Message

From: Atkinson, Emily [Atkinson.Emily@epa.gov]
Sent: 11/22/2017 1:49:21 PM
To: Robert.Wyman@LW.com
CC: Loving, Shanita [Loving.Shanita@epa.gov]
Subject: Confirmed 12/13 at 4pm: Request for Meeting

Hi Bob,

You are confirmed for a 45 minute in person meeting on Wednesday, December 13, 2017 at 4:00pm with Bill Wehrum.

Directions and procedures to 1200 Pennsylvania Avenue NW:

Metro: If you come by Metro get off at the Federal Triangle metro stop. Exit the metro station and go up two sets of escalators to the surface level and turn right. You will see a short staircase and wheelchair ramp leading to a set of glass doors with the EPA logo - that is the William Jefferson Clinton Federal Building, North Entrance.

Taxi: Direct the taxi to drop you off on 12th Street NW, between Constitution and Pennsylvania Avenues, at the elevator for the Federal Triangle metro stop - this is almost exactly half way between the two avenues on 12th Street NW. Facing the building with the EPA logo and American flags, walk toward the building and take the glass door on your right hand side with the escalators going down to the metro on your left - that is the North Lobby of the William Jefferson Clinton building.

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Please send me a list of participants in advance of the meeting and feel free to contact me should you need any additional information.

Emily

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Acting Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

-----Original Message-----
From: ROBERT.WYMAN@lw.com [mailto:ROBERT.WYMAN@lw.com]
Sent: Tuesday, November 21, 2017 4:57 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Cc: Loving, Shanita <Loving.Shanita@epa.gov>
Subject: RE: Request for Meeting

Yes, definitely. Thank you.

From: Atkinson, Emily <Atkinson.Emily@epa.gov>
Sent: Tuesday, November 21, 2017 1:48:14 PM
To: Wyman, Robert (LA)
Cc: Loving, Shanita
Subject: RE: Request for Meeting

Hi Bob,

It looks like Bill Wehrum could be available for a 45 minute in person meeting on Wednesday, December 13, 2017 at 4:00pm.

Please advise if this could work on your end.

Thank you.
Emily

Emily Atkinson

Management Analyst/Office Manager
Immediate Office of the Acting Assistant Administrator Office of Air and Radiation, USEPA Room 5412B, 1200 Pennsylvania Avenue NW Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: ROBERT.WYMAN@lw.com [mailto:ROBERT.WYMAN@lw.com]
Sent: Friday, November 17, 2017 6:03 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: Request for Meeting

Emily - thank you for speaking with me by telephone earlier today. I am writing to request a meeting with Bill Wehrum on the subject of the midterm evaluation and the national greenhouse gas emissions standards for motor vehicles. I make this request on behalf of the National Coalition for Advanced Transportation (NCAT).

NCAT is a coalition of leading companies that support electric vehicle and other advanced transportation technologies and related infrastructure, including through: energy supply, transmission and distribution; vehicle and component design and manufacturing; charging infrastructure, battery and other energy-storage technology design, production and implementation; infrastructure engineering and construction; and the movement of passengers, goods and services; among other activities. Prior to our meeting, I will provide a list of NCAT attendees.

If possible, we would like to meet with Mr. Wehrum and appropriate staff, as he determines, on Wednesday, December 13, at any time. Of course, we recognize that his schedule may not permit meeting on this date, in which case we will do our best to accommodate whatever date he selects.

Sincere thanks.

Bob

Robert A. Wyman, Jr.
LATHAM & WATKINS LLP
Email: robert.wyman@lw.com<mailto:robert.wyman@lw.com>

355 South Grand Avenue
Los Angeles, CA 90071-1560
Direct: +1.213.891.8346

555 Eleventh Street, NW
Washington, DC 20004-1304
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Message

From: Hengst, Benjamin [Hengst.Benjamin@epa.gov]
Sent: 11/21/2017 10:07:15 PM
To: Atkinson, Emily [Atkinson.Emily@epa.gov]; Sutton, Tia [sutton.tia@epa.gov]
CC: Lewis, Josh [Lewis.Josh@epa.gov]
Subject: RE: Request for Meeting

Thanks. Please add Bill Charmley, Robin Moran, and Mike Olechiw to the invite.

I don't think a pre-brief will be needed but I can ask the team to put a backgrounder together that we can send in advance.

Ben

From: Atkinson, Emily
Sent: Tuesday, November 21, 2017 4:50 PM
To: Hengst, Benjamin <Hengst.Benjamin@epa.gov>; Sutton, Tia <sutton.tia@epa.gov>
Cc: Lewis, Josh <Lewis.Josh@epa.gov>
Subject: FW: Request for Meeting

Hi Ben and Tia,

Checking in on this meeting . . . . Bill has said he will do it and I've put a tentative hold on for 12/13 at 4pm. Please advise who should be included on the invite – right now I just have you two and Chris + the OAR political team.

And let me know if you want time for a prep meeting with Bill.

Thanks.
Emily

From: ROBERT.WYMAN@lw.com [mailto:ROBERT.WYMAN@lw.com]
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Robert A. Wyman, Jr.
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Email: robert.wyman@lw.com

355 South Grand Avenue
Los Angeles, CA 90071-1560
Direct: +1.213.891.8346

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And let me know if you want time for a prep meeting with Bill.

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Message

From: Lauren Wilk [lwilk@aluminum.org]
Sent: 2/1/2018 5:05:48 PM
To: Atkinson, Emily [Atkinson.Emily@epa.gov]; Lewis, Josh [Lewis.Josh@epa.gov]
Subject: Aluminum Association Meeting Request

Emily and Josh --

Will Lovett suggested I connect with you on scheduling a meeting with Assistant Administrator Wehrum for a few representatives of the aluminum industry. We have availability on the following dates: February 16, 20, 21, 23, 26, 27, 28 or March 1 (but we can certainly be flexible if an alternative date is necessary).

The Aluminum Association is active with EPA on a number of issues -- and specifically, the members of our Aluminum Transportation Group (ATG) would very much like to hear directly from Mr. Wehrum about the Administration's priorities related to automotive GHG emissions and fuel economy regulations. The ATG represents the Association's member companies that produce aluminum for use in cars and trucks, including Alcoa, Arconic, Novelis, Rio Tinto and others.

The aluminum industry plays a significant role in the automotive supply chain, and the pounds of aluminum content per vehicle has grown by more than 30 percent over the past decade. Driven by that auto sector growth, the aluminum industry has announced or completed U.S. plant expansions and investments of more than $2.6 billion since 2013. Already this year, Novelis announced that it was investing $300 million in a new greenfield automotive finishing facility in Guthrie, Kentucky. The industry is acutely interested in the outcome of the midterm review on vehicle fuel economy, and we have met previously with the White House, OMB, NHTSA, CARB and others on this topic.

I'd be happy to answer any questions or provide additional background, if that's helpful.

Thanks so much,

Lauren

The Aluminum Association

Lauren Wilk
Vice President, Policy & International Trade
The Aluminum Association
1400 Crystal Drive, Suite 430
Arlington, VA 22202
T 703.358.2981 | [redacted] F 703.358.2961
JOIN THE CONVERSATION:

Message

From: Atkinson, Emily [Atkinson.Emily@epa.gov]
Sent: 2/7/2018 8:01:58 PM
To: Lauren Wilk [lwilk@aluminum.org]
Subject: Confirmed 3/1 at 4pm: Aluminum Association Meeting Request

Hi Lauren,
You are confirmed for 45 minute meeting on Thursday, March 1, 2018 at 4:00pm with Bill Wehrum.
Directions and procedures to 1200 Pennsylvania Avenue NW:

Metro: If you come by Metro get off at the Federal Triangle metro stop. Exit the metro station and go up two sets of escalators to the surface level and turn right. You will see a short staircase and wheelchair ramp leading to a set of glass doors with the EPA logo - that is the William Jefferson Clinton Federal Building, North Entrance.

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Please send me a list of participants in advance of the meeting and feel free to contact me should you need any additional information.

Emily

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Lauren Wilk [mailto:lwilk@aluminum.org]
Sent: Wednesday, February 07, 2018 2:59 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: RE: Confirmed 3/2 at 3pm: Aluminum Association Meeting Request

Thanks so much, Emily. That's perfect.

I'll circle back, closer to the meeting, with a list of attendees. Let me know if you need anything else in the meantime.

Lauren

Lauren Wilk
Vice President, Policy & International Trade
The Aluminum Association
1400 Crystal Drive, Suite 430
Arlington, VA 22202
T 703.358.2981 | [redacted] | F 703.358.2961
JOIN THE CONVERSATION:

From: Atkinson, Emily [mailto:Atkinson.Emily@epa.gov]
Sent: Wednesday, February 07, 2018 12:33 PM
To: Lauren Wilk <lwilk@aluminum.org>
Subject: RE: Confirmed 3/2 at 3pm: Aluminum Association Meeting Request

Hi Lauren,

It looks like we could fit this in on Thursday, March 1 at 4:00pm. Let me know if this could work on your end.

Emily

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Lauren Wilk [mailto:lwilk@aluminum.org]
Sent: Wednesday, February 07, 2018 11:01 AM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: RE: Confirmed 3/2 at 3pm: Aluminum Association Meeting Request

Hi, Emily. One of the technical experts I was hoping to bring in for our meeting with Mr. Wehrum will unfortunately be out of the country on Friday 3/2. Is there any chance that Mr. Wehrum would be available to meet on Thursday 3/1, or sometime March 12-16? If not, we'll keep our March 2 meeting and I'll have my colleague prepare his technical materials in advance.

Thanks so much,

Lauren

Lauren Wilk
Vice President, Policy & International Trade
The Aluminum Association
1400 Crystal Drive, Suite 430
Arlington, VA 22202

T 703.358.2981 | [redacted] F 703.358.2961
JOIN THE CONVERSATION:

From: Atkinson, Emily [mailto:Atkinson.Emily@epa.gov]
Sent: Tuesday, February 06, 2018 9:25 AM
To: Lauren Wilk <lwilk@aluminum.org>
Subject: RE: Confirmed 3/2 at 3pm: Aluminum Association Meeting Request

Hi Lauren,

Yes, we could accommodate a group of 8 attending this meeting.

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Lauren Wilk [mailto:lwilk@aluminum.org]
Sent: Monday, February 05, 2018 2:52 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: Re: Confirmed 3/2 at 3pm: Aluminum Association Meeting Request

Thanks, Emily. I appreciate your help in getting this nailed down.

I would like to invite a few member company representatives to join, so I'm curious if there's a hard limit on number of attendees — would 6-8 (as a total group size) be workable?

Best,

Lauren

Lauren Wilk
The Aluminum Association
Office: (703) 358-2981

On Mon, Feb 5, 2018 at 2:38 PM -0500, "Atkinson, Emily" <Atkinson.Emily@epa.gov> wrote:

> Hi Lauren,
> You are confirmed for 45 minute meeting on Friday, March 2, 2018 at 3:00pm with Bill Wehrum.
> Directions and procedures to 1200 Pennsylvania Avenue NW:
>
> > Metro: If you come by Metro get off at the Federal Triangle metro stop. Exit the metro station and go up two sets of escalators to the surface level and turn right. You will see a short staircase and wheelchair ramp leading to a set of glass doors with the EPA logo - that is the William Jefferson Clinton Federal Building, North Entrance.

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Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Lauren Wilk [mailto:lwilk@aluminum.org]
Sent: Monday, February 05, 2018 12:56 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: RE: Aluminum Association Meeting Request

Thanks, Emily. We'll take the meeting on March 2 at 3pm, and I'll firm up attendees on our end.

Let me know what details you need in advance of the meeting.

Much appreciated!

Lauren

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Lauren Wilk
Vice President, Policy & International Trade
The Aluminum Association
1400 Crystal Drive, Suite 430
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T 703.358.2981 | [redacted] | F 703.358.2961
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From: Atkinson, Emily [mailto:Atkinson.Emily@epa.gov]
Sent: Monday, February 05, 2018 12:48 PM
To: Lauren Wilk <lwilk@aluminum.org>
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Please advise if this could work on your end.

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Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Lauren Wilk [mailto:lwilk@aluminum.org]
Sent: Thursday, February 01, 2018 12:06 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>; Lewis, Josh <Lewis.Josh@epa.gov>
Subject: Aluminum Association Meeting Request

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Please send me a list of participants in advance of the meeting and feel free to contact me should you need any additional information.

Emily

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Lauren Wilk [mailto:lwilk@aluminum.org]
Sent: Monday, February 05, 2018 12:56 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: RE: Aluminum Association Meeting Request

Thanks, Emily. We'll take the meeting on March 2 at 3pm, and I'll firm up attendees on our end.

Let me know what details you need in advance of the meeting.

Much appreciated!

Lauren

Lauren Wilk
Vice President, Policy & International Trade
The Aluminum Association
1400 Crystal Drive, Suite 430
Arlington, VA 22202
T 703.358.2981 | [redacted] | F 703.358.2961
JOIN THE CONVERSATION:

From: Atkinson, Emily [mailto:Atkinson.Emily@epa.gov]
Sent: Monday, February 05, 2018 12:48 PM
To: Lauren Wilk <lwilk@aluminum.org>
Subject: RE: Aluminum Association Meeting Request

Hi Lauren,

It looks like Bill Wehrum could be available for a 45 minute meeting on Friday, March 2, 2018 at 3:00pm.

Please advise if this could work on your end.

Emily

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Management Analyst/Office Manager
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Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Lauren Wilk [mailto:lwilk@aluminum.org]
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To: Atkinson, Emily <Atkinson.Emily@epa.gov>; Lewis, Josh <Lewis.Josh@epa.gov>
Subject: Aluminum Association Meeting Request

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T 703.358.2981 | [redacted] | F 703.358.2961
JOIN THE CONVERSATION:

Message

From: Atkinson, Emily [Atkinson.Emily@epa.gov]
Sent: 1/18/2018 8:44:24 PM
To: Laurie Holmes [lholmes@mema.org]
CC: Lewis, Josh [Lewis.Josh@epa.gov]
Subject: Confirmed 2/5 at 4:15pm: Auto Suppliers Meeting Request on the Midterm Evaluation for Vehicle GHG Standards

Hi Laurie,
You are confirmed for a 45 minute in person meeting on Monday, February 5, 2018 at 4:15pm with Bill Wehrum.
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Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Laurie Holmes [mailto:lholmes@mema.org]
Sent: Thursday, January 18, 2018 3:08 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Cc: Lewis, Josh <Lewis.Josh@epa.gov>
Subject: Auto Suppliers Meeting Request on the Midterm Evaluation for Vehicle GHG Standards

Emily,
Yes, Mon. Feb. 5 at 4:15 will work for us.

Is there a number limit for the room? We will have some members with us.

Best,
Laurie

Sent from my iPhone

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Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Laurie Holmes [mailto:lholmes@mema.org]
Sent: Wednesday, January 17, 2018 10:34 AM
To: Lewis, Josh <Lewis.Josh@epa.gov>
Cc: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: Auto Suppliers Meeting Request on the Midterm Evaluation for Vehicle GHG Standards

Josh,
In addition to the week of the 29th we could also do Monday, February 5 or Tuesday, February 6 before 1.
Let me know if you need additional date ranges to work with.
Best,
Laurie

From: Lewis, Josh [mailto:Lewis.Josh@epa.gov]
Sent: Friday, January 12, 2018 2:16 PM
To: Laurie Holmes <lholmes@mema.org>; Catherine Boland <cboland@MEMA.ORG>
Cc: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: FW: Auto Suppliers Meeting Request on the Midterm Evaluation for Vehicle GHG Standards

+ Emily and – Bill.

Is there a rough date or dates you were looking to come in?

Josh Lewis
Chief of Staff

EPA/Office of Air and Radiation
Office: 202 564 2095
[redacted]

From: Laurie Holmes [mailto:lholmes@mema.org]
Sent: Friday, January 12, 2018 10:56 AM
To: Wehrum, Bill <Wehrum.Bill@epa.gov>
Cc: Catherine Boland <cboland@MEMA.ORG>; Lewis, Josh <Lewis.Josh@epa.gov>
Subject: Auto Suppliers Meeting Request on the Midterm Evaluation for Vehicle GHG Standards

Bill, Thank you so much.
Josh, Look forward to hearing from you.

From: Wehrum, Bill [mailto:Wehrum.Bill@epa.gov]
Sent: Friday, January 12, 2018 7:38 AM
To: Laurie Holmes <lholmes@mema.org>
Cc: Catherine Boland <cboland@MEMA.ORG>; Lewis, Josh <Lewis.Josh@epa.gov>
Subject: Re: Auto Suppliers Meeting Request on the Midterm Evaluation for Vehicle GHG Standards

Hi Laurie. I'd be happy to talk with you. I've copied my chief of staff, Josh Lewis, who can help coordinate.

_____
Bill Wehrum
Assistant Administrator
Office of Air and Radiation
U.S. Environmental Protection Agency
(202) 564-7404

On Jan 11, 2018, at 1:33 PM, Laurie Holmes <lholmes@mema.org> wrote:

> Bill:
> MEMA would like to request a meeting to discuss the midterm evaluation on the vehicle greenhouse gas emission standards.
>
> MEMA represents more than 1,000 companies that manufacture components, systems and materials for motor vehicles and represents the largest sector of manufacturing jobs in the U.S. Since auto suppliers play a major role in developing the technologies necessary for vehicle emission reduction, suppliers have a strong interest in the midterm evaluation and the standards. Our position is also not identical to the vehicle manufactures on the issue.
>
> It would be helpful if we could discuss with you the impact the program has had and will have on our industry.
>
> Look forward to hearing from you.
>
> Laurie Holmes
> Senior Director, Environmental Policy
> Motor & Equipment Manufacturers Association
> 1030 15th Street NW, Suite 500 East

Washington, DC 20005
Direct: 202-312-9247
[redacted]

<image001.png>

April 10-11 | Washington, DC

www.mema.org/dcsummit

Message

From: Laurie Holmes [lholmes@mema.org]
Sent: 2/1/2018 2:38:05 PM
To: Atkinson, Emily [Atkinson.Emily@epa.gov]
CC: Lewis, Josh [Lewis.Josh@epa.gov]
Subject: Confirmed 2/5 at 4:15pm: Auto Suppliers Meeting Request on the Midterm Evaluation for Vehicle GHG Standards

Hi Emily,
As requested, below is a list of participants for the meeting with Mr. Wehrum at 4:15 on Monday, February 5.
Thank you so much for your assistance in setting up this meeting.

Attendees:

1. Laurie Holmes, MEMA
2. Catherine Boland, MEMA
3. Dave Cetola, Johnson Matthey
4. Greg Garr, Umicore
5. Mike Belwood, Arconic
6. Joseph Fengler, Honeywell
7. Jennifer Heckmann, DENSO
8. Ana Meuweissen, Bosch
9. Erika Nielson, BW
10. Andrew Kenny, Magna

Best,
Laurie

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Assistant Administrator
Office of Air and Radiation

U.S. Environmental Protection Agency
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It would be helpful if we could discuss with you the impact the program has had and will have on our industry.

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Senior Director, Environmental Policy
Motor & Equipment Manufacturers Association
1030 15th Street NW, Suite 500 East
Washington, DC 20005
Direct: 202-312-9247
[redacted]

<image001.png>
April 10-11 | Washington, DC
www.mema.org/dcsummit

Message

From: Lauren Wilk [lwilk@aluminum.org]
Sent: 2/1/2018 5:05:48 PM
To: Atkinson, Emily [Atkinson.Emily@epa.gov]; Lewis, Josh [Lewis.Josh@epa.gov]
Subject: Aluminum Association Meeting Request

Emily and Josh --

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The Aluminum Association
1400 Crystal Drive, Suite 430
Arlington, VA 22202
T 703.358.2981[redacted]6 | F 703.358.2961
JOIN THE CONVERSATION:

Message

From: Atkinson, Emily [Atkinson.Emily@epa.gov]
Sent: 2/5/2018 7:38:19 PM
To: Lauren Wilk [lwilk@aluminum.org]
Subject: Confirmed 3/2 at 3pm: Aluminum Association Meeting Request

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JOIN THE CONVERSATION:

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The Aluminum Association

Lauren Wilk
Vice President, Policy & International Trade
The Aluminum Association
1400 Crystal Drive, Suite 430
Arlington, VA 22202
T 703.358.2981 [redacted] F 703.358.2961
JOIN THE CONVERSATION:

Message

From: Ross Eisenberg [REisenberg@nam.org]
Sent: 2/4/2018 3:48:53 PM
To: Atkinson, Emily [Atkinson.Emily@epa.gov]
CC: Lewis, Josh [Lewis.Josh@epa.gov]; Alexandra Williams [AWilliams@nam.org]
Subject: RE: Speaker invitation: Feb 5 NAM energy/environment committee meeting
Attachments: Spring 2018 EE Committee Agenda.docx; EE Committee Spring 2018 attendee list.xlsx

Emily,

We're looking forward to having Bill Wehrum and Mandy Gunasekara address our energy and environment policy committees Monday afternoon at 2:30 pm. Attached is the current agenda for the meeting and the most recent attendee list for the event. Right now we're looking like we'll have 115 people in the room and another 60 or so on the phone. I expect a few drop-offs between now and tomorrow but not many.

NAM Headquarters is located at 733 10th St. NW, Suite 700. The location is the corner of 10th and G Streets, NW; our office is on the 7th floor. The meeting itself will be in the NAM's Global Room, which is our largest conference room, located just to the side of the front lobby. We'll have someone waiting in the lobby to meet Bill and Mandy when they get here. The room will probably be set up with a large table at the front and rows of chairs facing the speakers. Bill and Mandy will be on at 2:30 pm.

This is a joint meeting of the NAM's energy and environment policy committees, which have jurisdiction over all energy, environment and natural resources issues for the NAM. Chris Keuleman, International Paper's VP of government affairs, chairs the energy committee and will be chairing Monday's meeting. He will introduce Bill and Mandy and moderate Q&A. The room is wired for teleconference, and Bill and Mandy will have microphones for their remarks so attendees on the phone can listen. I will also be at the table to help with any unexpected issues. We'll have staff roaming the room with microphones for the Q&A portion.

We have 45 minutes slotted for tomorrow's presentation. Bill and Mandy are likely very familiar with the range of issues our members care about; our top environmental priorities tend to be the big issues the air office is focusing on. Top of mind for the members in the room will be ozone, the Clean Power Plan, New Source Review, the light-duty vehicle midterm review, heavy-duty vehicle phase 2 GHG regs, the upcoming PM2.5 NAAQS, and process-related issues that deal with the underlying framework for the regulations (e.g. cost-benefit analysis, CASAC, etc.). This will be a friendly crowd; they are big supporters of the work the air office is doing. Given the diversity in the room it's possible they could get a curveball on a climate issue or something like the glider rule for heavy-duty trucks (NAM expressed concern with this rule). But even if that happens I expect things to be very friendly.

The meeting is off-the-record and we will make an announcement to that effect at the start of the meeting and again right before Bill and Mandy begin speaking. Committee membership is open to any NAM member company or association, and you can see from the attached attendee list that we have a pretty diverse turnout.

Let me know if you have any other questions, and thanks again for working with us on tomorrow's meeting. We're really looking forward to it.

Ross Eisenberg
Vice President, Energy and Resources Policy
National Association of Manufacturers
Direct: 202.637.3173
[redacted]
Email: reisenberg@nam.org

From: Atkinson, Emily [mailto:Atkinson.Emily@epa.gov]
Sent: Wednesday, January 31, 2018 12:06 PM
To: Ross Eisenberg <REisenberg@nam.org>
Cc: Lewis, Josh <Lewis.Josh@epa.gov>; Alexandra Williams <AWilliams@nam.org>
Subject: RE: Speaker invitation: Feb 5 NAM energy/environment committee meeting

Thank you Ross.

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Ross Eisenberg [mailto:REisenberg@nam.org]
Sent: Wednesday, January 31, 2018 12:00 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Cc: Lewis, Josh <Lewis.Josh@epa.gov>; Alexandra Williams <AWilliams@nam.org>
Subject: RE: Speaker invitation: Feb 5 NAM energy/environment committee meeting

Emily, that would be wonderful. Thank you so much for making it work on their schedules.

Location is NAM Headquarters, 733 10th St. NW, Suite 700, Washington DC 20001 (corner of 10th and G streets NW). They'll be speaking from 2:30 to 3:15. We will get you an attendee list ahead of time so Bill and Mandy can see who is in the room.

If there are additional logistics that you need from us, just let me know. Thanks again for confirming; we're very excited that Bill and Mandy can make it.

From: Atkinson, Emily [mailto:Atkinson.Emily@epa.gov]
Sent: Wednesday, January 31, 2018 11:51 AM
To: Ross Eisenberg <REisenberg@nam.org>
Cc: Lewis, Josh <Lewis.Josh@epa.gov>
Subject: RE: Speaker invitation: Feb 5 NAM energy/environment committee meeting

Hi Ross,

It looks like Bill Wehrum and Mandy Gunasekara could be available to join you for 45 minutes starting at 2:30pm on Monday, February 5.

Please confirm this timing works on your end and the location of the event.

Thank you.
Emily

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Ross Eisenberg [mailto:REisenberg@nam.org]
Sent: Monday, January 29, 2018 3:29 PM
To: Wehrum, Bill <Wehrum.Bill@epa.gov>; Wehrum, Bill <Wehrum.Bill@epa.gov>
Subject: Speaker invitation: Feb 5 NAM energy/environment committee meeting

Bill,

I hope all is well. I'd like to invite you to speak at the NAM's upcoming meeting of its energy and environment committees. The meeting is scheduled for Feb. 5 from 2-4 pm at NAM headquarters and would be off-the-record. Audience would be member companies and trade associations, all of whom are NAM members. We usually get 100 in the room and another 70-80 by phone. We have flexibility on time, so if you are able to attend at any point during the 2-4 pm window, we will carve out a 30-45 minute spot on the agenda for you.

As you know, your portfolio at EPA is far and away the most requested issue area from our committee members. If you have time to provide an update I'm sure the members would love it.

Ross Eisenberg
Vice President, Energy and Resources Policy
National Association of Manufacturers
Direct: 202.637.3173
[redacted]
Email: reisenberg@nam.org

First_Name_Initial	Last_Name
Charles	Acquard
Richard	Alonso
Ashley	Amidon
Matt	Armstrong
Patrick	Atagi
Kevin	Avery
Louis	Baer
Paul	Balserak
Mike	Belwood
John	Boling
Chuck	Bowen
Samuel	Boxerman
Rich	Bozek
Laura	Brannen
Sue	Briggum
Timothy	Brown
Michael	Burnside
Larry	Camm
Abigail	Campbell
Margaret	Caravelli
Lorine	Card
Anne	Clawson
Jim	Creevy
Ruth	Demeter
Dennis	Deziel
Andrew	Dodson
Richard	Doyle
Kjersten	Drager
David	Dunlap
Joseph	Eaves
Paul	Feenstra
Howard	Feldman
Emily	Foster
joanna	foust
Garrick	Francis
Charles	Franklin
Bradford	Frisby
Leland	Frost
Marnie	Funk
Jacqueline	Gelb
Lorraine	Gershman
Bill	Gill
Sylvester	Giustino
John	Glaser
Seth	Goldberg
Kyle	Harris

Title
Vice President
Partner
Senior Director, Government Affairs
Counsel and Director, Global Government Affairs & Policy
Vice President, Advocacy and External Affairs
Manager, Federal Government Affairs
Director/Assistant Counsel
Vice President, Environment
Vice President, Government Affairs
Vice President, Government Affairs
Vice President, Industry Affairs
Partner
Director, Environmental and Health & Safety Policy
Government Affairs Manager
Vice President, Federal Public Affairs
Vice President, Regulatory Counel & International Affairs
Specialist, Regulatory Affairs
Senior Government Affairs Representative
Director, Government Affairs
Outside Counsel
Senior Manager, Federal Government Affairs
Director, Strategy and Program Coordination
Vice President, Government Relations
Senior Manager of Federal Government Relations
Director, Federal Government Affairs
Vice President, Government Affairs
President and CEO
Manager, Government Affairs
Director, Environmental Regulatory Affairs
Director, Government Relations
Director of Government Relations
Director, Regulatory & Scientific Affairs
Director, Government Relations
general manager-federal affairs
Director, Federal Affairs
Vice President and Counsel, Government Affairs
Deputy General Counsel
Associate General Counsel
Senior Government Relations Advisor
Vice President, Government Relations
Vice President, Regulatory Affairs
Assistant Vice President, Environmental Affairs
Director of Government Relations and Technical Affairs
Manager, Congressional Affairs
Partner
Manager, Environmental Affairs/Workplace Safety

Member_Name	HowWillAttend
ELCON	In Person
Sidley Austin LLP	In Person
National Stone, Sand & Gravel Association	In Person
Baker Hughes, a GE company	In Person
National Wooden Pallet and Container Association	In Person
ConocoPhillips	In Person
Portland Cement Association	In Person
American Iron and Steel Institute	In Person
Arconic	In Person
Institute of Makers of Explosives	In Person
Outdoor Power Equipment Institute	In Person
Sidley Austin LLP	In Person
Edison Electric Institute	In Person
Bechtel Group, Inc.	In Person
Waste Management	In Person
Household & Commercial Products Association	In Person
American Fuel and Petrochemical Manufacturers	In Person
Schweitzer Engineering Laboratories, Inc.	In Person
Siemens Corporation	In Person
Marathon Petroleum	In Person
The Mosaic Company	In Person
Alcoa Corporation	In Person
ABB Inc.	In Person
Peabody Energy Corporation	In Person
The Dow Chemical Company	In Person
American Wood Council	In Person
Vinyl Institute	In Person
ConocoPhillips	In Person
Koch Companies Public Sector, LLC	In Person
National Electrical Manufacturers Association	In Person
PACCAR Inc.	In Person
American Petroleum Institute	In Person
Cummins Inc.	In Person
daimler north america corp	In Person
CSX Corporation	In Person
Portland Cement Association	In Person
National Lime Association	In Person
National Association of Manufacturers	In Person
Shell Oil Company	In Person
Navistar International Corporation	In Person
National Oilseed Processors Association	In Person
Smithfield Foods	In Person
Can Manufacturers Institute	In Person
Association of American Railroads	In Person
Steptoe & Johnson LLP	In Person
Corn Refiners Association	In Person

Joel	Heilman
William	Herz
Stephen	Higley
Ariel	Hill-Davis
Dan	Hilton
Tim	Hunt
Briana	Huxley
Lisa	Jackson
Bryan	Jacobs
Tasha	Jamaluddin
Booth	Jameson
Carter Lee	Kelly
Chris	Keuleman
Stephen	Kittredge
Kip	Knudson
Eileen	Lauzon
Mark	Lessans
Jason	Leuck
Jesse	Levine
Bill	Libro
Steve	Lomax
Scott	Lynch
Jason	Lynn
Robert	McArver
Kevin	McKenney
Jonathan	Miller
Jeanne	Mitchell
David	Modi
Ryan	Modlin
Hilary	Moffett
Riaz	Mohammed
Darrin	Munoz
Asaf	Nagler
Robert	Nolan
Cal	Odom
Missy	Owens
Peter	Pagano
Anna	Pavlova
Carrie	Perry
Julia	Price-Madison
Kelley	Raymond
Anthony	Reed
Josh	Reiner
James	Riley
Liz	Roberts
Jared	Rothstein
Stephanie	Salmon

Senior Manager, Federal Government Affairs
Executive Director
Manager, Federal Government Affairs
Director of Industry Affairs
Director of Government Affairs
Senior Director, Air Quality Programs
Communications Manager
Director, Federal Government Relations
Vice President, Government Affairs
Managing Director
Sr. Director, Federal Affairs
Senior Director, Federal Affairs
Vice President, Global Government Relations
Managing Director, Government and Public Affairs
Director, Federal Government Affairs
Manager, Government Affairs & Public Policy
Energy Efficiency Analyst
Director, Government & Regulatory Affairs
Manager, Regulatory Affairs
Director, Federal Government Affairs
Director, Environmental Regulatory Affairs
President & CEO
Washington Manager Government Affairs
Head of Government Affairs, NAFTA
Director of Government Affairs
Vice President, Government Relations and Public Affairs
Washington Representative
Vice President, Government Affairs
Vice President, North American Government Affairs
Director, Federal Relations
Manager
Director
Senior Director, Government Relations
Federal Government Relations Advisor
Senior Director, Government Relations
Director, Government Relations Federal & Diplomatic
Director, Environment and Energy
VP, Government Relations
Federal Affairs Policy Advisor
Global Government Affairs Analyst
Director, Government Relations
Senior Director, Government Relations
Government Affairs Director
Vice President, Federal Affairs & Deputy General Counsel
Principal & Co-founder, Capitoline Consulting, representing
Senior Manager, Regulatory Affairs
Vice President Government Affairs

LyondellBasell	In Person
National LIme Association	In Person
Marathon Petroleum Corporation	In Person
Industrial Minerals Association - North America	In Person
American Supply Association	In Person
American Forest & Paper Association	In Person
Motor & Equipment Manufacturers Association	In Person
Emerson	In Person
BMW North America	In Person
Epcon Industrial Systems, L.P.	In Person
American Chemistry Council	In Person
Waste Management	In Person
International Paper	In Person
Owens Corning	In Person
Andeavor	In Person
Rheem Manufacturing Company	In Person
Ingersoll Rand	In Person
Lockheed Martin Corporation	In Person
U.S. Tire Manufacturers Association	In Person
ALLETE, Inc.	In Person
Koch Industries	In Person
American Boiler Manufacturers Association	In Person
Caterpillar	In Person
Covestro LLC	In Person
Window and Door Manufacturers Association	In Person
Volvo Group North America	In Person
Exxon Mobil Corporation	In Person
Dover Corporation	In Person
Owens-Illinois, Inc.	In Person
API	In Person
EEI	In Person
Murray Energy Corporation	In Person
ABB Inc.	In Person
Exxon Mobil Corporation	In Person
Edison Electric Institute	In Person
The Coca-Cola Company	In Person
The Boeing Company	In Person
Schneider Electric	In Person
Dominion Energy	In Person
Alcoa	In Person
Air-Conditioning, Heating and Refrigeration Institute	In Person
Archer Daniels Midland Company	In Person
Portland Cement Association	In Person
National Waste & Recycling Association	In Person
Evonik Corporation	In Person
Society of Chemical Manufacturers & Affiliates	In Person
American Foundry Society	In Person

Karyn	Schmidt
Jerry	Schwartz
Laura	Siegrist
Brett	Smith
Kyndal	Sowers
Robert	Stout
Suzanne	Swink
Elizabeth	Tate
Dale	Thanjan
Prerna	Tomar
Meredith	Tunick
Glenn	Unterberger
Devin	Urness
David	Van Hoogstraten
Laura	Vaught
Puneet	Verma
David	Wagger
Kevin	Washington
Curt	Wells
Lauren	Wilk
Jeanne	Wolak
Todd	Young
David	Ailor
Deedra	Allen
Jennifer	Baker Reid
Cristian	Barcan
Heather	Berlinski
Susan	Blevins
Corey	Brandt
Michael	Cashin
Michael	Cassidy
Anna	Clark-Emerick
Jennifer	Cleary
Carlos	Davis
Jonathan	De'Ath
Amy	DeArmond
Renita	Dixon
Raga	Elim
David	Falck
Jason	Flower
Jessica	Franks
Louis	Hengen
Melissa	Horton
James	Howe
Patrick	Hughes
Jeff	Kaman
Marci	Kinter

Assistant General Council
Senior Director, Energy & Environmental Policy
Senior Manager, Government Relations
Senior Director, Government Relations
Intern
Vice President & Head of Regulatory Affairs
Director, Federal Government Affairs
Director, Global Corporate Sustainability
Director, Federal Government Affairs
Public Policy Counsel
Manager, Federal Government Affairs
Partner
Legislative Assistant
Senior Director, Environmental Regulatory Affairs
Federal Affairs Policy Advisor
Manager, Federal Government Affairs
Chief Scientist / Director of Environmental Management
Government Affairs
Director, Regulatory Affairs
VIce President, Policy & International Trade
Vice President, Federal Legislative Affairs
Managing Director, Federal Government Affairs
President
Director Regulatory Affairs
Partner, The Laurin Baker Group, LLC
Vice President, Sustainability & Industry Affairs
Manager, State Government Relations
Senior Climate Policy Advisor
Sr. Environmental Engineering Mgr, Air
Environmental Policy Advisor
Manager - EHS Technical Resources
Director HESS Corporate Governance
Director, Regulatory Affairs
Air Permit Manager
Director of Environmental Affairs
Director of Government Policy
Sustainability and Environmental Coordinator
Director, Government Relations
Executive Vice President, Law
Partner
Director, Government Relations
Director, Government Relations
Federal Environmental Affairs
Vice President, Government Relations
Senior Director, Government Relations and Strategic Initiatives
Energy Manager
Vice President of Government Affairs & Business Information

American Chemistry Council	In Person
American Forest & Paper Association	In Person
Whirlpool Corporation	In Person
American Iron and Steel Institute	In Person
Nucor Corporation	In Person
BP America, Inc.	In Person
BP America, Inc.	In Person
Johnson Controls International PLC	In Person
Phillips 66	In Person
Samsung Electronics America, Inc.	In Person
Robert Bosch LLC	In Person
Ballard Spahr, LLP	In Person
Nucor Public Affairs, Inc.	In Person
BP America, Inc.	In Person
Dominion Energy	In Person
Chevron Corporation	In Person
Institute of Scrap Recycling Industries	In Person
Illinois Tool Works Inc.	In Person
The Aluminum Association	In Person
The Aluminum Association	In Person
Southern Comapny	In Person
United States Steel Corporation	In Person
American Coke and Coal Chemicals Institute	via Teleconference
The Mosaic Company	via Teleconference
Forging Industry Association	via Teleconference
The Vinyl Institute	via Teleconference
S.C. Johnson & Son, Inc.	via Teleconference
Exxon Mobil Corporation	via Teleconference
WestRock Company	via Teleconference
Minnesota Power (ALLETE)	via Teleconference
Kohler Company	via Teleconference
Covestro LLC	via Teleconference
Association of Home Appliance Manufacturers	via Teleconference
Saint-Gobain Corporation	via Teleconference
National Lime Association	via Teleconference
Leggett & Platt Incorporated	via Teleconference
Illinois Tool Works Inc.	via Teleconference
Ashland Inc.	via Teleconference
Arizona Public Service Company	via Teleconference
Husch Blackwell LLP	via Teleconference
Edison Electric Institute	via Teleconference
WestRock	via Teleconference
Southern Company	via Teleconference
Centrus Energy Corporation	via Teleconference
National Electrical Manufacturers Association	via Teleconference
Deere & Company	via Teleconference
Specialty Graphic Imaging Association	via Teleconference

Amy	Lincoln
Patricia	McCullough
Kevin	Medeiros
Kevin	Messner
Adrian	Metcalf
Susan	Miller
John	Milner
Kathryn	Mitchell
Paul	Noe
Adam	Parr
Gabriel	Pellathy
Heather	Rock
Grant	Ruckel
Justin	Savage
Jane	Schilmoeller
John	Serrano
Yuichi	Somemori
Charlie	Souhrada
Bill	Spencer
Daniel	Steen
Joan	Sterling
Brad	Stevenson
Patricia	Strabbing
Matthew	Thornblad
Patrick	van der Voorn
Cynthia	Walaitis
Lyle	Witham
Matt	Woodruff
Gina	Young
Mike	Younis

Supervising Counsel, Environmental & Safety Law Group
Director of Environmental Regulatory Affairs
Air, Safety and Security Analyst - Policy, Government and Public Affairs
Senior Vice President, Policy & Government Relations
Senior Director, EHS
Vice President of Environment, Health & Safety
Brunini Law Firm representing
Env Manager
Vice President, Public Policy
Director of Communications and Public Affairs
Managing Director, Government Affairs
Climate Analyst
Vice President, Government Affairs
Partner
Deputy General Counsel - EH&S Law & Policy
Director of Government Affairs
Manager, Environmental and CSR Activities
Vice President, Regulatory & Technical Affairs
Research and Development Manager
Vice President, Government Affairs
VP Public and Government Affairs
EHS Manager/Air, Water & Hazardous Materials, Global Environmental Affairs, Health & Safety
Senior Manager, External Affairs
Director, Government Relations
ChiefEnvironmental Counsel
EHS Director
Sr. Environmental Policy Analyst
Director of Public & Government Affairs
Senior Lawyer
Director of Energy Optimization Consumer Products Group

Chevron Corporation	via Teleconference
Koch Industries	via Teleconference
Chevron Corporation	via Teleconference
Association of Home Appliance Manufacturers	via Teleconference
Pfizer Inc.	via Teleconference
Brick Industry Association	via Teleconference
Mississippi Manufacturers Association	via Teleconference
Intalco Aluminum LLC, Alcoa	via Teleconference
American Forest & Paper Association	via Teleconference
Gerdau North America	via Teleconference
PPG	via Teleconference
Chevron Corporation	via Teleconference
Energy Transfer Partners, L.P.	via Teleconference
Sidley Austin	via Teleconference
Koch Industries	via Teleconference
The Vinyl Institute	via Teleconference
Hitachi America Ltd.	via Teleconference
North American Assn of Food Equipment Manufacturers	via Teleconference
Oxbow Corporation	via Teleconference
Owens-Illinois, Inc.	via Teleconference
Intertek	via Teleconference
Caterpillar Inc.	via Teleconference
FCA US LLC	via Teleconference
United Technologies Corporation	via Teleconference
The Mosaic Company	via Teleconference
Shaw Industries Group, Inc.	via Teleconference
Tri-State Generation & Transmission	via Teleconference
Kirby Corporation	via Teleconference
Cargill, Incorporated	via Teleconference
Georgia-Pacific Corporation	via Teleconference

NAM Energy and Environment Joint Committee Meeting

AGENDA

Monday, February 5, 2018
2:00 p.m. – 4:00 p.m. ET

NAM Headquarters
733 10th Street, NW, Suite 700
Washington, D.C.

