1.5-liter gasoline-electric hybrid powertrain also emits 104g/km.

You may e-mail Luca Ciferri at lciferri@craincom.de

Linc Wehrly
Manager, Light-Duty Vehicle Group
USEPA
Compliance and Innovative Strategies Division
(734) 214-4286
wehrly.linc@epa.gov

From:	Thomas.Hofmann@bmwna.com
To:	DavidA Wright/AA/USEPA/US@EPA
Cc:	Chris Nevers/AA/USEPA/US@EPA; Linc Wehrly/AA/USEPA/US@EPA
Subject:	BMW Diesel Certification MY2014
Date:	01/28/2013 11:38 AM
Attachments:	2014MY BMW copper SCR catalyst.pptx Dioxin - San Antonio Paper on EU Program.pdf

---

Hello David

For the 2014MY diesels, BMW would is planning to use a copper-based SCR system.
BMW concludes that copper-based systems are comparable to iron-based systems with respect to dioxin emissions.
That conclusion is based on the findings of US EPA (Chris LaRoo, et.al.) and Eurofins/University of Applied Sciences Regensburg (Germany).
A presentation of the latter work is attached here as "Dioxin – San Antonio Paper on EU Program.pdf".

The attached powerpoint slide:

- shows a block diagram of the planned aftertreatment system
- requests confirmation that no further substantiation is required in order to use a copper-based SCR catalyst.

Please let me know if you have any questions.

Kind regards,
Tom

BMW Group
Thomas E. Hofmann
Emissions Certification
200 Chestnut Ridge Road, Building 150
Woodcliff Lake, NJ 07677-7731

Tel: 201-571-5195
Cell: 201-937-6738
Fax: 201-571-5479
Mail: thomas.hofmann@bmwna.com

From: Chris Nevers
To: ball.joel@epa.gov; Jim Snyder; Stephen Healy
Cc: Linc Wehrly; Robert Peavyhouse; Arvon Mitcham; Martin Reineman
Subject: BMW Diesel SCR - Updated
Date: 03/14/2011 08:23 AM
Attachments: 110313_EPA-BMW_Diesel-Mtg_14Mar2011.pdf

110313_EPA-BMW_Diesel-Mtg_14Mar2011.pdf

BMW Diesel SCR

Mon 03/14/2011 9:30 AM - 11:30 AM

Attendance is **optional** for Linc Wehrly

Chair: Chris Nevers/AA/USEPA/US

Rooms: AA-N66/AA-OTAQ-OFFICE@EPA

Required:	ball.joel@epa.gov, Jim Snyder/AA/USEPA/US@EPA, Stephen Healy/AA/USEPA/US@EPA
Optional:	Linc Wehrly/AA/USEPA/US@EPA, Robert Peavyhouse/AA/USEPA/US@EPA

Description

- Timing and introduction for the new engines
- New after-treatment technology
- Wrong-Medium detection
- Next generation SCR system
- Diagnostics

Personal Notes

From:	Doug.McGregor@bmwna.com
To:	Vincent Mazaitis/AA/USEPA/US@EPA; David Good/AA/USEPA/US@EPA; Linc Wehrly/AA/USEPA/US@EPA; jocain@arb.ca.gov; jjwong@arb.ca.gov
Cc:	Thomas.King@bmw.de; Wilhelm.Hall@bmwna.com; Stephen.Sinkez@bmwna.com; Thomas.Hofmann@bmwna.com; Dieter.Cramm@bmw.de; Detlef.Hiemesch@bmw.com; Andreas.Bruhn@bmw.de; Detmar.Nellessen@bmw.de
Subject:	BMW Diesel, Proposed SCR Plan, and Documents; Confidential
Date:	12/19/2007 04:47 PM
Attachments:	Advanced_Diesel_owners_manual_US.pdf Application for Certification Diesel final_121907.ipz

Colleagues:
Attached you will find two documents related to BMW's proposed SCR plan; one document an excerpt from the Certification Application explaining how the vehicle reducing agent delivery system and warning system works (change extension to .zip to open), and a supporting document which is an excerpt from the proposed Owner Manual supplement relating to diesel SCR. Please note that the development of the SCR system and supporting infrastructure is not finalized in all aspects, and some modifications are possible. In particular I would point out that the "Emergency Starts" provision is still under discussion and review. The Owner Manual and Cert App descriptions do not agree on this subject.
Despite this, the concepts are close enough to finalization that we would appreciate your attention and review, and your feedback in terms of letting us know what will not work, or what may be ambiguous and need further clarification.
We would like to schedule a certification preview meeting for no later than March 2008. We can meet at EPA and include CARB via conference call or video conference, or we can have separate meetings, whatever works best. If we can have your comments in advance of the meeting we will be well prepared to address all the issues. Please suggest some dates for a meeting; we will respond with confirmation as soon as possible.

I will send you a third file in a second e-mail; this one also is a zipped file (change the extension to .zip to open), an executable animation, with sound, showing what the customer will see and here when the defined low level stages are reached.

Please keep in mind that I will be on vacation starting tomorrow, through Jan. 2. You might try Wilhelm, Steve, or Tom, if you need help with these documents.

Happy Holidays!
Doug McGregor
Environmental Engineering

BMW Advanced Diesel technology

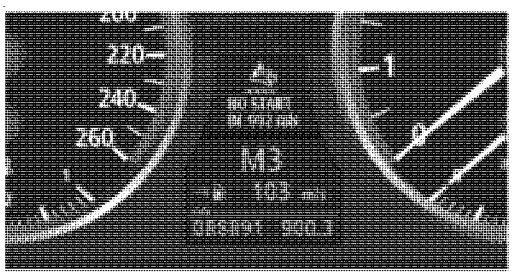
The concept

BMW Advanced Diesel reduces the level of nitrogen oxides in the diesel exhaust gas of your vehicle. For this purpose, the AdBlue fluid is injected into the exhaust gas from a reservoir. In the catalytic converter, a chemical reaction minimizes the level of nitrogen oxides.

In addition, BMW Advanced Diesel reduces the concentration of soot particles in the exhaust gas. The soot particles are collected in the diesel particulate filter and burned at regular intervals, refer to page 193.

Reserve display

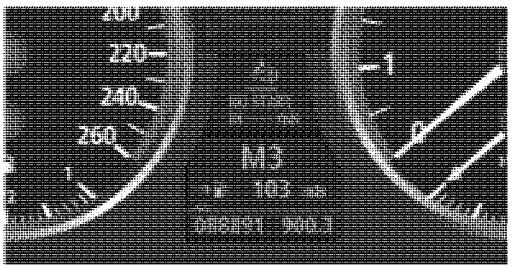
A display in the instrument cluster informs you of the remaining driving distance in miles for which the quantity of AdBlue left in the reservoir will suffice so that the engine can be started as usual.
The reserve display appears at a remaining distance of approx. 1,000 mls.



Do not drive the entire remaining distance, otherwise you will only be able to emergency start the engine a maximum of three times within five minutes after you switch it off.◀

If the display jumps to an unusually low value shortly after AdBlue is added, the wrong fluid may have been filled into the AdBlue reservoir.
Contact your BMW center.◀

AdBlue at the minimum level



Even when the display indicates -- mls, the engine will continue running provided it is not switched off and all other operational requirements are met, e.g. there is a sufficient amount of fuel.

If the AdBlue reservoir is empty, up to three emergency starts are possible within five minutes after the engine is switched off, e.g. to move out of a hazardous area.◀

Having AdBlue refilled

AdBlue is refilled by your BMW center during a regular service inspection. The system is designed so that AdBlue generally does not need to be refilled between service appointments if the regular service intervals are adhered to.

Under certain circumstances, e.g. a very sporty driving style, it may be necessary to refill AdBlue between service appointments.

Have AdBlue refilled as soon as the reserve display appears in the instrument cluster, to prevent a situation in which the engine cannot be started.

You can have AdBlue refilled by a BMW center or by the Mobile Service.

AdBlue at low temperatures

Because of its physical properties AdBlue may need to be refilled more frequently at low temperatures. This may happen even if AdBlue was added only recently.◀

Refilling AdBlue yourself

Do not come into contact with AdBlue as it can cause skin and eye irritations. Wear

protective goggles and gloves if necessary. Follow the safety instructions on the AdBlue bottle. Vapors with a stinging odor may escape from the AdBlue reservoir and bottles when they are opened. Before refilling AdBlue, close the vehicle completely to prevent vapors from entering its interior. When handling AdBlue in an enclosed area, ensure that the latter is well ventilated.
After handling AdBlue, wash your hands thoroughly, otherwise accidental contact with your eyes could cause irritations.
If your eyes become irritated, rinse them immediately with large quantities of water and consult a physician if necessary.
If AdBlue comes into contact with surfaces of vehicle parts, rinse off the affected areas with water to prevent damage.
Store AdBlue in a place that is inaccessible to children. ◀

To be able to drive your BMW until the next service appointment, for example, you can refill AdBlue yourself if you adhere to the safety instructions described above. This will enable you to drive an additional 1,500 mls, approx. 2,400 km. The actual driving distance varies with your driving style.

Suitable AdBlue

▷ Preferred: BMW Diesel Exhaust Fluid AdBlue.
AdBlue can be filled conveniently using this bottle and its special adapter.

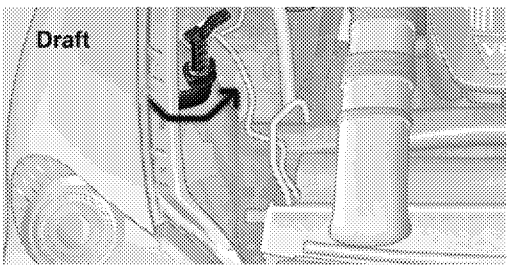
▷ Alternatively: NOx reduction agent AUS 32

AdBlue bottles can be identified by this symbol.

You can obtain AdBlue from your BMW center.

Opening the AdBlue reservoir

1. Open the engine hood, page 223.
2. Attach the unlocking tool from the onboard toolkit, page 205, and open the cap, see arrow.



Refilling: With a bottle or open canister

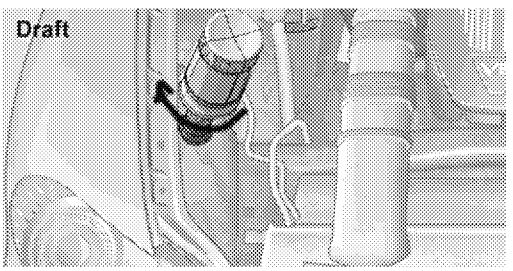
Refilling quantity: maximum 1 gallon, approx. 3.75 liters.

Fill AdBlue slowly to prevent the fluid from overflowing.

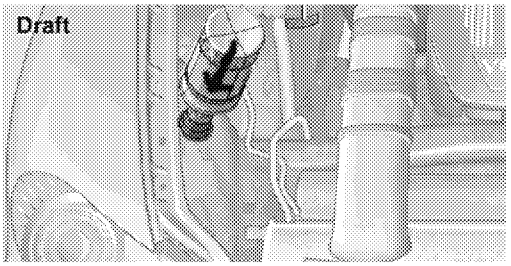
Add a maximum of 1 gallon, approx. 3.75 liters, of AdBlue when the reserve display appears, otherwise the AdBlue reservoir may be damaged due to overfilling. ◀

Refilling: BMW Diesel Exhaust Fluid AdBlue

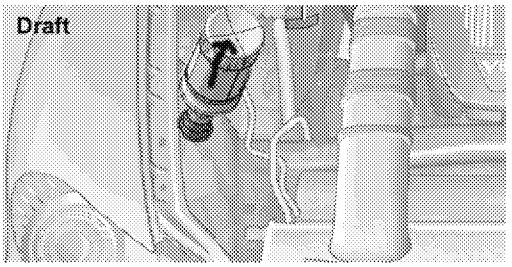
1. Attach the AdBlue bottle and screw it on all the way, see arrow.



2. Push down the AdBlue bottle, see arrow. The AdBlue reservoir is filled.



3. The AdBlue reservoir is full when air bubbles stop rising up into the bottle. Pull the bottle back, see arrow, and unscrew it.



Closing the reservoir

After filling, close the reservoir again using the unlocking tool.

Wrong fluid

If you have filled the wrong fluid into the reservoir, do not start the engine but contact your BMW center.

From:	Doug.McGregor@bmwna.com
To:	Vincent Mazaitis/AA/USEPA/US@EPA; David Good/AA/USEPA/US@EPA; Linc Wehrly/AA/USEPA/US@EPA; jocain@arb.ca.gov; jjwong@arb.ca.gov
Subject:	BMW Diesel, SCR Display Animation; Confidential
Date:	12/19/2007 04:49 PM
Attachments:	SCR_221107_ohnePwd.ipz

As promised....

Doug

From: Thomas.Hofmann@bmwna.com
To: Chris Nevers/AA/USEPA/US@EPA
Cc: Linc Wehrly/AA/USEPA/US@EPA
Subject: BMW GHG compliance - proposal for data substitution - HFET for CREE calculation
Date: 05/02/2011 12:09 PM
Attachments: CH4 Highway MY12 .xlsx

Hello Chris

As indicated in our 2012 GHG Compliance Projection, BMW expected that our X5 diesel model would not be able to comply with the standalone CH4/N2O standards.
We have done some preliminary testing and it confirms our good engineering judgment.
It is now certain that BMW will be required to use the Optional CREE when calculating the 2012MY GHG fleet average compliance.

We have begun reviewing and compiling the necessary data to make this calculation.

Ex. 4 CBI

There simply was no requirement for this data at the time when those tests were performed.

Proposal

Ex. 4 CBI

Please feel free to contact me with any questions or comments.

thanks and best regards,
Tom

BMW of North America, LLC
Thomas E. Hofmann
Senior Engineer, Emissions and Fuel Economy Certification
200 Chestnut Ridge Road, Building 150
Woodcliff Lake, NJ 07677-7731

Phone: (001) 201-571-5195
Fax: (001) 201-571-5479

From:	David Ganss
To:	Ben Ellies; David Ganss; Jeff Alson; Judi Berrier; Lisa Snapp; Robert Larson; Betty Stendel; Daniel Takashima; Doris Wu; Alberta Parker; Edmund Coe; John Davies; Michael Shelby; Nicole Lents; Rebecca White; Sarah Dunham; Sharon Saile; Simon Mui; Vincent Camobreco; Elizabeth Etchells; Sharyn Lie
Cc:	Christopher Grundler; David Haugen; John Kargul; Antonio Fernandez; Robin Moran; David Good; Linc Wehrly
Subject:	BMW Hydrogen 7 series article and press release
Date:	09/13/2006 07:59 AM

- H2 and Gasoline fuel systems
- 125 mi range on H2
- 300 mi range on gasoline
- sold to "select customers" in limited numbers
- to be released in 2007

http://www.autobloggreen.com/2006/09/12/bmw-officially-announces-the-bmw-hydrogen-7/

BMW officially announces the BMW Hydrogen 7
Posted Sep 12th 2006 9:58AM by Bruno Vanzieleghem
Filed under: Emerging Technologies, Hydrogen, BMW

Closely following a sighting of a Hydrogen-powered 7 series during testing, BMW officially announced the Hydrogen 7 today. The car is touted as the first hydrogen-drive luxury performance automobile for everyday use. The BMW Hydrogen 7 will be built in a limited series, and sold to select customers in the U.S. and overseas in 2007. The engine in the Hydrogen 7, a derivative of the 7 series 12 cylinder engine, is capable of running on gasoline or hydrogen, and produces 260 hp. The car will accelerate from 0 to 62.1 mpg in 9.5 seconds. The ability to run on both gasoline and hydrogen gives the Hydrogen 7 a range of more than 400 miles. The high tech hydrogen storage tank has a capacity of approximately 17.6 lb of liquid hydrogen, giving the Hydrogen 7 a cruising range in hydrogen mode upwards of 125 miles. The gasoline mode accounts for an additional 300 miles of cruising range. The driver is the one who decides which fuel to use, with a smooth transition between both operating modes, since the engine power and torque remain identical regardless of the fuel used.

[Source: BMW, full press release after the jump. Also, see more pictures of the Hydrogen 7 here]
Munich/Los Angeles, CA - September 12, 2006... BMW today announced the introduction of the new BMW Hydrogen 7, the world's first hydrogen-drive luxury performance automobile for everyday use. The car - a vehicle that has undergone the regular Product Development Process - will be built in a limited series and deployed to selected users in the U.S. and other countries in 2007. It is equipped with an internal combustion engine capable of running either on hydrogen or on gasoline and based on the BMW 7 Series.

Hydrogen technology dramatically reduces emissions generated by personal transport and, in particular, minimizes the emission of CO_2. Running in the hydrogen mode, the BMW Hydrogen 7 essentially emits nothing but vapor. And, unlike fossil fuels and traditional gasoline, hydrogen is available in virtually infinite supply. With the BMW Hydrogen 7, the BMW Group is laying down a marker for sustainable mobility. This car will play a pioneering role in driving forward hydrogen technologies. BMW has

gained an excellent reputation for significantly reducing fuel consumption and CO2 emissions by using ultra efficient, yet very dynamic gasoline engines. Together with clean performance diesel cars and the technologically advanced hybrid systems currently under development within the BMW EfficientDynamics project, the BMW Group has a clear strategy for sustainable mobility with hydrogen as the ultimate solution.

With all the comforts and amenities of a non-hydrogen BMW 7 Series, the BMW Hydrogen 7 is powered by a 260 hp twelve-cylinder engine and accelerates from 0-62.1 mph in 9.5 seconds. Top speed is limited electronically to 143 mph. The BMW Hydrogen 7 also features a dual-mode power unit - controlled at the touch of a button - that can switch quickly and conveniently from hydrogen to conventional premium gasoline.

The car's dual-mode drive provides an overall cruising range of more than 400 miles and enables the driver of a BMW Hydrogen 7 to enjoy virtually unlimited mobility, even when far away from the nearest hydrogen filling station. This technology is a viable solution until the hydrogen infrastructure is fully developed.

BMW CleanEnergy: paving the way into the future.

The BMW Hydrogen 7 perfectly captures the essence of the BMW CleanEnergy strategy. By using hydrogen produced from water and renewable energy, such as wind, sun or hydropower, in an internal combustion engine, the car's emissions are essentially nothing but vapor. And, with this emitted water vapor, the cycle can start again and the dream of sustainable mobility without using fossil fuel resources and without impacting the earth's climate can become a reality. The complete change from a fossil fuel infrastructure to a hydrogen economy will require decades, but with the Hydrogen 7, BMW shows that bringing hydrogen technology to the road is indeed feasible.

BMW Hydrogen 7: Industrializing hydrogen technologies.

The BMW Hydrogen 7 has successfully completed the entire Product Development Process (PDP) obligatory for all new BMWs. In this process, all components of the new technology were integrated into the overall vehicle according to the same challenging criteria applied to "regular" production cars. The BMW Hydrogen 7 is not a hand made concept car, but rather, a milestone in industrializing hydrogen technologies for automotive use.

The knowledge gained in the PDP has not only made a decisive contribution to the everyday driving qualities of the BMW Hydrogen 7, but it will also significantly impact the development and production of future hydrogen car concepts, with the principle of dual-mode drive and the features of other components now going through the strict test of everyday driving practice.

Dual-mode combustion engine for enhanced flexibility.

While cruising range is a significant consideration to consumers in any car, BMW recognizes that it is of critical importance in a hydrogen-powered vehicle, because there is not yet a full network of hydrogen filling stations in the United States.

For precisely this reason, the BMW Hydrogen 7 features dual-mode drive technology

and a combustion engine capable of running on both hydrogen and gasoline. The cruising range in the hydrogen mode is more than 125 miles, with another 300 miles in the gasoline mode. Thus, the driver of a BMW Hydrogen 7 is able to use the vehicle without problem even when the nearest hydrogen filling station is far away.

The BMW Hydrogen 7 clearly proves that liquid hydrogen may by all means be used as a source of energy for the production car. By introducing the BMW Hydrogen 7, the BMW Group establishes powerful momentum for the ongoing development of a supply infrastructure serving above all to set up additional hydrogen filling stations providing sustained mobility on a broad basis also in the future.

Two tanks: Smooth transitions and maximum cruise range.

To offer the longest conceivable cruising range, the BMW Hydrogen 7 comes with both a conventional 74-litre (16.3 Imp gal) gasoline tank and an additional fuel tank taking up approximately 8 kilos or 17.6 lb of liquid hydrogen. Stored in a high tech tank, liquid hydrogen offers significant advantages in energy density enhancing the cruising range of the hydrogen car.

The driver is able to switch from hydrogen to gasoline mode manually by pressing a button on the multifunction steering wheel. Because engine power and torque remain exactly the same regardless of the mode of operation, switching from one mode to another has no effect on the driving behavior and performance of the BMW Hydrogen 7.

The control system in BMW Hydrogen 7 gives priority to the use of hydrogen. And, should one of the two types of fuel be fully consumed, the system will automatically switch over to the other type of fuel in the interest of secure, ongoing supply.

Luxury class comfort for four.

The BMW Hydrogen 7 is a four-seater with the two passengers at the rear enjoying the same high standard of comfort in the world's first hydrogen car developed for everyday use as in one of BMW's "regular" luxury performance vehicles.

The BMW Hydrogen 7 comes with an unusually wide range of standard features. In addition to the high level of equipment featured from the start in the BMW 760i, the BMW Hydrogen 7 comes inter alia with climate comfort composite glazing, BMW's high-end automatic air conditioning, auxiliary heating, electric seat heating for the driver, front passenger and rear seats, lumbar supports, electric seat adjustment with memory function on the front seats, ISOFIX child seat fastenings, Park Distance Control, a rain sensor, exterior and interior mirrors with automatic anti-dazzle, Soft Close Automatic for the doors and a headlight assistant. A complete entertainment and communication package adds to the comfort a BMW 7 Series can provide.

Progress without compromises.

BMW Hydrogen 7 emphatically proves that changing over to an alternative form of energy doesn't mean missing out on superior driving dynamics and comfort. The departure from fossil fuel does not in any way mean giving up the dynamics and performance typical of a BMW. Mobility of tomorrow and driving pleasure of today are compatible, with the drive concept of BMW Hydrogen 7 being directly transferable to future models. Driving a car of this caliber will be just as thrilling in the future as it is

today, but at the same time cleaner than ever before.

BMW Group: "Sustainability. It can be done."

Sustainable action and corporate success belong together. With this clear commitment, the BMW Group has integrated sustainability as part of its corporate strategy for many years and takes responsibility for its products throughout their entire life cycle - from production to end-of-life recycling. The BMW CleanEnergy strategy aims to create a sustainable future for individual mobility independent of fossil fuels. With BMW EfficientDynamics, the company enhances fuel economy with every new product while still offering the customer the best in class performance.

With recycling-optimized product design and life cycle assessment, BMW reduces the impact on the environment. The use of benchmark technologies in its clean production program significantly reduces the consumption of water and energy during the production process. There are many examples of the advantages of adhering to BMW's mantra, "Sustainability. It can be done." The benefits are enjoyed by not only the company and its associates, but also the environment and, most importantly, the customer. To learn more about BMW Group and sustainability, please visit www.bmwgroup.com/sustainability.

David Ganss
U.S. EPA -- Office of Transportation and Air Quality
voice: 734-214-4471
fax: 734-214-4958
email: ganss.david@epa.gov

From: Chris Nevers
To: Linc Wehrly
Subject: BMW X5 diesel, Certificate was issued on 9/9/2011
Date: 10/13/2011 03:27 PM
Attachments: X5 certificate.pdf

The certificate request was made on 9/6/2011. It was issued 3 days later.

Submission Date	Manufacturer	Request for Certificate	Test Group	Evaporative/ Refueling Family	Model Year	Certificate Details	CAP 2000 Conditional Certificate	Certificate Request Status	Dataset Status	Approval Type	EPA Assigned Staff	CSI	Application and Related Documents
09/06/2011	BMW (BMX)	Details	CBMXT03.0M57		2012	CBMXT03.0M57-019	No	Approved	Active	Manual	cnevers	View	View Document

	UNITED STATES ENVIRONMENTAL PROTECTION AGENCY **2012 MODEL YEAR** **CERTIFICATE OF CONFORMITY** **WITH THE CLEAN AIR ACT OF 1990**	**OFFICE OF TRANSPORTATION** **AND AIR QUALITY** **ANN ARBOR, MICHIGAN 48105**

Certificate Issued To: BMW (U.S. Manufacturer or Importer) **Certificate Number: CBMXT03.0M57-019**	**Effective Date:** **09/09/2011** **Expiration Date:** **12/31/2012**	**Karl J. Simon, Director** **Compliance and Innovative Strategies Division**	**Issue Date:** **09/09/2011** **Revision Date:** **N/A**

Test Group Name: CBMXT03.0M57 **Evaporative/Refueling Family Name:** **Applicable Exhaust Emission Standards:** Federal Tier 2 Bin 5 **Applicable Evaporative/Refueling Standards:**	**Engine Displacement:** 3.0 Liters **Exhaust Emission Test Fuel Type:** Cert Diesel 7-15 ppm Sulfur **Full Useful Life Miles: Exhaust Emissions:** 120,000 miles **Full Useful Life Miles: Evaporative/Refueling Emissions:** N/A

Models Covered: BMW: X5 xDrive35d

Pursuant to section 206 of the Clean Air Act (42 U.S.C.7525) and 40 CFR Parts 85, 86, 88, and 600 as applicable, this certificate of conformity is hereby issued with respect to test vehicles which have been found to conform to the requirements of the regulations on Control of Air Pollution from New Motor Vehicles and New Motor Vehicle Engines (40 CFR Parts 85, 86, 88, and 600 as applicable) and which represent the new motor vehicle models listed above by test group and evaporative/refueling emission family, more fully described in the application of the above named manufacturer. Vehicles covered by this certificate have demonstrated compliance with the applicable emission standards as more fully described in the manufacturer's application. This certificate covers the above models, which are designed to meet the applicable emission standards specified in 40 CFR Parts 85, 86, 88, and 600 as applicable at both high and low altitude as applicable.

EPA is issuing this certificate subject to the conditions and provisions of 40 CFR 86.1848(c).

This certificate covers only those new motor vehicles or vehicle engines which conform, in all material respects, to the design specifications that apply to those vehicles or engines described in the documentation required by 40 CFR Parts 85, 86, 88, and 600 as applicable and which are produced during the 2012 model year production period stated on this certificate of the said manufacturer, as defined in 40 CFR Parts 85, 86, 88, and 600 as applicable. The manufacturer shall obtain the approval of the California Air Resources Board (in the form of an executive order issued by the California Air Resources Board) prior to introducing any vehicle covered by this certificate into commerce 1) in the State of California, or 2) in a State that, under the authority of Section 177 of the Clean Air Act, has adopted and placed into effect the California standards to which this test group has been certified.

Catalyst-equipped vehicles designed to be operated on gasoline or flexible fuel are equipped with an emission control device which the Administrator has determined will be significantly inpaired by the use of leaded fuel. This certificate is issued subject to the conditions specified in 40 CFR 80.24. Catalyst-equipped vehicles designed to be operated on gasoline or flexible fuel, otherwise covered by this certificate, which are driven outside the United States, Canada, Mexico, Japan, Australia, Taiwan and the Bahama Islands will be presumed to have been operated on leaded fuel resulting in deactivation of the catalysts. If these vehicles are imported or offered for importation without retrofit of the catalyst, they will be considered not to be within the coverage of this certificate unless included in a catalyst control program operated by manufacturer or a United States Government Agency and approved by the Administrator.

In the case of completely assembled vehicles, this certificate of conformity covers only vehicles which are completely manufactured prior to January 1, 2013. Normally incompletely assembled vehicles (such as cab chassis) may be completed after this date, provided that the basic manufacturing (including installation of the emission control system) was completed prior to January 1, 2013. This certificate does not cover vehicles sold, offered for sale, or introduced, or delivered for introduction, into commerce in the U.S. prior to the effective date of the certificate.

From: David Good
To: Linc Wehrly
Cc: Robert Peavyhouse; Roberts French
Subject: Can I put the BMW diesel vehs and 2008 Mini E (electric veh) on www.fueleconomy.gov?
Date: 06/02/2009 01:58 PM
Attachments: 2009 BMW diesels 335d and X5 xDrive35d label info.pdf
2008 MINI E Label self approval info.pdf

Linc,

Ex. 5 Deliberative Process (DP)

Please advise.
----- Forwarded by David Good/AA/USEPA/US on 06/02/2009 01:43 PM -----

<Thomas.Hofmann@bmwna.com>
Sent by:
<Thomas.Hofmann@bmwna.com>

To David Good/AA/USEPA/US@EPA
cc
Subject RE: Models missing on fueleconomy website

Received Date:
06/02/2009 11:05 AM
Transmission Date:
06/02/2009 11:05:55 AM

Hello Dave

Attached please find the data sheets for our 2009 diesels and for the 2008 MINI E battery electric.
Thanks for your help!

Regards,
Tom

-----Original Message-----
From: Good.David@epamail.epa.gov [mailto:Good.David@epamail.epa.gov]
Sent: Monday, June 01, 2009 3:14 PM
To: Hofmann Thomas, ES-5-US-20
Subject: Re: Models missing on fueleconomy website

Tom,

Please attach the paper "hardcopy" FE labels and I'll have DOE add them manually to the website. As a reminder, the paper copy should contain the following info in the attached Toyota example.

(See attached file: Example mfr self approval FE Label letter.808.pdf)

<Thomas.Hofmann@
bmwna.com>
Sent by:
<Thomas.Hofmann@
bmwna.com>

To
David Good/AA/USEPA/US@EPA
cc

Received Date:	Subject
06/01/2009 11:16 AM	Models missing on fueleconomy website
Transmission Date: 06/01/2009 11:16:23 AM	

Hello Dave

My supervisor has asked me to have the following models added to www.fueleconomy.gov website.
These three models are also missing from the www.epa.gov/greenvehicles web page.

2009 335d (diesel 3-Series sedan)

2009 X5 xDrive35d (diesel X5 SUV)

2008 MINI E (battery electric MINI Cooper)

Diesels.

The 2009 diesel models were certified using CFEIS.
Unfortunately, the Confirmatory Testing at NVFEL slipped beyond the CFEIS shutdown date.
As a result, I was unable to make general label submissions on CFEIS.
As you may recall, I did a paper hardcopy "notification of self-approval" for these two diesel models.
Is there some process that the data for these two models can be transmitted to DOE and to greenvehicles?

MINI E.

The certification data for this was submitted to Verify but the automated Request for Certificate did not work.,
The Certificate was generated manually.
I never attempted a Fuel Economy Label submission, in part because I knew it would be rejected since there was not a valid Request for Certificate in the system.
Is there some process that the data for this model could be transmitted to DOE and to greenvehicles?
I would understand the reluctance to do so given that it is 2008 MY and the limited distribution of these vehicles.
However, it might be helpful for future reference if the data were available somewhere.

Any thoughts or guidance are most welcomed!

regards,
Tom

Tom Hofmann
Emissions & Fuel Economy Certification
BMW of North America, LLC
201-571-5195

2009 BMW diesels 335d and X5 xDrive35d label info.pdf 2008 MINI E Label self approval info.pdf

BMW 2009MY - Model Type and General Fuel Economy Label Data - Diesel Models

Engine	Model Name	Label Values			Est. Ann. Fuel Cost	Engine Displ. / No. of Cyl.	Drive System	Trans	Comparable Class
		City	Highway	Combined					
M57D30TOP-E90	335d	23	36	27	2498	183 (3.0L) / 6	RWD	S6	Compact Cars
M57D30TOP-E70	X5 xDrive35d	19	26	22	3071	183 (3.0L) / 6	AWD	S6	Special Purpose SUV-4WD

Est. Annual Fuel Cost based on Diesel fuel @ $4.50/gal

California emissions certification standard: LEVII LEV
Federal emissions certification standard: Tier 2, Bin 5

From:	Linc Wehrly
To:	Margo Oge
Cc:	Karl Simon; Janet Cohen; Clifford Dean; Cleophas Jackson; Chet France; Byron Bunker; William Charmley; Christopher Grundler
Subject:	Certificate issued to Mercedes-Benz Bluetec II (SCR) vehicle
Date:	03/31/2008 10:38 AM

Margo,

I wanted to let you know that the Mercedes-Benz GL320 Bluetec (SCR) confirmatory test vehicle was tested last week at NVFEL over the FTP, highway cycle, and US06 cycle and passed all tests. The vehicle has been released back to Mercedes.

The next light-duty diesel SCR vehicle to be confirmatory tested at NVFEL will be either a BMW or VW within the next couple of months.

Regards,
Linc

Manager, Light-Duty Vehicle Group
Compliance and Innovative Strategies Division
United States Environmental Protection Agency
(734) 214-4286
wehrly.linc@epa.gov

From: Linc Wehrly
To: Margo Oge
Cc: Karl Simon; Christopher Grundler; Janet Cohen; Ed Nam
Subject: Certificates issued to BMW Diesel (SCR) vehicles
Date: 12/01/2008 01:41 PM

Margo,

We issued two certificates today to BMW for the M3 335d sedan and X5 35d SUV. Both of these vehicles are equipped with the 3.0 liter I6 turbocharged diesel engine that utilizes SCR to control NOx emissions. Both vehicles are certified to Tier 2 bin 5 and CA LEV II emission standards. BMW is the second manufacturer to receive certificates for SCR vehicles. The 335d sedan is the first passenger car certified with a SCR system. All of the other light-duty vehicles using SCR are SUVs. Confirmatory testing at NVFEL over the FTP, highway, and US06 cycles was successfully completed several months ago.

We believe the BMW vehicles meet the intent of our SCR guidance letter. They have ensured that urea will be available to their customers through their dealerships; have an emergency 24-hour service; and provide free urea for the first four years and/or 50,000 miles of operation. They will also ensure that vehicles will never operate without urea and exceed emission standards through a robust warning system that includes a message center, icons, and chimes with a no re-start driver inducement strategy.

We also anticipate that VW will be receiving a certificate for the diesel Touareg SUV that uses SCR within the next couple of weeks. Please let me know if you have any questions or would like more details.

Regards,
Linc

Linc Wehrly
Manager, Light-Duty Vehicle Group
Compliance and Innovative Strategies Division
United States Environmental Protection Agency
(734) 214-4286
wehrly.linc@epa.gov

From: Wilhelm.Hall@bmwna.com
To: Linc Wehrly/AA/USEPA/US@EPA
Cc: Karl Simon/DC/USEPA/US@EPA; Karl-Heinz.Ziwica@bmwna.com
Subject: Conference Call about Diesel Issues
Date: 10/13/2006 04:00 PM

Hello Linc,

As discussed earlier today, the meeting with Ms. Oge has been cancelled. In lieu off we will have a conference call on Monday, October 16, 2006 at 3:30 pm. Our conference call-in number is 201-573-2063. You will initiate the call. Participants will be:

EPA

Karl Simon
Linc Wehrly

BMW

Karl-Heinz Ziwica
Wilhelm Hall

Have a great weekend!

Wilhelm Hall
Environmental Engineering
BMW Group
201-573-2177 (phone)
201-782-0764 (fax)

From: Hall Wilhelm, ES-US-2
Sent: Tuesday, October 03, 2006 10:21 AM
To: 'Bryant-Akers.gladys@epa.gov'
Cc: Ziwica Karl-Heinz, ES-US
Subject: Meeting with Margo Oge on October 17-2006

Dear Ms. Bryant Akers,

This is to confirm the meeting arrangement we made this morning with Margo Oge for October 17, 2006 at 1:00 pm. We have been contacted by Linc Wehrly of your Ann Arbor staff, asking for a "high level" meeting with Margo Oge. The issues for discussion are BMW's Diesel introduction plans, emission control technologies applied as well as EPA's perspective and manufacturer guidance.

BMW participants will be:

Karl-Heinz Ziwica – VP Engineering US
Wilhelm Hall – GM Environmental Engineering

We also discussed the availability of a BMW 7 Series hydrogen ICE vehicle in Washington DC for a test drive for Margo Oge and other EPA representatives today and tomorrow morning. To make arrangements please contact Liz Pfeiffer at 201-803-7806.

Have a great day!

Wilhelm Hall
Environmental Engineering
BMW Group
201-573-2177 (phone)
201-782-0764 (fax)

Delivery Failure Report

Your document:	Diesel Vehicles
was not delivered to:	thomas.hoffman@bmwna.com
because:	501 #5.1.1 bad address thomas.hoffman@bmwna.com
Routing Path:	CN=EPAHUB12/O=USEPA/C=US;CN=AAMAIL2/OU=AA/O=USEPA/C=US
To:	thomas.hoffman@bmwna.com
Cc:	Vincent Mazaitis/AA/USEPA/US@EPA
Subject:	Diesel Vehicles
Date:	07/30/2008 10:35:45 AM

Tom,

I have a couple of quick questions regarding the diesel vehicles:

Have you already submitted an application into Verify? If not, when do you plan to?
Will BMW be requesting conditional certificates or willing to wait until the confirmatory testing is complete?

Thanks,
Linc

Linc Wehrly
Manager, Light-Duty Vehicle Group
Compliance and Innovative Strategies Division
United States Environmental Protection Agency
(734) 214-4286
wehrly.linc@epa.gov

From: Justin Cohen
To: Jeff Alson
Cc: Linc Wehrly
Subject: diesel factoid reference
Date: 04/28/2008 10:50 AM

Hi Jeff,
See reference to the factoid in a stakeholder's letter to the editor that appeared in the Washington Times, a conservative daily newspaper here in DC

In praise of diesel (*Washington Times*)

In his recent Op-Ed ("Meeting energy needs," April 18), Michael Williams, chairman of the Railroad Commission of Texas, provided vision and articulated a challenge to our nation: Find better and smarter ways to use energy. One solution often overlooked and one that is available today is clean diesel technology.

The automotive industry already has developed imaginative, yet viable, diesel-fuel alternatives. This fall, for instance, manufacturers such as Mercedes, Volkswagen and BMW will introduce to the U.S. market the first wave of passenger vehicles that use ultra-low sulfur diesel fuel.

This new fuel contains 97 percent less sulfur coupled with new advanced engines and emissions-control systems. It offer a compelling alternative to consumers eager to protect the environment and save costs while also retaining the thrill of driving power and performance.

Clean diesel cars provide the highest fuel economy in real-world driving, performing with 30 percent better fuel economy, 20 percent less greenhouse-gas emissions and 50 percent better torque than a comparable gasoline vehicle. This is also at a favorable cost-benefit ratio.

We say clean diesel cars deliver "good clean fun." At the same time, today's clean diesel technology contributes to efforts to reduce our nation's dependency on foreign oil. The Environmental Protection Agency, in fact, predicts that the United States could save as much as 1.4 million barrels of oil per day if as few as one-third of our passenger cars were diesel.

The automotive industry is delivering on the challenge of bringing clean and affordable solutions to America's drivers with clean diesel technology.

JOHANNES-JOERG RUEGER
Vice president diesel engineering
Diesel systems
Robert Bosch LLC

Farmington Hills, Mich.

Justin Cohen
U.S. Environmental Protection Agency
Office of Transportation and Air Quality
phone: (202) 564-1643
fax: (202) 564-1686

From: Vincent Mazaitis
To: thomas.hofmann@bmwna.com
Cc: David Good; Linc Wehrly
Subject: Diesel Testing
Date: 05/29/2008 11:49 AM

Hello Tom,

I hope all is well with you.

During the 2009 Certification Preview meeting BMW indicated that two diesel vehicles the X5 and the 3 Series would be introduced into the U.S. It was indicated these vehicles would be available for testing at EPA in the August - September time frame. As we need to plan better for diesel testing EPA would like to know if that testing window is still valid or if you have a better idea as to when the vehicles would be available for testing.

If you have any questions or concerns, please contact me.

Thanks Tom,

Kind regards,

Vince Mazaitis

From: Linc Wehrly
To: thomas.hoffman@bmwna.com
Cc: Vincent Mazaitis
Subject: Diesel Vehicles
Date: 07/30/2008 10:35 AM

Tom,

I have a couple of quick questions regarding the diesel vehicles:

1. Have you already submitted an application into Verify? If not, when do you plan to?
2. Will BMW be requesting conditional certificates or willing to wait until the confirmatory testing is complete?

Thanks,
Linc

Linc Wehrly
Manager, Light-Duty Vehicle Group
Compliance and Innovative Strategies Division
United States Environmental Protection Agency
(734) 214-4286
wehrly.linc@epa.gov

Discuss draft Ex. 4 CBI letter, BMW diesel certification and labeling, and other GM issues

Mon 11/05/2012 1:00 PM - 1:30 PM

Attendance is **required** for Linc Wehrly

Chair: DavidA Wright/AA/USEPA/US

Location: Linc's office

Required: Linc Wehrly/AA/USEPA/US@EPA

Description

Personal Notes

From:	Chris Nevers
To:	Stephen Healy; Vincent Mazaitis; Martin Reineman; David Good
Cc:	Linc Wehrly
Subject:	FOI version of BMW's 3L Diesel
Date:	02/04/2009 08:11 AM
Signed by:	CN=Chris Nevers/OU=AA/O=USEPA/C=US

I could not find BMW's FOI version for their TG 9BMXT03.0M57? Do we have any requirement for FOI submission at the time of cert?

From:	Chris Nevers
To:	Arvon Mitcham; Jim Snyder; Joel Ball; Stephen Healy
Cc:	Laura Baker; Linc Wehrly
Subject:	Follow Up - LD Diesel Policy
Date:	03/13/2009 08:40 AM
Signed by:	CN=Chris Nevers/OU=AA/O=USEPA/C=US
Attachments:	cisd0707.pdf cisd0617.pdf cisd0622.pdf Supplemental SCR Guidance - HDDE.DOC SCR Systems Updates_7_30_08.xls CAA Sec 202 (a)(4)(A)-(B).pdf

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Maybe we are over reaching, but if we put all the diesel issues on the table for light duty they would include:

Light Duty SCR supplemental guidance (including DEF refill interval leniency)
LD IRAF guidance
Guidance on both ammonia slip and dioxin
durability - Co's (Bosch) asking about bench cycle to load particulate filter or other age exhaust comp - OK for HD and gas but not diesel LD?
Generic B7 process exemption

Let me know if I left anything off.

At a minimum, Bosch was asking for something akin to the HD supplemental guidance. We are going to have issues with possibly all of the above if we give differing requirements to VW, Mercedes, BMW, and Mahindra (all of which use Bosch aftertreatment).

Included for reference: Initial SCR Guidance (CISD 07 07), Supplemental HD Guidance, Overview of LD SCR systems already approved (requires update), HD IRAF Guidance 0617, Alternative HD IRAF Guidance 0622, and CAA rational behind both NH3 slip and dioxin (unregulated emissions)

cisd0707.pdf cisd0617.pdf cisd0622.pdf Supplemental SCR Guidance - HDDE.DOC SCR Systems Updates_7_30_08.xls
CAA Sec 202 (a)(4)(A)-(B).pdf

Chris

From:	Byron Bunker
To:	Jeff Alson; David Ganss; Ben Ellies; Robin Moran; Linc Wehrly; Todd Sherwood; Robert Larson; Christopher Lieske; William Charmley
Subject:	Fw: 2 diesel car stories worth noting
Date:	05/24/2007 01:43 PM

I assume the Ricardo/UBS report may be of interest.

----- Forwarded by Byron Bunker/AA/USEPA/US on 05/24/2007 01:41 PM -----

"Kassel, Rich" <rkassel@nrdc.org> Sent by: "Kassel, Rich" <rkassel@nrdc.org>	To	Margo Oge/DC/USEPA/US@EPA, Chet France/AA/USEPA/US@EPA, Karl Simon/DC/USEPA/US@EPA, Byron Bunker/AA/USEPA/US@EPA
	cc	
Received Date: 05/24/2007 01:19 PM Transmission Date: 05/24/2007 01:19:20 PM	Subject	2 diesel car stories worth noting

In case you are too busy with CA waiver issues to notice Jack Peckham's latest, these are worth talking about sometime…

NEWS UPDATE: Ricardo/UBS Report Sees Light-Duty Diesel 'Boom' Coming to U.S.; Cheaper than Hybrids for CO_2 Regulation

A joint report by automotive engineering consultancy Ricardo and investment banker UBS foresees a "boom" in U.S. demand for light-duty diesels, outstripping U.S. gasoline-electric hybrid demand by 2012.

The report, "Is Diesel Set to Boom in the U.S.?," (http://www.ricardo.com/download/pdf/R119361S.pdf) not only forecasts that diesel light-duty vehicle sales will hit 1.5 million units in 2012, but that U.S. diesel sales will outstrip U.S. gasoline-electric hybrids by 300,000 unit sales in 2012.

Reasons: "Similar fuel economy, but substantially lower costs for the [automaker] producer. We believe OEMs share our enthusiasm for diesels: recent months have seen Mercedes, VW, BMW, Nissan and Honda announce plans for 'clean diesel' in the U.S.," the analysts conclude.

"Many OEMs plan to launch hybrid products in the next few years, but this technology faces substantial manufacturing cost penalties, which are unlikely to be eroded even in mass production," the analysts found.

"Diesel has a clear cost advantage over hybrid, even when fitted with the type of complex exhaust after-treatment technologies necessary to meet future, more stringent emissions regulations.

"Diesel already dominates in Europe. The conditions may now be right for a big acceleration in diesel sales in the North American market."

Among the diesel technology providers likely to win from a light-duty diesel surge in the U.S. are Borg-Warner, Denso, Honeywell (Garrett turbochargers), BASF (formerly Engelhard,

makers of exhaust catalysts), IHI, NGK, Emitec, Ibiden, Umicore, Johnson-Matthey, Siemens, Delphi and Denso, the report shows. Continental also could benefit if it succeeds in buying Siemens VDO, the report notes.

"Efforts to raise [vehicle corporate average fuel economy, CAFE] standards in the past, and to expand coverage from [criteria] pollutants to greenhouse gases, have usually been stalled by political lobbying," the report notes. "But the political mood appears to be shifting – and it looks likely that higher standards are likely at the individual state level (on GHG) and possibly national level (on both GHG and CAFE)," the report says.

But no matter what happens in the U.S. Congress or a new U.S. EPA regulation forcing higher CAFE, "we believe sales of more fuel-efficient vehicles are likely even without legislation," the report says. "Consumers may opt for more fuel-efficient vehicles as CO_2 emissions, global warming and/or U.S. dependence on foreign oil become ever more topical. Consumer behavior will also ultimately rest on actual and anticipated fuel prices," which over the past two years had favored gasoline over diesel. Now, diesel is once again cheaper than gasoline in the U.S. retail market.

What's more, although gasoline-electric hybrids improve fuel economy especially in city stop-and-go driving, "we are ultimately bullish on diesel for one simple reason: cost," the report found.

"Hybrid powertrains ultimately cost more than diesels, and we do not believe the cost penalty of hybrid will change dramatically even with big increases in production volumes." The cost advantage especially favors diesels in larger vehicles, they found.

An emissions-compliant U.S. diesel engine in a crossover or SUV "will incur a cost penalty [compared to a comparable, conventional gasoline car] half that of a full hybrid (U.S. $3,000 versus U.S. $7,000)," the study found.

"For smaller vehicles, the cost penalty for both powertrain types will be lower, but diesel still has the upper hand. UBS estimates that for a conventional mid-size passenger car (e.g. Toyota Camry, VW Passat), the cost penalty for a diesel will be around $2,000-$3,000 and for a full hybrid around $5,000."

Ironically, consumers won't get a quick fuel-savings payback on the higher up-front investment, neither with diesel nor with a gasoline hybrid, the study found.

"In the U.S., a consumer paying the full up-front cost of a clean diesel (e.g. $4,000 extra for a 4.0 liter vehicle) is unlikely to recoup the extra cost in fuel savings quickly. A U.S. consumer, driving 20,000 miles per year, would save less than $700 per year by moving from a 25 mpg vehicle to a 35 mpg vehicle.

"However, it is possible that perceived savings (every time the consumer fills up), consumer attitudes (preference for driving a more fuel-efficient vehicle) and automaker pricing decisions (taking some of the cost penalty in the margin, rather than passing it on to the consumer in full) will improve the prospects for fuel-efficient vehicles."

For example, the study cites a recent Synovate survey showing that 35% of the U.S. population is willing to pay $3,000 or more for a "green" vehicle of equivalent performance of the baseline car, and 30% willing to pay $4,000 or more. "Even if these percentages are high by a factor of two, 15% of 2015 U.S. sales of perhaps 20 million vehicles would yield three million units of diesels and hybrids," the study notes, pointing out that a 15% share "is not far off our own forecast."

While German automakers (VW, BMW, Daimler) are well advanced in their plans for U.S. EPA emissions-compliant diesel passenger vehicles in the U.S. market, the strong Euro versus the U.S. dollar can hurt profitability, unless more of the diesel manufacturing shifts to North America.

Meantime, while both PSA-Peugeot and Renault are strong in diesel technology, they likewise face unfavorable Euro-dollar exchange rates.

Nevertheless, "we believe it is conceivable that the French may seen an opportunity . . . Renault may be better positioned than PSA as it could 'piggy-back' the [existing U.S.] Nissan dealer network."
As for Italy, "Fiat also has plans to bring Alfa Romeo back to the U.S in 2009 [and] diesel could potentially feature in Alfa's product plans."
Given current and likely clean-diesel introductions into the U.S. market in coming years, Ricardo sees diesel passenger new-vehicle sales to rise from about 4% in 2009 to about 9% in 2013, mostly light trucks rather than cars. – *Jack Peckham*

Dieselization: Cheapest Path to CO_2-Reduction & Gasoline Substitution

Detroit -- A transportation fuel life-cycle assessment (LCA) by the Natural Resources Canada (NRCan) "GHGenius" model shows that dieselization of the North American light-duty fleet would be by far the cheapest pathway to slash carbon dioxide (CO_2) from transport by 2020.
The study (*SAE 2007-01-1606*) presented to Society of Automotive Engineers 2007 World Congress here, looked at 23 possible vehicle/fuel pathways for cutting CO_2 from "typical" mid-sized passenger vehicles, including well-to-wheel (WTW) analysis.
Compared to using gasoline in a baseline gasoline vehicle, diesel from crude oil used in a comparable diesel car would by far be the cheapest option on a dollars-per-ton basis for cutting CO_2, followed by biodiesel from tallow, "SuperCetane" (refinery hydrotreated bio-oils converted to diesel), Fischer-Tropsch diesel from wood, esterified biodiesel from canola oil, and wider adoption of diesel-electric hybrid vehicles.
While the "GHGenius" model is applicable to Canada, it also contains data for the U.S., Mexico, India and other areas, the authors point out. It is based on Dr. Mark Delucchi's University of California-Davis "lifecycle emissions model," with further development by Natural Resources Canada.
The study makes some conservative assumptions about future vehicle and fuel costs, drawing in part from U.S. Energy Information Administration's 2005 Annual Energy Outlook, which at the time foresaw 2020 crude oil at around $40 rather than the current $60/barrel.
Asked what would happen to the conclusions if $60 crude was the base assumption rather than $40, NRCan technical advisor and study co-author Jesse Fleming told *Diesel Fuel News*:
"If the price of crude oil was assumed to be US$60 and all the other parameters in the analysis remained the same, then diesel would still be among low-cost substitutions for gasoline. This is due mainly to the fact that the increased price of crude would also affect the reference: gasoline. Pathways that did not use crude oil as the main feedstock would look more cost-effective."
The analysis assumed that first-cost premium for diesel cars (versus comparable gasoline cars) if they became more widely available by 2020 would be around $1,000, while a diesel-electric hybrid would cost about $4,000 more than a comparable gasoline car.
It also generously assumed that a fuel-cell car in 2020 would cost only $7,000 more than a comparable gasoline car, although fuel-cell cars today are vastly more expensive than comparable gasoline cars, and many wonder if hydrogen will ever become widely available for refueling such cars.
The study also compared costs for compressed natural gas (CNG) cars, corn-based ethanol cars, and a wide variety of hydrogen sources (coal, gas, electric) for fuel-cell cars.
Of all the options, by far the most expensive for CO_2 reductions were fuel-cell cars, the study shows. – *Jack Peckham*

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From: Linc Wehrly
To: Frederick Hart; Robert Doyle
Cc: Chris Nevers; Stephen Healy
Subject: Fw: 335d FOIA cert application
Date: 02/09/2009 12:27 PM

Fred & Bob,

Ex. 5 Deliberative Process (DP)

Linc

Linc Wehrly
Manager, Light-Duty Vehicle Group
Compliance and Innovative Strategies Division
United States Environmental Protection Agency
(734) 214-4286
wehrly.linc@epa.gov
----- Forwarded by Linc Wehrly/AA/USEPA/US on 02/09/2009 12:24 PM -----

Chris Nevers/AA/USEPA/US
EPA-OAR,OTAQ,CISD
Sent by: Chris Nevers

To Linc Wehrly/AA/USEPA/US@EPA
cc Stephen Healy/AA/USEPA/US@EPA
Subject Fw: 335d FOIA cert application

Received Date:
02/09/2009 11:32 AM
Transmission Date:
02/09/2009 11:32:51 AM

Ex. 5 Deliberative Process (DP)

Chris
----- Forwarded by Chris Nevers/AA/USEPA/US on 02/09/2009 11:29 AM -----

<Thomas.Hofmann@bmwna.com>
Sent by:
<Thomas.Hofmann@bmwna.com>

To Chris Nevers/AA/USEPA/US@EPA
cc
Subject 335d FOIA cert application

Received Date:
02/09/2009 11:25 AM
Transmission Date:
02/09/2009 11:25:44 AM

Hi Chris

My supervisor is asking for a copy of the FOIA request.
Is that something you can provide?