2:00 – 2:30 pm: Department of Energy Update

- Daniel Simmons, Principal Deputy Assistant Secretary, Office of Energy Efficiency and Renewable Energy, Department of Energy

2:30 - 3:15 pm: EPA Air Policy Update

- William Wehrum, Assistant Administrator for Air and Radiation, Environmental Protection Agency
- Mandy Gunasekara, Principal Deputy Assistant Administrator, Office of Air and Radiation, Environmental Protection Agency

3:15 – 3:35 pm: Introduction to the Manufacturing Institute and Center for Manufacturing Research

- Carolyn Lee, Executive Director, Manufacturing Institute
- Chad Moutray, Chief Economist, National Association of Manufacturers

3:35 – 4:00 pm: Committee Business

4:00 pm: Adjourn

Message

From: Laurie Holmes [lholmes@mema.org]
Sent: 2/2/2018 3:56:07 PM
To: Atkinson, Emily [Atkinson.Emily@epa.gov]
Subject: Auto Suppliers Meeting on the Midterm Evaluation for Vehicle GHG Standards
Attachments: MEMA Wehrum Meeting Feb 5 Final EPA.pptx

Emily,
One more thing, attached are a few slides we plan on having hard copies of at the meeting on Monday to provide visuals to our discussion points.
I've provided these to Ann Arbor staff too but thought I'd make sure you were aware.

Best,

Laurie

Laurie Holmes
Senior Director, Environmental Policy
Motor & Equipment Manufacturers Association
1030 15th Street NW, Suite 500 East
Washington, DC 20005
Direct: 202-312-9247

2018 LEGISLATIVE SUMMIT
April 10-11 | Washington, DC
www.mema.org/dcsummit

From: Laurie Holmes
Sent: Thursday, February 01, 2018 9:38 AM
To: 'Atkinson, Emily' <Atkinson.Emily@epa.gov>
Cc: Lewis, Josh <Lewis.Josh@epa.gov>
Subject: Confirmed 2/5 at 4:15pm: Auto Suppliers Meeting Request on the Midterm Evaluation for Vehicle GHG Standards

Hi Emily,
As requested, below is a list of participants for the meeting with Mr. Wehrum at 4:15 on Monday, February 5.
Thank you so much for your assistance in setting up this meeting.

Attendees:
1. Laurie Holmes, MEMA
2. Catherine Boland, MEMA

3. Dave Cetola, Johnson Matthey
4. Greg Garr, Umicore
5. Mike Belwood, Arconic
6. Joseph Fengler, Honeywell
7. Jennifer Heckmann, DENSO
8. Ana Meuweissen, Bosch
9. Erika Nielson, BW
10. Andrew Kenny, Magna

Best,
Laurie

From: Atkinson, Emily [mailto:Atkinson.Emily@epa.gov]
Sent: Thursday, January 18, 2018 3:44 PM
To: Laurie Holmes <lholmes@mema.org>
Cc: Lewis, Josh <Lewis.Josh@epa.gov>
Subject: Confirmed 2/5 at 4:15pm: Auto Suppliers Meeting Request on the Midterm Evaluation for Vehicle GHG Standards

Hi Laurie,
You are confirmed for a 45 minute in person meeting on Monday, February 5, 2018 at 4:15pm with Bill Wehrum.
Directions and procedures to 1200 Pennsylvania Avenue NW:

Metro: If you come by Metro get off at the Federal Triangle metro stop. Exit the metro station and go up two sets of escalators to the surface level and turn right. You will see a short staircase and wheelchair ramp leading to a set of glass doors with the EPA logo - that is the William Jefferson Clinton Federal Building, North Entrance.

Taxi: Direct the taxi to drop you off on 12th Street NW, between Constitution and Pennsylvania Avenues, at the elevator for the Federal Triangle metro stop - this is almost exactly half way between the two avenues on 12th Street NW. Facing the building with the EPA logo and American flags, walk toward the building and take the glass door on your right hand side with the escalators going down to the metro on your left – that is the North Lobby of the William Jefferson Clinton building.

Security Procedures: A government issued photo id is required to enter the building and it is suggested you arrive 15 minutes early in order to be cleared and arrive at the meeting room on time. Upon entering the lobby, the meeting attendees will be asked to pass through security and provide a photo ID for entrance. Let the guards know that you were instructed to call 202-564-7404 for a security escort.

Please send me a list of participants in advance of the meeting and feel free to contact me should you need any additional information. And based on the size of the room we plan to use, you should plan to bring no more than 10 attendees to this meeting.

Emily

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Laurie Holmes [mailto:lholmes@mema.org]
Sent: Thursday, January 18, 2018 3:08 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Cc: Lewis, Josh <Lewis.Josh@epa.gov>
Subject: Auto Suppliers Meeting Request on the Midterm Evaluation for Vehicle GHG Standards

Emily,
Yes, Mon. Feb. 5 at 4:15 will work for us.

Is there a number limit for the room? We will have some members with us.

Best,
Laurie

Sent from my iPhone

On Jan 18, 2018, at 11:08 AM, Atkinson, Emily <Atkinson.Emily@epa.gov> wrote:

> Hi Laurie,
>
> It looks like Bill Wehrum could be available for a 45 minute in person meeting on Monday, February 5 at 4:15pm.
>
> Please advise if this could work on your end.
>
> Emily
>
> Emily Atkinson
> Management Analyst/Office Manager
> Immediate Office of the Assistant Administrator
> Office of Air and Radiation, USEPA
> Room 5412B, 1200 Pennsylvania Avenue NW
> Washington, DC 20460
> Voice: 202-564-1850
> Email: atkinson.emily@epa.gov
>
> **From:** Laurie Holmes [mailto:lholmes@mema.org]
> **Sent:** Wednesday, January 17, 2018 10:34 AM
> **To:** Lewis, Josh <Lewis.Josh@epa.gov>
> **Cc:** Atkinson, Emily <Atkinson.Emily@epa.gov>
> **Subject:** Auto Suppliers Meeting Request on the Midterm Evaluation for Vehicle GHG Standards
>
> Josh,
> In addition to the week of the 29th we could also do Monday, February 5 or Tuesday, February 6 before 1.
> Let me know if you need additional date ranges to work with.
> Best,
> Laurie
>
> **From:** Lewis, Josh [mailto:Lewis.Josh@epa.gov]
> **Sent:** Friday, January 12, 2018 2:16 PM

To: Laurie Holmes <lholmes@mema.org>; Catherine Boland <cboland@MEMA.ORG>
Cc: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: FW: Auto Suppliers Meeting Request on the Midterm Evaluation for Vehicle GHG Standards

+ Emily and – Bill.

Is there a rough date or dates you were looking to come in?

Josh Lewis
Chief of Staff
EPA/Office of Air and Radiation
Office: 202 564 2095
[redacted]

From: Laurie Holmes [mailto:lholmes@mema.org]
Sent: Friday, January 12, 2018 10:56 AM
To: Wehrum, Bill <Wehrum.Bill@epa.gov>
Cc: Catherine Boland <cboland@MEMA.ORG>; Lewis, Josh <Lewis.Josh@epa.gov>
Subject: Auto Suppliers Meeting Request on the Midterm Evaluation for Vehicle GHG Standards

Bill, Thank you so much.
Josh, Look forward to hearing from you.

From: Wehrum, Bill [mailto:Wehrum.Bill@epa.gov]
Sent: Friday, January 12, 2018 7:38 AM
To: Laurie Holmes <lholmes@mema.org>
Cc: Catherine Boland <cboland@MEMA.ORG>; Lewis, Josh <Lewis.Josh@epa.gov>
Subject: Re: Auto Suppliers Meeting Request on the Midterm Evaluation for Vehicle GHG Standards

Hi Laurie. I'd be happy to talk with you. I've copied my chief of staff, Josh Lewis, who can help coordinate.

_____
Bill Wehrum
Assistant Administrator
Office of Air and Radiation
U.S. Environmental Protection Agency
(202) 564-7404

On Jan 11, 2018, at 1:33 PM, Laurie Holmes <lholmes@mema.org> wrote:

> Bill:
> MEMA would like to request a meeting to discuss the midterm evaluation on the vehicle greenhouse gas emission standards.
>
> MEMA represents more than 1,000 companies that manufacture components, systems and materials for motor vehicles and represents the largest sector of manufacturing jobs in the U.S. Since auto suppliers play a major role in developing the technologies necessary for vehicle emission reduction, suppliers have a strong interest in the midterm evaluation and the standards. Our position is also not identical to the vehicle manufactures on the issue.

It would be helpful if we could discuss with you the impact the program has had and will have on our industry.

Look forward to hearing from you.

Laurie Holmes
Senior Director, Environmental Policy
Motor & Equipment Manufacturers Association
1030 15th Street NW, Suite 500 East
Washington, DC 20005
Direct: 202-312-9247
[redacted]

<image001.png>

April 10-11 | Washington, DC
www.mema.org/dcsummit

DRIVING THE FUTURE
U.S. Environmental Protection Agency
Office of Air and Radiation
February 5, 2018
MEMA

DRIVING THE FUTURE

Agenda

I. Supplier Industry and Economic Impact
II. Supplier Investment Risks and Need for Certainty
III. Long-term Targets Drive Technology Innovation
IV. Support of Off-Cycle Technology Credits, Other Flexibilities
V. MEMA Midterm Evaluation Priorities

MOTOR VEHICLE PARTS SUPPLIERS ARE THE **LARGEST** SECTOR OF **MANUFACTURING JOBS** IN THE **U.S.**

871,000
AMERICANS
EMPLOYED
IN **2015**

4.26 MILLION

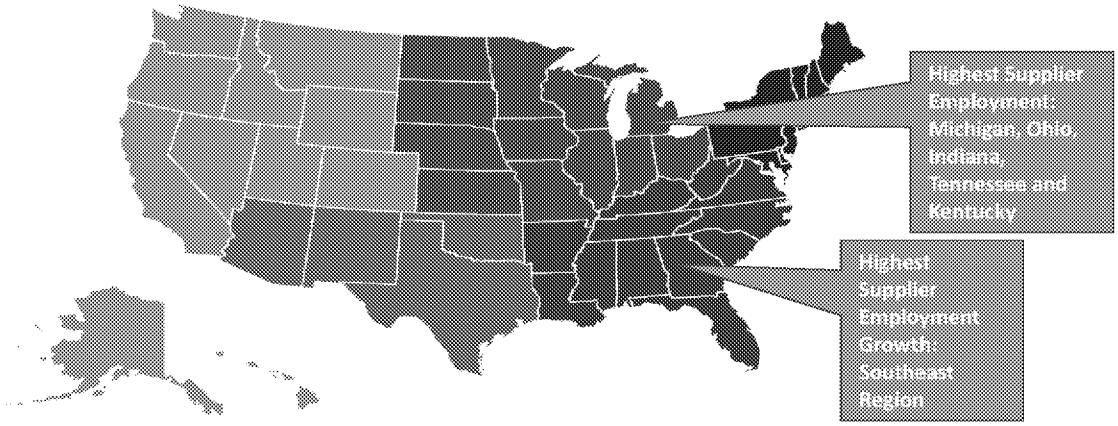
Total employment impact of the motor vehicle parts manufacturing industry in the U.S. – rising nearly 18% from 3.62 million in 2012

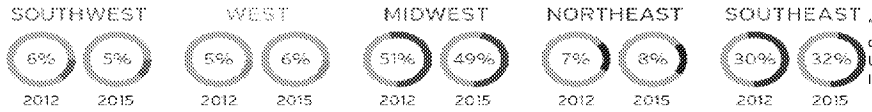
MOTOR VEHICLE MANUFACTURING JOBS GREW MORE THAN **19%** SINCE **2012**

All data from "The Employment and Economic Impact of the Vehicle Supplier Industry in the U.S." based on research undertaken by IHS Markit on behalf of MEMA

3

Suppliers Employ Workers in All 50 States

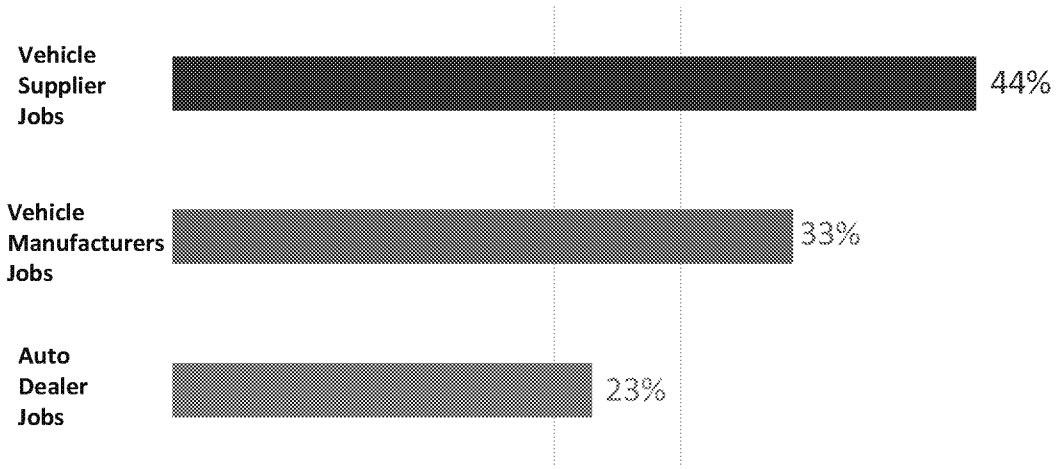




"The Employment and Economic Impact of the Vehicle Supplier Industry in the U.S." based on research undertaken by IHS Markit on behalf of MEMA

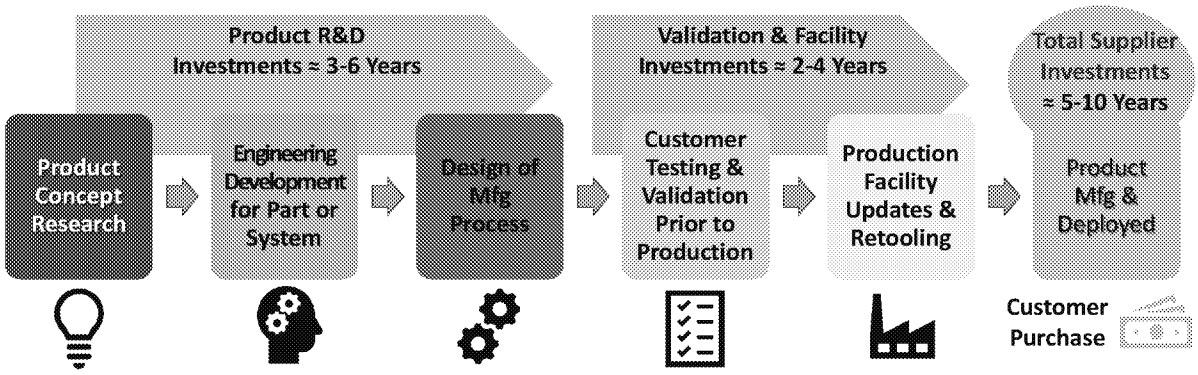
4

Suppliers Make Up the Largest Portion of Auto Sector Jobs*

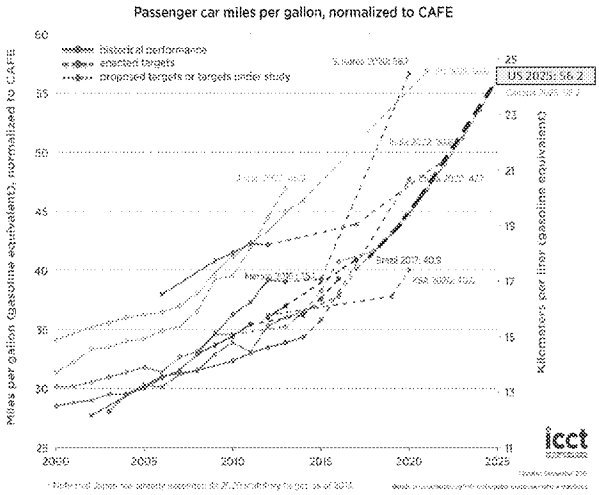


Source: https://autoalliance.org/economy/
Alliance of Automobile Manufacturers' *Cars Move America: State of the Auto Industry*
* Out of the total 7.5 million auto sector jobs - includes direct and indirect jobs

Need for Certainty:
Significant Risk for Supplier Investments



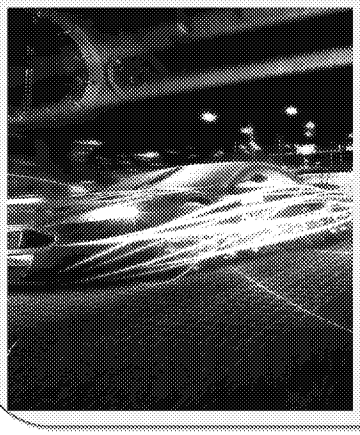
Long-Term Targets Drive Technology Innovation



Significant Changes to the Standards Would:

- Put U.S. companies at a competitive disadvantage
- Increase the likelihood that work and investments on these emissions-reducing technologies would shift to other markets
- Tilt the balance away from American innovation, and result in a loss of U.S. jobs

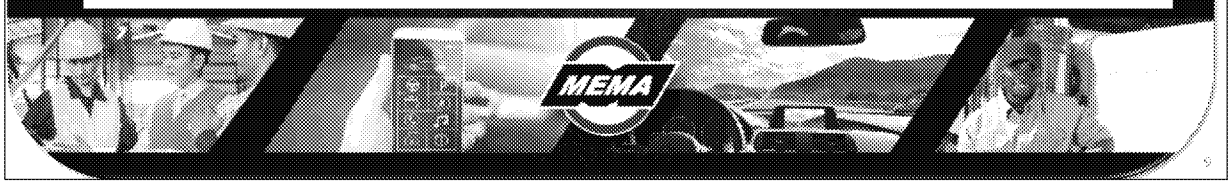
Suppliers Support Further Off-Cycle Technology Credit Opportunities and Flexibilities



- Off-Cycle Technologies Offer Real-World Emissions-Reductions
- Off-Cycle Credits Incentivize Vehicle Manufacturer Adoption of Technologies
- Preserves Long-term Supplier Technology Investments

MEMA Priorities for Midterm Evaluation

- Forward progress on MYs 2022 – 2025 standards
- Oppose changes to MY2021 standard
- Regulatory certainty through 2025 and post-2025
- One National Program
- Preserve American leadership for technology innovation
- Further opportunities for off-cycle technologies, flexibilities



Message

From: Tucker, Jamie [jtucker@AKINGUMP.COM]
Sent: 1/29/2018 3:11:31 PM
To: Atkinson, Emily [Atkinson.Emily@epa.gov]
CC: Feeley, Drew (Robert) [Feeley.Drew@epa.gov]; Lewis, Josh [Lewis.Josh@epa.gov]
Subject: RE: Confirmed 1/30 at 4pm: Meeting Request re: Natural Gas Vehicles
Attachments: EPA Memo 1.26.18.pdf; A Regulatory Reform Agenda for NGVs v2 (002).pdf; EPA presentation Dec 14 vF.PDF

Please find below the list of attendees for tomorrow afternoon and I've also enclosed for your use a one-pager providing a brief overview as well as separate one-pager describing the four proposed regulatory changes. Lastly, I've also enclosed a more in-depth presentation which we shared in December during a conversation with your team at OTAQ.

We are looking forward to meeting with Mr. Wehrum tomorrow and please let us know if you need any additional background in advance of the meetings.

Attending:
Robert Friedman, COO
Bob Atkinson, Chief Regulatory Officer
Larry Highbloom, Chief Administrative Officer

Susan Lent, Akin Gump
Jamie Tucker, Akin Gump

From: Atkinson, Emily [mailto:Atkinson.Emily@epa.gov]
Sent: Wednesday, January 10, 2018 8:48 AM
To: Tucker, Jamie
Cc: Feeley, Drew (Robert); Lewis, Josh
Subject: Confirmed 1/30 at 4pm: Meeting Request re: Natural Gas Vehicles

Hi Jamie,
You are confirmed for a 45 minute meeting on Tuesday, January 30, 2018 at 4:00pm with Bill Wehrum. Directions and procedures to 1200 Pennsylvania Avenue NW:

> Metro: If you come by Metro get off at the Federal Triangle metro stop. Exit the metro station and go up two sets of escalators to the surface level and turn right. You will see a short staircase and wheelchair ramp leading to a set of glass doors with the EPA logo - that is the William Jefferson Clinton Federal Building, North Entrance.
>
> Taxi: Direct the taxi to drop you off on 12th Street NW, between Constitution and Pennsylvania Avenues, at the elevator for the Federal Triangle metro stop - this is almost exactly half way between the two avenues on 12th Street NW. Facing the building with the EPA logo and American flags, walk toward the building and take the glass door on your right hand side with the escalators going down to the metro on your left – that is the North Lobby of the William Jefferson Clinton building.
>
> Security Procedures: A government issued photo id is required to enter the building and it is suggested you arrive 15 minutes early in order to be cleared and arrive at the meeting room on time. Upon entering the lobby, the meeting attendees will be asked to pass through security and provide a photo ID for entrance. Let the guards know that you were instructed to call 202-564-7404 for a security escort.

Please send me a list of participants in advance of the meeting and feel free to contact me should you need any additional information.

Emily

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Tucker, Jamie [mailto:jtucker@AKINGUMP.COM]
Sent: Tuesday, January 09, 2018 3:02 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Cc: Feeley, Drew (Robert) <Feeley.Drew@epa.gov>; Lewis, Josh <Lewis.Josh@epa.gov>
Subject: RE: Meeting Request re: Natural Gas Vehicles

That's terrific and will work on our end. I will follow up shortly with a complete list of attendees on our part, but let's go ahead and book it.

Thanks.

From: Atkinson, Emily [mailto:Atkinson.Emily@epa.gov]
Sent: Tuesday, January 09, 2018 10:53 AM
To: Tucker, Jamie
Cc: Feeley, Drew (Robert); Lewis, Josh
Subject: FW: Meeting Request re: Natural Gas Vehicles

Hi Jamie,

It looks like Bill Wehrum could be available for a 45 minute meeting on Tuesday, January 30, 2018 at 4:00pm.

Please advise if this could work on your end.

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Tucker, Jamie [mailto:jtucker@AKINGUMP.COM]
Sent: Wednesday, January 03, 2018 3:21 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>; Lewis, Josh <Lewis.Josh@epa.gov>
Cc: Feeley, Drew (Robert) <Feeley.Drew@epa.gov>
Subject: Meeting Request re: Natural Gas Vehicles

Emily/Josh - On behalf of VNG.Co, a natural gas vehicle fueling infrastructure company, we wanted to see if Assistant Administrator Wehrum would be available this month to discuss a number of administrative and legislative policy changes the company is advocating to promote the adoption of natural gas vehicles largely by leveling the playing field with electric vehicles. We have had recent conversations with the Office of Policy as well as the Office of Transportation and Air Quality to discuss these proposals as well as with staff at the White House and Department of Transportation. With Mr. Wehrum's confirmation we would like to fold him into the conversation as well.

Natural gas vehicles provide a cost effective and additional pathway for automaker emissions compliance while preserving the products' consumer appeal, and are therefore worthy of being included in a portfolio of solutions along with EVs to achieve the objectives.

Among the key advantages of the proposed regulatory changes is the benefit to achieving emissions reductions in the light-duty truck category which accounts for 64% of new vehicle purchases (and are responsible for even greater amounts of fuel use and pollution if you take into account the differential in fuel economy between light-duty trucks and passenger cars), and for which there is not a viable electrification solution.

Specifically, we would encourage the Administration to consider:

- **Restoring the 0.15 "divisor"** in EPA's compliance calculations, equivalent to NHTSA's statutory Petroleum Equivalency Factor that counts a gallon-equivalent of natural gas as 0.15 gallons of gasoline. The previous Administration ended this powerful incentive while simultaneously providing electric vehicles with additional emissions incentives on the hope that EVs would be "game changers." The game has now changed for NGVs. The shale revolution that has occurred since the current rules were set as well the development of Renewable Natural Gas as the lowest carbon vehicle fuel are true game changers that strongly justify returning to the 0.15 divisor.

The powerful and well-justified incentive of the 0.15 divisor would be complemented and made even more effective by additional changes including:

- **Eliminating range requirements on bi-fuel NGVs** that results in an impractical natural gas tank size requirement that is twice the size of the gasoline tank and costly design requirements for NGVs, whereas no such range requirements exists for hybrid electric vehicles. This is the most important regulatory change as a complement to the 0.15 divisor of the three.

- **Providing NGV pick-ups with the bonus credits** provided to "strong electric hybrid pick-ups" and **eliminating the existing minimum 10% deployment threshold** to qualify for pickup bonus credits.

- **Establishing a new incentive to encourage retrofitting existing gasoline and diesel vehicles to run on natural gas**, something that isn't feasible for electric drives but which will reduce emissions by the existing fleet of vehicles

Enclosed for your further consideration are our Midterm Evaluation comments as well as information outlining the rationale for the recommended regulatory changes.

Thank you for your consideration.

Jamie

Jamie Tucker
AKIN GUMP STRAUSS HAUER & FELD LLP
1333 New Hampshire Avenue, N.W. | Washington, DC 20036-1564 | USA | Direct: +1 202.887.4279 | Internal: 24279
Fax: +1 202.887.4288 | jtucker@akingump.com | akingump.com | Bio

The information contained in this e-mail message is intended only for the personal and confidential use of the recipient(s) named above. If you have received this communication in error, please notify us immediately by e-mail, and delete the original message.
The information contained in this e-mail message is intended only for the personal and confidential use of the recipient(s) named above. If you have received this communication in error, please notify us immediately by e-mail, and delete the original message.
The information contained in this e-mail message is intended only for the personal and confidential use of the recipient(s) named above. If you have received this communication in error, please notify us immediately by e-mail, and delete the original message.

A Regulatory Reform Agenda for NGVs

A fast-track rulemaking to reform natural gas vehicle (NGV) incentives can be accomplished simply. The reforms necessary to achieve this goal are straightforward and fully justified by the game-changing environmental benefits of NGV technology, including the use of renewable natural gas (RNG), the potential for high-efficiency engines, and synergies with hydrogen fuel cell vehicles. We recommend four actions:

- **Restore 0.15 Divisor:** NGV emissions calculations should return to the "0.15 divisor" effective immediately, with emissions calculated as 85% below a gasoline vehicle (as was the case before 2016). This is justified by the game-changing real-world emissions benefits of RNG, and is moreover harmonized with Congressionally-mandated incentives under the CAFE program.

  We recommend reinstating language from the MY 2011-2016 regulations under 40 C.F.R. § 600.510–12, Calculation of average fuel economy and average carbon-related exhaust emissions.

- **Remove Dual-Fuel Design Requirements:** EPA should remove the utility factor requirements for a 2:1 ratio of CNG-to-gasoline range, as well as the requirement for dual-fuel NGVs to only use gasoline when the CNG tank is empty. These unnecessary design requirements add cost and reduce the appeal of these vehicles to consumers, and analogous plug-in hybrid electric (PHEV) vehicles face no such requirements despite having far lower driving range on electricity (<40 miles) compared to the typical natural gas range of a dual-fuel NGV pickup (250+ miles).

  This could be achieved by deleting the requirements in 40 C.F.R. § 600.510–12, Calculation of average fuel economy and average carbon-related exhaust emissions, part (c)(2)(vii)(B) for fuel economy and (j)(2)(vii)(B) for emissions.

- **NGV Pickup Incentive:** EPA has recognized the unique challenges facing full-sized pickups, and natural gas could be the ideal low-emission platform for these vehicles. This could be encouraged by offering a "Natural Gas Pickup" incentive similar to current hybrid-electric and "performance-based" pickup incentives; however, for the natural gas pickup credit, minimum deployment thresholds (10% of all full-size pickups for existing credits) should be eliminated to reflect the greater market challenges faced by NGVs - since, unlike hybrids, they use an alternative fuel.

  This could be accomplished by inserting a new section (c) under 40 C.F.R. § 86.1870–12, CO2 credits for qualifying full-size pickup trucks, titled "Credits for implementation of natural gas technology." The structure of these credits would be similar to those for sections (a) and (b), but without requirements for the "required minimum percent of full size pickup trucks."

- **Recognize Retrofits:** Encouraging retrofits of older gasoline vehicles to run on CNG is slightly more complex, but offers a unique opportunity to reduce vehicle emissions throughout their useful life instead of just at the point of sale. EPA should allow certified converters to "opt in" to the program and generate credits for CNG retrofits and upfits, prorated in proportion to their remaining useful life. Retrofits could also be encouraged by providing credits for CNG "prep packages" that reduce the costs of subsequent conversion to natural gas, as part of the off-cycle credit technologies menu listed at *40 C.F.R. § 86.1869–12, CO2 credits for off-cycle CO2-reducing technologies.*

For further info: Robert Atkinson, Chief Reg. Officer, VNG. rcatkinson@vng.co; 908-447-4201

VNG

A Rulemaking to Unlock the Potential of Natural Gas Vehicles

During the previous administration, EPA pushed automakers to manufacture light duty electric vehicles (EVs) as a means of meeting fuel economy and emission standards, ignoring the benefits of natural gas vehicles (NGVs). Not only did EPA remove the NGV incentives provided by Congress under the law, it failed to consider NGV technology development, the full impact of the shale revolution, or the growth of renewable natural gas (RNG) in its Technical Assessment Report on the regulations.

Natural gas is an abundant resource and is uniquely suited as a fuel for light trucks, which make up 64% of the passenger vehicle market and an even greater percentage of fuel use and pollution due to their lower fuel economy. EVs, on the other hand, are limited to lighter weight and luxury passenger cars. With automakers struggling to meet emissions standards, it is critical that EPA provide alternative compliance options, including incentivizing automakers to add NGVs to their product lines.

EPA can solve this urgent problem with a rulemaking to reform light-duty vehicle regulations for NGVs. With appropriate support, NGVs can deliver these much-needed benefits:

- **Game-Changing Lifecycle Emissions:** NGVs reduce greenhouse emissions by up to 25% with fossil natural gas and can achieve *negative* lifecycle emissions with RNG from landfills, dairy farms, and other sources. With 35% of NGV fueling coming from RNG already, these vehicles are clearly delivering game-changing emissions on par with EVs – and should be incentivized as such.
- **Alternative Fuel for Light Trucks:** EVs are an option for small cars, but battery cost and weight are prohibitive for electrifying larger vehicles like pickups and light trucks. By contrast, NGVs are a proven alternative for light trucks, with both OEM and conversion-certified pickup models as well as bi-fuel configurations that can run on gasoline (key for addressing "range anxiety" for early adopters).
- **Cleaning Up Older Vehicles:** While it's impossible to electrify existing vehicles, they *can* be converted to natural gas – as in states like Oklahoma and Utah that have encouraged thriving retrofit industries. Automaker support of NGVs will reduce retrofit costs and presents a unique opportunity to reduce emissions from the highly polluting used vehicle fleet and expand the benefits of the rules.
- **Economic Benefits:** In addition to the environmental benefits of NGVs, they offer the opportunity to bolster economic growth in the automotive industry, the natural gas industry, and even the agriculture and waste industries, which can benefit from the production and sale of RNG fuel.

The fact that the considerable benefits of NGVs have been previously ignored by EPA is reason enough to convene a rulemaking as proposed by VNG last year in its Regulatory Reform comments, instead of waiting for the Mid-Term Evaluation. Another compelling reason to fast-track these reforms is to unlock a win-win compromise by expanding the portfolio of low-emission solutions for automakers beyond EVs.

- **Breaking Through the Logjam on Vehicle Rules:** Automakers need a reform of the rules because they currently have no cost-effective way to meet their emission targets for pickups and light trucks, which are essential to their economic health. Meanwhile, California policymakers are demanding that the targets remain, threatening years of legal uncertainty and a fractured regulatory landscape.

NGVs are the missing piece of the puzzle. The massive environmental benefits of RNG have already been acknowledged by the California Air Resources Board, and the potential of NGVs as a light truck alternative have already been demonstrated by automakers. By reforming regulations to recognize the benefits of NGVs (and harmonize with CAFE incentives in the process), EPA can provide automakers a cost-effective compliance option for light trucks. This would help the environment *and* the economy, through job creation, GDP growth, and trade deficit reduction.

For further info: Robert Atkinson, Chief Reg. Officer, VNG. rcatkinson@vng.co; 908-447-4201

VNG

ARIEL

NGVs, Light Trucks, & the Mid-Term Evaluation

Meeting with Environmental Protection Agency, 12/14/17

Robert Atkinson, VNG Chief Regulatory Officer
RCAtkinson@vng.co, 908-447-4201

Dec-17

VNG and Ariel – Who We Are

- VNG and Ariel are collaborating on this regulatory initiative
- Ariel is the largest manufacturer of reciprocating gas compressors in the world
- VNG builds CNG fueling for light- & medium-duty fleets at existing gasoline stations
  - High-visibility locations that are accessible, convenient, and consumer-friendly, with full service C-store retail amenities; major contrast to heavy-duty CNG private fleet depots, utility yards
  - Locations in Philadelphia, Houston, Dallas, and Milwaukee
  - Discussions with major light-duty fleet for fueling in California (operates ~4,000 NGVs in state)
- VNG has been a leading voice for light-duty NGVs, cited in original 2017-2025 rule

Expanding Compliance Options for Light Trucks

The Problem With Low Gasoline Prices

- As noted in TAR, market shift towards light trucks reduces aggregate emissions benefits of regulations, even if individual OEM targets adjust to compensate
- Battery cost and weight means no EV pickups for foreseeable future – the OEMs' most popular, profitable, and polluting vehicles

NGVs Could Be The Solution – With EPA Support

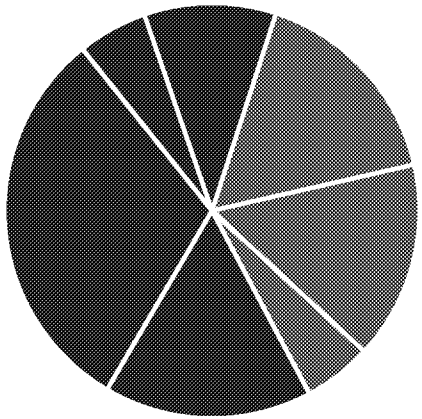
- NGVs have seen dramatic, game-changing reductions in lifecycle emissions since original rulemaking, thanks to major uptake of renewable natural gas (RNG)
- OEMs have already experimented with NGV pickups with limited production of Dodge Ram and Chevy Silverado bi-fuels, CNG-ready Ford F-150

With revised incentives that recognize rapid growth of RNG fueling, NGVs could be a key low-emission compliance pathway for light trucks for 2025 and beyond.

Shift To Light Trucks Eroding Benefits of Rules

YTD 2017 Sales

LIGHT TRUCKS
63% of YTD 2017 auto sales
+4.6% from YTD 2016



CARS
42% of YTD 2017 auto sales
-10.3% from YTD 2016

Source: Wall Street Journal

- Gasoline prices have plunged since rulemaking, shifting market to larger vehicles
- Not a current compliance problem for OEMs, since targets adjust to sales mix
- BUT shift will reduce aggregate emissions benefits of regulations
- Growing OEM concerns about limited compliance options for light trucks - and pickups especially

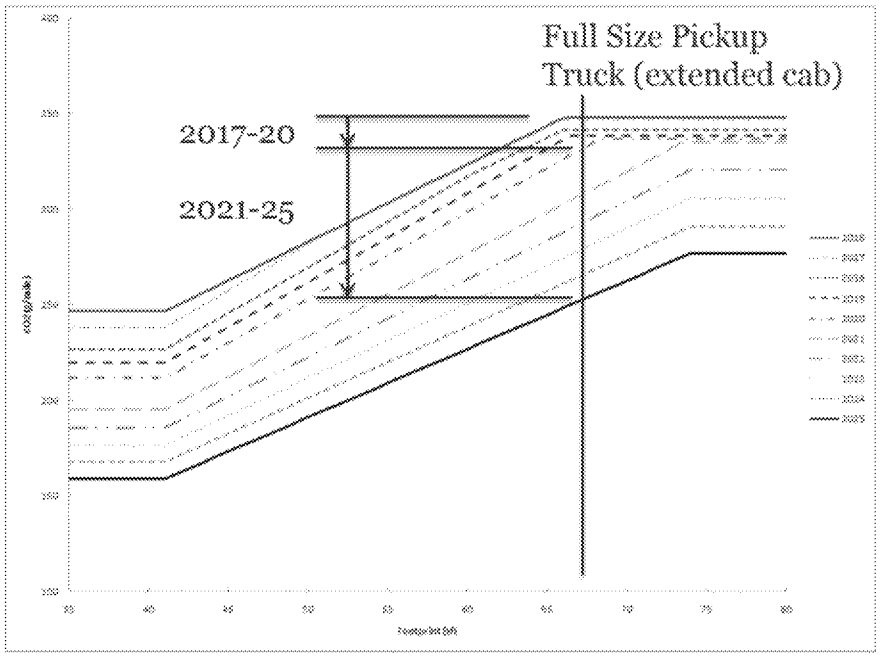
Emission Solutions for Pickups Most Urgently Needed

- Pickups are the top-selling vehicles, most profitable, and most polluting
- Pickups also face the most dramatic increase in CO2 emission requirements in 2021-2025 period – biggest challenge for automakers, few tech options

- No EV alternatives for foreseeable future (2025+) due to weight and utility requirements (2016 TAR)
- Natural gas (or natural gas-ready) versions of Chevy Silverado, Dodge Ram, and Ford F-150 have already been rolled out by OEMs

With support from EPA, NGVs could be best compliance pathway for automakers for light trucks for 2025 and beyond.

Figure I-4 CO2 (g/mile) Light-Truck Standard Curves



Source: Westport

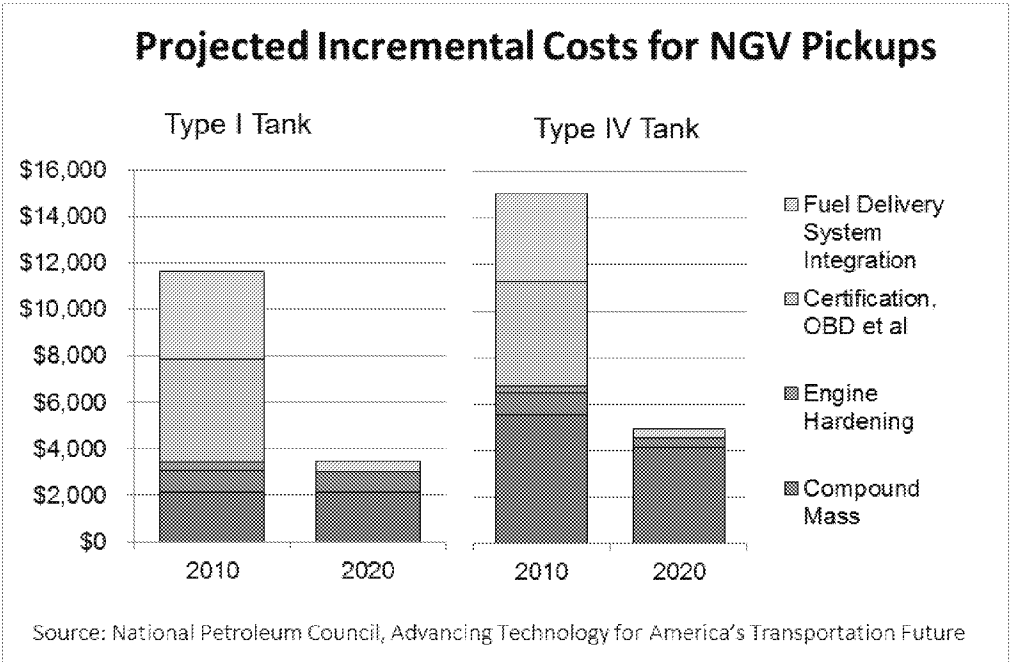
RNG: From 0% to 35% of NGV Fueling Since 2012

- **Original rulemaking:** *"Biomethane will remain a small part of the overall natural gas market for the foreseeable future"…*
- **Today:** Biomethane/RNG accounts for about 35% of national NGV fueling, 60% in California (Fleets & Fuels) – and growing as fast as RNG projects can come online
- **Why?** Regulations - and economics. RNG reclassified as cellulosic biofuel in 2014, RIN revenues of ~$23/MMBTU (UC Davis) make it more profitable than fossil.
  - —3x revenues from transportation vs electricity sales (CARB)
  - —California adds another $11+/MMBTU for LCFS sales (UC Davis)
- **Game-Changing Emissions:** Lowest carbon intensity of any fuel measured under California's Low Carbon Fuel Standard – **pathways up to -304 gCO2e/MJ** (CARB)

Economics of RFS and LCFS will ensure continued growth in RNG use for NGVs, and growth in NGV market will be primary driver of new RNG capture projects.

Major NGV Cost Reductions With Scale

- NGVs have far greater potential for rapid incremental cost reductions than EVs, as costs come from design/regulatory – not components (i.e. batteries)
- Fuel system integration + certification are >50% of NGV incremental costs (NPC)
- Fixed costs virtually eliminated overnight if spread over large number of vehicles
- Precedent in Europe (e.g. Italy), where OEM-produced NGVs retail for <$3,000 more than gasoline model (BCG)
- $3,000 is projected cost to lightweight pickup truck for 10% emissions improvement (TAR)
- NGVs offer comparable cost with much greater emission reduction



Advanced Tech for Ultra-Low NGV Pickup Emissions

- NGVs already commercial tech – but can be pushed much farther by taking advantage of high octane, clean-burning properties of gas
- Westport (Cummins JV partner) has proposed "Super Pickup Truck" NGV concept with >30% greater fuel economy, ultra-low NOx
- Advanced tank technologies (e.g. adsorption) another avenue of improvement
- Hybrid/Plug-In Hybrid pathway offers further potential emission reductions

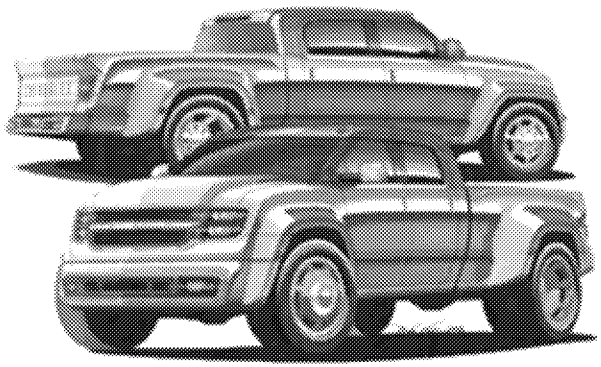
Advanced powertrains that fully exploit ultra high-octane low-carbon fuel properties of methane

a. Not been done to-date – missed opportunity

b. High efficiency and high performance at the same time, outperform gasoline and diesel

c. >30% CO2 reduction TTW

- Westport, "Methane: The Performance Fuel"

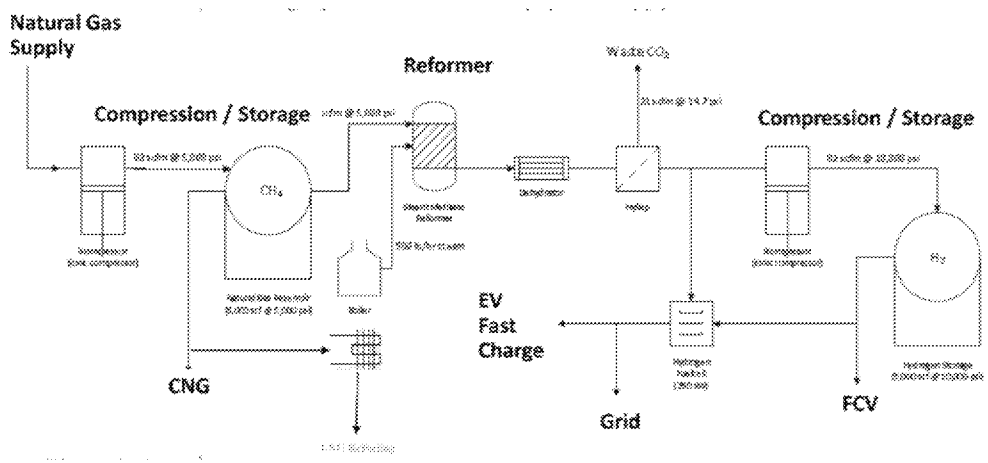


NGV Synergies With Hydrogen

- Vehicle synergy via gaseous fuel storage tech (e.g. adsorption tanks)
- CNG/H2 fueling can be combined, or else CNG stations can be transitioned to H2 at a later date due to shared components
- RNG is also fuel for ultra-low GHG H2 production – NGVs develop market for production infrastructure today for H2 fueling tomorrow

"Planning for the addition of H2 infrastructure at CNG fueling locations can facilitate the adoption of hydrogen at a later date and smooth the transition to near zero carbon technologies."

- **UC Davis STEPS Program**



Proposed Reforms to GHG Rules – 0.15 Divisor

Return to "0.15 divisor": Calculate CNG emissions as 0.15x gasoline emissions, as in the pre-MY 2016 GHG regulations

- Equivalent to 85% reduction, reflects game-changing lifecycle RNG emissions (some pathways achieve 100% or more)
- Analogous to EV 0 g/mi incentive that assumes 100% renewable electricity; instead, assumes 100% RNG use
  - *RNG use of 35% nationally and growing is equal to % of zero-carbon electricity (renewables + nuclear) in national mix*
- Like EV incentive, can be transitioned to real-world lifecycle emissions based on national RNG use (can use RFS data)
- Harmonizes with CAFE Petroleum Equivalency Factor (PEF)

A return to the 0.15 divisor could enable OEMs to achieve existing 2025 targets and establish NGVs as long-term compliance pathway for light trucks.

Proposed Reforms to GHG Rules – Dual-Fuel Design

Remove utility factor design requirements for dual-fuel NGVs: Eliminate need for 2:1 CNG-to-gasoline range ratio, use of gasoline only when CNG tank is empty

- Dual-fuel vehicles critical to building NGV market as fueling develops, like PHEVs
- Fastest, lowest-cost pathway is adding CNG tank to existing gasoline vehicle
- However dual-fuel NGVs face unique design requirements to receive utility factor, despite having much greater CNG range vs PHEV electric-only range
- Forces automakers to add cost (from shrinking and redesigning gasoline tank) and decrease total range and utility (from increased size of CNG tanks) if they want to receive full utility factor incentives
  - **Example:** FCA chose design simplicity over incentives with Dodge Ram dual-fuel, with 255 miles of CNG range and nearly 400 miles of gasoline range

These design requirements are as unnecessary for dual-fuel NGVs as for PHEVs, and will force OEMs to either limit consumer appeal or lose incentives.

Proposed Reforms to GHG Rules – Pickup Incentive

NGV Pickup Incentive: Create full-size pickup incentive equivalent to hybrid incentives for both dedicated and dual-fuel NGVs with **no** minimum penetration

- Cleaner technologies for pickups badly needed, but currently no projected use of existing full-size pickup advanced technology incentives (2016 TAR)
- NGVs are ideal next-gen pickup platform and could qualify for performance-based incentive (<15% emission reduction)…
- But 10% minimum penetration threshold too high for alternative fuel vehicles; too risky for OEMs to make big, immediate move in critical profit segment
- Removing threshold and awarding incentives for every NGV pickup would encourage OEMs to experiment, invest in new technology

NGV-specific incentive would surpass original goals of full-size pickup incentives by providing new platform for continuous, long-term efficiency improvements

Proposed Reforms to GHG Rules – Retrofits

Retrofit Credits: Create credits based on remaining useful life of converted vehicle: for instance, conversion of 5 year-old pickup would get credit for 50% emission reductions as a new vehicle; credits awarded to converter, can be sold to OEMs

- Vehicle life steadily increasing beyond 10 years, likely to continue growing as vehicle prices increase – how to avoid erosion of program benefits?
- NGV retrofits offer pathway to reduce emissions from vehicles significantly during their useful life – very successful in Utah, Oklahoma
- These emission benefits not currently captured in (or incentivized by) rules
- Synergies with EPA reforms to certification rules in 2011
- Could also add off-cycle credits for CNG-ready "prep packages" (e.g. Ford F-150)

Incorporating retrofits is an "outside the box" solution that would accelerate progress and honor EPA mandate to regulate emissions throughout useful life

Action On NGV Light Trucks is Major Opportunity

Incentivizing NGVs as part of GHG rules ensures continued progress on not only emission reductions but on vehicle and fuel technologies:

- Introduces low-emission options for pickups a decade or more in advance of EV technologies in this segment
- Shifts trajectory of potential emissions improvements for light truck segment, allowing more ambitious post-2025 targets
- Pathway to near-zero emissions and beyond with advanced ICE engines, RNG, and hydrogen synergies
- Drives market for RNG capture, realizing massive lifecycle emission reductions and cost-effective waste recovery that compliments broader EPA agenda

Robert Atkinson, VNG Chief Regulatory Officer
RCAtkinson@vng.co, 908-447-4201

VNG

Message

From: Atkinson, Emily [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=BB2155ADEF6A44AEA9410741F0C01D27-ATKINSON, EMILY]
Sent: 2/6/2018 2:25:26 PM
To: Lauren Wilk [lwilk@aluminum.org]
Subject: RE: Confirmed 3/2 at 3pm: Aluminum Association Meeting Request

Hi Lauren,

Yes, we could accommodate a group of 8 attending this meeting.

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Lauren Wilk [mailto:lwilk@aluminum.org]
Sent: Monday, February 05, 2018 2:52 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: Re: Confirmed 3/2 at 3pm: Aluminum Association Meeting Request

Thanks, Emily. I appreciate your help in getting this nailed down.

I would like to invite a few member company representatives to join, so I'm curious if there's a hard limit on number of attendees — would 6-8 (as a total group size) be workable?

Best,

Lauren

Lauren Wilk
The Aluminum Association
Office: (703) 358-2981

On Mon, Feb 5, 2018 at 2:38 PM -0500, "Atkinson, Emily" <Atkinson.Emily@epa.gov> wrote:

> Hi Lauren,
> You are confirmed for 45 minute meeting on Friday, March 2, 2018 at 3:00pm with Bill Wehrum.
> Directions and procedures to 1200 Pennsylvania Avenue NW:
>
> > Metro: If you come by Metro get off at the Federal Triangle metro stop. Exit the metro station and go up two sets of escalators to the surface level and turn right. You will see a short staircase and wheelchair ramp leading to a set of glass doors with the EPA logo - that is the William Jefferson Clinton Federal Building, North Entrance.

Taxi: Direct the taxi to drop you off on 12th Street NW, between Constitution and Pennsylvania Avenues, at the elevator for the Federal Triangle metro stop - this is almost exactly half way between the two avenues on 12th Street NW. Facing the building with the EPA logo and American flags, walk toward the building and take the glass door on your right hand side with the escalators going down to the metro on your left – that is the North Lobby of the William Jefferson Clinton building.

Security Procedures: A government issued photo id is required to enter the building and it is suggested you arrive 15 minutes early in order to be cleared and arrive at the meeting room on time. Upon entering the lobby, the meeting attendees will be asked to pass through security and provide a photo ID for entrance. Let the guards know that you were instructed to call 202-564-7404 for a security escort.

Please send me a list of participants in advance of the meeting and feel free to contact me should you need any additional information.

Emily

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Lauren Wilk [mailto:lwilk@aluminum.org]
Sent: Monday, February 05, 2018 12:56 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: RE: Aluminum Association Meeting Request

Thanks, Emily. We'll take the meeting on March 2 at 3pm, and I'll firm up attendees on our end.

Let me know what details you need in advance of the meeting.

Much appreciated!

Lauren

The Aluminum Association
Lauren Wilk
Vice President, Policy & International Trade
The Aluminum Association
1400 Crystal Drive, Suite 430
Arlington, VA 22202
T 703.358.2981 | [redacted] | F 703.358.2961
JOIN THE CONVERSATION:

From: Atkinson, Emily [mailto:Atkinson.Emily@epa.gov]
Sent: Monday, February 05, 2018 12:48 PM
To: Lauren Wilk <lwilk@aluminum.org>
Subject: RE: Aluminum Association Meeting Request

Hi Lauren,

It looks like Bill Wehrum could be available for a 45 minute meeting on Friday, March 2, 2018 at 3:00pm.

Please advise if this could work on your end.

Emily

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Lauren Wilk [mailto:lwilk@aluminum.org]
Sent: Thursday, February 01, 2018 12:06 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>; Lewis, Josh <Lewis.Josh@epa.gov>
Subject: Aluminum Association Meeting Request

Emily and Josh –

Will Lovett suggested I connect with you on scheduling a meeting with Assistant Administrator Wehrum for a few representatives of the aluminum industry. We have availability on the following dates: February 16, 20, 21, 23, 26, 27, 28 or March 1 (but we can certainly be flexible if an alternative date is necessary).

The Aluminum Association is active with EPA on a number of issues – and specifically, the members of our Aluminum Transportation Group (ATG) would very much like to hear directly from Mr. Wehrum about the Administration's priorities related to automotive GHG emissions and fuel economy regulations. The ATG represents the Association's member companies that produce aluminum for use in cars and trucks, including Alcoa, Arconic, Novelis, Rio Tinto and others.

The aluminum industry plays a significant role in the automotive supply chain, and the pounds of aluminum content per vehicle has grown by more than 30 percent over the past decade. Driven by that auto sector growth, the aluminum industry has announced or completed U.S. plant expansions and investments of more than $2.6 billion since 2013. Already this year, Novelis announced that it was investing $300 million in a new greenfield automotive finishing facility in Guthrie, Kentucky. The industry is acutely interested in the outcome of the midterm review on vehicle fuel economy, and we have met previously with the White House, OMB, NHTSA, CARB and others on this topic.

I'd be happy to answer any questions or provide additional background, if that's helpful.

Thanks so much,

Lauren

The Aluminum Association
Lauren Wilk
Vice President, Policy & International Trade

The Aluminum Association
1400 Crystal Drive, Suite 430
Arlington, VA 22202
T 703.358.2981 | [redacted] | F 703.358.2961
JOIN THE CONVERSATION:

Appointment

From: Atkinson, Emily [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=BB2155ADEF6A44AEA9410741F0C01D27-ATKINSON, EMILY]
Sent: 1/23/2018 2:53:15 PM
To: Grundler, Christopher [grundler.christopher@epa.gov]; Hengst, Benjamin [Hengst.Benjamin@epa.gov]; Burch, Julia [Burch.Julia@epa.gov]; Charmley, William [charmley.william@epa.gov]; Moran, Robin [moran.robin@epa.gov]; Olechiw, Michael [olechiw.michael@epa.gov]; Simon, Karl [Simon.Karl@epa.gov]
CC: Alson, Jeff [alson.jeff@epa.gov]

Subject: Meet with Toyota re: MidTerm Review (MTR) for autos/light duty trucks (Confirmed)
Attachments: RE: Meeting Requests for Toyota ; FW: Meeting Requests for Toyota from S. Fotis; Confirmed 12/15 at 3pm: Meeting Requests for Toyota from S. Fotis; Confirmed 1/23/18 at 10am: Meeting with USEPA's Bill Wehrum and Toyota from S. Fotis; RE: Rescheduling Meeting with USEPA's Bill Wehrum and Toyota from S. Fotis
Location: WJC-N 5400 + Video with AA [redacted]

Start: 1/23/2018 4:00:00 PM
End: 1/23/2018 4:45:00 PM
Show Time As: Tentative

To: Bill Wehrum, Chris Grundler, Ben Hengst, Julia Burch, Bill Charmley, Robin Moran, Mike Olechiw and Karl Simon
Outside Attendees (in person):

- Tom Stricker, Vice President, Technical and Regulatory Affairs, Toyota
- Fred Turatti, General Manager, Toyota Motor North America
- Rick Gezelle, Manager, Technical and Regulatory Affairs
- Andrea Campbell, Van Ness Feldman, legal counsel for Toyota

RE: Meeting Requests for Toy... | FW: Meeting Requests for Toy... | Confirmed 12/15 at 3pm: Meeting Re... | Confirmed 1/23/18 at 10am: Meetin... | RE: Rescheduling Meeting with US...

Message

From: Atkinson, Emily [Atkinson.Emily@epa.gov]
Sent: 12/11/2017 8:26:45 PM
To: Stephen Fotis [scf@vnf.com]
CC: Loving, Shanita [Loving.Shanita@epa.gov]; Lewis, Josh [Lewis.Josh@epa.gov]
Subject: Confirmed 1/23/18 at 10am: Meeting with USEPA's Bill Wehrum and Toyota from S. Fotis

Hi Stephen,

You are confirmed for a 45 minute in person meeting on Tuesday, January 23, 2018 at 10:00am EDT with Bill Wehrum.
Directions and procedures to 1200 Pennsylvania Avenue NW:

Metro: If you come by Metro get off at the Federal Triangle metro stop. Exit the metro station and go up two sets of escalators to the surface level and turn right. You will see a short staircase and wheelchair ramp leading to a set of glass doors with the EPA logo - that is the William Jefferson Clinton Federal Building, North Entrance.

Taxi: Direct the taxi to drop you off on 12th Street NW, between Constitution and Pennsylvania Avenues, at the elevator for the Federal Triangle metro stop - this is almost exactly half way between the two avenues on 12th Street NW. Facing the building with the EPA logo and American flags, walk toward the building and take the glass door on your right hand side with the escalators going down to the metro on your left – that is the North Lobby of the William Jefferson Clinton building.

Security Procedures: A government issued photo id is required to enter the building and it is suggested you arrive 15 minutes early in order to be cleared and arrive at the meeting room on time. Upon entering the lobby, the meeting attendees will be asked to pass through security and provide a photo ID for entrance. Let the guards know that you were instructed to call 202-564-7404 for a security escort.
Please send me a list of participants in advance of the meeting and feel free to contact me should you need any additional information.

Emily

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Stephen Fotis [mailto:scf@vnf.com]
Sent: Monday, December 11, 2017 3:22 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Cc: Loving, Shanita <Loving.Shanita@epa.gov>; Lewis, Josh <Lewis.Josh@epa.gov>
Subject: RE: Rescheduling Meeting with USEPA's Bill Wehrum and Toyota from S. Fotis

Emily – I would like to confirm January 23, 2018 at 10:00am EDT for the Toyota meeting with Bill. I will shortly provide you with the names of individuals who will be participating in the meeting on behalf of Toyota.
Many thanks for your assistance!

Stephen

Stephen Fotis
Partner
Van Ness Feldman LLP
scf@vnf.com
(202) 298-1908

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From: Atkinson, Emily [mailto:Atkinson.Emily@epa.gov]
Sent: Monday, December 11, 2017 3:00 PM
To: Stephen Fotis
Cc: Loving, Shanita; Lewis, Josh
Subject: RE: Rescheduling Meeting with USEPA's Bill Wehrum and Toyota from S. Fotis

Hi Stephen,

Yes, Josh Lewis and I have coordinated on this to review scheduling options and January 23, 2018 at 10:00am EDT is the first available time to slot this meeting in for Bill Wehrum.

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Stephen Fotis [mailto:scf@vnf.com]
Sent: Monday, December 11, 2017 2:48 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Cc: Loving, Shanita <Loving.Shanita@epa.gov>; Lewis, Josh <Lewis.Josh@epa.gov>
Subject: RE: Rescheduling Meeting with USEPA's Bill Wehrum and Toyota from S. Fotis

Thanks Emily. In my conversations with Josh earlier today, we were talking about trying to schedule a Toyota meeting with Bill in early January, either at the end of the first week of January (January 4 or 5) or the following week (January 8-12). Before we schedule a meeting for the January 23, I want to confirm that there is no chance of scheduling a meeting during either of these two weeks.
Best,
Stephen

Stephen Fotis
Partner
Van Ness Feldman LLP
scf@vnf.com
(202) 298-1908

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From: Atkinson, Emily [mailto:Atkinson.Emily@epa.gov]
Sent: Monday, December 11, 2017 2:39 PM
To: Stephen Fotis
Cc: Loving, Shanita; Lewis, Josh
Subject: Rescheduling Meeting with USEPA's Bill Wehrum and Toyota from S. Fotis

Hi Stephen,

It looks like the earliest date we could fit this in is for 45 minutes on Tuesday, January 23, 2018 at 10:00am EDT.

Please advise if this could work on your end.

Emily

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Stephen Fotis [mailto:scf@vnf.com]
Sent: Friday, December 08, 2017 5:22 PM
To: Lewis, Josh <Lewis.Josh@epa.gov>
Cc: Atkinson, Emily <Atkinson.Emily@epa.gov>; Loving, Shanita <Loving.Shanita@epa.gov>
Subject: RE: Confirmed 12/15 at 3pm: Meeting Requests for Toyota from S. Fotis

Thanks Josh for your email. I totally understand and very much appreciate your efforts to meet with Toyota. Please let me check with the client and will get back to you on Monday. Have a great weekend.
Best,
Stephen

Stephen Fotis
Partner
Van Ness Feldman LLP
scf@vnf.com
(202) 298-1908

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From: Lewis, Josh [mailto:Lewis.Josh@epa.gov]
Sent: Friday, December 08, 2017 2:14 PM
To: Stephen Fotis
Cc: Atkinson, Emily; Loving, Shanita
Subject: FW: Confirmed 12/15 at 3pm: Meeting Requests for Toyota from S. Fotis

Hi Stephen,

Bill now will be out of the office next Friday for work travel. We could keep the meeting for Friday (EPA participants would include a combination of the political team – Mandy Gunasekara/David Harlow/maybe others – along with career folks from OTAQ); or, if you want to reschedule with Bill, we'd be looking to early January to schedule. What is your preference?

Josh Lewis
Chief of Staff
EPA/Office of Air and Radiation
Office: 202 564 2095
[redacted]

From: Atkinson, Emily
Sent: Thursday, November 30, 2017 4:36 PM
To: Stephen Fotis <scf@vnf.com>
Cc: Loving, Shanita <Loving.Shanita@epa.gov>
Subject: Confirmed 12/15 at 3pm: Meeting Requests for Toyota from S. Fotis

Hi Stephen,

You are confirmed for a 45 minute in person meeting on Friday, December 15, 2017 at 3:00pm with Bill Wehrum.
Directions and procedures to 1200 Pennsylvania Avenue NW:

> Metro: If you come by Metro get off at the Federal Triangle metro stop. Exit the metro station and go up two sets of escalators to the surface level and turn right. You will see a short staircase and wheelchair ramp leading to a set of glass doors with the EPA logo - that is the William Jefferson Clinton Federal Building, North Entrance.
>
> Taxi: Direct the taxi to drop you off on 12th Street NW, between Constitution and Pennsylvania Avenues, at the elevator for the Federal Triangle metro stop - this is almost exactly half way between the two avenues on 12th Street NW. Facing the building with the EPA logo and American flags, walk toward the building and take the glass door on your right hand side with the escalators going down to the metro on your left – that is the North Lobby of the William Jefferson Clinton building.
>
> Security Procedures: A government issued photo id is required to enter the building and it is suggested you arrive 15 minutes early in order to be cleared and arrive at the meeting room on time. Upon entering the lobby, the meeting attendees will be asked to pass through security and provide a photo ID for entrance. Let the guards know that you were instructed to call 202-564-7404 for a security escort.

Please send me a list of participants in advance of the meeting and feel free to contact me should you need any additional information.

Emily

Emily Atkinson
Management Analyst/Office Manager

Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Stephen Fotis [mailto:scf@vnf.com]
Sent: Thursday, November 30, 2017 4:27 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Cc: Loving, Shanita <Loving.Shanita@epa.gov>
Subject: RE: Meeting Requests for Toyota from S. Fotis

Emily - Friday, December 15, 2017 at 3:00 PM works for Toyota. I will get back to you shortly with the names and titles of those individuals who will be attending the meeting with Bill on behalf of Toyota.
Again, many thanks for all of your assistance here.
Have a great rest of the day.
Best,
Stephen

Stephen Fotis
Partner
Van Ness Feldman LLP
scf@vnf.com
(202) 298-1908

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From: Atkinson, Emily [mailto:Atkinson.Emily@epa.gov]
Sent: Thursday, November 30, 2017 3:43 PM
To: Stephen Fotis
Cc: Loving, Shanita
Subject: FW: Meeting Requests for Toyota from S. Fotis

Hi Stephen,

It looks like Bill Wehrum could be available for a 45 minute in person meeting on Friday, December 15, 2017 at 3:00pm with Toyota.

Please advise if this could work on your end.

Thank you.
Emily

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW

Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Stephen Fotis [mailto:scf@vnf.com]
Sent: Wednesday, November 29, 2017 12:37 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: RE: Meeting Requests for Toyota and Shell

Thank you Emily for your assistance.
Best,
Stephen

Stephen Fotis
Partner
Van Ness Feldman LLP
scf@vnf.com
(202) 298-1908

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From: Atkinson, Emily [mailto:Atkinson.Emily@epa.gov]
Sent: Wednesday, November 29, 2017 11:51 AM
To: Stephen Fotis
Subject: RE: Meeting Requests for Toyota and Shell

Hi Stephen,

We are reviewing scheduling options now and will get back to you shortly.

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Stephen Fotis [mailto:scf@vnf.com]
Sent: Tuesday, November 28, 2017 5:32 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: RE: Meeting Requests for Toyota and Shell

Hi Emily – As suggested by Bill in his email below, I am following up with you regarding the scheduling of two separate meetings with Bill – one with Toyota on the Mid Term Review (MTR) for autos/light duty trucks, and the other with Shell on the OOOOa NSPS reconsideration rulemaking. Could you please advise me as to possible times that we might schedule these meetings? If possible, I'd like to try to schedule meetings for later this December before the holidays. Many thanks for your assistance.

Stephen

Stephen Fotis
Partner
Van Ness Feldman LLP
scf@vnf.com
(202) 298-1908

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From: Wehrum, Bill [mailto:Wehrum.Bill@epa.gov]
Sent: Monday, November 27, 2017 12:29 PM
To: Stephen Fotis
Cc: Atkinson, Emily
Subject: RE: Meeting Requests for Toyota and Shell

Thanks Stephen. I'm copying Emily Atkinson. She can work with you to find times.

From: Stephen Fotis [mailto:scf@vnf.com]
Sent: Monday, November 27, 2017 11:29 AM
To: Wehrum, Bill <Wehrum.Bill@epa.gov>; Wehrum, Bill <Wehrum.Bill@epa.gov>
Subject: Meeting Requests for Toyota and Shell

Bill – I hope that you had a good Thanksgiving and had some time to relax. As a follow-up to our discussions of last week, both Toyota and Shell are happy to accommodate your request and delay their meetings until later this December or early January. However, I would like to see if we can schedule the meeting time for each now given that your calendar will no doubt be filling up quickly and the issues both want to raise are time sensitive.
Would it be appropriate for me to follow-up with Shanita or someone else on scheduling meeting dates?
Best,
Stephen

Stephen Fotis
Partner
Van Ness Feldman LLP
scf@vnf.com
(202) 298-1908

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From: Stephen Fotis
Sent: Wednesday, November 22, 2017 2:46 PM
To: wehrum.bill@epa.gov; wehrum.william@epa.gov
Subject: Follow-up to Your Message on Meeting Requests

Bill – Many thanks for your call last night regarding my two meeting requests. I am now checking with the client in each case but will most likely not be getting back to you with answer until after the Thanksgiving holiday. However, I would

be very surprised if there is anything compelling or urgent that would require scheduling either one of the meetings over the next few weeks.
Have a great Thanksgiving and I will be getting back to you next week.
Best,
Stephen

Stephen Fotis
Partner
Van Ness Feldman LLP
scf@vnf.com
(202) 298-1908

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Message

From: Atkinson, Emily [Atkinson.Emily@epa.gov]
Sent: 11/30/2017 9:35:51 PM
To: Stephen Fotis [scf@vnf.com]
CC: Loving, Shanita [Loving.Shanita@epa.gov]
Subject: Confirmed 12/15 at 3pm: Meeting Requests for Toyota from S. Fotis

Hi Stephen,

You are confirmed for a 45 minute in person meeting on Friday, December 15, 2017 at 3:00pm with Bill Wehrum.
Directions and procedures to 1200 Pennsylvania Avenue NW:

Metro: If you come by Metro get off at the Federal Triangle metro stop. Exit the metro station and go up two sets of escalators to the surface level and turn right. You will see a short staircase and wheelchair ramp leading to a set of glass doors with the EPA logo - that is the William Jefferson Clinton Federal Building, North Entrance.

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Please send me a list of participants in advance of the meeting and feel free to contact me should you need any additional information.

Emily

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Stephen Fotis [mailto:scf@vnf.com]
Sent: Thursday, November 30, 2017 4:27 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Cc: Loving, Shanita <Loving.Shanita@epa.gov>
Subject: RE: Meeting Requests for Toyota from S. Fotis

Emily - Friday, December 15, 2017 at 3:00 PM works for Toyota. I will get back to you shortly with the names and titles of those individuals who will be attending the meeting with Bill on behalf of Toyota.
Again, many thanks for all of your assistance here.

Have a great rest of the day.
Best,
Stephen

Stephen Fotis
Partner
Van Ness Feldman LLP
scf@vnf.com
(202) 298-1908

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From: Atkinson, Emily [mailto:Atkinson.Emily@epa.gov]
Sent: Thursday, November 30, 2017 3:43 PM
To: Stephen Fotis
Cc: Loving, Shanita
Subject: FW: Meeting Requests for Toyota from S. Fotis

Hi Stephen,

It looks like Bill Wehrum could be available for a 45 minute in person meeting on Friday, December 15, 2017 at 3:00pm with Toyota.

Please advise if this could work on your end.

Thank you.
Emily

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Stephen Fotis [mailto:scf@vnf.com]
Sent: Wednesday, November 29, 2017 12:37 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: RE: Meeting Requests for Toyota and Shell

Thank you Emily for your assistance.
Best,
Stephen

Stephen Fotis
Partner
Van Ness Feldman LLP

scf@vnf.com
(202) 298-1908

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From: Atkinson, Emily [mailto:Atkinson.Emily@epa.gov]
Sent: Wednesday, November 29, 2017 11:51 AM
To: Stephen Fotis
Subject: RE: Meeting Requests for Toyota and Shell

Hi Stephen,

We are reviewing scheduling options now and will get back to you shortly.

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Stephen Fotis [mailto:scf@vnf.com]
Sent: Tuesday, November 28, 2017 5:32 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: RE: Meeting Requests for Toyota and Shell

Hi Emily – As suggested by Bill in his email below, I am following up with you regarding the scheduling of two separate meetings with Bill – one with Toyota on the Mid Term Review (MTR) for autos/light duty trucks, and the other with Shell on the OOOOa NSPS reconsideration rulemaking. Could you please advise me as to possible times that we might schedule these meetings? If possible, I'd like to try to schedule meetings for later this December before the holidays. Many thanks for your assistance.
Stephen

Stephen Fotis
Partner
Van Ness Feldman LLP
scf@vnf.com
(202) 298-1908

This communication may contain information and/or metadata that is legally privileged, confidential or exempt from disclosure. If you are not the intended recipient, please do not read or review the content and/or metadata and do not disseminate, distribute or copy this communication. Anyone who receives this message in error should notify the sender immediately by telephone (202-298-1800) or by return e-mail and delete it from his or her computer.

From: Wehrum, Bill [mailto:Wehrum.Bill@epa.gov]
Sent: Monday, November 27, 2017 12:29 PM
To: Stephen Fotis

Cc: Atkinson, Emily
Subject: RE: Meeting Requests for Toyota and Shell

Thanks Stephen. I'm copying Emily Atkinson. She can work with you to find times.

From: Stephen Fotis [mailto:scf@vnf.com]
Sent: Monday, November 27, 2017 11:29 AM
To: Wehrum, Bill <Wehrum.Bill@epa.gov>; Wehrum, Bill <Wehrum.Bill@epa.gov>
Subject: Meeting Requests for Toyota and Shell

Bill – I hope that you had a good Thanksgiving and had some time to relax. As a follow-up to our discussions of last week, both Toyota and Shell are happy to accommodate your request and delay their meetings until later this December or early January. However, I would like to see if we can schedule the meeting time for each now given that your calendar will no doubt be filling up quickly and the issues both want to raise are time sensitive.
Would it be appropriate for me to follow-up with Shanita or someone else on scheduling meeting dates?
Best,
Stephen

Stephen Fotis
Partner
Van Ness Feldman LLP
scf@vnf.com
(202) 298-1908

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From: Stephen Fotis
Sent: Wednesday, November 22, 2017 2:46 PM
To: wehrum.bill@epa.gov; wehrum.william@epa.gov
Subject: Follow-up to Your Message on Meeting Requests

Bill – Many thanks for your call last night regarding my two meeting requests. I am now checking with the client in each case but will most likely not be getting back to you with answer until after the Thanksgiving holiday. However, I would be very surprised if there is anything compelling or urgent that would require scheduling either one of the meetings over the next few weeks.
Have a great Thanksgiving and I will be getting back to you next week.
Best,
Stephen

Stephen Fotis
Partner
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scf@vnf.com
(202) 298-1908

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Message

From: Atkinson, Emily [Atkinson.Emily@epa.gov]
Sent: 11/30/2017 8:42:58 PM
To: scf@vnf.com
CC: Loving, Shanita [Loving.Shanita@epa.gov]
Subject: FW: Meeting Requests for Toyota from S. Fotis

Hi Stephen,

It looks like Bill Wehrum could be available for a 45 minute in person meeting on Friday, December 15, 2017 at 3:00pm with Toyota.

Please advise if this could work on your end.

Thank you.
Emily

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Stephen Fotis [mailto:scf@vnf.com]
Sent: Wednesday, November 29, 2017 12:37 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: RE: Meeting Requests for Toyota and Shell

Thank you Emily for your assistance.
Best,
Stephen

Stephen Fotis
Partner
Van Ness Feldman LLP
scf@vnf.com
(202) 298-1908

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From: Atkinson, Emily [mailto:Atkinson.Emily@epa.gov]
Sent: Wednesday, November 29, 2017 11:51 AM
To: Stephen Fotis
Subject: RE: Meeting Requests for Toyota and Shell

Hi Stephen,

We are reviewing scheduling options now and will get back to you shortly.

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Stephen Fotis [mailto:scf@vnf.com]
Sent: Tuesday, November 28, 2017 5:32 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: RE: Meeting Requests for Toyota and Shell

Hi Emily – As suggested by Bill in his email below, I am following up with you regarding the scheduling of two separate meetings with Bill – one with Toyota on the Mid Term Review (MTR) for autos/light duty trucks, and the other with Shell on the OOOOa NSPS reconsideration rulemaking. Could you please advise me as to possible times that we might schedule these meetings? If possible, I'd like to try to schedule meetings for later this December before the holidays. Many thanks for your assistance.
Stephen

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From: Wehrum, Bill [mailto:Wehrum.Bill@epa.gov]
Sent: Monday, November 27, 2017 12:29 PM
To: Stephen Fotis
Cc: Atkinson, Emily
Subject: RE: Meeting Requests for Toyota and Shell

Thanks Stephen. I'm copying Emily Atkinson. She can work with you to find times.