He would also like to know what procedures we need to follow in our response and also the date our response is due.
The Application would need to come out of our Munich office as that falls under their jurisdication.

thanks,
Tom

Tom Hofmann
Emissions & Fuel Economy Certification
BMW of North America, LLC
201-571-5195

From: Justin Cohen
To: Jeff Alson; (069F3755A2FE21DA4C7563B943B3DECA) Robin Moran; Ed Nam; William Charmley
Cc: Lori Stewart; Lisa Snapp; Linc Wehrly
Subject: Fw: An Energy-Efficient Future Includes More Clean Diesel Cars and Trucks
Date: 07/31/2012 01:24 PM

Fyi. Ps. Jeff check out the diesel factoid...:-)

Sent from my BlackBerry Wireless Handheld

From: "Diesel Technology Forum" [Diesel_Technology_Forum@dieselforum.org]
Sent: 07/31/2012 09:08 AM AST
To: Justin Cohen
Subject: An Energy-Efficient Future Includes More Clean Diesel Cars and Trucks

July 31, 2012

Diesel Direct is a monthly publication featuring the latest clean diesel news and activities of the Diesel Technology Forum.

In This Issue:

Hot Topics | Policy Insider | Breaking News | DTF News
Calendar of Upcoming Events

Hot Topics

An Energy-Efficient Future Includes More Clean Diesel Cars and Trucks

"Are we there yet?" If you're hitting the road this summer for that family vacation in your new diesel car, you'll be spending more time vacationing and less time fueling up. Thanks to the higher fuel efficiency of diesel (average 30 percent better than gasoline), in some of the new diesel cars, you could be going nearly 700 miles on a single tank of fuel.

Using more diesel fuel instead of gasoline to power our cars and trucks will reduce dependence on foreign oil. That's according to the U.S. Environmental Protection Agency that estimates America could save up to 1.4 million barrels of oil per day - an amount equivalent to the oil we currently import from Saudi Arabia - if one-third of U.S. cars, pickup trucks and SUVs were diesel-powered.

With new fuel economy mandates of 52.5 mpg on the horizon, and overwhelmingly positive consumer acceptance of the new generation of clean diesel technology as an advanced alternative fuel powertrain, the future for clean diesel cars in the U.S. is exploding. According to new market forecasts from Pike Research, "from 2012 to 2018 North America will experience a cumulative growth rate of 22 percent for fuel efficient vehicles and diesels will capture a slightly higher percentage of new vehicle sales than hybrids. In 2011, the diesel market (in the U.S.) began to show signs of revival, with 27 percent growth over 2010, and hybrids actually dipped."

Looking ahead, don't be surprised to see diesel hybrid offerings in the next five years, like the Volkswagen Cross Coupe, which is reported to attaining an incredible 157 mpg on the New European Driving Cycle. And when high quality renewable diesel fuels become more widely available in coming years, this combination will set the bar for fuel-efficiency and energy security, economic and environmental friendly transportation.

Clean Diesel Technology accounts for a small (six percent) and declining portion of all particle emissions, says DTF to EPA officials at hearing on proposed new air quality standards

Officials from the Environmental Protection Agency (EPA) heard how the transformation to clean diesel technology over the past decade has significantly reduced particulate emissions - "soot" - both in California and throughout the United States.

In testimony given at hearings on the proposed new clean air standards for fine particles, the Diesel Technology Forum highlighted that while other sources of emissions of fine particles are increasing, emissions of fine particles from diesel engines and equipment are decreasing; a trend not seen in any other sector. DTF

highlighted these results in air quality as a direct result of industry investment of billions of dollars in development of cleaner diesel fuels, advanced engines, and emissions control technology.

Read the full press release and DTF's statement.

Policy Insider

Highway Bill Funds Diesel Retrofits on Construction Equipment

On July 6, President Obama signed surface transportation spending reauthorization legislation - *Moving America Forward for Progress in the 21st Century*, or MAP-21. This bill outlines federal transportation spending and policy priorities for the next two years. Tucked away in the 560 page bill is a provision allowing states with non-attainment areas for particulate matter to use funds to install emissions control technologies on off- and on-road construction equipment.

This provision is a much watered-down version of the "Clean Construction Act" introduced in Congress in 2011 that required contractors working on federal-aid transportation projects in states with non-attainment areas to install diesel emission control technologies on all on and off-road equipment and allows States to provide funding to help pay for these investments.

DOT Grant Program Helps Fund New Diesel Bus Purchases

On July 23rd, Transportation Secretary Ray Lahood announced the recipients of the "State of Good Repair Program" administered by the Federal Transit Administration. The competitive grant program allocates over $700 million for state and local transit administrations to upgrade mass transit infrastructure including the purchase of new buses and other vehicles. The latest round of grants include roughly $150 million for transit administrators to help purchase new diesel and hybrid-electric buses. The City of Chicago was awarded just over $20 million to replace older buses with new diesel electric articulated buses. New Jersey Transit received over $27 million to replace older cruiser buses with new electric hybrid buses on routes connecting southern New Jersey with New York City.

You can read more about the program by visiting the FTA's announcement here.

Breaking News

Notable Quotes

"Given the extent of dependence on diesel engines, locally as well as globally, it seems unlikely that the IARC's classification of diesel exhaust as a carcinogen will significantly affect the use of diesel worldwide. On the contrary, it may further spur the need for adoption of diesel emission standards where none exist, or more stringent standards where only minimal standards are in place."

- Andrea Schmidt, an energy practice attorney, writing about IARC's recent finding on diesel exhaust as a carcinogen

"Back up emergency diesel generators are the technology of choice and are in place at America's airports and critical telecommunication centers. With a self-contained fuel supply, these diesel-powered units aren't vulnerable to utility service interruptions such as the emergency shut-off of natural gas pipelines that are common safety procedures in natural disasters." - DTF Executive Director Allen Schaeffer highlighting the important role of emergency diesel generators during the recent Midwest and Mid-Atlantic wind and storm disasters

AOL Autos' Editor-In-Chief David Kiley explains how diesel fuel is more eco-conscious with higher MPGs - AOL Autos
In Utero Exposure to Diesel Exhaust a Possible Risk Factor for Obesity - Science Daily, July 19
Commentary: Clean diesel outlook optimistic despite WHO classification of diesel exhaus t - The Daily Journal of Commerce, Jully 19
New Yor k run on diesel, industry group says - The Business Review, July 13
Great diesel myth: They DON'T save you money and petrol models 'are more economical for most makes of car' - The Daily Mail (United Kingdom), July 18
Diesel Technology Forum Demonstrates How Clean Diesel Powers California - OEM Off-Highway, July 10
Bill Gates-backed EcoMotors to use funding to build more-efficient diesel engine - Automotive News, July 11
Natural-gas boom could isolate US on climate change - The Hill, July 13
The impending diesel bombardment - The Toronto Globe and Mail, July 05
Transit agencies buy 509 diesel-electric buses - The Montreal Gazette, July 05
2014 Jeep Grand Cherokee Diesel To Carry New EcoDiesel Tag - Green Car Reports, July 06
Mazda to Promote Diesel Advantages Through Motorsports - Auto Guide.Com, July 03
Some California CNG School Buses Grounded Due to Expired Tanks - School Transportation News, June 28
Clean Diesel Vehicles to Make Up 12% of G lobal Light-Duty Vehicle Sales by 2018 - Green Fleet, June 27

How do you keep up with the news on clean diesel? In addition to this Diesel Direct newsletter, you can be a fan of DTF's **Facebook** page, follow us on **Twitter** @DieselTechForum, or subscribe to our **YouTube** channel @DieselTechForum.

DTF News

Member Profile

BorgWarner Turbo Systems is a leading global producer of turbochargers, exhaust gas recirculation valves and other engine air management systems for cars and trucks. The systems are designed to improve fuel economy, reduce emissions and enhance vehicle performance. Customers include Ford, VW/Audi, DaimlerChrysler, General Motors, Toyota, Renault/Nissan, Hyundai/Kia, Honda, BMW, Caterpillar, Navistar International, and Peugeot.

Visit their website.

How Does Clean Diesel Technology Power Your State?

In July, DTF launched a new media program to highlight clean diesel's important role

in each state's economy and transportation systems. Using information from DTF's updated State Fact Sheets, the Forum is issuing press releases in each state with specific information and statistics outlining how diesel technology is important to the daily lives of people in communities throughout the United States.

Learn more about how diesel is the backbone of transportation systems, powers the state's economy and how policymakers in the state recognize the value of clean diesel technology.

Clean Diesel Facts from Illinois
Did You Know...

- More than 18,900 manufacturing companies operate in the state, generating a gross output of $76.6 billion. Illinois is a leader in the production of construction and farm machinery, which are largely diesel powered.
- 74,827 diesel-powered construction vehicles were used in Illinois' construction industry, generating $23.5 billion and employing over 271,000 people in 2007.
- Illinois is home to more than 6,300 trucking companies - the third largest trucking industry in the U.S. - providing jobs for 70,800. Truck transportation is almost completely powered by diesel engines and fuel.

Calendar of Upcoming Events

July 31-August 3, 2012 - Association of Diesel Specialists International Convention & Tradeshow, Orlando, FL

August 6-9, 2012 - National Conference of State Legislatures (NCSL) 2012 Legislative Summit, Chicago, IL

August 28-29, 2012 - Women in Green Forum, Santa Monica, CA

September 10-12, 2012 - 5th International Environmentally Friendly Vehicle Conference, Baltimore, MD

October 17-21, 2012 - Society of Environmental Journalists Annual Conference, Lubbock, TX

Want to know more about membership in the Diesel Technology Forum? To learn more about meetings and web events coming up contact us.

Please note that some of the links in this e-mail are temporary and may move or expire in the coming weeks. Some sources may require registration or fee-based subscriptions.

The Diesel Technology Forum is a non-profit organization dedicated to promoting clean diesel technologies. Forum members include engine and vehicle manufacturers, diesel fuel refiners, and manufacturers of emissions control devices. For more information about the Forum, visit our web site at www.dieselforum.org.

www.dieselforum.org

This message was sent to cohen.justin@epa.gov from:

Diesel Technology Forum | 5291 Corporate Drive, Suite 102 | Frederick, MD 21703

Manage Your Subscription

Email Marketing by

From:	Justin Cohen
To:	Karl Simon; Linc Wehrly; Robin Moran; Sarah Dunham
Cc:	Lori Stewart
Subject:	Fw: Automakers to be Highlighted at Senate Earth Day Event
Date:	04/21/2010 02:41 PM
Attachments:	image001.png oledata.mso

---

fyi

Justin Cohen
U.S. Environmental Protection Agency
Office of Transportation and Air Quality
phone: (202) 564-1643
fax: (202) 564-1686

----- Forwarded by Justin Cohen/DC/USEPA/US on 04/21/2010 02:37 PM -----

From:	Amy Dewey/DC/USEPA/US
To:	Justin Cohen/DC/USEPA/US@EPA, Julia Ortiz/DC/USEPA/US@EPA
Date:	04/21/2010 02:36 PM
Subject:	Fw: Automakers to be Highlighted at Senate Earth Day Event

---

Sharing Information, Amy

Amy H. Dewey

Alliance OF AUTOMOBILE MANUFACTURERS

Media Advisory:
April 21, 2010

Contact: Charles Territo
(202) 326-5523

Auto Alliance Members to be Highlighted at U.S. Senate's Spring Environmental and Energy Showcase

Washington, DC – Automakers share concerns about energy security and climate change and recently committed to reducing greenhouse gas emissions by 30 percent while improving fuel

economy by 40 percent by 2016. There is no silver bullet to meeting these new standards. Instead, the industry will rely on a variety of new technologies.

To highlight these exciting new technologies, several Alliance member companies will display vehicles tomorrow at the U.S. Senate's Spring Environmental and Energy Showcase. Among the vehicles on display will be the: Chevrolet Volt, Chevrolet Cruze, Chevrolet Equinox Fuel Cell, BMW Mini E, Daimler S400 hybrid, Freightliner M2, Mercedes ML 350 Bluetec, Car2go, Audi A3 TDI, Ford Escape PHEV, Volkswagen Golf TDI and Toyota Prius Plug–in Hybrid and others.

"This event is a terrific opportunity for policy makers to see first-hand these exciting new technologies," said Dave McCurdy, President and CEO Alliance of Automobile Manufacturers. "The auto industry continues to reinvent itself, using innovation to drive us towards sustainable mobility. In 2010 there are more than 130 vehicles available that are powered by alternatives to gasoline including hybrid electrics, clean diesel, ethanol powered flexible fuel and more."

What: U.S. Senate Spring Environmental and Energy Showcase

Where: C St. NE, Behind the Russell Senate Office Building

When: 10am-3pm, April 22, 2010

# # #

The Alliance of Automobile Manufacturers is a trade association of 11 car and light truck manufacturers including BMW Group, Chrysler, Ford Motor Company, General Motors, Jaguar Land Rover, Mazda, Mercedes-Benz, Mitsubishi Motors, Porsche, Toyota and Volkswagen.

image001.png oledata.mso

From:	Robin Moran
To:	stuart.johnson@vw.com
Cc:	Linc Wehrly
Subject:	Fw: Automotive News: BMW won't push diesels in U.S.
Date:	11/24/2006 08:38 AM

Hi Stuart, so is VW officially going with the Bluetech name too? What can you tell me about the Nov. 28 announcement mentioned in this article?

Thanks for the agenda and participants. From EPA's side, besides Margo, I expect:

Chet France, Director, Assessment & Standards Division
Karl Simon, Acting Director, Certification & Innovative Programs Division
William Charmley, Deputy Director, ASD
Robin Moran, Center Director, Light-Duty Onroad Center, ASD
Linc Wehrly, Engineer, CISD
Charles Schenk, Engineer, Heavy-duty Onroad Center, ASD
Antonio Fernandez, Engineer, Light-Duty Onroad Center, ASD

Hope you had a nice Thanksgiving.

Robin Moran
Director, Light-Duty Onroad Center
Assessment and Standards Division
U.S. EPA, Office of Transportation and Air Quality
2000 Traverwood Dr.
Ann Arbor, MI 48105
moran.robin@epa.gov
(734) 214-4781 (phone)
(734) 214-4939 (fax)

----- Forwarded by Robin Moran/AA/USEPA/US on 11/24/2006 08:30 AM -----

Byron Bunker/AA/USEPA/US EPA-OAR,OTAQ,ASD Sent by: Byron Bunker	To	Robin Moran/AA/USEPA/US@EPA, Linc Wehrly/AA/USEPA/US@EPA, Charles Schenk/AA/USEPA/US@EPA, William Charmley/AA/USEPA/US@EPA, Jeff Alson/AA/USEPA/US@EPA
Received Date: 11/24/2006 06:38 AM Transmission Date: 11/24/2006 06:38:45 AM	cc	
	Subject	Automotive News: BMW won't push diesels in U.S.

BMW won't push diesels in U.S.

Reuters | 3:20 pm, November 22, 2006

FRANKFURT -- BMW will not join forces with German carmakers Mercedes-Benz,

Volkswagen and Audi to market clean diesels in the United States under the Bluetec name.

While Volkswagen and Mercedes already sell diesels in the U.S. market, BMW has no plans to do so any time soon and declines to use the Bluetec name, currently being used to help sell Mercedes-Benz E320s that run on ultra low sulphur diesel in the U.S.

The world's biggest premium carmaker, a fierce rival of DaimlerChrysler's luxury Mercedes brand, first wants to develop a urea-based technology to reduce nitrogen oxides before considering a sustained entry into the U.S. diesel market.

"We are in the process of thinking of a name that is different from Bluetec," a spokesman for BMW said on Wednesday.

Helped by diesel fuel subsidies, diesels make up around half of the western European car market but traditionally they have been a tough sell for passenger cars in the U.S.

Widespread perceptions of diesels as dirty and loud, regulatory hurdles and diesels' extra expense -- they cost around $2,000 more than petrol engines -- have limited their appeal in the past.

But last month's advent of diesel fuel in the U.S. with a low sulphur content of just 15 parts per million has opened a window for carmakers to highlight diesel's far better fuel economy and robust towing power. Diesels typically get around 30 percent better mileage than petrol engines.

Volkswagen, Audi and Mercedes consequently want to push diesels under the Bluetec name as an alternative technology to counter the success of Toyota's hybrids.

"Three brands have more power," a Volkswagen spokesman said on Wednesday, adding Mercedes' sister brand Chrysler also would join the alliance at a later date.

A formal announcement was due on Nov. 28 ahead of the Los Angeles car show.

Developed by Mercedes-Benz and diesel injection system specialist Bosch, Bluetec with AdBlue lets cars meet the stringent U.S. emissions norm, Bin 5, which goes into effect in 2009.

Due in 2008, the AdBlue system uses urea-based additives to cut nitrogen oxide emissions and thus meet clean air rules in all 50 U.S. states.

****

Byron Bunker
Center Director - Heavy-Duty Onroad Center
Assessment and Standards Division
Office of Transportation and Air Quality
US Environmental Protection Agency
2000 Traverwood Drive
Ann Arbor, MI 48105
(734) 214-4155
(734) 214-4050 (fax)
(734) 670-0750 (pager)
e-mail: bunker.byron@epa.gov

****

From:	Linc Wehrly
To:	Karl Simon
Cc:	Clifford Dean; Dan Harrison; Janet Cohen
Subject:	Fw: BMW Diesel presentation
Date:	07/21/2006 02:24 PM
Attachments:	2006_Meeting-EPA-25-07-2006.pdf BMW_2006_Meeting-EPA-25-07-2006.pdf EPA_draft_.doc

---

Karl,

This is the presentation material for the meeting next Tuesday with BMW to discuss their light-duty diesel introduction plan. They plan to introduce two vehicles in 2008: X5 SUV and 3-Series Sedan. Both will meet bin 5 standards and both will use a DPF and SCR. Their presentation is pretty comprehensive and impressive. They have clearly put a great deal of thought into how to certify these two vehicles (perhaps even more than DCX!). I don't think you were planning on attending the meeting, but I wanted to give you the presentation material to review.

I am also attaching a draft letter from DaimlerChrysler explaining their understanding of EPA's "targets" for urea infrastructure. We discussed this a couple of weeks ago. They want us to respond to it so that they can share it with the rest of the German OEMs to get the ball rolling for a U.S. urea infrastructure. As usual, they want it right away. I think we hold-off. We need to discuss our thoughts on infrastructure and I don't think we should prematurely except or acknowledge the targets they have described.

BMW_2006_Meeting-EPA-25-07-2006.pdf EPA_draft_.doc

Linc Wehrly
USEPA
Compliance and Innovative Strategies Division
(734) 214-4286
wehrly.linc@epa.gov

----- Forwarded by Linc Wehrly/AA/USEPA/US on 07/21/2006 01:58 PM -----

Thomas.Hofmann@bmwna.com
Sent by:
Thomas.Hofmann@bmwna.com

Received Date:
07/21/2006 11:11 AM
Transmission Date:
07/21/2006 11:11:33 AM

To	Vincent Mazaitis/AA/USEPA/US@EPA, David Good/AA/USEPA/US@EPA, Linc Wehrly/AA/USEPA/US@EPA
cc	Doug.McGregor@bmwna.com, Thomas.King@bmw.de
Subject	BMW Diesel presentation

Gentlemen:

The attachment is BMW's presentation for our meeting on Tuesday afternoon, July 25th.

This covers the topics of diesel technology and certification.
We will defer discussion of the Intelligent Generator Control topic to a later date.

Kind regards,

Tom Hofmann
Emissions and Fuel Economy Certification
BMW of North America, LLC
201-573-2195

2006_Meeting-EPA-25-07-2006.pdf

From:	Linc Wehrly
To:	Robert Peavyhouse; Arvon Mitcham
Cc:	Chris Nevers
Subject:	Fw: BMW Diesel, Proposed SCR Plan, and Documents; Confidential
Date:	01/18/2008 03:37 PM
Attachments:	BMW decision template SCR.doc

I would like to schedule a meeting/phone call with BMW either late next week or early the next week to discuss the status of their SCR system. Several weeks ago I forwarded some information BMW sent us on their system. I would like for you to please review it and give me your comments by Thursday morning so we can schedule the meeting (Chris was a good boy and has already given me his comments!).

Thanks,
Linc

Manager, Light-Duty Vehicle Group
Compliance and Innovative Strategies Division
United States Environmental Protection Agency
(734) 214-4286
wehrly.linc@epa.gov

----- Forwarded by Linc Wehrly/AA/USEPA/US on 01/18/2008 03:30 PM -----

Chris Nevers/AA/USEPA/US EPA-OAR,OTAQ,CISD	To	Linc Wehrly/AA/USEPA/US@EPA
	cc	Arvon Mitcham/AA/USEPA/US@EPA, Robert Peavyhouse/AA/USEPA/US@EPA
Received Date: 12/20/2007 10:26 AM Transmission Date: 12/20/2007 10:26:30 AM	Subject	Re: Fw: BMW Diesel, Proposed SCR Plan, and Documents; Confidential

BMW questions & observations ,using template. BMW decision template SCR.doc

They seem to have supplied most everything we would have required anyway. Overall, pretty good for their first run.

Major concerns
No agreement or plan for reagent at some other commercial entity, just dealers and back up plan

Incorrect reagent identification linked to refill, but reagent refill detection not thoroughly explained

Tamper resistant explanation should be more robust than "it would be hard to do"
Minor
Urea freeze time and volumes needed
Explain an emergency restart.

Chris

▼ Linc Wehrly/AA/USEPA/US

Linc Wehrly/AA/USEPA/US
EPA-OAR,OTAQ,CISD
Sent by: Linc Wehrly

To: Chris Nevers/AA/USEPA/US@EPA, Robert Peavyhouse/AA/USEPA/US@EPA, Arvon Mitcham/AA/USEPA/US@EPA

cc:

Received Date: 12/20/2007 09:02 AM
Transmission Date: 12/20/2007 09:02:01 AM

Subject: Fw: BMW Diesel, Proposed SCR Plan, and Documents; Confidential

Here is the latest information from BMW on their SCR system. Please review and let me know what you think.

Thanks,
Linc

Manager, Light-Duty Vehicle Group
Compliance and Innovative Strategies Division
United States Environmental Protection Agency
(734) 214-4286
wehrly.linc@epa.gov

----- Forwarded by Linc Wehrly/AA/USEPA/US on 12/20/2007 09:00 AM -----

<Doug.McGregor@bmwna.com>
Sent by:
<Doug.McGregor@bmwna.com>

To: Vincent Mazaitis/AA/USEPA/US@EPA, David Good/AA/USEPA/US@EPA, Linc Wehrly/AA/USEPA/US@EPA, <jocain@arb.ca.gov>, <jjwong@arb.ca.gov>

Received Date: 12/19/2007 04:45 PM
Transmission Date: 12/19/2007 04:45:44 PM

cc: <Thomas.King@bmw.de>, <Wilhelm.Hall@bmwna.com>, <Stephen.Sinkez@bmwna.com>, <Thomas.Hofmann@bmwna.com>, <Dieter.Cramm@bmw.de>, <Detlef.Hiemesch@bmw.com>, <Andreas.Bruhn@bmw.de>, <Detmar.Nellessen@bmw.de>

Subject: BMW Diesel, Proposed SCR Plan, and Documents; Confidential

Colleagues:
Attached you will find two documents related to BMW's proposed SCR plan; one document an excerpt from the Certification Application

explaining how the vehicle reducing agent delivery system and warning system works (change extension to .zip to open), and a supporting document which is an excerpt from the proposed Owner Manual supplement relating to diesel SCR. Please note that the development of the SCR system and supporting infrastructure is not finalized in all aspects, and some modifications are possible. In particular I would point out that the "Emergency Starts" provision is still under discussion and review. The Owner Manual and Cert App descriptions do not agree on this subject.
Despite this, the concepts are close enough to finalization that we would appreciate your attention and review, and your feedback in terms of letting us know what will not work, or what may be ambiguous and need further clarification.
We would like to schedule a certification preview meeting for no later than March 2008. We can meet at EPA and include CARB via conference call or video conference, or we can have separate meetings, whatever works best. If we can have your comments in advance of the meeting we will be well prepared to address all the issues. Please suggest some dates for a meeting; we will respond with confirmation as soon as possible.

I will send you a third file in a second e-mail; this one also is a zipped file (change the extension to .zip to open), an executable animation, with sound, showing what the customer will see and here when the defined low level stages are reached.

Please keep in mind that I will be on vacation starting tomorrow, through Jan. 2. You might try Wilhelm, Steve, or Tom, if you need help with these documents.

Happy Holidays!
Doug McGregor
Environmental Engineering[attachment "Advanced_Diesel_owners_manual_US.pdf" deleted by Chris Nevers/AA/USEPA/US] [attachment "Application for Certification Diesel final_121907.ipz" deleted by Chris Nevers/AA/USEPA/US]

From:	Linc Wehrly
To:	Chris Nevers; Robert Peavyhouse; Arvon Mitcham
Subject:	Fw: BMW Diesel, Proposed SCR Plan, and Documents; Confidential
Date:	12/20/2007 09:02 AM
Attachments:	Advanced_Diesel_owners_manual_US.pdf Application for Certification Diesel final_121907.ipz

---

Here is the latest information from BMW on their SCR system. Please review and let me know what you think.

Thanks,
Linc

Manager, Light-Duty Vehicle Group
Compliance and Innovative Strategies Division
United States Environmental Protection Agency
(734) 214-4286
wehrly.linc@epa.gov

----- Forwarded by Linc Wehrly/AA/USEPA/US on 12/20/2007 09:00 AM -----

<Doug.McGregor@bmwna.com>
Sent by:
<Doug.McGregor@bmwna.com>

Received Date:
12/19/2007 04:45 PM
Transmission Date:
12/19/2007 04:45:44 PM

To	Vincent Mazaitis/AA/USEPA/US@EPA, David Good/AA/USEPA/US@EPA, Linc Wehrly/AA/USEPA/US@EPA, <jocain@arb.ca.gov>, <jjwong@arb.ca.gov>
cc	<Thomas.King@bmw.de>, <Wilhelm.Hall@bmwna.com>, <Stephen.Sinkez@bmwna.com>, <Thomas.Hofmann@bmwna.com>, <Dieter.Cramm@bmw.de>, <Detlef.Hiemesch@bmw.com>, <Andreas.Bruhn@bmw.de>, <Detmar.Nellessen@bmw.de>
Subject	BMW Diesel, Proposed SCR Plan, and Documents; Confidential

Colleagues:
Attached you will find two documents related to BMW's proposed SCR plan; one document an excerpt from the Certification Application explaining how the vehicle reducing agent delivery system and warning system works (change extension to .zip to open), and a supporting document which is an excerpt from the proposed Owner Manual supplement relating to diesel SCR. Please note that the development of the SCR system and supporting infrastructure is not finalized in all aspects, and some modifications are possible. In particular I would point out that the "Emergency Starts" provision is still under discussion and review. The Owner Manual and Cert App descriptions do not agree on this subject.
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I will send you a third file in a second e-mail; this one also is a zipped file (change the extension to .zip to open), an executable animation, with sound, showing what the customer will see and here when the defined low level stages are reached.

Please keep in mind that I will be on vacation starting tomorrow, through Jan. 2. You might try Wilhelm, Steve, or Tom, if you need help with these documents.

Happy Holidays!
Doug McGregor

Environmental Engineering Advanced Diesel owners manual US.pdf

Application for Certification Diesel final_121907.jpz

From: David Good
To: Linc Wehrly; Stephen Healy; Chris Nevers
Subject: Fw: BMW Diesels - 2009 FE Label mpg values
Date: 10/02/2008 04:17 PM
Attachments: notification self approval 335d X5 35d.pdf

FYI---(Projected sales from the cert preview (last spring) was Ex. 4 CBI and Ex. 4 CBI)

Regards
----- Forwarded by David Good/AA/USEPA/US on 10/02/2008 04:03 PM -----

<Thomas.Hofmann@bmwna.com>
Sent by:
<Thomas.Hofmann@bmwna.com>

To David Good/AA/USEPA/US@EPA
cc Vincent Mazaitis/AA/USEPA/US@EPA
Subject RE: BMW Diesels - What are the FE Label mpg values?

Received Date:
10/02/2008 12:20 PM
Transmission Date:
10/02/2008 12:20:13 PM

Hello Dave

Attached is our notification of self-approval for the diesels, including the support info and my calculation.
As mentioned in the text of the letter, we will put this info on Verify as soon as practical.
In case there are issues with Verify (or my ability to use it), this self-approval is helpful as a backup.

The paper original is in the mail to your attention.

Please feel free to contact me by e-mail or phone.

best regards,
Tom

-----Original Message-----
From: Good.David@epamail.epa.gov [mailto:Good.David@epamail.epa.gov]
Sent: Thursday, September 25, 2008 7:55 AM
To: Hofmann Thomas, ES-5-US-20
Cc: Mazaitis.Vincent@epamail.epa.gov
Subject: BMW Diesels - What are the FE Label mpg values?

Tom,

Please send me the FE Label values for the 2009 diesels (335d and the X5) when they are available.

Attached is an example FE label self approval letter, in case you need to notify EPA of the label values of these vehicles during the CFEIS/Verify shutdown. Verify should be up and running somewhere around October 7th.

Regards

(See attached file: Example mfr self approval FE Label letter.808.pdf)

notification self approval 335d X5 35d.pdf

BMW Group

October 1, 2008

Mr. Dave Good
Compliance and Innovative Strategies Division
US Environmental Protection Agency
2000 Traverwood Dr
Ann Arbor MI 48105

Re: Notification of Self-Approval of 2009MY BMW General Label Fuel Economy Values (2)

Dear Mr. Good:

In accordance with 40 CFR §600, we are notifying EPA of the Self-Approval of 2009MY General Fuel Economy Label Values for the following model types:

Engine	Model
M57D30TOP	335d
M57D30TOP	X5 xDrive35d

The calculation information is included in the following two attachments:

Attachment 1: 2009MY Model Type & General Label Data
Attachment 2: BMW Label Value calculation

This notification is being made because there is presently no means available for BMW to initiate electronic approval of these label values. We intend to submit this information using Verify as soon as practical.

Should you have any questions, please do not hesitate to contact Tom Hofmann of my staff at (201) 571-5195

Sincerely yours,

Wilhelm Hall
General Manager
Environmental Engineering

Headquarters
300 Chestnut Ridge Road
Woodcliff Lake, NJ 07675

Mailing Address
200 Chestnut Ridge Rd
Woodcliff Lake, NJ 07677

Telephone
(201) 571-5177

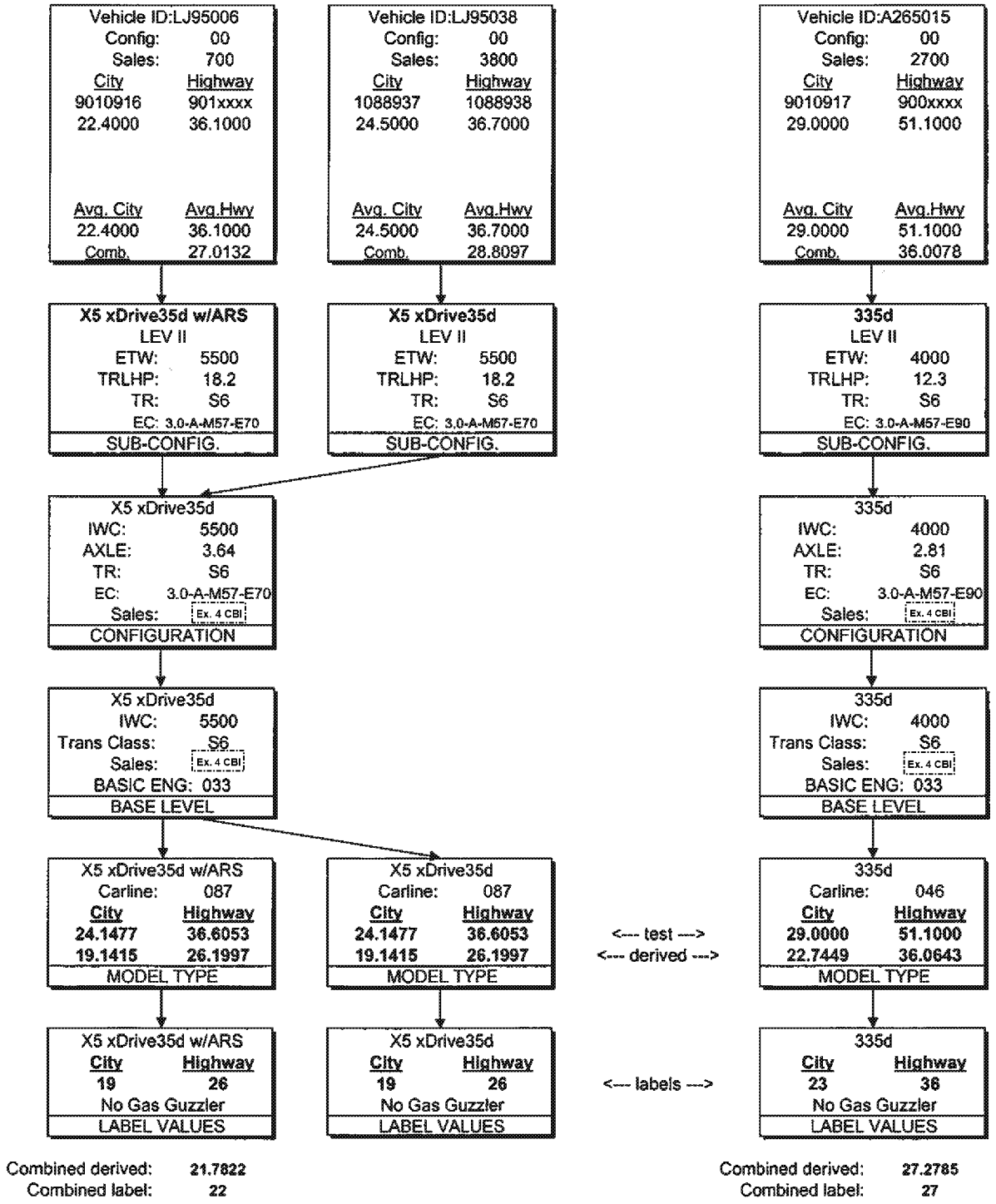
Facsimile
(201) 571-5479

BMW 2009MY - Model Type and General Fuel Economy Label Data - Diesel Models

Engine	Model Name	Label Values			Est. Ann. Fuel Cost	Engine Displ. / No. of Cyl.	Drive System	Trans	Comparable Class
		City	Highway	Combined					
M57D30TOP-E90	335d	23	36	27	2389	183 (3.0L) / 6	RWD	S6	Compact Cars
M57D30TOP-E70	X5 xDrive35d	19	26	22	2932	183 (3.0L) / 6	AWD	S6	Special Purpose SUV-4WD

ED_002825B_00000139-00002

BMW 2009MY - Label Value Calculations - Diesel Models



From: William Charmley
To: Byron Bunker; Robin Moran
Cc: Linc Wehrly
Subject: Fw: BMW's Diesel Intro Plans/Emission Control Technologies/EPA's Perspective and Manufacturer Guidance w/BMW-Ziwica/CISD/ASD
Date: 10/16/2006 08:53 AM
Signed by: CN=William Charmley/OU=AA/O=USEPA/C=US

Robin and Byron,

it look like this meeting with BMW will cover 3 topics, SCR guidance, diesel technology update/plans, and hyrdrogen.

do we have someone who should cover this?

thanks,
bill c.

----- Forwarded by William Charmley/AA/USEPA/US on 10/16/2006 08:51 AM -----

Calendar Entry
Meeting

Subject	BMW's Diesel Intro Plans/Emission Control Technologies/EPA's Perspective and Manufacturer Guidance w/BMW-Ziwica/CISD/ASD
Chair	Margo Oge/DC/USEPA/US
Sent By	Gladys Bryant-Akers
When	Starts: Tue 10/17/2006 01:00 PM Ends: Tue 10/17/2006 02:00 PM 1 hour
Where	Location: Ofc
Categorize	
Invitees	Required (to): Chet France/AA/USEPA/US@EPA, Janet Cohen/AA/USEPA/US@EPA, John Hannon/DC/USEPA/US@EPA, Karl Simon/DC/USEPA/US@EPA, Linc Wehrly/AA/USEPA/US@EPA, William Charmley/AA/USEPA/US@EPA

Optional (cc)	Bryan Wood-Thomas/DC/USEPA/US@EPA, Cassandra Wallace/DC/USEPA/US@EPA, Karen Orehowsky/DC/USEPA/US@EPA, Nanette Cooper/AA/USEPA/US@EPA

Description

This is to confirm the meeting arrangement we made this morning with Margo Oge for October 17, 2006 at 1:00 pm. We have been contacted by Linc Wehrly of your Ann Arbor staff, asking for a "high level" meeting with Margo Oge. The issues for discussion are BMW's Diesel introduction plans, emission control technologies applied as well as EPA's perspective and manufacturer guidance.

BMW participants will be:

Karl-Heinz Ziwica – VP Engineering US
Wilhelm Hall – GM Environmental Engineering

We also discussed the availability of a BMW 7 Series hydrogen ICE vehicle in Washington DC for a test drive for Margo Oge and other EPA representatives today and tomorrow morning. To make arrangements please contact Liz Pfeiffer at 201-803-7806.

Have a great day!

Wilhelm Hall
Environmental Engineering
BMW Group
201-573-2177 (phone)
201-782-0764 (fax)

Your Notes

From: Karl Simon
To: Linc Wehrly
Subject: Fw: Diesel Cleans Up Its Act for an Encore (New York Times)
Date: 05/24/2008 11:03 PM

---

would like to know more about what Honda is up to. Should they come in and talk to us?

----- Forwarded by Karl Simon/DC/USEPA/US on 05/24/2008 11:03 PM -----

Justin Cohen/DC/USEPA/US

05/19/2008 10:50 AM

To: Karl Simon/DC/USEPA/US@EPA, Linc Wehrly/AA/USEPA/US@EPA

cc:

Subject: Diesel Cleans Up Its Act for an Encore (New York Times)

Diesel Cleans Up Its Act for an Encore (*New York Times*)

May 18, 2008 Sunday
Late Edition - Final
SECTION: Section AU; Column 0; Automobiles; Pg. 1
By LAWRENCE ULRICH
AFTER years in the automotive wilderness, largely exiled to the smoky borders of truck stops, diesel is coming home. Americans may not recognize its freshly scrubbed face.

A 19th-century invention by Rudolf Diesel, the diesel engine has always been known for outstanding fuel efficiency, with better mileage (by 25 percent to 40 percent) than gasoline. But the kerosenelike fuel and the engines that burn it were dirty, noisy, dawdling and even deadly, linked to increased risk of cancer and respiratory disease.

That has all changed, in part because of cleaner-burning fuel -- its 2006 rollout had been mandated in 2000 by the Clinton administration -- that has 97 percent less of the sulfur responsible for diesel engines' sooty particulates.

The low-sulfur fuel, hailed by the Environmental Protection Agency as a historic advance, has opened the door to sophisticated emissions controls that let diesel engines meet the strict pollution standards of California. Those rules, the world's most stringent by far, require 2009-model diesels to be as green as gasoline or even hybrid models.

In the meantime, advances like turbocharging and high-pressure fuel injection have transformed diesel cars from soot-belching slowpokes with a telltale clickety-clack

sound to smooth, tidy and powerful machines that many Americans would have a hard time distinguishing from gasoline models.

With technical and environmental hurdles overcome -- and facing tougher mileage standards that call for a 35 m.p.g. average by 2020 -- automakers are rushing in with clean-diesel cars.

Two sets of emissions rules -- a very strict set for California and four other states, another for the remaining 45 states -- had kept most diesel cars out of the United States until now. In contrast, fuel-sipping diesels were embraced in Europe, where they account for half of passenger car sales.

But starting with the 2009 model year, several automakers have developed diesels clean enough to pass muster in all states, including -- at last -- the big California and New York markets.

Volkswagen says it will be the first to market, with Jetta sedans and wagons arriving in August. Mercedes will follow in October with diesel versions of its GL-, ML- and R-Class sport crossover utilities. BMW is preparing a mighty twin-turbo 6-cylinder diesel for sale this fall in the 335d sedan and X5 35d sport wagon.

Audi's Q7 3.0 TDI utility wagon goes on sale early next year. That automaker has been vividly demonstrating modern diesel's one-two punch by dominating recent runnings of the 24 Hours of Le Mans with its R10 racers, which are not only fast, but are the quietest, cleanest and most fuel-efficient cars in the field.

The new diesel disciples are not just the usual German suspects. Three Japanese companies -- Honda, Nissan and Subaru -- are ramping up the technology. Long known for efficient gasoline engines, Honda will offer its first American diesel next year, as an option on the Acura TSX sedan. A similar diesel Honda from Europe that I recently tested achieved a wallet-friendly 53 m.p.g. on the highway.

Honda also plans to offer a diesel V-6 around 2010 that may find its way into the Acura TL sedan, the Acura MDX utility or the Honda Odyssey minivan.

Nissan will install a Renault-designed diesel in its Maxima sedan for 2010; Subaru will counter with a diesel the same year, probably in a Legacy sedan or Outback wagon. A Jeep Grand Cherokee diesel arrives in 2009, and General Motors, Ford and Dodge all plan 50-state diesel versions of their light-duty pickup trucks in 2009 or 2010.

The situation seems to defy the conventional wisdom that saw diesel cars heading to history's scrapyard. As late as 1982, Mercedes relied on diesels for 80 percent of its American sales. But aside from their strong presence in heavy-duty trucks, diesels have been relegated to a small but loyal fringe.

The diesel revival takes its cues from Europe, where the engines power everything from tiny microcars to luxurious autobahn cruisers. Strikingly, hybrids have grabbed less than 1 percent of the European market. Yet automakers acknowledge that

mending diesel's foul reputation in the United States remains an enormous challenge.

Johan de Nysschen, executive vice president at Audi of America, estimates that diesels might eventually account for 15 percent of Audis sold here. But first, he said, Americans must learn that modern diesels are not only clean and fun to drive, but more efficient than hybrids for many consumers.

"In stop-and-go city driving like Manhattan, the hybrid is a good solution," Mr. de Nysschen said at the New York auto show this spring. "But we need to convey the message that hybrids are not the definitive solution."

Under the hood, there is little to distinguish diesel engines from those that burn gasoline. Both use pistons, valves and electronic fuel injection, but the differences go beyond the form of petroleum that goes in the tank. Today's gasoline engines ignite their fuel with a high-voltage spark; diesels, also known as compression-ignition engines, light the fire with the heat generated by squeezing the air in the cylinders to a far greater degree. This is one of their main advantages: a compression ratio of nearly 20:1, compared with a maximum of about 12:1 for gasoline. This means that diesel engines extract more power from their fuel.

The compression of a gasoline engine can't simply be cranked up higher -- the gasoline would burn erratically. Diesel fuel, a petroleum distillate, will tolerate those high cylinder pressures.

Another reason diesels get better mileage: the fuel contains 12 percent more energy a gallon.

Largely because they burn less fuel, the engines produce up to a third less carbon dioxide than gasoline models -- compelling some environmentalists to reverse their longstanding opposition. Diesel's drawback had been high levels of smog-forming nitrogen oxides and carcinogenic soot.

The greening of diesel involves the new ultra-low-sulfur fuel, cleaner-burning engines and a suite of emissions equipment.

Filters trap sooty particulates while catalysts use ammonia to convert nitrogen oxides into harmless nitrogen and water in the exhaust.

"There's a little chemical processing plant in there, and some pretty amazing chemistry," said Thomas Hinman, vice president for diesel technologies at Corning, a leading supplier of cellular ceramic filters for diesel engines.

For many models, including those from BMW, Mercedes and Audi, there is a catch: their S.U.V.'s will carry six- to eight-gallon tanks of urea, an ammonia-rich solution injected into the exhaust to neutralize smog-forming pollution.

And to ensure that consumers don't let the urea run dry, Mercedes is installing a dashboard alert that warns consumers when the urea level drops below one gallon.

From there, owners will be on a countdown until the tank is topped off: the cars will start just 20 more times before they cannot be operated. That countdown is a concession to federal regulators, who demanded technical assurances that these groundbreaking systems would work continuously to keep emissions below legal levels.

The smaller 4-cylinder VW and Honda diesels, in contrast, meet 50-state standards without requiring urea tanks that would have to be replenished every 12,000 miles or so.

Yet as automakers dress up diesel for its coming-out party, one unexpected development is threatening to spoil it. For decades, diesel fuel cost less than gasoline, amplifying the advantage of its higher mileage. But over the last year, diesel has soared to a record average of $4.33 a gallon nationwide, compared with $3.72 for regular gasoline.

George Peterson, vice president of the AutoPacific consulting firm, said that diesel cars traditionally offset their higher prices through both fuel savings and higher resale value. But higher-price diesel fuel puts both those financial incentives at risk.

"Given the price of diesel, you can't get the cars to pay you back, so it doesn't make as much sense," he said.

While diesel currently costs 16 percent more than gasoline, that premium is more than offset by mileage gains of 25 to 40 percent. Consumers would still save money with a diesel car, and they would fill it less frequently.

The Mercedes E320 diesel sedan, for example, can cover roughly 700 highway miles on a tank. Clean-diesel models may also become eligible for federal tax credits of up to $3,400.

Consumers will also pay more for diesel technology, with manufacturers estimating that diesel engines and emissions gear add from $1,500 to $3,500 to their costs for each car. Mercedes is charging only $1,000 extra for its diesel models, compared with the equivalent gasoline versions, though some analysts suggest that Mercedes is partly subsidizing diesels to win converts. Steve Keyes, a spokesman for Volkswagen, said the Jetta diesel sedan and sport wagon would cost less than $2,000 over the gas versions, a price that he said would cover the additional costs.

Automakers also note major differences between European and American markets. European nations have long subsidized diesel by taxing gasoline at higher rates. Additional taxes on large engines also drove consumers into small but relatively powerful diesels.

Finally, diesel isn't as widely available as gasoline, though 42 percent of service stations nationwide offer the fuel, according to the Diesel Technology Forum, a trade group.

Many analysts expect diesels to blow past hybrids in popularity. J. D. Power & Associates estimates that diesel will explode from its 3 percent market share to 11.5 percent by 2015, exceeding hybrids at 7 percent. Continued high diesel prices could force an adjustment in that projection.

"People will definitely get sticker shock at over $4 a gallon," said Mike Omotoso, the powertrain analyst at J. D. Power. "But we see the huge price gap between gasoline and diesel as a relatively short-term spike."

And as the industry hedges its bets on which fuels and technologies -- including gas-electric hybrids, diesels, plug-in hybrids and ethanol -- will catch on, some automakers are publicly at odds over diesel's chances.

General Motors' advanced propulsion strategy is to develop a full range of alternatives to gasoline, including hybrids, ethanol, hydrogen and its Chevrolet Volt plug-in electric car. As part of that strategy, G.M. is developing new diesels, including a 4.5-liter V-8 that it will offer on 2010 models of the Chevy Silverado and GMC Sierra pickups.

Yet while GM is already selling 1.3 million diesel models a year worldwide -- and is readying a diesel-powered Cadillac CTS for Europe -- it sees diesel's American future in pickups and S.U.V.s, not in affordable cars.

G.M. engineers say diesel can raise the mileage of a trailer-towing truck by 70 percent, making it a smart buy. But, they say, for a gasoline car that already gets 35 m.p.g., diesel's gains don't justify the added costs.

Some automakers prefer to squeeze higher mileage from gasoline-burning engines without the expense of diesel engines and emissions gear. "There's no question that we can get to the 35 m.p.g. standard with gasoline," said John Krafcik, Hyundai's vice president for product development.

As technologies vie for supremacy, the diesel-versus-hybrid debate has been especially fierce. But diesel devotees don't have to be hybrid haters, or vice versa. With petroleum expected to dominate the automotive landscape for several more decades, the hybrids and diesels that burn it are central technologies in the transition to alternative fuels and the drive against global warming.

As if to prove the point, some automakers are marrying diesel and hybrid for the best of both worlds. Mercedes has shown a diesel-hybrid prototype of its big S-Class sedan that the company estimates would achieve 44 m.p.g. VW has shown a 69 m.p.g. diesel-hybrid Golf, though Mr. Keyes said the technology was years away from production.

Johannes-Joerg Rueger, vice president for diesel engineering at Robert Bosch, a major manufacturer of diesel systems, said: "If you're looking at the carbon dioxide and mileage goals that have to be met, it doesn't really matter whether it's diesel or hybrid. Let the consumer choose."

Pros Mileage is 25 percent to 40 percent higher than gasoline. Carbon dioxide emissions are lower. Highway mileage and performance are better than hybrids'. High torque is well suited to large pickups and S.U.V.'s. Extended driving range means less frequent fill-ups. Engines are robust, often lasting 300,000 miles or more. Cons Engines and emissions systems can be costly. Diesel fuel currently costs far more than gasoline. Like gasoline, diesel is a petroleum product from foreign suppliers. Though outdated, image as a dirty technology lingers. Only 42 percent of American filling stations have diesel pumps. Some companies' latest emissions controls require refills of urea.

Justin Cohen
U.S. Environmental Protection Agency
Office of Transportation and Air Quality
phone: (202) 564-1643
fax: (202) 564-1686

From: Vincent Mazaitis
To: Mary Seminitis
Cc: Linc Wehrly
Subject: Fw: meeting requests
Date: 06/06/2006 09:45 AM

Good morning Mary,

I spoke with Linc Wehrly about the BMW meetings they requested and he gave me a list of people to invite. As indicated below the meetings should take a total of about 4 hours. It may be best to schedule the three hour Diesel meeting first, so if anyone from ASD wants to leave following that discussion they may do so. A list of EPA invitees include the following: (Robin Moran may have others to invite or designate/s)

Karl Simon (if available)
Dan Harrison
Robin Moran
Linc Wehrly
Dave Good
Steve Healy
Vince Mazaitis

The BMW representatives from Germany will be here the entire week. Their preferences are Monday or Tuesday. Dan has a Certification Team meeting on Tuesdays @ 10:00 a.m. I'm not sure if he wants to cancel that, as more than half of the list is at that meeting. If those dates do not work, we can propose another and let them respond. Please let me know when you get a tentative date and I'll check with BMW or you can check with Tom Hofmann. If there is anything I can or need to do please let me know.

Thanks Mary,

Vince Mazaitis

----- Forwarded by Vincent Mazaitis/AA/USEPA/US on 06/06/2006 09:09 AM -----

Linc Wehrly/AA/USEPA/US
EPA-OAR,OTAQ,CISD

To Vincent Mazaitis/AA/USEPA/US@EPA
cc David Good/AA/USEPA/US@EPA, Healy.Stephen@epamail.epa.gov
Subject Re: Fw: meeting requests

Received Date: 06/02/2006 03:16 PM
Transmission Date: 06/02/2006 03:16:16 PM

Vince,

Could you work with Mary Seminitis to schedule this meeting. We want to invite Dave, Steve, and Dan. We should also let Karl and Robin Moran (ASD) know about the meeting and let them decide if they want to participate.

Thanks,

Linc

Linc Wehrly
USEPA
Compliance and Innovative Strategies Division
(734) 214-4286
wehrly.linc@epa.gov
▼ Vincent Mazaitis/AA/USEPA/US

Vincent Mazaitis/AA/USEPA/US
Other-OAR,OTAQ,CISD
Sent by: Vincent Mazaitis

To David Good/AA/USEPA/US@EPA
cc Linc Wehrly/AA/USEPA/US@EPA, Healy.Stephen@epamail.epa.gov@EPA
Subject Fw: meeting requests

Received Date:
06/02/2006 01:50 PM
Transmission Date:
06/02/2006 01:50:01 PM

Dave,

Please take a look and we will discuss.