From: Stephen Fotis [mailto:scf@vnf.com]
Sent: Monday, November 27, 2017 11:29 AM
To: Wehrum, Bill <Wehrum.Bill@epa.gov>; Wehrum, Bill <Wehrum.Bill@epa.gov>
Subject: Meeting Requests for Toyota and Shell

Bill – I hope that you had a good Thanksgiving and had some time to relax. As a follow-up to our discussions of last week, both Toyota and Shell are happy to accommodate your request and delay their meetings until later this December

or early January. However, I would like to see if we can schedule the meeting time for each now given that your calendar will no doubt be filling up quickly and the issues both want to raise are time sensitive.
Would it be appropriate for me to follow-up with Shanita or someone else on scheduling meeting dates?
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From: Stephen Fotis
Sent: Wednesday, November 22, 2017 2:46 PM
To: wehrum.bill@epa.gov; wehrum.william@epa.gov
Subject: Follow-up to Your Message on Meeting Requests

Bill – Many thanks for your call last night regarding my two meeting requests. I am now checking with the client in each case but will most likely not be getting back to you with answer until after the Thanksgiving holiday. However, I would be very surprised if there is anything compelling or urgent that would require scheduling either one of the meetings over the next few weeks.
Have a great Thanksgiving and I will be getting back to you next week.
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Message

From: Hengst, Benjamin [Hengst.Benjamin@epa.gov]
Sent: 11/30/2017 8:32:26 PM
To: Atkinson, Emily [Atkinson.Emily@epa.gov]
CC: Burch, Julia [Burch.Julia@epa.gov]
Subject: RE: Meeting Requests for Toyota

Yes, working on that now. I need to hear from some folks on whether a pre-brief is needed.

For now, you can add the following people. I may ask that you add more later.

Chris G
Ben H
Julia Burch
Bill Charmley

From: Atkinson, Emily
Sent: Thursday, November 30, 2017 3:17 PM
To: Hengst, Benjamin <Hengst.Benjamin@epa.gov>
Cc: Burch, Julia <Burch.Julia@epa.gov>
Subject: RE: Meeting Requests for Toyota

Thanks – let us know who to include in the Toyota meeting and if you all think Bill needs a prep meeting.

From: Hengst, Benjamin
Sent: Thursday, November 30, 2017 11:36 AM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Cc: Burch, Julia <Burch.Julia@epa.gov>
Subject: RE: Meeting Requests for Toyota and Shell

Working on this one (Toyota). CC'ing Julia as she helps me staff the LD issues.

Thanks
Ben

From: Atkinson, Emily
Sent: Thursday, November 30, 2017 11:28 AM
To: Hengst, Benjamin <Hengst.Benjamin@epa.gov>; Krieger, Jackie <Krieger.Jackie@epa.gov>; Koerber, Mike <Koerber.Mike@epa.gov>
Cc: Loving, Shanita <Loving.Shanita@epa.gov>; Lewis, Josh <Lewis.Josh@epa.gov>
Subject: FW: Meeting Requests for Toyota and Shell

Hi Ben, Jackie and Mike,

Bill has reviewed this request and agreed we will set up the two one hour meetings, as outlined below. Please advise if anyone from OAP, OAQPS, OGC and OTAQ should be included and whether or not a prep meeting is needed.

(1) Toyota on the Mid Term Review (MTR) for autos/light duty trucks
Prep – Y/N
OAP:
OAQPS:
OTAQ:

(2) Shell on the OOOOa NSPS reconsideration rulemaking
Prep – Y/N
OAP:
OAQPS:
OTAQ:

And for completeness, a note to the IO staff that Bill clarified these meeting do not require us to advise the requestor to bring four other groups in with them as we advise when the meeting is with former clients of Bill's.

I will wait to hear from you all before getting back to the requestor.

Thank you.
Emily

From: Stephen Fotis [mailto:scf@vnf.com]
Sent: Wednesday, November 29, 2017 12:37 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: RE: Meeting Requests for Toyota and Shell

Thank you Emily for your assistance.
Best,
Stephen

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From: Atkinson, Emily [mailto:Atkinson.Emily@epa.gov]
Sent: Wednesday, November 29, 2017 11:51 AM
To: Stephen Fotis
Subject: RE: Meeting Requests for Toyota and Shell

Hi Stephen,

We are reviewing scheduling options now and will get back to you shortly.

Emily Atkinson
Management Analyst/Office Manager

Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Stephen Fotis [mailto:scf@vnf.com]
Sent: Tuesday, November 28, 2017 5:32 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: RE: Meeting Requests for Toyota and Shell

Hi Emily – As suggested by Bill in his email below, I am following up with you regarding the scheduling of two separate meetings with Bill – one with Toyota on the Mid Term Review (MTR) for autos/light duty trucks, and the other with Shell on the OOOOa NSPS reconsideration rulemaking. Could you please advise me as to possible times that we might schedule these meetings? If possible, I'd like to try to schedule meetings for later this December before the holidays. Many thanks for your assistance.
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From: Wehrum, Bill [mailto:Wehrum.Bill@epa.gov]
Sent: Monday, November 27, 2017 12:29 PM
To: Stephen Fotis
Cc: Atkinson, Emily
Subject: RE: Meeting Requests for Toyota and Shell

Thanks Stephen. I'm copying Emily Atkinson. She can work with you to find times.

From: Stephen Fotis [mailto:scf@vnf.com]
Sent: Monday, November 27, 2017 11:29 AM
To: Wehrum, Bill <Wehrum.Bill@epa.gov>; Wehrum, Bill <Wehrum.Bill@epa.gov>
Subject: Meeting Requests for Toyota and Shell

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Would it be appropriate for me to follow-up with Shanita or someone else on scheduling meeting dates?
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Stephen

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From: Stephen Fotis
Sent: Wednesday, November 22, 2017 2:46 PM
To: wehrum.bill@epa.gov; wehrum.william@epa.gov
Subject: Follow-up to Your Message on Meeting Requests

Bill – Many thanks for your call last night regarding my two meeting requests. I am now checking with the client in each case but will most likely not be getting back to you with answer until after the Thanksgiving holiday. However, I would be very surprised if there is anything compelling or urgent that would require scheduling either one of the meetings over the next few weeks.
Have a great Thanksgiving and I will be getting back to you next week.
Best,
Stephen

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Message

From: Stephen Fotis [scf@vnf.com]
Sent: 1/21/2018 11:33:25 PM
To: Atkinson, Emily [Atkinson.Emily@epa.gov]
CC: Loving, Shanita [Loving.Shanita@epa.gov]; Lewis, Josh [Lewis.Josh@epa.gov]
Subject: RE: Rescheduling Meeting with USEPA's Bill Wehrum and Toyota from S. Fotis

Hi Emily --
Below are names and titles of the individuals who will be attending the Toyota meeting with Bill Wehrum that is scheduled for Tuesday, January 23, 2018 at 10:00am EDT:
Tom Stricker, Vice President, Technical and Regulatory Affairs, Toyota
Fred Turatti, General Manager, Toyota Motor North America
Rick Gezelle, Manager, Technical and Regulatory Affairs
Andrea Campbell, Van Ness Feldman, legal counsel for Toyota
Please let me know if you have any questions, and many thanks for all of your assistance.
Best,
Stephen

From: Stephen Fotis
Sent: Monday, December 11, 2017 3:22 PM
To: 'Atkinson, Emily'
Cc: Loving, Shanita; Lewis, Josh
Subject: RE: Rescheduling Meeting with USEPA's Bill Wehrum and Toyota from S. Fotis

Emily -- I would like to confirm January 23, 2018 at 10:00am EDT for the Toyota meeting with Bill. I will shortly provide you with the names of individuals who will be participating in the meeting on behalf of Toyota.
Many thanks for your assistance!
Stephen

Stephen Fotis
Partner
Van Ness Feldman LLP
scf@vnf.com
(202) 298-1908

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From: Atkinson, Emily [mailto:Atkinson.Emily@epa.gov]
Sent: Monday, December 11, 2017 3:00 PM
To: Stephen Fotis
Cc: Loving, Shanita; Lewis, Josh
Subject: RE: Rescheduling Meeting with USEPA's Bill Wehrum and Toyota from S. Fotis

Hi Stephen,

Yes, Josh Lewis and I have coordinated on this to review scheduling options and January 23, 2018 at 10:00am EDT is the first available time to slot this meeting in for Bill Wehrum.

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Stephen Fotis [mailto:scf@vnf.com]
Sent: Monday, December 11, 2017 2:48 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Cc: Loving, Shanita <Loving.Shanita@epa.gov>; Lewis, Josh <Lewis.Josh@epa.gov>
Subject: RE: Rescheduling Meeting with USEPA's Bill Wehrum and Toyota from S. Fotis

Thanks Emily. In my conversations with Josh earlier today, we were talking about trying to schedule a Toyota meeting with Bill in early January, either at the end of the first week of January (January 4 or 5) or the following week (January 8-12). Before we schedule a meeting for the January 23, I want to confirm that there is no chance of scheduling a meeting during either of these two weeks.
Best,
Stephen

Stephen Fotis
Partner
Van Ness Feldman LLP
scf@vnf.com
(202) 298-1908

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From: Atkinson, Emily [mailto:Atkinson.Emily@epa.gov]
Sent: Monday, December 11, 2017 2:39 PM
To: Stephen Fotis
Cc: Loving, Shanita; Lewis, Josh
Subject: Rescheduling Meeting with USEPA's Bill Wehrum and Toyota from S. Fotis

Hi Stephen,

It looks like the earliest date we could fit this in is for 45 minutes on Tuesday, January 23, 2018 at 10:00am EDT.

Please advise if this could work on your end.

Emily

Emily Atkinson
Management Analyst/Office Manager

Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Stephen Fotis [mailto:scf@vnf.com]
Sent: Friday, December 08, 2017 5:22 PM
To: Lewis, Josh <Lewis.Josh@epa.gov>
Cc: Atkinson, Emily <Atkinson.Emily@epa.gov>; Loving, Shanita <Loving.Shanita@epa.gov>
Subject: RE: Confirmed 12/15 at 3pm: Meeting Requests for Toyota from S. Fotis

Thanks Josh for your email. I totally understand and very much appreciate your efforts to meet with Toyota. Please let me check with the client and will get back to you on Monday. Have a great weekend.
Best,
Stephen

Stephen Fotis
Partner
Van Ness Feldman LLP
scf@vnf.com
(202) 298-1908

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From: Lewis, Josh [mailto:Lewis.Josh@epa.gov]
Sent: Friday, December 08, 2017 2:14 PM
To: Stephen Fotis
Cc: Atkinson, Emily; Loving, Shanita
Subject: FW: Confirmed 12/15 at 3pm: Meeting Requests for Toyota from S. Fotis

Hi Stephen,

Bill now will be out of the office next Friday for work travel. We could keep the meeting for Friday (EPA participants would include a combination of the political team – Mandy Gunasekara/David Harlow/maybe others – along with career folks from OTAQ); or, if you want to reschedule with Bill, we'd be looking to early January to schedule. What is your preference?

Josh Lewis
Chief of Staff
EPA/Office of Air and Radiation
Office: 202 564 2095
[redacted]

From: Atkinson, Emily
Sent: Thursday, November 30, 2017 4:36 PM
To: Stephen Fotis <scf@vnf.com>
Cc: Loving, Shanita <Loving.Shanita@epa.gov>
Subject: Confirmed 12/15 at 3pm: Meeting Requests for Toyota from S. Fotis

Hi Stephen,

You are confirmed for a 45 minute in person meeting on Friday, December 15, 2017 at 3:00pm with Bill Wehrum.
Directions and procedures to 1200 Pennsylvania Avenue NW:

Metro: If you come by Metro get off at the Federal Triangle metro stop. Exit the metro station and go up two sets of escalators to the surface level and turn right. You will see a short staircase and wheelchair ramp leading to a set of glass doors with the EPA logo - that is the William Jefferson Clinton Federal Building, North Entrance.

Taxi: Direct the taxi to drop you off on 12th Street NW, between Constitution and Pennsylvania Avenues, at the elevator for the Federal Triangle metro stop - this is almost exactly half way between the two avenues on 12th Street NW. Facing the building with the EPA logo and American flags, walk toward the building and take the glass door on your right hand side with the escalators going down to the metro on your left – that is the North Lobby of the William Jefferson Clinton building.

Security Procedures: A government issued photo id is required to enter the building and it is suggested you arrive 15 minutes early in order to be cleared and arrive at the meeting room on time. Upon entering the lobby, the meeting attendees will be asked to pass through security and provide a photo ID for entrance. Let the guards know that you were instructed to call 202-564-7404 for a security escort.

Please send me a list of participants in advance of the meeting and feel free to contact me should you need any additional information.

Emily

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Stephen Fotis [mailto:scf@vnf.com]
Sent: Thursday, November 30, 2017 4:27 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Cc: Loving, Shanita <Loving.Shanita@epa.gov>
Subject: RE: Meeting Requests for Toyota from S. Fotis

Emily - Friday, December 15, 2017 at 3:00 PM works for Toyota. I will get back to you shortly with the names and titles of those individuals who will be attending the meeting with Bill on behalf of Toyota.
Again, many thanks for all of your assistance here.
Have a great rest of the day.
Best,
Stephen

Stephen Fotis
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From: Atkinson, Emily [mailto:Atkinson.Emily@epa.gov]
Sent: Thursday, November 30, 2017 3:43 PM
To: Stephen Fotis
Cc: Loving, Shanita
Subject: FW: Meeting Requests for Toyota from S. Fotis

Hi Stephen,

It looks like Bill Wehrum could be available for a 45 minute in person meeting on Friday, December 15, 2017 at 3:00pm with Toyota.

Please advise if this could work on your end.

Thank you.
Emily

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Stephen Fotis [mailto:scf@vnf.com]
Sent: Wednesday, November 29, 2017 12:37 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: RE: Meeting Requests for Toyota and Shell

Thank you Emily for your assistance.
Best,
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From: Atkinson, Emily [mailto:Atkinson.Emily@epa.gov]
Sent: Wednesday, November 29, 2017 11:51 AM
To: Stephen Fotis
Subject: RE: Meeting Requests for Toyota and Shell

Hi Stephen,

We are reviewing scheduling options now and will get back to you shortly.

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Stephen Fotis [mailto:scf@vnf.com]
Sent: Tuesday, November 28, 2017 5:32 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: RE: Meeting Requests for Toyota and Shell

Hi Emily – As suggested by Bill in his email below, I am following up with you regarding the scheduling of two separate meetings with Bill – one with Toyota on the Mid Term Review (MTR) for autos/light duty trucks, and the other with Shell on the OOOOa NSPS reconsideration rulemaking. Could you please advise me as to possible times that we might schedule these meetings? If possible, I'd like to try to schedule meetings for later this December before the holidays. Many thanks for your assistance.
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Sent: Monday, November 27, 2017 12:29 PM
To: Stephen Fotis
Cc: Atkinson, Emily
Subject: RE: Meeting Requests for Toyota and Shell

Thanks Stephen. I'm copying Emily Atkinson. She can work with you to find times.

From: Stephen Fotis [mailto:scf@vnf.com]
Sent: Monday, November 27, 2017 11:29 AM

To: Wehrum, Bill <Wehrum.Bill@epa.gov>; Wehrum, Bill <Wehrum.Bill@epa.gov>
Subject: Meeting Requests for Toyota and Shell

Bill – I hope that you had a good Thanksgiving and had some time to relax. As a follow-up to our discussions of last week, both Toyota and Shell are happy to accommodate your request and delay their meetings until later this December or early January. However, I would like to see if we can schedule the meeting time for each now given that your calendar will no doubt be filling up quickly and the issues both want to raise are time sensitive.
Would it be appropriate for me to follow-up with Shanita or someone else on scheduling meeting dates?
Best,
Stephen

Stephen Fotis
Partner
Van Ness Feldman LLP
scf@vnf.com
(202) 298-1908

This communication may contain information and/or metadata that is legally privileged, confidential or exempt from disclosure. If you are not the intended recipient, please do not read or review the content and/or metadata and do not disseminate, distribute or copy this communication. Anyone who receives this message in error should notify the sender immediately by telephone (202-298-1800) or by return e-mail and delete it from his or her computer.

From: Stephen Fotis
Sent: Wednesday, November 22, 2017 2:46 PM
To: wehrum.bill@epa.gov; wehrum.william@epa.gov
Subject: Follow-up to Your Message on Meeting Requests

Bill – Many thanks for your call last night regarding my two meeting requests. I am now checking with the client in each case but will most likely not be getting back to you with answer until after the Thanksgiving holiday. However, I would be very surprised if there is anything compelling or urgent that would require scheduling either one of the meetings over the next few weeks.
Have a great Thanksgiving and I will be getting back to you next week.
Best,
Stephen

Stephen Fotis
Partner
Van Ness Feldman LLP
scf@vnf.com
(202) 298-1908

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Appointment

From: Atkinson, Emily [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=BB2155ADEF6A44AEA9410741F0C01D27-ATKINSON, EMILY]
Sent: 12/13/2017 2:05:22 PM
To: Gunasekara, Mandy [Gunasekara.Mandy@epa.gov]; Harlow, David [harlow.david@epa.gov]; Dominguez, Alexander [dominguez.alexander@epa.gov]; Hengst, Benjamin [Hengst.Benjamin@epa.gov]; Sutton, Tia [sutton.tia@epa.gov]; Grundler, Christopher [grundler.christopher@epa.gov]; Charmley, William [charmley.william@epa.gov]; Moran, Robin [moran.robin@epa.gov]; Olechiw, Michael [olechiw.michael@epa.gov]; Woods, Clinton [woods.clinton@epa.gov]
BCC: DCRoomARN5415PolyPCTB/DC-ARN-OAR [DCRoomARN5415PolyPCTB@epa.gov]

Subject: Meet with National Coalition for Advanced Transportation (NCAT) (Confirmed)
Attachments: RE: Request for Meeting; Confirmed 12/13 at 4pm: Request for Meeting
Location: WJC-N 5415 + Video with [redacted]

Start: 12/13/2017 2:30:00 PM
End: 12/13/2017 3:15:00 PM
Show Time As: Tentative

To: Bill Wehrum, Mandy Gunasekara, David Harlow, Alex Dominguez, Ben Hengst, Tia Sutton, Chris Grundler, Bill Charmley, Robin Moran, and Mike Olechiw, Clint Woods
Outside Attendees (in person): TBD

Confirmed 12/13 at 4pm: Request for...

RE: Request for Meeting

Message

From: Atkinson, Emily [Atkinson.Emily@epa.gov]
Sent: 11/22/2017 1:49:21 PM
To: Robert.Wyman@LW.com
CC: Loving, Shanita [Loving.Shanita@epa.gov]
Subject: Confirmed 12/13 at 4pm: Request for Meeting

Hi Bob,

You are confirmed for a 45 minute in person meeting on Wednesday, December 13, 2017 at 4:00pm with Bill Wehrum.

Directions and procedures to 1200 Pennsylvania Avenue NW:

Metro: If you come by Metro get off at the Federal Triangle metro stop. Exit the metro station and go up two sets of escalators to the surface level and turn right. You will see a short staircase and wheelchair ramp leading to a set of glass doors with the EPA logo - that is the William Jefferson Clinton Federal Building, North Entrance.

Taxi: Direct the taxi to drop you off on 12th Street NW, between Constitution and Pennsylvania Avenues, at the elevator for the Federal Triangle metro stop - this is almost exactly half way between the two avenues on 12th Street NW. Facing the building with the EPA logo and American flags, walk toward the building and take the glass door on your right hand side with the escalators going down to the metro on your left – that is the North Lobby of the William Jefferson Clinton building.

Security Procedures: A government issued photo id is required to enter the building and it is suggested you arrive 15 minutes early in order to be cleared and arrive at the meeting room on time. Upon entering the lobby, the meeting attendees will be asked to pass through security and provide a photo ID for entrance. Let the guards know that you were instructed to call 202-564-7404 for a security escort.

Please send me a list of participants in advance of the meeting and feel free to contact me should you need any additional information.

Emily

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Acting Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

-----Original Message-----
From: ROBERT.WYMAN@lw.com [mailto:ROBERT.WYMAN@lw.com]
Sent: Tuesday, November 21, 2017 4:57 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Cc: Loving, Shanita <Loving.Shanita@epa.gov>
Subject: RE: Request for Meeting

Yes, definitely. Thank you.

From: Atkinson, Emily <Atkinson.Emily@epa.gov>
Sent: Tuesday, November 21, 2017 1:48:14 PM
To: Wyman, Robert (LA)
Cc: Loving, Shanita
Subject: RE: Request for Meeting

Hi Bob,

It looks like Bill Wehrum could be available for a 45 minute in person meeting on Wednesday, December 13, 2017 at 4:00pm.

Please advise if this could work on your end.

Thank you.
Emily

Emily Atkinson
Management Analyst/Office Manager

Immediate Office of the Acting Assistant Administrator Office of Air and Radiation, USEPA Room 5412B, 1200 Pennsylvania Avenue NW Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: ROBERT.WYMAN@lw.com [mailto:ROBERT.WYMAN@lw.com]
Sent: Friday, November 17, 2017 6:03 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: Request for Meeting

Emily - thank you for speaking with me by telephone earlier today. I am writing to request a meeting with Bill Wehrum on the subject of the midterm evaluation and the national greenhouse gas emissions standards for motor vehicles. I make this request on behalf of the National Coalition for Advanced Transportation (NCAT).

NCAT is a coalition of leading companies that support electric vehicle and other advanced transportation technologies and related infrastructure, including through: energy supply, transmission and distribution; vehicle and component design and manufacturing; charging infrastructure, battery and other energy-storage technology design, production and implementation; infrastructure engineering and construction; and the movement of passengers, goods and services; among other activities. Prior to our meeting, I will provide a list of NCAT attendees.

If possible, we would like to meet with Mr. Wehrum and appropriate staff, as he determines, on Wednesday, December 13, at any time. Of course, we recognize that his schedule may not permit meeting on this date, in which case we will do our best to accommodate whatever date he selects.

Sincere thanks.

Bob

Robert A. Wyman, Jr.
LATHAM & WATKINS LLP
Email: robert.wyman@lw.com<mailto:robert.wyman@lw.com>

355 South Grand Avenue
Los Angeles, CA 90071-1560
Direct: +1.213.891.8346

555 Eleventh Street, NW
Washington, DC 20004-1304
Direct: +1.202.654.7119

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Latham & Watkins LLP

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Latham & Watkins LLP

Message

From: Hengst, Benjamin [Hengst.Benjamin@epa.gov]
Sent: 11/21/2017 10:07:15 PM
To: Atkinson, Emily [Atkinson.Emily@epa.gov]; Sutton, Tia [sutton.tia@epa.gov]
CC: Lewis, Josh [Lewis.Josh@epa.gov]
Subject: RE: Request for Meeting

Thanks. Please add Bill Charmley, Robin Moran, and Mike Olechiw to the invite.

I don't think a pre-brief will be needed but I can ask the team to put a backgrounder together that we can send in advance.

Ben

From: Atkinson, Emily
Sent: Tuesday, November 21, 2017 4:50 PM
To: Hengst, Benjamin <Hengst.Benjamin@epa.gov>; Sutton, Tia <sutton.tia@epa.gov>
Cc: Lewis, Josh <Lewis.Josh@epa.gov>
Subject: FW: Request for Meeting

Hi Ben and Tia,

Checking in on this meeting . . . . Bill has said he will do it and I've put a tentative hold on for 12/13 at 4pm. Please advise who should be included on the invite – right now I just have you two and Chris + the OAR political team.

And let me know if you want time for a prep meeting with Bill.

Thanks.
Emily

From: ROBERT.WYMAN@lw.com [mailto:ROBERT.WYMAN@lw.com]
Sent: Friday, November 17, 2017 6:03 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: Request for Meeting

Emily – thank you for speaking with me by telephone earlier today. I am writing to request a meeting with Bill Wehrum on the subject of the midterm evaluation and the national greenhouse gas emissions standards for motor vehicles. I make this request on behalf of the ***National Coalition for Advanced Transportation (NCAT)***.

NCAT is a coalition of leading companies that support electric vehicle and other advanced transportation technologies and related infrastructure, including through: energy supply, transmission and distribution; vehicle and component design and manufacturing; charging infrastructure, battery and other energy-storage technology design, production and implementation; infrastructure engineering and construction; and the movement of passengers, goods and services; among other activities. Prior to our meeting, I will provide a list of ***NCAT*** attendees.

If possible, we would like to meet with Mr. Wehrum and appropriate staff, as he determines, on Wednesday, December 13, at any time. Of course, we recognize that his schedule may not permit meeting on this date, in which case we will do our best to accommodate whatever date he selects.

Sincere thanks.

Bob

Robert A. Wyman, Jr.
LATHAM & WATKINS LLP
Email: robert.wyman@lw.com

355 South Grand Avenue
Los Angeles, CA 90071-1560
Direct: +1.213.891.8346

555 Eleventh Street, NW
Washington, DC 20004-1304
Direct: +1.202.654.7119

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Latham & Watkins LLP or any of its affiliates may monitor electronic communications sent or received by our networks in order to protect our business and verify compliance with our policies and relevant legal requirements.

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Message

From: Atkinson, Emily [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=BB2155ADEF6A44AEA9410741F0C01D27-ATKINSON, EMILY]
Sent: 2/5/2018 2:46:57 PM
To: Laurie Holmes [lholmes@mema.org]
Subject: RE: Auto Suppliers Meeting on the Midterm Evaluation for Vehicle GHG Standards

Yes, 4:15pm

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Laurie Holmes [mailto:lholmes@mema.org]
Sent: Monday, February 05, 2018 9:46 AM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: Re: Auto Suppliers Meeting on the Midterm Evaluation for Vehicle GHG Standards

Great, thank you! The meeting is scheduled for 4:15 right?

Sent from my iPhone

On Feb 5, 2018, at 9:33 AM, Atkinson, Emily <Atkinson.Emily@epa.gov> wrote:

> Hi Laurie,
>
> Yes, below is a call in number and we will open the line for today's 4pm meeting. See the rest of the group later today.
>
> [redacted]
>
> Emily Atkinson
> Management Analyst/Office Manager
> Immediate Office of the Assistant Administrator
> Office of Air and Radiation, USEPA
> Room 5412B, 1200 Pennsylvania Avenue NW
> Washington, DC 20460
> Voice: 202-564-1850
> Email: atkinson.emily@epa.gov
>
> **From:** Laurie Holmes [mailto:lholmes@mema.org]
> **Sent:** Monday, February 05, 2018 9:19 AM
> **To:** Atkinson, Emily <Atkinson.Emily@epa.gov>
> **Subject:** Auto Suppliers Meeting on the Midterm Evaluation for Vehicle GHG Standards

Good morning Emily,
I have at least one member that cannot make it into DC because of the snowstorm in Detroit last night. Is there anyway we could have a call-in number for this member?

Also, I'd like to add Tim Lynch (Morgan Lewis) to the list of attendees in place of Joe Fengler, Honeywell.

Best,
Laurie

From: Laurie Holmes
Sent: Friday, February 02, 2018 10:56 AM
To: Emily Atkinson (atkinson.emily@epa.gov) <atkinson.emily@epa.gov>
Subject: Auto Suppliers Meeting on the Midterm Evaluation for Vehicle GHG Standards

Emily,
One more thing, attached are a few slides we plan on having hard copies of at the meeting on Monday to provide visuals to our discussion points.
I've provided these to Ann Arbor staff too but thought I'd make sure you were aware.

Best,

Laurie

Laurie Holmes
Senior Director, Environmental Policy
Motor & Equipment Manufacturers Association
1030 15th Street NW, Suite 500 East
Washington, DC 20005
Direct: 202-312-9247
[redacted]
<image001.png>
April 10-11 | Washington, DC
www.mema.org/dcsummit

From: Laurie Holmes
Sent: Thursday, February 01, 2018 9:38 AM
To: 'Atkinson, Emily' <Atkinson.Emily@epa.gov>
Cc: Lewis, Josh <Lewis.Josh@epa.gov>
Subject: Confirmed 2/5 at 4:15pm: Auto Suppliers Meeting Request on the Midterm Evaluation for Vehicle GHG Standards

Hi Emily,
As requested, below is a list of participants for the meeting with Mr. Wehrum at 4:15 on Monday, February 5.
Thank you so much for your assistance in setting up this meeting.

Attendees:

1. Laurie Holmes, MEMA
2. Catherine Boland, MEMA
3. Dave Cetola, Johnson Matthey
4. Greg Garr, Umicore
5. Mike Belwood, Arconic
6. Joseph Fengler, Honeywell
7. Jennifer Heckmann, DENSO
8. Ana Meuweissen, Bosch
9. Erika Nielson, BW
10. Andrew Kenny, Magna

Best,
Laurie

From: Atkinson, Emily [mailto:Atkinson.Emily@epa.gov]
Sent: Thursday, January 18, 2018 3:44 PM
To: Laurie Holmes <lholmes@mema.org>
Cc: Lewis, Josh <Lewis.Josh@epa.gov>
Subject: Confirmed 2/5 at 4:15pm: Auto Suppliers Meeting Request on the Midterm Evaluation for Vehicle GHG Standards

Hi Laurie,
You are confirmed for a 45 minute in person meeting on Monday, February 5, 2018 at 4:15pm with Bill Wehrum.
Directions and procedures to 1200 Pennsylvania Avenue NW:

> Metro: If you come by Metro get off at the Federal Triangle metro stop. Exit the metro station and go up two sets of escalators to the surface level and turn right. You will see a short staircase and wheelchair ramp leading to a set of glass doors with the EPA logo - that is the William Jefferson Clinton Federal Building, North Entrance.
>
> Taxi: Direct the taxi to drop you off on 12th Street NW, between Constitution and Pennsylvania Avenues, at the elevator for the Federal Triangle metro stop - this is almost exactly half way between the two avenues on 12th Street NW. Facing the building with the EPA logo and American flags, walk toward the building and take the glass door on your right hand side with the escalators going down to the metro on your left – that is the North Lobby of the William Jefferson Clinton building.
>
> Security Procedures: A government issued photo id is required to enter the building and it is suggested you arrive 15 minutes early in order to be cleared and arrive at the meeting room on time. Upon entering the lobby, the meeting attendees will be asked to pass through security and provide a photo ID for entrance. Let the guards know that you were instructed to call 202-564-7404 for a security escort.

Please send me a list of participants in advance of the meeting and feel free to contact me should you need any additional information. And based on the size of the room we plan to use, you should plan to bring no more than 10 attendees to this meeting.

Emily

Emily Atkinson
Management Analyst/Office Manager

Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Laurie Holmes [mailto:lholmes@mema.org]
Sent: Thursday, January 18, 2018 3:08 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Cc: Lewis, Josh <Lewis.Josh@epa.gov>
Subject: Auto Suppliers Meeting Request on the Midterm Evaluation for Vehicle GHG Standards

Emily,
Yes, Mon. Feb. 5 at 4:15 will work for us.

Is there a number limit for the room? We will have some members with us.

Best,
Laurie

Sent from my iPhone

On Jan 18, 2018, at 11:08 AM, Atkinson, Emily <Atkinson.Emily@epa.gov> wrote:

> Hi Laurie,
>
> It looks like Bill Wehrum could be available for a 45 minute in person meeting on Monday, February 5 at 4:15pm.
>
> Please advise if this could work on your end.
>
> Emily
>
> Emily Atkinson
> Management Analyst/Office Manager
> Immediate Office of the Assistant Administrator
> Office of Air and Radiation, USEPA
> Room 5412B, 1200 Pennsylvania Avenue NW
> Washington, DC 20460
> Voice: 202-564-1850
> Email: atkinson.emily@epa.gov
>
> ---
>
> **From:** Laurie Holmes [mailto:lholmes@mema.org]
> **Sent:** Wednesday, January 17, 2018 10:34 AM
> **To:** Lewis, Josh <Lewis.Josh@epa.gov>
> **Cc:** Atkinson, Emily <Atkinson.Emily@epa.gov>
> **Subject:** Auto Suppliers Meeting Request on the Midterm Evaluation for Vehicle GHG Standards
>
> Josh,

In addition to the week of the 29th we could also do Monday, February 5 or Tuesday, February 6 before 1.
Let me know if you need additional date ranges to work with.
Best,
Laurie

From: Lewis, Josh [mailto:Lewis.Josh@epa.gov]
Sent: Friday, January 12, 2018 2:16 PM
To: Laurie Holmes <lholmes@mema.org>; Catherine Boland <cboland@MEMA.ORG>
Cc: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: FW: Auto Suppliers Meeting Request on the Midterm Evaluation for Vehicle GHG Standards

+ Emily and – Bill.

Is there a rough date or dates you were looking to come in?

Josh Lewis
Chief of Staff
EPA/Office of Air and Radiation
Office: 202 564 2095
[redacted]

From: Laurie Holmes [mailto:lholmes@mema.org]
Sent: Friday, January 12, 2018 10:56 AM
To: Wehrum, Bill <Wehrum.Bill@epa.gov>
Cc: Catherine Boland <cboland@MEMA.ORG>; Lewis, Josh <Lewis.Josh@epa.gov>
Subject: Auto Suppliers Meeting Request on the Midterm Evaluation for Vehicle GHG Standards

Bill, Thank you so much.
Josh, Look forward to hearing from you.

From: Wehrum, Bill [mailto:Wehrum.Bill@epa.gov]
Sent: Friday, January 12, 2018 7:38 AM
To: Laurie Holmes <lholmes@mema.org>
Cc: Catherine Boland <cboland@MEMA.ORG>; Lewis, Josh <Lewis.Josh@epa.gov>
Subject: Re: Auto Suppliers Meeting Request on the Midterm Evaluation for Vehicle GHG Standards

Hi Laurie. I'd be happy to talk with you. I've copied my chief of staff, Josh Lewis, who can help coordinate.

_____
Bill Wehrum
Assistant Administrator
Office of Air and Radiation
U.S. Environmental Protection Agency
(202) 564-7404

On Jan 11, 2018, at 1:33 PM, Laurie Holmes <lholmes@mema.org> wrote:

Bill:
MEMA would like to request a meeting to discuss the midterm evaluation on the vehicle greenhouse gas emission standards.

MEMA represents more than 1,000 companies that manufacture components, systems and materials for motor vehicles and represents the largest sector of manufacturing jobs in the U.S. Since auto suppliers play a major role in developing the technologies necessary for vehicle emission reduction, suppliers have a strong interest in the midterm evaluation and the standards. Our position is also not identical to the vehicle manufactures on the issue.

It would be helpful if we could discuss with you the impact the program has had and will have on our industry.

Look forward to hearing from you.

Laurie Holmes
Senior Director, Environmental Policy
Motor & Equipment Manufacturers Association
1030 15th Street NW, Suite 500 East
Washington, DC 20005
Direct: 202-312-9247
[redacted]
<image001.png>
April 10-11 | Washington, DC
www.mema.org/dcsummit

Appointment

From: Atkinson, Emily [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=BB2155ADEF6A44AEA9410741F0C01D27-ATKINSON, EMILY]
Sent: 1/18/2018 8:45:17 PM
To: Grundler, Christopher [grundler.christopher@epa.gov]; Hengst, Benjamin [Hengst.Benjamin@epa.gov]
CC: Gunasekara, Mandy [Gunasekara.Mandy@epa.gov]

Subject: Meet with Motor & Equipment Manufacturers Association (Confirmed)
Attachments: Confirmed 2/5 at 4:15pm: Auto Suppliers Meeting Request on the Midterm Evaluation for Vehicle GHG Standards
Location: WJC-N 5400 + Video with AA

Start: 2/5/2018 9:15:00 PM
End: 2/5/2018 10:00:00 PM
Show Time As: Tentative

Re: Midterm Evaluation for Vehicle GHG Standards
To: Bill Wehrum, Chris Grundler, Ben Hengst
Cc: Mandy Gunasekara

Message

From: Atkinson, Emily [Atkinson.Emily@epa.gov]
Sent: 1/18/2018 8:44:24 PM
To: Laurie Holmes [lholmes@mema.org]
CC: Lewis, Josh [Lewis.Josh@epa.gov]
Subject: Confirmed 2/5 at 4:15pm: Auto Suppliers Meeting Request on the Midterm Evaluation for Vehicle GHG Standards

Hi Laurie,
You are confirmed for a 45 minute in person meeting on Monday, February 5, 2018 at 4:15pm with Bill Wehrum.
Directions and procedures to 1200 Pennsylvania Avenue NW:

Metro: If you come by Metro get off at the Federal Triangle metro stop. Exit the metro station and go up two sets of escalators to the surface level and turn right. You will see a short staircase and wheelchair ramp leading to a set of glass doors with the EPA logo - that is the William Jefferson Clinton Federal Building, North Entrance.

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Please send me a list of participants in advance of the meeting and feel free to contact me should you need any additional information. And based on the size of the room we plan to use, you should plan to bring no more than 10 attendees to this meeting.

Emily

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Laurie Holmes [mailto:lholmes@mema.org]
Sent: Thursday, January 18, 2018 3:08 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Cc: Lewis, Josh <Lewis.Josh@epa.gov>
Subject: Auto Suppliers Meeting Request on the Midterm Evaluation for Vehicle GHG Standards

Emily,
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Is there a number limit for the room? We will have some members with us.

Best,
Laurie

Sent from my iPhone

On Jan 18, 2018, at 11:08 AM, Atkinson, Emily <Atkinson.Emily@epa.gov> wrote:

Hi Laurie,

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Please advise if this could work on your end.

Emily

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

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To: Lewis, Josh <Lewis.Josh@epa.gov>
Cc: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: Auto Suppliers Meeting Request on the Midterm Evaluation for Vehicle GHG Standards

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From: Lewis, Josh [mailto:Lewis.Josh@epa.gov]
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+ Emily and – Bill.

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Josh Lewis
Chief of Staff

EPA/Office of Air and Radiation
Office: 202 564 2095
[redacted]

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Cc: Catherine Boland <cboland@MEMA.ORG>; Lewis, Josh <Lewis.Josh@epa.gov>
Subject: Re: Auto Suppliers Meeting Request on the Midterm Evaluation for Vehicle GHG Standards

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_____
Bill Wehrum
Assistant Administrator
Office of Air and Radiation
U.S. Environmental Protection Agency
(202) 564-7404

On Jan 11, 2018, at 1:33 PM, Laurie Holmes <lholmes@mema.org> wrote:

> Bill:
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> MEMA represents more than 1,000 companies that manufacture components, systems and materials for motor vehicles and represents the largest sector of manufacturing jobs in the U.S. Since auto suppliers play a major role in developing the technologies necessary for vehicle emission reduction, suppliers have a strong interest in the midterm evaluation and the standards. Our position is also not identical to the vehicle manufactures on the issue.
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> Look forward to hearing from you.
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> Laurie Holmes
> Senior Director, Environmental Policy
> Motor & Equipment Manufacturers Association
> 1030 15th Street NW, Suite 500 East

Washington, DC 20005
Direct: 202-312-9247
[redacted]

<image001.png>

April 10-11 | Washington, DC

www.mema.org/dcsummit

Message

From: Atkinson, Emily [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=BB2155ADEF6A44AEA9410741F0C01D27-ATKINSON, EMILY]
Sent: 1/18/2018 8:44:24 PM
To: Laurie Holmes [lholmes@mema.org]
CC: Lewis, Josh [Lewis.Josh@epa.gov]
BCC: Atkinson, Emily [Atkinson.Emily@epa.gov]
Subject: Confirmed 2/5 at 4:15pm: Auto Suppliers Meeting Request on the Midterm Evaluation for Vehicle GHG Standards

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Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

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Cc: Lewis, Josh <Lewis.Josh@epa.gov>
Subject: Auto Suppliers Meeting Request on the Midterm Evaluation for Vehicle GHG Standards

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Chief of Staff
EPA/Office of Air and Radiation
Office: 202 564 2095
[redacted]

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Appointment

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Sent: 2/5/2018 2:34:17 PM
To: Grundler, Christopher [grundler.christopher@epa.gov]; Hengst, Benjamin [Hengst.Benjamin@epa.gov]
CC: Gunasekara, Mandy [Gunasekara.Mandy@epa.gov]; Charmley, William [charmley.william@epa.gov]; Simon, Karl [Simon.Karl@epa.gov]; Moran, Robin [moran.robin@epa.gov]

Subject: Meet with Motor & Equipment Manufacturers Association (Confirmed)
Attachments: Confirmed 2/5 at 4:15pm: Auto Suppliers Meeting Request on the Midterm Evaluation for Vehicle GHG Standards ; Confirmed 2/5 at 4:15pm: Auto Suppliers Meeting Request on the Midterm Evaluation for Vehicle GHG Standards ; Auto Suppliers Meeting on the Midterm Evaluation for Vehicle GHG Standards
Location: WJC-N 5400 + Video with AA + [redacted]

Start: 2/5/2018 9:15:00 PM
End: 2/5/2018 10:00:00 PM
Show Time As: Tentative

Re: Midterm Evaluation for Vehicle GHG Standards
To: Bill Wehrum, Chris Grundler, Ben Hengst
Cc: Mandy Gunasekara
Outside Attendees (in person):

1. Laurie Holmes, MEMA
2. Catherine Boland, MEMA
3. Dave Cetola, Johnson Matthey
4. Greg Garr, Umicore
5. Mike Belwood, Arconic
6. Tim Lynch, Morgan Lewis
7. Jennifer Heckmann, DENSO
8. Ana Meuweissen, Bosch
9. Erika Nielson, BW
10. Andrew Kenny, Magna

Confirmed 2/5 at 4:15pm: Auto Su... | Confirmed 2/5 at 4:15pm: Auto Su... | Auto Suppliers Meeting on the ...

Message

From: Laurie Holmes [lholmes@mema.org]
Sent: 2/5/2018 2:18:39 PM
To: Atkinson, Emily [Atkinson.Emily@epa.gov]
Subject: Auto Suppliers Meeting on the Midterm Evaluation for Vehicle GHG Standards

Good morning Emily,
I have at least one member that cannot make it into DC because of the snowstorm in Detroit last night. Is there anyway we could have a call-in number for this member?

Also, I'd like to add Tim Lynch (Morgan Lewis) to the list of attendees in place of Joe Fengler, Honeywell.

Best,
Laurie

From: Laurie Holmes
Sent: Friday, February 02, 2018 10:56 AM
To: Emily Atkinson (atkinson.emily@epa.gov) <atkinson.emily@epa.gov>
Subject: Auto Suppliers Meeting on the Midterm Evaluation for Vehicle GHG Standards

Emily,
One more thing, attached are a few slides we plan on having hard copies of at the meeting on Monday to provide visuals to our discussion points.
I've provided these to Ann Arbor staff too but thought I'd make sure you were aware.

Best,

Laurie

Laurie Holmes
Senior Director, Environmental Policy
Motor & Equipment Manufacturers Association
1030 15th Street NW, Suite 500 East
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Direct: 202-312-9247

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Laurie

From: Lewis, Josh [mailto:Lewis.Josh@epa.gov]
Sent: Friday, January 12, 2018 2:16 PM
To: Laurie Holmes <lholmes@mema.org>; Catherine Boland <cboland@MEMA.ORG>
Cc: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: FW: Auto Suppliers Meeting Request on the Midterm Evaluation for Vehicle GHG Standards

+ Emily and – Bill.

Is there a rough date or dates you were looking to come in?

Josh Lewis
Chief of Staff
EPA/Office of Air and Radiation
Office: 202 564 2095
[redacted]

From: Laurie Holmes [mailto:lholmes@mema.org]
Sent: Friday, January 12, 2018 10:56 AM
To: Wehrum, Bill <Wehrum.Bill@epa.gov>
Cc: Catherine Boland <cboland@MEMA.ORG>; Lewis, Josh <Lewis.Josh@epa.gov>
Subject: Auto Suppliers Meeting Request on the Midterm Evaluation for Vehicle GHG Standards

Bill, Thank you so much.
Josh, Look forward to hearing from you.

From: Wehrum, Bill [mailto:Wehrum.Bill@epa.gov]
Sent: Friday, January 12, 2018 7:38 AM
To: Laurie Holmes <lholmes@mema.org>
Cc: Catherine Boland <cboland@MEMA.ORG>; Lewis, Josh <Lewis.Josh@epa.gov>
Subject: Re: Auto Suppliers Meeting Request on the Midterm Evaluation for Vehicle GHG Standards

Hi Laurie. I'd be happy to talk with you. I've copied my chief of staff, Josh Lewis, who can help coordinate.

_____
Bill Wehrum
Assistant Administrator
Office of Air and Radiation

U.S. Environmental Protection Agency
(202) 564-7404

On Jan 11, 2018, at 1:33 PM, Laurie Holmes <lholmes@mema.org> wrote:

Bill:
MEMA would like to request a meeting to discuss the midterm evaluation on the vehicle greenhouse gas emission standards.

MEMA represents more than 1,000 companies that manufacture components, systems and materials for motor vehicles and represents the largest sector of manufacturing jobs in the U.S. Since auto suppliers play a major role in developing the technologies necessary for vehicle emission reduction, suppliers have a strong interest in the midterm evaluation and the standards. Our position is also not identical to the vehicle manufactures on the issue.

It would be helpful if we could discuss with you the impact the program has had and will have on our industry.

Look forward to hearing from you.

Laurie Holmes
Senior Director, Environmental Policy
Motor & Equipment Manufacturers Association
1030 15th Street NW, Suite 500 East
Washington, DC 20005
Direct: 202-312-9247
[redacted]
<image001.png>
April 10-11 | Washington, DC
www.mema.org/dcsummit

Appointment

From: Atkinson, Emily [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=BB2155ADEF6A44AEA9410741F0C01D27-ATKINSON, EMILY]
Sent: 1/10/2018 1:48:51 PM
To: Gunasekara, Mandy [Gunasekara.Mandy@epa.gov]; Grundler, Christopher [grundler.christopher@epa.gov]; Charmley, William [charmley.william@epa.gov]; Hengst, Benjamin [Hengst.Benjamin@epa.gov]; Moran, Robin [moran.robin@epa.gov]; Alson, Jeff [alson.jeff@epa.gov]; Burch, Julia [Burch.Julia@epa.gov]; Orlin, David [Orlin.David@epa.gov]; Kataoka, Mark [Kataoka.Mark@epa.gov]

Subject: Meet with VNG Co re: natural gas vehicles program (Confirmed)
Attachments: Updated VNG Comments on EPA-HQ-OAR-2015-0827.pdf; NGV Executive Action Summary.docx; RE: Meeting Request re: Natural Gas Vehicles; Confirmed 1/30 at 4pm: Meeting Request re: Natural Gas Vehicles
Location: WJC-N 5400

Start: 1/30/2018 9:00:00 PM
End: 1/30/2018 9:45:00 PM
Show Time As: Tentative

To: Bill Wehrum, Mandy Gunasekara, Chris Grundler, Bill Charmley, Ben Hengst, Robin Moran, Jeff Alson, Julia Burch, David Orlin, Mark Kataoka
Outside Attendees (in person): TBD

Message

From: Atkinson, Emily [Atkinson.Emily@epa.gov]
Sent: 1/10/2018 1:47:37 PM
To: Tucker, Jamie [jtucker@AKINGUMP.COM]
CC: Feeley, Drew (Robert) [Feeley.Drew@epa.gov]; Lewis, Josh [Lewis.Josh@epa.gov]
Subject: Confirmed 1/30 at 4pm: Meeting Request re: Natural Gas Vehicles

Hi Jamie,
You are confirmed for a 45 minute meeting on Tuesday, January 30, 2018 at 4:00pm with Bill Wehrum. Directions and procedures to 1200 Pennsylvania Avenue NW:

Metro: If you come by Metro get off at the Federal Triangle metro stop. Exit the metro station and go up two sets of escalators to the surface level and turn right. You will see a short staircase and wheelchair ramp leading to a set of glass doors with the EPA logo - that is the William Jefferson Clinton Federal Building, North Entrance.

Taxi: Direct the taxi to drop you off on 12th Street NW, between Constitution and Pennsylvania Avenues, at the elevator for the Federal Triangle metro stop - this is almost exactly half way between the two avenues on 12th Street NW. Facing the building with the EPA logo and American flags, walk toward the building and take the glass door on your right hand side with the escalators going down to the metro on your left – that is the North Lobby of the William Jefferson Clinton building.

Security Procedures: A government issued photo id is required to enter the building and it is suggested you arrive 15 minutes early in order to be cleared and arrive at the meeting room on time. Upon entering the lobby, the meeting attendees will be asked to pass through security and provide a photo ID for entrance. Let the guards know that you were instructed to call 202-564-7404 for a security escort.
Please send me a list of participants in advance of the meeting and feel free to contact me should you need any additional information.

Emily

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Tucker, Jamie [mailto:jtucker@AKINGUMP.COM]
Sent: Tuesday, January 09, 2018 3:02 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Cc: Feeley, Drew (Robert) <Feeley.Drew@epa.gov>; Lewis, Josh <Lewis.Josh@epa.gov>
Subject: RE: Meeting Request re: Natural Gas Vehicles

That's terrific and will work on our end. I will follow up shortly with a complete list of attendees on our part, but let's go ahead and book it.

Thanks.

From: Atkinson, Emily [mailto:Atkinson.Emily@epa.gov]
Sent: Tuesday, January 09, 2018 10:53 AM
To: Tucker, Jamie
Cc: Feeley, Drew (Robert); Lewis, Josh
Subject: FW: Meeting Request re: Natural Gas Vehicles

Hi Jamie,

It looks like Bill Wehrum could be available for a 45 minute meeting on Tuesday, January 30, 2018 at 4:00pm.

Please advise if this could work on your end.

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Tucker, Jamie [mailto:jtucker@AKINGUMP.COM]
Sent: Wednesday, January 03, 2018 3:21 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>; Lewis, Josh <Lewis.Josh@epa.gov>
Cc: Feeley, Drew (Robert) <Feeley.Drew@epa.gov>
Subject: Meeting Request re: Natural Gas Vehicles

Emily/Josh - On behalf of VNG.Co, a natural gas vehicle fueling infrastructure company, we wanted to see if Assistant Administrator Wehrum would be available this month to discuss a number of administrative and legislative policy changes the company is advocating to promote the adoption of natural gas vehicles largely by leveling the playing field with electric vehicles. We have had recent conversations with the Office of Policy as well as the Office of Transportation and Air Quality to discuss these proposals as well as with staff at the White House and Department of Transportation. With Mr. Wehrum's confirmation we would like to fold him into the conversation as well.

Natural gas vehicles provide a cost effective and additional pathway for automaker emissions compliance while preserving the products' consumer appeal, and are therefore worthy of being included in a portfolio of solutions along with EVs to achieve the objectives.

Among the key advantages of the proposed regulatory changes is the benefit to achieving emissions reductions in the light-duty truck category which accounts for 64% of new vehicle purchases (and are responsible for even greater amounts of fuel use and pollution if you take into account the differential in fuel economy between light-duty trucks and passenger cars), and for which there is not a viable electrification solution.

Specifically, we would encourage the Administration to consider:

- **Restoring the 0.15 "divisor"** in EPA's compliance calculations, equivalent to NHTSA's statutory Petroleum Equivalency Factor that counts a gallon-equivalent of natural gas as 0.15 gallons of gasoline. The previous Administration ended this powerful incentive while simultaneously providing electric vehicles with additional emissions incentives on the hope that EVs would be "game changers." The game has now changed for NGVs. The shale revolution that has occurred since the current rules were set as well the development of Renewable Natural Gas as the lowest carbon vehicle fuel are true game changers that strongly justify returning to the 0.15 divisor.

The powerful and well-justified incentive of the 0.15 divisor would be complemented and made even more effective by additional changes including:

- **Eliminating range requirements on bi-fuel NGVs** that results in an impractical natural gas tank size requirement that is twice the size of the gasoline tank and costly design requirements for NGVs, whereas no such range requirements exists for hybrid electric vehicles. This is the most important regulatory change as a complement to the 0.15 divisor of the three.

- **Providing NGV pick-ups with the bonus credits** provided to "strong electric hybrid pick-ups" and **eliminating the existing minimum 10% deployment threshold** to qualify for pickup bonus credits.

- **Establishing a new incentive to encourage retrofitting existing gasoline and diesel vehicles to run on natural gas**, something that isn't feasible for electric drives but which will reduce emissions by the existing fleet of vehicles

Enclosed for your further consideration are our Midterm Evaluation comments as well as information outlining the rationale for the recommended regulatory changes.

Thank you for your consideration.

Jamie

Jamie Tucker
AKIN GUMP STRAUSS HAUER & FELD LLP
1333 New Hampshire Avenue, N.W. | Washington, DC 20036-1564 | USA | Direct: +1 202.887.4279 | Internal: 24279
Fax: +1 202.887.4288 | jtucker@akingump.com | akingump.com | Bio

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VNG

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NGVs ideally suited to help pickups, light duty trucks reach 2025 emissions goals

- Light duty trucks face biggest compliance challenge, are critical to Big Three future
- EVs not an option – batteries too expensive, too heavy for larger vehicles
  - NGVs are proven: Ford F150, Chevy Silverado, Dodge Ram

Correcting NGV incentives is straightforward – and justified

- No consideration of NGV technology in 2016 Technical Assessment Report despite availability of abundant domestic fuel and vehicle technology
  - Game-changing Renewable Natural Gas (RNG) delivers more than 85% lifecycle emission reductions
- Restore pre-2015 "0.15 divisor" to harmonize EPA with statutory CAFE incentives,
  - Parity with EV incentives: just as EV incentives reflect renewable energy, restoring 0.15 divisor for NGVs would reflect emissions benefits of RNG (85%)
  - Would allow OEMs to easily meet 2025 targets for pickups
- Parity: eliminate arbitrary driving range requirement imposed on bi-fuel NGVs
  - Plug-in hybrids have no requirements despite much shorter electric range
- Provide NGV pickups with same emissions credits as "Strong Hybrids"
  - Eliminate minimum penetration for NGV pickup incentives: NGVs as 10% of all pickups not immediately feasible for alt fuel like natural gas

Additional opportunity for smarter regulations: encourage retrofits

- Retrofitting deployed vehicles with natural gas reduces emissions of existing fleet
- Build on NGV retrofit successes in Oklahoma, greatly expand benefits of rules
- Allow converters to receive credits based on vehicle's remaining useful life, sell/transfer to OEMs

Restoring parity between NGVs and EVs, and between EPA and NHTSA, will provide automakers much-needed compliance flexibility for light trucks and pickups – and by making these changes effective immediately, we can start building this industry today.

Message

From: Atkinson, Emily [Atkinson.Emily@epa.gov]
Sent: 1/8/2018 5:01:19 PM
To: Hengst, Benjamin [Hengst.Benjamin@epa.gov]
CC: Lewis, Josh [Lewis.Josh@epa.gov]
Subject: RE: Meeting Request re: Natural Gas Vehicles
Attachments: Updated VNG Comments on EPA-HQ-OAR-2015-0827.pdf; NGV Executive Action Summary.docx

Ok sounds good – thanks Ben.

From: Hengst, Benjamin
Sent: Monday, January 08, 2018 11:59 AM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Cc: Lewis, Josh <Lewis.Josh@epa.gov>
Subject: RE: Meeting Request re: Natural Gas Vehicles

I think 45 min would be appropriate.

OTAQ invitees would be:
Chris G
Bill Charmley
Ben Hengst
Robin Moran
Jeff Alson
Julia Burch
David Orlin
Mark Kataoka

In talking to Bill, you guys can convey that we don't think that this is a big priority, but that they seem to be heavily engaged with OP political management already, so it makes sense to make sure OAR political management is up to speed, too.

Thanks-Ben

From: Atkinson, Emily
Sent: Monday, January 08, 2018 11:25 AM
To: Hengst, Benjamin <Hengst.Benjamin@epa.gov>
Cc: Lewis, Josh <Lewis.Josh@epa.gov>
Subject: RE: Meeting Request re: Natural Gas Vehicles

Thanks Ben – we can run this recommendation by Bill and then I can reach out to set this one up. If Bill wants to take this meeting – who from OTAQ would you like included on the scheduler? And would 30 minutes be enough or is 45 minutes more appropriate for this group?

From: Hengst, Benjamin
Sent: Monday, January 08, 2018 10:57 AM
To: Lewis, Josh <Lewis.Josh@epa.gov>
Cc: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: RE: Meeting Request re: Natural Gas Vehicles

Josh—I ran the traps on this. OTAQ's recommendation is that Bill Wehrum should take the meeting, but that it should be on a later timeline (e.g., early to mid-February).

Please let me know if you want to discuss more. Thanks--Ben

From: Lewis, Josh
Sent: Friday, January 05, 2018 1:16 PM
To: Hengst, Benjamin <Hengst.Benjamin@epa.gov>
Cc: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: FW: Meeting Request re: Natural Gas Vehicles

Drew Feely in OP called me about something yesterday and mentioned the meeting below in passing...if I'm recalling correctly he said you were part of the OTAQ mtg that Jamie references. If that's true, wondering if you think a follow up meeting now w/ Bill is appropriate?

From: Tucker, Jamie [mailto:jtucker@AKINGUMP.COM]
Sent: Wednesday, January 03, 2018 3:21 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>; Lewis, Josh <Lewis.Josh@epa.gov>
Cc: Feeley, Drew (Robert) <Feeley.Drew@epa.gov>
Subject: Meeting Request re: Natural Gas Vehicles

Emily/Josh - On behalf of VNG.Co, a natural gas vehicle fueling infrastructure company, we wanted to see if Assistant Administrator Wehrum would be available this month to discuss a number of administrative and legislative policy changes the company is advocating to promote the adoption of natural gas vehicles largely by leveling the playing field with electric vehicles. We have had recent conversations with the Office of Policy as well as the Office of Transportation and Air Quality to discuss these proposals as well as with staff at the White House and Department of Transportation. With Mr. Wehrum's confirmation we would like to fold him into the conversation as well.

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Among the key advantages of the proposed regulatory changes is the benefit to achieving emissions reductions in the light-duty truck category which accounts for 64% of new vehicle purchases (and are responsible for even greater amounts of fuel use and pollution if you take into account the differential in fuel economy between light-duty trucks and passenger cars), and for which there is not a viable electrification solution.

Specifically, we would encourage the Administration to consider:

- **Restoring the 0.15 "divisor"** in EPA's compliance calculations, equivalent to NHTSA's statutory Petroleum Equivalency Factor that counts a gallon-equivalent of natural gas as 0.15 gallons of gasoline. The previous Administration ended this powerful incentive while simultaneously providing electric vehicles with additional emissions incentives on the hope that EVs would be "game changers." The game has now changed for NGVs. The shale revolution that has occurred since the current rules were set as well the development of Renewable Natural Gas as the lowest carbon vehicle fuel are true game changers that strongly justify returning to the 0.15 divisor.

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requirements exists for hybrid electric vehicles. This is the most important regulatory change as a complement to the 0.15 divisor of the three.

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Enclosed for your further consideration are our Midterm Evaluation comments as well as information outlining the rationale for the recommended regulatory changes.

Thank you for your consideration.

Jamie

Jamie Tucker
AKIN GUMP STRAUSS HAUER & FELD LLP
1333 New Hampshire Avenue, N.W. | Washington, DC 20036-1564 | USA | Direct: +1 202.887.4279 | Internal: 24279
Fax: +1 202.887.4288 | jtucker@akingump.com | akingump.com | Bio

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VNG

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Restoring parity between NGVs and EVs, and between EPA and NHTSA, will provide automakers much-needed compliance flexibility for light trucks and pickups – and by making these changes effective immediately, we can start building this industry today.

VNG

Comments by VNG.co LLC on
Reconsideration of the Final Determination of the Mid-Term
Evaluation of Greenhouse Gas Emissions Standards
For Model Year 2022–2025 Light-Duty Vehicles

Docket ID: EPA–HQ–OAR–2015–0827

VNG.co LLC is a developer of compressed natural gas (CNG) fuel dispensing infrastructure for light- and medium-duty natural gas vehicles (NGVs). We welcome this opportunity to comment on the Midterm Evaluation (MTE) of light-duty vehicle greenhouse gas standards established for model years 2022-2025 and provide the agencies[1] with much-needed updated information on NGVs and their ability to contribute to the goals of the regulations.

Indeed, NGVs are perhaps the largest and most consequential knowledge gap in the agencies' work on these regulations to date. The only substantive discussion of NGVs in the 1,217 page Technical Assessment Review (TAR) issued by EPA, NHTSA and CARB was one short paragraph noting the growth in CNG fueling infrastructure,[2] and NGVs were not included in the TAR's models for automaker compliance.[3] This is inexplicable considering that U.S. OEMs (the "Big Three") have each produced pickups that operate on compressed natural gas (CNG) in recent years, as well as the fact that there are 22 million NGVs on the road globally - including many produced by OEMs that also serve the U.S. market.

However, this decision to exclude NGVs from serious analysis becomes even more confounding when one considers the radical changes that have occurred in the emissions profile of this technology since the original rulemaking. Renewable natural gas (RNG) can reduce lifecycle greenhouse emissions by 85% or more compared to gasoline, and this ultra-low carbon biofuel now accounts for over 35% of NGV fueling nationally and over 60% of NGV fueling in California. Furthermore, engine manufacturers are beginning to explore the potential of advanced engine designs to take advantage of CNG's high-octane, inherently low-emission properties - another major opportunity to meet the agencies' goals that has been completely unexplored to date.

The virtual exclusion of NGVs from the analysis and discussion has led to the perception of regulators having a false choice between siding with automakers and consumers on one side and environmentalists on the other. Automakers assert that they cannot stop consumers from buying the larger, less fuel-efficient vehicles they want (and in many cases need), and that meeting the current emissions targets for 2025 would impose major costs and risks on their business. Meanwhile, environmentalists insist that we need to transition our entire vehicle fleet to electric vehicles (including hydrogen fuel cell vehicles) as soon as possible, despite the fact

[1] While these Comments are being submitted in the EPA's docket, it is VNG's expectation that they will be also be considered by the National Highway Traffic Safety Administration (NHTSA) and the California Air Resources Board (CARB), collectively "the agencies."
[2] *Draft Technical Assessment Report: Midterm Evaluation of Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards for Model Years 2022-2025*, ENVIRONMENTAL PROTECTION AGENCY (July 2016), at 9-41, https://nepis.epa.gov/Exe/ZyPDF.cgi/P100OXEO.PDF?Dockey=P100OXEO.PDF (hereinafter "Draft TAR").
[3] *Id.* at 5-502.

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that they are not projected to have more than 1-2% market share through at least 2025 – and are especially unlikely to be a practical choice for SUVs and pickups due to their weight and utility requirements.

NGVs are the missing piece of the puzzle. From an automaker's perspective, they offer a proven pathway to dramatically reducing emissions from their large-footprint vehicles, with similar costs and much greater benefits than lightweighting for pickup trucks. For environmentalists, the use of RNG offers similar or even superior emissions benefits to EVs, while also immediately addressing the segments of the auto market (e.g. light trucks) that are unlikely to have an electric alternative for the foreseeable future.

Reforming the light-duty emission regulations to make NGVs a practical compliance path for automakers thus offers the agencies a way to preserve the stringency of existing targets while simultaneously making it easier for automakers to meet them cost-effectively. Equally important, individual Americans will benefit from the use of a cleaner transportation fuel with lower and more stable pricing, compared to gasoline, all while purchasing the vehicles they want and need at reasonable costs. That's a win-win-win.

The following comments detail the reasons for providing robust regulatory support for NGVs on par with previous regulatory support for EVs, organized into the following sections.

- **The Need for Light Truck Alternatives in a Changing Market Context:** Consumer demand is shifting towards large vehicles with relatively low fuel economy. NGVs are ideally suited to provide a low-emission, non-petroleum alternative for the light truck segment, which is unlikely to be served by electric vehicle (EV) alternatives for the foreseeable future.

- **Renewable Natural Gas - A "Waste-to-Wheels" Emissions Game-Changer:** RNG is a game-changer that puts NGVs on par with an EV powered with wind or solar power - and it accounts for a much higher percentage of NGV fuel use than renewable electricity in the overall electricity mix. The rules must account for this dramatic shift and provide incentives for NGVs similar to those provided for EVs.

- **Potential for Rapid Cost Reductions, Consumer Savings with NGVs:** Unlike EVs, NGVs do not depend on inherently-expensive components like batteries, giving them much greater potential for rapid cost reductions with production at scale. This potential has already been demonstrated by European OEMs and gives NGVs much greater potential for mass-market adoption than the agencies have recognized to date.

- **Importance of Dual-Fuel NGVs:** Dual-fuel (commonly referred to as "bi-fuel") vehicles will play an important role in the market development of NGVs during early years of infrastructure buildout. The agencies took steps towards providing important support for bi-fuel NGVs in the original rulemaking, yet also placed unfair restrictions on this support that were not placed on similarly-important plug-in hybrid electric vehicles.

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- **Advanced NGV Technologies Promise Best Emissions Path for Internal Combustion Engines (ICEs):** The development of new engine technologies optimized for CNG's inherently high-octane, clean-burning qualities gives NGVs unsurpassed potential for environmental performance on a mass-market-ready ICE platform.

- **"Bridge to Hydrogen" Needed More Than Ever:** The agencies have previously recognized the ability of NGVs to provide a "bridge" to hydrogen-fueled vehicles thanks to numerous technology synergies on the vehicle as well as the fueling side. The opportunities for such synergies have expanded in recent years, and are as urgently-needed as ever due to the slow market uptake of hydrogen fuel cell vehicles.

- **Emissions Solution for Mid-Life Vehicles:** Sec. 202(a) of the Clean Air Act requires the agencies to regulate vehicle emissions throughout their useful life, but the current light-duty program only provides incentives for low-emission technologies deployed in *new* vehicles. As states like Oklahoma and Utah have shown, there is significant potential to reduce emissions and petroleum use from older vehicles with CNG retrofits, and these benefits should be recognized and encouraged in these regulations.

- **Addressing the Threat of Petroleum Dependence:** The CAFE program was originally created as a response to the oil crisis of 1973; yet, more than 40 years later, the program has done very little to reduce our near-total dependence on petroleum, and the agencies project that the 2017-2025 rules will not make a meaningful difference either. The current regulations ensure this in part by disadvantaging natural gas, perhaps our best hope for a long-term solution to this problem.

- **NGV Reform Needed Today for 2017-2021 Targets:** Because the current disparity between treatment of NGVs and EVs is so clearly arbitrary and contrary to real-world lifecycle GHG emissions, and because automakers need this compliance flexibility and regulatory certainty in order to confidently invest in NGV production, these changes should be made effective immediately – without waiting for the 2022-2025 period. EPA's review of the 2021 targets as part of this proceeding is an excellent opportunity to do so.

In addition to providing information on each of these topics for use in the rulemaking process, we will indicate the specific topics from EPA's Request for Comment that each section is relevant to, and we will conclude each section with a list of recommended changes to the regulations. By updating the regulations to incentivize the deployment of NGVs similar to the previous administration's focus on incentivizing EVs, the agencies will provide automakers with a greater range of compliance pathways that will help achieve the goals of the regulations sooner and more cost-effectively, to the collective benefit of consumers, the environment and industry.

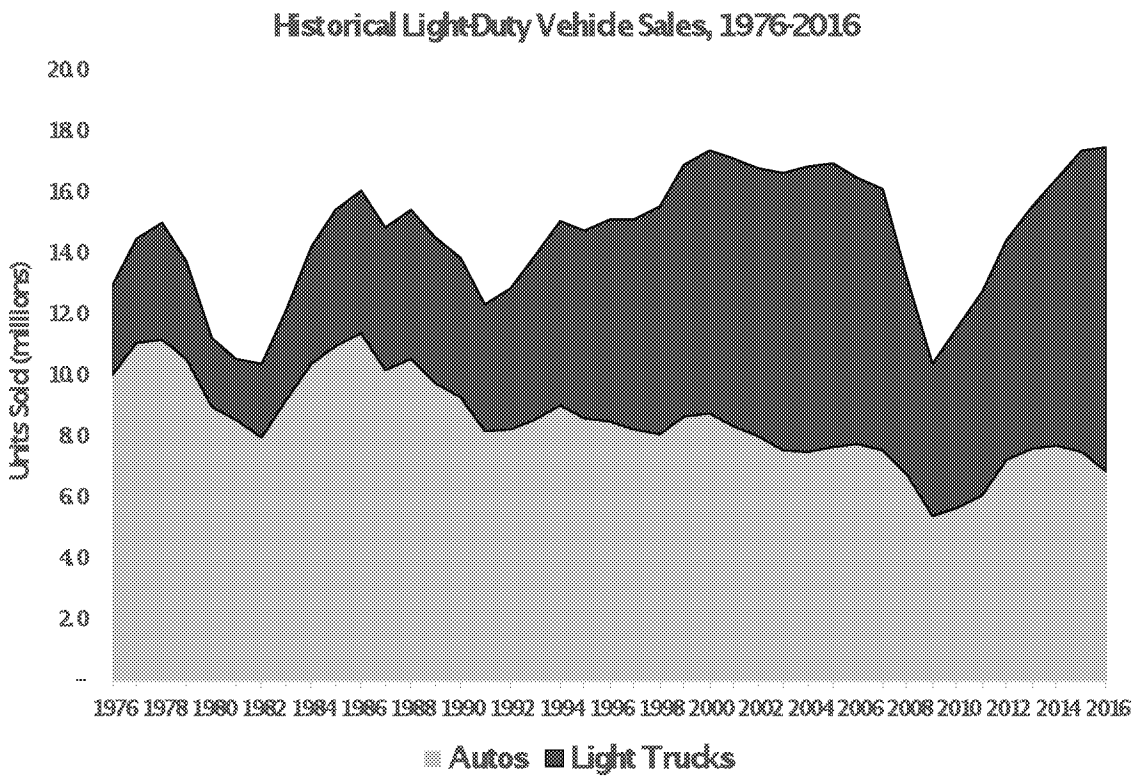
VNG

The Need for Light Truck Alternatives in a Changing Market Context

Issues Addressed:

- *The impact of the standards on the automobile industry*
- *The feasibility and practicability of the standards*

As the agencies acknowledged in the 2016 draft Technical Assessment Report (TAR), low gasoline prices have encouraged U.S. consumers to gravitate towards the purchase of larger and less fuel-efficient vehicles. After the Great Recession of 2008 decimated all classes of vehicle sales as well as oil prices, light truck sales have rebounded much more strongly than passenger vehicles and are approaching all-time highs and a market share of over 60%.[4] As the experience of the 1980s-2000s demonstrated, this shift in the market towards light trucks is likely to be sustained if gasoline prices stay low for the long term, as many observers have speculated - including oil majors like Shell, whose CEO recently said that oil prices may be "lower forever."[5]



Source: Bureau of Economic Analysis, 2017[6]

[4] *Auto and Truck Seasonal Adjustment*, BUREAU OF ECONOMIC ANALYSIS (August 2, 2017), https://www.bea.gov/national/xls/gap_hist.xlsx

[5] Sarah Kent, *Shell Prepares for 'Lower Forever' Oil Prices*, WALL ST. J. (July 27, 2017), https://www.wsj.com/articles/royal-dutch-shells-second-quarter-earnings-rise-sharply-1501137915

[6] *Auto and Truck Seasonal Adjustment*, BUREAU OF ECONOMIC ANALYSIS (August 2, 2017), https://www.bea.gov/national/xls/gap_hist.xlsx

VNG

Even if gasoline prices rise again, these large light duty vehicles will always account for a sizable part of the market due to their unique ability to meet specific consumer and business needs. While the footprint-based structure of the rules ensures that automakers will have to increase the fuel economy of all vehicles in order to achieve compliance, the TAR projected that this trend will nonetheless reduce the original projected impacts of the rules on petroleum dependence and greenhouse gas emissions.

The size of light trucks limits the availability of cost-effective solutions to increasing fuel economy and reducing emissions – particularly for full-size pickups, which have added performance requirements. For example, the TAR estimated that the total cost of a 20% mass reduction for towing-capable pickups, which would improve fuel economy and emissions by only 10%, would be roughly $3,000. It is also particularly challenging to electrify light trucks and pickups due to the added cost and weight of the battery packs needed to move these larger vehicles, particularly those built for carrying or towing heavy loads. Indeed, there are very few electric light trucks on the market today and no pickups, and the TAR does not even consider the possibility of electric towing-capable vehicles within the 2025 timeframe.[7]

Pickup trucks are the best-selling vehicles in America, as well as the most important source of profits for the "Big Three" U.S. automakers. Thus, a cost-effective solution to their emissions and petroleum dependence is absolutely essential to ensuring that these companies, their hundreds of thousands of employees, and the millions of consumers and businesses that rely on pickup trucks are not unnecessarily harmed by the agencies' regulations.

Fortunately, and in contrast to electrification, compressed natural gas (CNG) is ideally suited to be a low-emission, non-petroleum alternative fuel for light trucks and pickups especially. Larger vehicle envelopes provide ample room for CNG storage tanks, and since natural gas offers far greater energy density than batteries, it is much better-suited for moving heavy vehicles. These characteristics are why natural gas has long been the clean fuel of choice for heavy-duty vehicles like transit buses and refuse trucks, and the same logic holds true for the heavier side of the light-duty vehicle spectrum.

Indeed, automakers have demonstrated that NGVs are already a viable commercial technology. All three U.S. automakers have offered either CNG-equipped or CNG-ready versions of their flagship full-size pickups, including GM's Chevy Silverado,[8] FCA's Dodge Ram,[9] and Ford's F-

[7] Draft TAR, supra note 2, at 4-40.
[8] Brandon Turkus, *2015 Chevy Silverado HD gets CNG option*, AUTOBLOG (Feb. 6, 2014), http://www.autoblog.com/2014/02/06/2015-chevrolet-silverado-hd-cng-official/.
[9] Richard Truett, *Ram will expand lineup of CNG-powered trucks*, AUTOMOTIVE NEWS (Mar. 4, 2015), http://www.autonews.com/article/20150304/OEM05/150309913/ram-will-expand-lineup-of-cng-powered-trucks.

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150. In fact, in addition to being the best-selling vehicle of any model, the 2016 Ford F-150 was named Green Car Journal's "Green Car of the Year" in part due to the availability of a CNG prep package as an option.[10]

Thus, the rules should encourage automakers to transition these vehicle segments to natural gas in two ways. First, they should be provided strong incentives to do so, including special incentives for pickup trucks similar to the incentive previously created for hybrid-electric pickups. Second, natural gas should be factored into setting targets for what can be reasonably achieved for light trucks and pickups, since this is a mature, proven, commercially-available technology that automakers have already deployed in recent years.

Summary and Recommendations

Because light trucks and pickups especially are a critical market segment for consumers, businesses and automakers, and because neither electrification nor lightweighting are practical alternatives for these heavier vehicles, EPA should provide a clear regulatory pathway for automakers to transition these segments to natural gas.

- Provide emissions credits for all NGVs that reflect the emissions benefits of renewable natural gas (RNG), as discussed in the following section.

- Offer a "Natural Gas Pickup" incentive similar to current hybrid-electric and "performance-based" pickup credits; however, for the natural gas pickup credit, minimum deployment thresholds should be eliminated to reflect the greater market challenges faced by NGVs - since, unlike hybrid-electrics, they use an alternative fuel. Expecting an automaker to immediately transition at least 10% of their critical pickup fleet to an alternative fuel is simply not realistic, and renders the current "performance-based" credit useless despite the fact that natural gas can meet the credit's performance threshold of 20% emission reductions.

    - This goal could be accomplished by inserting a new section (c) under 40 C.F.R. § 86.1870–12, *CO_2 credits for qualifying full-size pickup trucks*, titled "Credits for implementation of natural gas technology." The structure of these credits would be similar to those for sections (a) and (b), but with reduced or eliminated requirements for the "required minimum percent of full size pickup trucks."

[10] *Fuel Efficiency, Alternative Fuels and Sustainability Earn Ford F-150 2016 Green Truck of the Year Award*, FORD MOTOR CO. (Nov. 19, 2015), https://media.ford.com/content/fordmedia/fna/us/en/news/2015/11/19/ford-f-150-earns-2016-green-truck-of-the-year-award.html.

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- Incorporate the use of natural gas when setting targets for practical, achievable emissions improvements for light trucks and full-size pickups.

Renewable Natural Gas - A "Waste-to-Wheels" Emissions Game-Changer

Issues Addressed:

- *The availability and effectiveness of technology, and the appropriate lead time for introduction of technology*
- *Any relevant information in light of newly available information.*
- *The impact of the greenhouse gas emission standards on the Corporate Average Fuel Economy standards and a national harmonized program*

Since the original rulemaking, there has been a dramatic transformation of the lifecycle emissions profile of NGVs due to the rapid adoption of renewable natural gas (RNG) in the transportation sector. Indeed, this is likely the biggest change in the lifecycle emissions of any fuel or vehicle type since the 2011 rulemaking – yet it was completely absent in the draft TAR for reasons that are not clear.

RNG, also known as biogas or biomethane, captures methane produced from a variety of sources including landfills, dairy and livestock operations, and wastewater treatment plants. Once impurities are removed, this methane can be used as a perfect substitute for fossil natural gas, including distribution in the existing natural gas pipeline system and use in NGVs.

Since methane is a powerful greenhouse gas, the use of RNG can achieve massive emission reductions on a CO2-equivalent basis when used as a transportation fuel. While lifecycle emissions can vary significantly depending on the pathway for RNG production, according to the most recent values for the California Low Carbon Fuel Standard (LCFS) it can yield emission cuts of between 70% and *130%*[11] - in other words, NGVs powered by RNG can be carbon-negative, potentially yielding even greater emissions benefits than an electric vehicle powered entirely by solar or wind energy.

[11] Staff Report, CALIFORNIA AIR RESOURCES BOARD, Proposed Re-Adoption of the California Low Carbon Fuel Standard. Dec. 2014. https://www.arb.ca.gov/regact/2015/lcfs2015/lcfs15isor.pdf.