Thanks,

Vince Mazaitis
----- Forwarded by Vincent Mazaitis/AA/USEPA/US on 06/02/2006 01:47 PM -----

Thomas.Hofmann@bmwna.com
Sent by:
Thomas.Hofmann@bmwna.com

To Vincent Mazaitis/AA/USEPA/US@EPA
cc
Subject meeting requests

Received Date:
06/01/2006 02:19 PM
Transmission Date:
06/01/2006 02:19:32 PM

Hello Vince

BMW would like to arrange two meetings with EPA during the last week of July.

The first meeting would be to discuss certification-related issues for our future diesel LDV/LDTs.
We would like to present our engine, exhaust after-treatment and SCR technologies and discuss the relevant certification-related issues.
Five colleagues from Germany will participate along with one or two folks from New Jersey.
Given the breadth of this topic, we expect this will take approximately 3 hours.

The second meeting would be to discuss our Intelligent Generator Control.
This system has the potential to improve vehicle efficiency by using a different control strategy for the engine-driven alternator.
Part of the strategy includes using the generator to put stored energy back into the power-train.
We expect this meeting will take an hour or so.

Our first preference would be to have both of these meetings on Tuesday July 25th.

Thanks and best regards,

Tom Hofmann
Emissions and Fuel Economy Certification
BMW of North America, LLC
201-573-2195

From: Martin Reineman
To: David Good; Linc Wehrly; Stephen Healy
Subject: Fw: Meeting with BMW--Wolgang Thiel and Wilhelm Hall
Date: 09/05/2006 09:59 AM
Attachments: Proposed AGENDA-BMW-EPA Visit 9-6-06.doc

FYI. I'm not excited about a 6 hour meeting but it looks like someone from CISD should be there, or part of the time. Do we have anything new to add wrt to hybrid testing?

Linc, **Ex. 5 Deliberative Process (DP)**

Ex. 5 Deliberative Process (DP)

----- Forwarded by Martin Reineman/AA/USEPA/US on 09/05/2006 09:39 AM -----

Calendar Entry
Meeting

Subject	Meeting with BMW--Wolgang Thiel and Wilhelm Hall
Chair	Maria Peralta/AA/USEPA/US
When	Starts: Wed 09/06/2006 10:30 AM Ends: Wed 09/06/2006 04:30 PM 6 hours
Where	Location: Reserved: The following have been requested Rooms: AA-211 (LOD)/AA-OTAQ-LAB@EPA
Invited	The following invitees have been invited Required: Antonio Fernandez/AA/USEPA/US@EPA, Don Paulsell/AA/USEPA/US@EPA, Linc Wehrly/AA/USEPA/US@EPA, Martin

Invitees	(to)	Reineman/AA/USEPA/US@EPA, Matt Spears/AA/USEPA/US@EPA, Thomas Schrodt/AA/USEPA/US@EPA
	Optional (cc)	Michael Sabourin/AA/USEPA/US@EPA

Categorize	

Description

Proposed AGENDA-BMW-EPA Visit 9-6-06.doc

Your Notes

From: Linc Wehrly
To: Christine Mikolajczyk
Subject: Highlights
Date: 06/29/2009 04:29 PM

Certification and Compliance Highlights

- Issued Tier 2 bin 5 certificates to Audi, BMW, Mercedes, and VW for new clean technology diesel vehicles utilizing diesel particulate filters and selective catalyst reduction (SCR) NOx control systems. The VW Jetta TDI diesel vehicle uses a NOx adsorber to control NOx emissions in lieu of a SCR system.
- Certified two electric vehicles - BMW electric Mini and Tesla Roadster.
- Began development of new policy for establishing fuel economy labels and test procedures for plug-in hybrids which will be ready in 2010.
- Successfully certified and confirmatory tested on E85 test fuel, FFVs from Chrysler, GM, Ford, Nissan, and Toyota.

Linc Wehrly
Manager, Light-Duty Vehicle Group
Compliance and Innovative Strategies Division
United States Environmental Protection Agency
(734) 214-4286
wehrly.linc@epa.gov

From: David Good
To: David Vanamburg
Cc: David Bochenek; Maria Peralta; Linc Wehrly; Stephen Healy; Martin Reineman; Russell Banush; Vincent Mazaitis; Robert Peavyhouse; Chris Nevers; Emily Chen; Tom Anderson
Subject: Hybrids, Fuel cell vehicle & diesel vehicle testing for 2008
Date: 02/19/2008 01:27 PM

Dave,

Here is our latest test projections for fuel cell and diesel test vehicles:

Diesels:

Date	Mfr	Vehicle	Comments
3/15/08	Mercedes	3.0L E320 Bluetech2	Diesel with urea dosing; Mercedes has 4 diesel vehicles (E320/R320/ML320/RL320 CDI carlines). CISD will likely test one or two of the Mercedes vehicles
3/20/08	VW	2.0L Jetta TDI	Diesel with urea dosing.
4/7/08	Cummins	6.7L Ram 2500/3500	Diesel - Heavy-duty Chassis testing (without urea) - mostly carryover so CISD may waive testing
June/July 2008	BMW	X5	Diesel with urea dosing.
June/July 2008	BMW	3-Series	Diesel with urea dosing.
9/22/08	Chrysler	3.0L Grand Cherokee	Diesel with urea dosing. Similar to Mercedes.
10/1/08	V W	3.0L Touerag	Diesel (without urea)
1/29/09	Honda	2.2L Acura TSX	Diesel (without urea)

Fuel Cell Vehicles:

TBD	GM	Equinox	Pending EPA lab changes to be able to test
4/1/08	Honda	FCX	
Nov/Dec 2008	Toyota	FCHV	Toyota will schedule 1-2 meetings prior to EPA testing. Can't test in Toyota's Ann Arbor Lab.

Hybrids:

We expect to test 5-10 Hybrids throughout the year, including a Chrysler Durango (March); a new 3.6L Saturn Vue; a new Ford Escape, a Porsche Cayenne, and possibly a BMW hybrid.

From:	David Good
To:	Linc Wehrly
Cc:	Stephen Healy; Chris Nevers; Robert Peavyhouse; Martin Reineman; Antonio Fernandez; David Good; Ben Haynes; Jeff Alson
Subject:	Hybrids, fuel cell vehs, diesels, new technology vehicles - spread sheet attached
Date:	02/12/2008 04:36 PM
Attachments:	Hybrids1_2-11-08..xls

Linc & all,

Attached is my CONFIDENTIAL spreadsheet with future product plans, projected sales, etc. Blue text is the current (2008) model year. Red text is 2009 or future model years (mostly from cert preview meetings with mfrs).

We still haven't had 2009 MY cert preview meetings with VW, Toyota, BMW, Porsche yet. (I think Porsche has a hybrid coming in 2009MY). Most of the other manufacturers are included.

Regards

Hybrids1_2-11-08..xls

Meeting Update Request:

Calendar Entry

Subject:	BMW Diesel SCR status
When	
Date:	Monday 02/11/2008
Time:	10:00 AM - 12:00 PM (2 hours)
Chair:	Chris Nevers
Invitees	
Required (to):	Arvon Mitcham/AA/USEPA/US@EPA; Linc Wehrly/AA/USEPA/US@EPA; Robert Peavyhouse/AA/USEPA/US@EPA
Optional (cc):	Vincent Mazaitis/AA/USEPA/US@EPA
Where	
Location:	AA-C34/AA-OTAQ-OFFICE@EPA

Agenda

Is there an updated BMW SCR plan, the Dec. version appears to be a draft with comments turned on?

EPA on reducing agent availability and accessibility:
Agreement or plan for reagent at some other commercial entity, other than dealer and back up plan.

EPA on tamper resistance:
Plans to make "simple" tampers less likely, for example unplugging the NOx sensor

EPA request for more detail on how the incorrect reagent identification is linked to refill events and how refills are determined

EPA request for more detail on urea freeze times and volumes associated with freeze events

EPA request for an emergency start explanation

Call-in number, US: 866-811-8978
Call-in number, Europe: 203-310-1891
Passcode: Ex. 6 Personal Privacy (PP)
My mobile phone: Ex. 6 Personal Privacy (PP)

From: Linc Wehrly
To: Karl Simon
Subject: Mercedes & BMW Certificates
Date: 11/09/2009 02:12 PM

All of the BMW and Mercedes diesel SCR certificates were issued on September 10, 2009.

There was a total of four certificates:

Cert 1 - Mercedes ML 350 Blutec (SUV) & R 350 Blutec (SUV)
Cert 2 - Mercedes GL 350 Blutec (SUV)
Cert 3 - BMW X5d (SUV)
Cert 4 - BMW 335d (Sedan)

No 2010 certificates for Mercedes E350 Bluetec or VW Touareg/Audi Q7 yet.

Linc Wehrly
Manager, Light-Duty Vehicle Group
Compliance and Innovative Strategies Division
United States Environmental Protection Agency
(734) 214-4286
wehrly.linc@epa.gov

From: Justin Cohen
To: Linc Wehrly
Cc: Karl Simon
Subject: Mercedes diesels get first diesel tax credits (Detroit News)
Date: 09/17/2008 09:49 AM

Hi Linc,

Remember that MB BlueTEC press release Pat asked us to provide a quote for? They gave Margo a heads-up it was going out yesterday, and I see it's already getting some play in the Detroit News.

http://www.detnews.com/apps/pbcs.dll/article?AID=/20080916/AUTO01/809160457/1148

Mercedes diesels get first diesel tax credits

David Shepardson / Detroit News Washington Bureau

WASHINGTON -- Mercedes-Benz has won the first consumer tax credits for diesel vehicles, winning credits for three models that go on sale Oct. 1

The Internal Revenue Service awarded the Daimler AG unit credits for the ML 320 BlueTEC, R 320 BlueTEC, and GL 320 BlueTEC.

The Environmental Protection Agency certified to the IRS that the Mercedes-Benz BlueTEC vehicles meet new 50-state strict emission requirements, a status previously granted to hybrid-electric natural gas, and propane fueled vehicles under the Qualified Alternative Motor Vehicle Credit, passed by Congress in 2005.

"Diesel passenger vehicles are one important piece of the future technology puzzle," said Margo Oge, Director of EPA's Office of Transportation and Air Quality. "Clean diesel is a viable, efficient technology to help improve our air quality and energy security."

Buyers of the ML 320 BlueTEC can a $900 tax credit; the purchasers of the R320 BlueTEC can get a $1,550 tax credit, and the GL 320 BlueTEC qualifies for up to $1,800 tax credit depending on their individual tax status.

The vehicles, which are the first diesel passenger vehicles to meet all 50 state emissions requirements and get up to 600 miles to the tank.

J.D. Power and Associates has forecast that diesels will account for 14 percent of the U.S. auto market in 2017, up from 3 percent today, driven by high fuel price and strict tailpipe emissions limit.

In Europe, diesels account for about half of all auto sales, in large part because of higher taxes on traditional gas-powered vehicles.

But diesels face significant hurdles in the United States. There is far less refining capacity and diesel fuel averages $4.06 a gallon, up $1.14 over the last year, according to the Energy Information Agency. Unleaded gasoline prices average $3.64 a gallon.

Although they are more costly to produce, diesel engines get about 25 percent better mileage than traditional gas-powered engines. Automakers see diesel as a key part in meeting a new federal requirement that will boost fleetwide fuel efficiency by 40 percent to 35 miles per gallon by 2020.

Volkswagen AG, BMW AG, Honda Motor Co, and Nissan Motor Co. are bringing new diesel vehicles to market in the United States.

BMW will market a diesel X5 SUV and a 3 Series sedan starting next month. Acura will begin selling a diesel version of its new TSX in 2010. Nissan will bring a diesel version of its redesigned Maxima to market in 2010.

Volkswagen of America as introduced diesel versions of the Jetta later this year -- a sportwagon and sedan. Chrysler LLC is introducing a new Jeep Grand Cherokee using the Mercedes Bluetech engine next year. It plans to unveil a diesel Dodge Ram and two-mode hybrid diesel Ram in the next few years.

You can reach David Shepardson at (202) 662 - 8735 or dshepardson@detnews.com.

Justin Cohen
U.S. Environmental Protection Agency
Office of Transportation and Air Quality
phone: (202) 564-1643
fax: (202) 564-1686

Update: Mtg w/BMW representative from Germany
Meeting #1: Discuss certification-related issues for our future diesel LDV/LDTs.
Meeting #2: Discuss BMW's Intelligent Generator Control.

Tue 07/25/2006 12:30 PM - 4:30 PM

Attendance is **required** for Linc Wehrly

Chair: Mary Seminitis/AA/USEPA/US

Location: C34

Required:	Cassandra Wallace/DC/USEPA/US@EPA, Dan Harrison/AA/USEPA/US@EPA, David Good/AA/USEPA/US@EPA, Janet Cohen/AA/USEPA/US@EPA, Karl Simon/DC/USEPA/US@EPA, Linc Wehrly/AA/USEPA/US@EPA, Robin

Description

Personal Notes

Mtg w/BMW representative from Germany
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Meeting #2: Discuss BMW's Intelligent Generator Control.

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Description

Personal Notes

From: Chris Nevers
To: Linc Wehrly
Subject: nnto: 2 BMW diesel cert apps are now in queue. These were the TG's ARB was interested in
Date: 03/24/2010 03:56 PM

From:	David Good
To:	Ed Nam
Cc:	Antonio Fernandez; Ben Ellies; Linc Wehrly; Karl Simon; Jeff Alson
Subject:	Partially updated spreadsheet - new technology vehs, HEVs, diesels, fuel cell vehicles, etc
Date:	06/19/2008 03:34 PM
Attachments:	Hybrids1_5-16-08.xls

Ed,

Here's my spreadsheet. I haven't had time to add in the 2009 model year certification plans for Toyota, Nissan, Volvo, BMW, Chrysler. It's up to date for 2009 VW diesel, Mercedes diesel, 2009 Cummins diesel, Honda Fuel cell veh.

It has CONFIDENTIAL info, so please don't forward it.

Regards

Hybrids1_5-16-08.xls

From: Robin Moran
To: Johnson, Stuart
Cc: Linc Wehrly
Subject: RE: Automotive News: BMW won't push diesels in U.S.
Date: 11/27/2006 10:16 AM

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thanks Stuart, I know Margo's met with him several times before.

▼ "Johnson, Stuart" <Stuart.Johnson@vw.com>

"Johnson, Stuart"
<Stuart.Johnson@vw.com>
Sent by: "Johnson, Stuart"
<Stuart.Johnson@vw.com>

To Robin Moran/AA/USEPA/US@EPA
cc Linc Wehrly/AA/USEPA/US@EPA
Subject RE: Automotive News: BMW won't push diesels in U.S.

Received Date:
11/27/2006 08:27 AM
Transmission Date:
11/27/2006 08:27:15 AM

Hello Robin and Linc:

I forgot that Mr. David Geanacopoulis, Director of our Washington office, will also attend the Margo meeting with us.

Best Regards,

Stuart

-----Original Message-----
From: Moran.Robin@epamail.epa.gov
[mailto:Moran.Robin@epamail.epa.gov]
Sent: Friday, November 24, 2006 8:38 AM
To: Johnson, Stuart
Cc: Wehrly.Linc@epamail.epa.gov
Subject: Fw: Automotive News: BMW won't push diesels in U.S.

Hi Stuart, so is VW officially going with the Bluetech name too? What
can you tell me about the Nov. 28 announcement mentioned in this article?

Thanks for the agenda and participants. From EPA's side, besides Margo,
I expect:

Chet France, Director, Assessment & Standards Division Karl Simon, Acting Director, Certification & Innovative Programs Division William Charmley, Deputy Director, ASD Robin Moran, Center Director, Light-Duty
Onroad Center, ASD Linc Wehrly, Engineer, CISD Charles Schenk, Engineer,
Heavy-duty Onroad Center, ASD Antonio Fernandez, Engineer, Light-Duty Onroad Center, ASD

Hope you had a nice Thanksgiving.

Robin Moran
Director, Light-Duty Onroad Center
Assessment and Standards Division
U.S. EPA, Office of Transportation and Air Quality 2000 Traverwood Dr.
Ann Arbor, MI 48105
moran.robin@epa.gov
(734) 214-4781 (phone)
(734) 214-4939 (fax)

----- Forwarded by Robin Moran/AA/USEPA/US on 11/24/2006 08:30 AM ---
--

Byron
Bunker/AA/USEPA/
US
To
EPA-OAR,OTAQ,ASD
Sent by: Byron
Bunker
Received Date:
11/24/2006 06:38
AM
Transmission
Date:
11/24/2006
06:38:45
AM

Robin Moran/AA/USEPA/US@EPA,
Linc
Wehrly/AA/USEPA/US@EPA,
Charles
Schenk/AA/USEPA/US@EPA,
William
Charmley/AA/USEPA/US@EPA,
Jeff
Alson/AA/USEPA/US@EPA
cc
Subject
Automotive News: BMW won't
push
diesels in
U.S.

BMW won't push diesels in U.S.

Reuters | 3:20 pm, November 22, 2006

FRANKFURT -- BMW will not join forces with German carmakers Mercedes-Benz, Volkswagen and Audi to market clean diesels in the United States under the Bluetec name.

While Volkswagen and Mercedes already sell diesels in the U.S. market, BMW has no plans to do so any time soon and declines to use the Bluetec name, currently being used to help sell Mercedes-Benz E320s that run on ultra low sulphur diesel in the U.S.

The world's biggest premium carmaker, a fierce rival of DaimlerChrysler's luxury Mercedes brand, first wants to develop a urea-based technology to reduce nitrogen oxides before considering a sustained entry into the U.S. diesel market.

"We are in the process of thinking of a name that is different from Bluetec," a spokesman for BMW said on Wednesday.

Helped by diesel fuel subsidies, diesels make up around half of the western European car market but traditionally they have been a tough sell for passenger cars in the U.S.

Widespread perceptions of diesels as dirty and loud, regulatory hurdles and diesels' extra expense -- they cost around $2,000 more than petrol engines -- have limited their appeal in the past.

But last month's advent of diesel fuel in the U.S. with a low sulphur content of just 15 parts per million has opened a window for carmakers to highlight diesel's far better fuel economy and robust towing power.

Diesels typically get around 30 percent better mileage than petrol engines.

Volkswagen, Audi and Mercedes consequently want to push diesels under the Bluetec name as an alternative technology to counter the success of
Toyota's hybrids.

"Three brands have more power," a Volkswagen spokesman said on Wednesday, adding Mercedes' sister brand Chrysler also would join the alliance at a later date.

A formal announcement was due on Nov. 28 ahead of the Los Angeles car show.

Developed by Mercedes-Benz and diesel injection system specialist Bosch,
Bluetec with AdBlue lets cars meet the stringent U.S. emissions norm, Bin 5, which goes into effect in 2009.

Due in 2008, the AdBlue system uses urea-based additives to cut nitrogen
oxide emissions and thus meet clean air rules in all 50 U.S. states.

****
Byron Bunker
Center Director - Heavy-Duty Onroad Center Assessment and Standards Division Office of Transportation and Air Quality US Environmental Protection Agency 2000 Traverwood Drive Ann Arbor, MI 48105
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e-mail: bunker.byron@epa.gov
****

From: Johnson, Stuart
To: Robin Moran/AA/USEPA/US@EPA
Cc: Linc Wehrly/AA/USEPA/US@EPA
Subject: RE: Automotive News: BMW won't push diesels in U.S.
Date: 11/27/2006 08:30 AM

Hello Robin and Linc:

I forgot that Mr. David Geanacopoulis, Director of our Washington office, will also attend the Margo meeting with us.

Best Regards,

Stuart

-----Original Message-----
From: Moran.Robin@epamail.epa.gov [mailto:Moran.Robin@epamail.epa.gov]
Sent: Friday, November 24, 2006 8:38 AM
To: Johnson, Stuart
Cc: Wehrly.Linc@epamail.epa.gov
Subject: Fw: Automotive News: BMW won't push diesels in U.S.

Hi Stuart, so is VW officially going with the Bluetech name too? What can you tell me about the Nov. 28 announcement mentioned in this article?

Thanks for the agenda and participants. From EPA's side, besides Margo, I expect:

Chet France, Director, Assessment & Standards Division Karl Simon, Acting Director, Certification & Innovative Programs Division William Charmley, Deputy Director, ASD Robin Moran, Center Director, Light-Duty Onroad Center, ASD Linc Wehrly, Engineer, CISD Charles Schenk, Engineer, Heavy-duty Onroad Center, ASD Antonio Fernandez, Engineer, Light-Duty Onroad Center, ASD

Hope you had a nice Thanksgiving.

Robin Moran
Director, Light-Duty Onroad Center
Assessment and Standards Division
U.S. EPA, Office of Transportation and Air Quality 2000 Traverwood Dr.
Ann Arbor, MI 48105
moran.robin@epa.gov
(734) 214-4781 (phone)
(734) 214-4939 (fax)

----- Forwarded by Robin Moran/AA/USEPA/US on 11/24/2006 08:30 AM -----

Byron Bunker/AA/USEPA/US EPA-OAR,OTAQ,ASD Sent by: Byron Bunker Received Date: 11/24/2006 06:38 AM Transmission Date: 11/24/2006 06:38:45 AM	To: Robin Moran/AA/USEPA/US@EPA, Linc Wehrly/AA/USEPA/US@EPA, Charles Schenk/AA/USEPA/US@EPA, William Charmley/AA/USEPA/US@EPA, Jeff Alson/AA/USEPA/US@EPA cc: Subject: Automotive News: BMW won't push diesels in U.S.

BMW won't push diesels in U.S.

Reuters | 3:20 pm, November 22, 2006

FRANKFURT -- BMW will not join forces with German carmakers Mercedes-Benz, Volkswagen and Audi to market clean diesels in the United States under the Bluetec name.

While Volkswagen and Mercedes already sell diesels in the U.S. market, BMW has no plans to do so any time soon and declines to use the Bluetec name, currently being used to help sell Mercedes-Benz E320s that run on ultra low sulphur diesel in the U.S.

The world's biggest premium carmaker, a fierce rival of DaimlerChrysler's luxury Mercedes brand, first wants to develop a urea-based technology to reduce nitrogen oxides before considering a sustained entry into the U.S. diesel market.

"We are in the process of thinking of a name that is different from Bluetec," a spokesman for BMW said on Wednesday.

Helped by diesel fuel subsidies, diesels make up around half of the western European car market but traditionally they have been a tough sell for passenger cars in the U.S.

Widespread perceptions of diesels as dirty and loud, regulatory hurdles and diesels' extra expense -- they cost around $2,000 more than petrol engines -- have limited their appeal in the past.

But last month's advent of diesel fuel in the U.S. with a low sulphur content of just 15 parts per million has opened a window for carmakers to highlight diesel's far better fuel economy and robust towing power. Diesels typically get around 30 percent better mileage than petrol engines.

Volkswagen, Audi and Mercedes consequently want to push diesels under the Bluetec name as an alternative technology to counter the success of Toyota's hybrids.

"Three brands have more power," a Volkswagen spokesman said on Wednesday, adding Mercedes' sister brand Chrysler also would join the alliance at a later date.

A formal announcement was due on Nov. 28 ahead of the Los Angeles car show.

Developed by Mercedes-Benz and diesel injection system specialist Bosch, Bluetec with AdBlue lets cars meet the stringent U.S. emissions norm, Bin 5, which goes into effect in 2009.

Due in 2008, the AdBlue system uses urea-based additives to cut nitrogen oxide emissions and thus meet clean air rules in all 50 U.S. states.

****

Byron Bunker
Center Director - Heavy-Duty Onroad Center Assessment and Standards Division Office of Transportation and Air Quality US Environmental Protection Agency 2000 Traverwood Drive Ann Arbor, MI 48105
(734) 214-4155
(734) 214-4050 (fax)
(734) 670-0750 (pager)
e-mail: bunker.byron@epa.gov
****

From: Chris Nevers
To: Vincent Mazaitis
Cc: David Good; Healy.Stephen@epamail.epa.gov; Linc Wehrly
Subject: Re: BMW Diesel Certificates
Date: 11/25/2008 12:03 PM

Vince,
I had a couple of questions for BMW. One thing we did not go over much in our diesel discussions with BMW was Infrequent Regeneration Adjustment Factors (IRAFs). Although BMW does list some upward and downward adjustment factors due to DPF regen, they do not explicitly state the frequency of the regens. Typically, we also ask if said regens can start (and can they complete) on any of the test cycles. Finally, how did BMW initiate and measure the emissions during regen?

Chris
▼ Vincent Mazaitis/AA/USEPA/US

Vincent Mazaitis/AA/USEPA/US
Other-OAR,OTAQ,CISD
Sent by: Vincent Mazaitis

To Chris Nevers/AA/USEPA/US@EPA, Healy.Stephen@epamail.epa.gov@EPA
cc Linc Wehrly/AA/USEPA/US@EPA, David Good/AA/USEPA/US@EPA
Subject BMW Diesel Certificates

Received Date:
11/24/2008 08:13 AM
Transmission Date:
11/24/2008 08:13:32 AM

Hello Chris and Steve,

As you know, BMW has asked for Certificates for the two Diesel test groups. I've received a copy of the OBD approval, the fees are in the fees data base and the Application for Certificate appears to be in order. The Certificates need to be generated in CFEIS. Please let me know when you want me to generate them.

Thanks,

Vince Mazaitis

From:	Thomas.Hofmann@bmwna.com
To:	David Good/AA/USEPA/US@EPA; Andrea.Antholzner@bmwna.com
Cc:	Roberts French/AA/USEPA/US@EPA; Chris Nevers/AA/USEPA/US@EPA; Linc Wehrly/AA/USEPA/US@EPA; Tom Anderson/AA/USEPA/US@EPA
Subject:	RE: BMW light-duty Greenhouse Gas – 2013 PreMY Report questions, potential errors & deficiencies [Status of BMW's response]
Date:	09/27/2012 02:53 PM
Attachments:	BMW Updated GHG Report MY 2013.pdf

Hello Dave

BMW responded on 7/26/2012.
The response was sent by Mr. Dieter Cramm in our Munich office.
It is attached here as well.

Please also accept this as our acknowledgment of your email, as per your request.

kind regards,
Tom

From: David Good [mailto:Good.David@epamail.epa.gov]
Sent: Thursday, September 27, 2012 2:27 PM
To: Hofmann Thomas, EG-8-US-22; Antholzner Andrea, EG-8-US-2
Cc: Roberts French; Chris Nevers; Linc Wehrly; Tom Anderson
Subject: Fw: BMW light-duty Greenhouse Gas – 2013 PreMY Report questions, potential errors & deficiencies [Status of BMW's response]

Tom & Andrea,

My records show that you have not yet responded to my email questions about your 2013 greenhouse gas (GHG) Pre model year report. Please let me know if I have somehow missed your response.

For the 2013 model year, I show the following estimated balance of GHG credits/debits:

Ex. 4 CBI

As you probably know, EPA regulations at 40 CFR 600. 514-12(b)(2) read as follows:

(2) Manufacturers must submit, in the pre-model year report for each model year in which a credit deficit is generated (or projected to be generated), a compliance plan demonstrating how the manufacturer will comply with the fleet average CO_2 standard by the end of the third year after the deficit occurred.

Ex. 4 CBI

Please let me know when you can supply answers to my questions and when you intend to submit a revised 2013 pre-model year report or an addendum to that report.

Also, Andrea or Tom, please reply by email message that you received this email message.

Thanks

----- Forwarded by David Good/AA/USEPA/US on 09/27/2012 01:09 PM -----

From: David Good/AA/USEPA/US
To: thomas.hofmann@bmwna.com
Cc: Chris Nevers/AA/USEPA/US@EPA, Linc Wehrly/AA/USEPA/US@EPA, Roberts French/AA/USEPA/US@EPA, Tom Anderson/AA/USEPA/US@EPA, Andrea.Antholzner@bmwna.com
Date: 07/23/2012 01:15 PM
Subject: Re: BMW light-duty Greenhouse Gas – 2013 PreMY Report questions & potential errors [Status of BMW's response]

Tom,

How are you coming with a response to my GHG questions?

Ex. 4 CBI

Thanks

David Good---06/06/2012 03:03:05 PM---I forgot to include the attachment. From: David Good/AA/USEPA/US

From: David Good/AA/USEPA/US
To: Andrea.Antholzner@bmwna.com, thomas.hofmann@bmwna.com
Cc: Chris Nevers/AA/USEPA/US@EPA, Linc Wehrly/AA/USEPA/US@EPA, Roberts French/AA/USEPA/US@EPA, Tom Anderson/AA/USEPA/US@EPA
Date: 06/06/2012 03:03 PM
Subject: Re: BMW light-duty Greenhouse Gas – 2013 PreMY Report questions & potential errors [Resent with attachment]

I forgot to include the attachment.

(See attached file: BMW-2013 PreMY Report-CBI_DBMXJ_COMMON_CR1_GHG[1]from Verify.pdf)

David Good---06/06/2012 02:59:11 PM---Andrea & Tom, I have some questions about BMW's 2013 GHG Pre-Model year Report.

From: David Good/AA/USEPA/US
To: Andrea.Antholzner@bmwna.com, thomas.hofmann@bmwna.com
Cc: Roberts French/AA/USEPA/US@EPA, Linc Wehrly/AA/USEPA/US@EPA, Tom Anderson/AA/USEPA/US@EPA, Chris Nevers/AA/USEPA/US@EPA
Date: 06/06/2012 02:59 PM
Subject: BMW light-duty Greenhouse Gas – 2013 PreMY Report questions & potential errors

---

Andrea & Tom,

I have some questions about BMW's 2013 GHG Pre-Model year Report.

1. Cover letter – Your February 13, 2012 cover letter doesn't seem to contain all the information in 40 CFR 600.514-12 as outlined on slide 55 of the EPA presentation at the Sept 23, 2010 GHG workshop available at http://www.epa.gov/otaq/regs/ld-hwy/greenhouse/ld-ghg.htm.

I am especially looking for:

Ex. 4 CBI

Ex. 4 CBI

Please advise.

Ex. 4 CBI

Please advise.

In summary, please email us the answers to my questions and send us a corrected 2013 PreMY Report (if needed) as soon as practicable. If you like, we will be glad to schedule a conference call at your convenience to discuss these questions and the potential errors.

Thanks

------ Message from <Dieter.Cramm@bmw.de> on Thu, 26 Jul 2012 13:51:02 +0200 ------
To: <Good.David@epamail.epa.gov>
Subject: Updated 2013 Pre MY Report

Good morning Dave,

I do apologize for the delay in answering your e-mails from June, 6 and July, 23.
I decided to wait for actual projected sales information and the latest test results, performed in the last weeks. However, I should have given you a feedback in the meantime.
With these new information the debits for MY 13 are reduced significantly. The remaining debits will be equalized by using the Temporary Leadtime Allowance Standards for a small part of BMW`s Truck Fleet.

Back to your written concerns/errors and missing information, which are completely justified:

1. N2O/CH4

BMW determined, that all gasoline test groups meet the N2O/CH4 far below the standards. Ex. 4 CBI

Ex. 4 CBI

Therefore BMW would like to take option (f)(3) of §86.1818-12 taking higher alternative standards for these Diesels.
With this approach I calculated the CO2 equivalent debits for these higher standards (0,030 for N2O and 0,090 g/mi for CH4) and included these additional megagrams in the GHG report.

1.1 Offset of debits

Ex. 4 CBI

2. Errors in previous fleet average calculations.

You calculation is completely correct. I obviously listed erroneously some earlier results and did not adapt these to the new calculation. Sorry for this.

3. A/C Leakage and Efficiency credits.

On page 5 of the report I summarized the details for the A/C credit generation.

One open issue is the engine start/stop treatment. In the report I used only the best case results with engine start/stop active. After the discussion this week with EPA we have to average the test with and w/o, because we will not meet the predominant use criteria. Because the testing is not completely finished at the moment, I will update the report as soon as all fuel economy are available. This will probably deteriorate the FTP results for the affected vehicles by 1 – 2 %.

If you have any questions or if you need further information you can contact Tom Hofmann or send me an e-mail.

Sorry again for the inconvenience due to the deficient first report and my late answer.

Best regards
Dieter

BMW Group
Dieter Cramm
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80788 München
Tel: +49 89 382-32613
Fax: +49 89 382-32594
mailto:dieter.cramm@bmw.de
http://www.bmwgroup.com

Bayerische Motoren Werke Aktiengesellschaft
Vorstand: Norbert Reithofer, Vorsitzender,
Frank-Peter Arndt, Herbert Diess, Klaus Draeger,
Friedrich Eichiner, Harald Krüger, Ian Robertson
Vorsitzender des Aufsichtsrats: Joachim Milberg
Sitz und Registergericht: München HRB 42243

From:	David Good
To:	Bain, Debbie T.
Cc:	Amy Bunker; Smith, Dennis; Greene, David L.; Gibson, Robert C.; Holly Pugliese; Hopson, Janet L.; Linc Wehrly; Bluestein, Linda; Mary Manners; Roberts French; Loi, Sandra; Shea, Shannon; Dafoe, Wendy
Subject:	Re: Conference Call TODAY at 2:00 - [BMW, Nissan placeholders]
Date:	09/21/2011 05:24 PM
Attachments:	Infinity M35h only-2012 FEGuide-for DOE-all rel dates-no-sales-09-1-2011.xlsx

Debbie & all,

Nissan:

Nissan doesn't need a placeholder for the 2012 Altima hybrid---but the Infinity M35h is missing from the 2012 FE Guide page 24. It will not be sold in 2012 model year---replaced by the Infinity M35h. Attached is the dataset for the M35h if you need it.

BMW:

BMW will send us placeholders (late today or early tomorrow) for the the following vehicles:

Diesels - BMW needs a placeholder for the X5 xDrive35d (diesel) which is carryover from 2011 model year. BMW is not offering the 335d (3-series) diesel---see forwarded email message.

Hybrids - BMW will needs placeholders for the the following hybrid vehicles:

- 5-series Hybrid (I think it will be called the Active Hybrid5)
- Active Hybrid7 (which is carryover from 2011

BMW says they don't need a placeholder for the hybrid SUV---(the Active Hybrid X6) as it won't be sold in 2012 model year.

I'll send the BMW placeholders to all tomorrow.

Dave

----- Forwarded by David Good/AA/USEPA/US on 09/21/2011 04:01 PM -----

From:	<Thomas.Hofmann@bmwna.com>
To:	David Good/AA/USEPA/US@EPA
Cc:	Chris Nevers/AA/USEPA/US@EPA
Date:	09/21/2011 01:57 PM
Subject:	no 2012 BMW 335d

Hello Dave

Sorry I missed your call.

3-Series Diesel
There will be no 2012MY 335d (diesel).
That chassis is going out of production shortly.
The new 3-Series diesel is in development.
The current plan is a start production some time in CY2013 as a 2014 model.

X5 Diesel
There will be an X5 xDrive35d (diesel) for 2012MY. It is carryover from 2011MY.
It has an October start of production.
I expect to do that FE Label submission in the next few days.

thanks,
Tom

BMW of North America, LLC
Thomas E. Hofmann
Senior Engineer, Emissions and Fuel Economy Certification
200 Chestnut Ridge Road, Building 150
Woodcliff Lake, NJ 07677-7731
Phone: (001) 201-571-5195
Fax: (001) 201-571-5479

David Good---09/21/2011 03:49:13 PM---Debbie & all, Here are the electric vehicle placeholders which need corrections. I'm still checking

From: David Good/AA/USEPA/US

To: "Bain, Debbie T." <baindt@ornl.gov>

Cc: Amy Bunker/AA/USEPA/US@EPA, "Bain, Debbie T." <baindt@ornl.gov>, "Smith, Dennis" <dennis.a.smith@ee.doe.gov>, "Greene, David L." <dlgreene@ornl.gov>, "Gibson, Robert C." <gibsonrc@ornl.gov>, Holly Pugliese/AA/USEPA/US@EPA, "Hopson, Janet L." <hopsonjl@ornl.gov>, Linc Wehrly/AA/USEPA/US@EPA, "Bluestein, Linda" <linda.bluestein@ee.doe.gov>, Mary Manners/AA/USEPA/US@EPA, Roberts French/AA/USEPA/US@EPA, "Loi, Sandra" <sandra.loi@nrel.gov>, "Shea, Shannon" <shannon.shea@ee.doe.gov>, "Dafoe, Wendy" <wendy_dafoe@nrel.gov>

Date: 09/21/2011 03:49 PM

Subject: Re: Conference Call TODAY at 2:00 - resending the placeholders that need corrections

Debbie & all,

Here are the electric vehicle placeholders which need corrections. I'm still checking on placeholders for the BMW hybrid, the BMW 335d (diesel) and the Altima hybrid.

Dave

[attachment "Tesla Placeholder Info-2012MY-Model S - 9-8-2011.xlsx" deleted by David Good/AA/USEPA/US] [attachment "Coda-2012 Placeholder Info-rev1--9-14-2011.xlsx" deleted by David Good/AA/USEPA/US] [attachment "Ford-Placeholder Info 2012MY-rev1-9-22-2011.xlsx" deleted by David Good/AA/USEPA/US]

"Bain, Debbie T." ---09/21/2011 12:56:15 PM---Hell all: This is a reminder of our conference call today at 2:00 p.m. (Easter Time Zone). Call 865

From: "Bain, Debbie T." <baindt@ornl.gov>

To: "Bain, Debbie T." <baindt@ornl.gov>, "Bluestein, Linda" <linda.bluestein@ee.doe.gov>, Amy Bunker/AA/USEPA/US@EPA, "Dafoe, Wendy" <wendy_dafoe@nrel.gov>, Roberts French/AA/USEPA/US@EPA, "Gibson, Robert C." <gibsonrc@ornl.gov>, David Good/AA/USEPA/US@EPA, "Greene, David L." <dlgreene@ornl.gov>, "Hopson, Janet L." <hopsonjl@ornl.gov>, "Loi, Sandra" <sandra.loi@nrel.gov>, Mary Manners/AA/USEPA/US@EPA, Holly Pugliese/AA/USEPA/US@EPA, "Shea, Shannon" <shannon.shea@ee.doe.gov>, "Smith, Dennis" <dennis.a.smith@ee.doe.gov>, Linc Wehrly/AA/USEPA/US@EPA

Date: 09/21/2011 12:56 PM

Subject: Conference Call TODAY at 2:00

Hell all:

This is a reminder of our conference call today at 2:00 p.m. (Easter Time Zone). Call 865-574-1000 and ask for David Greene's call.

Attached is a copy of the Guide as of now. Page 4 is LAST years' data; I'll update that as soon as I can.

We are at our limit for page numbers (divisible by 4) or we can add 4 more pages if we need to. We are already 4 pages more than last year.

I don't have the updated graphs yet. I can move stuff around (where space allows) if needed.

Thanks.

deb[attachment "2012_BODY_09-21-11.pdf" deleted by David Good/AA/USEPA/US]

From: David Good
To: Bain, Debbie T.
Cc: Amy Bunker; Smith, Dennis; Greene, David L.; Gibson, Robert C.; Holly Pugliese; Hopson, Janet L.; Linc Wehrly; Bluestein, Linda; Mary Manners; Roberts French; Loi, Sandra; Shea, Shannon; Dafoe, Wendy
Subject: Re: Conference Call TODAY at 2:00 - [Last of the placeholders]
Date: 09/22/2011 08:57 AM
Attachments: BMW placeholder info 2012MY-hybrids and diesels-9-22-2011.xlsx

---

Debbie & all,

Here's BMW's placeholders. This should be all the placeholders, but let me know if you think there are any others.

Dave

----- Forwarded by David Good/AA/USEPA/US on 09/22/2011 08:56 AM -----

From: <Thomas.Hofmann@bmwna.com>
To: David Good/AA/USEPA/US@EPA
Date: 09/21/2011 05:34 PM
Subject: BMW 2012 Alternate Fuel Placeholders

Hello Dave

Please find our placeholder information below. The same information is in the attached spreadsheet in case that format is more helpful.

Model Name	Vehicle Class, Body Type, Pass/Cargo	Trans Type	No. of Cyl.	Engine	Fuel Type	City MPG	Hwy MPG	Driving Range
X5 xDrive35d	SUV-4WD	SA6	6	3.0 L	Diesel	N/A	N/A	N/A
ActiveHybrid 5	midsize, 4 dr, 102/10	SA8	6	3.0 L	Gasoline	N/A	N/A	N/A
ActiveHybrid 7	midsize, 4 dr, 106/13	SA8	8	4.4 L	Gasoline	N/A	N/A	N/A
ActiveHybrid								

7L	large, 4 dr, 115/13	SA8	8	4.4 L	Gasoline	N/A	N/A	N/A

best regards,
Tom

BMW of North America, LLC
Thomas E. Hofmann
Senior Engineer, Emissions and Fuel Economy Certification
200 Chestnut Ridge Road, Building 150
Woodcliff Lake, NJ 07677-7731
Phone: (001) 201-571-5195
Fax: (001) 201-571-5479

David Good---09/21/2011 05:24:36 PM---Debbie & all, Nissan:

From: David Good/AA/USEPA/US
To: "Bain, Debbie T." <baindt@ornl.gov>
Cc: Amy Bunker/AA/USEPA/US@EPA, "Smith, Dennis" <dennis.a.smith@ee.doe.gov>, "Greene, David L." <dlgreene@ornl.gov>, "Gibson, Robert C." <gibsonrc@ornl.gov>, Holly Pugliese/AA/USEPA/US@EPA, "Hopson, Janet L." <hopsonjl@ornl.gov>, Linc Wehrly/AA/USEPA/US@EPA, "Bluestein, Linda" <linda.bluestein@ee.doe.gov>, Mary Manners/AA/USEPA/US@EPA, Roberts French/AA/USEPA/US@EPA, "Loi, Sandra" <sandra.loi@nrel.gov>, "Shea, Shannon" <shannon.shea@ee.doe.gov>, "Dafoe, Wendy" <wendy_dafoe@nrel.gov>
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This is a reminder of our conference call today at 2:00 p.m. (Easter Time Zone). Call 865-574-1000 and ask for David Greene's call.

Attached is a copy of the Guide as of now. Page 4 is LAST years' data; I'll update that as soon as I can.

We are at our limit for page numbers (divisible by 4) or we can add 4 more pages if we need to. We are already 4 pages more than last year.

I don't have the updated graphs yet. I can move stuff around (where space allows) if needed.

Thanks.

deb[attachment "2012_BODY_09-21-11.pdf" deleted by David Good/AA/USEPA/US]

From: Thomas.Hofmann@bmwna.com
To: Vincent Mazaitis/AA/USEPA/US@EPA
Cc: Chris Nevers/AA/USEPA/US@EPA; David Good/AA/USEPA/US@EPA; Linc Wehrly/AA/USEPA/US@EPA; Stephen Healy/AA/USEPA/US@EPA
Subject: RE: Diesel Cert Application Questions for 9BMXV03.0M57 & 9BMXT03.0M57
Date: 11/26/2008 11:39 AM
Attachments: BMW Supplemental Info Regeneration Nov_2008.pdf

Hello Vince

Attached are BMW's response to your questions.
I will upload this on Verify shortly.

Please feel free to contact me with any questions or comments.

kind regards,
Tom

-----Original Message-----
From: Mazaitis.Vincent@epamail.epa.gov
[mailto:Mazaitis.Vincent@epamail.epa.gov]
Sent: Tuesday, November 25, 2008 3:13 PM
To: Hofmann Thomas, ES-5-US-20
Cc: Nevers.Chris@epamail.epa.gov; Good.David@epamail.epa.gov;
Wehrly.Linc@epamail.epa.gov; Healy.Stephen@epamail.epa.gov
Subject: Diesel Cert Application Questions for 9BMXV03.0M57 &
9BMXT03.0M57

Hello Tom,

In reviewing the Certification Applications for the subject vehicles,
there a few questions.

What is the frequency of a regen?

How did BMW initiate and measure the emissions during regen?

How long does a regen take?

Can or would a regen be completed during an emission test if it
begins soon enough during the test cycle? (city, highway, US06)

Please add the responses to Verify. (Not necessary to modify the Cert
Application)

If you have any questions or concerns, please contact me.

Thanks Tom,

Best regards,

Vince Mazaitis

From: Stephen.Sinkez@bmwna.com
To: Vincent Mazaitis/AA/USEPA/US@EPA; Chris Nevers/AA/USEPA/US@EPA
Cc: Linc Wehrly/AA/USEPA/US@EPA; David Good/AA/USEPA/US@EPA; Thomas.Hofmann@bmwna.com; Wilhelm.Hall@bmwna.com
Subject: RE: Diesel SCR exhaust system information - CONFIDENTIAL
Date: 04/30/2008 10:50 AM
Attachments: X5d, 335d Position Catalyst and Particulate Trap.ppt

---

Vince, Chris,

On behalf of BMW, attached is the information you requested. We will begin MY09 certification of both the X5d and the 335d very soon. I apologize for the delay in responding. Please contact me if you have any questions.

Kind regards,

Stephen Sinkez
BMW of North America, LLC

-----Original Message-----
From: Mazaitis.Vincent@epamail.epa.gov
[mailto:Mazaitis.Vincent@epamail.epa.gov]
Sent: Monday, April 28, 2008 3:17 PM
To: Sinkez Stephen, ES-5-US-20
Cc: Nevers.Chris@epamail.epa.gov; Wehrly.Linc@epamail.epa.gov; Good.David@epamail.epa.gov; Hofmann Thomas, ES-5-US-20
Subject: Fw: Diesel SCR exhaust system information

Hello Steven,

EPA is assembling information on unregulated emissions as indicated below and Chris Nevers has not yet received any information from BMW. With Doug McGregor leaving and you now being short handed I understand the added workload that all must be experiencing. Please let me know if there is anyone I should contact or anything I can do to help gather the information we've requested.

Thanks Steven.

Kind regards,

Vince Mazaitis
(734) 214-4864

----- Forwarded by Vincent Mazaitis/AA/USEPA/US on 04/28/2008 02:58 PM -----

Chris Nevers/AA/USEPA/US	To	stephen.sinkez@bmwna.com
EPA-OAR,OTAQ,CISD	cc	Vincent Mazaitis/AA/USEPA/US@EPA, David Good/AA/USEPA/US@EPA, Linc Wehrly/AA/USEPA/US@EPA
Sent by: Chris Nevers	Subject	Fw: Diesel SCR exhaust system information
Received Date: 04/21/2008 03:54 PM		
Transmission Date: 04/21/2008 03:54:45 PM		

Dear Mr. Sinkez,

I realize you may not yet have all the information regarding the questions EPA posed, below. In the interest of time, it would be helpful if you could share the catalyst configurations, material (e.g. what type of base metal zeolite SCR cat), and when you planned on certifying SCR systems. Temperature profiles and exact exhaust lay-out are really a secondary to the big picture of quantifying possible dioxin formation or excessive ammonia slip.

I'd like to thank you in advance for your patience as we try to determine a position on the unregulated emission of dioxins and ammonia. EPA will be asking the same questions of several manufacturers that are planning on certifying vehicles using SCR technology.

Thanks again, any questions are welcome

Chris Nevers
734 214 4412
----- Forwarded by Chris Nevers/AA/USEPA/US on 04/21/2008 03:52 PM -----

Chris Nevers/AA/USEPA/US	To	doug.mcgregor@bmwna.com
EPA-OAR,OTAQ,CIS		

D
Sent by: Chris Nevers

Received Date: 04/10/2008 01:41 PM
Transmission Date: 04/10/2008 01:41:43 PM

cc
Vincent Mazaitis/AA/USEPA/US@EPA, David Good/AA/USEPA/US@EPA

Subject
Diesel SCR exhaust system information

Dear Mr. McGregor,

In evaluating possible unregulated emissions, EPA is requesting some information regarding current and/or planned diesel exhaust systems using selective catalytic reduction. On any current or planned SCR system, could you please provide EPA with the following?

1- The distance, in cm, each catalyst and/or filter is down-pipe from the exhaust manifold.

2- The distance, in cm, each exhaust sensor and/or aftertreatment fluid injector is down-pipe from the exhaust manifold.

3- What is the expected maximum temperature (both steady state and excursion) each catalyst/filter will experience? If this is only during a regen, please also give the maximum non-regen temperatures.

4- Indicate what, if any, base metal zeolite is used.

As always, all information will be treated as confidential.

Please feel free to call or email me with any questions.

Thank you,
Chris Nevers
EPA Light Duty Vehicle Group
734 214 4412

From: Thomas.Hofmann@bmwna.com
To: Vincent Mazaitis/AA/USEPA/US@EPA
Cc: David Good/AA/USEPA/US@EPA; Linc Wehrly/AA/USEPA/US@EPA
Subject: RE: Diesel Testing
Date: 05/30/2008 08:51 AM

Hello Vince

According to Mr. Cramm, our manufacturer testing is going according to plan and should be completed in early July.
Allowing time for data processing, waiver requests, transportation, etc. BMW anticipates Confirmatory Testing in mid-August.
In terms of calendar weeks, we should be able to have the vehicles at your facility for the week of August 11 or August 18.

best regards,
Tom

-----Original Message-----
From: Mazaitis.Vincent@epamail.epa.gov
[mailto:Mazaitis.Vincent@epamail.epa.gov]
Sent: Thursday, May 29, 2008 11:49 AM
To: Hofmann Thomas, ES-5-US-20
Cc: Good.David@epamail.epa.gov; Wehrly.Linc@epamail.epa.gov
Subject: Diesel Testing

Hello Tom,

I hope all is well with you.

During the 2009 Certification Preview meeting BMW indicated that two diesel vehicles the X5 and the 3 Series would be introduced into the U.S. It was indicated these vehicles would be available for testing at EPA in the August - September time frame. As we need to plan better for diesel testing EPA would like to know if that testing window is still valid or if you have a better idea as to when the vehicles would be available for testing.

If you have any questions or concerns, please contact me.

Thanks Tom,

Kind regards,

Vince Mazaitis

From: Hopson, Janet L.
To: David Good/AA/USEPA/US@EPA; Goeltz, Rick
Cc: Li, Jia; Linc Wehrly/AA/USEPA/US@EPA; Roberts French/AA/USEPA/US@EPA
Subject: RE: Follow up on BMW Diesels - Please post the 2009 BMW diesel models and 2008 Mini E (electric vehicle) on the web when you get a chance
Date: 06/25/2009 11:20 AM

Dave:

Can you get the unadjusted values for the diesels?

Thanks,

Janet

-----Original Message-----
From: Good.David@epamail.epa.gov [mailto:Good.David@epamail.epa.gov]
Sent: Tuesday, June 23, 2009 12:11 PM
To: Goeltz, Rick
Cc: Li, Jia; Hopson, Janet L.; Wehrly.Linc@epamail.epa.gov; French.Roberts@epamail.epa.gov
Subject: Fw: Follow up on BMW Diesels - Please post the 2009 BMW diesel models and 2008 Mini E (electric vehicle) on the web when you get a chance

Rick,

Let me know if you need any other info on these models.

Thanks
----- Forwarded by David Good/AA/USEPA/US on 06/23/2009 12:08 PM -----

From: <Thomas.Hofmann@bmwna.com>

To: David Good/AA/USEPA/US@EPA

Date: 06/23/2009 10:14 AM

Subject: Follow up on BMW Diesels

Hi Dave

I checked the fueleconomy.gov website and the 2009 BMW diesels and 2008 MINI E (BEV) are not yet posted.
Did DOE give you any feedback on how long it might take to post these manually?

Attached is my 6/2 email to you on this subject.

regards,
Tom

Tom Hofmann
Emissions & Fuel Economy Certification
BMW of North America, LLC
201-571-5195

----- Message from <Thomas.Hofmann@bmwna.com> on Tue, 2 Jun 2009 11:05:55 -0400 -----

To: <Good.David@epamail.epa.gov>

Subject: RE: Models missing on fueleconomy website

Hello Dave

Attached please find the data sheets for our 2009 diesels and for the 2008 MINI E battery electric.
Thanks for your help!

Regards,
Tom

-----Original Message-----
From: Good.David@epamail.epa.gov [mailto:Good.David@epamail.epa.gov]
Sent: Monday, June 01, 2009 3:14 PM

To: Hofmann Thomas, ES-5-US-20
Subject: Re: Models missing on fueleconomy website

Tom,

Please attach the paper "hardcopy" FE labels and I'll have DOE add them manually to the website. As a reminder, the paper copy should contain the following info in the attached Toyota example.

(See attached file: Example mfr self approval FE Label letter.808.pdf)

<Thomas.Hofmann@ bmwna.com>		
Sent by: <Thomas.Hofmann@ bmwna.com>		To David Good/AA/USEPA/US@EPA cc
Received Date: 06/01/2009 11:16 AM Transmission Date: 06/01/2009 11:16:23 AM		Subject Models missing on fueleconomy website

Hello Dave

My supervisor has asked me to have the following models added to www.fueleconomy.gov website.
These three models are also missing from the www.epa.gov/greenvehicles web page.