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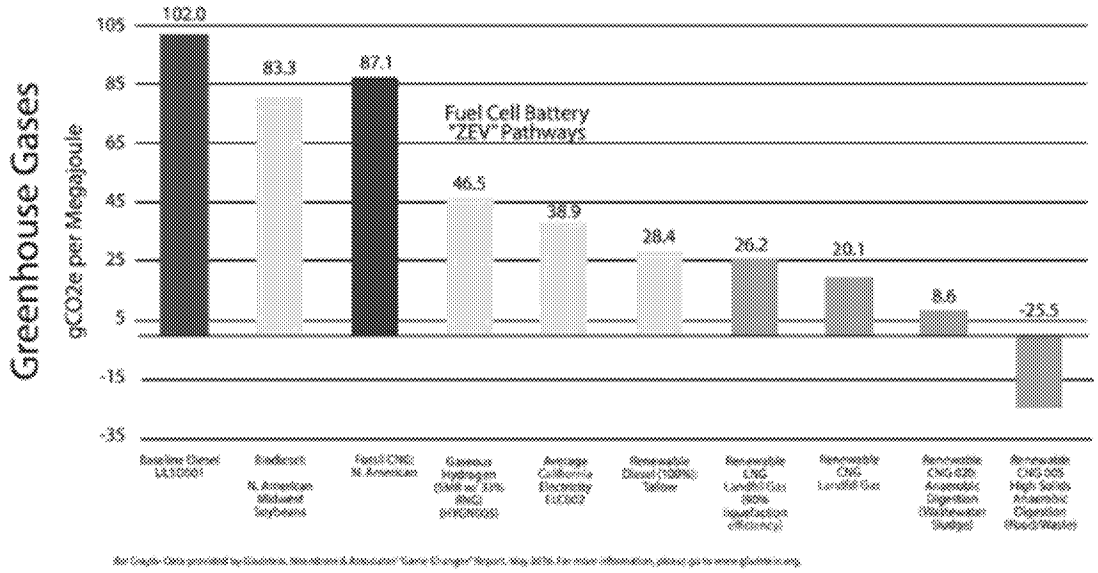

Source: Gladstein, Neandross & Associates[12]

In the original 2017-2025 rulemaking, EPA recognized the potential for RNG to deliver "game-changing" lifecycle GHG emissions for NGVs, but stated that the agency "believe[d] that biomethane will remain a small part of the overall natural gas market for the foreseeable future."[13] This belief is, simply put, outdated. Today, RNG fueling is increasingly the norm for NGVs thanks to the federal Renewable Fuel Standard (RFS) and the California Low Carbon Fuel Standard (LCFS). While these programs were in their infancy during the original rulemaking in 2011, they have since emerged as powerful economic drivers for RNG use in transportation, thanks to the reclassification of RNG as a cellulosic biofuel by EPA[14] as well as CARB's ranking of it as the lowest GHG fuel on the market. [15] Today, the value of these RFS and LCFS credits has made RNG commercially competitive with fossil natural gas.[16]

This economic driver has led to the very rapid increase in the production and sale of RNG fuel to the transportation sector – particularly in California, where fuel retailers can benefit from sales of both LCFS and RFS credits and where there are the largest number of NGVs and natural gas fueling stations. According to the RNG Coalition, over 60% of NGV fueling in California and 35%

[12] *Game-Changer: Next Generation Heavy Duty Natural Gas Engines Fueled By Renewable Natural Gas*, GLADSTEIN, NEANDROSS AND ASSOCIATES (May 2016), http://ngvgamechanger.com/pdfs/GameChanger_FullReport.pdf
[13] 2017 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions and Corporate Average Fuel Economy Standards, 77 Fed. Reg. 62815 (Oct. 15, 2012) (hereinafter "*2012 Light Duty GHG Standards*").
[14] "Renewable Fuel Pathways II Final Rule to Identify Additional Fuel Pathways under Renewable Fuel Standard Program Documents." ENVIRONMENTAL PROTECTION AGENCY. July 18, 2014. https://www.epa.gov/renewable-fuel-standard-program/renewable-fuel-pathways-ii-final-rule-identify-additional-fuel-0
[15] Staff Report, CALIFORNIA AIR RESOURCES BOARD, Proposed Re-Adoption of the California Low Carbon Fuel Standard (Dec. 2014), https://www.arb.ca.gov/regact/2015/lcfs2015/lcfs15isor.pdf
[16] *The Feasibility of Renewable Natural Gas as a Large-Scale, Low Carbon Substitute*, UC DAVIS INSTITUTE OF TRANSPORTATION STUDIES, June 2016. https://www.arb.ca.gov/research/apr/past/13-307.pdf

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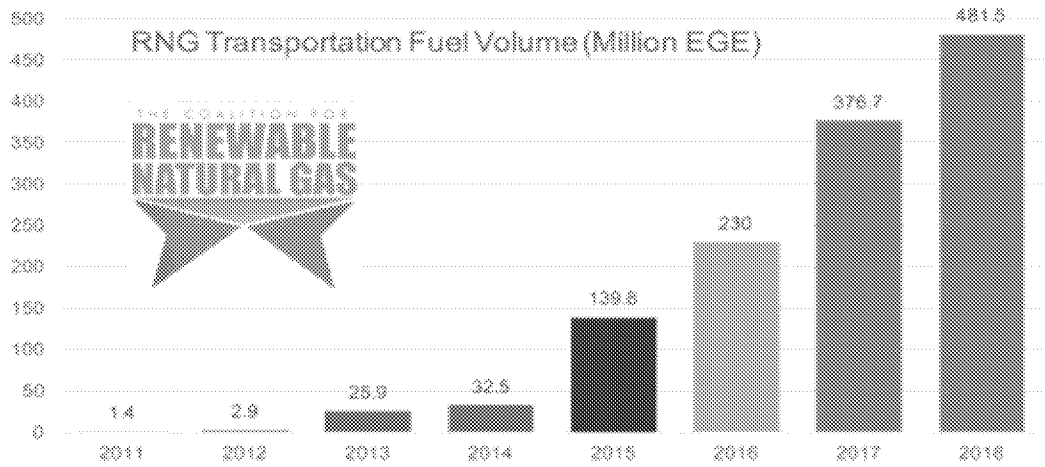
nationally comes from RNG.[17] In terms of absolute volumes, RNG fuel use in transportation increased fivefold between 2013 and 2015, and the Coalition projects it will more than quadruple between 2015 and 2018.



Source: RNG Coalition, Fleets & Fuels Magazine[18]

With this trajectory of RNG growth, the emissions benefits of NGVs today are already at least as powerful as EVs and likely even greater. Thus, ignoring the growth of RNG is not only outdated, but it renders the regulations ineffective in their stated goal of reducing GHG emissions. It also inhibits job creation not only in the NGV industry but the RNG industry as well, which has the potential to create jobs at farms and municipalities across the country through the capture and sale of locally-produced renewable fuel.

In addition to missing an opportunity to achieve the goals of the regulations, the failure to recognize the emissions benefits of RNG has also resulted in EPA effectively negating Congressional incentives for NGVs under the CAFE program. According to Sec. 6 of the Alternative Motor Fuels Act (AMFA)[19] codified as 49 U.S. Code § 32905, the fuel economy of NGVs and EVs alike is to be calculated using the Petroleum Equivalency Factor (PEF) that treats every gallon-equivalent of compressed natural gas or equivalent electrical energy as 0.15 gallons of gasoline. The goal of this technology-neutral statutory calculation was to provide automakers with a strong incentive to manufacture ***both*** types of alternative fuel vehicles to achieve the goal of American energy independence. By encouraging the production of vehicles that reduce the use of higher-carbon petroleum fuels, the statute also reduces emissions.

While the statute requires that NGVs and EVs be treated the same in terms of measuring fuel economy, there is no equivalent law governing measurement of GHGs. EPA chose to follow

[17] Patrick Couch, *RNG in California: More Than You Think*, FLEETS AND FUELS (Apr. 20, 2016), http://www.fleetsandfuels.com/fuels/cng/2016/04/rng-in-california-more-than-you-think/.
[18] *Id.*
[19] Alternative Motor Fuels Act of 1988, Public Law 100-494, 102 Stat. 2441.

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Congressional CAFE incentives through model year (MY) 2015[20] but thereafter to give NGVs credit for only their tailpipe emissions reductions of approximately 20% compared to gasoline instead of the "0.15 divisor,"[21] while temporarily treating EVs as having *zero* emissions.[22] In its original 2017-2025 rulemaking, EPA acknowledged that this calculation for EVs failed to account for the upstream emissions produced by EVs from power generation but claimed that the long-term potential of EVs to produce "game-changing" emissions when charged with renewable electricity justified this unprecedented incentive.[23]

By contrast, in the same rulemaking EPA recognized the potential for RNG to deliver "game-changing" lifecycle GHG emissions for NGVs, but stated that the agency "believe[d] that biomethane will remain a small part of the overall natural gas market for the foreseeable future."[24] As discussed above, this expectation has been proven wrong for natural gas transportation. To be consistent with this new reality and the goals of the regulation, as well as with the goal of harmonizing EPA's regulations with the statutory CAFE program, the rules should give *both* fuels incentives that reflect their "game-changing" emissions potential: for NGVs, this means credits that are equivalent to 100% RNG fueling, in the same way that the 0 g/mi incentive for EVs is equivalent to the use of 100% renewable electricity.

It would be justifiable to calculate the emissions of a 100% RNG-fueled NGV as 85% below that of a gasoline vehicle - which would be in line with the average cited in the NPC's topic paper on the subject[25] as well as a return to the "0.15 divisor" in line with CAFE's PEF calculation. And, because the present bias towards EV incentives represents the most egregious inconsistency of EPA's regulations with the CAFE program, we believe it is also justifiable to make this change effective immediately, instead of waiting for 2022.

Summary and Recommendations

RNG has transformed the emissions of NGVs since the original rulemaking, accounting for 35% of NGV fueling nationally and delivering emission reductions of 70% to 130%. Because of this game-changing emissions potential, and because existing EPA incentives for alternative fuels are biased towards EVs and disruptive of Congressionally-mandated CAFE incentives for NGVs, the emission calculation for NGVs should be reformed effective immediately.

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[20] Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards, 75 Fed. Reg. 25716 (May 7, 2010)
[21] *2012 Light Duty GHG Standards* at 62623, 62816.
[22] *Id.* at 62819.
[23] *Id. at* 62820.
[24] *Id.* at 62815.
[25] Report, NATIONAL PETROLEUM COUNCIL, *Advancing Technology for America's Transportation* (2012), http://www.npc.org/reports/trans.html.

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- NGV emissions calculations should return to the "0.15" divisor used before 2016, with emissions calculated as 85% below a gasoline vehicle. This is both justified by the real-world emissions benefits of RNG and is consistent with the CAFE program.

    - We recommend reinstating language from the MY 2011-2016 regulations under 40 C.F.R. § 600.510–12, *Calculation of average fuel economy and average carbon-related exhaust emissions*: "For natural gas-fueled model types . . . the carbon-related exhaust emissions value calculated for that model type in accordance with paragraph (b)(2) of this section multiplied by 0.15 and rounded to the nearest gram per mile, except that manufacturers complying with the fleet averaging option for N_2O and CH_4 as allowed under § 86.1818 of this chapter must perform this calculation such that N_2O and CH_4 values are not multiplied by 0.15.[26]"

- This change should be effective retroactively to model year 2017, given the major impediment to NGV adoption posed by the current incentive structure as well as the uniquely egregious regulatory overreach it represents compared to the CAFE program.

- To mirror EV incentives, EPA could consider a similar volume-based transition after 2022 to a regime that considers the real-world use of RNG just as EV incentives will ultimately be calculated based on real-world lifecycle emissions; this would be relatively simple to do since EPA already tracks RNG use under the RFS program.

Potential For Rapid Cost Reductions, Consumer Savings with NGVs

Issues Addressed:
- *The cost on the producers or purchasers of new motor vehicles*
- *The feasibility and practicability of the standards*

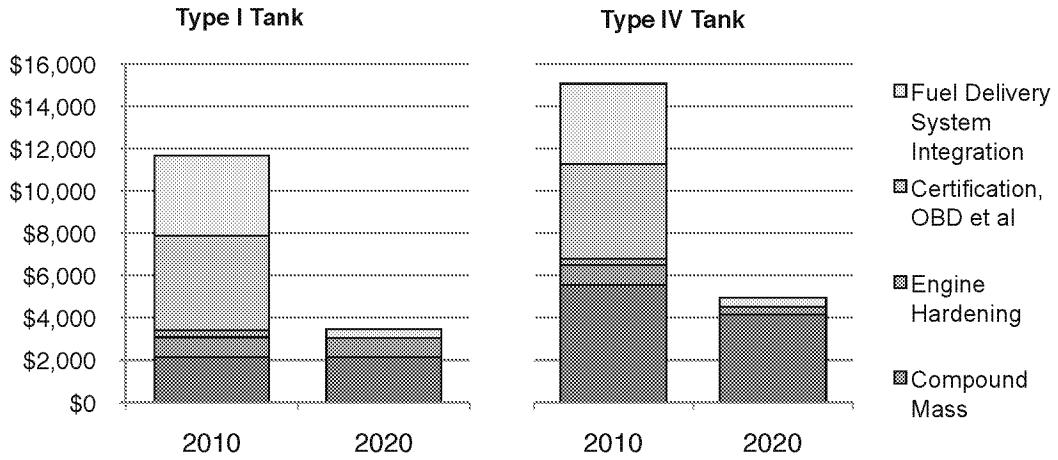
As part of a shift towards a serious analysis of NGVs in the MTE, the agencies must consider not only the current costs of NGVs but their potential for very rapid cost reductions with production at scale. Indeed, while the current incremental prices of CNG pickups are typically $10,000 or more (including upfitting costs), these high costs are primarily due to the need to spread significant up-front design and certification costs over a small number of vehicle sales.

The 2012 report "Advancing Technologies for America's Transportation Future" by the National Petroleum Council (NPC) estimates that about two thirds of the incremental cost of a NGV pickup comes from these areas, and that incremental costs could be reduced to $3,500 per vehicle by 2020 simply by moving to high-volume production (over 100,000 vehicles per year).[27]

[26] 40 C.F.R. § 600.510–12(j)(2)(iii)(A).
[27] Report, NATIONAL PETROLEUM COUNCIL, *Advancing Technology for America's Transportation* (2012), http://www.npc.org/reports/trans.html.

These projections are based in part on experiences in major NGV markets in Europe like Italy and Germany, where volume production has driven incremental costs down to $3,000 or less.[28]

Projected NGV Pickup Incremental Costs, National Petroleum Council



This compares very favorably to the current and projected incremental costs of electric and plug-in electric vehicles. Unlike NGVs, which use the same internal combustion engine platforms as gasoline vehicles and mostly only require the addition of a compressed gas tank made of steel or composites, EVs use batteries that require numerous expensive components and can only reduce costs relatively slowly. This is a critical difference for the agencies to incorporate into their planning, given much greater potential for near-term mass-market adoption of NGVs.

The mass-market potential of NGVs is due to the combination of (potentially) low incremental costs along with the lower and more stable price of natural gas compared to petroleum fuels, which allows the incremental cost to be recouped relatively quickly. According to modeling done in conjunction with the NPC study, this combination gave NGVs the potential to achieve a 17 percent light-duty vehicle market share by 2020 - more than twice the combined market share of electric and plug-in electric vehicles given their projected cost improvements.[29] While this 2012 forecast is clearly unrealistic from the perspective of 2017, the impressive potential for mass-market adoption of a cleaner fuel - and *much* cleaner when RNG is used instead of fossil natural gas - remains an opportunity that should be seriously considered in the agencies' analysis and target-setting.

Indeed, putting aside the comparison to EVs, the potential incremental costs for NGV pickups are comparable to the projected costs for 20% mass reduction via lightweighting cited earlier - $3,000 per pickup. However, as previously stated, lightweighting is forecasted to yield a fuel economy and emissions improvement of only 10%. NGV pickups at scale would have a similar

[28] Rohan Nath et al., *A Realistic View of CNG Vehicles in the US*, BCG PERSPECTIVES (June 16, 2014), https://www.bcgperspectives.com/content/articles/energy_environment_automotive_realistic_view_cng_vehicles_us/.
[29] *Id.*

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incremental cost, yet deliver *twice* the emission reductions with fossil natural gas and many times that with RNG. NGV pickups also completely eliminate petroleum dependence, protecting this critical market segment (and all the consumers, businesses, and workers that depend on it) from oil price swings.

Thus, natural gas deserves to be included in the formulation of the targets for pickups and other light trucks just like other fuel efficiency technologies that have been proven to be cost-effective at scale. This would significantly increase the achievable fuel economy and emissions improvements for these segments within the timeframe of the rulemaking and thus provides a strong rationale for potentially maintaining the existing targets. [30]

Summary and Recommendations

Because NGVs have been proven to deliver rapid and deep cost reductions with high-volume production, the agencies should incorporate them as such into their analysis.

- Modeling used to set achievable emissions curves for pickups and light trucks should include natural gas as a proven technology at costs based on high-volume adoption, not their current incremental costs at low production volumes.

Importance of Dual-Fuel NGVs

Issues Addressed:
- *The impact of the standards on the automobile industry*
- *The feasibility and practicability of the standards*

Dual-fuel NGVs (referred to in the industry as "bi-fuel" NGVs) that operate primarily on CNG but can also operate on gasoline as a backup fuel are likely to play a critical role in winning market adoption of NGVs more broadly. The ability to fuel on gasoline as a backup fuel effectively eliminates consumers' "range anxiety" while CNG fueling infrastructure is not yet as widely available as gasoline, in the same way that dual-fuel electric vehicles (referred to in the industry as plug-in hybrid electric vehicles, or PHEVs) like GM's Chevy Volt have played an important role in expanding the early market for EVs.

The 2017-2025 rulemaking made a major stride towards recognizing the potential benefits of dual-fuel NGVs, which had previously only been assumed to fuel on CNG for 50% of the time. EPA recognized that drivers purchasing dual-fuel NGVs as well as PHEVs are likely to live in areas where fueling (or charging, respectively) infrastructure is reasonably available, and will also preferentially use these alternative fuels whenever possible given their lower cost

[30] Starting the NPC's eight-year projection in 2017 instead of 2012 would imply that an NGV market share of 17 percent could be achieved by 2025 with huge reductions of emissions and petroleum consumption.

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compared to gasoline. Thus, the rules allowed automakers to calculate the fuel usage of both dual-fuel NGVs and PHEVs using a method called the "utility factor" which bases relative consumption of alternative fuels versus gasoline on the vehicle's range on the alternative fuel.[31]

Using this method, a dual-fuel NGV with 250 miles of CNG range – such as the 2015 Dodge Ram[32] – would be assumed to operate on CNG 97.1% of the time, making them nearly as beneficial as a dedicated NGV. PHEVs would receive a similar calculation, although their much shorter all-electric range makes the incentive relatively less beneficial. For example, in the original rulemaking EPA estimated that the Chevy Volt would receive a utility factor of 69% for an all-electric range of 50 miles. [33]

However, despite the fact that utility factors for dual-fuels are ostensibly to be calculated based on their range on alternative fuels, EPA has saddled dual-fuel NGVs with a unique and onerous additional requirement: they must have a CNG range at least double that of their gasoline range in order to qualify for the utility factor calculation, or else they default to an assumed baseline 50% CNG fuel use.[34] Not only that, to be eligible for the incentive, the dual-fuel NGVs must be designed to only use gasoline when the CNG tank is empty.

This requirement is inconsistent with the EPA's assumption that dual-fuel vehicles will fuel as often as possible on CNG for economic reasons, which would imply that their proportion of CNG use should be solely determined by their CNG range according to the utility factors – and not by their gasoline range. Adding further inconsistency, PHEVs face no such requirements, despite the fact of their much more limited all-electric range.

In addition to rendering incentives for dual-fuel NGVs less effective, this requirement adds marketing challenges and, significantly, unnecessary costs to automakers and consumers. To date, the configurations offered by automakers have focused on vehicles that maintain full range on gasoline in order to provide as long of a combined range as possible as well as flexibility; for instance, the dual-fuel GM Silverado has a combined CNG and gasoline range of 650 miles (with the majority coming from gasoline) and allows drivers to switch fuels by flipping a switch.[35]

Beyond unnecessarily restricting customer appeal, the CNG-to-gasoline driving range requirement would require automakers to reduce the size and capacity of the existing gasoline fueling systems in dual-fuel NGVs, which will impose additional costs on manufacturers that will

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[31] *2012 Light Duty GHG Standards* at 62829.
[32] Richard Truett, *Ram will expand lineup of CNG-powered trucks*, AUTOMOTIVE NEWS (Mar. 4, 2015), http://www.autonews.com/article/20150304/OEM05/150309913/ram-will-expand-lineup-of-cng-powered-trucks.
[33] *2012 Light Duty GHG Standards* at 62828.
[34] *Id.* at 62829.
[35] Brandon Turkus, *2015 Chevy Silverado HD gets CNG option*, AUTOBLOG (Feb. 6, 2014), http://www.autoblog.com/2014/02/06/2015-chevrolet-silverado-hd-cng-official/.

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have to be passed on to consumers. Today's dual-fuel pickup truck designs leave the existing gasoline fueling systems intact and simply add CNG storage capacity by placing the CNG tank in the bed of the pickup truck. Downsizing the gasoline fueling system would require additional design, manufacturing, and certification costs that would serve no purpose other than meeting an arbitrary and unnecessary regulatory requirement.

Of course, automakers could also pursue an alternative pathway and maintain the existing gasoline tank size and instead greatly increase CNG fueling capacity. However, this would require tripling or quadrupling the number of CNG tanks currently installed in vehicles like the dual-fuel Dodge Ram, which would add so much weight and take up so much space in the pickup bed that it would be completely unusable for the work fleets that depend on these vehicles. Once again, the current requirement forces automakers to make changes that would increase costs and reduce market acceptance in order to receive full regulatory benefits.

Allowing all NGVs to receive the full utility factor credit for CNG use would remove an unnecessary, ineffective, and arbitrary regulatory impediment to the development of this crucial market segment for stimulating growth in the wider NGV industry.

Summary and Recommendations

Because dual-fuel NGVs are critical for market development and consumer acceptance, and because the agencies should strive to be consistently technology-neutral in their incentives, the unique requirements for dual-fuel NGVs to receive credits based on utility factor calculations should be eliminated.

- Remove the utility factor requirements for a 2:1 ratio of CNG-to-gasoline range, as well as the requirement for dual-fuel NGVs to only use gasoline when the CNG tank is empty.
    - This goal could be achieved by deleting the requirements contained in 40 C.F.R. § 600.510–12, *Calculation of average fuel economy and average carbon-related exhaust emissions*, part (c)(2)(vii)(B) for fuel economy and (j)(2)(vii)(B) for emissions.

Advanced NGV Technologies Promise Best Emissions Path For ICEs

Issues Addressed:

- *The impact of the standards on advanced fuels technology, including but not limited to the potential for high-octane blends*
- *The impact of the standards on compliance with other air quality standards;*
- *The availability of realistic technological concepts for improving efficiency in automobiles that consumers demand, as well as any indirect impacts on emissions;*

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Going beyond today's NGV technology, the agencies should consider the enormous untapped potential of natural gas to deliver even greater environmental and fuel economy benefits in the future. As the highest-octane, cleanest hydrocarbon fuel, natural gas has very favorable physical properties for unsurpassed performance from an internal combustion engine – if automakers are sufficiently incentivized to invest in developing this fuel to its full potential.

Natural gas has 130 octane, far beyond what gasoline – even ethanol-blended gasoline – can provide. In the "Advancing Technologies for America's Transportation Future" study, the NPC projected that this could yield fuel economy up to double that of conventional vehicles when combined with direct injection technologies that fully utilize the properties of CNG.[36] The leading CNG conversion company Westport Innovations is already investigating the potential for natural gas-fueled advanced powertrains that exploit these properties for pickup trucks, with a turbocharged direct injection platform that could reduce carbon emissions by at least 30%.[37]

The potential environmental benefits of CNG aren't limited to greenhouse gases. In 2015, Cummins Westport International (CWI) introduced a heavy-duty CNG engine that was the first engine of any kind to meet the California Air Resources Board (CARB) optional low-NOx emission standard of 0.02 g/bhp-hr NOx – 90% below the 2010 EPA certification level.[38] Owing to the inherently cleaner chemistry of natural gas compared to petroleum-based fuels, similar improvements in performance for NOx emissions could likely be achieved for light-duty vehicles given sufficient automaker interest and investment. While NOx emissions are much lower for gasoline-fueled vehicles compared to diesel vehicles, they are still significant, making this a major untapped opportunity to address smog-forming emissions on our roads.

Agency staff should study the potential of advanced technology to further improve the emissions profile of NGVs, in the same in-depth manner that it has investigated the current and future state of EV and FCV technology. Furthermore, it should incorporate this potential in its assessment of the "game-changing" potential of NGVs as justification for strong incentives.

Summary and Recommendations

[36] Report, NATIONAL PETROLEUM COUNCIL, *Advancing Technology for America's Transportation* (2012), http://www.npc.org/reports/trans.html.
[37] *Methane: The Performance Fuel*, WESTPORT INNOVATIONS (October 2015) https://cleancities.energy.gov/files/u/news_events/document/document_url/128/Brad_Douville__Westport_NGVTF_.pdf
[38] *Game-Changer: Next Generation Heavy Duty Natural Gas Engines Fueled By Renewable Natural Gas*, GLADSTEIN, NEANDROSS AND ASSOCIATES (May 2016), http://ngvgamechanger.com/pdfs/GameChanger_FullReport.pdf

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Because of the high-octane, low-emission properties of natural gas, the agencies should fully study the ability of advanced NGV technologies to further reduce CO2 and smog-forming pollutants and incorporate the results into regulatory incentives and long-term target setting.

- The ability of NGVs to deliver unsurpassed fuel economy for an ICE vehicle should be used as a further rationale for returning to the use of the "0.15 divisor" for calculating NGV emissions, as discussed in the above section on RNG.

"Bridge to Hydrogen" Needed More Than Ever

Issues Addressed:
- *The availability and effectiveness of technology, and the appropriate lead time for introduction of technology*
- *Any relevant information in light of newly available information.*

In awarding advanced technology multiplier incentives to NGVs, the original light-duty vehicle rulemaking in 2012 recognized that there are numerous technical synergies between the development and commercialization of NGVs and hydrogen fuel cell electric vehicles (FCVs) owing to the physical similarities between methane and hydrogen. The agencies wrote that "CNG investments have the potential to facilitate the introduction of hydrogen FCVs in several respects," including innovations in advanced storage materials and tube trailer designs, improved designs for compressors and fuel dispensers, and on-site production of hydrogen from natural gas feedstock. VNG helped to lay out this rationale in a white paper, "NGVs: An Essential Bridge to Hydrogen," commissioned from the consultancy Energy Futures.[39]

Since 2012, the FCV industry has taken its first steps towards commercialization, with Toyota, Honda, and Hyundai each offering models for the U.S. market. The TAR was cautiously optimistic about the uptake of these technologies, with an estimated 125,000 FCVs deployed in California by 2025 thanks to the Zero Emissions Vehicle (ZEV) mandate. However, this does not mean they are fully commercial technologies; indeed, it means that the need for NGV synergies to accelerate the development of this market has been elevated from the realm of the theoretical to the practical. The need is particularly urgent in the area of hydrogen fueling infrastructure, as the TAR estimated that hydrogen fuel demand could begin to outpace infrastructure availability as early as 2019 and as late as 2026.

As noted in the original rulemaking, some of the strongest synergies between these fuels are in the area of infrastructure development. Both CNG and hydrogen fueling stations require the same types of equipment, including compressors, high-pressure storage tanks, and gaseous fuel dispensers. Shared standards, equipment designs, production and operational economies

[39] *Natural Gas: An Essential Bridge to Hydrogen Fuel Cell Vehicles,* ENERGY FUTURES (2011) http://vng.co/wp-content/uploads/2012/05/Natural-Gas-An-Essential-Bridge-To-Hydrogen-Fuel-Cell-Vehicles.pdf

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of scale, and technology innovations in this area could simultaneously drive down costs for both fuels. The September 2014 report "Transitioning the Transportation Sector: Exploring the Intersection of Hydrogen Fuel Cell and Natural Gas Vehicles" by the Sandia National Laboratory[40] goes further, with a concept design for a combined hydrogen and natural gas fueling station that "could improve operational expenditures and also take advantage of common supply chains."

The TAR also noted that "implementation of renewable hydrogen sourcing has posed a financial challenge" for stations developed to date, despite a minimum renewable content of 33% to receive grants from the California Energy Commission and greater incentives for 100% renewable hydrogen stations. RNG is an ideal feedstock for renewable hydrogen production via steam methane reforming (SMR) technology, but the market for FCVs is currently too small to drive widespread development of these resources. As discussed earlier in these comments, increasing the deployment of RNG-fueled NGVs is key to building the market and growing demand for this ultra-low GHG fuel in the near term, ensuring sufficient supplies of RNG for renewable hydrogen production in the longer term.

Finally, these synergies may also yield benefits in the opposite direction, with advances in hydrogen improving the emissions profile of NGVs. The TAR recognizes the potential benefits of power-to-gas applications, in which large-scale wind and solar generation can be used to create hydrogen for blending into natural gas pipelines. While it is discussed in the context of reducing the lifecycle emissions of hydrogen production, this is also clearly relevant to reducing the lifecycle emissions of CNG. The 2013 report "Blending Hydrogen into Natural Gas Pipeline Networks" by the National Renewable Energy Laboratory[41] estimates that natural gas pipelines could accommodate blends of 5-20% hydrogen content with no technical changes by end users (e.g. NGVs), which would not only reduce the overall carbon content of natural gas but also reduce methane leakage from the pipeline system (since hydrogen, as a lighter molecule, would escape from leaks first and 'crowd out' methane).

The NREL report notes that "conceivably, a credit trading system could apply to natural gas with a specified blend content of renewable hydrogen, paralleling the renewable energy credit system used in the electricity sector." In fact, such programs already exist in the transportation sector: the LCFS and RFS programs both allow for the addition of new low-carbon and renewable fuel pathways, and renewable hydrogen-enriched natural gas sold as fuel for NGVs could readily fit within these schema. As with RNG, NGVs can play a crucial role in building this

[40] *Transitioning the Transportation Sector: Exploring the Intersection of Hydrogen Fuel Cell and Natural Gas Vehicles*, SANDIA NATIONAL LABORATORY (2014), https://energy.gov/sites/prod/files/2015/02/f19/2015-01_H2NG-Report-FINAL.pdf

[41] *Blending Hydrogen into Natural Gas Pipeline Networks: A Review of Key Issues*, NATIONAL RENEWABLE ENERGY LABORATORY (2013), http://www1.eere.energy.gov/hydrogenandfuelcells/pdfs/blending_h2_nat_gas_pipeline.pdf

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market in the near term to ensure the availability of renewable, low-emission feedstocks for hydrogen fuel production in the long term.

In all these ways, NGVs could provide much-needed boosts to the development of the FCV industry. On the commercialization side, NGVs will help stimulate adoption of FCVs through lower costs and expanded infrastructure availability, and on the environmental side the expansion of availability of renewable gas feedstocks will maximize the climate benefits of these vehicles. Indeed, NGVs and FCVs should be considered part of the same gaseous fuel pathway and recognized as such in regulations that fully account for and promote the lifecycle benefits of ultra-low GHG gaseous fuel blends.

Summary and Recommendations

The widespread adoption of RNG fueling for NGVs has only increased the synergies between NGVs and FCVs. As such, the agencies should continue to recognize the linkage between these fuels as part of an advanced gaseous fuel pathway for game-changing, long-term emission reductions.

- The mutually-reinforcing ability of both NGVs and FCVs to deliver "game-changing" emission reductions should be used as a further rationale for returning to the use of the "0.15 divisor" for calculating NGV emissions, as discussed in the above section on RNG.

Emissions Solution for Mid-Life Vehicles

Issues Addressed:
- *The impact of the standards on consumer behavior, including but not limited to consumer purchasing behavior and consumer automobile usage behavior.*

Sec. 202(a) of the Clean Air Act requires the agencies to regulate vehicle emissions throughout their useful life, but the current light-duty program only provides incentives for low-emission technologies deployed in *new* vehicles. This is becoming an issue because the past decade has seen a slow, steady increase in the average life of vehicles on our roads, and particularly for light trucks. According to data from the Bureau of Transportation Statistics, the average life of cars on US roads has increased from 9.5 years in 2005 to 11.5 years in 2015[42] - surpassing the 10 year vehicle life currently considered by the agencies.

This trend will likely continue and accelerate if regulations drive up the cost of new vehicles by thousands of dollars, as the agencies themselves have estimated. This will encourage drivers to hold onto their older, less fuel-efficient, and more polluting cars and light trucks for longer and longer, undermining the benefits of the regulations.

[42] *Transportation Energy Databook 2016*, OAK RIDGE NATIONAL LABORATORY, http://cta.ornl.gov/data/index.shtml

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With conventional gasoline cars and trucks, it is essentially impossible to improve the fuel economy and emissions of a given vehicle after it rolls off the assembly line. However, retrofitting existing vehicles to fuel on natural gas has long been a major part of the NGV industry, particularly in states like Oklahoma[43] and Utah[44] that have actively sought to promote the retrofit market. The robust retrofit ecosystem in place for NGVs is fully capable of addressing this market, and the updated certification requirements for remarketed and used vehicles established by EPA in 2012[45] could make this a very cost-effective way to deliver real emissions and petroleum consumption benefits.

While expanding the rules to include emission and petroleum reductions from vehicles that have already been sold is novel, the environmental and energy security benefits that would result are just as meaningful as those stemming from sales of cleaner, more efficient new vehicles.

One way to incentivize retrofits of existing vehicles would be to allow EPA-certified conversion companies to "opt in" to the regulation for the purpose of generating credits for every vehicle they retrofit to operate on natural gas. These credits would be pro-rated based on the vehicle's projected remaining useful life - for instance, a vehicle that is five years old (halfway through the current 10 year/100,000 mile definition of useful life used by the agencies) would receive credits equal to 50% of the emissions benefits of a new NGV, including the "0.15 divisor" and the full-size pickup bonuses proposed in previous sections. The conversion company could then sell the credits to automakers looking to reduce their compliance costs in a given vehicle category.

Incentives for the development of the aftermarket upfit and retrofit ecosystem could also be incorporated into regulations for new vehicles, by including credits for CNG "prep packages" in the off-cycle credit program. For instance, the previously-mentioned 2016 Ford F-150 pickup has a CNG "prep package" including hardened valves, valve seats, pistons and piston rings, which significantly reduces the future cost of upfitting/retrofitting the vehicle for CNG operation.[46] Since this feature increases the likelihood that vehicles will be converted to a low-emission, non-petroleum fuel, it should be included on the off-cycle credit menu.

We encourage the agencies to consider these and other creative solutions to incorporate retrofits and aftermarket upfits into the rules. Doing so would help to counter the environmental and petroleum consumption impacts of increasing vehicle life, encourage closer collaboration between automakers and conversion companies, and improve the rules' cost-effectiveness.

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[43] Jay F. Marks, *CNG vehicle conversion business is booming for Oklahoma company*, THE OKLAHOMAN (Mar. 16, 2012), http://newsok.com/article/3658028.
[44] Clifford Krauss, *Surge in Natural Gas Has Utah Driving Cheaply*, N.Y. TIMES (Aug. 29, 2008), http://www.nytimes.com/2008/08/30/business/30gascars.html.
[45] *Certification and Compliance for Vehicles and Engines*, ENVIRONMENTAL PROTECTION AGENCY, https://www3.epa.gov/otaq/consumer/fuels/altfuels/altfuels.htm.
[46] *First Compressed Natural Gas and Propane-Capable 2016 Ford F-150 Rolls Off The Line At Kansas City*, FORD MOTOR CO. (Dec. 9, 2015), https://media.ford.com/content/fordmedia/fna/us/en/news/2015/12/09/first-compressed-natural-gas-and-propane-capable-2016-ford-f-150.html.

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Summary and Recommendations

NGVs offer a unique, proven pathway to reducing the emissions and petroleum consumption of the existing vehicle fleet, which is likely to be a growing issue as vehicle lifespans continue to be extended. Accordingly, the existing ecosystem of NGV conversion companies (as exemplified by states like Oklahoma and Utah) as well as OEMs should benefit from regulatory incentives for serving this important potential market.

- Allow EPA-certified converters to "opt in" to the program and generate credits for CNG retrofits and upfits that can subsequently be sold to automakers.

- Provide emission credits for CNG "prep packages" that reduce the costs of subsequent conversion to natural gas, as part of the off-cycle credit technologies listed at 40 C.F.R. § 86.1869–12, *CO_2 credits for off-cycle CO_2-reducing technologies.*

Addressing the Threat of Petroleum Dependence

Issues Addressed:

- *The cost on the producers or purchasers of new motor vehicles or new motor vehicle engines*
- *The impact of the standards on consumer behavior, including but not limited to consumer purchasing behavior and consumer automobile usage behavior (e.g. impacts on rebound, fleet turnover, consumer welfare effects, etc.)*
- *The impact of the standards on the automobile industry*

While EPA's emission regulations under the Clean Air Act serve an important purpose, they currently overshadow the original reason that Congress created the CAFE program in 1975: to reduce America's dependence on the petroleum fuels. The Energy Policy and Conservation Act was a direct response by lawmakers to the catastrophic economic and geopolitical effects of the 1973 oil crisis, but this purpose should also be fresh in the minds of today's policymakers and regulators. Like virtually every other economic recession, the oil price spike of 2007 is widely regarded as triggering the Great Recession in 2008, which devastated the global economy and cost over a hundred thousand jobs in the automotive sector as Chrysler and GM went into bankruptcy.[47]

Much more recently, Hurricane Harvey's devastation seriously disrupted the nation's gasoline fuel supplies[48] – a reminder (along with Superstorm Sandy in 2012[49]) that our dependency on one fuel source poses inherent risks beyond political or economic events.

[47] James Hamilton, "Oil Prices and the Economic Downturn." Testimony Prepared for the Joint Economic Committee of the U.S. Congress (May 20, 2009), https://www.jec.senate.gov/public/_cache/files/a6fca8ca-4c4f-4006-bca5-67e972dc19e2/hamilton-testimony.pdf

[48] Gaurav Sharma, *Hurricane Harvey Has Morphed Into A Major U.S. Gasoline Supply Disruption Event*, FORBES (August 28, 2017), https://www.forbes.com/sites/gauravsharma/2017/08/28/hurricane-harvey-has-morphed-into-a-major-u-s-gasoline-supply-disruption-event/#319555b72872

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The U.S. shale oil boom of recent years, while welcome, does not change this near-total dependence on petroleum fuels, nor the associated vulnerabilities. Despite increased production and exports, we still import nearly half of the oil consumed in this country.[50] Moreover, regardless of the degree of oil imports, the TAR acknowledges that "the price impacts of an oil disruption anywhere will continue to be transmitted to U.S. markets"[51] because oil is a global commodity. And Middle East and North African countries – which have triggered 8 of the 10 oil price shocks in history, and face significant threats from the rise of ISIS and Saudi/Iranian tensions – still account for 30% of global production, a share that the TAR expects to rise.[52]

Despite this ever-present danger hanging over our country, and despite the original intent of the CAFE rules, the TAR chapter on energy security acknowledges that the present regulations will barely make a dent in this dependence. In 2025, the TAR projects that U.S. oil imports will be reduced by 169,000 barrels a day thanks to the rules – less than 6% of imports, which will continue to *rise*, not fall. And with sales of EVs and FCVs projected to be less than 2% of the total market as late as 2030[53] - and NGV sales not projected at all – there is no expectation for alternative fuels to break oil's stranglehold on the transportation sector.

This does not have to be the case. As discussed in previous sections, NGVs are a proven, feasible solution for petroleum-free transportation, with 22 million on the road worldwide and currently-untapped potential for mass-market adoption here in America. In terms of a resource base, the shale gas revolution has created an enormous supply of domestic fossil natural gas supplies, and potential sources of RNG are found in communities and farms across the country. With this combination of a market-ready technology and an abundant, cleaner fuel supply, there is no reason for regulators to give up and resign the country to an oil-dependent future.