2009 335d (diesel 3-Series sedan)

2009 X5 xDrive35d (diesel X5 SUV)

2008 MINI E (battery electric MINI Cooper)

Diesels.

The 2009 diesel models were certified using CFEIS.
Unfortunately, the Confirmatory Testing at NVFEL slipped beyond the CFEIS shutdown date.
As a result, I was unable to make general label submissions on CFEIS.
As you may recall, I did a paper hardcopy "notification of self-approval" for these two diesel models.
Is there some process that the data for these two models can be transmitted to DOE and to greenvehicles?

MINI E.

The certification data for this was submitted to Verify but the automated Request for Certificate did not work., The Certificate was generated manually.
I never attempted a Fuel Economy Label submission, in part because I knew it would be rejected since there was not a valid Request for Certificate in the system.
Is there some process that the data for this model could be transmitted to DOE and to greenvehicles?
I would understand the reluctance to do so given that it is 2008 MY and the limited distribution of these vehicles.
However, it might be helpful for future reference if the data were available somewhere.

Any thoughts or guidance are most welcomed!

regards,
Tom

Tom Hofmann
Emissions & Fuel Economy Certification
BMW of North America, LLC
201-571-5195 (See attached file: 2009 BMW diesels 335d and X5 xDrive35d label info.pdf)(See attached file: 2008 MINI E Label self approval info.pdf)

From: Chris Nevers
To: Linc Wehrly
Cc: Arvon Mitcham; Robert Peavyhouse
Subject: Re: Fw: BMW Diesel, Proposed SCR Plan, and Documents; Confidential
Date: 12/20/2007 09:11 AM

Do they know they sent us their commented draft for application? My German is very bad, but some of the comments in German are interesting.

From: Linc Wehrly
To: Vincent Mazaitis
Subject: Re: Fw: Diesel Certificates
Date: 11/21/2008 10:52 AM

Thanks, Vince.

Ex. 5 Deliberative Process (DP)

Thanks,
Linc

Linc Wehrly
Manager, Light-Duty Vehicle Group
Compliance and Innovative Strategies Division
United States Environmental Protection Agency
(734) 214-4286
wehrly.linc@epa.gov
▼ Vincent Mazaitis/AA/USEPA/US

Vincent Mazaitis/AA/USEPA/US
Other-OAR,OTAQ,CISD
Sent by: Vincent Mazaitis

To Linc Wehrly/AA/USEPA/US@EPA
cc
Subject Fw: Diesel Certificates

Received Date:
11/18/2008 02:16 PM
Transmission Date:
11/18/2008 02:16:22 PM

Hello Linc,

Ex. 4 CBI

I checked and it seems issuing a certificate is no problem through CFEIS. I'll keep you posted.

Vince Mazaitis

----- Forwarded by Vincent Mazaitis/AA/USEPA/US on 11/18/2008 02:13 PM -----

<Thomas.Hofmann@bmwna.com>
Sent by:
<Thomas.Hofmann@bmwna.com>

To Vincent Mazaitis/AA/USEPA/US@EPA
cc
Subject RE: Diesel Certificates

Received Date:
11/18/2008 01:59 PM
Transmission Date:
11/18/2008 01:59:11 PM

Hi Vince

We are still in the Q&A mode with the Advanced Engineering section of CARB.
There is a marathon conference call going on right now ... Fortunately I have been excused!

All of the data for these two test groups has been input to CFEIS.
This was done because we expected to be done with OBD in September.
I hope that it is still be possible for EPA to generate these two certificates using CFEIS.

If this cannot be done, please let me know.
This would put us in the emergency mode as my colleagues are currently working on other stuff - putting carryover data into Verify, data input for 9BMXV04.4N63, two catalyst reduction MINI test groups, etc.

best regards,
Tom

-----Original Message-----
From: Mazaitis.Vincent@epamail.epa.gov
[mailto:Mazaitis.Vincent@epamail.epa.gov]
Sent: Tuesday, November 18, 2008 12:48 PM
To: Hofmann Thomas, ES-5-US-20
Subject: Diesel Certificates

Hello again Tom,

A question came up from during our weekly Cert Staff meeting this morning about the Certificates of Conformity for the Diesels, 9BMXV3.0M57 & 9BMXT03.0M57 as to when BMW expects to obtain the certificates. With the Verify update we want to be aware in advance of the process. Any idea when you expect to request these certificates? Is OBD still a hang up?

Thanks in advance Tom,

Kind regards,

Vince Mazaitis

From: Josh Lewis
To: Linc Wehrly
Cc: Lori Stewart; Diann Frantz
Subject: Re: Have you heard anything about delays in EPA approving a BMW diesel engine?
Date: 10/13/2011 03:32 PM

Thanks Linc. I'll let his office know, and will be in touch if there's a need for any additional follow up

Josh Lewis
USEPA/Office of Congressional and Intergovernmental Relations
phone: 202-564-2095
fax: 202-501-1550

Linc Wehrly---10/13/2011 03:23:54 PM---We issued a certificate to BMW for the 3.0 liter diesel x5 on September 9, 2011. Linc Wehrly Directo

From: Linc Wehrly/AA/USEPA/US
To: Lori Stewart/DC/USEPA/US@EPA
Cc: Diann Frantz/DC/USEPA/US@EPA, Josh Lewis/DC/USEPA/US@EPA
Date: 10/13/2011 03:23 PM
Subject: Re: Have you heard anything about delays in EPA approving a BMW diesel engine?

We issued a certificate to BMW for the 3.0 liter diesel x5 on September 9, 2011.

Linc Wehrly
Director, Light-Duty Vehicle Center
Compliance Division
United States Environmental Protection Agency
(734) 214-4286
wehrly.linc@epa.gov

Lori Stewart---10/13/2011 03:13:02 PM---I have not. Am cc'ing Linc who may know what this is about. ----------

From: Lori Stewart/DC/USEPA/US
To: Josh Lewis/DC/USEPA/US@EPA, "Linc Wehrly" <Wehrly.Linc@epamail.epa.gov>
Cc: Diann Frantz/DC/USEPA/US@EPA
Date: 10/13/2011 03:13 PM
Subject: Re: Have you heard anything about delays in EPA approving a BMW diesel engine?

I have not. Am cc'ing Linc who may know what this is about.

Sent by EPA Wireless E-Mail Services

Josh Lewis

----- Original Message -----
From: Josh Lewis
Sent: 10/13/2011 02:43 PM EDT
To: Lori Stewart
Cc: Diann Frantz
Subject: Have you heard anything about delays in EPA approving a BMW diesel engine?

Congressman Gowdy's district includes BMW's HQs (Spartanburg)

Josh Lewis
USEPA/Office of Congressional and Intergovernmental Relations
phone: 202-564-2095
fax: 202-501-1550

----- Forwarded by Josh Lewis/DC/USEPA/US on 10/13/2011 02:37 PM -----

From: Sven-Erik Kaiser/DC/USEPA/US
To: Josh Lewis/DC/USEPA/US@EPA
Date: 10/13/2011 02:25 PM
Subject: Cong. Gowdy Inquiry about BMW engine approval

Josh,
Emily Davis of Cong. Gowdy's office called with a constituent complaint (BMW manufacturing plant) about EPA delay in approving a BMW X5 diesel engine. Here's a link to the BMW X5 - http://www.bmwusa.com/standard/content/vehicles/2012/x5/default.aspx. The contact info is emily.davis1@mail.house.gov, 864-583-3264. Thanks,
Sven

Sven-Erik Kaiser
U.S. EPA
Office of Congressional and Intergovernmental Relations
1200 Pennsylvania Ave., NW (1305A)
Washington, DC 20460
202-566-2753

From: Linc Wehrly
To: Karl Simon
Subject: Re: SCR introduction
Date: 01/08/2007 11:01 AM

MB plans to introduce the Bluetec 2 (SCR) technology in the E320 sedan and ML/GL and R class SUVs for the Ex. 4 CBI We can expect to get cert applications in late Ex. 4 CBI for the GL/ML and R-class and Ex. 4 CBI for the E320, since they plan to release it as possibly a Ex. 4 CBI vehicle.

BMW plans to send us cert applications for the 3-series sedan and the X5 SUV in Ex. 4 CBI

VW plans to send us cert applications for the Touareg/Q7 SUVs in Ex. 4 CBI The diesel VW passenger cars that will use NSC will be certified for the Ex. 4 CBI and we should see applications in Ex. 4 CBI

We have no information for any other manufacturers (Ford, GM, or Toyota).

Linc

Linc Wehrly
USEPA
Compliance and Innovative Strategies Division
(734) 214-4286
wehrly.linc@epa.gov
▼ Karl Simon/DC/USEPA/US

Karl Simon/DC/USEPA/US
EPA-OAR,OTAQ,CISD
Sent by: Karl Simon

To wehrly.linc@epa.gov
cc
Subject SCR introduction

Received Date:
01/08/2007 10:21 AM
Transmission Date:
01/08/2007 10:21:13 AM

What is your understanding of when MB, VW and BMW are going to get us cert apps for Bin 5 diesel vehicles? thanks

From: Linc Wehrly
To: Karl Simon
Subject: SCR Certification Update
Date: 11/26/2008 12:42 PM

Karl,

Here is the updated LDV SCR spreadsheet that I promised. Let me know if you have any questions.

Linc

Linc Wehrly
Manager, Light-Duty Vehicle Group
Compliance and Innovative Strategies Division
United States Environmental Protection Agency
(734) 214-4286
wehrly.linc@epa.gov

Karl,

As I told you yesterday, both BMW and VW are asking for certificates for their respective diesel SCR applications.

For BMW, there are two pending certificates. One for the 2009 MY M3 Sedan and the other for the 2009 MY X5 SUV. The confirmatory testing for both vehicles was completed at NVFEL a couple of months ago and both passed all emission standards. Their SCR package looks good. If you are OK, we'll issue the certificates.

Ex. 5 Deliberative Process (DP)

I need to update the LDV SCR spreadsheet. I'll send it to you tomorrow. Both BMW and VW's systems look good. There are no obvious issues.

Linc

Linc Wehrly
Manager, Light-Duty Vehicle Group
Compliance and Innovative Strategies Division
United States Environmental Protection Agency
(734) 214-4286
wehrly.linc@epa.gov

From: Karl Simon
To: wehrly.linc@epa.gov
Subject: SCR introduction
Date: 01/08/2007 10:21 AM

What is your understanding of when MB, VW and BMW are going to get us cert apps for Bin 5 diesel vehicles? thanks

From: Linc Wehrly
To: Clifford Dean
Subject: VW & BMW Meetings
Date: 06/19/2006 11:38 AM
Attachments: LDV SCR.doc

Cliff,

The VW meeting is set for July 11, from 9 am to 1pm. This meeting will discuss VW's overall diesel plan, including SCR, so you may not be interested in the whole meeting. BMW meeting is July 25, from 12:30 pm to 4:30 pm. It is to discuss SCR.

I'll give you a contact phone number when it gets closer to the date.

I'm also attaching the draft SCR Guidance Letter.

Linc

LDV SCR.doc

Linc Wehrly
USEPA
Compliance and Innovative Strategies Division
(734) 214-4286
wehrly.linc@epa.gov

Meeting Invitation Accepted:

Calendar Entry

Subject:	Discuss draft Ex. 4 CBI letter, BMW diesel certification and labeling, and other GM issues
When	
Date:	Monday 11/05/2012
Time:	01:00 PM - 01:30 PM (0 hours 30 minutes)
Chair:	DavidA Wright
Invitees	
Required (to):	Linc Wehrly/AA/USEPA/US@EPA
Optional (cc):	
Where	
Location:	Linc's office

{In Archive} EPA-BMW 2014MY Cert Preview - open items list

Thomas.Hofmann to: DavidA Wright, Chris Nevers, Linc Wehrly, Kachuen.Wong 02/12/2013 04:40 PM

Cc: Andrea.Antholzner

History: This message has been forwarded.

Archive: This message is being viewed in an archive.

Gentlemen

Thank you for hosting our 2014MY Certification Preview this past Thursday.
As mentioned at the end of our meeting, I thought it might be helpful to share a list of the open items.
Here is the list compiled from our notes:

Items for BMW:

1. Are BMW all-wheel-drive models tested on an AWD dyno?
2. Dyno testing of the i8 PHEV
   a. Does the electric drive motor de-clutch from the front wheels?
   b. Is BMW testing on an AWD dyno?
   c. Has BMW encountered any dyno-related testing issues?
3. New diesel engines (engine types N47 and N57):
   a. Are these engines all-new or are some of the components carried-over from the current diesel engines?
   b. What specifically is meant by the "anti-wear package" for the injectors?
4. Will premium fuel be required or recommended for the new MINI engines (engine types B38 and B48)?
5. What improvements were made to the SCR catalyst being used for the recall as compared to the original 2009MY SCR catalyst?

Items for EPA:

1. During the meeting, EPA announced that reprogramming ESS to default = last-setting is not approved for 2014MY.
   - Is this Is this something that EPA will discuss further internally or is this the final word?
   - I expect BMW management will want to consider

producing vehicles that default to "last-setting" (e.g. latch)

- Can you confirm that we would use a harmonic average of ESS-active and ESS-disabled for Label, CAFÉ and GHG purposes for vehicles produced that default to last-setting?
- Would it be necessary to perform predominant usage surveys?
- If predominant usage surveys will be required, how and when would the results be implemented?
- Are there other ramifications to using default = latch?

2. Is it necessary for our initial applications to have dyno target coefficients for all FEDV sub-configurations in order to meet the "fully described" criteria?
   - Certain sub-configurations are only tested during the model year to support CAFÉ and GHG reporting
   - BMW's motivation is to reduce the number of Running Change additions and corresponding requests for revised Certificates made during the model year
3. For models equipped with ESS that are currently required to be fuel economy tested in both modes, BMW is requesting that EPA waive highway testing with ESS-active. Highway testing would be performed with ESS-deactivated.
   - If EPA grants this waiver, we would appreciate and welcome any thoughts on how to best implement this on Verify, in our Applications, etc.

The reprogramming issue (item 1 above) is the subject of a separate email that I sent to you yesterday (February 11, 2013).
It is included here for completeness.

Please let me know if I missed something or if the list needs clarification or correction.

Thanks and best regards,
Tom

BMW Group
Thomas E. Hofmann
Emissions Certification
200 Chestnut Ridge Road, Building 150
Woodcliff Lake, NJ 07677-7731

Tel: 201-571-5195
Cell: 201-937-6738
Fax: 201-571-5479
Mail: thomas.hofmann@bmwna.com

From:	Thomas.Hofmann@bmwna.com
To:	Chris Nevers/AA/USEPA/US@EPA; DavidA Wright/AA/USEPA/US@EPA
Subject:	BMW OBD Approval for test group DBMXT03.0M57
Date:	10/31/2012 10:08 AM
Attachments:	OBD Approval DBMXT03.0M57 Ref No E-12-184.pdf

Hello Chris and David

Attached is the OBD Approval letter for our DBMXT03.0M57 test group. This covers our X5 diesel model.
Please let me know if you have any questions.

thanks and best regards,
Tom

BMW Group
Thomas E. Hofmann
Emissions Certification
200 Chestnut Ridge Road, Building 150
Woodcliff Lake, NJ 07677-7731

Tel: 201-571-5195
Cell: 201-937-6738
Fax: 201-571-5479
Mail: thomas.hofmann@bmwna.com

Air Resources Board

Mary D. Nichols, Chairman
9480 Telstar Avenue, Suite 4
El Monte, California 91731 • www.arb.ca.gov

Matthew Rodriquez
Secretary for
Environmental Protection

Edmund G. Brown Jr.
Governor

October 29, 2012 Reference No. E-12-204

Andrea Antholzner, Manager
Environmental Engineering
BMW of North America, Limited Liability Company
200 Chestnut Ridge Road, Building 150
Woodcliff Lake, NJ 07677-7731

SUBJECT: Conditional Approval of BMW's On-Board Diagnostics II (OBD II) System Design for 2013 Model Year Test Group DBMXT03.0M57.

Dear Ms. Antholzner:

The Air Resources Board's (ARB) Engineering Studies Branch has received the OBD II system description submitted by BMW for the 2013 model year test group listed above. Representations made in the application indicate that the system is compliant with the OBD II regulation with the exception of the swirl control valve monitor and particulate matter (PM) filter performance monitor. The staff has determined that BMW meets the factors necessary to allow OBD II systems to be certified with deficiencies. However, because BMW has not provided answers to questions on the demonstration data, ARB can only issue a conditional approval of the system design at this time. Upon submittal of the required information and staff's review and approval of the information, the conditional status will be removed. Therefore, ARB will approve the 2013 model year OBD II system design for the test group referenced above with two deficiencies. Details of the deficiencies are noted below.

Swirl Control Valve Monitoring Deficiency

For swirl valve control systems that use non-metal or segmented shafts, section (f)(16) of the OBD regulation requires manufacturers to verify that all portions of a segmented shaft are properly functioning. BMW's swirl valve control system consists of a single actuator that, through a series of linkages, drives six individual metal flaps that sit on individual metal shafts. Although BMW's monitor verifies the motion of the actuator and the linkage that connects to each individual shaft, it does not verify the motion of each individual shaft. As such, the monitor is deficient for the 2013 model year. This design was first considered deficient for the 2010 model year. Since the 2010 model year, BMW has been working on improving the monitor. For the 2013 model year, BMW

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our website: http://www.arb.ca.gov.

California Environmental Protection Agency

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improved the swirl control valve with more durable material and connections from the 2012 model year system. While the design was not fully compliant with the requirements, the redesign allows BMW to certify with a deficiency. BMW plans on completely redesigning the swirl control valve with a compliant monitor for the 2014 model year.

PM Filter Performance Monitor Deficiency

Beginning with the 2013 model year, light-duty vehicles are required to detect all malfunctions of the PM filter that result in PM emissions exceeding 1.75 times the emission standard. BMW's system, however, can only detect PM filter malfunctions when emissions exceed 3.1 times the PM standard. As such, the system is considered deficient for the 2013 model year. BMW is required to address this issue on its future model year products to remove the deficiency.

Should you have any comments or questions regarding this letter, please have your staff contact Mr. Jason Wong, Staff Air Pollution Specialist at (626) 575-6838.

Sincerely,

Robert H. Cross, M.S.M.E., P.E.
Chief, Mobile Source Control Division

cc: Mr. Jason Wong
Staff Air Pollution Specialist
Mobile Source Control Division

From: DavidA Wright
To: Chris Nevers
Subject: Fw: EPA-BMW 2014MY Cert Preview - open items list
Date: 02/12/2013 04:51 PM

Did you get the note Thomas references at the end of the following note? I did not receive any e-mail from Thomas yesterday.

Thanks,

David
734 214-4467
e-mail:wright.davida@epa.gov

****
This e-mail and any attachment contain information which is private and confidential and is intended for the addressee only. If you are not an addressee, you are not authorized to read, copy or use this e-mail or any attachment. If you have received this e-mail in error, please destroy it and notify the sender by return mail.
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----- Forwarded by DavidA Wright/AA/USEPA/US on 02/12/2013 04:50 PM -----

From: <Thomas.Hofmann@bmwna.com>
To: DavidA Wright/AA/USEPA/US@EPA, Chris Nevers/AA/USEPA/US@EPA, Linc Wehrly/AA/USEPA/US@EPA, <Kachuen.Wong@bmwna.com>
Cc: <Andrea.Antholzner@bmwna.com>
Date: 02/12/2013 04:40 PM
Subject: EPA-BMW 2014MY Cert Preview - open items list

Gentlemen

Thank you for hosting our 2014MY Certification Preview this past Thursday.
As mentioned at the end of our meeting, I thought it might be helpful to share a list of the open items.
Here is the list compiled from our notes:

Items for BMW:

1. Are BMW all-wheel-drive models tested on an AWD dyno?
2. Dyno testing of the i8 PHEV
   a. Does the electric drive motor de-clutch from the front wheels?
   b. Is BMW testing on an AWD dyno?
   c. Has BMW encountered any dyno-related testing issues?
3. New diesel engines (engine types N47 and N57):
   a. Are these engines all-new or are some of the components carried-over from the current diesel engines?
   b. What specifically is meant by the "anti-wear package" for the injectors?
4. Will premium fuel be required or recommended for the new MINI engines (engine types B38 and B48)?
5. What improvements were made to the SCR catalyst being used for the recall as compared to the

original 2009MY SCR catalyst?

Items for EPA:

1. During the meeting, EPA announced that reprogramming ESS to default = last-setting is not approved for 2014MY.
    - Is this Is this something that EPA will discuss further internally or is this the final word?
    - I expect BMW management will want to consider producing vehicles that default to "last-setting" (e.g. latch)
        - Can you confirm that we would use a harmonic average of ESS-active and ESS-disabled for Label, CAFÉ and GHG purposes for vehicles produced that default to last-setting?
        - Would it be necessary to perform predominant usage surveys?
        - If predominant usage surveys will be required, how and when would the results be implemented?
        - Are there other ramifications to using default = latch?
2. Is it necessary for our initial applications to have dyno target coefficients for all FEDV sub-configurations in order to meet the "fully described" criteria?
    - Certain sub-configurations are only tested during the model year to support CAFÉ and GHG reporting
    - BMW's motivation is to reduce the number of Running Change additions and corresponding requests for revised Certificates made during the model year
3. For models equipped with ESS that are currently required to be fuel economy tested in both modes, BMW is requesting that EPA waive highway testing with ESS-active. Highway testing would be performed with ESS-deactivated.
    - If EPA grants this waiver, we would appreciate and welcome any thoughts on how to best implement this on Verify, in our Applications, etc.

The reprogramming issue (item 1 above) is the subject of a separate email that I sent to you yesterday (February 11, 2013).
It is included here for completeness.

Please let me know if I missed something or if the list needs clarification or correction.

Thanks and best regards,
Tom

BMW Group
Thomas E. Hofmann
Emissions Certification
200 Chestnut Ridge Road, Building 150
Woodcliff Lake, NJ 07677-7731

Tel: 201-571-5195
Cell: 201-937-6738
Fax: 201-571-5479
Mail: thomas.hofmann@bmwna.com

Air Resources Board

Mary D. Nichols, Chairman
9480 Telstar Avenue, Suite 4
El Monte, California 91731 • www.arb.ca.gov

Matthew Rodriquez
Secretary for
Environmental Protection

Edmund G. Brown Jr.
Governor

October 29, 2012 Reference No. E-12-204

Andrea Antholzner, Manager
Environmental Engineering
BMW of North America, Limited Liability Company
200 Chestnut Ridge Road, Building 150
Woodcliff Lake, NJ 07677-7731

SUBJECT: Conditional Approval of BMW's On-Board Diagnostics II (OBD II) System Design for 2013 Model Year Test Group DBMXT03.0M57.

Dear Ms. Antholzner:

The Air Resources Board's (ARB) Engineering Studies Branch has received the OBD II system description submitted by BMW for the 2013 model year test group listed above. Representations made in the application indicate that the system is compliant with the OBD II regulation with the exception of the swirl control valve monitor and particulate matter (PM) filter performance monitor. The staff has determined that BMW meets the factors necessary to allow OBD II systems to be certified with deficiencies. However, because BMW has not provided answers to questions on the demonstration data, ARB can only issue a conditional approval of the system design at this time. Upon submittal of the required information and staff's review and approval of the information, the conditional status will be removed. Therefore, ARB will approve the 2013 model year OBD II system design for the test group referenced above with two deficiencies. Details of the deficiencies are noted below.

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For swirl valve control systems that use non-metal or segmented shafts, section (f)(16) of the OBD regulation requires manufacturers to verify that all portions of a segmented shaft are properly functioning. BMW's swirl valve control system consists of a single actuator that, through a series of linkages, drives six individual metal flaps that sit on individual metal shafts. Although BMW's monitor verifies the motion of the actuator and the linkage that connects to each individual shaft, it does not verify the motion of each individual shaft. As such, the monitor is deficient for the 2013 model year. This design was first considered deficient for the 2010 model year. Since the 2010 model year, BMW has been working on improving the monitor. For the 2013 model year, BMW

improved the swirl control valve with more durable material and connections from the 2012 model year system. While the design was not fully compliant with the requirements, the redesign allows BMW to certify with a deficiency. BMW plans on completely redesigning the swirl control valve with a compliant monitor for the 2014 model year.

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Beginning with the 2013 model year, light-duty vehicles are required to detect all malfunctions of the PM filter that result in PM emissions exceeding 1.75 times the emission standard. BMW's system, however, can only detect PM filter malfunctions when emissions exceed 3.1 times the PM standard. As such, the system is considered deficient for the 2013 model year. BMW is required to address this issue on its future model year products to remove the deficiency.

Should you have any comments or questions regarding this letter, please have your staff contact Mr. Jason Wong, Staff Air Pollution Specialist at (626) 575-6838.

Sincerely,

Robert H. Cross, M.S.M.E., P.E.
Chief, Mobile Source Control Division

cc: Mr. Jason Wong
Staff Air Pollution Specialist
Mobile Source Control Division

From: DavidA Wright
To: Chris Laroo
Subject: Re: Fw: BMW Diesel Certification MY2014
Date: 02/06/2013 05:16 PM

Thanks Chris,

But they know we might possibly know you.

David
734 214-4467
e-mail:wright.davida@epa.gov

****
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Chris Laroo---02/06/2013 03:04:50 PM---David, Yes that is correct. I published a paper in 2011 in ES&T showing that there is no adverse ef

From: Chris Laroo/AA/USEPA/US
To: DavidA Wright/AA/USEPA/US@EPA
Date: 02/06/2013 03:04 PM
Subject: Re: Fw: BMW Diesel Certification MY2014

David,

Yes that is correct. I published a paper in 2011 in ES&T showing that there is no adverse effect with respect to dioxin, furan, PAH, and PCB emissions when using CuZ SCR. It would be nice if they would reference the specific publication rather than just me!

Regards,

Chris Laroo
Environmental Protection Specialist
US Environmental Protection Agency
Office of Transportation and Air Quality
Assessment and Standards Division
2000 Traverwood Dr.
Ann Arbor, MI 48105
(734) 214-4937
(734) 214-4055 (fax)
Email: Laroo.Chris@epa.gov

DavidA Wright---02/06/2013 01:49:56 PM---Chris, I am forwarding the following note and documents to you as BMW is referencing you and indica

From: DavidA Wright/AA/USEPA/US
To: Chris Laroo/AA/USEPA/US@EPA
Date: 02/06/2013 01:49 PM
Subject: Fw: BMW Diesel Certification MY2014

Chris,

I am forwarding the following note and documents to you as BMW is referencing you and indicating that your testing has concluded that copper-based SCR systems have comparable dioxin emissions to iron-based systems. Not having any knowledge of any work in this area, I just wanted to confirm with you the claim BMW is attributing to you.

Thanks,

David A. Wright
U.S. EPA - OTAQ
Compliance Division, Light-Duty Vehicle Center
2565 Plymouth Road
Ann Arbor, Michigan 48105
734 214-4467
e-mail:wright.davida@epa.gov

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----- Forwarded by DavidA Wright/AA/USEPA/US on 02/06/2013 01:48 PM -----

From: <Thomas.Hofmann@bmwna.com>
To: DavidA Wright/AA/USEPA/US@EPA
Cc: Chris Nevers/AA/USEPA/US@EPA, Linc Wehrly/AA/USEPA/US@EPA
Date: 01/28/2013 11:38 AM
Subject: BMW Diesel Certification MY2014

Hello David

For the 2014MY diesels, BMW would is planning to use a copper-based SCR system.
BMW concludes that copper-based systems are comparable to iron-based systems with respect to dioxin emissions.
That conclusion is based on the findings of US EPA (Chris LaRoo, et.al.) and Eurofins/University of Applied Sciences Regensburg (Germany).
A presentation of the latter work is attached here as "Dioxin – San Antonio Paper on EU Program.pdf".

The attached powerpoint slide:

- shows a block diagram of the planned aftertreatment system
- requests confirmation that no further substantiation is required in order to use a copper-based SCR catalyst.

Please let me know if you have any questions.

Kind regards,
Tom

BMW Group
Thomas E. Hofmann
Emissions Certification
200 Chestnut Ridge Road, Building 150
Woodcliff Lake, NJ 07677-7731

Tel: 201-571-5195
Cell: 201-937-6738
Fax: 201-571-5479
Mail: thomas.hofmann@bmwna.com

[attachment "2014MY BMW copper SCR catalyst.pptx" deleted by Chris Laroo/AA/USEPA/US]
[attachment "Dioxin - San Antonio Paper on EU Program.pdf" deleted by Chris Laroo/AA/USEPA/US]

From: DavidA Wright
To: Linc Wehrly
Cc: Bill Pidgeon; Chris Nevers; Joel Ball
Subject: Re: Fw: Defect report EPA EDIR 0031 - Emission Control Information Label
Date: 10/17/2012 03:47 PM

Ex. 5 Deliberative Process (DP)

Regards,

David A. Wright
U.S. EPA - OTAQ
Compliance Division, Light-Duty Vehicle Center
2565 Plymouth Road
Ann Arbor, Michigan 48105
734 214-4467
e-mail:wright.davida@epa.gov

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Linc Wehrly---10/17/2012 10:38:23 AM---What are your collective thoughts on how to proceed with the BMW labeling issue? BMW acknowledged t

From: Linc Wehrly/AA/USEPA/US
To: DavidA Wright/AA/USEPA/US@EPA, Joel Ball/AA/USEPA/US@EPA, Bill Pidgeon/AA/USEPA/US@EPA, Chris Nevers/AA/USEPA/US@EPA
Date: 10/17/2012 10:38 AM
Subject: Fw: Defect report EPA EDIR 0031 - Emission Control Information Label

Ex. 5 Deliberative Process (DP)

Thanks,
Linc

Linc Wehrly
Director, Light-Duty Vehicle Center
Compliance Division
United States Environmental Protection Agency
(734) 214-4286
wehrly.linc@epa.gov

----- Forwarded by Linc Wehrly/AA/USEPA/US on 10/17/2012 10:18 AM -----

From: <Andrea.Antholzner@bmwna.com>
To: Linc Wehrly/AA/USEPA/US@EPA
Date: 10/12/2012 11:31 AM
Subject: Defect report EPA EDIR 0031 - Emission Control Information Label

---

Hi Linc,

sorry I missed your call.
The respective defect report I wanted to talk about has the EPA EDIR No 0031.
It is a defect report related to Diesel and contains an issue about the Ultra Low Sulfur Labels.

Please find I attached a copy.

I am back in the office now, and will try again later.
Thanks,
Andrea

Andrea Antholzner
Department Head Environmental Engineering
EG-8-US-2
BMW of North America, LLC
Office +1-201-571-5177
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Bayerische Motoren Werke Aktiengesellschaft
Board of Management: Norbert Reithofer, Chairman,
Frank-Peter Arndt, Milagros Caiña Carreiro-Andree,
Herbert Diess, Klaus Draeger, Friedrich Eichiner,
Harald Krüger, Ian Robertson.
Chairman of Supervisory Board: Joachim Milberg
Registered in Germany: München HRB 42243

[attachment "FOI_BMX_DRE_00031_BD_R00.pdf" deleted by DavidA Wright/AA/USEPA/US]

From: Chris Nevers
To: DavidA Wright
Subject: Re: NNTO: Linc wants to chat with you and I today about the BMW BEVx and their issue
Date: 01/29/2013 08:40 AM

OK

I should be in around 10. **Ex. 6 Personal Privacy (PP)**

Also, are you getting the BMW diesel data to Linc? Let me know if you need me to get it, I only have Ford and Cummins Diesels now.

-----DavidA Wright/AA/USEPA/US wrote: -----

To: Chris Nevers/AA/USEPA/US@EPA
From: DavidA Wright/AA/USEPA/US
Date: 01/29/2013 08:15AM
Subject: NNTO: Linc wants to chat with you and I today about the BMW BEVx and their issue

David A. Wright
U.S. EPA - OTAQ
Compliance Division, Light-Duty Vehicle Center
2565 Plymouth Road
Ann Arbor, Michigan 48105
734 214-4467
e-mail:wright.davida@epa.gov

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****

From: Thomas.Hofmann@bmwna.com
To: Chris.Nevers/AA/USEPA/US@EPA
Subject: 335d FOIA application
Date: 02/20/2009 03:28 PM

Hello Chris

My team leader in Munich informs me that the missing FOI applications were uploaded to Verify.
You should be able to download the 9BMXV03.0M57 application in order to respond to the FOIA request re: BMW 335d

have a great weekend,
Tom

Tom Hofmann
Emissions & Fuel Economy Certification
BMW of North America, LLC
201-571-5195

Certification Summary Information Report

Manufacturer	BMW	**Manufacturer Code**	BMX
Test Group	ABMXV03.0M57	**Evaporative/Refueling Family**	N/A
Certificate Number	N/A	**CARB Executive Order #**	N/A
Certificate Issue Date	N/A	**Certificate Revision Date**	N/A
Certificate Effective Date	N/A	**Conditional Certificate**	
CSI Revision #	0	**CSI Revision Date**	06/26/2009
Model Year	2010		

Test Group Information

CSI Type	Update for Correction	**Running Change Reference Number**	N/A
Drive Source	Combustion Engine	**EPA Vehicle Class**	LDV
Federal Clean Fuel Vehicle	No	**Federal Clean Fuel Vehicle Standard**	
Federal Clean Fuel Vehicle ILEV	No	**California Partial Zero Emissions Vehicle Indicator**	
Durability Group Name	ABMXDPDNNV30	**Durability Group Equivalency Factor**	1
Fuel Category	Single Fuel	**Fuel(s)**	Diesel
Reduced Fee Test Group	No		
Certification Region Codes			
Introduction into Commerce Date	09/01/2009	**CAP2000 Conditional Certificate?**	N/A
Mfr Test Group Comments			
Exhaust/Evap Standards Comments			

Models Covered by this Certificate

Manufacturer	Division	Carline	Certification Region Code	Drive System	Transmission			
					Trans Type	Lockup	Creeper Gear	# of Gears
BMW	1 - BMW	46 - 335d	Fed	R	SA	Yes	No	6
BMW	1 - BMW	46 - 335d	CA	R	SA	Yes	No	6

Engine Description

Hybrid Type		**Hybrid Description**	
Engine Type	4-Stroke Compression Ignition		
Engine Description			
Engine Block Arrangement	Inline		
Engine Block Arrangement Description			
Basic Fuel Metering Systems(s)	Common Rail Diesel Injection, Direct Diesel Injection	**Number of Cylinders/Rotors**	6

Certification Summary Information Report

Manufacturer	BMW	**Manufacturer Code**	BMX
Test Group	ABMXV03.0M57	**Evaporative/Refueling Family**	N/A
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Certificate Issue Date	N/A	**Certificate Revision Date**	N/A
Certificate Effective Date	N/A	**Conditional Certificate**	
CSI Revision #	0	**CSI Revision Date**	06/26/2009
Model Year	2010		

Engine Configuration Number 1

Engine Displacement (liters)	3.0	**Engine Rated Horsepower**	265
Number of Inlet Valves Per Cylinder	2	**Number of exhaust Valves Per Cylinder**	2
Air Aspiration Method	Turbocharged	**Number of Air Aspiration Devices**	2
Air Aspiration Device Configuration	Series	**Charge Air Cooler Type**	Air

Cylinder Deactivation Description - N/A

Variable Valve Timing System Description - N/A

Variable Valve Lift System - N/A

Sensor Information

Number of Knock Sensors	0		
Sensor # 1		**Sensor Type**	Air fuel
Sensor # 2		**Sensor Type**	Nitrogen oxide
Sensor # 3		**Sensor Type**	Nitrogen oxide

Sensor Comments - N/A

Exhaust Gas Recirculation	Yes	**EGR Type**	Vacuum
Cooled Exhaust Gas Recirculation	Yes		
Closed Loop Air Injection System	No	**Air Injection Type**	

Engine Configuration Comments - null

After Treatment Device(s) (ATD)

ATD Number	ATD Type	ATD Precious Metal	Substrate Material	Substrate Construction
1	Oxidation catalyst	Platinum + Paladium	Ceramic	Monolith
2	Diesel Particulate Filter	Platinum + Paladium	Metal	Monolith
3	Selective Catalytic Reduction	no precious metal	Metal	Monolith

After Treatment Device (ATD) Comments

Direct Ozone Reduction (DOR) Device Not Equipped

Emission Control Device Comments

Emission Data Vehicle Information

Vehicle ID / Configuration	A265015 / 0		
Transmission Type	Automatic	**# of Transmission Gears**	6
Engine Code	3.0-A-M57-E90	**Axle Ratio**	2.81
Fuel(s)	Diesel / Not Applicable	**Vehicle Fuel Category**	Single Fuel
Displacement (liters)	3	**Rated Horsepower**	265
Equivalent Test Weight (pounds)	4000	**Air Aspiration Method**	Turbocharged
Test Drive Code	2-Wheel Drive, Rear	**SIL Usage**	Not eqipped
Aged Emission Components	4,000 (mi)		

Dynamometer Coefficients Test Procedure: City/Highway/Evap

Dynamometer Target Coefficients	a=41.4 (lbf)	b=0.179 (lbf/mph)	c=0.01661 (lbf/mph**2)
Dynamometer Set Coefficients	a=19.4 (lbf)	b=-0.217 (lbf/mph)	c=0.01928 (lbf/mph**2)

Dynamometer Coefficients Test Procedure: US06

Dynamometer Target Coefficients	a=41.4 (lbf)	b=0.179 (lbf/mph)	c=0.01661 (lbf/mph**2)
Dynamometer Set Coefficients	a=19.4 (lbf)	b=-0.217 (lbf/mph)	c=0.01928 (lbf/mph**2)

Test Vehicle Comments

EDV 335d

Certification Summary Information Report

Manufacturer	BMW	**Manufacturer Code**	BMX
Test Group	ABMXV03.0M57	**Evaporative/Refueling Family**	N/A
Certificate Number	N/A	**CARB Executive Order #**	N/A
Certificate Issue Date	N/A	**Certificate Revision Date**	N/A
Certificate Effective Date	N/A	**Conditional Certificate**	
CSI Revision #	0	**CSI Revision Date**	06/26/2009
Model Year	2010		

Test #	9BMX10000337	**Exhaust Test # for this Evap Test**	N/A
Test Procedure	CVS 75 and later (w/o can. load)	**Test Fuel Type**	Cert Diesel 7-15 ppm Sulfur
Test Date	07/17/2008	**DF Type**	Mfr. Determined
4WD Dyno?	No	**State of Charge Delta**	

Test Comments

EDV CVS 335d

Exhaust Standards

Sales Area	Useful Life	Emission Name	Rounded Result	Cert Level	Std	Vehicle Class	Std Level	NMOG / NMHC	RAF	Deterioration Factor Add DF	Deterioration Factor Mult DF	Diesel Adjustment Factor Up	Diesel Adjustment Factor Down	Pass/Fail
Fed	50,000 miles	HC-NM	0.0184	0.02	0.075	LDV	Federal Tier 2 Bin 5				1.103	-0.00006	0.00314	Pass
Fed	50,000 miles	CO	0.12	0.1	3.4	LDV	Federal Tier 2 Bin 5				1.073	-0.00018	0.00982	Pass
Fed	50,000 miles	NOX	0.034	0.04	0.05	LDV	Federal Tier 2 Bin 5				1.043	0.00222	-0.12178	Pass
Fed	120,000 miles	HC-NM+NOX-COMP	0.096	0.1	0.65	LDV	Federal Tier 2 Bin 5				1	0	0	Pass
Fed	120,000 miles	HC-NM+NOX-COMP	0.096	0.1	0.65	LDV	Federal Tier 2 Bin 5				1	0	0	Pass
Fed	120,000 miles	HC-NM+NOX-COMP	0.096	0.1	0.65	LDV	Federal Tier 2 Bin 5				1	0	0	Pass
Fed	120,000 miles	HC-NM	0.0184	0.023	0.090	LDV	Federal Tier 2 Bin 5				1.26	-0.00006	0.00314	Pass
Fed	120,000 miles	CO	0.12	0.1	4.2	LDV	Federal Tier 2 Bin 5				1.183	-0.00018	0.00982	Pass
Fed	120,000 miles	PM-COMP	0.001	0	0.07	LDV	Federal Tier 2 Bin 5				1	0	0	Pass
Fed	120,000 miles	PM-COMP	0.001	0	0.07	LDV	Federal Tier 2 Bin 5				1	0	0	Pass
Fed	120,000 miles	PM-COMP	0.001	0	0.07	LDV	Federal Tier 2 Bin 5				1	0	0	Pass
Fed	120,000 miles	PM	0.0004	0	0.010	LDV	Federal Tier 2 Bin 5				1	0.00004	-0.00239	Pass
Fed	120,000 miles	NOX	0.034	0.04	0.07	LDV	Federal Tier 2 Bin 5				1.11	0.00222	-0.12178	Pass
CA	50,000 miles	HC-NM	0.0184	0.02	0.075	LDV	California LEV-II LEV				1.103	-0.00006	0.00314	Pass
CA	50,000 miles	CO	0.12	0.1	3.4	LDV	California LEV-II LEV				1.073	-0.00018	0.00982	Pass

Certification Summary Information Report

Manufacturer	BMW	**Manufacturer Code**	BMX
Test Group	ABMXV03.0M57	**Evaporative/Refueling Family**	N/A
Certificate Number	N/A	**CARB Executive Order #**	N/A
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Certificate Effective Date	N/A	**Conditional Certificate**	
CSI Revision #	0	**CSI Revision Date**	06/26/2009
Model Year	2010		

Test #	9BMX10000337	**Exhaust Test # for this Evap Test**	N/A
Test Procedure	CVS 75 and later (w/o can. load)	**Test Fuel Type**	Cert Diesel 7-15 ppm Sulfur
Test Date	07/17/2008	**DF Type**	Mfr. Determined
4WD Dyno?	No	**State of Charge Delta**	
Test Comments			

EDV CVS 335d

Exhaust Standards

CA	50,000 miles	NOX	0.034	0.04	0.05	LDV	California LEV-II LEV		1.043	0.00222	-0.12178	Pass
CA	120,000 miles	HC-NM	0.0184	0.023	0.090	LDV	California LEV-II LEV		1.26	-0.00006	0.00314	Pass
CA	120,000 miles	CO	0.12	0.1	4.2	LDV	California LEV-II LEV		1.183	-0.00018	0.00982	Pass
CA	120,000 miles	PM	0.0004	0	0.010	LDV	California LEV-II LEV		1	0.00004	-0.00239	Pass
CA	120,000 miles	NOX	0.034	0.04	0.07	LDV	California LEV-II LEV		1.11	0.00222	-0.12178	Pass

Test #	9BMX10000352	**Exhaust Test # for this Evap Test**	N/A
Test Procedure	HWFE	**Test Fuel Type**	Cert Diesel 7-15 ppm Sulfur
Test Date	07/09/2008	**DF Type**	Mfr. Determined
4WD Dyno?	No	**State of Charge Delta**	
Test Comments			

EDV HWY 335d

Exhaust Standards

										Deterioration Factor		Diesel Adjustment Factor		
Sales Area	**Useful Life**	**Emission Name**	**Rounded Result**	**Cert Level**	**Std**	**Vehicle Class**	**Std Level**	**NMOG / NMHC**	**RAF**	**Add DF**	**Mult DF**	**Up**	**Down**	**Pass/Fail**
Fed	50,000 miles	NOX	0.003	0	0.07	LDV	Federal Tier 2 Bin 5				1.043	0.00222	-0.12178	Pass
Fed	120,000 miles	NOX	0.003	0	0.09	LDV	Federal Tier 2 Bin 5				1.11	0.00222	-0.12178	Pass
CA	50,000 miles	NOX	0.003	0	0.07	LDV	California LEV-II LEV				1.043	0.00222	-0.12178	Pass
CA	120,000 miles	NOX	0.003	0	0.09	LDV	California LEV-II LEV				1.11	0.00222	-0.12178	Pass

Certification Summary Information Report

Manufacturer	BMW	**Manufacturer Code**	BMX
Test Group	ABMXV03.0M57	**Evaporative/Refueling Family**	N/A
Certificate Number	N/A	**CARB Executive Order #**	N/A
Certificate Issue Date	N/A	**Certificate Revision Date**	N/A
Certificate Effective Date	N/A	**Conditional Certificate**	
CSI Revision #	0	**CSI Revision Date**	06/26/2009
Model Year	2010		

Test #	9BMX10000353	**Exhaust Test # for this Evap Test**	N/A
Test Procedure	US06	**Test Fuel Type**	Cert Diesel 7-15 ppm Sulfur
Test Date	07/09/2008	**DF Type**	Mfr. Determined
4WD Dyno?	No	**State of Charge Delta**	

Test Comments

EDV US06 335d

Exhaust Standards

Sales Area	Useful Life	Emission Name	Rounded Result	Cert Level	Std	Vehicle Class	Std Level	NMOG / NMHC	RAF	Deterioration Factor Add DF	Deterioration Factor Mult DF	Diesel Adjustment Factor Up	Diesel Adjustment Factor Down	Pass/Fail
Fed	4,000 miles	CO	0.02	0	8.0	LDV	Federal Tier 2 Bin 5				1	-0.00018	0.00982	Pass
Fed	4,000 miles	HC-NM+NOX	0.023	0.02	0.14	LDV	Federal Tier 2 Bin 5				1	0	0	Pass
Fed	120,000 miles	CO	0.02	0	11.1	LDV	Federal Tier 2 Bin 5				1.183	-0.00018	0.00982	Pass
CA	4,000 miles	CO	0.02	0	8.0	LDV	California LEV-II LEV				1	0	0	Pass
CA	4,000 miles	HC-NM+NOX	0.023	0.02	0.14	LDV	California LEV-II LEV				1	0	0	Pass

Test #	9BMX10000354	**Exhaust Test # for this Evap Test**	N/A
Test Procedure	SC03	**Test Fuel Type**	Cert Diesel 7-15 ppm Sulfur
Test Date	07/11/2008	**DF Type**	Mfr. Determined
4WD Dyno?	No	**State of Charge Delta**	

Test Comments

EDV SC03 335d

Exhaust Standards

Sales Area	Useful Life	Emission Name	Rounded Result	Cert Level	Std	Vehicle Class	Std Level	NMOG / NMHC	RAF	Deterioration Factor Add DF	Deterioration Factor Mult DF	Diesel Adjustment Factor Up	Diesel Adjustment Factor Down	Pass/Fail
Fed	4,000 miles	CO	0.02	0	2.7	LDV	Federal Tier 2 Bin 5				1	-0.00018	0.00982	Pass
Fed	4,000 miles	HC-NM+NOX	0.014	0.01	0.20	LDV	Federal Tier 2 Bin 5				1	0	0	Pass
Fed	120,000 miles	CO	0.02	0	3.7	LDV	Federal Tier 2 Bin 5				1.183	-0.00018	0.00982	Pass
CA	4,000 miles	CO	0.02	0	2.7	LDV	California LEV-II LEV				1	0	0	Pass
CA	4,000 miles	HC-NM+NOX	0.014	0.01	0.20	LDV	California LEV-II LEV				1	0	0	Pass

From: David Good
To: Linc Wehrly; Stephen Healy; Chris Nevers
Subject: Fw: BMW Diesels - 2009 FE Label mpg values
Date: 10/02/2008 04:17 PM
Attachments: notification self approval 335d X5 35d.pdf

FYI---(Projected sales from the cert preview (last spring) was Ex. 4 CBI for the X5 and Ex. 4 CBI for the 335d.)

Regards
----- Forwarded by David Good/AA/USEPA/US on 10/02/2008 04:03 PM -----

<Thomas.Hofmann@bmwna.com>
Sent by:
<Thomas.Hofmann@bmwna.com>

To David Good/AA/USEPA/US@EPA
cc Vincent Mazaitis/AA/USEPA/US@EPA
Subject RE: BMW Diesels - What are the FE Label mpg values?

Received Date:
10/02/2008 12:20 PM
Transmission Date:
10/02/2008 12:20:13 PM

Hello Dave

Attached is our notification of self-approval for the diesels, including the support info and my calculation.
As mentioned in the text of the letter, we will put this info on Verify as soon as practical.
In case there are issues with Verify (or my ability to use it), this self-approval is helpful as a backup.

The paper original is in the mail to your attention.

Please feel free to contact me by e-mail or phone.

best regards,
Tom

-----Original Message-----
From: Good.David@epamail.epa.gov [mailto:Good.David@epamail.epa.gov]
Sent: Thursday, September 25, 2008 7:55 AM
To: Hofmann Thomas, ES-5-US-20
Cc: Mazaitis.Vincent@epamail.epa.gov
Subject: BMW Diesels - What are the FE Label mpg values?

Tom,

Please send me the FE Label values for the 2009 diesels (335d and the X5) when they are available.

Attached is an example FE label self approval letter, in case you need to notify EPA of the label values of these vehicles during the CFEIS/Verify shutdown. Verify should be up and running somewhere around October 7th.

Regards

(See attached file: Example mfr self approval FE Label letter.808.pdf)

notification self approval 335d X5 35d.pdf

From: Thomas.Hofmann@bmwna.com
To: David Good/AA/USEPA/US@EPA
Cc: Chris Nevers/AA/USEPA/US@EPA
Subject: no 2012 BMW 335d
Date: 09/21/2011 01:57 PM

Hello Dave

Sorry I missed your call.

3-Series Diesel
There will be no 2012MY 335d (diesel).
That chassis is going out of production shortly.
The new 3-Series diesel is in development.
The current plan is a start production some time in CY2013 as a 2014 model.

X5 Diesel
There will be an X5 xDrive35d (diesel) for 2012MY. It is carryover from 2011MY.
It has an October start of production.
I expect to do that FE Label submission in the next few days.

thanks,
Tom

BMW of North America, LLC
Thomas E. Hofmann
Senior Engineer, Emissions and Fuel Economy Certification
200 Chestnut Ridge Road, Building 150
Woodcliff Lake, NJ 07677-7731
Phone: (001) 201-571-5195
Fax: (001) 201-571-5479

BMW Group

October 1, 2008

Mr. Dave Good
Compliance and Innovative Strategies Division
US Environmental Protection Agency
2000 Traverwood Dr
Ann Arbor MI 48105

Re: Notification of Self-Approval of 2009MY BMW General Label Fuel Economy Values (2)

Dear Mr. Good:

In accordance with 40 CFR §600, we are notifying EPA of the Self-Approval of 2009MY General Fuel Economy Label Values for the following model types:

Engine	Model
M57D30TOP	335d
M57D30TOP	X5 xDrive35d

The calculation information is included in the following two attachments:

Attachment 1: 2009MY Model Type & General Label Data
Attachment 2: BMW Label Value calculation

This notification is being made because there is presently no means available for BMW to initiate electronic approval of these label values. We intend to submit this information using Verify as soon as practical.