This is why restoring the "0.15 divisor" calculation for NGV emissions and removing other unreasonable restrictions on NGV incentives, as discussed earlier in these comments, is so important: not only is it justified based on the game-changing environmental benefits of RNG, but it also returns the joint EPA/NHTSA program to Congress's original purpose in passing the Energy Policy and Conservation Act as well as the Alternative Motor Fuels Act. By effectively removing Congress's CAFE incentives for NGVs, the current EPA rules create a conflict between environmental progress and America's energy security that does not need to exist.

Summary and Recommendations

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[49] Kate Zernike, *Gasoline Runs Short, Adding Woes to Storm Recovery,* N.Y. TIMES (Nov 1, 2012) http://www.nytimes.com/2012/11/02/nyregion/gasoline-shortages-disrupting-recovery-from-hurricane.html?pagewanted=all

[50] *How much petroleum does the United States import and export?* ENERGY INFORMATION ADMINISTRATION (April 4, 2017). https://www.eia.gov/tools/faqs/faq.php?id=727&t=6

[51] Draft TAR, 10-22

[52] *Id.*

[53] *Id.,* 13-64

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The current rules fail to meaningfully address the massive risks to America's economic prosperity and security posed by our near-total dependence on petroleum fuels in transportation. NGVs have unsurpassed potential to provide a practical solution to this dependence, but the current EPA rules effectively undercut the original Congressional intent of the CAFE program and later Congressional incentives for NGVs by eliminating the "0.15 divisor" from emission calculations.

- The potential for NGVs to provide a mass-market solution for petroleum dependence is one more reason for pursuing the comprehensive agenda of reform for NGV regulations discussed in these comments – and making these reforms effective immediately.

NGV Reform Needed Today for 2017-2021 Targets

Issues Addressed:

- *Whether the light-duty vehicle greenhouse gas standards established for model year 2021 are appropriate.*

In addition to the MTE's original focus on the 2022-2025 standards, EPA has also requested comments on whether the standards for 2021 remain appropriate. As with the 2025 targets, we believe that automakers can indeed deliver these reductions in emissions as well as petroleum consumption – but only if they are provided with appropriate incentives that recognize the contributions that NGVs make to these goals.

For all of the reasons discussed in previous sections, we believe that the challenges of meeting the targets without NGVs pose a fundamental threat to the economic viability of U.S. automakers, and thus to the hundreds of thousands of jobs that they support. And, while this challenge is likely to become dire by 2025, it is likely that it will begin impacting automakers sooner, and potentially within the 2017-2021 timeframe. Moreover, automakers will need time to ramp up their production of NGVs, and infrastructure developers like VNG will similarly need time to build fueling networks to serve the light-duty market.

Thus, EPA's desire to review the 2021 targets is an excellent opportunity to make the recommended reforms to NGV incentives sooner, rather than waiting until 2022-2025. By reforming NGV incentives effective immediately, the industry will have the regulatory certainty needed to make these long-term investments and get to work right away. Given the importance of reducing the risks of petroleum dependence to our environment and the economy, there is simply no reason to wait.

Summary and Recommendations

Because the current disparity between the treatment of NGVs and EVs is so clearly arbitrary and contrary to real-world lifecycle GHG emissions, and because automakers need this compliance flexibility and regulatory certainty in order to confidently invest in NGV production, a reform of NGV incentives should be made effective immediately – without waiting for the 2022-

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2025 period. EPA's review of the 2021 targets as part of this proceeding is an opportunity to do so.

- In the process of reviewing the 2021 targets, the agencies should adopt the recommended changes to NGV incentives discussed in these comments effective immediately.

Conclusion and Summary of Recommendations

Discussions of the future of automotive emissions are too often characterized by pessimism from all sides. On one hand, environmentalists have pushed for a widespread adoption of EVs that the EPA's own projections (e.g. the TAR) show is decades away, with very limited penetration projected through 2025. On the other hand, the auto industry argues that it has no way to keep consumers from buying larger and more-polluting vehicles, nor any way to cost-effectively reduce their emissions. And those hoping for an end to the U.S.'s decades-long vulnerability to shocks from global oil markets have little hope at all.

This picture is so gloomy because NGVs are wrongly absent from the conversation. Proven, practical NGV technology and RNG fuel can benefit light truck drivers and the environment in the near term at competitive costs, and next-generation NGVs - with high-octane engines fueled by both RNG and hydrogen-enriched gas - have the potential to dramatically improve the trajectory of these vehicles for decades to come. And with America's unrivaled gas resources, NGVs also have the potential to finally break our near-total dependence on petroleum-based fuels with an affordable, cleaner, domestically-abundant fuel.

The MTE is a critical opportunity for the agencies to correct this glaring oversight. By seriously studying the promise of NGVs and by including a robust suite of incentives for their deployment comparable to those provided to EVs, the agencies can offer a compromise to please all sides. The existing targets for 2025 can be maintained as environmentalists wish; automakers can have an expanded set of compliance pathways that address their area of biggest need - light trucks and full-size pickups; and individual consumers get the vehicles they want and need while reducing petroleum dependence and environmental impacts at a reasonable cost.

In doing so, the agencies can deliver a win-win-win for America in line with the "pro-environment, pro-growth" philosophy espoused by this Administration.[54] VNG looks forward to working with the agencies as the MTE process continues to create a final rule that reduces emissions and petroleum dependence while boosting the domestic economy through maximizing our country's unsurpassed traditional fossil and renewable natural gas resources.

[54] *EPA chief: Trump's energy order sends 'pro-growth, pro-environment message'*, Fox News (Mar. 29, 2017), http://www.foxnews.com/politics/2017/03/29/epa-chief-trumps-energy-order-sends-pro-growth-pro-environment-message.html.

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As a final summary, we recommend the following changes to the rules:

- NGV emissions calculations should return to the "0.15" divisor effective immediately, with emissions calculated as 85% below a gasoline vehicle. This is both justified by the real-world emissions benefits of RNG and is consistent with the CAFE program. The potential for future improvements to NGV emissions from advanced engine technologies, as well as synergies with hydrogen FCVs, provides further justification for this incentive.
    - We recommend reinstating language from the MY 2011-2016 regulations under 40 C.F.R. § 600.510–12, *Calculation of average fuel economy and average carbon-related exhaust emissions*: "For natural gas-fueled model types . . . the carbon-related exhaust emissions value calculated for that model type in accordance with paragraph (b)(2) of this section multiplied by 0.15 and rounded to the nearest gram per mile, except that manufacturers complying with the fleet averaging option for N_2O and CH_4 as allowed under § 86.1818 of this chapter must perform this calculation such that N_2O and CH_4 values are not multiplied by 0.15."
- Offer a "Natural Gas Pickup" incentive similar to current hybrid-electric and "performance-based" pickup credits; however, for the natural gas pickup credit, minimum deployment thresholds should be eliminated to reflect the greater market challenges faced by NGVs - since, unlike hybrid-electrics, they use an alternative fuel.
    - This goal could be accomplished by inserting a new section (c) under 40 C.F.R. § 86.1870–12, *CO_2 credits for qualifying full-size pickup trucks*, titled "Credits for implementation of natural gas technology." The structure of these credits would be similar to those for sections (a) and (b), but with reduced or eliminated requirements for the "required minimum percent of full size pickup trucks."
- Remove the utility factor requirements for a 2:1 ratio of CNG-to-gasoline range, as well as the requirement for dual-fuel NGVs to only use gasoline when the CNG tank is empty.
    - This could be achieved by deleting the requirements in 40 C.F.R. § 600.510–12, *Calculation of average fuel economy and average carbon-related exhaust emissions*, part (c)(2)(vii)(B) for fuel economy and (j)(2)(vii)(B) for emissions.
- Incorporate the potential for use of natural gas when setting targets for practical, achievable emissions improvements for light trucks and full-size pickups. Modeling used to set achievable emissions curves for pickups and light trucks should include natural

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gas as a proven technology at costs based on high-volume adoption, not their current incremental costs at low production volumes.

- Allow EPA-certified converters to "opt in" to the program and generate credits for CNG retrofits and upfits that can subsequently be sold to automakers.

- Provide emission credits for CNG "prep packages" that reduce the costs of subsequent conversion to natural gas, as part of the off-cycle credit technologies listed at 40 C.F.R. § 86.1869–12, *CO_2 credits for off-cycle CO_2-reducing technologies.*

Respectfully submitted,

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Comments by VNG.co LLC on
Reconsideration of the Final Determination of the Mid-Term
Evaluation of Greenhouse Gas Emissions Standards
For Model Year 2022–2025 Light-Duty Vehicles

Docket ID: EPA–HQ–OAR–2015–0827

VNG.co LLC is a developer of compressed natural gas (CNG) fuel dispensing infrastructure for light- and medium-duty natural gas vehicles (NGVs). We welcome this opportunity to comment on the Midterm Evaluation (MTE) of light-duty vehicle greenhouse gas standards established for model years 2022-2025 and provide the agencies[1] with much-needed updated information on NGVs and their ability to contribute to the goals of the regulations.

Indeed, NGVs are perhaps the largest and most consequential knowledge gap in the agencies' work on these regulations to date. The only substantive discussion of NGVs in the 1,217 page Technical Assessment Review (TAR) issued by EPA, NHTSA and CARB was one short paragraph noting the growth in CNG fueling infrastructure,[2] and NGVs were not included in the TAR's models for automaker compliance.[3] This is inexplicable considering that U.S. OEMs (the "Big Three") have each produced pickups that operate on compressed natural gas (CNG) in recent years, as well as the fact that there are 22 million NGVs on the road globally - including many produced by OEMs that also serve the U.S. market.

However, this decision to exclude NGVs from serious analysis becomes even more confounding when one considers the radical changes that have occurred in the emissions profile of this technology since the original rulemaking. Renewable natural gas (RNG) can reduce lifecycle greenhouse emissions by 85% or more compared to gasoline, and this ultra-low carbon biofuel now accounts for over 35% of NGV fueling nationally and over 60% of NGV fueling in California. Furthermore, engine manufacturers are beginning to explore the potential of advanced engine designs to take advantage of CNG's high-octane, inherently low-emission properties - another major opportunity to meet the agencies' goals that has been completely unexplored to date.

The virtual exclusion of NGVs from the analysis and discussion has led to the perception of regulators having a false choice between siding with automakers and consumers on one side and environmentalists on the other. Automakers assert that they cannot stop consumers from buying the larger, less fuel-efficient vehicles they want (and in many cases need), and that meeting the current emissions targets for 2025 would impose major costs and risks on their business. Meanwhile, environmentalists insist that we need to transition our entire vehicle fleet to electric vehicles (including hydrogen fuel cell vehicles) as soon as possible, despite the fact

[1] While these Comments are being submitted in the EPA's docket, it is VNG's expectation that they will be also be considered by the National Highway Traffic Safety Administration (NHTSA) and the California Air Resources Board (CARB), collectively "the agencies."
[2] *Draft Technical Assessment Report: Midterm Evaluation of Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards for Model Years 2022-2025*, ENVIRONMENTAL PROTECTION AGENCY (July 2016), at 9-41, https://nepis.epa.gov/Exe/ZyPDF.cgi/P100OXEO.PDF?Dockey=P100OXEO.PDF (hereinafter "Draft TAR").
[3] *Id.* at 5-502.

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that they are not projected to have more than 1-2% market share through at least 2025 – and are especially unlikely to be a practical choice for SUVs and pickups due to their weight and utility requirements.

NGVs are the missing piece of the puzzle. From an automaker's perspective, they offer a proven pathway to dramatically reducing emissions from their large-footprint vehicles, with similar costs and much greater benefits than lightweighting for pickup trucks. For environmentalists, the use of RNG offers similar or even superior emissions benefits to EVs, while also immediately addressing the segments of the auto market (e.g. light trucks) that are unlikely to have an electric alternative for the foreseeable future.

Reforming the light-duty emission regulations to make NGVs a practical compliance path for automakers thus offers the agencies a way to preserve the stringency of existing targets while simultaneously making it easier for automakers to meet them cost-effectively. Equally important, individual Americans will benefit from the use of a cleaner transportation fuel with lower and more stable pricing, compared to gasoline, all while purchasing the vehicles they want and need at reasonable costs. That's a win-win-win.

The following comments detail the reasons for providing robust regulatory support for NGVs on par with previous regulatory support for EVs, organized into the following sections.

- **The Need for Light Truck Alternatives in a Changing Market Context:** Consumer demand is shifting towards large vehicles with relatively low fuel economy. NGVs are ideally suited to provide a low-emission, non-petroleum alternative for the light truck segment, which is unlikely to be served by electric vehicle (EV) alternatives for the foreseeable future.

- **Renewable Natural Gas - A "Waste-to-Wheels" Emissions Game-Changer:** RNG is a game-changer that puts NGVs on par with an EV powered with wind or solar power - and it accounts for a much higher percentage of NGV fuel use than renewable electricity in the overall electricity mix. The rules must account for this dramatic shift and provide incentives for NGVs similar to those provided for EVs.

- **Potential for Rapid Cost Reductions, Consumer Savings with NGVs:** Unlike EVs, NGVs do not depend on inherently-expensive components like batteries, giving them much greater potential for rapid cost reductions with production at scale. This potential has already been demonstrated by European OEMs and gives NGVs much greater potential for mass-market adoption than the agencies have recognized to date.

- **Importance of Dual-Fuel NGVs:** Dual-fuel (commonly referred to as "bi-fuel") vehicles will play an important role in the market development of NGVs during early years of infrastructure buildout. The agencies took steps towards providing important support for bi-fuel NGVs in the original rulemaking, yet also placed unfair restrictions on this support that were not placed on similarly-important plug-in hybrid electric vehicles.

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- **Advanced NGV Technologies Promise Best Emissions Path for Internal Combustion Engines (ICEs):** The development of new engine technologies optimized for CNG's inherently high-octane, clean-burning qualities gives NGVs unsurpassed potential for environmental performance on a mass-market-ready ICE platform.

- **"Bridge to Hydrogen" Needed More Than Ever:** The agencies have previously recognized the ability of NGVs to provide a "bridge" to hydrogen-fueled vehicles thanks to numerous technology synergies on the vehicle as well as the fueling side. The opportunities for such synergies have expanded in recent years, and are as urgently-needed as ever due to the slow market uptake of hydrogen fuel cell vehicles.

- **Emissions Solution for Mid-Life Vehicles:** Sec. 202(a) of the Clean Air Act requires the agencies to regulate vehicle emissions throughout their useful life, but the current light-duty program only provides incentives for low-emission technologies deployed in *new* vehicles. As states like Oklahoma and Utah have shown, there is significant potential to reduce emissions and petroleum use from older vehicles with CNG retrofits, and these benefits should be recognized and encouraged in these regulations.

- **Addressing the Threat of Petroleum Dependence:** The CAFE program was originally created as a response to the oil crisis of 1973; yet, more than 40 years later, the program has done very little to reduce our near-total dependence on petroleum, and the agencies project that the 2017-2025 rules will not make a meaningful difference either. The current regulations ensure this in part by disadvantaging natural gas, perhaps our best hope for a long-term solution to this problem.

- **NGV Reform Needed Today for 2017-2021 Targets:** Because the current disparity between treatment of NGVs and EVs is so clearly arbitrary and contrary to real-world lifecycle GHG emissions, and because automakers need this compliance flexibility and regulatory certainty in order to confidently invest in NGV production, these changes should be made effective immediately – without waiting for the 2022-2025 period. EPA's review of the 2021 targets as part of this proceeding is an excellent opportunity to do so.

In addition to providing information on each of these topics for use in the rulemaking process, we will indicate the specific topics from EPA's Request for Comment that each section is relevant to, and we will conclude each section with a list of recommended changes to the regulations. By updating the regulations to incentivize the deployment of NGVs similar to the previous administration's focus on incentivizing EVs, the agencies will provide automakers with a greater range of compliance pathways that will help achieve the goals of the regulations sooner and more cost-effectively, to the collective benefit of consumers, the environment and industry.

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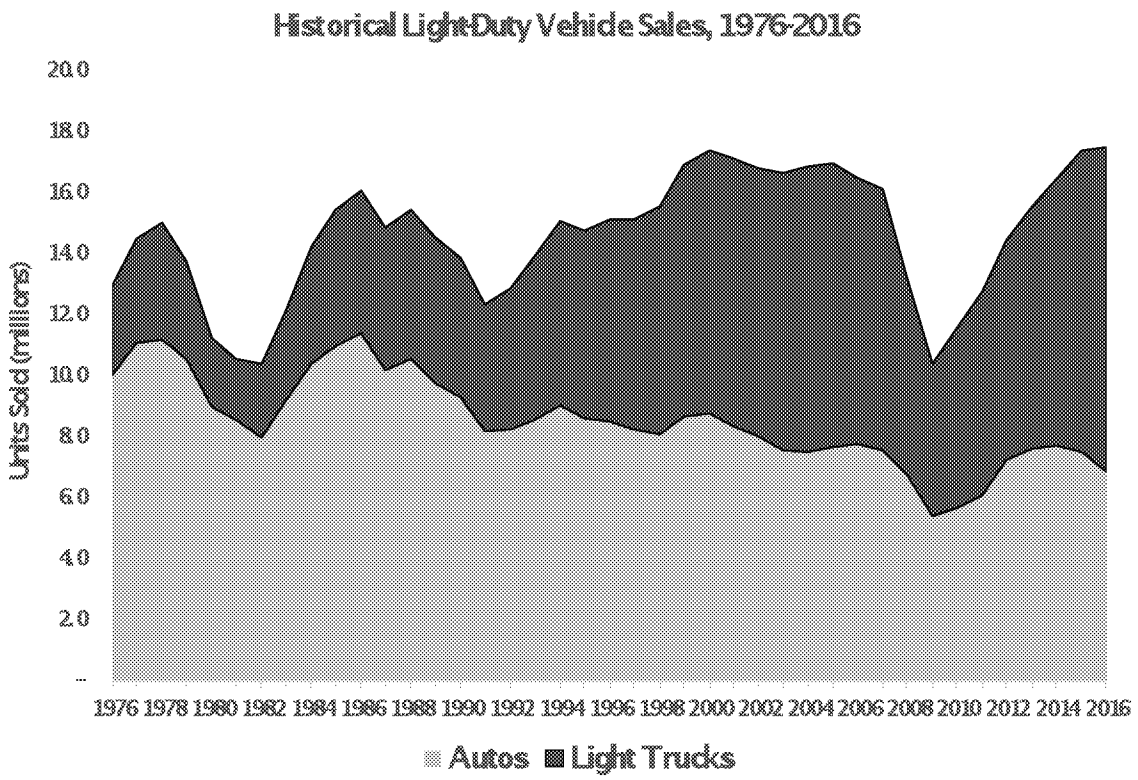
The Need for Light Truck Alternatives in a Changing Market Context

Issues Addressed:

- *The impact of the standards on the automobile industry*
- *The feasibility and practicability of the standards*

As the agencies acknowledged in the 2016 draft Technical Assessment Report (TAR), low gasoline prices have encouraged U.S. consumers to gravitate towards the purchase of larger and less fuel-efficient vehicles. After the Great Recession of 2008 decimated all classes of vehicle sales as well as oil prices, light truck sales have rebounded much more strongly than passenger vehicles and are approaching all-time highs and a market share of over 60%.[4] As the experience of the 1980s-2000s demonstrated, this shift in the market towards light trucks is likely to be sustained if gasoline prices stay low for the long term, as many observers have speculated - including oil majors like Shell, whose CEO recently said that oil prices may be "lower forever."[5]



Source: Bureau of Economic Analysis, 2017[6]

[4] *Auto and Truck Seasonal Adjustment*, BUREAU OF ECONOMIC ANALYSIS (August 2, 2017), https://www.bea.gov/national/xls/gap_hist.xlsx

[5] Sarah Kent, *Shell Prepares for 'Lower Forever' Oil Prices*, WALL ST. J. (July 27, 2017), https://www.wsj.com/articles/royal-dutch-shells-second-quarter-earnings-rise-sharply-1501137915

[6] *Auto and Truck Seasonal Adjustment*, BUREAU OF ECONOMIC ANALYSIS (August 2, 2017), https://www.bea.gov/national/xls/gap_hist.xlsx

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Even if gasoline prices rise again, these large light duty vehicles will always account for a sizable part of the market due to their unique ability to meet specific consumer and business needs. While the footprint-based structure of the rules ensures that automakers will have to increase the fuel economy of all vehicles in order to achieve compliance, the TAR projected that this trend will nonetheless reduce the original projected impacts of the rules on petroleum dependence and greenhouse gas emissions.

The size of light trucks limits the availability of cost-effective solutions to increasing fuel economy and reducing emissions – particularly for full-size pickups, which have added performance requirements. For example, the TAR estimated that the total cost of a 20% mass reduction for towing-capable pickups, which would improve fuel economy and emissions by only 10%, would be roughly $3,000. It is also particularly challenging to electrify light trucks and pickups due to the added cost and weight of the battery packs needed to move these larger vehicles, particularly those built for carrying or towing heavy loads. Indeed, there are very few electric light trucks on the market today and no pickups, and the TAR does not even consider the possibility of electric towing-capable vehicles within the 2025 timeframe.[7]

Pickup trucks are the best-selling vehicles in America, as well as the most important source of profits for the "Big Three" U.S. automakers. Thus, a cost-effective solution to their emissions and petroleum dependence is absolutely essential to ensuring that these companies, their hundreds of thousands of employees, and the millions of consumers and businesses that rely on pickup trucks are not unnecessarily harmed by the agencies' regulations.

Fortunately, and in contrast to electrification, compressed natural gas (CNG) is ideally suited to be a low-emission, non-petroleum alternative fuel for light trucks and pickups especially. Larger vehicle envelopes provide ample room for CNG storage tanks, and since natural gas offers far greater energy density than batteries, it is much better-suited for moving heavy vehicles. These characteristics are why natural gas has long been the clean fuel of choice for heavy-duty vehicles like transit buses and refuse trucks, and the same logic holds true for the heavier side of the light-duty vehicle spectrum.

Indeed, automakers have demonstrated that NGVs are already a viable commercial technology. All three U.S. automakers have offered either CNG-equipped or CNG-ready versions of their flagship full-size pickups, including GM's Chevy Silverado,[8] FCA's Dodge Ram,[9] and Ford's F-

[7] Draft TAR, supra note 2, at 4-40.
[8] Brandon Turkus, *2015 Chevy Silverado HD gets CNG option*, AUTOBLOG (Feb. 6, 2014), http://www.autoblog.com/2014/02/06/2015-chevrolet-silverado-hd-cng-official/.
[9] Richard Truett, *Ram will expand lineup of CNG-powered trucks*, AUTOMOTIVE NEWS (Mar. 4, 2015), http://www.autonews.com/article/20150304/OEM05/150309913/ram-will-expand-lineup-of-cng-powered-trucks.

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150. In fact, in addition to being the best-selling vehicle of any model, the 2016 Ford F-150 was named Green Car Journal's "Green Car of the Year" in part due to the availability of a CNG prep package as an option.[10]

Thus, the rules should encourage automakers to transition these vehicle segments to natural gas in two ways. First, they should be provided strong incentives to do so, including special incentives for pickup trucks similar to the incentive previously created for hybrid-electric pickups. Second, natural gas should be factored into setting targets for what can be reasonably achieved for light trucks and pickups, since this is a mature, proven, commercially-available technology that automakers have already deployed in recent years.

Summary and Recommendations

Because light trucks and pickups especially are a critical market segment for consumers, businesses and automakers, and because neither electrification nor lightweighting are practical alternatives for these heavier vehicles, EPA should provide a clear regulatory pathway for automakers to transition these segments to natural gas.

- Provide emissions credits for all NGVs that reflect the emissions benefits of renewable natural gas (RNG), as discussed in the following section.

- Offer a "Natural Gas Pickup" incentive similar to current hybrid-electric and "performance-based" pickup credits; however, for the natural gas pickup credit, minimum deployment thresholds should be eliminated to reflect the greater market challenges faced by NGVs - since, unlike hybrid-electrics, they use an alternative fuel. Expecting an automaker to immediately transition at least 10% of their critical pickup fleet to an alternative fuel is simply not realistic, and renders the current "performance-based" credit useless despite the fact that natural gas can meet the credit's performance threshold of 20% emission reductions.

    - This goal could be accomplished by inserting a new section (c) under 40 C.F.R. § 86.1870–12, *CO_2 credits for qualifying full-size pickup trucks*, titled "Credits for implementation of natural gas technology." The structure of these credits would be similar to those for sections (a) and (b), but with reduced or eliminated requirements for the "required minimum percent of full size pickup trucks."

[10] *Fuel Efficiency, Alternative Fuels and Sustainability Earn Ford F-150 2016 Green Truck of the Year Award*, FORD MOTOR CO. (Nov. 19, 2015), https://media.ford.com/content/fordmedia/fna/us/en/news/2015/11/19/ford-f-150-earns-2016-green-truck-of-the-year-award.html.

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- Incorporate the use of natural gas when setting targets for practical, achievable emissions improvements for light trucks and full-size pickups.

Renewable Natural Gas - A "Waste-to-Wheels" Emissions Game-Changer

Issues Addressed:

- *The availability and effectiveness of technology, and the appropriate lead time for introduction of technology*
- *Any relevant information in light of newly available information.*
- *The impact of the greenhouse gas emission standards on the Corporate Average Fuel Economy standards and a national harmonized program*

Since the original rulemaking, there has been a dramatic transformation of the lifecycle emissions profile of NGVs due to the rapid adoption of renewable natural gas (RNG) in the transportation sector. Indeed, this is likely the biggest change in the lifecycle emissions of any fuel or vehicle type since the 2011 rulemaking – yet it was completely absent in the draft TAR for reasons that are not clear.

RNG, also known as biogas or biomethane, captures methane produced from a variety of sources including landfills, dairy and livestock operations, and wastewater treatment plants. Once impurities are removed, this methane can be used as a perfect substitute for fossil natural gas, including distribution in the existing natural gas pipeline system and use in NGVs.

Since methane is a powerful greenhouse gas, the use of RNG can achieve massive emission reductions on a CO2-equivalent basis when used as a transportation fuel. While lifecycle emissions can vary significantly depending on the pathway for RNG production, according to the most recent values for the California Low Carbon Fuel Standard (LCFS) it can yield emission cuts of between 70% and *130%*[11] - in other words, NGVs powered by RNG can be carbon-negative, potentially yielding even greater emissions benefits than an electric vehicle powered entirely by solar or wind energy.

[11] Staff Report, CALIFORNIA AIR RESOURCES BOARD, Proposed Re-Adoption of the California Low Carbon Fuel Standard. Dec. 2014. https://www.arb.ca.gov/regact/2015/lcfs2015/lcfs15isor.pdf.

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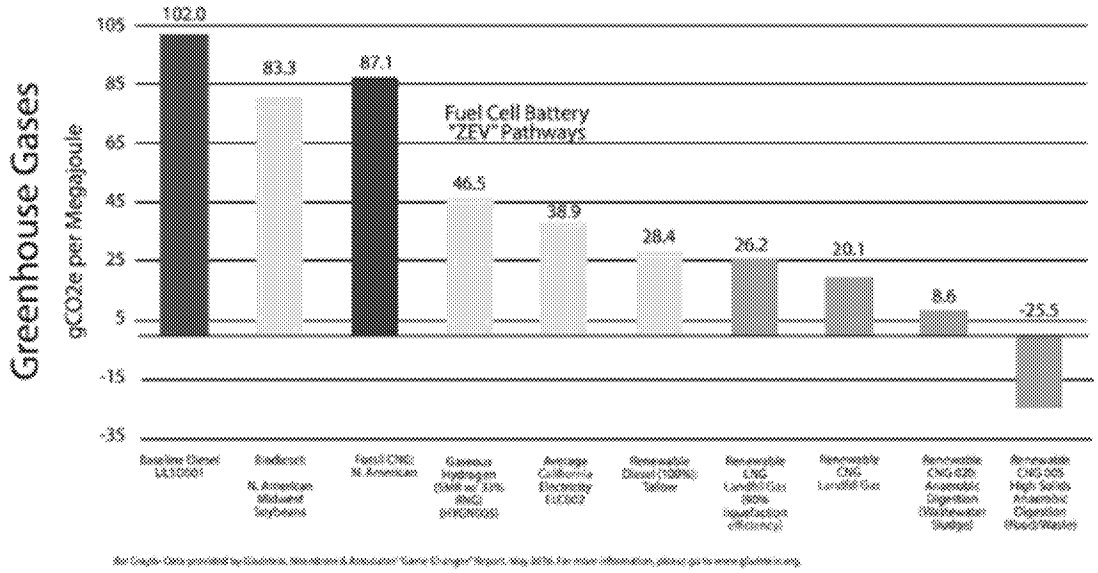

Source: Gladstein, Neandross & Associates[12]

In the original 2017-2025 rulemaking, EPA recognized the potential for RNG to deliver "game-changing" lifecycle GHG emissions for NGVs, but stated that the agency "believe[d] that biomethane will remain a small part of the overall natural gas market for the foreseeable future."[13] This belief is, simply put, outdated. Today, RNG fueling is increasingly the norm for NGVs thanks to the federal Renewable Fuel Standard (RFS) and the California Low Carbon Fuel Standard (LCFS). While these programs were in their infancy during the original rulemaking in 2011, they have since emerged as powerful economic drivers for RNG use in transportation, thanks to the reclassification of RNG as a cellulosic biofuel by EPA[14] as well as CARB's ranking of it as the lowest GHG fuel on the market. [15] Today, the value of these RFS and LCFS credits has made RNG commercially competitive with fossil natural gas.[16]

This economic driver has led to the very rapid increase in the production and sale of RNG fuel to the transportation sector – particularly in California, where fuel retailers can benefit from sales of both LCFS and RFS credits and where there are the largest number of NGVs and natural gas fueling stations. According to the RNG Coalition, over 60% of NGV fueling in California and 35%

[12] *Game-Changer: Next Generation Heavy Duty Natural Gas Engines Fueled By Renewable Natural Gas*, GLADSTEIN, NEANDROSS AND ASSOCIATES (May 2016), http://ngvgamechanger.com/pdfs/GameChanger_FullReport.pdf
[13] 2017 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions and Corporate Average Fuel Economy Standards, 77 Fed. Reg. 62815 (Oct. 15, 2012) (hereinafter "*2012 Light Duty GHG Standards*").
[14] "Renewable Fuel Pathways II Final Rule to Identify Additional Fuel Pathways under Renewable Fuel Standard Program Documents." ENVIRONMENTAL PROTECTION AGENCY. July 18, 2014. https://www.epa.gov/renewable-fuel-standard-program/renewable-fuel-pathways-ii-final-rule-identify-additional-fuel-0
[15] Staff Report, CALIFORNIA AIR RESOURCES BOARD, Proposed Re-Adoption of the California Low Carbon Fuel Standard (Dec. 2014), https://www.arb.ca.gov/regact/2015/lcfs2015/lcfs15isor.pdf
[16] *The Feasibility of Renewable Natural Gas as a Large-Scale, Low Carbon Substitute*, UC DAVIS INSTITUTE OF TRANSPORTATION STUDIES, June 2016. https://www.arb.ca.gov/research/apr/past/13-307.pdf

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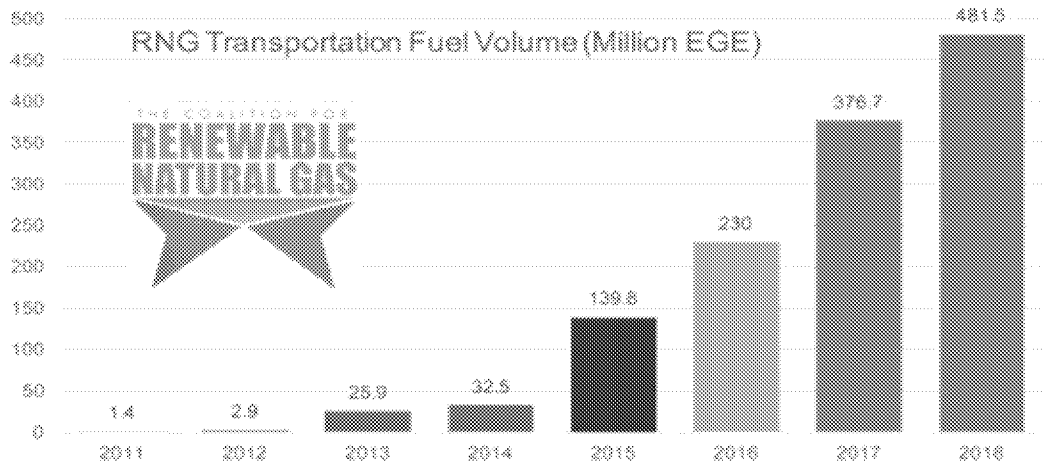
nationally comes from RNG.[17] In terms of absolute volumes, RNG fuel use in transportation increased fivefold between 2013 and 2015, and the Coalition projects it will more than quadruple between 2015 and 2018.



Source: RNG Coalition, Fleets & Fuels Magazine[18]

With this trajectory of RNG growth, the emissions benefits of NGVs today are already at least as powerful as EVs and likely even greater. Thus, ignoring the growth of RNG is not only outdated, but it renders the regulations ineffective in their stated goal of reducing GHG emissions. It also inhibits job creation not only in the NGV industry but the RNG industry as well, which has the potential to create jobs at farms and municipalities across the country through the capture and sale of locally-produced renewable fuel.

In addition to missing an opportunity to achieve the goals of the regulations, the failure to recognize the emissions benefits of RNG has also resulted in EPA effectively negating Congressional incentives for NGVs under the CAFE program. According to Sec. 6 of the Alternative Motor Fuels Act (AMFA)[19] codified as 49 U.S. Code § 32905, the fuel economy of NGVs and EVs alike is to be calculated using the Petroleum Equivalency Factor (PEF) that treats every gallon-equivalent of compressed natural gas or equivalent electrical energy as 0.15 gallons of gasoline. The goal of this technology-neutral statutory calculation was to provide automakers with a strong incentive to manufacture ***both*** types of alternative fuel vehicles to achieve the goal of American energy independence. By encouraging the production of vehicles that reduce the use of higher-carbon petroleum fuels, the statute also reduces emissions.

While the statute requires that NGVs and EVs be treated the same in terms of measuring fuel economy, there is no equivalent law governing measurement of GHGs. EPA chose to follow

[17] Patrick Couch, *RNG in California: More Than You Think*, FLEETS AND FUELS (Apr. 20, 2016), http://www.fleetsandfuels.com/fuels/cng/2016/04/rng-in-california-more-than-you-think/.
[18] *Id.*
[19] Alternative Motor Fuels Act of 1988, Public Law 100-494, 102 Stat. 2441.

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Congressional CAFE incentives through model year (MY) 2015[20] but thereafter to give NGVs credit for only their tailpipe emissions reductions of approximately 20% compared to gasoline instead of the "0.15 divisor,"[21] while temporarily treating EVs as having *zero* emissions.[22] In its original 2017-2025 rulemaking, EPA acknowledged that this calculation for EVs failed to account for the upstream emissions produced by EVs from power generation but claimed that the long-term potential of EVs to produce "game-changing" emissions when charged with renewable electricity justified this unprecedented incentive.[23]

By contrast, in the same rulemaking EPA recognized the potential for RNG to deliver "game-changing" lifecycle GHG emissions for NGVs, but stated that the agency "believe[d] that biomethane will remain a small part of the overall natural gas market for the foreseeable future."[24] As discussed above, this expectation has been proven wrong for natural gas transportation. To be consistent with this new reality and the goals of the regulation, as well as with the goal of harmonizing EPA's regulations with the statutory CAFE program, the rules should give *both* fuels incentives that reflect their "game-changing" emissions potential: for NGVs, this means credits that are equivalent to 100% RNG fueling, in the same way that the 0 g/mi incentive for EVs is equivalent to the use of 100% renewable electricity.

It would be justifiable to calculate the emissions of a 100% RNG-fueled NGV as 85% below that of a gasoline vehicle - which would be in line with the average cited in the NPC's topic paper on the subject[25] as well as a return to the "0.15 divisor" in line with CAFE's PEF calculation. And, because the present bias towards EV incentives represents the most egregious inconsistency of EPA's regulations with the CAFE program, we believe it is also justifiable to make this change effective immediately, instead of waiting for 2022.

Summary and Recommendations

RNG has transformed the emissions of NGVs since the original rulemaking, accounting for 35% of NGV fueling nationally and delivering emission reductions of 70% to 130%. Because of this game-changing emissions potential, and because existing EPA incentives for alternative fuels are biased towards EVs and disruptive of Congressionally-mandated CAFE incentives for NGVs, the emission calculation for NGVs should be reformed effective immediately.

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[20] Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards, 75 Fed. Reg. 25716 (May 7, 2010)
[21] *2012 Light Duty GHG Standards* at 62623, 62816.
[22] *Id.* at 62819.
[23] *Id. at* 62820.
[24] *Id.* at 62815.
[25] Report, NATIONAL PETROLEUM COUNCIL, *Advancing Technology for America's Transportation* (2012), http://www.npc.org/reports/trans.html.

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- NGV emissions calculations should return to the "0.15" divisor used before 2016, with emissions calculated as 85% below a gasoline vehicle. This is both justified by the real-world emissions benefits of RNG and is consistent with the CAFE program.

    - We recommend reinstating language from the MY 2011-2016 regulations under 40 C.F.R. § 600.510–12, *Calculation of average fuel economy and average carbon-related exhaust emissions*: "For natural gas-fueled model types . . . the carbon-related exhaust emissions value calculated for that model type in accordance with paragraph (b)(2) of this section multiplied by 0.15 and rounded to the nearest gram per mile, except that manufacturers complying with the fleet averaging option for N_2O and CH_4 as allowed under § 86.1818 of this chapter must perform this calculation such that N_2O and CH_4 values are not multiplied by 0.15.[26]"

- This change should be effective retroactively to model year 2017, given the major impediment to NGV adoption posed by the current incentive structure as well as the uniquely egregious regulatory overreach it represents compared to the CAFE program.

- To mirror EV incentives, EPA could consider a similar volume-based transition after 2022 to a regime that considers the real-world use of RNG just as EV incentives will ultimately be calculated based on real-world lifecycle emissions; this would be relatively simple to do since EPA already tracks RNG use under the RFS program.

Potential For Rapid Cost Reductions, Consumer Savings with NGVs

Issues Addressed:
- *The cost on the producers or purchasers of new motor vehicles*
- *The feasibility and practicability of the standards*

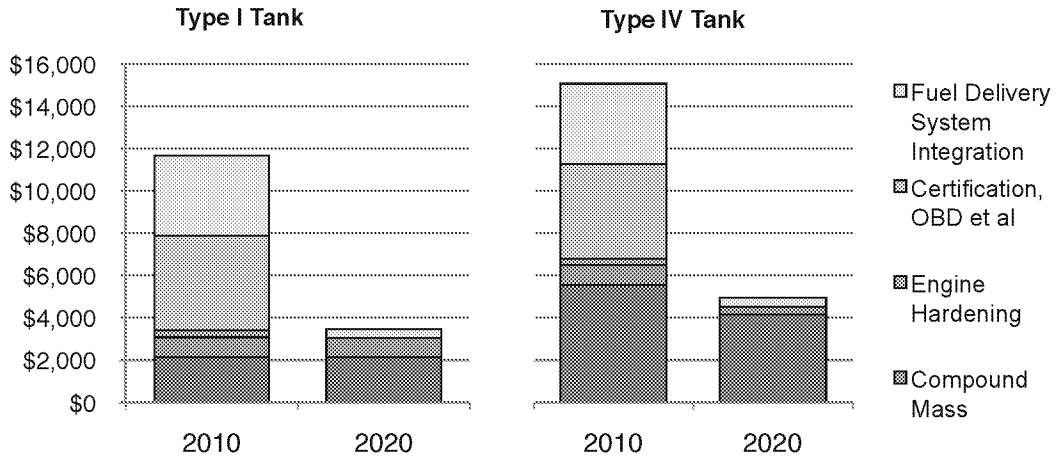
As part of a shift towards a serious analysis of NGVs in the MTE, the agencies must consider not only the current costs of NGVs but their potential for very rapid cost reductions with production at scale. Indeed, while the current incremental prices of CNG pickups are typically $10,000 or more (including upfitting costs), these high costs are primarily due to the need to spread significant up-front design and certification costs over a small number of vehicle sales.