Should you have any questions, please do not hesitate to contact Tom Hofmann of my staff at (201) 571-5195

Sincerely yours,

Wilhelm Hall
General Manager
Environmental Engineering

Headquarters
300 Chestnut Ridge Road
Woodcliff Lake, NJ 07675

Mailing Address
200 Chestnut Ridge Rd
Woodcliff Lake, NJ 07677

Telephone
(201) 571-5177

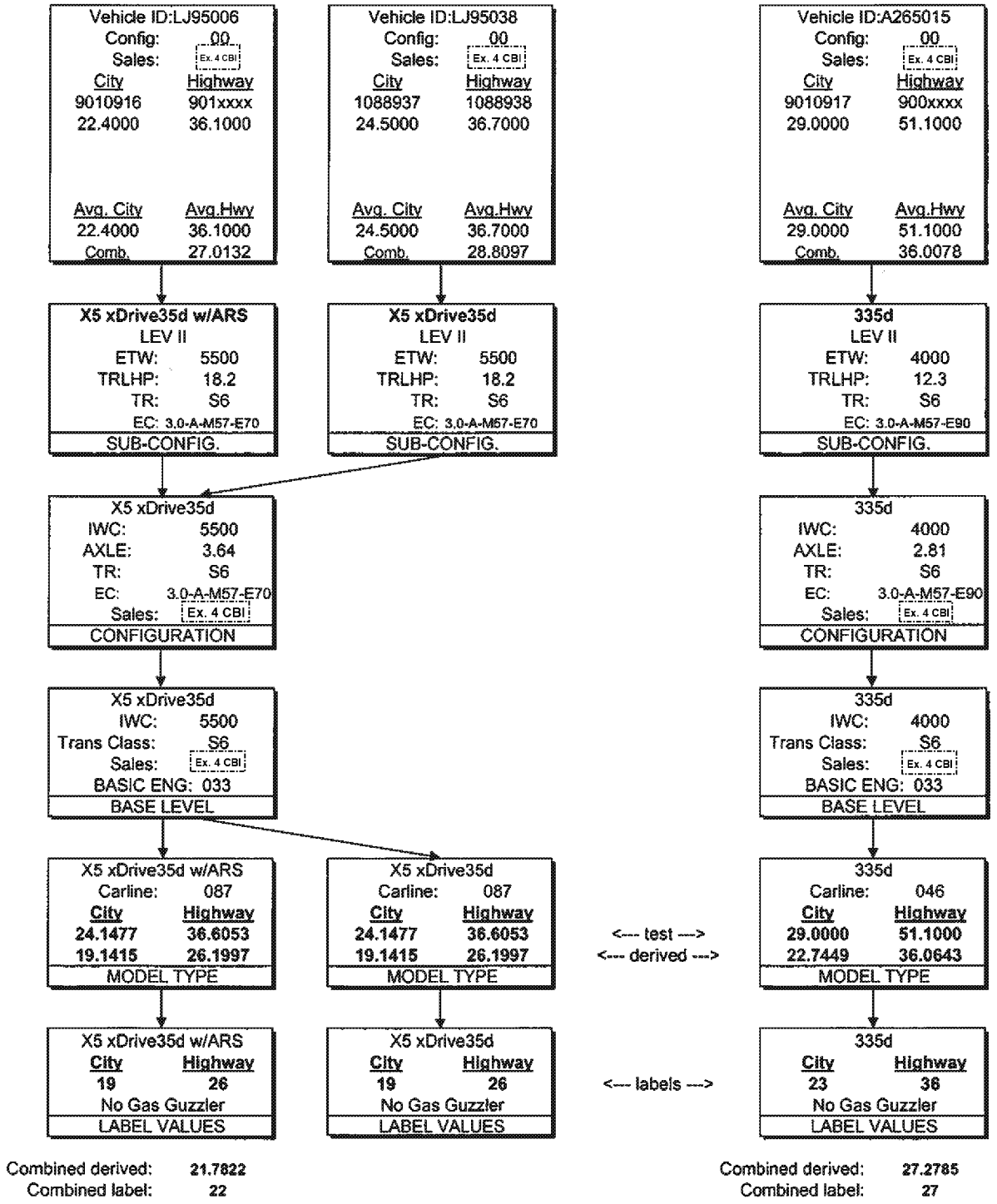
Facsimile
(201) 571-5479

BMW 2009MY - Model Type and General Fuel Economy Label Data - Diesel Models

Engine	Model Name	Label Values			Est. Ann. Fuel Cost	Engine Displ. / No. of Cyl.	Drive System	Trans	Comparable Class
		City	Highway	Combined					
M57D30TOP-E90	335d	23	36	27	2389	183 (3.0L) / 6	RWD	S6	Compact Cars
M57D30TOP-E70	X5 xDrive35d	19	26	22	2932	183 (3.0L) / 6	AWD	S6	Special Purpose SUV-4WD

ED_002825C_00000015-00002

BMW 2009MY - Label Value Calculations - Diesel Models



From:	Thomas.Hofmann@bmwna.com
To:	David Good/AA/USEPA/US@EPA
Cc:	Wilhelm.Hall@bmwna.com; Robert Peavyhouse/AA/USEPA/US@EPA; Ching-Shih Yang/AA/USEPA/US@EPA; Chris Nevers/AA/USEPA/US@EPA
Subject:	RE: 2011 FE Guide data for web posting on May 24, 2010 - Please review & let EPA know after the Verify data is error free and ready for posting on www.fueleconomy.gov
Date:	05/05/2010 11:24 AM
Attachments:	Comparison 5 Sedan to 5 Gran Turismo.pdf

Hello Dave

This is our 'good-to-go' notice for the next web posting of 2010 and 2011 fuel economy data.

Below is a list of identified concerns from each spreadsheet along with our response as to how each concern has been addressed.
Please let me know if you have any questions.

best regards,
Tom

1. Spreadsheet: Rolls-Royce 2010FE Guide new & revised
no concerns

2. Spreadsheet: Rolls-Royce 2010FE Guide all
no concerns

3. Spreadsheet: BMW 2010FE Guide new & revised

index 760 - 760Li - relabel warning
The reason and regulation for the re-label was stated in the comment text.
The release date was the effective date of the re-label

4. Spreadsheet: BMW 2010FE Guide all

index 350 - 335d - incorrect annual fuel cost
The annual fuel cost was corrected from $1499 to $1498 on 5/3/2010

index 339 - 335i xDrive auto - incorrect classification
The classification was corrected from code 3 (subcompact) to code 4 (compact) on 5/4/2010

index 340 - 335i xDrive manual - incorrect classification
The classification was corrected from code 3 (subcompact) to code 4 (compact) on 5/4/2010

index 528 - 528i auto - relabel warning
The reason and regulation for the re-label was stated in the comment text.
The release date was corrected from 9/18/2009 to 9/23/2009 to reflect the effective date of the re-label.

index 529 - 528i manual - relabel warning
The reason and regulation for the re-label was stated in the comment text.
The release date was corrected from 9/18/2009 to 9/23/2009 to reflect the effective date of the re-label

index 531 - 528i xDrive manual - relabel warning
The reason and regulation for the re-label was stated in the comment text;
The release date was corrected from 9/21/2009 to 9/23/2009 to reflect the effective date of the re-label

index 536 - 535i manual - relabel warning
The reason and regulation for the re-label was stated in the comment text.
The release date was the effective date of the re-label

index 537 - 535i xDrive auto - relabel warning
The reason and regulation for the re-label was stated in the comment text.
The release date was the effective date of the re-label.

index 538 - 535i xDrive manual - relabel warning
The reason and regulation for the re-label was stated in the comment text.
The release date was the effective date of the re-label

index 760 - 760Li - relabel warning
The reason and regulation for the re-label was stated in the comment text.
The release date was the effective date of the re-label.

index 674 - ActiveHybrid X6 - number of batteries warning
The number of batteries was changed from 260 to 1 on 5/5/2010.

index 574 - X5 xDriveM - relabel warning
The reason and regulation for the re-label was stated in the comment text.
The release date was the effective date of the re-label.

index 673 - X6 xDriveM - relabel warning
The reason and regulation for the re-label was stated in the comment text.
The release date was the effective date of the re-label

5. Spreadsheet: BMW 2011FE Guide all

most indicies - 5 cycle derived warning -
BMW has performed the Litmus Test for all of the test groups represented by the models listed.
In all cases, the litmus test met the criteria and we used the 5 cycle derived method.

The litmus tests are shown in the individual test group applications.

index 350 - 335d - incorrect annual fuel cost
The annual fuel cost was corrected from $1499 to $1498 on 5/3/2010.

index 339 - 335i xDrive auto - incorrect classification
The classification was corrected from code 3 (subcompact) to code 4 (compact) on 5/4/2010.

index 340 - 335i xDrive manual - incorrect classification
The classification was corrected from code 3 (subcompact) to code 4 (compact) on 5/4/2010.

index 541 - 535i Gran Turismo -
How does it differ from 535i?
The 535i Gran Turismo shares the 535i powertrain, but very little else is shared.
Some of the basic measurements are shown in the attached pdf document.
It is significantly larger (wheelbase, height, Large car rather than Midsize) and heavier.
Why different carlines?
The carline definition speaks to "a degree of commonality in construction (e.g. body, chassis)"
In this case, there is no commonality in body between the 535i Sedan and the 535i Gran Turismo.
Unique Labels?
The 535i automatic and 535i Gran Turismo (only available with automatic) have the same label values.
They are part of the same base level and do not have unique labels.

index 554 - 550i Gran Turismo -
How does it differ from 550i?
The 550i Gran Turismo shares the 550i powertrain, but very little else is shared.
Some of the basic measurements are shown in the attached pdf document.
It is significantly larger (wheelbase, height, Large car rather than Midsize) and heavier.
Why different carlines?
The carline definition speaks to "a degree of commonality in construction (e.g. body, chassis)"
In this case, there is no commonality in body between the 550i Sedan and the 550i Gran Turismo.
Unique Labels?
The 550i and the 550i Gran Turismo were not "forced" to have unique labels.
The 550i automatic and 550i Gran Turismo (only available with automatic) are in different Inertia Weight Classes.
Specifically, the 550i automatic is 4500 IWC while the 550i Gran Turismo is 5000 IWC.
As a result of the differing base levels, the 550i Gran Turismo has different fuel economy values than the 550i automatic.

index 758 - ActiveHybrid 7 - number of batteries warning
The number of batteries was changed from 35 to 1 on 5/5/2010.

index 759 - ActiveHybrid 7L - number of batteries warning
The number of batteries was changed from 35 to 1 on 5/5/2010.

index 674 - ActiveHybrid X6 - number of batteries warning
The number of batteries was changed from 260 to 1 on 5/5/2010.

index 572 - X5 xDrive35d (diesel) - error with combined unadjusted unrounded mfr FE
The error is due to a typo in the unadjusted unrounded city value.
The model type unadjusted unrounded city FE was corrected from 23.8289 to 23.8298 on 5/4/2010.

-----Original Message-----
From: Good.David@epamail.epa.gov [mailto:Good.David@epamail.epa.gov]
Sent: Thursday, April 29, 2010 7:11 PM
To: Hofmann Thomas, ES-5-US-20
Cc: Hall Wilhelm, ES-5-US-2; Peavyhouse.Robert@epamail.epa.gov; Yang.Ching-Shih@epamail.epa.gov; Nevers.Chris@epamail.epa.gov
Subject: 2011 FE Guide data for web posting on May 24, 2010 - Please review & let EPA know after the Verify data is error free and ready for posting on www.fueleconomy.gov

Tom,

re: 2011 FE Guide data for web posting on May 24, 2010 - Please review & let EPA know after the Verify data is error free and ready for posting on www.fueleconomy.gov

Attached are Excel Spreadsheets for each manufacturer which you are handling.

Two Types of 2010 Data Files Provided FYI: One type of 2010 spreadsheet contains new and revised FE Labels since the web was last updated on October 16, 2009. This new data was sent to DOE on April 27, 2010 for web posting as soon as possible. The second type of 2010 spreadsheet contains all 2010 FE Labels in EPA's Verify data base as of April 9, 2010. Please review the 2010 files, make changes in EPA's data base as needed----please email Bob Peavyhouse and me if you see any major problems with the 2010 data as posted on the web.

One Type of 2011 Data File: The third type of spreadsheet contains all the 2011 FE label data from EPA's Verify data base as of April 27, 2010. Please review the 2011 spreadsheet and confirm for your records that the data are correct. Please make sure that the release date is accurate for the models listed. Please double check any new FE Labels which you input into Verify (not listed in this spreadsheet) to make sure they are error free. Any corrections should be made directly in the EPA Verify database. [Do not correct the spreadsheet and send it back.]

The last date to make changes for the 2011 web posting is May 17, 2010. EPA will review the data on May 18 and forward it to DOE on May 19 for posting on the web on May 24, 2010.

Reminders:

1. EPA Comments: Please review all the comments in column 1 of the spreadsheet and make corrections as needed.

2. EPA generated Fields: Please double check the transmission, gas guzzler and model type descriptor fields in the attached spreadsheet (called "Trans as listed in FE Guide (derived from col AA thru AF)" and "Guzzler?" and "Engine Descriptor (40 characters or less)" in the attached spread sheet). These fields were derived by EPA (and not directly input to Verify by manufacturers). Please be sure they are accurate as they will be used to describe your vehicles on the web.

3. FFVs & Dual fuel Vehicles: For flexible-fueled and dual fuel vehicles, please enter data for both fuels in the same model type index--by clicking on the buttons to "Add Another Fuel Usage" and "Add another Base Level Fuel Usage." Then, for example, enter the gasoline test data in "Base Level Fuel Usage #1" and the E85 test data in "Base Level Fuel Usage #2." Please don't enter the gasoline and alternative fuel data using two separate index numbers.

4. Engine or Model Type Descriptors: If you need to enter a basic engine/model type descriptor (so that customers can easily identify two otherwise identical model types), please enter the descriptor in the Verify "Manufacturer Fuel Economy Label Comments" field. Please be clear and concise (40 characters or less) about the information added in the comment field, for example: Engine descriptor "4-valve" needed for this model type.

5. Relabeling: When relabeling vehicles for reasons specified 40 CFR 600.507(a) and 600.314-08(e)(4), please revise the original Index with the revised FE label information and also revise the release date to the effective date when the FE Label was revised. Please include in the model type comment field the reason for relabeling. Note that the provisions of 40 CFR 600.314-08 state that label values must not change for entire model year, except for 600.507(a) and 600.314-08(e)(4) reasons.

6. New Error Checks: We added a new error check to the spreadsheet which checks the manufacturer's calculation of the unadjusted combined mpg value. If your unadjusted combined mpg value does not agree with EPA's calculation please revise Verify accordingly. Errors in the unadjusted combined mpg value are sometimes caused by entering into Verify incorrectly rounded unadjusted city and/or unadjusted highway mpg values.

7. Forwarded reminders: Also, please read the reminders in the forwarded message below.

Please email me and your EPA team member when your 2011 Verify data is "good to go" (after any needed changes or additions are made to Verify and you are sure that the Verify data is correct).

Regards

----- Forwarded by David Good/AA/USEPA/US on 04/29/2010 04:11 PM -----

From:

David Good/AA/USEPA/US

Date:

04/20/2010 06:29 PM

Subject:

2011 FE Guide - Schedule for May, 2010 web release on www.fueleconomy.gov

To manufacturers,

Here's our tentative schedule for May, 2010 web update for the 2011 FE Guide.

2011 FE Guide Schedule: As you know, EPA and DOE typically put the new models on the web in mid-May, mid-July, Sept (first week) and Oct (second week). Attached is EPA's time line for this year's mid-May posting for early-introduction 2011MY vehicles.

Date	Action
Apr 27 (Tues)	EPA staff performs 2011 FE Guide Verify query (separated by mfr, etc) for EPA review
Apr 28 (Wed)	EPA sends FE Guide data to manufacturers for review & corrections; also sends prelim data to DOE
Apr 29-May 17	Mfrs review & make corrections
May 17 (Mon)	Last day for manufacturers to make corrections and add new data
May 18 (Tues)	EPA staff performs 2011 FE Guide Verify query for EPA review
May 19 (Wed)	EPA sends final data to DOE
May 24 (Mon)	DOE publishes 2011 FE Guide data on web

Reminders:

Release date for 2011 Labels: Please be sure that the release date is correct in EPA's Verify data base. For the May release, we will post FE Labels on the web which have a release date of May 24, 2010 and earlier.

2WD SUV Classification: As outlined in my Feb 24, 2010 email message to the Alliance and AIAM---when labeling 2WD SUVs, please continue to use the same vehicle classification category as in past model years (even though 2WD SUVs equal to or less than 6000 lbs GVWR will be included in 2011 passenger car CAFEs). EPA will require 2011 and later model year 2WD SUVs to continue to be included in the 2WD SUV comparable class for fuel economy labeling purposes, based on the provisions of 40 CFR 600.315-08(a)(1) and 600.315-08(a)(2) as revised in 74 FR 61537, November 25, 2009.

Rounding method changed slightly for mpg-based (derived) 5-cycle FE Labels: The rounding method for derived 5-cycle FE Label calculations changed slightly for reasons outlined in 74 FR 61537, November 25, 2009. The provisions of 40 CFR 600.210-08(a)(2)(i) and (a)(2)(ii) were revised to require the city and highway model type fuel economy values to be rounded to four decimal places prior to calculating the mpg-based (derived) 5-cycle FE Label values. Previously, the city and highway model type fuel economy values were rounded to one decimal place prior to calculating the mpg-based (derived) 5-cycle FE Label values.

Fuel Costs: New 2011 fuel costs will be provided to manufacturers in a future EPA guidance letter. Until the new fuel costs are provided, manufacturers should use the 2010 model year fuel costs provided in CISD-09-16. Please contact Bob Peavyhouse (734-214-4814 or by email) or me if you need a fuel cost for LPG or Hydrogen.

Range of comparable vehicles: Until the 2011 ranges (for the various classes of vehicles) are provided in a future EPA guidance letter, manufacturers should continue to use the 2010 model year ranges provided in CISD-09-17 (except if a model exceeds the 2010 range values, the manufacturer should extend the range appropriately); ref 40 CFR 600.306-08(b)(1).

If you have any questions, feel free to give your team member or me a call or send us an email message. I'm at 734-214-4450.

Regards

(See attached file: Rolls Royce_2010FE Guide new & revised labels for DOE-all rel dates-no-sales 4-9-10.xls)(See attached file: BMW_2010FE Guide all labels for DOE-all rel dates-no-sales 4-9-10.xls)(See attached file: BMW_2010FE Guide new & revised labels for DOE-all rel dates-no-sales 4-9-10.xls)(See attached file: BMW_2011FEguide-w-sales-all-rel-dates-4-27-10.xls)(See attached file: Rolls Royce_2010FE Guide all labels for DOE-all rel dates-no-sales 4-9-10.xls)

	Sedan		Gran Turismo	
Parameter	535i	550i	535i Gran Turismo	550i Gran Turismo
Track Width (in.)	63.0		63.4	
Wheelbase (in.)	116.9		120.7	
Overall Width (in.)	73.2		74.8	
Overall Length (in.)	193.1		196.8	
Overall Height (in.)	51.6		61.4	
Curb Weight (lb.)	4090	4376	4586	4938
Classification	midsize		large	

535i Sedan

535i Gran Turismo

From: Chris Nevers
To: Amy Bunker
Cc: Martin Reineman
Subject: Re: Fw: FOIA application
Date: 05/27/2009 10:28 AM

I'll put the EV list on your desk

The FFH recommendations, I sent to Linc first for a reality check. In a nutshell, the FFH proposal was to keep it simple and consistent. I would prefer just an upward adjustment factor applied to the vehicle standard (either EVAP or FTP). The UAF would be a combination of either bench or vehicle testing with usage frequency. - we do something similar with diesel Infrequent Regeneration Adjustment Factors

▼ Amy Bunker/AA/USEPA/US

Amy Bunker/AA/USEPA/US
EPA-OAR,OTAQ,CISD

To Chris Nevers/AA/USEPA/US@EPA
cc Martin Reineman/AA/USEPA/US@EPA
Subject Re: Fw: FOIA application

Received Date:
05/27/2009 10:10 AM
Transmission Date:
05/27/2009 10:10:44 AM

many thanks!
I know you are absolutely swamped, but when you have a chance to send Marty and me these two things, it will be a big help in answering converter questions:
1. The marked through the EV app list from Steve of items you think should be crossed-off because they make no sense to ask of converters to EV
2. The fuel-fired heater question - what should our current policy be?

Thanks and sorry to be a pest!
-Amy

Amy Bunker CISD/AA 734.214.4160
▼ Chris Nevers/AA/USEPA/US

Chris Nevers/AA/USEPA/US

To Amy Bunker/AA/USEPA/US@EPA
cc
05/27/2009 09:52 AM Subject Fw: FOIA application

The BMW mini EV FOIA app is now available.

----- Forwarded by Chris Nevers/AA/USEPA/US on 05/27/2009 09:49 AM -----

<Thomas.Hofmann@bmwna.com>
Sent by:
<Thomas.Hofmann@bmwna.com>

To Chris Nevers/AA/USEPA/US@EPA
cc
Subject RE: FOIA application

Received Date:
05/27/2009 09:30 AM
Transmission Date:
05/27/2009 09:30:24 AM

Chris

After some internal discussion, we have created a FOI version of the 8BMXV00.0BEV application for certification.
My colleague in Munich uploaded it to Verify a few minutes ago.

best regards,
Tom

-----Original Message-----
From: Nevers.Chris@epamail.epa.gov [mailto:Nevers.Chris@epamail.epa.gov]

Sent: Tuesday, May 19, 2009 12:37 PM
To: Hofmann Thomas, ES-5-US-20
Subject: Re: FOIA application

Tom,
Could you have a FOIA certificate of conformity request for test group 8BMXV00.0BEV uploaded into Verify? If it is already in Verify, I cannot see it. Typically, we like to see FOI versions at the same time CBI versions are posted. The current FOI request for the Mini EV is from an internal EPA group.

Regards,
Chris Nevers
734 214 4412

<Thomas.Hofmann@
bmwna.com>
Sent by:
<Thomas.Hofmann@
bmwna.com>

To Chris Nevers/AA/USEPA/US@EPA
cc
Subject 335d FOIA application

Received Date:
02/20/2009 03:26
PM
Transmission
Date:
02/20/2009
03:26:44 PM

Hello Chris

My team leader in Munich informs me that the missing FOI applications were uploaded to Verify.
You should be able to download the 9BMXV03.0M57 application in order to respond to the FOIA request re: BMW 335d

have a great weekend,
Tom

Tom Hofmann
Emissions & Fuel Economy Certification
BMW of North America, LLC
201-571-5195

From: Chris Nevers
To: David Good
Cc: Stephen Healy; Linc Wehrly; Jeff Alson
Subject: Re: Fw: Not Urgent--new BMW diesels with near zero NOx/PM?
Date: 10/21/2009 08:42 AM
Attachments: CSI-X5.pdf
CSI-335D.pdf

We tested the 335D BMW diesel in June of 2008 for 2009 MY 50 state certificate. The X5 was tested in August 08, also 50 state 2009 MY. 2010 MY is carryover for both. They are both Tier 2 Bin 5. I attached the cert data.

CSI-X5.pdf CSI-335D.pdf

David Good---10/19/2009 05:06:11 PM---FYI----in case you haven't seen this email yet. Dave

From: David Good/AA/USEPA/US
To: Chris Nevers/AA/USEPA/US@EPA
Cc: Stephen Healy/AA/USEPA/US@EPA
Date: 10/19/2009 05:06 PM
Subject: Fw: Not Urgent--new BMW diesels with near zero NOx/PM?

FYI----in case you haven't seen this email yet.

Dave

----- Forwarded by David Good/AA/USEPA/US on 10/19/2009 05:05 PM -----

From: Jeff Alson/AA/USEPA/US
To: Linc Wehrly/AA/USEPA/US@EPA
Cc: David Good/AA/USEPA/US@EPA
Date: 10/08/2009 04:56 PM
Subject: Not Urgent--new BMW diesels with near zero NOx/PM?

I just got a call from someone who said that BMW told him that CARB certified a couple of diesels with zero or near-zero PM and NOx. I am not a BMW expert, but I think he said the models are the X5 and 335D. Have we tested these vehicles yet? If so, I would love to see the cert data. No urgency.

Certification Summary Information Report

Manufacturer	BMW	**Manufacturer Code**	BMX
Test Group	ABMXV03.0M57	**Evaporative/Refueling Family**	N/A
Certificate Number	N/A	**CARB Executive Order #**	N/A
Certificate Issue Date	N/A	**Certificate Revision Date**	N/A
Certificate Effective Date	N/A	**Conditional Certificate**	
CSI Revision #	0	**CSI Revision Date**	06/26/2009
Model Year	2010		

Test Group Information

CSI Type	Update for Correction	**Running Change Reference Number**	N/A
Drive Source	Combustion Engine	**EPA Vehicle Class**	LDV
Federal Clean Fuel Vehicle	No	**Federal Clean Fuel Vehicle Standard**	
Federal Clean Fuel Vehicle ILEV	No	**California Partial Zero Emissions Vehicle Indicator**	
Durability Group Name	ABMXDPDNNV30	**Durability Group Equivalency Factor**	1
Fuel Category	Single Fuel	**Fuel(s)**	Diesel
Reduced Fee Test Group	No		
Certification Region Codes			
Introduction into Commerce Date	09/01/2009	**CAP2000 Conditional Certificate?**	N/A
Mfr Test Group Comments			
Exhaust/Evap Standards Comments			

Models Covered by this Certificate

Manufacturer	Division	Carline	Certification Region Code	Drive System	Transmission			
					Trans Type	Lockup	Creeper Gear	# of Gears
BMW	1 - BMW	46 - 335d	Fed	R	SA	Yes	No	6
BMW	1 - BMW	46 - 335d	CA	R	SA	Yes	No	6

Engine Description

Hybrid Type		**Hybrid Description**	
Engine Type	4-Stroke Compression Ignition		
Engine Description			
Engine Block Arrangement	Inline		
Engine Block Arrangement Description			
Basic Fuel Metering Systems(s)	Common Rail Diesel Injection, Direct Diesel Injection	**Number of Cylinders/Rotors**	6

Certification Summary Information Report

Manufacturer	BMW	**Manufacturer Code**	BMX
Test Group	ABMXV03.0M57	**Evaporative/Refueling Family**	N/A
Certificate Number	N/A	**CARB Executive Order #**	N/A
Certificate Issue Date	N/A	**Certificate Revision Date**	N/A
Certificate Effective Date	N/A	**Conditional Certificate**	
CSI Revision #	0	**CSI Revision Date**	06/26/2009
Model Year	2010		

Engine Configuration Number 1

Engine Displacement (liters)	3.0	**Engine Rated Horsepower**	265
Number of Inlet Valves Per Cylinder	2	**Number of exhaust Valves Per Cylinder**	2
Air Aspiration Method	Turbocharged	**Number of Air Aspiration Devices**	2
Air Aspiration Device Configuration	Series	**Charge Air Cooler Type**	Air

Cylinder Deactivation Description - N/A

Variable Valve Timing System Description - N/A

Variable Valve Lift System - N/A

Sensor Information

Number of Knock Sensors	0		
Sensor # 1		**Sensor Type**	Air fuel
Sensor # 2		**Sensor Type**	Nitrogen oxide
Sensor # 3		**Sensor Type**	Nitrogen oxide

Sensor Comments - N/A

Exhaust Gas Recirculation	Yes	**EGR Type**	Vacuum
Cooled Exhaust Gas Recirculation	Yes		
Closed Loop Air Injection System	No	**Air Injection Type**	

Engine Configuration Comments - null

After Treatment Device(s) (ATD)

ATD Number	ATD Type	ATD Precious Metal	Substrate Material	Substrate Construction
1	Oxidation catalyst	Platinum + Paladium	Ceramic	Monolith
2	Diesel Particulate Filter	Platinum + Paladium	Metal	Monolith
3	Selective Catalytic Reduction	no precious metal	Metal	Monolith

After Treatment Device (ATD) Comments

Direct Ozone Reduction (DOR) Device Not Equipped

Emission Control Device Comments

Emission Data Vehicle Information

Vehicle ID / Configuration	A265015 / 0		
Transmission Type	Automatic	**# of Transmission Gears**	6
Engine Code	3.0-A-M57-E90	**Axle Ratio**	2.81
Fuel(s)	Diesel / Not Applicable	**Vehicle Fuel Category**	Single Fuel
Displacement (liters)	3	**Rated Horsepower**	265
Equivalent Test Weight (pounds)	4000	**Air Aspiration Method**	Turbocharged
Test Drive Code	2-Wheel Drive, Rear	**SIL Usage**	Not eqipped
Aged Emission Components	4,000 (mi)		

Dynamometer Coefficients Test Procedure: City/Highway/Evap

Dynamometer Target Coefficients	a=41.4 (lbf)	b=0.179 (lbf/mph)	c=0.01661 (lbf/mph**2)
Dynamometer Set Coefficients	a=19.4 (lbf)	b=-0.217 (lbf/mph)	c=0.01928 (lbf/mph**2)

Dynamometer Coefficients Test Procedure: US06

Dynamometer Target Coefficients	a=41.4 (lbf)	b=0.179 (lbf/mph)	c=0.01661 (lbf/mph**2)
Dynamometer Set Coefficients	a=19.4 (lbf)	b=-0.217 (lbf/mph)	c=0.01928 (lbf/mph**2)

Test Vehicle Comments

EDV 335d

Certification Summary Information Report

Manufacturer	BMW	**Manufacturer Code**	BMX
Test Group	ABMXV03.0M57	**Evaporative/Refueling Family**	N/A
Certificate Number	N/A	**CARB Executive Order #**	N/A
Certificate Issue Date	N/A	**Certificate Revision Date**	N/A
Certificate Effective Date	N/A	**Conditional Certificate**	
CSI Revision #	0	**CSI Revision Date**	06/26/2009
Model Year	2010		

Test #	9BMX10000337	**Exhaust Test # for this Evap Test**	N/A
Test Procedure	CVS 75 and later (w/o can. load)	**Test Fuel Type**	Cert Diesel 7-15 ppm Sulfur
Test Date	07/17/2008	**DF Type**	Mfr. Determined
4WD Dyno?	No	**State of Charge Delta**	

Test Comments

EDV CVS 335d

Exhaust Standards

Sales Area	Useful Life	Emission Name	Rounded Result	Cert Level	Std	Vehicle Class	Std Level	NMOG / NMHC	RAF	Deterioration Factor Add DF	Deterioration Factor Mult DF	Diesel Adjustment Factor Up	Diesel Adjustment Factor Down	Pass/Fail
Fed	50,000 miles	HC-NM	0.0184	0.02	0.075	LDV	Federal Tier 2 Bin 5				1.103	-0.00006	0.00314	Pass
Fed	50,000 miles	CO	0.12	0.1	3.4	LDV	Federal Tier 2 Bin 5				1.073	-0.00018	0.00982	Pass
Fed	50,000 miles	NOX	0.034	0.04	0.05	LDV	Federal Tier 2 Bin 5				1.043	0.00222	-0.12178	Pass
Fed	120,000 miles	HC-NM+NOX-COMP	0.096	0.1	0.65	LDV	Federal Tier 2 Bin 5				1	0	0	Pass
Fed	120,000 miles	HC-NM+NOX-COMP	0.096	0.1	0.65	LDV	Federal Tier 2 Bin 5				1	0	0	Pass
Fed	120,000 miles	HC-NM+NOX-COMP	0.096	0.1	0.65	LDV	Federal Tier 2 Bin 5				1	0	0	Pass
Fed	120,000 miles	HC-NM	0.0184	0.023	0.090	LDV	Federal Tier 2 Bin 5				1.26	-0.00006	0.00314	Pass
Fed	120,000 miles	CO	0.12	0.1	4.2	LDV	Federal Tier 2 Bin 5				1.183	-0.00018	0.00982	Pass
Fed	120,000 miles	PM-COMP	0.001	0	0.07	LDV	Federal Tier 2 Bin 5				1	0	0	Pass
Fed	120,000 miles	PM-COMP	0.001	0	0.07	LDV	Federal Tier 2 Bin 5				1	0	0	Pass
Fed	120,000 miles	PM-COMP	0.001	0	0.07	LDV	Federal Tier 2 Bin 5				1	0	0	Pass
Fed	120,000 miles	PM	0.0004	0	0.010	LDV	Federal Tier 2 Bin 5				1	0.00004	-0.00239	Pass
Fed	120,000 miles	NOX	0.034	0.04	0.07	LDV	Federal Tier 2 Bin 5				1.11	0.00222	-0.12178	Pass
CA	50,000 miles	HC-NM	0.0184	0.02	0.075	LDV	California LEV-II LEV				1.103	-0.00006	0.00314	Pass
CA	50,000 miles	CO	0.12	0.1	3.4	LDV	California LEV-II LEV				1.073	-0.00018	0.00982	Pass

Certification Summary Information Report

Manufacturer	BMW	**Manufacturer Code**	BMX
Test Group	ABMXV03.0M57	**Evaporative/Refueling Family**	N/A
Certificate Number	N/A	**CARB Executive Order #**	N/A
Certificate Issue Date	N/A	**Certificate Revision Date**	N/A
Certificate Effective Date	N/A	**Conditional Certificate**	
CSI Revision #	0	**CSI Revision Date**	06/26/2009
Model Year	2010		

Test #	9BMX10000337	**Exhaust Test # for this Evap Test**	N/A
Test Procedure	CVS 75 and later (w/o can. load)	**Test Fuel Type**	Cert Diesel 7-15 ppm Sulfur
Test Date	07/17/2008	**DF Type**	Mfr. Determined
4WD Dyno?	No	**State of Charge Delta**	
Test Comments			

EDV CVS 335d

Exhaust Standards

CA	50,000 miles	NOX	0.034	0.04	0.05	LDV	California LEV-II LEV		1.043	0.00222	-0.12178	Pass
CA	120,000 miles	HC-NM	0.0184	0.023	0.090	LDV	California LEV-II LEV		1.26	-0.00006	0.00314	Pass
CA	120,000 miles	CO	0.12	0.1	4.2	LDV	California LEV-II LEV		1.183	-0.00018	0.00982	Pass
CA	120,000 miles	PM	0.0004	0	0.010	LDV	California LEV-II LEV		1	0.00004	-0.00239	Pass
CA	120,000 miles	NOX	0.034	0.04	0.07	LDV	California LEV-II LEV		1.11	0.00222	-0.12178	Pass

Test #	9BMX10000352	**Exhaust Test # for this Evap Test**	N/A
Test Procedure	HWFE	**Test Fuel Type**	Cert Diesel 7-15 ppm Sulfur
Test Date	07/09/2008	**DF Type**	Mfr. Determined
4WD Dyno?	No	**State of Charge Delta**	
Test Comments			

EDV HWY 335d

Exhaust Standards

										Deterioration Factor		Diesel Adjustment Factor		
Sales Area	**Useful Life**	**Emission Name**	**Rounded Result**	**Cert Level**	**Std**	**Vehicle Class**	**Std Level**	**NMOG / NMHC**	**RAF**	**Add DF**	**Mult DF**	**Up**	**Down**	**Pass/Fail**
Fed	50,000 miles	NOX	0.003	0	0.07	LDV	Federal Tier 2 Bin 5				1.043	0.00222	-0.12178	Pass
Fed	120,000 miles	NOX	0.003	0	0.09	LDV	Federal Tier 2 Bin 5				1.11	0.00222	-0.12178	Pass
CA	50,000 miles	NOX	0.003	0	0.07	LDV	California LEV-II LEV				1.043	0.00222	-0.12178	Pass
CA	120,000 miles	NOX	0.003	0	0.09	LDV	California LEV-II LEV				1.11	0.00222	-0.12178	Pass

Certification Summary Information Report

Manufacturer	BMW	**Manufacturer Code**	BMX
Test Group	ABMXV03.0M57	**Evaporative/Refueling Family**	N/A
Certificate Number	N/A	**CARB Executive Order #**	N/A
Certificate Issue Date	N/A	**Certificate Revision Date**	N/A
Certificate Effective Date	N/A	**Conditional Certificate**	
CSI Revision #	0	**CSI Revision Date**	06/26/2009
Model Year	2010		

Test #	9BMX10000353	**Exhaust Test # for this Evap Test**	N/A
Test Procedure	US06	**Test Fuel Type**	Cert Diesel 7-15 ppm Sulfur
Test Date	07/09/2008	**DF Type**	Mfr. Determined
4WD Dyno?	No	**State of Charge Delta**	

Test Comments

EDV US06 335d

Exhaust Standards

Sales Area	Useful Life	Emission Name	Rounded Result	Cert Level	Std	Vehicle Class	Std Level	NMOG / NMHC	RAF	Deterioration Factor Add DF	Deterioration Factor Mult DF	Diesel Adjustment Factor Up	Diesel Adjustment Factor Down	Pass/Fail
Fed	4,000 miles	CO	0.02	0	8.0	LDV	Federal Tier 2 Bin 5				1	-0.00018	0.00982	Pass
Fed	4,000 miles	HC-NM+NOX	0.023	0.02	0.14	LDV	Federal Tier 2 Bin 5				1	0	0	Pass
Fed	120,000 miles	CO	0.02	0	11.1	LDV	Federal Tier 2 Bin 5				1.183	-0.00018	0.00982	Pass
CA	4,000 miles	CO	0.02	0	8.0	LDV	California LEV-II LEV				1	0	0	Pass
CA	4,000 miles	HC-NM+NOX	0.023	0.02	0.14	LDV	California LEV-II LEV				1	0	0	Pass

Test #	9BMX10000354	**Exhaust Test # for this Evap Test**	N/A
Test Procedure	SC03	**Test Fuel Type**	Cert Diesel 7-15 ppm Sulfur
Test Date	07/11/2008	**DF Type**	Mfr. Determined
4WD Dyno?	No	**State of Charge Delta**	

Test Comments

EDV SC03 335d

Exhaust Standards

Sales Area	Useful Life	Emission Name	Rounded Result	Cert Level	Std	Vehicle Class	Std Level	NMOG / NMHC	RAF	Deterioration Factor Add DF	Deterioration Factor Mult DF	Diesel Adjustment Factor Up	Diesel Adjustment Factor Down	Pass/Fail
Fed	4,000 miles	CO	0.02	0	2.7	LDV	Federal Tier 2 Bin 5				1	-0.00018	0.00982	Pass
Fed	4,000 miles	HC-NM+NOX	0.014	0.01	0.20	LDV	Federal Tier 2 Bin 5				1	0	0	Pass
Fed	120,000 miles	CO	0.02	0	3.7	LDV	Federal Tier 2 Bin 5				1.183	-0.00018	0.00982	Pass
CA	4,000 miles	CO	0.02	0	2.7	LDV	California LEV-II LEV				1	0	0	Pass
CA	4,000 miles	HC-NM+NOX	0.014	0.01	0.20	LDV	California LEV-II LEV				1	0	0	Pass

Certification Summary Information Report

Manufacturer	BMW	**Manufacturer Code**	BMX
Test Group	ABMXT03.0M57	**Evaporative/Refueling Family**	N/A
Certificate Number	N/A	**CARB Executive Order #**	N/A
Certificate Issue Date	N/A	**Certificate Revision Date**	N/A
Certificate Effective Date	N/A	**Conditional Certificate**	
CSI Revision #	0	**CSI Revision Date**	08/20/2009
Model Year	2010		

Test Group Information

CSI Type	Update for Correction	**Running Change Reference Number**	N/A
Drive Source	Combustion Engine	**EPA Vehicle Class**	LDT4
Federal Clean Fuel Vehicle	Yes	**Federal Clean Fuel Vehicle Standard**	LEV
Federal Clean Fuel Vehicle ILEV	No	**California Partial Zero Emissions Vehicle Indicator**	
Durability Group Name	ABMXDPDNNV30	**Durability Group Equivalency Factor**	1
Fuel Category	Single Fuel	**Fuel(s)**	Diesel
Reduced Fee Test Group	No		
Certification Region Codes			
Introduction into Commerce Date	10/01/2009	**CAP2000 Conditional Certificate?**	N/A
Mfr Test Group Comments			
Exhaust/Evap Standards Comments			

Models Covered by this Certificate

Manufacturer	Division	Carline	Certification Region Code	Drive System	Transmission			
					Trans Type	Lockup	Creeper Gear	# of Gears
BMW	1 - BMW	87 - X5 xDrive35d	Fed	4	SA	Yes	No	6
BMW	1 - BMW	87 - X5 xDrive35d	CA	4	SA	Yes	No	6

Engine Description

Hybrid Type		**Hybrid Description**	
Engine Type	4-Stroke Compression Ignition		
Engine Description			
Engine Block Arrangement	Inline		
Engine Block Arrangement Description			
Basic Fuel Metering Systems(s)	Common Rail Diesel Injection, Direct Diesel Injection	**Number of Cylinders/Rotors**	6

Certification Summary Information Report

Manufacturer	BMW	**Manufacturer Code**	BMX
Test Group	ABMXT03.0M57	**Evaporative/Refueling Family**	N/A
Certificate Number	N/A	**CARB Executive Order #**	N/A
Certificate Issue Date	N/A	**Certificate Revision Date**	N/A
Certificate Effective Date	N/A	**Conditional Certificate**	
CSI Revision #	0	**CSI Revision Date**	08/20/2009
Model Year	2010		

Engine Configuration Number 1

Engine Displacement (liters)	3.0	**Engine Rated Horsepower**	265
Number of Inlet Valves Per Cylinder	2	**Number of exhaust Valves Per Cylinder**	2
Air Aspiration Method	Turbocharged	**Number of Air Aspiration Devices**	2
Air Aspiration Device Configuration	Series	**Charge Air Cooler Type**	Air

Cylinder Deactivation Description - N/A

Variable Valve Timing System Description - N/A

Variable Valve Lift System - N/A

Sensor Information

Number of Knock Sensors	0		
Sensor # 1		**Sensor Type**	Air fuel
Sensor # 2		**Sensor Type**	Nitrogen oxide
Sensor # 3		**Sensor Type**	Nitrogen oxide

Sensor Comments - N/A

Exhaust Gas Recirculation	Yes	**EGR Type**	Vacuum
Cooled Exhaust Gas Recirculation	Yes		
Closed Loop Air Injection System	No	**Air Injection Type**	

Engine Configuration Comments - null

After Treatment Device(s) (ATD)

ATD Number	ATD Type	ATD Precious Metal	Substrate Material	Substrate Construction
1	Oxidation catalyst	Platinum + Paladium	Ceramic	Monolith
2	Diesel Particulate Filter	Platinum + Paladium	Metal	Monolith
3	Selective Catalytic Reduction	no precious metal	Metal	Monolith

After Treatment Device (ATD) Comments

Direct Ozone Reduction (DOR) Device Not Equipped

Emission Control Device Comments

Emission Data Vehicle Information

Vehicle ID / Configuration	LJ95006 / 0		
Transmission Type	Automatic	**# of Transmission Gears**	6
Engine Code	3.0-A-M57-E70	**Axle Ratio**	3.64
Fuel(s)	Diesel / Not Applicable	**Vehicle Fuel Category**	Single Fuel
Displacement (liters)	3	**Rated Horsepower**	265
Equivalent Test Weight (pounds)	5500	**Air Aspiration Method**	Turbocharged
Test Drive Code	2-Wheel Drive, Rear	**SIL Usage**	Not eqipped
Aged Emission Components	4,000 (mi)		

Dynamometer Coefficients Test Procedure: City/Highway/Evap

Dynamometer Target Coefficients	a=59.3 (lbf)	b=0.33 (lbf/mph)	c=0.02413 (lbf/mph**2)
Dynamometer Set Coefficients	a=26.5 (lbf)	b=-0.048 (lbf/mph)	c=0.02677 (lbf/mph**2)

Test Vehicle Comments

EDV X5 xDrive35d with ARS and 4WD

Certification Summary Information Report

Manufacturer	BMW	**Manufacturer Code**	BMX
Test Group	ABMXT03.0M57	**Evaporative/Refueling Family**	N/A
Certificate Number	N/A	**CARB Executive Order #**	N/A
Certificate Issue Date	N/A	**Certificate Revision Date**	N/A
Certificate Effective Date	N/A	**Conditional Certificate**	
CSI Revision #	0	**CSI Revision Date**	08/20/2009
Model Year	2010		

Test #	9BMX10000062	**Exhaust Test # for this Evap Test**	N/A
Test Procedure	CVS 75 and later (w/o can. load)	**Test Fuel Type**	Cert Diesel 7-15 ppm Sulfur
Test Date	07/08/2008	**DF Type**	Mfr. Determined
4WD Dyno?	No	**State of Charge Delta**	

Test Comments

EDV FTP X5 xDrive35d with ARS

Exhaust Standards

Sales Area	Useful Life	Emission Name	Rounded Result	Cert Level	Std	Vehicle Class	Std Level	NMOG / NMHC	RAF	Deterioration Factor Add DF	Deterioration Factor Mult DF	Diesel Adjustment Factor Up	Diesel Adjustment Factor Down	Pass/Fail
Fed	50,000 miles	CO	0.11	0.1	3.4	LDT4	Federal Tier 2 Bin 5				1.073	-0.00018	0.00982	Pass
Fed	50,000 miles	HC-NM	0.0159	0.018	0.075	LDT4	Federal Tier 2 Bin 5				1.103	-0.00006	0.00314	Pass
Fed	50,000 miles	NOX	0.029	0.03	0.05	LDT4	Federal Tier 2 Bin 5				1.043	0.00222	-0.12178	Pass
Fed	120,000 miles	CO	0.11	0.1	4.2	LDT4	Federal Tier 2 Bin 5				1.183	-0.00018	0.00982	Pass
Fed	120,000 miles	PM	0.0007	0.001	0.010	LDT4	Federal Tier 2 Bin 5				1	0.00004	-0.00239	Pass
Fed	120,000 miles	PM-COMP	0	0	0.08	LDT4	Federal Tier 2 Bin 5				1	0	0	Pass
Fed	120,000 miles	PM-COMP	0	0	0.08	LDT4	Federal Tier 2 Bin 5				1	0	0	Pass
Fed	120,000 miles	PM-COMP	0	0	0.08	LDT4	Federal Tier 2 Bin 5				1	0	0	Pass
Fed	120,000 miles	HC-NM	0.0159	0.02	0.090	LDT4	Federal Tier 2 Bin 5				1.26	-0.00006	0.00314	Pass
Fed	120,000 miles	HC-NM+NOX-COMP	0.09	0.09	1.41	LDT4	Federal Tier 2 Bin 5				1	0	0	Pass
Fed	120,000 miles	HC-NM+NOX-COMP	0.09	0.09	1.41	LDT4	Federal Tier 2 Bin 5				1	0	0	Pass
Fed	120,000 miles	HC-NM+NOX-COMP	0.09	0.09	1.41	LDT4	Federal Tier 2 Bin 5				1	0	0	Pass
Fed	120,000 miles	NOX	0.029	0.03	0.07	LDT4	Federal Tier 2 Bin 5				1.11	0.00222	-0.12178	Pass
CA	50,000 miles	CO	0.11	0.1	3.4	LDT4	California LEV-II LEV				1.073	-0.00018	0.00982	Pass
CA	50,000 miles	HC-NM	0.0159	0.018	0.075	LDT4	California LEV-II LEV				1.103	-0.00006	0.00314	Pass

Certification Summary Information Report

Manufacturer	BMW	**Manufacturer Code**	BMX
Test Group	ABMXT03.0M57	**Evaporative/Refueling Family**	N/A
Certificate Number	N/A	**CARB Executive Order #**	N/A
Certificate Issue Date	N/A	**Certificate Revision Date**	N/A
Certificate Effective Date	N/A	**Conditional Certificate**	
CSI Revision #	0	**CSI Revision Date**	08/20/2009
Model Year	2010		

Test #	9BMX10000062	**Exhaust Test # for this Evap Test**	N/A
Test Procedure	CVS 75 and later (w/o can. load)	**Test Fuel Type**	Cert Diesel 7-15 ppm Sulfur
Test Date	07/08/2008	**DF Type**	Mfr. Determined
4WD Dyno?	No	**State of Charge Delta**	

Test Comments

EDV FTP X5 xDrive35d with ARS

Exhaust Standards

CA	50,000 miles	NOX	0.029	0.03	0.05	LDT4	California LEV-II LEV		1.043	0.00222	-0.12178	Pass
CA	120,000 miles	CO	0.11	0.1	4.2	LDT4	California LEV-II LEV		1.183	-0.00018	0.00982	Pass
CA	120,000 miles	PM	0.0007	0.001	0.010	LDT4	California LEV-II LEV		1	0.00004	-0.00239	Pass
CA	120,000 miles	HC-NM	0.0159	0.02	0.090	LDT4	California LEV-II LEV		1.26	-0.00006	0.00314	Pass
CA	120,000 miles	NOX	0.029	0.03	0.07	LDT4	California LEV-II LEV		1.11	0.00222	-0.12178	Pass

Test #	9BMX10000063	**Exhaust Test # for this Evap Test**	N/A
Test Procedure	HWFE	**Test Fuel Type**	Cert Diesel 7-15 ppm Sulfur
Test Date	07/08/2008	**DF Type**	Mfr. Determined
4WD Dyno?	No	**State of Charge Delta**	

Test Comments

EDV HWY X5 xDrive35d with ARS

Exhaust Standards

										Deterioration Factor		Diesel Adjustment Factor		
Sales Area	**Useful Life**	**Emission Name**	**Rounded Result**	**Cert Level**	**Std**	**Vehicle Class**	**Std Level**	**NMOG / NMHC**	**RAF**	**Add DF**	**Mult DF**	**Up**	**Down**	**Pass/Fail**
Fed	50,000 miles	NOX	0.002	0	0.07	LDT4	Federal Tier 2 Bin 5				1.043	0.00222	-0.12178	Pass
Fed	120,000 miles	NOX	0.002	0	0.09	LDT4	Federal Tier 2 Bin 5				1.11	0.00222	-0.12178	Pass
CA	50,000 miles	NOX	0.002	0	0.07	LDT4	California LEV-II LEV				1.043	0.00222	-0.12178	Pass
CA	120,000 miles	NOX	0.002	0	0.09	LDT4	California LEV-II LEV				1.11	0.00222	-0.12178	Pass

Certification Summary Information Report

Manufacturer	BMW	**Manufacturer Code**	BMX
Test Group	ABMXT03.0M57	**Evaporative/Refueling Family**	N/A
Certificate Number	N/A	**CARB Executive Order #**	N/A
Certificate Issue Date	N/A	**Certificate Revision Date**	N/A
Certificate Effective Date	N/A	**Conditional Certificate**	
CSI Revision #	0	**CSI Revision Date**	08/20/2009
Model Year	2010		

Test #	9BMX10000064	**Exhaust Test # for this Evap Test**	N/A
Test Procedure	SC03	**Test Fuel Type**	Cert Diesel 7-15 ppm Sulfur
Test Date	07/10/2008	**DF Type**	Mfr. Determined
4WD Dyno?	No	**State of Charge Delta**	

Test Comments

EDV SC03 X5 xDrive35d with ARS

Exhaust Standards

Sales Area	Useful Life	Emission Name	Rounded Result	Cert Level	Std	Vehicle Class	Std Level	NMOG / NMHC	RAF	Deterioration Factor Add DF	Deterioration Factor Mult DF	Diesel Adjustment Factor Up	Diesel Adjustment Factor Down	Pass/Fail
Fed	4,000 miles	CO	0.02	0	4.0	LDT4	Federal Tier 2 Bin 5				1	-0.00018	0.00982	Pass
Fed	4,000 miles	HC-NM+NOX	0.023	0.02	0.44	LDT4	Federal Tier 2 Bin 5				1	0	0	Pass
Fed	120,000 miles	CO	0.02	0	6.4	LDT4	Federal Tier 2 Bin 5				1.183	-0.00018	0.00982	Pass
CA	4,000 miles	CO	0.02	0	4.0	LDT4	California LEV-II LEV				1	0	0	Pass
CA	4,000 miles	HC-NM+NOX	0.023	0.02	0.44	LDT4	California LEV-II LEV				1	0	0	Pass

Test #	9BMX10000065	**Exhaust Test # for this Evap Test**	N/A
Test Procedure	US06	**Test Fuel Type**	Cert Diesel 7-15 ppm Sulfur
Test Date	07/17/2008	**DF Type**	Mfr. Determined
4WD Dyno?	No	**State of Charge Delta**	

Test Comments

EDV US06 X5 xDrive35d with ARS

Exhaust Standards

Sales Area	Useful Life	Emission Name	Rounded Result	Cert Level	Std	Vehicle Class	Std Level	NMOG / NMHC	RAF	Deterioration Factor Add DF	Deterioration Factor Mult DF	Diesel Adjustment Factor Up	Diesel Adjustment Factor Down	Pass/Fail
Fed	4,000 miles	HC-NM+NOX	0.2	0.2	0.6	LDT4	Federal Tier 2 Bin 5				1	0	0	Pass
Fed	4,000 miles	CO	0.02	0	11.8	LDT4	Federal Tier 2 Bin 5				1	-0.00018	0.00982	Pass
Fed	120,000 miles	CO	0.02	0	19.3	LDT4	Federal Tier 2 Bin 5				1.183	-0.00018	0.00982	Pass
CA	4,000 miles	HC-NM+NOX	0.2	0.2	0.6	LDT4	California LEV-II LEV				1	0	0	Pass
CA	4,000 miles	CO	0.02	0	11.8	LDT4	California LEV-II LEV				1	0	0	Pass

From: Chris Nevers
To: Linc Wehrly
Cc: Stephen Healy
Subject: Re: Fw: pending BMW diesel application
Date: 03/08/2010 03:54 PM

Ex. 5 Deliberative Process (DP). We have certified BMW 3L SCR diesels in 2009 and 2010 MY the 335d, X5, and xdrive 35d. I have not yet seen a 2011 MY BMW diesel application.

Linc Wehrly---03/08/2010 02:51:08 PM---Have we heard anything about this? Are the BMW 3.0L diesel test group application already in the qu

From: Linc Wehrly/AA/USEPA/US
To: Chris Nevers/AA/USEPA/US@EPA, Stephen Healy/AA/USEPA/US@EPA
Date: 03/08/2010 02:51 PM
Subject: Fw: pending BMW diesel application

Have we heard anything about this? Are the BMW 3.0L diesel test group application already in the queue?

Linc Wehrly
Manager, Light-Duty Vehicle Group
Compliance and Innovative Strategies Division
United States Environmental Protection Agency
(734) 214-4286
wehrly.linc@epa.gov

----- Forwarded by Linc Wehrly/AA/USEPA/US on 03/08/2010 02:49 PM -----

From: "Lourenco, Jackie@ARB" <jlourenc@arb.ca.gov>
To: Linc Wehrly/AA/USEPA/US@EPA, "Nguyen, Duc@ARB" <dnguyen@arb.ca.gov>, "Salmingo, Joseph@ARB" <jsalming@arb.ca.gov>
Date: 03/08/2010 01:10 PM
Subject: pending BMW diesel application

Duc/Joseph,

Deliberative Ex. (b)(5)

Linc,

Deliberative Ex. (b)(5)

Thank you
Jackie Lourenco

Air Resources Board
New Vehicle/Engine Programs Branch
626.450.6152

From: Ex. 6 Personal Privacy (PP)
To: Chris.Nevers/AA/USEPA/US@EPA
Subject: RE: Fw: Your EPA Inquiry - EPA Certification of 2011 BMW 335d
Date: 04/23/2010 02:59 PM

Chris,

Thank you very much for this information and your very prompt response! Your help is very much appreciated!

Have a great weekend.

PII Ex. (b)
(6)

PII Ex. (b)
(6)

From: Nevers.Chris@epamail.epa.gov [mailto:Nevers.Chris@epamail.epa.gov]
Sent: Friday, April 23, 2010 11:34 PII Ex. (b)
Cc: Imports@epamail.epa.gov; OTAQPUBLICWEB@epamail.epa.gov
Subject: Re: Fw: Your EPA Inquiry - EPA Certification of 2011 BMW 335d

Ex. 6 Personal Privacy (PP)

The 2011 model year BMW 335d certificate of conformity was issued on March 31, 2010. It is my understanding that BMW has not yet received the executive order from California Air Resources Board. Since this vehicle is for sale in all 50 states, an executive order is required for introduction into commerce in California or any state adopting California standards.

Regards,
Chris Nevers
EPA
734 214 4412

From: Group OTAQPUBLICWEB
To: Imports@EPA
Date: 04/23/2010 12:21 PM
Subject: Your EPA Inquiry - EPA Certification of 2011 BMW 335d
Sent by: Jennifer France

Time Sensitive

Can you answer this person's question please? If so, please respond directly to the inquirer (with his original message intact) at PII Ex. (b)(6) --- and please cc "Group OTAQPUBLICWEB@EPA" so that I can close it out on our end.

Thank you!

From: Ex. 6 Personal Privacy (PP)
To: Group OTAQPUBLICWEB@EPA
Date: 04/22/2010 08:12 PM
Subject: Your EPA Inquiry - (111201246) PII Ex. (b)(6) - EPA Certification of 2011 BMW 335d - OTAQ Web

---

Recipient
otaqpublicweb@epa.gov
UserWord
apple
Word
apple
comments
Hi,

I am currently awaiting release of my new 2011 BMW 335d from the VPC in Port Hueneme and have been told that the 2011 models are on hold until EPA certification is complete. Could you provide any status on the certification?

Thanks!
PII Ex.
(b)(6)

e

EPA Certification of 2011 BMW 335d

WARNING NOTICE
This electronic mail originated from a federal government computer system of the United States Environmental Protection Agency (EPA). Unauthorized access or use of this EPA system may subject violators to criminal, civil and/or administrative action. For official purposes, law enforcement and other authorized personnel may monitor, record, read, copy and disclose all information which an EPA system processes. Any person's access or use, authorized and unauthorized, of this EPA system to send electronic mail constitutes consent to these terms.

This information is for tracking purposes only.
Submitting script: /cgi-bin/mail.cgi
Submitting host: wsip-70-164-126-62.sd.sd.cox.net (70.164.126.62)
Browser: Mozilla/4.0 (compatible; MSIE 7.0; Windows NT 5.1; Trident/4.0; GTB6.4; .NET CLR 1.1.4322; .NET CLR 2.0.50727; .NET CLR 3.0.4506.2152; .NET CLR 3.5.30729)
Referred: http://www.epa.gov/otaq/oms-cmt.htm
TSSMS: orcdizux
Mail to File: omsmail.txt

Meeting Invitation Accepted:

Calendar Entry

Subject:	BMW Diesel SCR
When	
Date:	Monday 03/14/2011
Time:	09:30 AM - 11:30 AM (2 hours)
Chair:	Chris Nevers
Invitees	
Required (to):	ball.joel@epa.gov; Jim Snyder/AA/USEPA/US@EPA; Stephen Healy/AA/USEPA/US@EPA
Optional (cc):	Linc Wehrly/AA/USEPA/US@EPA; Robert Peavyhouse/AA/USEPA/US@EPA
Where	
Location:	AA-N66/AA-OTAQ-OFFICE@EPA

From: Jeff Cherry
To: GHG Technology Info
Subject: Automakers scrap diesel plans
Date: 06/29/2009 04:37 PM

Kevin McMahon from Martec mentions EPA below:

Automakers scrap diesel plans

By RICHARD TRUETT, AUTOMOTIVE NEWS

Mercedes-Benz has added its Bluetec clean-diesel powertrain to several of its SUVs in the U.S. market.

Mainstream carmakers have put the brakes on nine diesel-powered vehicles that had been scheduled for 2010.

Honda, Chrysler, Ford, General Motors, Nissan and Toyota have halted diesel programs because of spiraling costs and other problems.

Financial problems halted the programs at some companies. Others, like Toyota Motor Corp., are looking elsewhere for fuel economy. "We are banking heavily on hybrids," said Toyota spokesman Curt McAllister.

Only German automakers--Volkswagen, Audi, Mercedes-Benz and BMW--have followed through with plans to launch U.S. diesels on time. Most German diesels are in premium vehicles similar to vehicles built in large numbers for Europe and other markets. That volume reduces development and production costs per vehicle.

A diesel engine typically delivers fuel economy 20 to 30 percent better than that of a gasoline engine. But a diesel can add between $3,000 and $8,000 to a vehicle's price. Costly components include the turbocharger, the high-pressure fuel injection system and the complex emissions system, which is filled with precious metals. That cost seems to be a barrier for the mass-market brands.

Still, the new German diesels are selling well. The price of diesel fuel may be a factor. It has dropped from its high last summer of $4.85 per gallon--considerably more than gasoline--to $2.63 last week, a few pennies less than a gallon of regular gasoline.

'Cost-benefit' problem

Bernd Bohr, chairman of the automotive group at Germany's Robert Bosch GmbH, knows costs have to come down. Bosch, the world's largest supplier of diesel fuel injection systems, supplies all the new German diesel-powered vehicles in the United States.

"It's always a question of the cost-benefit relationship," Bohr told *Automotive News* recently.
Just one part of some diesels' emissions system--urea injection--can add $1,000 to the cost of the vehicle. A turbocharger, high-pressure fuel injection system and diesel particulate filter pump up the price, too.
Bohr said Bosch is attacking the cost problem in at least two areas: reducing the amount of oxides of nitrogen, or NOx, produced in the engine--which means a smaller amount of expensive precious metals are needed in the emissions system--and standardizing parts for larger production runs.
Bohr thinks manufacturers eventually will be able to sell vehicles with six-cylinder diesel engines of about 3.0 liters profitably and in high volumes in the United States.
"Maybe some of the projects our customers had in the past, maybe V-8s, were a little oversized in today's world," he said. "They are now looking at six-cylinders, maybe 3.0-liter diesel engines. That could be something very much worthwhile for the American market."

Bias toward hybrids?

Kevin McMahon, a partner at the Martec Group, a consulting firm, says the way the EPA calculates fuel economy and carbon dioxide standards gives gasoline-electric hybrids an unfair advantage over diesels.
In 2006, the EPA revised the way it determines real-world, "window sticker" fuel economy to reflect U.S. driving patterns. The EPA's new sticker rulemaking assumes Americans drive 43 percent of their miles in city conditions and 57 percent on the highway.
But under fleet average standards for corporate average fuel economy and CO_2, vehicles are certified using 35-year-old test weighting of 55 percent city and 45 percent highway driving.
"Diesel vehicles that perform very well at high-load and high-speed driving--where most of America's fuel is used in the real world--are penalized," says McMahon. "Meanwhile, vehicles that perform very well in stop-and-go driving, like hybrids, are overrewarded."
The image of the diesel engine may be one reason Toyota has halted its plans. Says McAllister: "One of the obstacles of the diesel is the aged perception that the diesel is smoky and stinky. It's hard to change the mind-set of consumers. Hybrid technology has such a clean halo to it."

http://www.autoweek.com/article/20090629/CARNEWS/906299987#ixzz0JqxSeLA7&D

Best Regards,

Jeff

Jeff Cherry
Assessment & Standards Division
US EPA Office of Transportation & Air Quality
2000 Traverwood Drive
Ann Arbor, MI 48105
Voice: 734-214-4371
Fax: 734-214-4050

cherry.jeff@epa.gov

BMW Group

August 16, 2011

Environmental Protection Agency
Motor Vehicle and Engine Compliance Program
PO Box 979032
St. Louis MO 63197-9000

Re: Certification Fee for 2012 Model Year Light Duty Vehicles

Gentlemen:

Enclosed please find (1) Fee Filing Form and check for the certification fee for the test group shown below:

Test Group	Model(s)	Check	Amount
CBMXT03.0M57	X5 xDrive35d	4000058856	$33,974.00

If you have any questions or comments, please do not hesitate to contact me at (201) 571-5195 or by e-mail at thomas.hofmann@bmwna.com

Sincerely yours,

Thomas E. Hofmann
Senior Engineer
Emissions and Fuel Economy Certification

enclosures

Headquarters
300 Chestnut Ridge Road
Woodcliff Lake, NJ 07677
(201) 307-4000

Mailing Address
PO Box 1227
Westwood, NJ 07675

Telephone
(201) 571-5195

Facsimile
(201) 571-5479

U.S. Environmental Protection Agency
Motor Vehicle and Engine Compliance Program Fee Filing Form

Date: August 16, 2011

Manufacturer Contact Information:

Manufacturer Name: **BMW Group**
Contact Name: **Thomas E. Hofmann**
Phone Number: **201-571-5195**
Calendar Year: 2011

Fax Number: **201-571-5479** (optional)
email Address: **thomas.hofmann@bmwna.com**

Test Group or Engine Family Name CBMXT03.0M57

For dual U.S / IMO Marine only , also give IMO name:

Certification Request Type: ● On Highway Nonroad

On-Highway Certification Types:

- **LDV** -Light-duty Vehicles (Chassis Certification - Federal Certificate)
- ● **LDT** -Light-duty Trucks (Chassis Certification - Federal Certificate)
- **MDPV** -Medium-duty Passenger Vehicles (Chassis Certification - Federal Certificate)
- **HDV** -Heavy-duty Vehicles (Chassis Certification - Federal Certificate)
- **HDE** -Heavy-duty Engine (Engine Dynamometer Certification - Federal Certificate)
- **LD ICI** -Light-duty Vehicles for Independent Commercial Importers
- **MDPV ICI** -Medium-duty Passenger Vehicles for Independent Commercial Importers
- **HDV ICI** -Heavy-duty Vehicles for Independent Commercial Importers
- **MOTORCYCLE** -On-highway Motorcycles (includes Independent Commercial Importers)
- **LDV** -Light-duty Vehicles (Chassis Certification - California-only Certificate)
- **LDT** -Light-duty Trucks (Chassis Certification - California-only Certificate)
- **MDPV** -Medium-duty Passenger Vehicles (Chassis Certification - California-only Certificate)
- **HDV** -Heavy-duty Vehicles (Chassis Certification - California-only Certificate)
- **HDE CALIF-ONLY** -Heavy-duty Engine California-only Certification
- **HDE EVAP-ONLY** -Heavy-duty Evaporative System Only

Nonroad Certification Types:

- **NR CI** -Nonroad Engine Compression-Ignition (includes Independent Commercial Importers and excludes Locomotives, Marine and Recreational)
- **NR SI** -Nonroad Spark-Ignition (includes Independent Commercial Importers)
- **Locomotives** -All Locomotives (includes Independent Commercial Importers)
- **Recreational** -Recreational Vehicles (except marine engines and includes Independent Commercial Importers)
- **All Marine** -(excludes spark-ignition inboard/sterndrive engiens and includes Independent Commercial Importers)

Fee Payment Information:

Do you qualify for reduced fee? **No**

Are you an Independent Commercial Importer? **No**

Make of the model(s) (list all that apply, separated by commas):

BMW

Model name(s) of vehicle or engine under this engine family/test group (list all that apply, separated by commas):

X5 xDrive35d

Year of the vehicle(s) or engine(s) (llist all that apply, separated by commas):

2012

VIN(s) of the model(s) (list all that apply, separated by commas. Enter "TBD" if unknown):

TBD

Has a certificate been issued? **No**

What is the total number of the vehicles or engines covered? **TBD**

What is the aggregate total retail value of the vehicles or engines covered? **N/A**

Payment Details:

Amount Owed (U.S. Funds Only): $33,974

Payment Type: **check**

Enter the check number: **4000058856**

From: Nevers.Chris@epamail.epa.gov
To: ball.joel@epa.gov; Jim Snyder; Stephen Healy
Cc: Linc Wehrly; Robert Peavyhouse; Arvon Mitcham; Martin Reineman
Subject: BMW Diesel SCR - Updated
Date: 03/14/2011 08:23 AM
Attachments: 110313_EPA-BMW_Diesel-Mtg_14Mar2011.pdf

110313_EPA-BMW_Diesel-Mtg_14Mar2011.pdf

From:	Thomas.Hofmann@bmwna.com
To:	Chris Nevers/AA/USEPA/US@EPA; Willem VandenBroek/AA/USEPA/US@EPA
Subject:	BMW LD fee submitted to St. Louis
Date:	08/16/2011 02:05 PM
Attachments:	BMW Cert Fee CBMXT03.0M57.pdf

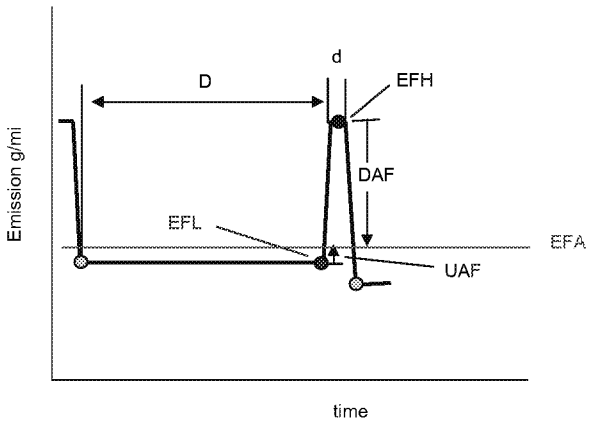
Hello Chris, Hello Bill

BMW has sent (1) certification fee to St. Louis via FedEx for 2nd day delivery.
The cover letter and fee filing form are attached.
This fee is for our CBMXT03.0M57 test group (X5 xDrive35d - diesel model) that has an October start-of-production.

thanks,
Tom

BMW of North America, LLC
Thomas E. Hofmann
Senior Engineer, Emissions and Fuel Economy Certification
200 Chestnut Ridge Road, Building 150
Woodcliff Lake, NJ 07677-7731
Phone: (001) 201-571-5195
Fax: (001) 201-571-5479

Adjustment of emissions to account for regeneration events 40CFR §86.004-28



EFH = emissions from a test with regeneration (FTP 75)
EFL = emissions from a test without regeneration (FTP 75)
EFA = average emission rate
D = time without regeneration
d = time where regeneration occurs

$$EFA^{1} = \frac{d}{d+D} \times EFH + \left(1 - \frac{d}{d+D}\right) \times EFL$$

[1]EFA is detemined by performing FTP 75 tests

Fraction of tests during which the regeneration occurs (F)= d/(d+D)

Adjustment for emission tests (FTP75,HWFET,US06,SC03) <u>without</u> regeneration:
UAF = EFA - EFL
UAF = upward adjustment factor

Adjustment for emission tests (FTP75,HWFET,US06,SC03) <u>with</u> regeneration:
DAF = EFA - EFH
DAF = downward adjustment factor

	NMHC	CO	NOx
D+d [sec]	9342903	9342903	9342903
d [sec]	167466	167466	167466
EFL	0.01060	0.10000	0.05000
EFH	0.00740	0.09000	0.17400
EFA	0.01054	0.09982	0.05218
UAF	**-0.00006**	**-0.00018**	**0.00218**
DAF	**0.00314**	**0.00982**	**-0.121817**

<u>Data recorded during our durability run (SRC):</u>

- overall SRC durability run duration **d + D = 9,342,903 sec**
- time where regeneration occurs (d) **d = 167,466 sec**
- number of regenerations during SRC **= 221**

<u>Your Questions:</u>

What is the frequency of a regeneration?

The observed frequency on our durability run is:

$$F_{reg} = \frac{\text{number of regens}}{d + D} = \frac{211 \text{ cycles}}{9342903 \text{ sec}} = \mathbf{0.0000226\ Hz}$$

The average periodicity of regens, expressed in miles:

$$P_{reg} = \frac{\text{total distance}}{\text{number of regens}} = \frac{120{,}000 \text{ miles}}{221 \text{ regens}} = \mathbf{543.0\ mi}$$

How did BMW initiate and measure the emissions during regen?

The measurement was performed with the DDV after finishing the durability run in order to account for the worst case emission at the end of the useful life.
Regeneration was started by the ECM after setting the required parameters to start regeneration

How long does a regen take?

On average, a regeneration with a length of **9.7 mi** occurred at intervals of **543.0 mi**.

Can or would a regen be completed during an emission test if it begins soon enough during the test cycle? (city, highway, US06)

Yes, regeneration will be completed during all three test cycles mentioned above.

From: Chris Nevers
To: Linc Wehrly
Subject: BMW X5 diesel, Certificate was issued on 9/9/2011
Date: 10/13/2011 03:27 PM
Attachments: X5 certificate.pdf

The certificate request was made on 9/6/2011. It was issued 3 days later.

Submission Date	Manufacturer	Request for Certificate	Test Group	Evaporative/ Refueling Family	Model Year	Certificate Details	CAP 2000 Conditional Certificate	Certificate Request Status	Dataset Status	Approval Type	EPA Assigned Staff	CSI	Application and Related Documents
09/06/2011	BMW (BMX)	Details	CBMXT03.0M57		2012	CBMXT03.0M57-019	No	Approved	Active	Manual	cnevers	View	View Document

From: Linc Wehrly
To: Stephen Healy; Chris Nevers; Joel Ball; Jim Snyder; Martin Reineman
Cc: Laura Baker
Subject: Fw: (b)(7) Draft FRN
Date: 08/25/2010 02:58 PM

Are you aware of any additional diesels that will be certified for the 2011 MY that will use SCR?

I'm aware of BMW, Mercedes, GM, Ford, Mahindra, Isuzu. Any others? What about the VW Touareg/Audi Q7?

Linc Wehrly
Manager, Light-Duty Vehicle Group
Compliance and Innovative Strategies Division
United States Environmental Protection Agency
(734) 214-4286
wehrly.linc@epa.gov
----- Forwarded by Linc Wehrly/AA/USEPA/US on 08/25/2010 02:51 PM -----

From: Laura Baker/AA/USEPA/US
To: Linc Wehrly/AA/USEPA/US@EPA
Date: 08/25/2010 02:46 PM
Subject: (b)(7) Draft FRN

Hey Linc-

Ex. 5 Attorney Work Product (AWP)

[attachment "SCR FRN.doc" deleted by Linc Wehrly/AA/USEPA/US]

From: David Good
To: wilhelm.hall@bmwna.com
Cc: Chris Nevers
Subject: Fw: BMW 2012 FE Guide - Placeholder Info needed for the 1-series EV by Friday 10/14 if possible
Date: 10/11/2011 04:15 PM
Attachments: BMW placeholder info 2012MY-1 series EV-(DJG generic).xlsx
2012MY BMW Alt Fuel Placeholders.xls

Wilhelm,

I forgot to cc you---since Tom is out of the office until 10/17/2011.

Regards
----- Forwarded by David Good/AA/USEPA/US on 10/11/2011 04:13 PM -----

From: David Good/AA/USEPA/US
To: <Thomas.Hofmann@bmwna.com>
Date: 10/11/2011 04:10 PM
Subject: Re: BMW 2012 FE Guide - Placeholder Info needed for the 1-series EV by Friday 10/14 if possible

---

Tom,

Per my 10/11/2011 voicemail message, please send me the 2012 FE Guide placeholder information for the 1-Series EV by Friday (Oct 14) if possible.

Attached is a spreadsheet with the info that we need highlighted in redline text. (Please fill in the correct info and email the spreadsheet back to me.)

Thanks

---09/21/2011 05:34:28 PM---Hello Dave Please find our placeholder information below. The same information is in the attached sp

From: <Thomas.Hofmann@bmwna.com>
To: David Good/AA/USEPA/US@EPA
Date: 09/21/2011 05:34 PM
Subject: BMW 2012 Alternate Fuel Placeholders

Hello Dave

Please find our placeholder information below. The same information is in the attached spreadsheet in case that format is more helpful.

Model Name	Vehicle Class, Body Type, Pass/Cargo	Trans Type	No. of Cyl.	Engine	Fuel Type	City MPG	Hwy MPG	Driving Range
X5 xDrive35d	SUV-4WD	SA6	6	3.0 L	Diesel	N/A	N/A	N/A
ActiveHybrid 5	midsize, 4 dr, 102/10	SA8	6	3.0 L	Gasoline	N/A	N/A	N/A
ActiveHybrid 7	midsize, 4 dr, 106/13	SA8	8	4.4 L	Gasoline	N/A	N/A	N/A
ActiveHybrid 7L	large, 4 dr, 115/13	SA8	8	4.4 L	Gasoline	N/A	N/A	N/A

best regards,
Tom

BMW of North America, LLC
Thomas E. Hofmann
Senior Engineer, Emissions and Fuel Economy Certification
200 Chestnut Ridge Road, Building 150
Woodcliff Lake, NJ 07677-7731
Phone: (001) 201-571-5195
Fax: (001) 201-571-5479

From:	Brown, Louis
To:	Melissa Jena
Cc:	Howden, Ken; Robert Peavyhouse/AA/USEPA/US@EPA; Chris Nevers/AA/USEPA/US@EPA; Krause, Norbert (VWoA); Brad.Warner2@us.bosch.com; Johnson, Timothy V; debbie_brodt_giles@nrel.gov; gravesrl@ornl.gov; Wolfgang.Mattes@bmw.com; Johnson, Stuart; Ehreiser, Daniel
Subject:	FW: BMW Diesel Presentation at SAE-Meeting
Date:	04/03/2008 10:47 AM
Attachments:	Light Duty Clean Diesel Session.doc

Hi Melissa,

Attached below is the e-mail from Mr. Wolfgang Mattes, BMW, with the title to his presentation at the Light Duty Clean Diesel Session.

Also attached is the order of the presentations for this session.

This should complete what we owe you for the final program.

Please let me know if you have any questions.

Best regards,
Lou

Lou Brown
Government Technical Affairs Manager
Volkswagen Group of America, Inc.
1300 Pennsylvania Ave., NW Suite 860
Washington, DC 20004
Work phone: 202-216-4922
Cell phone: 571-236-2853
louis.brown@vw.com

From: Wolfgang.Mattes@bmw.com [mailto:Wolfgang.Mattes@bmw.com]
Sent: Thursday, April 03, 2008 10:14 AM
To: Brown, Louis
Cc: Wilhelm.Hall@bmwna.com; Birgit.Hornbachner@partner.bmw.com
Subject: BMW Diesel Presentation at SAE-Meeting

Dear Mr. Brown,

I was informed by Mr. Howden that you are running the Industry Chair at the Clean Diesel Session.

Our presentation will have the title

" BMW Advanced Diesel Vehicles with BluePerformance for the US market"

If you would be so kind as to add this to the program.

Best regards,

Wolfgang Mattes

Functional Development Diesel Engines

BMW Motoren GmbH
A-4400 Steyr, Austria

wolfgang.mattes@bmw.com

SAE Government/Industry Light Duty Clean Diesel Session

Session Description: This session will explore new technologies for light-duty diesels and the technological hurdles and marketing strategies that are underway to gain consumer acceptance for diesel engines. Vehicle manufacturers will reveal their plans on introducing diesel engines to the U.S. market.

"Upcoming Volkswagen Models with Clean Diesel Technology" - Norbert Krause, Volkswagen

"Alternative Fuels and Advanced Vehicles Data Center - Supporting Light-Duty Diesel" - Debbie Brodt-Giles, National Renewable Energy Laboratory

"Trends in Light-Duty Diesel Emissions" - Timothy V. Johnson, Corning Incorporated

"Light-Duty Diesel R&D - Targeting Barriers to Market Penetration" - Ron Graves, Oak Ridge National Laboratory at NTRC

"Discover Today's Clean Diesel." - Dr. Johannes-Joerg Rueger

"BMW Advanced Diesel Vehicles with BluePerformance for the US market" - Wolfgang Mattes, BMW

From: Chris Nevers
To: Arvon Mitcham; Linc Wehrly; Robert Peavyhouse; Vincent Mazaitis
Subject: Fw: BMW/EPA Diesel SCR Conference Call Information
Date: 02/08/2008 12:28 PM

We are still on for Monday. No agenda as yet, since I was under the impression BMW wanted our time and not the other way around.

Chris
----- Forwarded by Vincent Mazaitis/AA/USEPA/US on 02/08/2008 12:21 PM -----

<Doug.McGregor@bmwna.com>
Sent by:
<Doug.McGregor@bmwna.com>

Received Date:
02/08/2008 12:15 PM
Transmission Date:
02/08/2008 12:15:58 PM

To: Linc Wehrly/AA/USEPA/US@EPA, Vincent Mazaitis/AA/USEPA/US@EPA, <Thomas.King@bmw.de>, <Wilhelm.Hall@bmwna.com>

cc: <Thomas.Hofmann@bmwna.com>, <Dieter.Cramm@bmw.de>, <Stephen.Sinkez@bmwna.com>

Subject: BMW/EPA Diesel SCR Conference Call Information

Friends and Colleagues:
This is the final information pertaining to our conference call to discuss the diesel SCR infrastructure issue. :

Date and Time: February 11, Monday, 10:00 AM Eastern
Call-in number, US: 866-811-8978
Call-in number, Europe: 203-310-1891
Passcode: Ex. 6 Personal Privacy (PP)
My mobile phone: 845-826-3199
Verizon number to call if you have trouble: **Ex. 6 Personal Privacy (PP)**

Since EPA asked for this call, I assume EPA will drive the agenda. We are making ourselves available to hear your concerns and answer your questions, and to have an open discussion about this issue.

We will allow 2 hours for this call, although in all likelihood we will need less than an hour. If I forgot anybody please feel free to forward them this e-mail.

All the best,
Doug McGregor
BMW Emissions Compliance
201-573-2193

From: Vincent Mazaitis
To: Chris Nevers
Subject: Fw: BMW/EPA Diesel SCR Conference Call Information
Date: 02/08/2008 12:23 PM

Chris,

Please forward this as you see necessary.

Thanks,

Vince Mazaitis
----- Forwarded by Vincent Mazaitis/AA/USEPA/US on 02/08/2008 12:21 PM -----

<Doug.McGregor@bmwna.com>
Sent by:
<Doug.McGregor@bmwna.com>

Received Date:
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To: Linc Wehrly/AA/USEPA/US@EPA, Vincent Mazaitis/AA/USEPA/US@EPA, <Thomas.King@bmw.de>, <Wilhelm.Hall@bmwna.com>

cc: <Thomas.Hofmann@bmwna.com>, <Dieter.Cramm@bmw.de>, <Stephen.Sinkez@bmwna.com>

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All the best,
Doug McGregor

BMW Emissions Compliance
201-573-2193

From: Chris Nevers
To: Thomas.Hofmann@bmwna.com
Subject: Fw: Diesel vehicle EPA hold
Date: 04/30/2010 12:38 PM

Tom,
Could you please follow up with Mr. Ex. 6 Personal Privacy (PP)? I assume BMW is waiting on the CA E.O.

Regards,
Chris
----- Forwarded by Chris Nevers/AA/USEPA/US on 04/30/2010 12:36 PM -----

From: **Ex. 6 Personal Privacy (PP)** >
To: Chris Nevers/AA/USEPA/US@EPA
Date: 04/30/2010 12:31 PM
Subject: Re: Fw: Diesel vehicle EPA hold

Mr. Nevers:

Thank you for your reply.

As I stated in the original email, the vehicle that I ordered with deposit has been built and is awaiting shipment to my local dealer. The two gasoline 2011 X5 models have been released for sale.

I understand that you may not be at liberty to discuss confidential business details, but can you confirm for me whether or not the EPA has authorized the 2011 BMW X5 XDrive 35d for sale? Is BMW complete with all required EPA actions necessary to allow vehicle delivery? What are some of the reasons that could be construed as an "EPA hold" that are actually manufacturer timing issues?

I appreciate your time and attention.

Respectfully,

Ex. 6 Personal Privacy (PP)

--- On **Fri, 4/30/10, Nevers.Chris@epamail.epa.gov** ***<Nevers.Chris@epamail.epa.gov>*** wrote:

From: Nevers.Chris@epamail.epa.gov <Nevers.Chris@epamail.epa.gov>

Subject: Re: Fw: Diesel vehicle EPA hold
To: Ex. 6 Personal Privacy (PP)
Date: Friday, April 30, 2010, 10:41 AM

Mr Ex. 6 Personal Privacy (PP),

This is in response to your question regarding shipping of the 2011 MY BMW X5. Due to confidential business information concerns, there is little we can disclose about a vehicle that has not yet entered commerce. There may be a miscommunication between yourself and your BMW contact. There are several reasons why a manufacturer might not ship vehicles that could be construed as "EPA hold" yet are really manufacturer timing issues. I'm sorry, but there is not much more I can say that wouldn't be considered confidential at this time.

I will forward your questions to a BMW of North America representative.

Best Regards,
Chris Nevers
EPA
734 214 4412

Forwarded by Carl Terry/R4/USEPA/US on 04/29/2010 08:40 AM -----

From: Ex. 6 Personal Privacy (PP)
To: Carl Terry/R4/USEPA/US@EPA
Date: 04/28/2010 09:00 PM
Subject: Diesel vehicle EPA hold

Mr. Terry:

I placed an order for a 2011 diesel BMW several weeks ago. This particular model is built here in SC, and the one I ordered (with deposit) rolled off the assembly line last week. Instead of taking delivery yesterday, I found out that the EPA has placed a hold on the release of the 2011 diesel models.

I'm well acquainted with the design and engineering of these vehicles, and I'm reasonably certain there are no mechanical differences between the models being placed on hold and the 2010 models available on dealer lots right now. I'd like to understand the reason for the hold on the 2011 models. Specifically, I'd like you to provide me with the technical basis for it as well the actions that the EPA and BMW are taking to resolve the problem.

Respectfully,

Ex. 6 Personal Privacy (PP)

From: Chris Nevers
To: Thomas.Hofmann@bmwna.com
Subject: Fw: SCR Workshop
Date: 07/08/2010 10:44 AM

Good Morning Tom,

As one of the manufacturers with diesel vehicles using SCR aftertreatment, has BMW been following the recent events in California regarding SCR systems? ARB has announced a public workshop for July 20th in regard to diesel engines and vehicles using SCR. It is unclear just how light duty will be impacted, but LD may very well follow trends set by heavy duty resulting from this workshop. EPA may be represented at this workshop. BMW may be asked what it would take (timing) to implement some of the proposed HD solutions in LD.

Workshop Mail out:

This Mail-out may be accessed at this link:

http://www.arb.ca.gov/msprog/mailouts/mouts_10.htm#msod

Regards,
Chris Nevers
734 214 4412

From: Robin Moran
To: GHG Vehicle Rule Team
Subject: Fw: UMTRI Auto News applauds "transparent" baseline in GHG/CAFE rule!
Date: 09/24/2009 10:28 AM

FYI: Walter McManus applauds the "profound change" to a transparent methodology!

----- Forwarded by Robin Moran/AA/USEPA/US on 09/24/2009 10:27 AM -----

From: Gloria Helfand/AA/USEPA/US
To: Robin Moran/AA/USEPA/US@EPA, charmley.william@epa.gov, Richard Rykowski/AA/USEPA/US@EPA
Date: 09/24/2009 07:55 AM
Subject: Fw: UMTRI Auto News Service Issue 79

Maybe of interest. Walter likes using public cost information.

Gloria Helfand
Assessment and Standards Division
Office of Transportation and Air Quality
U.S. Environmental Protection Agency
2000 Traverwood
Ann Arbor, MI 48105
(734) 214-4688
(734) 214-4821 fax

----- Forwarded by Gloria Helfand/AA/USEPA/US on 09/24/2009 07:55 AM -----

From: UMTRI Auto News Service <newsletter@autonewsservice.org>
To: Gloria Helfand/AA/USEPA/US@EPA
Date: 09/24/2009 05:09 AM
Subject: UMTRI Auto News Service Issue 79

UMTRI

UNIVERSITY OF MICHIGAN
TRANSPORTATION RESEARCH INSTITUTE
AUTOMOTIVE ANALYSIS DIVISION

AUTO NEWS SERVICE—ISSUE SEVENTY-NINE
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Auto Industry: Sales & Profits | Technology Trends | U.S. Driving Habits
Economy & Oil | Politics & Policy | Global Warming | Labor | Alterative Fuels | Public Opinion

NHTSA and EPA Joint Rulemaking Begins

Last week EPA and NHTSA released their preliminary/ draft/ proposed rulemaking to establish light-duty vehicle CAFE and GHG emissions standards for MY 2012-2016 light vehicles. The documents issued by the agencies are the first tangible product of the National Program that President Obama announced on May 19, 2009.

The National Program is supposed to establish strong and coordinated federal greenhouse gas and fuel economy standards for passenger cars, light-duty trucks, and medium-duty passenger vehicles. Based on what I have been able to read and digest so far the joint rulemaking appears to be on the right track.

In particular, the proposed new methodology for analyzing potential CAFE and GHG emissions standards is more transparent, replicable, and accurate that the prior methodology.

Among other objectives, Congress wants fuel economy standards that balance the benefits from reducing negative external effects of fuel consumption with the costs of improving vehicle fuel economy. The benefits can generally be estimated with public data, but to estimate the costs it would be helpful to use private information on costs known only to the automakers. This information asymmetry has the potential to introduce "gaming" into the process.

NHTSA has historically based its analysis of potential new CAFE standards heavily on private information—extensive and detailed product plans for vehicles, engines, and transmissions. This private information is obtained voluntarily, and NHTSA is obligated to prevent its public disclosure.

The new approach is more transparent. The information sources (with few exceptions), are all either in the public domain, available to the public upon request, or available commercially. This is arguably the most profound change in the methodology. In the past, the process was essentially immune from rigorous review. In the new process, anyone can repeat and review the analyses done by the agencies.

Transparency produces some tangible benefits. The new approach reduces the potential for errors (whether of omission and/or commission) that have been observed in past responses to NHTSA's requests. The new approach more accurately measures the incremental costs and benefits of the proposed standards. The product plans submitted recently show a significant increase over prior plans in applications of technology to improve fuel economy. To the extent that improvements have been planned in anticipation of future increases in CAFE standards, they should not be in the baseline. They would be in the old process.

The agencies have much work to do, but the joint rulemaking process should help them make better rules.

Dr. Walter McManus
Director, Automotive Analysis Division
University of Michigan Transportation Research Institute(UMTRI)
September, 2009

Highlights of News

Auto Industry

Sales and Profits

- September's light-vehicle sales will fall to the lowest rate in nearly 28 years, tying with the worst demand on record, 8.8 million units, said Edmunds.com. (AutoNews)
- The Commerce Department reported that overall U.S. retail sales in August bounded higher over the previous month, surpassing economists' expectations, as consumers swapped their old cars for new ones under Cash for Clunkers. (NYT)
- Toyota is preparing a $1 billion marketing blitz to juice U.S. sales in the fourth quarter and plans to expand its line of gas-electric hybrid models under the Prius name. (WSJ)
- GM is launching a new ad campaign with the challenge "May the Best Car Win," that features a 60-day, money-back guarantee, which starts Sept. 14 and runs through Nov. 30. (WSJ)
- GM dealers are pushing the company to boost availability of some of its hottest-selling models, after underestimated demand. (WSJ)
- The main floor for the 2010 N.A. International Auto Show in Detroit, Jan. 11-24, is full, a marked departure from the gaps that dotted the display space this year.

(DFP)
- Frankfurt Motor Show News
    - At the Frankfurt Motor Show BMW revealed its EfficientDynamics line of sporty but economical diesel-powered vehicles. (NYT)
    - Kia premiered its new 'EcoDynamics' sub-brand at the show, which will be equipped with Start/Stop (ISG) to automatically switch off and then restart the engine, an engine-power saving alternator management system, a gear-shift up/down indicator to encourage an economical driving style and low rolling resistance Michelin tires. (CarAdvice)
    - At the show Renault introduced a lineup of electric cars and is committed to making at least 100,000 of them by 2016. The cars will be able to drive between 60 to 100 miles on a single charge. (WSJ), Related Article: (WSJ)
    - The French tire maker Michelin showed its motorized wheel concept: its Active Wheel integrates a traction motor and suspension system -- both of them electric -- into the wheel itself. The technology allows automakers to reduce vehicle weight, and it frees up space in the vehicle. (DN)
    - Better Place displayed its battery-charging systems as well as battery-switching technology. (DN)

Technology Trends

- Prompted by crash-worthiness requirements and the need to make cars lighter to improve gas mileage, automakers are replacing conventional steels with advanced high-strength ones. (NYT)
- IBM is pursuing a tenfold improvement in battery storage. The future generation lithium-air battery might be the much sought after power source for electric vehicles with ranges that match gasoline powered cars of today. (NYT)
- To address safety concerns around electric and hybrid cars that produce little or no engine noise Toshiyuki Tabata at Nissan came up with a high- pitched sound reminiscent of the flying cars in the 1982 film, "Blade Runner." (Bloomberg)

Driving Habits

- As gasoline prices surged to a record high in 2008, more Americans commuted to work by public transportation, according to the Census Bureau show. 75.5% of workers drove alone to work last year, down from 76.1% in 2007 and 77% in 2005. (WSJ)

Economy & Oil

- OPEC's willingness to keep output low has helped prices rebound to around $70 a barrel. But resilient oil prices during the worst of the economic downturn have raised a fresh worry: As economic activity picks back up again, the world may face another supply crunch. (WSJ)
- More than 200 oil reserve discoveries, spanning five continents, are the result of hefty investments. Despite reaping record profits in recent years, many oil companies have warned that they need prices above $60 a barrel to develop the more challenging reserves. (NYT)

Politics & Policy

- Automakers would be required to gradually increase fuel efficiency under a landmark proposal by EPA and the NHTSA that raises the fleet-wide average to 35.5 mpg by 2016 and regulates tailpipe emissions for the first time. The initiative would boost fuel efficiency by 40% over current standards, reduce dependence on imported oil, and cut carbon emissions blamed for global warming by 21% by 2030. (Reuters), Related Articles: (GreenCarCongress), (MotorAge), (NYT), (WSJ), (DN), (CQ Politics), (Atlanta Alt. Trans. Examiner)
- The EPA and the NHTSA have provided a 60-day period for the public to comment in the Federal Register on the new proposed fuel economy ruling. Click here for instructions about how to submit a comment to EPA, and here for NHTSA. (Land Line)
- Obama said in his speech to the U.N. on climate change that he'd "work with my colleagues at the G20 to phase out fossil-fuel subsidies." Just scrapping subsidies could cut global CO2 emissions by about 6%. A report from Harvard's Kennedy School found that non-OECD countries spend between $220 billion and $280 billion subsidizing fossil fuels each year. (New Republic Blog), Related Article: (AP)
- In a preliminary filing with the U.S. Court of Appeals, the U.S. Chamber of Commerce and the National Automobile Dealers Association asked for a review of EPA's action to grant California a waiver in a joint effort to derail the state's ability to regulate tailpipe climate emissions. (WSJ Blog)
- The EPA said it would require the nation's biggest emitters of greenhouse gases to start tracking their emission levels on Jan. 1 and report them to the government. The reporting would cover roughly 85% of the greenhouse-gas emissions in the U.S. linked to global warming. (NYT), Related Article: (Greenwire)
- The U.S. DOE awarded the Alternative Fuel Trade Alliance a grant up to $1.6 million to raise public awareness and foster understanding of alternative fuels and advanced vehicle

technologies. (Biodiesel Magazine)

- The House overwhelmingly approved a bill to boost government funding for green vehicle research, authorizing $2.9 billion over five years, including $550 million in year starting Oct. 1 for the DOE to research and develop advanced technology vehicles and components. (DN), Related Article: (AP)
- About 60,000 Cash for Clunkers applications have been rejected so far equaling $250 million. NHTSA officials will reportedly work with dealers to try to get them approved. (AutoLoanDaily)
- SUVs and pickup trucks were more popular than previously believed under Cash for Clunkers, with three truck models among the top 10 sellers, according to a review of new federal data. (DFP)
- "In the first week of the [Cash for Clunker] program, the average miles per gallon of total vehicles purchased was significantly higher than subsequent weeks. Why? Dealers ran out of the more fuel-efficient cars. As time wore on, consumers had fewer and fewer fuel efficient choices," writes Mark Cooper of the Consumer Federation of America in the Detroit Free Press. (DFP)
- The EPA and NHTSA declare that vehicles that can run on B20, a 20% blend of biodiesel will be considered flexible fuel vehicles. (DomesticFuel)
- Major automakers endorsed a ban on texting and using hand-held mobile phones while driving. A Virginia Tech study said drivers of heavy vehicles using a hand-held text messaging system had a 23.2 times as high a risk of a crash than drivers who weren't. (DN)

Global Warming

- Leaders of the Alliance of Small Island States, a group of 42 island countries, urged that global temperature increases be sharply curtailed because they face devastating storms and floods from climate change. (Reuters)
- Family planning is five times cheaper than conventional green technologies in combating climate change, a claim made by Thomas Wire at the London School of Economics, and highlighted by British medics writing in the Lancet. (Economist), Related Article: (AP)

Alternative Fuels

- Kinder Morgan Energy Partners has started commercial transportation of blended biodiesel through its 115-mile Oregon Pipeline from Portland to Eugene. The pipeline is one of only a few in the U.S. that can regularly transport blended biodiesel. (Houston Business Journal)
- Darling International plans to join with Valero Energy to produce diesel fuel from used cooking oil, animal fat and other renewable feedstock sources, which would produce 135 million gallons of diesel a year. (Fort Worth Star-Telegram)

Labor

- GM is rehiring 2,400 workers at plants near Lansing, Ft. Wayne, Ind., and in Kansas, and is adding a third shift of production to meet demand for some of its new vehicles and better utilize factories. (DN)

Public Opinion

- About a third of customers who participated in the Cash for Clunkers program would not have purchased any vehicle without the government incentive, concluded a new survey by Cars.com. 80% of those surveyed said they were satisfied with the way the Cash for Clunkers program operated. 50% said they wish the government would continue the program. (AutoNews)

UMTRI Auto News Service

The University of Michigan Transportation Research Institute (UMTRI) Automotive Analysis Division has a 25-year record of providing information and analysis about the current trends and future direction of the automotive industry to manufacturers, suppliers, retailers, labor unions, scholars, government, the media, and the general public.

We are initiating this biweekly news service to give decision-makers and policy-makers a concise overview of recent thinking on important topics and challenges facing the automotive industry. Each issue will provide news excerpts and links to articles in seven subject areas: auto industry trends, economy and oil, alternative fuels, global warming, labor, politics and policy, and public opinion. In addition to the excerpts, each issue will feature a brief summary analysis by UMTRI.

We hope this service will help generate good ideas and wise decisions that strengthen the auto industry, grow American jobs, and benefit the economy.

Dr. Walter McManus
Director, Automotive Analysis Division
University of Michigan Transportation Research Institute (UMTRI)

November, 2005

UMTRI does not own or control the sites to which this e-mail may link and is not responsible for content on such sites.

From:	David Good
To:	David Vanamburg
Cc:	David Bochenek; Maria Peralta; Linc Wehrly; Stephen Healy; Martin Reineman; Russell Banush; Vincent Mazaitis; Robert Peavyhouse; Chris Nevers; Emily Chen; Tom Anderson
Subject:	Hybrids, Fuel cell vehicle & diesel vehicle testing for 2008
Date:	02/19/2008 01:27 PM

Dave,

Here is our latest test projections for fuel cell and diesel test vehicles:

Diesels:

Date	Mfr	Vehicle	Comments
3/15/08	Mercedes	3.0L E320 Bluetech2	Diesel with urea dosing; Mercedes has 4 diesel vehicles (E320/R320/ML320/RL320 CDI carlines). CISD will likely test one or two of the Mercedes vehicles
3/20/08	VW	2.0L Jetta TDI	Diesel with urea dosing.
4/7/08	Cummins	6.7L Ram 2500/3500	Diesel - Heavy-duty Chassis testing (without urea) - mostly carryover so CISD may waive testing
June/July 2008	BMW	X5	Diesel with urea dosing.
June/July 2008	BMW	3-Series	Diesel with urea dosing.
9/22/08	Chrysler	3.0L Grand Cherokee	Diesel with urea dosing. Similar to Mercedes.
10/1/08	V W	3.0L Touerag	Diesel (without urea)
1/29/09	Honda	2.2L Acura TSX	Diesel (without urea)

Fuel Cell Vehicles:

TBD	GM	Equinox	Pending EPA lab changes to be able to test
4/1/08	Honda	FCX	
Nov/Dec 2008	Toyota	FCHV	Toyota will schedule 1-2 meetings prior to EPA testing. Can't test in Toyota's Ann Arbor Lab.

Hybrids:

We expect to test 5-10 Hybrids throughout the year, including a Chrysler Durango (March); a new 3.6L Saturn Vue; a new Ford Escape, a Porsche Cayenne, and possibly a BMW hybrid.

From:	David Good
To:	Linc Wehrly
Cc:	Stephen Healy; Chris Nevers; Robert Peavyhouse; Martin Reineman; Antonio Fernandez; David Good; Ben Haynes; Jeff Alson
Subject:	Hybrids, fuel cell vehs, diesels, new technology vehicles - spread sheet attached
Date:	02/12/2008 04:36 PM
Attachments:	Hybrids1_2-11-08..xls

Linc & all,

Attached is my CONFIDENTIAL spreadsheet with future product plans, projected sales, etc. Blue text is the current (2008) model year. Red text is 2009 or future model years (mostly from cert preview meetings with mfrs).

We still haven't had 2009 MY cert preview meetings with VW, Toyota, BMW, Porsche yet. (I think Ex. 4 CBI). Most of the other manufacturers are included.

Regards

Hybrids1_2-11-08..xls

From: Chris Nevers
To: Linc Wehrly
Subject: nnto: 2 BMW diesel cert apps are now in queue. Ex. 5 Deliberative Process (DP)
Date: 03/24/2010 03:56 PM

Air Resources Board

Mary D. Nichols, Chairman
9480 Telstar Avenue, Suite 4
El Monte, California 91731 www.arb.ca.gov

Linda S. Adams
Secretary for Environmental Protection

Arnold Schwarzenegger
Governor

September 2, 2009

Reference No. E-09-170

Mr. Wilhelm Hall
BMW of North America
P.O. Box 1227
Westwood, NJ 07675-1227

SUBJECT: Approval of BMW's On-Board Diagnostics II (OBD II) System Design for 2010 Model Year Test Groups ABMXV03.0M57and ABMXT03.0M57.

Dear Mr. Hall:

The Air Resources Board's (ARB) Engineering Studies Branch has received the OBD II system description submitted by BMW for the 2010 model year test groups listed above. Representations made in the application indicate that the system is compliant with the OBD II regulation with the exception of swirl control valve monitoring, diesel oxidation catalyst (DOC) monitoring, diesel particulate filtering (DPF) monitoring, and cold start emission reduction strategy (CSERS) monitoring. The staff has also determined that BMW meets the factors necessary to allow OBD II systems to be certified with deficiencies. Based on an email from Mr. Wilhelm Hall dated September 2, 2009, BMW has agreed pay the required fines for the fourth deficiency. Therefore, ARB approves the 2010 model year OBD II system with four deficiencies. Additionally, staff has concerns regarding the EGR low flow monitor, DPF regeneration temperature feedback monitor, upstream SCR temperature sensor monitor, SCR time-to-closed-loop monitor, various temperature sensor monitors, reductant injection pressure sensor monitor, fault code usage for the glow plug monitors, and emissions increasing-auxiliary emission control device (EI-AECD) tracking. Details of the deficiencies and concerns are noted below.

Under section (k) of the OBD II regulation, BMW is subject to fines of $25 per vehicle for each 2010 model year vehicle produced for sale in California with the test group referenced above. Such fines are to be paid to the State Treasurer for deposit in the Air Pollution Control Fund. The total fine that BMW will be required to pay will be based on production and distribution records provided by BMW for the 2010 model year. BMW could limit its total liability should it elect to implement a running change correcting one

or more of these deficiencies during the model year. Upon ARB approval of these changes, vehicles produced subsequent to such changes would no longer be subject to fines.

Swirl Control Valve Monitoring Deficiency

For swirl valve control systems that use non-metal or segmented shafts, section (f)(16) of the OBD regulation requires manufacturers to verify that all portions of a segmented shaft are properly functioning. BMW's swirl valve control system consists of a single actuator that, through a series of linkages, drives six individual metal flaps that sit on individual metal shafts. Although BMW's monitor verifies the motion of the actuator and the linkage that connects to each individual shaft, it does not verify the motion of each individual shaft. As such, the monitor is deficient for the 2010 model year. BMW is required to address this issue on its future model year products to remove the deficiency determination.

DOC Monitoring Deficiency

Section (f)(1.2.3)(B) of the regulation requires malfunction detection when the catalyst is unable to generate the necessary feedgas constituents for proper SCR system operation. In previous presentations to ARB, BMW has claimed that there is a strong correlation between HC conversion and NO2 generation since both are oxidation processes. As such, BMW is utilizing the NMHC catalyst conversion efficiency monitor (P0420) to comply with the feedgas generation monitor. However, ARB is not fully convinced that deterioration of feedgas generation and NMHC conversion are directly correlated. Therefore, staff cannot conclude whether the NMHC conversion efficiency monitor will reliably detect a DOC malfunction when the catalyst is unable to generate the feedgas or whether further DOC deterioration will be necessary to fail the NMHC conversion monitor. The OBD II system is therefore deficient for monitoring of the DOC feedgas capability. BMW must include a separate monitor to monitor for proper feedgas generation or provide data that demonstrates the failure mechanisms for NMHC conversion efficiency and feedgas generation have a strong correlation to avoid a deficiency determination on its future model year products.

DPF Monitoring Deficiency

Section (f)(9.2.4) of the regulation requires catalyzed DPFs to be monitored for proper function if no malfunction of the catalyzed DPF could result in emissions exceeding the required emission threshold. On BMW's system the DOC and catalyzed DPF are located in the same can. BMW claims that the DOC temperature is always hotter than the DPF because of its more upstream position in the exhaust. Therefore, the DOC

should always deteriorate before the catalyzed DPF. By only monitoring the DOC, BMW believes it will detect DOC malfunctions and catalyzed DPF deterioration before either of these components has complete loss of function. Additionally, BMW believes that the DPF will be replaced whenever the DOC fails since both components share the same can. Staff, however, is not convinced that the DOC will always see higher temperatures than the catalyzed DPF and fail prior to the DPF given the high temperatures that occur during regeneration of the DPF. Furthermore, while BMW has submitted data of a catalyzed DPF with a 35mm hole to demonstrate that the catalyzed DPF has no emission impact on NMHC emissions, staff does not believe that this failure mode demonstrates that an intact trap with degraded catalytic performance would behave similarly. Therefore, the DPF monitor is considered deficient for the 2010 model year. In order to avoid a deficiency determination on its future model year products, BMW will need to include a diagnostic that directly monitors the functionality of the catalyzed DPF or provide data and/or analysis demonstrating that the catalyzed coating of the DPF will never fail before a DOC fault is detected and that the DOC will not likely be separately replaced in-use. In addition, BMW needs to submit a more comprehensive set of data that demonstrates the NMHC emission impact of the DPF prior to the 2011 model year certification.

Cold Start Emission Reduction Strategy Monitoring Deficiency

BMW has indicated that a cold start strategy is used on this vehicle, and each component involved in the cold start phase is individually monitored. In a presentation to ARB, BMW showed monitors for the components involved in cold start. However, it was unclear how the components were operated during cold start and whether the OBD system will robustly verify the desired effect is achieved during cold start operation. BMW has not shown that cold start monitoring requirements are met. Therefore, the OBD II system is considered deficient for cold start monitoring.

EGR Low Flow Monitoring Concern

BMW's system includes an EGR low flow diagnostic that runs continuously even though it can be susceptible to false passes when operating in areas where the EGR setpoint is low and/or boost pressure is low. While having a monitor that runs frequently during in-use driving is an important consideration for designing monitors, ARB believes, it is equally important to design monitors that will robustly detect malfunctions in-use. Section (f)(6.3.5) of the regulation provides manufacturers flexibility to disable continuous monitoring under specific conditions that are technically necessary to ensure robust monitoring. Staff requests that BMW improve this monitor on its future model year products to ensure that robust monitoring occurs by utilizing the guidelines that are

described in section (f)(6.3.5).

DPF Regeneration Temperature Feedback Monitoring Concern

BMW's system includes a monitor (P244C) to detect when the start of regeneration temperature feedback control is improperly delayed. In order to begin temperature feedback control, the system requires that a temperature of 250°C is achieved upstream of the DPF. Once this temperature is achieved, the temperature feedback controller is activated. To detect a malfunction, the system allows a debounce time of 10 to 120 seconds depending upon the upstream DPF temperature when regeneration is first commanded. While a debounce time of 120 seconds appears appropriate for when the upstream DPF temperature is cold (e.g., -0.04°C), staff does not believe a debounce time of 60 to 100 seconds is necessary when the DPF temperature is near or even above the required temperature to activate feedback control. For example, at a DPF temperature of 249,96°C at the start of regeneration, the debounce time for the monitor is 100 seconds even though the DPF only needs to warm up less than one degree to achieve the required temperature of 250°C for activating feedback control. In order to avoid a deficiency determination on its future model year products, BMW must provide data that justifies the need for the debounce times or improve the diagnostic by utilizing more appropriate debounce times or enable criteria.

Glow Plug Fault Code Usage Concerns

BMW's system utilizes one fault code to describe both open circuit and shorted high malfunctions even though the system is capable of distinguishing between the two failure modes. The OBD II regulation requires manufacturers to store a fault code "identifying the likely area of malfunction." Staff is concerned that BMW's use of a single fault code for different failure modes may not provide sufficient information to assist technicians in identifying the likely area of malfunction in an efficient manner. Staff is requesting that BMW utilize available SAE J2012 generic fault codes wherever they are appropriate on its future model year applications to avoid a deficiency determination. BMW has agreed to utilize generic fault codes to separately distinguish the open circuit malfunction from the shorted high for the 2011 model year to avoid a deficiency.

Upstream SCR Temperature Sensor Monitoring Concern

BMW's system includes a two-sided key-on rationality test for the upstream SCR temperature sensor and a low-sided rationality diagnostic with the engine running. However, it does not include a high-sided rationality diagnostic with the engine running. Since the key-on rationality test does not monitor the SCR temperature sensor for

temperatures that it normally encounters during in-use driving, staff requests that BMW research implementing an engine-on high-sided rationality diagnostic of this sensor on its future model year products.

SCR Time to Closed Loop Monitor Concern

Section (f)(2.2.3)(D) of the OBD II regulation requires the OBD II system to detect a malfunction when the SCR system fails to begin reductant injection control within a manufacturer's specified time interval. In lieu of monitoring the SCR system for time to enter closed loop, BMW is individually monitoring all the components and parameters that are used as inputs to closed loop control. In order to enter reductant control, BMW's system requires two things to occur. First, the SCR upstream temperature must exceed 79.96°C to enable the pressure build-up of the SCR injection system. Second, the SCR upstream temperature must exceed 189.96°C to enable SCR reductant dosing. While the system includes a monitor that detects if dosing does not occur when it should have started (P204F), this diagnostic requires that the SCR temperature model exceed 229.9°C for greater than 240 seconds continuously. BMW has claimed the monitor is calibrated to a worst case scenario of a drive cycle at continuous idle at -30°C ambient temperature. While it is appropriate to consider all possible conditions that a vehicle may encounter in-use, staff has concerns that this calibration based on such worst case scenarios and applied to all in-use conditions may take longer than necessary to detect a malfunction under less than worst case scenarios. When such large discrepancies exist between expected performance in typical conditions versus extreme conditions, BMW should utilize disablements and/or thresholds that are a function of other parameters (e.g., ambient temp, vehicle operating conditions) to ensure adequate protection in extreme conditions while still maintaining robust detection in the far more common typical conditions.

Additionally, in order to enable the P204F diagnostic, the SCR system must have successfully achieved pressure build-up. Pressure build-up only occurs when the SCR upstream temperature sensor exceeds 79.96°C. Although BMW's system includes a monitor that detects a biased or slow to warm-up temperature sensor (P242A), this diagnostic requires 600 seconds of engine run time before the diagnostic is enabled. Staff has concerns that the interdependency of the SCR temperature sensor diagnostic with the P204F diagnostic could cause a biased low or slow to warm-up sensor to improperly delay the start of injection and not be detected prior to emissions exceeding 2.5 times the applicable standard. BMW is required to address this concern on its future model year products to avoid a deficiency determination.

Various Temperature Sensor Monitoring Concerns

The OBD II regulation requires that manufacturers set reasonable malfunction thresholds. For several of BMW's temperature sensors including the EGR cooler temperature sensors and SCR reductant temperature sensor, the out-of-range low diagnostics are calibrated overly conservative. For example, the low out-of range malfunction thresholds for these sensors are calibrated to -50°C. Considering that the lowest normal operating temperature for this vehicle is -40°C and the out-of-range low threshold for other temperature sensors are set at -40°C, staff believes the malfunction threshold is set unreasonably conservative. BMW has agreed to address this concern for the 2011 model year to avoid a deficiency determination.

Reductant Injection Pressure Sensor Monitoring Concern

The OBD II regulation requires that manufacturers set reasonable malfunction thresholds. On BMW's reductant injection pressure sensor, the out-of-range low diagnostic is calibrated well outside of its normal operating range. For example, the low out-of range malfunction threshold for the reductant injection pressure sensor diagnostic is set at -200 hPa. Considering that the lowest normal operating pressure for this vehicle is 0 hPa, staff believes the malfunction threshold is set unreasonably conservative. BMW must address this concern on its future model year products to avoid a deficiency determination.

EI-AECD.Tracking Concern

For 2010 model year diesel vehicles, manufacturers are required to track and report EI-AECD activity as specified in section (g)(6.2) of the regulation. BMW has assessed its AECDs and has only identified one that should be tracked and reported as an EI-AECD. However, staff has concerns that other AECDs in BMW's system may also meet the definition for an EI-AECD and require tracking. For example, staff is concerned that the system may include AECDs that are altitude based that BMW has not fully documented. To resolve this concern, BMW is required to provide further documentation of its AECDs and schedule a follow-up discussion with ARB staff to ensure all that qualify as EI-AECDs have been appropriately identified.

Should you have any comments or questions regarding this letter, please have your staff contact Mr. Jason Wong at (626) 575-6838.

Sincerely,

Steve Albu, Assistant Chief
Mobile Source Control Division

cc: Mr. Jason Wong
Staff Air Pollution Specialist
Mobile Source Control Division

Air Resources Board

Mary D. Nichols, Chairman
9480 Telstar Avenue, Suite 4
El Monte, California 91731 www.arb.ca.gov

Linda S. Adams
Secretary for Environmental Protection

Arnold Schwarzenegger
Governor

March 5, 2010

Reference No. E-10-030

Mr. Wilhelm Hall
BMW of North America
P.O. Box 1227
Westwood, NJ 07675-1227

SUBJECT: Approval of BMW's On-Board Diagnostics II (OBD II) System Design for 2011 Model Year Test Groups BBMXV03.0M57and BBMXT03.0M57.

Dear Mr. Hall:

The Air Resources Board's (ARB) Engineering Studies Branch has received the OBD II system description submitted by BMW for the 2011 model year test groups listed above. Representations made in the applications indicate that the systems are compliant with the OBD II regulation with the exception of swirl control valve monitoring, diesel oxidation catalyst (DOC) monitoring, diesel particulate filtering (DPF) monitoring, cold start emission reduction strategy (CSERS) monitoring, and diesel exhaust fluid (DEF) heater monitoring. The staff has also determined that BMW meets the factors necessary to allow OBD II systems to be certified with deficiencies. Based on an email from Mr. Wilhelm Hall dated March 5, 2010, BMW has agreed pay the required fines for the third through fifth deficiency. Therefore, ARB approves the 2011 model year OBD II systems with five deficiencies. Additionally, staff has concerns regarding the EGR low flow monitor, DPF regeneration temperature feedback monitor, upstream SCR temperature sensor monitor, SCR time-to-closed-loop monitor, various temperature sensor monitors, reductant injection pressure sensor monitor, fault code usage for the glow plug monitors, and emissions increasing-auxiliary emission control device (EI-AECD) tracking. Details of the DEF heater monitoring deficiency are provided below. Details of the remaining deficiencies and concerns have been provided in a previous approval letter (Reference No. E-09-170).

Under section (k) of the OBD II regulation, BMW is subject to fines of $100.00 per vehicle for each 2011 model year vehicle produced for sale in California with the test groups referenced above. Such fines are to be paid to the State Treasurer for deposit in the Air Pollution Control Fund. The total fine that BMW will be required to pay will be

based on production and distribution records provided by BMW for the 2011 model year. BMW could limit its total liability should it elect to implement a running change correcting one or more of these deficiencies during the model year. Upon ARB approval of these changes, vehicles produced subsequent to such changes would no longer be subject to fines.

DEF Heater Monitoring Deficiency

Section (f)(15.2.2) requires manufacturers to monitor output components for proper functional response to computer commands. BMW's DEF tank includes a heater to warm up DEF in the tank under conditions when the DEF is frozen. Upon sufficient heat input, the frozen DEF is melted and the system can begin DEF injection into the exhaust stream. BMW's OBD II system includes circuit checks of the DEF tank heater. The OBD II system also has a diagnostic for heater performance when the DEF fluid level is greater than 50%; however, BMW does not verify that the heater is properly functioning and sufficiently heating up DEF in the tank under conditions when the DEF is frozen and the heater is commanded on. Specifically, when the DEF is frozen, BMW representatives have explained the system does not produce a valid DEF fluid level signal, and therefore, ARB staff concludes the DEF heater monitor will be disabled. Therefore, the DEF tank heater monitor is considered deficient for lack of proper functional monitoring. To avoid a deficiency determination on future model year vehicles BMW is required to improve DEF tank heater monitoring and verify that the heater is functioning properly. Further, BMW is required to review this issue with ARB and Unites States Environmental Protection Agency certification staff to assess whether it creates any consequences for certification of the SCR system on the test groups referenced above.

Should you have any comments or questions regarding this letter, please have your staff contact Mr. Thomas Montes at (626) 575-6777.

Sincerely,

Steve Albu, Assistant Chief
Mobile Source Control Division

From: Chris Nevers
To: Thomas.Hofmann@bmwna.com
Subject: Re: BMW Common
Date: 03/24/2010 12:46 PM

Thanks,
Chris

▼ ---03/24/2010 08:29:23 AM---Good morning Chris Dawud informs me that he has updated the Common Application to add the diesel OBD

From: <Thomas.Hofmann@bmwna.com>
To: Chris Nevers/AA/USEPA/US@EPA
Date: 03/24/2010 08:29 AM
Subject: BMW Common

Good morning Chris

Dawud informs me that he has updated the Common Application to add the diesel OBD and the diesel AECD information.
The revised Common has been uploaded to Verify.
I hope this will allow you to continue with your review.

He is working on adding the other OBD information to the Common.
That revision will be uploaded as soon as it is done.

Thanks,
Tom

Tom Hofmann
Emissions & Fuel Economy Certification
BMW of North America, LLC
201-571-5195

From: Vincent Mazaitis
To: Chris Nevers
Cc: David Good; Healy.Stephen@epamail.epa.gov; Linc Wehrly
Subject: Re: BMW Diesel Certificates
Date: 11/25/2008 01:07 PM

Chris,

Shall I send an e-mail to BMW asking the questions, and should I have them include this information in their Cert Application?

Thanks,

Vince Mazaitis

▼ Chris Nevers/AA/USEPA/US

Chris Nevers/AA/USEPA/US
EPA-OAR,OTAQ,CISD

Received Date:
11/25/2008 12:03 PM
Transmission Date:
11/25/2008 12:03:00 PM

To: Vincent Mazaitis/AA/USEPA/US@EPA
cc: David Good/AA/USEPA/US@EPA, Healy.Stephen@epamail.epa.gov, Linc Wehrly/AA/USEPA/US@EPA
Subject: Re: BMW Diesel Certificates

Vince,
I had a couple of questions for BMW. One thing we did not go over much in our diesel discussions with BMW was Infrequent Regeneration Adjustment Factors (IRAFs). Although BMW does list some upward and downward adjustment factors due to DPF regen, they do not explicitly state the frequency of the regens. Typically, we also ask if said regens can start (and can they complete) on any of the test cycles. Finally, how did BMW initiate and measure the emissions during regen?

Chris

▼ Vincent Mazaitis/AA/USEPA/US

Vincent Mazaitis/AA/USEPA/US
Other-OAR,OTAQ,CISD
Sent by: Vincent Mazaitis

Received Date:
11/24/2008 08:13 AM
Transmission Date:
11/24/2008 08:13:32 AM

To: Chris Nevers/AA/USEPA/US@EPA, Healy.Stephen@epamail.epa.gov@EPA
cc: Linc Wehrly/AA/USEPA/US@EPA, David Good/AA/USEPA/US@EPA
Subject: BMW Diesel Certificates

Hello Chris and Steve,

As you know, BMW has asked for Certificates for the two Diesel test groups. I've received a copy of the OBD approval, the fees are in the fees data base and the

Application for Certificate appears to be in order. The Certificates need to be generated in CFEIS. Please let me know when you want me to generate them.

Thanks,

Vince Mazaitis

From: Nathan.Murphy@bmwnaext.com
To: Chris.Nevers/AA/USEPA/US@EPA
Subject: RE: BMW Diesel Meeting in March
Date: 02/08/2011 02:21 PM

Hello Chris-

You can book it. BMW will be there at the agreed time. We are working out exactly who will be there, but it will be either 4 or 5 people from Europe, and Tom Hofmann joining either in person, or on the phone – more likely on the phone. Tom is on vacation, or I could confirm his present today...

I'll update you with a detailed agenda and attendance roster soon.

Thanks,

Nathan Murphy

p: 201.571.5085
e: nathan.murphy@bmwnaext.com

ES-5-US-2
Environmental Engineering
BMW of North America LLC

From: Nevers.Chris@epamail.epa.gov [mailto:Nevers.Chris@epamail.epa.gov]
Sent: Tuesday, 08 February 2011 13:38
To: Murphy Nathan , (C)
Subject: RE: BMW Diesel Meeting in March

Sounds good. The sooner I know of changes, the better.

Thanks,
Chris

From: <Nathan.Murphy@bmwnaext.com>
To: Chris Nevers/AA/USEPA/US@EPA
Date: 02/07/2011 10:05 AM
Subject: RE: BMW Diesel Meeting in March

Hi Chris-

This should be fine. I'm waiting for final-final confirmation, but that is exactly when our team wanted to meet. It should work as a placeholder if nothing else, right?

Thanks,

Nathan Murphy

p: 201.571.5085
e: nathan.murphy@bmwnaext.com

ES-5-US-2
Environmental Engineering
BMW of North America LLC

From: Nevers.Chris@epamail.epa.gov [mailto:Nevers.Chris@epamail.epa.gov]
Sent: Thursday, 03 February 2011 07:17
To: Murphy Nathan , (C)
Subject: RE: BMW Diesel Meeting in March

Nathan,

How about 9:30- 11:30, Monday, March 14?

Chris

From:	<Nathan.Murphy@bmwnaext.com>
To:	Chris Nevers/AA/USEPA/US@EPA
Cc:	<Thomas.Hofmann@bmwna.com>
Date:	02/02/2011 11:29 AM
Subject:	RE: BMW Diesel Meeting in March

Hi Chris-

For sure I was more interested in pinning down a date at this point. I realize EPA would have to assemble a few people.

There would be 4 or 5 people from Europe coming, with Tom Hofmann joining either in person or on the phone, more likely.

There are no plans to bring special vehicles, as the program is still out a bit far to have test cars ready. There would just be the rental cars.

For sure a projector would be useful, although I can have the guys from Europe bring one.

Thanks for the prompt reply!

Nathan Murphy

p: 201.571.5085
e: nathan.murphy@bmwnaext.com

ES-5-US-2
Environmental Engineering
BMW of North America LLC

From: Nevers.Chris@epamail.epa.gov [mailto:Nevers.Chris@epamail.epa.gov]
Sent: Wednesday, 02 February 2011 11:14
To: Murphy Nathan , (C)
Subject: Re: BMW Diesel Meeting in March

Nathan,

I do not have a date or invitee list nailed down, yet, but how many were planning on coming from BMW? (and in how many vehicles - we may have parking/ facility issues that week) Also, will you need a projector?

Thanks,
Chris
-----<Nathan.Murphy@bmwnaext.com> wrote: -----
To: Chris Nevers/AA/USEPA/US@EPA
From: <Nathan.Murphy@bmwnaext.com>
Date: 02/02/2011 10:50AM
Cc: <Thomas.Hofmann@bmwna.com>, <Christoph.Weizenauer@bmw.com>, <Erwin.Kranawetter@bmw.com>, <Robert.Edenhofer@bmw.de>
Subject: BMW Diesel Meeting in March
Hello Chris-

BMW would like to schedule a meeting to introduce our new line of Diesel engines that are coming for MY2014. We are shooting for March 14. The agenda would be, more or less:

- Timing and introduction for the new engines
- New after-treatment technology
- Wrong-Medium detection
- Next generation SCR system
- Diagnostics

I can be your point of contact, and I work very closely (figuratively and literally) with Tom Hofmann.

Thank you,

Nathan Murphy

p: 201.571.5085
e: nathan.murphy@bmwnaext.com

ES-5-US-2
Environmental Engineering
BMW of North America LLC

From: Thomas.Hofmann@bmwna.com
To: Vincent Mazaitis/AA/USEPA/US@EPA
Cc: Chris Nevers/AA/USEPA/US@EPA; David Good/AA/USEPA/US@EPA; Linc Wehrly/AA/USEPA/US@EPA; Stephen Healy/AA/USEPA/US@EPA
Subject: RE: Diesel Cert Application Questions for 9BMXV03.0M57 & 9BMXT03.0M57
Date: 11/26/2008 11:39 AM
Attachments: BMW Supplemental Info Regeneration Nov_2008.pdf

Hello Vince

Attached are BMW's response to your questions.
I will upload this on Verify shortly.

Please feel free to contact me with any questions or comments.

kind regards,
Tom

-----Original Message-----
From: Mazaitis.Vincent@epamail.epa.gov
[mailto:Mazaitis.Vincent@epamail.epa.gov]
Sent: Tuesday, November 25, 2008 3:13 PM
To: Hofmann Thomas, ES-5-US-20
Cc: Nevers.Chris@epamail.epa.gov; Good.David@epamail.epa.gov;
Wehrly.Linc@epamail.epa.gov; Healy.Stephen@epamail.epa.gov
Subject: Diesel Cert Application Questions for 9BMXV03.0M57 &
9BMXT03.0M57

Hello Tom,

In reviewing the Certification Applications for the subject vehicles,
there a few questions.

What is the frequency of a regen?

How did BMW initiate and measure the emissions during regen?

How long does a regen take?

Can or would a regen be completed during an emission test if it
begins soon enough during the test cycle? (city, highway, US06)

Please add the responses to Verify. (Not necessary to modify the Cert
Application)

If you have any questions or concerns, please contact me.

Thanks Tom,

Best regards,

Vince Mazaitis

From: Chris Nevers
To: William Charmley
Cc: Roberts French; Robert Peavyhouse; Linc Wehrly
Subject: Re: Fw: 5-cycle data request
Date: 11/21/2008 12:01 PM
Attachments: 5-cycle data request.xls

Ex. 5 Deliberative Process (DP)

Did you want to add the BMW Mini Cooper EV? It is set to test at EPA the 1st week in Dec.

Chris

▼ William Charmley/AA/USEPA/US

William Charmley/AA/USEPA/US
EPA-OAR,OTAQ,ASD
Sent by: William Charmley

Received Date:
11/21/2008 09:28 AM
Transmission Date:
11/21/2008 09:28:13 AM

To "Linc Wehrly" <Wehrly.Linc@epamail.epa.gov>, "Chris Nevers" <Nevers.Chris@epamail.epa.gov>, "Robert Peavyhouse" <Peavyhouse.Robert@epamail.epa.gov>

cc "Roberts French" <French.Roberts@epamail.epa.gov>

Subject Fw: 5-cycle data request

Chris and Bob

Any additional thoughts on this?
Sent by EPA Wireless E-Mail Services

▼ Richard Rykowski

----- Original Message -----
From: Richard Rykowski
Sent: 11/21/2008 09:24 AM EST

To: Ben Ellies; Roberts French
Cc: Anthony Neam; Antonio Fernandez; Ben Ellies; David Ganss; David Haugen; Ed Nam; Linc Wehrly; Matt Brusstar; Robin Moran; William Charmley
Subject: Re: 5-cycle data request

Rob, I've added three vehicles to the bottom of the list. They focus on the potential impact of advanced conventional engine technology (variable valve lift and timing) on the 5-cycle vs. 2-cycle difference.

5-cycle data request.xls

Richard A. Rykowski
Assessment and Standards Division
U.S. Environmental Protection Agency
2000 Traverwood Drive
Ann Arbor, MI 48105
(734) 214-4959 fax (734) 214-4816

Ben Ellies/AA/USEPA/US

Ben Ellies/AA/USEPA/US
EPA-OAR,OTAQ,TCD-AnnArbor
Sent by: Ben Ellies

Received Date: 11/21/2008 08:05 AM
Transmission Date: 11/21/2008 08:05:42 AM

To: Roberts French/AA/USEPA/US@EPA

cc: Robin Moran/AA/USEPA/US@EPA, Ed Nam/AA/USEPA/US@EPA, Anthony Neam/AA/USEPA/US@EPA, Antonio Fernandez/AA/USEPA/US@EPA, Ben Ellies/AA/USEPA/US@EPA, David Ganss/AA/USEPA/US@EPA, David Haugen/AA/USEPA/US@EPA, Linc Wehrly/AA/USEPA/US@EPA, Matt Brusstar/AA/USEPA/US@EPA, Richard Rykowski/AA/USEPA/US@EPA, William Charmley/AA/USEPA/US@EPA

Subject: 5-cycle data request

Hi Rob,

Attached is a list of vehicles (probably not exhaustive, but long enough to get a good cross section) for which people have requested 5-cycle FE data. Most of these vehicles are either hybrids, diesels, or advanced gasoline engines with key features of interest. A few baseline comparison vehicles are also included.

Please review and let me know what other vital information is needed (on a case-by-case basis) based on your initial foray into CFEIS. We might need to have some additional help from others within CISD who have more specialized knowledge about model types/subtleties for particular mfrs, etc.

Thanks for your help.
Ben

[attachment "5-cycle data request.xls" deleted by Richard Rykowski/AA/USEPA/US]

From: Vincent Mazaitis
To: Chris Nevers
Subject: Re: Fw: BMW Diesel, Proposed SCR Plan, and Documents; Confidential
Date: 02/04/2008 01:05 PM

Chris,

His number is: (201) 573-2193

Vince
Chris Nevers/AA/USEPA/US

Chris Nevers/AA/USEPA/US
EPA-OAR,OTAQ,CISD
Sent by: Chris Nevers

To: Vincent Mazaitis/AA/USEPA/US@EPA
cc:
Subject: Fw: BMW Diesel, Proposed SCR Plan, and Documents; Confidential

Received Date:
02/04/2008 12:44 PM
Transmission Date:
02/04/2008 12:44:29 PM

Vince,
Do you have Doug McGregor's phone number? Linc wanted me to set up an SCR meeting.

Thanks,
Chris

----- Forwarded by Chris Nevers/AA/USEPA/US on 02/04/2008 12:42 PM -----

Linc Wehrly/AA/USEPA/US
EPA-OAR,OTAQ,CISD
Sent by: Linc Wehrly

To: Chris Nevers/AA/USEPA/US@EPA, Robert Peavyhouse/AA/USEPA/US@EPA, Arvon Mitcham/AA/USEPA/US@EPA
cc:
Subject: Fw: BMW Diesel, Proposed SCR Plan, and Documents; Confidential

Received Date:
12/20/2007 09:02 AM
Transmission Date:
12/20/2007 09:02:01 AM

Here is the latest information from BMW on their SCR system. Please review and let me know what you think.

Thanks,
Linc

Manager, Light-Duty Vehicle Group
Compliance and Innovative Strategies Division
United States Environmental Protection Agency
(734) 214-4286
wehrly.linc@epa.gov

----- Forwarded by Linc Wehrly/AA/USEPA/US on 12/20/2007 09:00 AM -----

<Doug.McGregor@bmwna.com>
Sent by:
<Doug.McGregor@bmwna.com>

Received Date:
12/19/2007 04:45 PM
Transmission Date:
12/19/2007 04:45:44 PM

To Vincent Mazaitis/AA/USEPA/US@EPA, David Good/AA/USEPA/US@EPA, Linc Wehrly/AA/USEPA/US@EPA, <jocain@arb.ca.gov>, <jjwong@arb.ca.gov>

cc <Thomas.King@bmw.de>, <Wilhelm.Hall@bmwna.com>, <Stephen.Sinkez@bmwna.com>, <Thomas.Hofmann@bmwna.com>, <Dieter.Cramm@bmw.de>, <Detlef.Hiemesch@bmw.com>, <Andreas.Bruhn@bmw.de>, <Detmar.Nellessen@bmw.de>

Subject BMW Diesel, Proposed SCR Plan, and Documents; Confidential

Colleagues:
Attached you will find two documents related to BMW's proposed SCR plan; one document an excerpt from the Certification Application explaining how the vehicle reducing agent delivery system and warning system works (change extension to .zip to open), and a supporting document which is an excerpt from the proposed Owner Manual supplement relating to diesel SCR. Please note that the development of the SCR system and supporting infrastructure is not finalized in all aspects, and some modifications are possible. In particular I would point out that the "Emergency Starts" provision is still under discussion and review. The Owner Manual and Cert App descriptions do not agree on this subject.
Despite this, the concepts are close enough to finalization that we would appreciate your attention and review, and your feedback in terms of letting us know what will not work, or what may be ambiguous and need further clarification.
We would like to schedule a certification preview meeting for no later than March 2008. We can meet at EPA and include CARB via conference call or video conference, or we can have separate meetings, whatever works best. If we can have your comments in advance of the meeting we will be well prepared to address all the issues. Please suggest some dates for a meeting; we will respond with confirmation as soon as possible.

I will send you a third file in a second e-mail; this one also is a zipped file (change the extension to .zip to open), an executable animation, with sound, showing what the customer will see and here when the defined low level stages are reached.

Please keep in mind that I will be on vacation starting tomorrow, through Jan. 2. You might try Wilhelm, Steve, or Tom, if you need help with these documents.

Happy Holidays!
Doug McGregor
Environmental Engineering[attachment "Advanced_Diesel_owners_manual_US.pdf" deleted by Chris Nevers/AA/USEPA/US] [attachment "Application for Certification Diesel final_121907.ipz" deleted by Chris Nevers/AA/USEPA/US]

From: Doug.McGregor@bmwna.com
To: Chris.Nevers/AA/USEPA/US@EPA
Subject: RE: Fw: BMW/EPA Diesel SCR Conference Call Information
Date: 02/08/2008 02:17 PM

Chris --
Yes, this is definitely helpful. Of course we have all seen the guidance document, but this is a good outline to help us focus. I will pass it around to my colleagues.

Doug
PS sorry I forgot to include you on the e-mail!

From: Nevers.Chris@epamail.epa.gov [mailto:Nevers.Chris@epamail.epa.gov]
Sent: Friday, February 08, 2008 1:44 PM
To: Mazaitis.Vincent@epamail.epa.gov; McGregor Doug, ES-US-20
Cc: Wehrly.Linc@epamail.epa.gov
Subject: Re: Fw: BMW/EPA Diesel SCR Conference Call Information

Doug,
After looking through BMW's SCR plan, we do have a couple of questions. I'd also like to share with you a template we started using to ensure future SCR applications meet regulatory and guidance criteria. This template in not intended as a guidance document, but really as summary of existing language to help us here at the EPA. I realize that for some of the agenda items you may not have a response by Monday. Sorry for the short notice. We could go over the first three agenda items and then cover whatever you have that may address the last 3 items. If need be, we can always schedule a follow up.

Agenda:

Is there an updated BMW SCR plan, the Dec. version appears to be a draft with comments turned on?

EPA on reducing agent availability and accessibility:
Agreement or plan for reagent at some other commercial entity, other than dealer and back up plan.

EPA on tamper resistance:
Plans to make "simple" tampers less likely, for example unplugging the NOx sensor

EPA request for more detail on how the incorrect reagent identification is linked to refill events and how refills are determined

EPA request for more detail on urea freeze times and volumes associated with freeze events

EPA request for an emergency start explanation

Regards,
Chris Nevers
734 214 4412

----- Forwarded by Vincent Mazaitis/AA/USEPA/US on 02/08/2008 12:21 PM -----

<Doug.McGregor@bmwna.com>
Sent by: <Doug.McGregor@bmwna.com>

Received Date:
02/08/2008 12:15 PM

Transmission Date:
02/08/2008 12:15:58 PM

To Linc Wehrly/AA/USEPA/US@EPA, Vincent Mazaitis/AA/USEPA/US@EPA, <Thomas.King@bmw.de>, <Wilhelm.Hall@bmwna.com>

cc <Thomas.Hofmann@bmwna.com>, <Dieter.Cramm@bmw.de>, <Stephen.Sinkez@bmwna.com>

Subject BMW/EPA Diesel SCR Conference Call Information

Friends and Colleagues:
This is the final information pertaining to our conference call to discuss the diesel SCR infrastructure issue. :

Date and Time: February 11, Monday, 10:00 AM Eastern
Call-in number, US: 866-811-8978
Call-in number, Europe: 203-310-1891
Passcode: Ex. 6 Personal Privacy (PP)
My mobile phone: 845-826-3199
Verizon number to call if you have trouble: **Ex. 6 Personal Privacy (PP)**

Since EPA asked for this call, I assume EPA will drive the agenda. We are making ourselves available to hear your concerns and answer your questions, and to have an open discussion about this issue.

We will allow 2 hours for this call, although in all likelihood we will need less than an hour. If I forgot anybody please feel free to forward them this e-mail.

All the best,
Doug McGregor
BMW Emissions Compliance
201-573-2193

From: Chris Nevers
To: Dale Aspy
Subject: Re: Fw: Diesel vehicle EPA hold
Date: 04/30/2010 08:46 AM

Dale,
There is not much we can say publically about a vehicle that has not yet entered commerce. There must be a miscommunication between Mr. Ex. 6 Personal Privacy (PP) and his contact at BMW. There are several reasons why a manufacturer might not ship vehicles that could be construed as an "EPA hold" yet are really manufacturer timing issues. I'm sorry, but there is not much else I can say that wouldn't be considered confidential.

Regards,
Chris

Dale Aspy---04/29/2010 03:15:17 PM---Chris, I don't know if Steve Healy talked to you but the Region 4 office received the following emai

From: Dale Aspy/R4/USEPA/US
To: Chris Nevers/AA/USEPA/US@EPA
Date: 04/29/2010 03:15 PM
Subject: Fw: Diesel vehicle EPA hold

Chris,

I don't know if Steve Healy talked to you but the Region 4 office received the following email and it filtered down to me to get a response. Do you want to email him back or me? Is there anything to it? What can we say or not say to the public and not violate any confidential business information?

Thanks for any help on this one.

Dale

Energy, Environment, Economy

Dale Aspy
EPA Region 4
Southeast Diesel Collaborative
404-562-9041

----- Forwarded by Dale Aspy/R4/USEPA/US on 04/29/2010 03:11 PM -----

From: Carl Terry/R4/USEPA/US
To: Dale Aspy/R4/USEPA/US@EPA
Date: 04/29/2010 08:43 AM
Subject: Fw: Diesel vehicle EPA hold

Please respond or forward to HQ for a response. Thanks.
Carl Terry, Director
Office of External Affairs
U.S. EPA Region 4
(404) 562-8325
(678) 576-6806 (c)

----- Forwarded by Carl Terry/R4/USEPA/US on 04/29/2010 08:40 AM -----

From: **Ex. 6 Personal Privacy (PP)**
To: Carl Terry/R4/USEPA/US@EPA
Date: 04/28/2010 09:00 PM
Subject: Diesel vehicle EPA hold

Mr. Terry:

I placed an order for a 2011 diesel BMW several weeks ago. This particular model is built

here in SC, and the one I ordered (with deposit) rolled off the assembly line last week. Instead of taking delivery yesterday, I found out that the EPA has placed a hold on the release of the 2011 diesel models.

I'm well acquainted with the design and engineering of these vehicles, and I'm reasonably certain there are no mechanical differences between the models being placed on hold and the 2010 models available on dealer lots right now. I'd like to understand the reason for the hold on the 2011 models. Specifically, I'd like you to provide me with the technical basis for it as well the actions that the EPA and BMW are taking to resolve the problem.

Respectfully,

Ex. 6 Personal Privacy (PP)

From: Thomas.Hofmann@bmwna.com
To: Ex. 6 Personal Privacy (PP)
Cc: Chris Nevers/AA/USEPA/US@EPA
Subject: RE: Fw: Diesel vehicle EPA hold
Date: 04/30/2010 03:36 PM

Dear Mr Ex. 6 Personal Privacy (PP)

You are correct in that the 2011 MY X5 xDrive35d is very similar to the 2010 MY X5 xDrive35d. However, the emissions certification must be done anew for each model year for each engine family. Since all of our cars and light trucks are 50-state certified, BMW will not release any model until both EPA and CARB emissions certifications have been completed.

For the X5 diesel, the EPA certification is complete and the California certification is nearly finished. I can assure you that both BMW and CARB are doing their best to work through the process. We anticipate release of the diesel models in the next week or so.

Thanks for your patience.

Tom Hofmann
Emissions & Fuel Economy Certification
BMW of North America, LLC
201-571-5195

From: Nevers.Chris@epamail.epa.gov [mailto:Nevers.Chris@epamail.epa.gov]
Sent: Friday, April 30, 2010 10:42 AM
To: Ex. 6 Personal Privacy (PP)
Subject: Re: Fw: Diesel vehicle EPA hold

Mr Ex. 6 Personal Privacy (PP),

This is in response to your question regarding shipping of the 2011 MY BMW X5. Due to confidential business information concerns, there is little we can disclose about a vehicle that has not yet entered commerce. There may be a miscommunication between yourself and your BMW contact. There are several reasons why a manufacturer might not ship vehicles that could be construed as "EPA hold" yet are really manufacturer timing issues. I'm sorry, but there is not much more I can say that wouldn't be considered confidential at this time.

I will forward your questions to a BMW of North America representative.

Best Regards,
Chris Nevers
EPA
734 214 4412

Forwarded by Carl Terry/R4/USEPA/US on 04/29/2010 08:40 AM -----
From: Ex. 6 Personal Privacy (PP)
To: Carl Terry/R4/USEPA/US@EPA
Date: 04/28/2010 09:00 PM
Subject: Diesel vehicle EPA hold

Mr. Terry:

I placed an order for a 2011 diesel BMW several weeks ago. This particular model is built here in SC, and the one I ordered (with deposit) rolled off the assembly line last week. Instead of taking delivery yesterday, I found out that the EPA has placed a hold on the release of the 2011 diesel models.

I'm well acquainted with the design and engineering of these vehicles, and I'm reasonably certain there are no mechanical differences between the models being placed on hold and the 2010 models available on dealer lots right now. I'd like to understand the reason for the hold on the 2011 models. Specifically, I'd like you to provide me with the technical basis for it as well the actions that the EPA and BMW are taking to resolve the problem.

Respectfully,

Ex. 6 Personal Privacy (PP)

From: Chris Nevers
To: Linc Wehrly
Subject: Re: Fw: EPA approvals for 2011 BMW X5
Date: 04/15/2010 07:45 AM

Yes,we have issued a couple of X5 certificates. The diesel, the 3L gas, and the 4.4L gas. The new 3L, single turbo DI X5, is a conditional cert. It is testing this week, today.

Linc Wehrly---04/15/2010 07:30:46 AM---Chris, Have we issued the certificate yet for the 2011 BMW X5? I know there are a couple of differe

From: Linc Wehrly/AA/USEPA/US
To: Chris Nevers/AA/USEPA/US@EPA
Date: 04/15/2010 07:30 AM
Subject: Fw: EPA approvals for 2011 BMW X5

Chris,

Have we issued the certificate yet for the 2011 BMW X5? I know there are a couple of different engines, including the diesel which we have issued.

Thanks

Linc Wehrly
Manager, Light-Duty Vehicle Group
Compliance and Innovative Strategies Division
United States Environmental Protection Agency
(734) 214-4286
wehrly.linc@epa.gov

----- Forwarded by Linc Wehrly/AA/USEPA/US on 04/15/2010 07:28 AM -----

From: Ex. 6 Personal Privacy (PP)
To: Linc Wehrly/AA/USEPA/US@EPA
Date: 04/14/2010 05:19 PM
Subject: Fwd: EPA approvals for 2011 BMW X5

Hi Linc.

My name is Ex. 6 Personal Privacy (PP). I was given your contact info from Penny Lassiter (s the person to speak to regarding emissions standards for automobiles.

I have a 2011 BMW X5 on order which has completed

production but BMW is telling me that can not release the automobile
to me until the new 2011 model get its EPA approvals.

do you have any info on when this will happen?

if you are not the proper person to speak to, can you please point me
in the right direction.

thanks,

Ex. 6 Personal Privacy (PP)

---------- Forwarded message ----------
From: <Lassiter.Penny@epamail.epa.gov>
Date: Wed, Apr 14, 2010 at 5:07 PM
Subj BMW X5
To: Ex. 6 Personal Privacy (PP)

PII Ex. (b)(6)
,

Unfortunately, somehow the EPA help desk has my name mistakenly associated with automobiles. You will need to contact our Office of
Transportation Air Quality in Ann Arbor, MI at:

Certificates of Conformity Imports Hotline 734-214-4100

or contact Linc Wehrly at our National Vehicle and Fuel Emissions Lab at
wehrly.linc@epa.gov

Penny Lassiter
Associate Director
Sector Policies and Programs Division (D205-01)
Office of Air Quality Planning and Standards
U.S. EPA
Research Triangle Park, NC 27711
(919) 541-5396

From: Ex. 6 Personal Privacy (PP)

To: Penny Lassiter/RTP/USEPA/US@EPA

Date: 04/14/2010 04:52 PM

Subject: EPA approvals for 2011 BMW X5

Hi Penny.

My name is Ex. 6 Personal Privacy (PP). i was given your info from the main EPA switchboard on to speak to regarding emissions standards
for automobiles. I have a 2011 BMW X5 on order which has completed
production but BMW is telling me that can not release the automobile
to me until the new 2011 model get its EPA approvals.

do you have any info on when this will happen?

if you are not the proper person to speak to, can you please point me

in the right direction.

thanks,

Ex. 6 Personal Privacy (PP)

From: Thomas.Hofmann@bmwna.com
To: Chris.Nevers/AA/USEPA/US@EPA
Subject: RE: OBD Approval for 2011 BMW diesels BBMXT03.0M57 BBMXV03.0M57
Date: 03/11/2010 03:25 PM

Hi Chris

You are absolutely correct; the only thing that matches up is the Coolant Temperature. Sorry about that!
I have forwarded your request to Munich.

best regards,
Tom

From: Nevers.Chris@epamail.epa.gov [mailto:Nevers.Chris@epamail.epa.gov]
Sent: Thursday, March 11, 2010 10:57 AM
To: Hofmann Thomas, ES-5-US-20
Subject: Re: OBD Approval for 2011 BMW diesels BBMXT03.0M57 BBMXV03.0M57

Tom,
I'm looking at the two diesel applications now. Could you please get the Common Updated to reflect the diesel AECDs? It appears as if the diesel AECD descriptions are in some cases missing and in other instances inconsistent with the diesel application numbering. It may not be a bad idea to also look at the 2010 Common and fix the final update also.

Regards,
Chris

From: <Thomas.Hofmann@bmwna.com>
To: Chris Nevers/AA/USEPA/US@EPA
Date: 03/08/2010 03:39 PM
Subject: OBD Approval for 2011 BMW diesels BBMXT03.0M57 BBMXV03.0M57

Hi Chris

Attached please find the OBD Approval Letter for our diesel test groups BBMXV03.0M57 and BBMXT03.0M57.

kind regards,
Tom

Tom Hofmann
Emissions & Fuel Economy Certification
BMW of North America, LLC
201-571-5195[attachment "OBD Approval BBMXV03.0M57 BBMXT03.0M57 BMW E-10-030.pdf" deleted by Chris Nevers/AA/USEPA/US]

From: Chris Nevers
To: Thomas.Hofmann@bmwna.com
Subject: RE: OBD Approval for 2011 BMW diesels BBMXT03.0M57 BBMXV03.0M57
Date: 03/19/2010 12:30 PM

From: Chris Nevers
To: Thomas.Hofmann@bmwna.com
Subject: Re: OBD approval for ABMXT03.0M57 and ABMXV03.0M57
Date: 09/09/2009 01:39 PM

Tom,
When you get a chance, could you have the CSI's updated to reflect the number of OBD deficiencies and have the FOIA applications submitted? Neither of the mentioned items will prevent me from approving the requests for certificate.

Regards,
Chris

---09/04/2009 08:15:34 AM---Hello Chris

From: <Thomas.Hofmann@bmwna.com>
To: Chris Nevers/AA/USEPA/US@EPA
Date: 09/04/2009 08:15 AM
Subject: OBD approval for ABMXT03.0M57 and ABMXV03.0M57

Hello Chris

Attached please find the OBD approval for the BMW diesel system as used in test groups ABMXT03.0M57 and ABMXV03.0M57

Regards,
Tom

Tom Hofmann
Emissions & Fuel Economy Certification
BMW of North America, LLC
201-571-5195[attachment "OBD Approval ABMXT03.0M57 ABMXV03.0M57 Ref No E-09-170_BMW.pdf" deleted by Chris Nevers/AA/USEPA/US]

From: Linc Wehrly
To: Chris Nevers
Subject: Re: SCR OEM info
Date: 04/09/2008 11:40 AM

This looks good. Go ahead and send the message to the mfrs.

Manager, Light-Duty Vehicle Group
Compliance and Innovative Strategies Division
United States Environmental Protection Agency
(734) 214-4286
wehrly.linc@epa.gov
▼ Chris Nevers/AA/USEPA/US

Chris Nevers/AA/USEPA/US
EPA-OAR,OTAQ,CISD
Sent by: Chris Nevers

To Linc Wehrly/AA/USEPA/US@EPA
cc
Subject SCR OEM info

Received Date:
04/09/2008 11:14 AM
Transmission Date:
04/09/2008 11:14:32 AM

The below is what I would like to ask the SCR OEM's. The data I have is basically that of the bluetech 2 and some partial data on VW and BMW.

(In evaluating possible unregulated emissions, EPA is requesting some information regarding current and/or planned diesel exhaust systems using selective catalytic reduction. Could you please provide EPA with the following:

1- The distance, in cm, each catalyst and/or filter is down-pipe from the exhaust manifold.

2- The distance, in cm, each exhaust sensor and/or aftertreatment fluid injector is down-pipe from the exhaust manifold.

3- What is the expected maximum temperature (both steady state and excursion) each catalyst/filter will experience? If this is only during a regen, please also give the maximum non-regen temperatures.

4- Indicate what, if any, base metal zeolite is used.

As always, all information will be treated as confidential.)

Ex. 4 CBI

BMW - Ex. 4 CBI

I don't have anything concrete on GM, Ford, or Nissan other than we suspect both GM and Ford are using Ex. 4 CBI

Chris

From: Thomas.Hofmann@bmwna.com
To: Chris Nevers/AA/USEPA/US@EPA
Subject: RE: TG ABMXV03.051R and ABMXV03.0M57
Date: 01/07/2010 09:27 AM

Hi Chris

The ABMXV03.051R NMOG FUL standard for T2B5 has been corrected.

The SULEV standard is not so simple.
We currently adjust the standard upward to reflect an NMOG credit of 0.005 g/mi for the Direct Ozone Reduction device (PremAir-coated radiator).

Originally, BMW adjusted the test result downward by the credit amount.
In discussions with Dave Good, he requested that we report the actual test result and make the adjustment by adding the credit to the standard.

Either approach seems to cause some downstream problems.

Since the SULEV FUL NMOG is 0.011 g/mi, we need to reflect the credit in some manner.

Please advise.

best regards,
Tom

From: Nevers.Chris@epamail.epa.gov [mailto:Nevers.Chris@epamail.epa.gov]
Sent: Tuesday, January 05, 2010 11:02 AM
To: Hofmann Thomas, ES-5-US-20
Subject: RE: TG ABMXV03.051R and ABMXV03.0M57

Tom,
Please ignore the second part of my request. We can accept HC-NM as NMOG for diesel per 40 CFR 86.1811-04 (m). However, the first part of my request stands (incorrect NMOG FUL standards in test group ABMXV03.051R).

Regards,
Chris

From: <Thomas.Hofmann@bmwna.com>
To: Chris Nevers/AA/USEPA/US@EPA
Date: 01/04/2010 09:23 AM
Subject: RE: TG ABMXV03.051R and ABMXV03.0M57

Hi Chris

I have forwarded your correction requests to Munich for action.
They are out until Friday but should be able to make the corrections soon thereafter.

best regards,
Tom
From: Nevers.Chris@epamail.epa.gov [mailto:Nevers.Chris@epamail.epa.gov]
Sent: Wednesday, December 30, 2009 1:25 PM
To: Hofmann Thomas, ES-5-US-20
Subject: TG ABMXV03.051R and ABMXV03.0M57

Tom,
Please call me at your next convenience regarding TGs ABMXV03.051R and ABMXV03.0M57. It appears as if BMW entered some incorrect standard values with the first TG and some incorrect emission names on the second.

ABMXV03.051R: NMOG FUL standards are .090 and .010 g/mi for T2B5 and SULEV, respectively, and not .095 and .015
ABMXV03.0M57: HC-NM standard name should have been NMOG

Regards,
Chris

From: Thomas.Hofmann@bmwna.com
To: Chris.Nevers/AA/USEPA/US@EPA
Subject: RE: TG ABMXV03.051R and ABMXV03.0M57
Date: 01/05/2010 04:20 PM

Thanks for the update. I have informed my colleagues in Munich

Tom

From: Nevers.Chris@epamail.epa.gov [mailto:Nevers.Chris@epamail.epa.gov]
Sent: Tuesday, January 05, 2010 11:02 AM
To: Hofmann Thomas, ES-5-US-20
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ABMXV03.051R: NMOG FUL standards are .090 and .010 g/mi for T2B5 and SULEV, respectively, and not .095 and .015
ABMXV03.0M57: HC-NM standard name should have been NMOG

Regards,
Chris

BMW 2009MY - Model Type and General Fuel Economy Label Data - Diesel Models

Engine	Model Name	Label Values			Est. Ann. Fuel Cost	Engine Displ. / No. of Cyl.	Drive System	Trans	Comparable Class
		City	Highway	Combined					
M57D30TOP-E90	335d	23	36	27	2498	183 (3.0L) / 6	RWD	S6	Compact Cars
M57D30TOP-E70	X5 xDrive35d	19	26	22	3071	183 (3.0L) / 6	AWD	S6	Special Purpose SUV-4WD

Est. Annual Fuel Cost based on Diesel fuel @ $4.50/gal

California emissions certification standard: LEVII LEV
Federal emissions certification standard: Tier 2, Bin 5

From: Linc Wehrly
To: Frederick Hart; Robert Doyle
Cc: Chris Nevers; Stephen Healy
Subject: Fw: 335d FOIA cert application
Date: 02/09/2009 12:27 PM

Fred & Bob,

Can or do we release a copy of a FOIA request to anyone? BMW has a FOIA request for a certificate and they are asking us for information on the request. What do you suggest?

Linc

Linc Wehrly
Manager, Light-Duty Vehicle Group
Compliance and Innovative Strategies Division
United States Environmental Protection Agency
(734) 214-4286
wehrly.linc@epa.gov

----- Forwarded by Linc Wehrly/AA/USEPA/US on 02/09/2009 12:24 PM -----

Chris Nevers/AA/USEPA/US
EPA-OAR,OTAQ,CISD
Sent by: Chris Nevers

To Linc Wehrly/AA/USEPA/US@EPA
cc Stephen Healy/AA/USEPA/US@EPA
Subject Fw: 335d FOIA cert application

Received Date:
02/09/2009 11:32 AM
Transmission Date:
02/09/2009 11:32:51 AM

After I asked for BMW's FOAI application (which has not yet been provided) for their SCR diesel TG application, BMW asked to see the FOIA request for their diesel SCR application. Are we allowed to disclose who asks for FOIA data?

Chris

----- Forwarded by Chris Nevers/AA/USEPA/US on 02/09/2009 11:29 AM -----

<Thomas.Hofmann@bmwna.com>
Sent by:
<Thomas.Hofmann@bmwna.com>

To Chris Nevers/AA/USEPA/US@EPA
cc
Subject 335d FOIA cert application

Received Date:
02/09/2009 11:25 AM
Transmission Date:
02/09/2009 11:25:44 AM

Hi Chris

My supervisor is asking for a copy of the FOIA request.
Is that something you can provide?

He would also like to know what procedures we need to follow in our response and also the date our response is due.
The Application would need to come out of our Munich office as that falls under their jurisdication.

thanks,
Tom

Tom Hofmann
Emissions & Fuel Economy Certification
BMW of North America, LLC
201-571-5195

From: Karl Simon
To: Linc Wehrly
Subject: Fw: Diesel Cleans Up Its Act for an Encore (New York Times)
Date: 05/24/2008 11:03 PM

---

would like to know more about what Honda is up to. Should they come in and talk to us?

----- Forwarded by Karl Simon/DC/USEPA/US on 05/24/2008 11:03 PM -----

Justin Cohen/DC/USEPA/US

05/19/2008 10:50 AM

To: Karl Simon/DC/USEPA/US@EPA, Linc Wehrly/AA/USEPA/US@EPA

cc:

Subject: Diesel Cleans Up Its Act for an Encore (New York Times)

Diesel Cleans Up Its Act for an Encore (*New York Times*)

May 18, 2008 Sunday
Late Edition - Final
SECTION: Section AU; Column 0; Automobiles; Pg. 1
By LAWRENCE ULRICH
AFTER years in the automotive wilderness, largely exiled to the smoky borders of truck stops, diesel is coming home. Americans may not recognize its freshly scrubbed face.

A 19th-century invention by Rudolf Diesel, the diesel engine has always been known for outstanding fuel efficiency, with better mileage (by 25 percent to 40 percent) than gasoline. But the kerosenelike fuel and the engines that burn it were dirty, noisy, dawdling and even deadly, linked to increased risk of cancer and respiratory disease.

That has all changed, in part because of cleaner-burning fuel -- its 2006 rollout had been mandated in 2000 by the Clinton administration -- that has 97 percent less of the sulfur responsible for diesel engines' sooty particulates.

The low-sulfur fuel, hailed by the Environmental Protection Agency as a historic advance, has opened the door to sophisticated emissions controls that let diesel engines meet the strict pollution standards of California. Those rules, the world's most stringent by far, require 2009-model diesels to be as green as gasoline or even hybrid models.

In the meantime, advances like turbocharging and high-pressure fuel injection have transformed diesel cars from soot-belching slowpokes with a telltale clickety-clack

sound to smooth, tidy and powerful machines that many Americans would have a hard time distinguishing from gasoline models.

With technical and environmental hurdles overcome -- and facing tougher mileage standards that call for a 35 m.p.g. average by 2020 -- automakers are rushing in with clean-diesel cars.

Two sets of emissions rules -- a very strict set for California and four other states, another for the remaining 45 states -- had kept most diesel cars out of the United States until now. In contrast, fuel-sipping diesels were embraced in Europe, where they account for half of passenger car sales.

But starting with the 2009 model year, several automakers have developed diesels clean enough to pass muster in all states, including -- at last -- the big California and New York markets.

Volkswagen says it will be the first to market, with Jetta sedans and wagons arriving in August. Mercedes will follow in October with diesel versions of its GL-, ML- and R-Class sport crossover utilities. BMW is preparing a mighty twin-turbo 6-cylinder diesel for sale this fall in the 335d sedan and X5 35d sport wagon.

Audi's Q7 3.0 TDI utility wagon goes on sale early next year. That automaker has been vividly demonstrating modern diesel's one-two punch by dominating recent runnings of the 24 Hours of Le Mans with its R10 racers, which are not only fast, but are the quietest, cleanest and most fuel-efficient cars in the field.

The new diesel disciples are not just the usual German suspects. Three Japanese companies -- Honda, Nissan and Subaru -- are ramping up the technology. Long known for efficient gasoline engines, Honda will offer its first American diesel next year, as an option on the Acura TSX sedan. A similar diesel Honda from Europe that I recently tested achieved a wallet-friendly 53 m.p.g. on the highway.

Honda also plans to offer a diesel V-6 around 2010 that may find its way into the Acura TL sedan, the Acura MDX utility or the Honda Odyssey minivan.

Nissan will install a Renault-designed diesel in its Maxima sedan for 2010; Subaru will counter with a diesel the same year, probably in a Legacy sedan or Outback wagon. A Jeep Grand Cherokee diesel arrives in 2009, and General Motors, Ford and Dodge all plan 50-state diesel versions of their light-duty pickup trucks in 2009 or 2010.

The situation seems to defy the conventional wisdom that saw diesel cars heading to history's scrapyard. As late as 1982, Mercedes relied on diesels for 80 percent of its American sales. But aside from their strong presence in heavy-duty trucks, diesels have been relegated to a small but loyal fringe.

The diesel revival takes its cues from Europe, where the engines power everything from tiny microcars to luxurious autobahn cruisers. Strikingly, hybrids have grabbed less than 1 percent of the European market. Yet automakers acknowledge that

mending diesel's foul reputation in the United States remains an enormous challenge.

Johan de Nysschen, executive vice president at Audi of America, estimates that diesels might eventually account for 15 percent of Audis sold here. But first, he said, Americans must learn that modern diesels are not only clean and fun to drive, but more efficient than hybrids for many consumers.

"In stop-and-go city driving like Manhattan, the hybrid is a good solution," Mr. de Nysschen said at the New York auto show this spring. "But we need to convey the message that hybrids are not the definitive solution."

Under the hood, there is little to distinguish diesel engines from those that burn gasoline. Both use pistons, valves and electronic fuel injection, but the differences go beyond the form of petroleum that goes in the tank. Today's gasoline engines ignite their fuel with a high-voltage spark; diesels, also known as compression-ignition engines, light the fire with the heat generated by squeezing the air in the cylinders to a far greater degree. This is one of their main advantages: a compression ratio of nearly 20:1, compared with a maximum of about 12:1 for gasoline. This means that diesel engines extract more power from their fuel.

The compression of a gasoline engine can't simply be cranked up higher -- the gasoline would burn erratically. Diesel fuel, a petroleum distillate, will tolerate those high cylinder pressures.

Another reason diesels get better mileage: the fuel contains 12 percent more energy a gallon.

Largely because they burn less fuel, the engines produce up to a third less carbon dioxide than gasoline models -- compelling some environmentalists to reverse their longstanding opposition. Diesel's drawback had been high levels of smog-forming nitrogen oxides and carcinogenic soot.

The greening of diesel involves the new ultra-low-sulfur fuel, cleaner-burning engines and a suite of emissions equipment.

Filters trap sooty particulates while catalysts use ammonia to convert nitrogen oxides into harmless nitrogen and water in the exhaust.

"There's a little chemical processing plant in there, and some pretty amazing chemistry," said Thomas Hinman, vice president for diesel technologies at Corning, a leading supplier of cellular ceramic filters for diesel engines.

For many models, including those from BMW, Mercedes and Audi, there is a catch: their S.U.V.'s will carry six- to eight-gallon tanks of urea, an ammonia-rich solution injected into the exhaust to neutralize smog-forming pollution.

And to ensure that consumers don't let the urea run dry, Mercedes is installing a dashboard alert that warns consumers when the urea level drops below one gallon.

From there, owners will be on a countdown until the tank is topped off: the cars will start just 20 more times before they cannot be operated. That countdown is a concession to federal regulators, who demanded technical assurances that these groundbreaking systems would work continuously to keep emissions below legal levels.

The smaller 4-cylinder VW and Honda diesels, in contrast, meet 50-state standards without requiring urea tanks that would have to be replenished every 12,000 miles or so.

Yet as automakers dress up diesel for its coming-out party, one unexpected development is threatening to spoil it. For decades, diesel fuel cost less than gasoline, amplifying the advantage of its higher mileage. But over the last year, diesel has soared to a record average of $4.33 a gallon nationwide, compared with $3.72 for regular gasoline.

George Peterson, vice president of the AutoPacific consulting firm, said that diesel cars traditionally offset their higher prices through both fuel savings and higher resale value. But higher-price diesel fuel puts both those financial incentives at risk.

"Given the price of diesel, you can't get the cars to pay you back, so it doesn't make as much sense," he said.

While diesel currently costs 16 percent more than gasoline, that premium is more than offset by mileage gains of 25 to 40 percent. Consumers would still save money with a diesel car, and they would fill it less frequently.

The Mercedes E320 diesel sedan, for example, can cover roughly 700 highway miles on a tank. Clean-diesel models may also become eligible for federal tax credits of up to $3,400.

Consumers will also pay more for diesel technology, with manufacturers estimating that diesel engines and emissions gear add from $1,500 to $3,500 to their costs for each car. Mercedes is charging only $1,000 extra for its diesel models, compared with the equivalent gasoline versions, though some analysts suggest that Mercedes is partly subsidizing diesels to win converts. Steve Keyes, a spokesman for Volkswagen, said the Jetta diesel sedan and sport wagon would cost less than $2,000 over the gas versions, a price that he said would cover the additional costs.

Automakers also note major differences between European and American markets. European nations have long subsidized diesel by taxing gasoline at higher rates. Additional taxes on large engines also drove consumers into small but relatively powerful diesels.

Finally, diesel isn't as widely available as gasoline, though 42 percent of service stations nationwide offer the fuel, according to the Diesel Technology Forum, a trade group.

Many analysts expect diesels to blow past hybrids in popularity. J. D. Power & Associates estimates that diesel will explode from its 3 percent market share to 11.5 percent by 2015, exceeding hybrids at 7 percent. Continued high diesel prices could force an adjustment in that projection.

"People will definitely get sticker shock at over $4 a gallon," said Mike Omotoso, the powertrain analyst at J. D. Power. "But we see the huge price gap between gasoline and diesel as a relatively short-term spike."

And as the industry hedges its bets on which fuels and technologies -- including gas-electric hybrids, diesels, plug-in hybrids and ethanol -- will catch on, some automakers are publicly at odds over diesel's chances.

General Motors' advanced propulsion strategy is to develop a full range of alternatives to gasoline, including hybrids, ethanol, hydrogen and its Chevrolet Volt plug-in electric car. As part of that strategy, G.M. is developing new diesels, including a 4.5-liter V-8 that it will offer on 2010 models of the Chevy Silverado and GMC Sierra pickups.

Yet while GM is already selling 1.3 million diesel models a year worldwide -- and is readying a diesel-powered Cadillac CTS for Europe -- it sees diesel's American future in pickups and S.U.V.s, not in affordable cars.

G.M. engineers say diesel can raise the mileage of a trailer-towing truck by 70 percent, making it a smart buy. But, they say, for a gasoline car that already gets 35 m.p.g., diesel's gains don't justify the added costs.

Some automakers prefer to squeeze higher mileage from gasoline-burning engines without the expense of diesel engines and emissions gear. "There's no question that we can get to the 35 m.p.g. standard with gasoline," said John Krafcik, Hyundai's vice president for product development.

As technologies vie for supremacy, the diesel-versus-hybrid debate has been especially fierce. But diesel devotees don't have to be hybrid haters, or vice versa. With petroleum expected to dominate the automotive landscape for several more decades, the hybrids and diesels that burn it are central technologies in the transition to alternative fuels and the drive against global warming.

As if to prove the point, some automakers are marrying diesel and hybrid for the best of both worlds. Mercedes has shown a diesel-hybrid prototype of its big S-Class sedan that the company estimates would achieve 44 m.p.g. VW has shown a 69 m.p.g. diesel-hybrid Golf, though Mr. Keyes said the technology was years away from production.

Johannes-Joerg Rueger, vice president for diesel engineering at Robert Bosch, a major manufacturer of diesel systems, said: "If you're looking at the carbon dioxide and mileage goals that have to be met, it doesn't really matter whether it's diesel or hybrid. Let the consumer choose."

Pros Mileage is 25 percent to 40 percent higher than gasoline. Carbon dioxide emissions are lower. Highway mileage and performance are better than hybrids'. High torque is well suited to large pickups and S.U.V.'s. Extended driving range means less frequent fill-ups. Engines are robust, often lasting 300,000 miles or more. Cons Engines and emissions systems can be costly. Diesel fuel currently costs far more than gasoline. Like gasoline, diesel is a petroleum product from foreign suppliers. Though outdated, image as a dirty technology lingers. Only 42 percent of American filling stations have diesel pumps. Some companies' latest emissions controls require refills of urea.

Justin Cohen
U.S. Environmental Protection Agency
Office of Transportation and Air Quality
phone: (202) 564-1643
fax: (202) 564-1686

From: Linc Wehrly
To: Ed Nam
Subject: Re: Certificates issued to BMW Diesel (SCR) vehicles
Date: 12/01/2008 03:21 PM

Ex. 5 Deliberative Process (DP)

Linc Wehrly
Manager, Light-Duty Vehicle Group
Compliance and Innovative Strategies Division
United States Environmental Protection Agency
(734) 214-4286
wehrly.linc@epa.gov

Ed Nam/AA/USEPA/US

Ed Nam/AA/USEPA/US
EPA-OAR,OTAQ,ASD

To Linc Wehrly/AA/USEPA/US@EPA
cc

Received Date:
12/01/2008 01:46 PM
Transmission Date:
12/01/2008 01:46:01 PM

Subject Re: Certificates issued to BMW Diesel (SCR) vehicles

Linc,

Ex. 5 Deliberative Process (DP)

-Ed

Linc Wehrly/AA/USEPA/US

Linc Wehrly/AA/USEPA/US

12/01/2008 01:41 PM

To Margo Oge/DC/USEPA/US@EPA
cc Karl Simon/DC/USEPA/US@EPA, Christopher Grundler/AA/USEPA/US@EPA, Janet Cohen/AA/USEPA/US@EPA, Ed Nam/AA/USEPA/US@EPA
Subject Certificates issued to BMW Diesel (SCR) vehicles

Margo,

We issued two certificates today to BMW for the M3 335d sedan and X5 35d SUV. Both of these vehicles are equipped with the 3.0 liter I6 turbocharged diesel engine that utilizes SCR to control NOx emissions. Both vehicles are certified to Tier 2 bin 5 and CA LEV II emission standards. BMW is the second manufacturer to receive

certificates for SCR vehicles. The 335d sedan is the first passenger car certified with a SCR system. All of the other light-duty vehicles using SCR are SUVs. Confirmatory testing at NVFEL over the FTP, highway, and US06 cycles was successfully completed several months ago.

We believe the BMW vehicles meet the intent of our SCR guidance letter. They have ensured that urea will be available to their customers through their dealerships; have an emergency 24-hour service; and provide free urea for the first four years and/or 50,000 miles of operation. They will also ensure that vehicles will never operate without urea and exceed emission standards through a robust warning system that includes a message center, icons, and chimes with a no re-start driver inducement strategy.

We also anticipate that VW will be receiving a certificate for the diesel Touareg SUV that uses SCR within the next couple of weeks. Please let me know if you have any questions or would like more details.

Regards,
Linc

Linc Wehrly
Manager, Light-Duty Vehicle Group
Compliance and Innovative Strategies Division
United States Environmental Protection Agency
(734) 214-4286
wehrly.linc@epa.gov

From: David Good
To: Bain, Debbie T.
Cc: Amy Bunker; Smith, Dennis; Greene, David L.; Gibson, Robert C.; Holly Pugliese; Hopson, Janet L.; Linc Wehrly; Bluestein, Linda; Mary Manners; Roberts French; Loi, Sandra; Shea, Shannon; Dafoe, Wendy
Subject: Re: Conference Call TODAY at 2:00 - [Last of the placeholders]
Date: 09/22/2011 08:57 AM
Attachments: BMW placeholder info 2012MY-hybrids and diesels-9-22-2011.xlsx

---

Debbie & all,

Here's BMW's placeholders. This should be all the placeholders, but let me know if you think there are any others.

Dave

----- Forwarded by David Good/AA/USEPA/US on 09/22/2011 08:56 AM -----

From: <Thomas.Hofmann@bmwna.com>
To: David Good/AA/USEPA/US@EPA
Date: 09/21/2011 05:34 PM
Subject: BMW 2012 Alternate Fuel Placeholders

Hello Dave

Please find our placeholder information below. The same information is in the attached spreadsheet in case that format is more helpful.

Model Name	Vehicle Class, Body Type, Pass/Cargo	Trans Type	No. of Cyl.	Engine	Fuel Type	City MPG	Hwy MPG	Driving Range
X5 xDrive35d	SUV-4WD	SA6	6	3.0 L	Diesel	N/A	N/A	N/A
ActiveHybrid 5	midsize, 4 dr, 102/10	SA8	6	3.0 L	Gasoline	N/A	N/A	N/A
ActiveHybrid 7	midsize, 4 dr, 106/13	SA8	8	4.4 L	Gasoline	N/A	N/A	N/A
ActiveHybrid								

7L	large, 4 dr, 115/13	SA8	8	4.4 L	Gasoline	N/A	N/A	N/A

best regards,
Tom

BMW of North America, LLC
Thomas E. Hofmann
Senior Engineer, Emissions and Fuel Economy Certification
200 Chestnut Ridge Road, Building 150
Woodcliff Lake, NJ 07677-7731
Phone: (001) 201-571-5195
Fax: (001) 201-571-5479

David Good---09/21/2011 05:24:36 PM---Debbie & all, Nissan:

From: David Good/AA/USEPA/US
To: "Bain, Debbie T." <baindt@ornl.gov>
Cc: Amy Bunker/AA/USEPA/US@EPA, "Smith, Dennis" <dennis.a.smith@ee.doe.gov>, "Greene, David L." <dlgreene@ornl.gov>, "Gibson, Robert C." <gibsonrc@ornl.gov>, Holly Pugliese/AA/USEPA/US@EPA, "Hopson, Janet L." <hopsonjl@ornl.gov>, Linc Wehrly/AA/USEPA/US@EPA, "Bluestein, Linda" <linda.bluestein@ee.doe.gov>, Mary Manners/AA/USEPA/US@EPA, Roberts French/AA/USEPA/US@EPA, "Loi, Sandra" <sandra.loi@nrel.gov>, "Shea, Shannon" <shannon.shea@ee.doe.gov>, "Dafoe, Wendy" <wendy_dafoe@nrel.gov>
Date: 09/21/2011 05:24 PM
Subject: Re: Conference Call TODAY at 2:00 - [BMW, Nissan placeholders]

Debbie & all,

Nissan:

Nissan doesn't need a placeholder for the 2012 Altima hybrid---but the Infinity M35h is missing from the 2012 FE Guide page 24. It will not be sold in 2012 model year---replaced by the Infinity M35h. Attached is the dataset for the M35h if you need it.

BMW:

BMW will send us placeholders (late today or early tomorrow) for the the following vehicles:

Diesels - BMW needs a placeholder for the X5 xDrive35d (diesel) which is carryover from 2011 model year. BMW is not offering the 335d (3-series) diesel---see forwarded email message.

Hybrids - BMW will needs placeholders for the the following hybrid vehicles:

- 5-series Hybrid (I think it will be called the Active Hybrid5)
- Active Hybrid7 (which is carryover from 2011

BMW says they don't need a placeholder for the hybrid SUV---(the Active Hybrid X6) as it won't be sold in 2012 model year.

I'll send the BMW placeholders to all tomorrow.

Dave

[attachment "Infinity M35h only-2012 FEGuide-for DOE-all rel dates-no-sales-09-1-2011.xlsx" deleted by David Good/AA/USEPA/US]

----- Forwarded by David Good/AA/USEPA/US on 09/21/2011 04:01 PM -----

From: <Thomas.Hofmann@bmwna.com>
To: David Good/AA/USEPA/US@EPA
Cc: Chris Nevers/AA/USEPA/US@EPA
Date: 09/21/2011 01:57 PM
Subject: no 2012 BMW 335d

Hello Dave

Sorry I missed your call.

3-Series Diesel
There will be no 2012MY 335d (diesel).
That chassis is going out of production shortly.
The new 3-Series diesel is in development.
The current plan is a start production some time in CY2013 as a 2014 model.

X5 Diesel
There will be an X5 xDrive35d (diesel) for 2012MY. It is carryover from 2011MY.
It has an October start of production.
I expect to do that FE Label submission in the next few days.

thanks,
Tom

BMW of North America, LLC
Thomas E. Hofmann
Senior Engineer, Emissions and Fuel Economy Certification
200 Chestnut Ridge Road, Building 150
Woodcliff Lake, NJ 07677-7731
Phone: (001) 201-571-5195
Fax: (001) 201-571-5479

David Good---09/21/2011 03:49:13 PM---Debbie & all, Here are the electric vehicle placeholders which need corrections. I'm still checking

From: David Good/AA/USEPA/US

To: "Bain, Debbie T." <baindt@ornl.gov>

Cc: Amy Bunker/AA/USEPA/US@EPA, "Bain, Debbie T." <baindt@ornl.gov>, "Smith, Dennis" <dennis.a.smith@ee.doe.gov>, "Greene, David L." <dlgreene@ornl.gov>, "Gibson, Robert C." <gibsonrc@ornl.gov>, Holly Pugliese/AA/USEPA/US@EPA, "Hopson, Janet L." <hopsonjl@ornl.gov>, Linc Wehrly/AA/USEPA/US@EPA, "Bluestein, Linda" <linda.bluestein@ee.doe.gov>, Mary Manners/AA/USEPA/US@EPA, Roberts French/AA/USEPA/US@EPA, "Loi, Sandra" <sandra.loi@nrel.gov>, "Shea, Shannon" <shannon.shea@ee.doe.gov>, "Dafoe, Wendy" <wendy_dafoe@nrel.gov>

Date: 09/21/2011 03:49 PM

Subject: Re: Conference Call TODAY at 2:00 - resending the placeholders that need corrections

---

Debbie & all,

Here are the electric vehicle placeholders which need corrections. I'm still checking on placeholders for the BMW hybrid, the BMW 335d (diesel) and the Altima hybrid.

Dave

[attachment "Tesla Placeholder Info-2012MY-Model S - 9-8-2011.xlsx" deleted by David Good/AA/USEPA/US] [attachment "Coda-2012 Placeholder Info-rev1--9-14-2011.xlsx" deleted by David Good/AA/USEPA/US] [attachment "Ford-Placeholder Info 2012MY-rev1-9-22-2011.xlsx" deleted by David Good/AA/USEPA/US]

"Bain, Debbie T." ---09/21/2011 12:56:15 PM---Hell all: This is a reminder of our conference call today at 2:00 p.m. (Easter Time Zone). Call 865

From: "Bain, Debbie T." <baindt@ornl.gov>

To: "Bain, Debbie T." <baindt@ornl.gov>, "Bluestein, Linda" <linda.bluestein@ee.doe.gov>, Amy Bunker/AA/USEPA/US@EPA, "Dafoe, Wendy" <wendy_dafoe@nrel.gov>, Roberts French/AA/USEPA/US@EPA, "Gibson, Robert C." <gibsonrc@ornl.gov>, David Good/AA/USEPA/US@EPA, "Greene, David L." <dlgreene@ornl.gov>, "Hopson, Janet L." <hopsonjl@ornl.gov>, "Loi, Sandra" <sandra.loi@nrel.gov>, Mary Manners/AA/USEPA/US@EPA, Holly Pugliese/AA/USEPA/US@EPA, "Shea, Shannon" <shannon.shea@ee.doe.gov>, "Smith, Dennis" <dennis.a.smith@ee.doe.gov>, Linc Wehrly/AA/USEPA/US@EPA

Date: 09/21/2011 12:56 PM

Subject: Conference Call TODAY at 2:00

Hell all:

This is a reminder of our conference call today at 2:00 p.m. (Easter Time Zone). Call 865-574-1000 and ask for David Greene's call.

Attached is a copy of the Guide as of now. Page 4 is LAST years' data; I'll update that as soon as I can.

We are at our limit for page numbers (divisible by 4) or we can add 4 more pages if we need to. We are already 4 pages more than last year.

I don't have the updated graphs yet. I can move stuff around (where space allows) if needed.

Thanks.

deb[attachment "2012_BODY_09-21-11.pdf" deleted by David Good/AA/USEPA/US]

From: David Ganss
To: Linc Wehrly
Subject: Re: DC Autoshow green vehicles
Date: 02/02/2009 06:49 AM
Signed by: CN=David Ganss/OU=AA/O=USEPA/C=US

Linc,
Thanks for that follow-up. Ex. 5 Deliberative Process (DP)

David Ganss
Transportation and Climate Division
U.S. EPA -- Office of Transportation and Air Quality
voice: 734-214-4471
fax: 734-214-4958
email: ganss.david@epa.gov
Linc Wehrly/AA/USEPA/US

Linc Wehrly/AA/USEPA/US
EPA-OAR,OTAQ,CISD

Received Date:
01/30/2009 03:47 PM
Transmission Date:
01/30/2009 03:47:10 PM

To: Karl Simon/DC/USEPA/US@EPA
cc: Chris Nevers/AA/USEPA/US@EPA, David Ganss/AA/USEPA/US@EPA, Jim Snyder/AA/USEPA/US@EPA, Justin Cohen/DC/USEPA/US@EPA, Arman Tanman/DC/USEPA/US@EPA
Subject: Re: DC Autoshow green vehicles

Karl,

Ex. 5 Deliberative Process (DP)

Linc

Linc Wehrly
Manager, Light-Duty Vehicle Group

Compliance and Innovative Strategies Division
United States Environmental Protection Agency
(734) 214-4286
wehrly.linc@epa.gov
Arman Tanman/DC/USEPA/US

Arman Tanman/DC/USEPA/US
EPA-OAR,OTAQ,CISD

Received Date:
01/30/2009 12:38 PM
Transmission Date:
01/30/2009 12:38:54 PM

To: David Ganss/AA/USEPA/US@EPA
cc: Chris Nevers/AA/USEPA/US@EPA, Jim Snyder/AA/USEPA/US@EPA, Justin Cohen/DC/USEPA/US@EPA, Karl Simon/DC/USEPA/US@EPA, Linc Wehrly/AA/USEPA/US@EPA
Subject: Re: DC Autoshow green vehicles

Thanks David,
Greatly appreciate you getting this to me so quickly and others in reviewing the factual information.
As we spoke, I can fill in the rest and provide it to Justin by the end of today.
-- Arman

Justin: I am following up with the auto show folks to get a complete list. I will add another 16 vehicles or more to David's list and should get it to you by the end of today. There will probably be a total of about 30 "Green" vehicles at the auto show in various locations-- Arman
David Ganss---01/30/2009 12:24:33 PM---Arman, Here's our draft of the vehicles we could identify this morning.

From: David Ganss/AA/USEPA/US
To: Arman Tanman/DC/USEPA/US@EPA
Cc: Justin Cohen/DC/USEPA/US@EPA, Sarah Dunham/DC/USEPA/US@EPA, Karl Simon/DC/USEPA/US@EPA, Chris Nevers/AA/USEPA/US@EPA, Jim Snyder/AA/USEPA/US@EPA, Linc Wehrly/AA/USEPA/US@EPA
Date: 01/30/2009 12:24 PM
Subject: DC Autoshow green vehicles

Arman,

Here's our draft of the vehicles we could identify this morning.

Hopefully it will be a good start for you.

Many thanks to Chris Nevers and Jim Snyder for their help in pulling this together

[attachment "Green Cars at the 2009 Washington auto show.doc" deleted by Arman Tanman/DC/USEPA/US]

David Ganss
Transportation and Climate Division
U.S. EPA -- Office of Transportation and Air Quality
voice: 734-214-4471
fax: 734-214-4958
email: ganss.david@epa.gov

Arman Tanman/DC/USEPA/US

Arman Tanman/DC/USEPA/US
EPA-OAR,OTAQ,CISD
Sent by: Arman Tanman

To David Ganss/AA/USEPA/US@EPA
cc
Subject Fw: Any List of Green Car Pavilion Vehicles?

Received Date:
01/30/2009 11:20 AM
Transmission Date:
01/30/2009 11:20:47 AM

----- Forwarded by Arman Tanman/DC/USEPA/US on 01/30/2009 11:20 AM -----

From: Karl Simon/DC/USEPA/US
To: tanman.arman@epa.gov, cohen.justin@epa.gov
Date: 01/30/2009 10:11 AM
Subject: Fw: Any List of Green Car Pavilion Vehicles?

----- Forwarded by Karl Simon/DC/USEPA/US on 01/30/2009 10:09 AM -----

From: Julie Becker <JBECKER@autoalliance.org>
To: Karl Simon/DC/USEPA/US@EPA
Date: 01/30/2009 10:11 AM
Subject: Fw: Any List of Green Car Pavilion Vehicles?

Fyi

Sent from my BlackBerry Wireless Handheld

From: Charles Territo
To: Julie Becker
Cc: Clinton Blair
Sent: Fri Jan 30 09:46:36 2009
Subject: RE: Any List of Green Car Pavilion Vehicles?

Here is a partial list. Each day there are few additions/changes but this should give you a good idea.

Chevrolet Equinox Fuel Cell

Saturn Vue 2 Mode Hybrid

Chevrolet E85 Avalanche

VW Jetta TDI

BMW X5 xDrive35d (from Bosch)

VW Jetta TDI (from Bosch)

BMW ActiveDynamics 335d

Hymotion Prius Plug-In Hybrid

Mercedes-Benz BlueEfficiency B-Class CNG

Smart fortwo

EcoCAR Challenge Saturn Vue Hybrid

Ohio State Challenge X Equinox

West Virginia University Challenge X Equinox

Mitsubishi i-MiEV

Chrysler Town & Country Electric Car Concept

MIT Aztec Solar Race Car (from Electric Vehicle Association Club)

Pontiac Fiero Electric Car, Red (from Electric Vehicle Association Club)

Toyota Prius Plug-In Hybrid (from Electric Vehicle Association Club)

Toyota RAV4 EV (from Electric Vehicle Association Club)

Roush Propane Pickup

HiPa Drive F-150 Electric

Honda Civic GX

ExerTrike

ExerTrike TriHybrid (Automotive X Prize entry)

VW Toureg TDI Biodiesel (possible)

Ford Fusion Hybrid NASCAR Pace Car (possible)

Ford E85 Hybrid (from RFA, possible)

From: Julie Becker
Sent: Friday, January 30, 2009 9:44 AM
To: Charles Territo
Cc: Clinton Blair
Subject: Any List of Green Car Pavilion Vehicles?

Charlie:

Does anyone have the list of vehicles? Carl Simon was asking for this today (on behalf of Lisa Jackson and Margo Oge).

Julie

From: Jim Snyder
To: David Ganss
Cc: Arman Tanman; Chris Nevers; Justin Cohen; Linc Wehrly; Sarah Dunham
Subject: Re: DC Autoshow green vehicles
Date: 01/30/2009 02:05 PM

Here are a couple more green cars to add to the list:

Tesla EV Roadster
Totally electric, 2 seat performance car. First EV to use high capacity Lithium Ion batteries for extended driving range and lighter weight. Capable of 220 miles on a charge yet can also accelerate 0-60 in 4 sec. (quicker than a Viper). Priced at $109,000 with very limited production.

Saturn Vue 2-mode hybrid
Latest version with 2-mode transmission is now a full Hybrid that can operate electric only at low speeds, uses 3.6LV at higher speeds. Rated 25/32 with a base price of $28,000

Jim Snyder
Light-Duty Vehicle Group
Compliance and Innovative Strategies Division
United States Environmental Protection Agency
(734) 214-4946
snyder.jim@epa.gov
▼ David Ganss/AA/USEPA/US

David Ganss/AA/USEPA/US

01/30/2009 12:23 PM

To: Arman Tanman/DC/USEPA/US@EPA
cc: Justin Cohen/DC/USEPA/US@EPA, Sarah Dunham/DC/USEPA/US@EPA, Karl Simon/DC/USEPA/US@EPA, Chris Nevers/AA/USEPA/US@EPA, Jim Snyder/AA/USEPA/US@EPA, Linc Wehrly/AA/USEPA/US@EPA
Subject: DC Autoshow green vehicles

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David Ganss

Transportation and Climate Division
U.S. EPA -- Office of Transportation and Air Quality
voice: 734-214-4471
fax: 734-214-4958
email: ganss.david@epa.gov

Arman Tanman/DC/USEPA/US

Arman Tanman/DC/USEPA/US
EPA-OAR,OTAQ,CISD
Sent by: Arman Tanman

To David Ganss/AA/USEPA/US@EPA
cc
Subject Fw: Any List of Green Car Pavilion Vehicles?

Received Date:
01/30/2009 11:20 AM
Transmission Date:
01/30/2009 11:20:47 AM

----- Forwarded by Arman Tanman/DC/USEPA/US on 01/30/2009 11:20 AM -----

From: Karl Simon/DC/USEPA/US
To: tanman.arman@epa.gov, cohen.justin@epa.gov
Date: 01/30/2009 10:11 AM
Subject: Fw: Any List of Green Car Pavilion Vehicles?

----- Forwarded by Karl Simon/DC/USEPA/US on 01/30/2009 10:09 AM -----

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To: Karl Simon/DC/USEPA/US@EPA
Date: 01/30/2009 10:11 AM
Subject: Fw: Any List of Green Car Pavilion Vehicles?

Fyi

Sent from my BlackBerry Wireless Handheld

From: Charles Territo
To: Julie Becker
Cc: Clinton Blair
Sent: Fri Jan 30 09:46:36 2009
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Saturn Vue 2 Mode Hybrid

Chevrolet E85 Avalanche

VW Jetta TDI

BMW X5 xDrive35d (from Bosch)

VW Jetta TDI (from Bosch)

BMW ActiveDynamics 335d

Hymotion Prius Plug-In Hybrid

Mercedes-Benz BlueEfficiency B-Class CNG

Smart fortwo

EcoCAR Challenge Saturn Vue Hybrid

Ohio State Challenge X Equinox

West Virginia University Challenge X Equinox

Mitsubishi i-MiEV

Chrysler Town & Country Electric Car Concept

MIT Aztec Solar Race Car (from Electric Vehicle Association Club)

Pontiac Fiero Electric Car, Red (from Electric Vehicle Association Club)

Toyota Prius Plug-In Hybrid (from Electric Vehicle Association Club)

Toyota RAV4 EV (from Electric Vehicle Association Club)

Roush Propane Pickup

HiPa Drive F-150 Electric

Honda Civic GX

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ExerTrike TriHybrid (Automotive X Prize entry)

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Sent: Friday, January 30, 2009 9:44 AM
To: Charles Territo
Cc: Clinton Blair
Subject: Any List of Green Car Pavilion Vehicles?

Charlie:

Does anyone have the list of vehicles? Carl Simon was asking for this today (on behalf of Lisa Jackson and Margo Oge).

Julie

From: Chris Nevers
To: Panagiota Dilara
Cc: hausberger@vkmb.tugraz.at
Bcc: Linc Wehrly
Subject: Re: EPA SCR FOIA data
Date: 02/11/2009 10:37 AM

Penny,
I added my responses in blue text, below. As always, questions are welcome.

Regards,
Chris Nevers
Panagiota Dilara <panagiota.dilara@jrc.it>

Panagiota Dilara <panagiota.dilara@jrc.it>
Sent by: Panagiota Dilara <panagiota.dilara@jrc.it>

To Chris Nevers/AA/USEPA/US@EPA
cc hausberger@vkmb.tugraz.at
Subject Re: EPA SCR FOIA data

Received Date:
02/10/2009 10:51 AM
Transmission Date:
02/10/2009 10:51:13 AM

Dear Chris,
Thanks a lot for your data. Here is the input from a colleague Stefan Hausberger
on the units used or implied.

However, on the first look I think there are no units specified.
For emissions I assume [g/mile]**Correct**
Test Weight: I assume [pound]**Correct**

For the dynamometer settings given, e.g.:
Dynamometer Target Coefficients: a = 58.825 b = 1.01991 c = .022364
Dynamometer Set Coefficients: a = 32.44 b = .3418 c = .028839
it would be nice to know the units of a, b, c.
I assume, the target coefficients describe the rolling resistance from the coast down test on the road, right?
In EU we have:
F [N] = a + b * speed [m/s] + c * speed [m/s] **2
Is it similar at EPA or do they use mph as unit for the speed? **EPA uses mph to express speed and force expressed in pounds force, otherwise the assumptions are correct. The units of a, b and c would then be lbf, lbf/mph, and lbf/ mph^2. The target coefficients are developed via coast down (on road)ref SAEJ1263 and SAEJ2263. The set coefficients are the dynamometer settings used to mimic the road coast down values.**

And the test codes:
Test Procedure Code: 2 CVS 75 AND LATER (W/O CAN.
Does this stand for FTP? **Yes, the 75 is the FTP, not sure why its called the 75 by some, maybe that was the year it was first developed. The can refers to evaporative canister loading. Since this is a diesel, there is no evap canister and therefore no need to load it.**
Test Procedure Code: 3 HWFE (HIGHWAY TEST)
Obviously the highway test

I have put him in copy, so if you could sent your answers to both, it would be great.

Thanks a lot again,
Penny

Nevers.Chris@epamail.epa.gov wrote:
> Penny,
> I was asked to provide you with some information regarding BMW and
> Mercedes SCR equipped vehicles. I have attached the test result
> portions of the FOI (freedom of information act) applications for
> certification submitted by BMW and Mercedes. The BMW 335d and Mercedes
> GL320 are SCR equipped. The bluetech E320 uses a NOx trap. If you have
> further questions or data requests, please reply.
>
> (See attached file: GL320.pdf)(See attached file: 335d.pdf)(See attached
> file: E320 bluetech.pdf)
>
>
> Regards,
> Chris Nevers
> EPA OTAQ CISD
> 734 214 4412

--
Panagiota Dilara, M.Sc, Ph.D.
European Commission - DG JRC
Institute for Environment and Sustainability
Transport and Air Quality Unit, TP 441
Via E. Fermi, 2749
I-21027 Ispra (VA)
ITALY
Tel: +39 0332 78 9207
Fax: +39 0332 78 6328
mobile: +39 349 7192182
e-mail: Panagiota.dilara@jrc.it
WWW: http://www.jrc.ec.europa.eu

"The views expressed are purely those of the writer
and may not in any circumstances
be regarded as stating an official position
of the European Commission."

From: Hopson, Janet L.
To: David Good/AA/USEPA/US@EPA; Goeltz, Rick
Cc: Li, Jia; Linc Wehrly/AA/USEPA/US@EPA; Roberts French/AA/USEPA/US@EPA
Subject: RE: Follow up on BMW Diesels - Please post the 2009 BMW diesel models and 2008 Mini E (electric vehicle) on the web when you get a chance
Date: 06/25/2009 11:20 AM

Dave:

Can you get the unadjusted values for the diesels?

Thanks,

Janet

-----Original Message-----
From: Good.David@epamail.epa.gov [mailto:Good.David@epamail.epa.gov]
Sent: Tuesday, June 23, 2009 12:11 PM
To: Goeltz, Rick
Cc: Li, Jia; Hopson, Janet L.; Wehrly.Linc@epamail.epa.gov; French.Roberts@epamail.epa.gov
Subject: Fw: Follow up on BMW Diesels - Please post the 2009 BMW diesel models and 2008 Mini E (electric vehicle) on the web when you get a chance

Rick,

Let me know if you need any other info on these models.

Thanks
----- Forwarded by David Good/AA/USEPA/US on 06/23/2009 12:08 PM -----

From: <Thomas.Hofmann@bmwna.com>

To: David Good/AA/USEPA/US@EPA

Date: 06/23/2009 10:14 AM

Subject: Follow up on BMW Diesels

Hi Dave

I checked the fueleconomy.gov website and the 2009 BMW diesels and 2008 MINI E (BEV) are not yet posted.
Did DOE give you any feedback on how long it might take to post these manually?

Attached is my 6/2 email to you on this subject.

regards,
Tom

Tom Hofmann
Emissions & Fuel Economy Certification
BMW of North America, LLC
201-571-5195

----- Message from <Thomas.Hofmann@bmwna.com> on Tue, 2 Jun 2009 11:05:55 -0400 -----

To: <Good.David@epamail.epa.gov>

Subject: RE: Models missing on fueleconomy website

Hello Dave

Attached please find the data sheets for our 2009 diesels and for the 2008 MINI E battery electric.
Thanks for your help!

Regards,
Tom

-----Original Message-----
From: Good.David@epamail.epa.gov [mailto:Good.David@epamail.epa.gov]
Sent: Monday, June 01, 2009 3:14 PM

To: Hofmann Thomas, ES-5-US-20
Subject: Re: Models missing on fueleconomy website

Tom,

Please attach the paper "hardcopy" FE labels and I'll have DOE add them manually to the website. As a reminder, the paper copy should contain the following info in the attached Toyota example.

(See attached file: Example mfr self approval FE Label letter.808.pdf)

<Thomas.Hofmann@ bmwna.com>		
Sent by: <Thomas.Hofmann@ bmwna.com>		To David Good/AA/USEPA/US@EPA cc
Received Date: 06/01/2009 11:16 AM Transmission Date: 06/01/2009 11:16:23 AM		Subject Models missing on fueleconomy website

Hello Dave

My supervisor has asked me to have the following models added to www.fueleconomy.gov website.
These three models are also missing from the www.epa.gov/greenvehicles web page.

2009 335d (diesel 3-Series sedan)

2009 X5 xDrive35d (diesel X5 SUV)

2008 MINI E (battery electric MINI Cooper)

Diesels.

The 2009 diesel models were certified using CFEIS.
Unfortunately, the Confirmatory Testing at NVFEL slipped beyond the CFEIS shutdown date.
As a result, I was unable to make general label submissions on CFEIS.
As you may recall, I did a paper hardcopy "notification of self-approval" for these two diesel models.
Is there some process that the data for these two models can be transmitted to DOE and to greenvehicles?

MINI E.

The certification data for this was submitted to Verify but the automated Request for Certificate did not work., The Certificate was generated manually.
I never attempted a Fuel Economy Label submission, in part because I knew it would be rejected since there was not a valid Request for Certificate in the system.
Is there some process that the data for this model could be transmitted to DOE and to greenvehicles?
I would understand the reluctance to do so given that it is 2008 MY and the limited distribution of these vehicles.
However, it might be helpful for future reference if the data were available somewhere.

Any thoughts or guidance are most welcomed!

regards,
Tom

Tom Hofmann
Emissions & Fuel Economy Certification
BMW of North America, LLC
201-571-5195 (See attached file: 2009 BMW diesels 335d and X5 xDrive35d label info.pdf)(See attached file: 2008 MINI E Label self approval info.pdf)

From: Linc Wehrly
To: Karl Simon
Subject: Re: Fw: Can I put the BMW diesel vehs and 2008 Mini E (electric veh) on www.fueleconomy.gov?
Date: 06/02/2009 03:16 PM

Probably the Honda FCX Clarity and the Toyota FCHV, both fuel cell vehicles. There is already data on the 2008 Clarity and the 2007 Chevy Equinox FCV, so data exists on the website for FCVs. It would make sense to update the data with the most current information. The existing data on the 2007 Chevy and the 2008 Honda use the old adjustment factors of 0.9 and 0.78, so the new data would use the 5-cycle adjustment of 0.7.

Linc Wehrly
Manager, Light-Duty Vehicle Group
Compliance and Innovative Strategies Division
United States Environmental Protection Agency
(734) 214-4286
wehrly.linc@epa.gov

Karl Simon---06/02/2009 02:37:47 PM---are there other vehicles then that should also go up?

From: Karl Simon/DC/USEPA/US
To: Linc Wehrly/AA/USEPA/US@EPA
Date: 06/02/2009 02:37 PM
Subject: Re: Fw: Can I put the BMW diesel vehs and 2008 Mini E (electric veh) on www.fueleconomy.gov?

---

are there other vehicles then that should also go up?

Linc Wehrly---06/02/2009 02:33:38 PM---Correct. Linc Wehrly Manager, Light-Duty Vehicle Group

From: Linc Wehrly/AA/USEPA/US
To: Karl Simon/DC/USEPA/US@EPA
Date: 06/02/2009 02:33 PM
Subject: Re: Fw: Can I put the BMW diesel vehs and 2008 Mini E (electric veh) on www.fueleconomy.gov?

Correct.

Linc Wehrly
Manager, Light-Duty Vehicle Group
Compliance and Innovative Strategies Division
United States Environmental Protection Agency
(734) 214-4286
wehrly.linc@epa.gov

Karl Simon---06/02/2009 02:32:11 PM---I assume this was resolved for the time being

with an enforcement discretion while we move the rule?

From: Karl Simon/DC/USEPA/US
To: Linc Wehrly/AA/USEPA/US@EPA
Date: 06/02/2009 02:32 PM
Subject: Re: Fw: Can I put the BMW diesel vehs and 2008 Mini E (electric veh) on www.fueleconomy.gov?

Ex. 5 Deliberative Process (DP)

correct?

Linc Wehrly---06/02/2009 02:25:19 PM---Karl, BMW wants to have their 2008 Mini E (electric vehicle) added to the www.fueleconomy.gov websit

From: Linc Wehrly/AA/USEPA/US
To: Karl Simon/DC/USEPA/US@EPA
Date: 06/02/2009 02:25 PM
Subject: Fw: Can I put the BMW diesel vehs and 2008 Mini E (electric veh) on www.fueleconomy.gov?

Karl,

BMW wants to have their 2008 Mini E (electric vehicle) added to the www.fueleconomy.gov website. I don't see any problem with allowing this do you?

Linc

Linc Wehrly
Manager, Light-Duty Vehicle Group
Compliance and Innovative Strategies Division
United States Environmental Protection Agency
(734) 214-4286
wehrly.linc@epa.gov

----- Forwarded by Linc Wehrly/AA/USEPA/US on 06/02/2009 02:23 PM -----

From: David Good/AA/USEPA/US
To: Linc Wehrly/AA/USEPA/US@EPA
Cc: Robert Peavyhouse/AA/USEPA/US@EPA, Roberts French/AA/USEPA/US@EPA
Date: 06/02/2009 01:58 PM
Subject: Can I put the BMW diesel vehs and 2008 Mini E (electric veh) on www.fueleconomy.gov?

Linc,

BMW wants EPA/DOE to add these models to the www.fueleconomy.gov website. **Ex. 5 Deliberative Process (DP)**

Ex. 5 Deliberative Process (DP)

Please advise.

----- Forwarded by David Good/AA/USEPA/US on 06/02/2009 01:43 PM -----

<Thomas.Hofmann@bmwna.com>
Sent by:
<Thomas.Hofmann@bmwna.com>

To David Good/AA/USEPA/US@EPA
cc
Subject RE: Models missing on fueleconomy website

Received Date:
06/02/2009 11:05 AM
Transmission Date:
06/02/2009 11:05:55 AM

Hello Dave

Attached please find the data sheets for our 2009 diesels and for the 2008 MINI E battery electric.
Thanks for your help!

Regards,
Tom

-----Original Message-----
From: Good.David@epamail.epa.gov [mailto:Good.David@epamail.epa.gov]
Sent: Monday, June 01, 2009 3:14 PM
To: Hofmann Thomas, ES-5-US-20
Subject: Re: Models missing on fueleconomy website

Tom,

Please attach the paper "hardcopy" FE labels and I'll have DOE add them
manually to the website. As a reminder, the paper copy should contain
the following info in the attached Toyota example.

(See attached file: Example mfr self approval FE Label letter.808.pdf)

<Thomas.Hofmann@

bmwna.com>
Sent by:
To
<Thomas.Hofmann@ David
Good/AA/USEPA/US@EPA
bmwna.com>
cc

Received Date:
Subject
06/01/2009 11:16 Models missing on
fueleconomy
AM
website

Transmission

Date:

06/01/2009
11:16:23
AM

Hello Dave

My supervisor has asked me to have the following models added to www.fueleconomy.gov website.
These three models are also missing from the www.epa.gov/greenvehicles web page.

2009 335d (diesel 3-Series sedan)

2009 X5 xDrive35d (diesel X5 SUV)

2008 MINI E (battery electric MINI Cooper)

Diesels.

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Unfortunately, the Confirmatory Testing at NVFEL slipped beyond the CFEIS shutdown date.
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As you may recall, I did a paper hardcopy "notification of self-approval" for these two diesel models.
Is there some process that the data for these two models can be transmitted to DOE and to greenvehicles?

MINI E.

The certification data for this was submitted to Verify but the automated Request for Certificate did not work.,
The Certificate was generated manually.
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Is there some process that the data for this model could be transmitted
to DOE and to greenvehicles?
I would understand the reluctance to do so given that it is 2008 MY and
the limited distribution of these vehicles.
However, it might be helpful for future reference if the data were available somewhere.

Any thoughts or guidance are most welcomed!

regards,
Tom

Tom Hofmann
Emissions & Fuel Economy Certification
BMW of North America, LLC
201-571-5195
[attachment "2009 BMW diesels 335d and X5 xDrive35d label info.pdf" deleted by Linc Wehrly/AA/USEPA/US] [attachment "2008 MINI E Label self approval info.pdf" deleted by Linc Wehrly/AA/USEPA/US]

From: Linc Wehrly
To: Karl Simon
Subject: Mercedes & BMW Certificates
Date: 11/09/2009 02:12 PM

All of the BMW and Mercedes diesel SCR certificates were issued on September 10, 2009.

There was a total of four certificates:

Cert 1 - Mercedes ML 350 Blutec (SUV) & R 350 Blutec (SUV)
Cert 2 - Mercedes GL 350 Blutec (SUV)
Cert 3 - BMW X5d (SUV)
Cert 4 - BMW 335d (Sedan)

No 2010 certificates for Mercedes E350 Bluetec or VW Touareg/Audi Q7 yet.

Linc Wehrly
Manager, Light-Duty Vehicle Group
Compliance and Innovative Strategies Division
United States Environmental Protection Agency
(734) 214-4286
wehrly.linc@epa.gov

From: Stephen.Sinkez@bmwna.com
To: Vincent Mazaitis/AA/USEPA/US@EPA; Chris Nevers/AA/USEPA/US@EPA
Cc: Linc Wehrly/AA/USEPA/US@EPA; David Good/AA/USEPA/US@EPA; Thomas.Hofmann@bmwna.com; Wilhelm.Hall@bmwna.com
Subject: RE: Diesel SCR exhaust system information - CONFIDENTIAL
Date: 04/30/2008 10:50 AM
Attachments: X5d, 335d Position Catalyst and Particulate Trap.ppt

---

Vince, Chris,

On behalf of BMW, attached is the information you requested. We will begin MY09 certification of both the X5d and the 335d very soon. I apologize for the delay in responding. Please contact me if you have any questions.

Kind regards,

Stephen Sinkez
BMW of North America, LLC

-----Original Message-----
From: Mazaitis.Vincent@epamail.epa.gov
[mailto:Mazaitis.Vincent@epamail.epa.gov]
Sent: Monday, April 28, 2008 3:17 PM
To: Sinkez Stephen, ES-5-US-20
Cc: Nevers.Chris@epamail.epa.gov; Wehrly.Linc@epamail.epa.gov; Good.David@epamail.epa.gov; Hofmann Thomas, ES-5-US-20
Subject: Fw: Diesel SCR exhaust system information

Hello Steven,

EPA is assembling information on unregulated emissions as indicated below and Chris Nevers has not yet received any information from BMW. With Doug McGregor leaving and you now being short handed I understand the added workload that all must be experiencing. Please let me know if there is anyone I should contact or anything I can do to help gather the information we've requested.

Thanks Steven.

Kind regards,

Vince Mazaitis
(734) 214-4864

----- Forwarded by Vincent Mazaitis/AA/USEPA/US on 04/28/2008 02:58 PM -----

Chris Nevers/AA/USEPA/US	To	stephen.sinkez@bmwna.com
EPA-OAR,OTAQ,CISD	cc	Vincent Mazaitis/AA/USEPA/US@EPA, David Good/AA/USEPA/US@EPA, Linc Wehrly/AA/USEPA/US@EPA
Sent by: Chris Nevers	Subject	Fw: Diesel SCR exhaust system information
Received Date: 04/21/2008 03:54 PM		
Transmission Date: 04/21/2008 03:54:45 PM		

Dear Mr. Sinkez,

I realize you may not yet have all the information regarding the questions EPA posed, below. In the interest of time, it would be helpful if you could share the catalyst configurations, material (e.g. what type of base metal zeolite SCR cat), and when you planned on certifying SCR systems. Temperature profiles and exact exhaust lay-out are really a secondary to the big picture of quantifying possible dioxin formation or excessive ammonia slip.

I'd like to thank you in advance for your patience as we try to determine a position on the unregulated emission of dioxins and ammonia. EPA will be asking the same questions of several manufacturers that are planning on certifying vehicles using SCR technology.

Thanks again, any questions are welcome

Chris Nevers
734 214 4412
----- Forwarded by Chris Nevers/AA/USEPA/US on 04/21/2008 03:52 PM -----

Chris Nevers/AA/USEPA/US	To	doug.mcgregor@bmwna.com
EPA-OAR,OTAQ,CIS		

D

Sent by: Chris Nevers

Received Date: 04/10/2008 01:41 PM

Transmission Date: 04/10/2008 01:41:43 PM

cc

Vincent Mazaitis/AA/USEPA/US@EPA, David Good/AA/USEPA/US@EPA

Subject

Diesel SCR exhaust system information

Dear Mr. McGregor,

In evaluating possible unregulated emissions, EPA is requesting some information regarding current and/or planned diesel exhaust systems using selective catalytic reduction. On any current or planned SCR system, could you please provide EPA with the following?

1- The distance, in cm, each catalyst and/or filter is down-pipe from the exhaust manifold.

2- The distance, in cm, each exhaust sensor and/or aftertreatment fluid injector is down-pipe from the exhaust manifold.

3- What is the expected maximum temperature (both steady state and excursion) each catalyst/filter will experience? If this is only during a regen, please also give the maximum non-regen temperatures.

4- Indicate what, if any, base metal zeolite is used.

As always, all information will be treated as confidential.

Please feel free to call or email me with any questions.

Thank you,

Chris Nevers
EPA Light Duty Vehicle Group
734 214 4412

From: Cleophas Jackson
To: Linc Wehrly
Subject: Re: Tier 2 LD. Diesels
Date: 02/09/2009 06:53 PM

Thanks Linc.
Cleophas Jackson
Sent from my Blackberry

▼ Linc Wehrly

----- Original Message -----
From: Linc Wehrly
Sent: 02/09/2009 04:37 PM EST
To: Cleophas Jackson
Subject: Re: Tier 2 LD. Diesels

We have issued certificates for six test groups covering nine models.

2009 MY

Mercedes - E350 Bluetec (Car) - Lean Nox Cat
GL350 Bluetec (SUV) - SCR
ML350 Bluetec (SUV) - SCR
RL350 Bluetec (SUV) - SCR

VW/Audi - Jetta TDI (Car) - Lean Nox Cat
Touareg (SUV) - SCR
Q7 (SUV) - SCR

BMW - 335d (Car) - SCR
X5d (SUV) - SCR

Linc Wehrly
Manager, Light-Duty Vehicle Group
Compliance and Innovative Strategies Division
United States Environmental Protection Agency
(734) 214-4286
wehrly.linc@epa.gov

▼ Cleophas Jackson/AA/USEPA/US

Cleophas Jackson/AA/USEPA/US
EPA-OAR,OTAQ,CISD
Sent by: Cleophas Jackson

To "Linc Wehrly" <Wehrly.Linc@epamail.epa.gov>
cc
Subject Tier 2 LD. Diesels

Received Date:
02/09/2009 01:39 PM
Transmission Date:
02/09/2009 01:39:41 PM

How many LD diesels have we certified so for? Is it 2 vehicles or more?
Cleophas Jackson
Sent from my Blackberry