The 2012 report "Advancing Technologies for America's Transportation Future" by the National Petroleum Council (NPC) estimates that about two thirds of the incremental cost of a NGV pickup comes from these areas, and that incremental costs could be reduced to $3,500 per vehicle by 2020 simply by moving to high-volume production (over 100,000 vehicles per year).[27]

[26] 40 C.F.R. § 600.510–12(j)(2)(iii)(A).
[27] Report, NATIONAL PETROLEUM COUNCIL, *Advancing Technology for America's Transportation* (2012), http://www.npc.org/reports/trans.html.

These projections are based in part on experiences in major NGV markets in Europe like Italy and Germany, where volume production has driven incremental costs down to $3,000 or less.[28]

Projected NGV Pickup Incremental Costs, National Petroleum Council



This compares very favorably to the current and projected incremental costs of electric and plug-in electric vehicles. Unlike NGVs, which use the same internal combustion engine platforms as gasoline vehicles and mostly only require the addition of a compressed gas tank made of steel or composites, EVs use batteries that require numerous expensive components and can only reduce costs relatively slowly. This is a critical difference for the agencies to incorporate into their planning, given much greater potential for near-term mass-market adoption of NGVs.

The mass-market potential of NGVs is due to the combination of (potentially) low incremental costs along with the lower and more stable price of natural gas compared to petroleum fuels, which allows the incremental cost to be recouped relatively quickly. According to modeling done in conjunction with the NPC study, this combination gave NGVs the potential to achieve a 17 percent light-duty vehicle market share by 2020 - more than twice the combined market share of electric and plug-in electric vehicles given their projected cost improvements.[29] While this 2012 forecast is clearly unrealistic from the perspective of 2017, the impressive potential for mass-market adoption of a cleaner fuel - and *much* cleaner when RNG is used instead of fossil natural gas - remains an opportunity that should be seriously considered in the agencies' analysis and target-setting.

Indeed, putting aside the comparison to EVs, the potential incremental costs for NGV pickups are comparable to the projected costs for 20% mass reduction via lightweighting cited earlier - $3,000 per pickup. However, as previously stated, lightweighting is forecasted to yield a fuel economy and emissions improvement of only 10%. NGV pickups at scale would have a similar

[28] Rohan Nath et al., *A Realistic View of CNG Vehicles in the US*, BCG PERSPECTIVES (June 16, 2014), https://www.bcgperspectives.com/content/articles/energy_environment_automotive_realistic_view_cng_vehicles_us/.
[29] *Id.*

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incremental cost, yet deliver *twice* the emission reductions with fossil natural gas and many times that with RNG. NGV pickups also completely eliminate petroleum dependence, protecting this critical market segment (and all the consumers, businesses, and workers that depend on it) from oil price swings.

Thus, natural gas deserves to be included in the formulation of the targets for pickups and other light trucks just like other fuel efficiency technologies that have been proven to be cost-effective at scale. This would significantly increase the achievable fuel economy and emissions improvements for these segments within the timeframe of the rulemaking and thus provides a strong rationale for potentially maintaining the existing targets. [30]

Summary and Recommendations

Because NGVs have been proven to deliver rapid and deep cost reductions with high-volume production, the agencies should incorporate them as such into their analysis.

- Modeling used to set achievable emissions curves for pickups and light trucks should include natural gas as a proven technology at costs based on high-volume adoption, not their current incremental costs at low production volumes.

Importance of Dual-Fuel NGVs

Issues Addressed:
- *The impact of the standards on the automobile industry*
- *The feasibility and practicability of the standards*

Dual-fuel NGVs (referred to in the industry as "bi-fuel" NGVs) that operate primarily on CNG but can also operate on gasoline as a backup fuel are likely to play a critical role in winning market adoption of NGVs more broadly. The ability to fuel on gasoline as a backup fuel effectively eliminates consumers' "range anxiety" while CNG fueling infrastructure is not yet as widely available as gasoline, in the same way that dual-fuel electric vehicles (referred to in the industry as plug-in hybrid electric vehicles, or PHEVs) like GM's Chevy Volt have played an important role in expanding the early market for EVs.

The 2017-2025 rulemaking made a major stride towards recognizing the potential benefits of dual-fuel NGVs, which had previously only been assumed to fuel on CNG for 50% of the time. EPA recognized that drivers purchasing dual-fuel NGVs as well as PHEVs are likely to live in areas where fueling (or charging, respectively) infrastructure is reasonably available, and will also preferentially use these alternative fuels whenever possible given their lower cost

[30] Starting the NPC's eight-year projection in 2017 instead of 2012 would imply that an NGV market share of 17 percent could be achieved by 2025 with huge reductions of emissions and petroleum consumption.

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compared to gasoline. Thus, the rules allowed automakers to calculate the fuel usage of both dual-fuel NGVs and PHEVs using a method called the "utility factor" which bases relative consumption of alternative fuels versus gasoline on the vehicle's range on the alternative fuel.[31]

Using this method, a dual-fuel NGV with 250 miles of CNG range – such as the 2015 Dodge Ram[32] – would be assumed to operate on CNG 97.1% of the time, making them nearly as beneficial as a dedicated NGV. PHEVs would receive a similar calculation, although their much shorter all-electric range makes the incentive relatively less beneficial. For example, in the original rulemaking EPA estimated that the Chevy Volt would receive a utility factor of 69% for an all-electric range of 50 miles. [33]

However, despite the fact that utility factors for dual-fuels are ostensibly to be calculated based on their range on alternative fuels, EPA has saddled dual-fuel NGVs with a unique and onerous additional requirement: they must have a CNG range at least double that of their gasoline range in order to qualify for the utility factor calculation, or else they default to an assumed baseline 50% CNG fuel use.[34] Not only that, to be eligible for the incentive, the dual-fuel NGVs must be designed to only use gasoline when the CNG tank is empty.

This requirement is inconsistent with the EPA's assumption that dual-fuel vehicles will fuel as often as possible on CNG for economic reasons, which would imply that their proportion of CNG use should be solely determined by their CNG range according to the utility factors – and not by their gasoline range. Adding further inconsistency, PHEVs face no such requirements, despite the fact of their much more limited all-electric range.

In addition to rendering incentives for dual-fuel NGVs less effective, this requirement adds marketing challenges and, significantly, unnecessary costs to automakers and consumers. To date, the configurations offered by automakers have focused on vehicles that maintain full range on gasoline in order to provide as long of a combined range as possible as well as flexibility; for instance, the dual-fuel GM Silverado has a combined CNG and gasoline range of 650 miles (with the majority coming from gasoline) and allows drivers to switch fuels by flipping a switch.[35]

Beyond unnecessarily restricting customer appeal, the CNG-to-gasoline driving range requirement would require automakers to reduce the size and capacity of the existing gasoline fueling systems in dual-fuel NGVs, which will impose additional costs on manufacturers that will

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[31] *2012 Light Duty GHG Standards* at 62829.
[32] Richard Truett, *Ram will expand lineup of CNG-powered trucks*, AUTOMOTIVE NEWS (Mar. 4, 2015), http://www.autonews.com/article/20150304/OEM05/150309913/ram-will-expand-lineup-of-cng-powered-trucks.
[33] *2012 Light Duty GHG Standards* at 62828.
[34] *Id.* at 62829.
[35] Brandon Turkus, *2015 Chevy Silverado HD gets CNG option*, AUTOBLOG (Feb. 6, 2014), http://www.autoblog.com/2014/02/06/2015-chevrolet-silverado-hd-cng-official/.

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have to be passed on to consumers. Today's dual-fuel pickup truck designs leave the existing gasoline fueling systems intact and simply add CNG storage capacity by placing the CNG tank in the bed of the pickup truck. Downsizing the gasoline fueling system would require additional design, manufacturing, and certification costs that would serve no purpose other than meeting an arbitrary and unnecessary regulatory requirement.

Of course, automakers could also pursue an alternative pathway and maintain the existing gasoline tank size and instead greatly increase CNG fueling capacity. However, this would require tripling or quadrupling the number of CNG tanks currently installed in vehicles like the dual-fuel Dodge Ram, which would add so much weight and take up so much space in the pickup bed that it would be completely unusable for the work fleets that depend on these vehicles. Once again, the current requirement forces automakers to make changes that would increase costs and reduce market acceptance in order to receive full regulatory benefits.

Allowing all NGVs to receive the full utility factor credit for CNG use would remove an unnecessary, ineffective, and arbitrary regulatory impediment to the development of this crucial market segment for stimulating growth in the wider NGV industry.

Summary and Recommendations

Because dual-fuel NGVs are critical for market development and consumer acceptance, and because the agencies should strive to be consistently technology-neutral in their incentives, the unique requirements for dual-fuel NGVs to receive credits based on utility factor calculations should be eliminated.

- Remove the utility factor requirements for a 2:1 ratio of CNG-to-gasoline range, as well as the requirement for dual-fuel NGVs to only use gasoline when the CNG tank is empty.
    - This goal could be achieved by deleting the requirements contained in 40 C.F.R. § 600.510–12, *Calculation of average fuel economy and average carbon-related exhaust emissions*, part (c)(2)(vii)(B) for fuel economy and (j)(2)(vii)(B) for emissions.

Advanced NGV Technologies Promise Best Emissions Path For ICEs

Issues Addressed:

- *The impact of the standards on advanced fuels technology, including but not limited to the potential for high-octane blends*
- *The impact of the standards on compliance with other air quality standards;*
- *The availability of realistic technological concepts for improving efficiency in automobiles that consumers demand, as well as any indirect impacts on emissions;*

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Going beyond today's NGV technology, the agencies should consider the enormous untapped potential of natural gas to deliver even greater environmental and fuel economy benefits in the future. As the highest-octane, cleanest hydrocarbon fuel, natural gas has very favorable physical properties for unsurpassed performance from an internal combustion engine – if automakers are sufficiently incentivized to invest in developing this fuel to its full potential.

Natural gas has 130 octane, far beyond what gasoline – even ethanol-blended gasoline – can provide. In the "Advancing Technologies for America's Transportation Future" study, the NPC projected that this could yield fuel economy up to double that of conventional vehicles when combined with direct injection technologies that fully utilize the properties of CNG.[36] The leading CNG conversion company Westport Innovations is already investigating the potential for natural gas-fueled advanced powertrains that exploit these properties for pickup trucks, with a turbocharged direct injection platform that could reduce carbon emissions by at least 30%.[37]

The potential environmental benefits of CNG aren't limited to greenhouse gases. In 2015, Cummins Westport International (CWI) introduced a heavy-duty CNG engine that was the first engine of any kind to meet the California Air Resources Board (CARB) optional low-NOx emission standard of 0.02 g/bhp-hr NOx – 90% below the 2010 EPA certification level.[38] Owing to the inherently cleaner chemistry of natural gas compared to petroleum-based fuels, similar improvements in performance for NOx emissions could likely be achieved for light-duty vehicles given sufficient automaker interest and investment. While NOx emissions are much lower for gasoline-fueled vehicles compared to diesel vehicles, they are still significant, making this a major untapped opportunity to address smog-forming emissions on our roads.

Agency staff should study the potential of advanced technology to further improve the emissions profile of NGVs, in the same in-depth manner that it has investigated the current and future state of EV and FCV technology. Furthermore, it should incorporate this potential in its assessment of the "game-changing" potential of NGVs as justification for strong incentives.

Summary and Recommendations

[36] Report, NATIONAL PETROLEUM COUNCIL, *Advancing Technology for America's Transportation* (2012), http://www.npc.org/reports/trans.html.
[37] *Methane: The Performance Fuel*, WESTPORT INNOVATIONS (October 2015) https://cleancities.energy.gov/files/u/news_events/document/document_url/128/Brad_Douville__Westport_NGVTF_.pdf
[38] *Game-Changer: Next Generation Heavy Duty Natural Gas Engines Fueled By Renewable Natural Gas*, GLADSTEIN, NEANDROSS AND ASSOCIATES (May 2016), http://ngvgamechanger.com/pdfs/GameChanger_FullReport.pdf

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Because of the high-octane, low-emission properties of natural gas, the agencies should fully study the ability of advanced NGV technologies to further reduce CO2 and smog-forming pollutants and incorporate the results into regulatory incentives and long-term target setting.

- The ability of NGVs to deliver unsurpassed fuel economy for an ICE vehicle should be used as a further rationale for returning to the use of the "0.15 divisor" for calculating NGV emissions, as discussed in the above section on RNG.

"Bridge to Hydrogen" Needed More Than Ever

Issues Addressed:
- *The availability and effectiveness of technology, and the appropriate lead time for introduction of technology*
- *Any relevant information in light of newly available information.*

In awarding advanced technology multiplier incentives to NGVs, the original light-duty vehicle rulemaking in 2012 recognized that there are numerous technical synergies between the development and commercialization of NGVs and hydrogen fuel cell electric vehicles (FCVs) owing to the physical similarities between methane and hydrogen. The agencies wrote that "CNG investments have the potential to facilitate the introduction of hydrogen FCVs in several respects," including innovations in advanced storage materials and tube trailer designs, improved designs for compressors and fuel dispensers, and on-site production of hydrogen from natural gas feedstock. VNG helped to lay out this rationale in a white paper, "NGVs: An Essential Bridge to Hydrogen," commissioned from the consultancy Energy Futures.[39]

Since 2012, the FCV industry has taken its first steps towards commercialization, with Toyota, Honda, and Hyundai each offering models for the U.S. market. The TAR was cautiously optimistic about the uptake of these technologies, with an estimated 125,000 FCVs deployed in California by 2025 thanks to the Zero Emissions Vehicle (ZEV) mandate. However, this does not mean they are fully commercial technologies; indeed, it means that the need for NGV synergies to accelerate the development of this market has been elevated from the realm of the theoretical to the practical. The need is particularly urgent in the area of hydrogen fueling infrastructure, as the TAR estimated that hydrogen fuel demand could begin to outpace infrastructure availability as early as 2019 and as late as 2026.

As noted in the original rulemaking, some of the strongest synergies between these fuels are in the area of infrastructure development. Both CNG and hydrogen fueling stations require the same types of equipment, including compressors, high-pressure storage tanks, and gaseous fuel dispensers. Shared standards, equipment designs, production and operational economies

[39] *Natural Gas: An Essential Bridge to Hydrogen Fuel Cell Vehicles,* ENERGY FUTURES (2011) http://vng.co/wp-content/uploads/2012/05/Natural-Gas-An-Essential-Bridge-To-Hydrogen-Fuel-Cell-Vehicles.pdf

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of scale, and technology innovations in this area could simultaneously drive down costs for both fuels. The September 2014 report "Transitioning the Transportation Sector: Exploring the Intersection of Hydrogen Fuel Cell and Natural Gas Vehicles" by the Sandia National Laboratory[40] goes further, with a concept design for a combined hydrogen and natural gas fueling station that "could improve operational expenditures and also take advantage of common supply chains."

The TAR also noted that "implementation of renewable hydrogen sourcing has posed a financial challenge" for stations developed to date, despite a minimum renewable content of 33% to receive grants from the California Energy Commission and greater incentives for 100% renewable hydrogen stations. RNG is an ideal feedstock for renewable hydrogen production via steam methane reforming (SMR) technology, but the market for FCVs is currently too small to drive widespread development of these resources. As discussed earlier in these comments, increasing the deployment of RNG-fueled NGVs is key to building the market and growing demand for this ultra-low GHG fuel in the near term, ensuring sufficient supplies of RNG for renewable hydrogen production in the longer term.

Finally, these synergies may also yield benefits in the opposite direction, with advances in hydrogen improving the emissions profile of NGVs. The TAR recognizes the potential benefits of power-to-gas applications, in which large-scale wind and solar generation can be used to create hydrogen for blending into natural gas pipelines. While it is discussed in the context of reducing the lifecycle emissions of hydrogen production, this is also clearly relevant to reducing the lifecycle emissions of CNG. The 2013 report "Blending Hydrogen into Natural Gas Pipeline Networks" by the National Renewable Energy Laboratory[41] estimates that natural gas pipelines could accommodate blends of 5-20% hydrogen content with no technical changes by end users (e.g. NGVs), which would not only reduce the overall carbon content of natural gas but also reduce methane leakage from the pipeline system (since hydrogen, as a lighter molecule, would escape from leaks first and 'crowd out' methane).

The NREL report notes that "conceivably, a credit trading system could apply to natural gas with a specified blend content of renewable hydrogen, paralleling the renewable energy credit system used in the electricity sector." In fact, such programs already exist in the transportation sector: the LCFS and RFS programs both allow for the addition of new low-carbon and renewable fuel pathways, and renewable hydrogen-enriched natural gas sold as fuel for NGVs could readily fit within these schema. As with RNG, NGVs can play a crucial role in building this

[40] *Transitioning the Transportation Sector: Exploring the Intersection of Hydrogen Fuel Cell and Natural Gas Vehicles*, SANDIA NATIONAL LABORATORY (2014), https://energy.gov/sites/prod/files/2015/02/f19/2015-01_H2NG-Report-FINAL.pdf

[41] *Blending Hydrogen into Natural Gas Pipeline Networks: A Review of Key Issues*, NATIONAL RENEWABLE ENERGY LABORATORY (2013), http://www1.eere.energy.gov/hydrogenandfuelcells/pdfs/blending_h2_nat_gas_pipeline.pdf

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market in the near term to ensure the availability of renewable, low-emission feedstocks for hydrogen fuel production in the long term.

In all these ways, NGVs could provide much-needed boosts to the development of the FCV industry. On the commercialization side, NGVs will help stimulate adoption of FCVs through lower costs and expanded infrastructure availability, and on the environmental side the expansion of availability of renewable gas feedstocks will maximize the climate benefits of these vehicles. Indeed, NGVs and FCVs should be considered part of the same gaseous fuel pathway and recognized as such in regulations that fully account for and promote the lifecycle benefits of ultra-low GHG gaseous fuel blends.

Summary and Recommendations

The widespread adoption of RNG fueling for NGVs has only increased the synergies between NGVs and FCVs. As such, the agencies should continue to recognize the linkage between these fuels as part of an advanced gaseous fuel pathway for game-changing, long-term emission reductions.

- The mutually-reinforcing ability of both NGVs and FCVs to deliver "game-changing" emission reductions should be used as a further rationale for returning to the use of the "0.15 divisor" for calculating NGV emissions, as discussed in the above section on RNG.

Emissions Solution for Mid-Life Vehicles

Issues Addressed:
- *The impact of the standards on consumer behavior, including but not limited to consumer purchasing behavior and consumer automobile usage behavior.*

Sec. 202(a) of the Clean Air Act requires the agencies to regulate vehicle emissions throughout their useful life, but the current light-duty program only provides incentives for low-emission technologies deployed in *new* vehicles. This is becoming an issue because the past decade has seen a slow, steady increase in the average life of vehicles on our roads, and particularly for light trucks. According to data from the Bureau of Transportation Statistics, the average life of cars on US roads has increased from 9.5 years in 2005 to 11.5 years in 2015[42] - surpassing the 10 year vehicle life currently considered by the agencies.

This trend will likely continue and accelerate if regulations drive up the cost of new vehicles by thousands of dollars, as the agencies themselves have estimated. This will encourage drivers to hold onto their older, less fuel-efficient, and more polluting cars and light trucks for longer and longer, undermining the benefits of the regulations.

[42] *Transportation Energy Databook 2016*, OAK RIDGE NATIONAL LABORATORY, http://cta.ornl.gov/data/index.shtml

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With conventional gasoline cars and trucks, it is essentially impossible to improve the fuel economy and emissions of a given vehicle after it rolls off the assembly line. However, retrofitting existing vehicles to fuel on natural gas has long been a major part of the NGV industry, particularly in states like Oklahoma[43] and Utah[44] that have actively sought to promote the retrofit market. The robust retrofit ecosystem in place for NGVs is fully capable of addressing this market, and the updated certification requirements for remarketed and used vehicles established by EPA in 2012[45] could make this a very cost-effective way to deliver real emissions and petroleum consumption benefits.

While expanding the rules to include emission and petroleum reductions from vehicles that have already been sold is novel, the environmental and energy security benefits that would result are just as meaningful as those stemming from sales of cleaner, more efficient new vehicles.

One way to incentivize retrofits of existing vehicles would be to allow EPA-certified conversion companies to "opt in" to the regulation for the purpose of generating credits for every vehicle they retrofit to operate on natural gas. These credits would be pro-rated based on the vehicle's projected remaining useful life - for instance, a vehicle that is five years old (halfway through the current 10 year/100,000 mile definition of useful life used by the agencies) would receive credits equal to 50% of the emissions benefits of a new NGV, including the "0.15 divisor" and the full-size pickup bonuses proposed in previous sections. The conversion company could then sell the credits to automakers looking to reduce their compliance costs in a given vehicle category.

Incentives for the development of the aftermarket upfit and retrofit ecosystem could also be incorporated into regulations for new vehicles, by including credits for CNG "prep packages" in the off-cycle credit program. For instance, the previously-mentioned 2016 Ford F-150 pickup has a CNG "prep package" including hardened valves, valve seats, pistons and piston rings, which significantly reduces the future cost of upfitting/retrofitting the vehicle for CNG operation.[46] Since this feature increases the likelihood that vehicles will be converted to a low-emission, non-petroleum fuel, it should be included on the off-cycle credit menu.

We encourage the agencies to consider these and other creative solutions to incorporate retrofits and aftermarket upfits into the rules. Doing so would help to counter the environmental and petroleum consumption impacts of increasing vehicle life, encourage closer collaboration between automakers and conversion companies, and improve the rules' cost-effectiveness.

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[43] Jay F. Marks, *CNG vehicle conversion business is booming for Oklahoma company*, THE OKLAHOMAN (Mar. 16, 2012), http://newsok.com/article/3658028.

[44] Clifford Krauss, *Surge in Natural Gas Has Utah Driving Cheaply*, N.Y. TIMES (Aug. 29, 2008), http://www.nytimes.com/2008/08/30/business/30gascars.html.

[45] *Certification and Compliance for Vehicles and Engines*, ENVIRONMENTAL PROTECTION AGENCY, https://www3.epa.gov/otaq/consumer/fuels/altfuels/altfuels.htm.

[46] *First Compressed Natural Gas and Propane-Capable 2016 Ford F-150 Rolls Off The Line At Kansas City*, FORD MOTOR CO. (Dec. 9, 2015), https://media.ford.com/content/fordmedia/fna/us/en/news/2015/12/09/first-compressed-natural-gas-and-propane-capable-2016-ford-f-150.html.

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Summary and Recommendations

NGVs offer a unique, proven pathway to reducing the emissions and petroleum consumption of the existing vehicle fleet, which is likely to be a growing issue as vehicle lifespans continue to be extended. Accordingly, the existing ecosystem of NGV conversion companies (as exemplified by states like Oklahoma and Utah) as well as OEMs should benefit from regulatory incentives for serving this important potential market.

- Allow EPA-certified converters to "opt in" to the program and generate credits for CNG retrofits and upfits that can subsequently be sold to automakers.

- Provide emission credits for CNG "prep packages" that reduce the costs of subsequent conversion to natural gas, as part of the off-cycle credit technologies listed at 40 C.F.R. § 86.1869–12, *CO_2 credits for off-cycle CO_2-reducing technologies.*

Addressing the Threat of Petroleum Dependence

Issues Addressed:

- *The cost on the producers or purchasers of new motor vehicles or new motor vehicle engines*
- *The impact of the standards on consumer behavior, including but not limited to consumer purchasing behavior and consumer automobile usage behavior (e.g. impacts on rebound, fleet turnover, consumer welfare effects, etc.)*
- *The impact of the standards on the automobile industry*

While EPA's emission regulations under the Clean Air Act serve an important purpose, they currently overshadow the original reason that Congress created the CAFE program in 1975: to reduce America's dependence on the petroleum fuels. The Energy Policy and Conservation Act was a direct response by lawmakers to the catastrophic economic and geopolitical effects of the 1973 oil crisis, but this purpose should also be fresh in the minds of today's policymakers and regulators. Like virtually every other economic recession, the oil price spike of 2007 is widely regarded as triggering the Great Recession in 2008, which devastated the global economy and cost over a hundred thousand jobs in the automotive sector as Chrysler and GM went into bankruptcy.[47]

Much more recently, Hurricane Harvey's devastation seriously disrupted the nation's gasoline fuel supplies[48] – a reminder (along with Superstorm Sandy in 2012[49]) that our dependency on one fuel source poses inherent risks beyond political or economic events.

[47] James Hamilton, "Oil Prices and the Economic Downturn." Testimony Prepared for the Joint Economic Committee of the U.S. Congress (May 20, 2009), https://www.jec.senate.gov/public/_cache/files/a6fca8ca-4c4f-4006-bca5-67e972dc19e2/hamilton-testimony.pdf

[48] Gaurav Sharma, *Hurricane Harvey Has Morphed Into A Major U.S. Gasoline Supply Disruption Event*, FORBES (August 28, 2017), https://www.forbes.com/sites/gauravsharma/2017/08/28/hurricane-harvey-has-morphed-into-a-major-u-s-gasoline-supply-disruption-event/#319555b72872

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The U.S. shale oil boom of recent years, while welcome, does not change this near-total dependence on petroleum fuels, nor the associated vulnerabilities. Despite increased production and exports, we still import nearly half of the oil consumed in this country.[50] Moreover, regardless of the degree of oil imports, the TAR acknowledges that "the price impacts of an oil disruption anywhere will continue to be transmitted to U.S. markets"[51] because oil is a global commodity. And Middle East and North African countries – which have triggered 8 of the 10 oil price shocks in history, and face significant threats from the rise of ISIS and Saudi/Iranian tensions – still account for 30% of global production, a share that the TAR expects to rise.[52]

Despite this ever-present danger hanging over our country, and despite the original intent of the CAFE rules, the TAR chapter on energy security acknowledges that the present regulations will barely make a dent in this dependence. In 2025, the TAR projects that U.S. oil imports will be reduced by 169,000 barrels a day thanks to the rules – less than 6% of imports, which will continue to *rise*, not fall. And with sales of EVs and FCVs projected to be less than 2% of the total market as late as 2030[53] - and NGV sales not projected at all – there is no expectation for alternative fuels to break oil's stranglehold on the transportation sector.

This does not have to be the case. As discussed in previous sections, NGVs are a proven, feasible solution for petroleum-free transportation, with 22 million on the road worldwide and currently-untapped potential for mass-market adoption here in America. In terms of a resource base, the shale gas revolution has created an enormous supply of domestic fossil natural gas supplies, and potential sources of RNG are found in communities and farms across the country. With this combination of a market-ready technology and an abundant, cleaner fuel supply, there is no reason for regulators to give up and resign the country to an oil-dependent future.

This is why restoring the "0.15 divisor" calculation for NGV emissions and removing other unreasonable restrictions on NGV incentives, as discussed earlier in these comments, is so important: not only is it justified based on the game-changing environmental benefits of RNG, but it also returns the joint EPA/NHTSA program to Congress's original purpose in passing the Energy Policy and Conservation Act as well as the Alternative Motor Fuels Act. By effectively removing Congress's CAFE incentives for NGVs, the current EPA rules create a conflict between environmental progress and America's energy security that does not need to exist.

Summary and Recommendations

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[49] Kate Zernike, *Gasoline Runs Short, Adding Woes to Storm Recovery,* N.Y. TIMES (Nov 1, 2012) http://www.nytimes.com/2012/11/02/nyregion/gasoline-shortages-disrupting-recovery-from-hurricane.html?pagewanted=all

[50] *How much petroleum does the United States import and export?* ENERGY INFORMATION ADMINISTRATION (April 4, 2017). https://www.eia.gov/tools/faqs/faq.php?id=727&t=6

[51] Draft TAR, 10-22

[52] *Id.*

[53] *Id.,* 13-64

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The current rules fail to meaningfully address the massive risks to America's economic prosperity and security posed by our near-total dependence on petroleum fuels in transportation. NGVs have unsurpassed potential to provide a practical solution to this dependence, but the current EPA rules effectively undercut the original Congressional intent of the CAFE program and later Congressional incentives for NGVs by eliminating the "0.15 divisor" from emission calculations.

- The potential for NGVs to provide a mass-market solution for petroleum dependence is one more reason for pursuing the comprehensive agenda of reform for NGV regulations discussed in these comments – and making these reforms effective immediately.

NGV Reform Needed Today for 2017-2021 Targets

Issues Addressed:

- *Whether the light-duty vehicle greenhouse gas standards established for model year 2021 are appropriate.*

In addition to the MTE's original focus on the 2022-2025 standards, EPA has also requested comments on whether the standards for 2021 remain appropriate. As with the 2025 targets, we believe that automakers can indeed deliver these reductions in emissions as well as petroleum consumption – but only if they are provided with appropriate incentives that recognize the contributions that NGVs make to these goals.

For all of the reasons discussed in previous sections, we believe that the challenges of meeting the targets without NGVs pose a fundamental threat to the economic viability of U.S. automakers, and thus to the hundreds of thousands of jobs that they support. And, while this challenge is likely to become dire by 2025, it is likely that it will begin impacting automakers sooner, and potentially within the 2017-2021 timeframe. Moreover, automakers will need time to ramp up their production of NGVs, and infrastructure developers like VNG will similarly need time to build fueling networks to serve the light-duty market.

Thus, EPA's desire to review the 2021 targets is an excellent opportunity to make the recommended reforms to NGV incentives sooner, rather than waiting until 2022-2025. By reforming NGV incentives effective immediately, the industry will have the regulatory certainty needed to make these long-term investments and get to work right away. Given the importance of reducing the risks of petroleum dependence to our environment and the economy, there is simply no reason to wait.

Summary and Recommendations

Because the current disparity between the treatment of NGVs and EVs is so clearly arbitrary and contrary to real-world lifecycle GHG emissions, and because automakers need this compliance flexibility and regulatory certainty in order to confidently invest in NGV production, a reform of NGV incentives should be made effective immediately – without waiting for the 2022-

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2025 period. EPA's review of the 2021 targets as part of this proceeding is an opportunity to do so.

- In the process of reviewing the 2021 targets, the agencies should adopt the recommended changes to NGV incentives discussed in these comments effective immediately.

Conclusion and Summary of Recommendations

Discussions of the future of automotive emissions are too often characterized by pessimism from all sides. On one hand, environmentalists have pushed for a widespread adoption of EVs that the EPA's own projections (e.g. the TAR) show is decades away, with very limited penetration projected through 2025. On the other hand, the auto industry argues that it has no way to keep consumers from buying larger and more-polluting vehicles, nor any way to cost-effectively reduce their emissions. And those hoping for an end to the U.S.'s decades-long vulnerability to shocks from global oil markets have little hope at all.

This picture is so gloomy because NGVs are wrongly absent from the conversation. Proven, practical NGV technology and RNG fuel can benefit light truck drivers and the environment in the near term at competitive costs, and next-generation NGVs - with high-octane engines fueled by both RNG and hydrogen-enriched gas - have the potential to dramatically improve the trajectory of these vehicles for decades to come. And with America's unrivaled gas resources, NGVs also have the potential to finally break our near-total dependence on petroleum-based fuels with an affordable, cleaner, domestically-abundant fuel.

The MTE is a critical opportunity for the agencies to correct this glaring oversight. By seriously studying the promise of NGVs and by including a robust suite of incentives for their deployment comparable to those provided to EVs, the agencies can offer a compromise to please all sides. The existing targets for 2025 can be maintained as environmentalists wish; automakers can have an expanded set of compliance pathways that address their area of biggest need - light trucks and full-size pickups; and individual consumers get the vehicles they want and need while reducing petroleum dependence and environmental impacts at a reasonable cost.

In doing so, the agencies can deliver a win-win-win for America in line with the "pro-environment, pro-growth" philosophy espoused by this Administration.[54] VNG looks forward to working with the agencies as the MTE process continues to create a final rule that reduces emissions and petroleum dependence while boosting the domestic economy through maximizing our country's unsurpassed traditional fossil and renewable natural gas resources.

[54] *EPA chief: Trump's energy order sends 'pro-growth, pro-environment message'*, Fox News (Mar. 29, 2017), http://www.foxnews.com/politics/2017/03/29/epa-chief-trumps-energy-order-sends-pro-growth-pro-environment-message.html.

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As a final summary, we recommend the following changes to the rules:

- NGV emissions calculations should return to the "0.15" divisor effective immediately, with emissions calculated as 85% below a gasoline vehicle. This is both justified by the real-world emissions benefits of RNG and is consistent with the CAFE program. The potential for future improvements to NGV emissions from advanced engine technologies, as well as synergies with hydrogen FCVs, provides further justification for this incentive.
    - We recommend reinstating language from the MY 2011-2016 regulations under 40 C.F.R. § 600.510–12, *Calculation of average fuel economy and average carbon-related exhaust emissions*: "For natural gas-fueled model types . . . the carbon-related exhaust emissions value calculated for that model type in accordance with paragraph (b)(2) of this section multiplied by 0.15 and rounded to the nearest gram per mile, except that manufacturers complying with the fleet averaging option for N_2O and CH_4 as allowed under § 86.1818 of this chapter must perform this calculation such that N_2O and CH_4 values are not multiplied by 0.15."
- Offer a "Natural Gas Pickup" incentive similar to current hybrid-electric and "performance-based" pickup credits; however, for the natural gas pickup credit, minimum deployment thresholds should be eliminated to reflect the greater market challenges faced by NGVs - since, unlike hybrid-electrics, they use an alternative fuel.
    - This goal could be accomplished by inserting a new section (c) under 40 C.F.R. § 86.1870–12, *CO_2 credits for qualifying full-size pickup trucks*, titled "Credits for implementation of natural gas technology." The structure of these credits would be similar to those for sections (a) and (b), but with reduced or eliminated requirements for the "required minimum percent of full size pickup trucks."
- Remove the utility factor requirements for a 2:1 ratio of CNG-to-gasoline range, as well as the requirement for dual-fuel NGVs to only use gasoline when the CNG tank is empty.
    - This could be achieved by deleting the requirements in 40 C.F.R. § 600.510–12, *Calculation of average fuel economy and average carbon-related exhaust emissions*, part (c)(2)(vii)(B) for fuel economy and (j)(2)(vii)(B) for emissions.
- Incorporate the potential for use of natural gas when setting targets for practical, achievable emissions improvements for light trucks and full-size pickups. Modeling used to set achievable emissions curves for pickups and light trucks should include natural

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gas as a proven technology at costs based on high-volume adoption, not their current incremental costs at low production volumes.

- Allow EPA-certified converters to "opt in" to the program and generate credits for CNG retrofits and upfits that can subsequently be sold to automakers.

- Provide emission credits for CNG "prep packages" that reduce the costs of subsequent conversion to natural gas, as part of the off-cycle credit technologies listed at 40 C.F.R. § 86.1869–12, *CO_2 credits for off-cycle CO_2-reducing technologies.*

Respectfully submitted,

Robert C. Atkinson
Chief Regulatory Officer
VNG.co LLC
rcatkinson@vng.co
908-447-4201

Appointment

From: Atkinson, Emily [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=BB2155ADEF6A44AEA9410741F0C01D27-ATKINSON, EMILY]
Sent: 2/5/2018 7:41:21 PM
To: Gunasekara, Mandy [Gunasekara.Mandy@epa.gov]; Grundler, Christopher [grundler.christopher@epa.gov]; Hengst, Benjamin [Hengst.Benjamin@epa.gov]; Cook, Leila [cook.leila@epa.gov]; Charmley, William [charmley.william@epa.gov]

Subject: Meet with Alliance for Vehicle Efficiency (Confirmed)
Attachments: FW: Meeting Request (2-20-2018) with Asst. Adm. Wehrum; Confirmed 2/20 at 10am: Meeting Request (2-20-2018) with Asst. Adm. Wehrum
Location: WJC-N 5400

Start: 2/20/2018 3:00:00 PM
End: 2/20/2018 3:45:00 PM
Show Time As: Tentative

Re: MTE
To: Bill Wehrum, Mandy Gunasekara, Chris Grundler, Ben Hengst, Lee Cook, Bill Charmley
Outside Attendees (in person): TBD

FW: Meeting Request (2-20-2...

Confirmed 2/20 at 10am: Meeting R...

Message

From: Atkinson, Emily [Atkinson.Emily@epa.gov]
Sent: 2/5/2018 7:40:36 PM
To: Lee Janger [lee@armitagellc.com]
Subject: Confirmed 2/20 at 10am: Meeting Request (2-20-2018) with Asst. Adm. Wehrum

Hi Lee,
You are confirmed for 45 minute meeting on Tuesday, February 20, 2018 at 10:00am with Bill Wehrum.
Directions and procedures to 1200 Pennsylvania Avenue NW:

Metro: If you come by Metro get off at the Federal Triangle metro stop. Exit the metro station and go up two sets of escalators to the surface level and turn right. You will see a short staircase and wheelchair ramp leading to a set of glass doors with the EPA logo - that is the William Jefferson Clinton Federal Building, North Entrance.

Taxi: Direct the taxi to drop you off on 12th Street NW, between Constitution and Pennsylvania Avenues, at the elevator for the Federal Triangle metro stop - this is almost exactly half way between the two avenues on 12th Street NW. Facing the building with the EPA logo and American flags, walk toward the building and take the glass door on your right hand side with the escalators going down to the metro on your left – that is the North Lobby of the William Jefferson Clinton building.

Security Procedures: A government issued photo id is required to enter the building and it is suggested you arrive 15 minutes early in order to be cleared and arrive at the meeting room on time. Upon entering the lobby, the meeting attendees will be asked to pass through security and provide a photo ID for entrance. Let the guards know that you were instructed to call 202-564-7404 for a security escort.
Please send me a list of participants in advance of the meeting and feel free to contact me should you need any additional information.

Emily

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Lee Janger [mailto:lee@armitagellc.com]
Sent: Monday, February 05, 2018 12:58 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: RE: Meeting Request (2-20-2018) with Asst. Adm. Wehrum

Emily,

That works great on our end. Thank you very much for making these arrangements. I will make sure to reach out a few days beforehand to brief you on attendees and materials to be discussed.

Best regards,
-Lee

From: Atkinson, Emily [mailto:Atkinson.Emily@epa.gov]
Sent: Monday, February 05, 2018 12:53 PM
To: Lee Janger <lee@armitagellc.com>
Subject: FW: Meeting Request (2-20-2018) with Asst. Adm. Wehrum

Hi Lee,

It looks like Bill Wehrum and Mandy Gunasekara could be available for a 45 minute meeting on Tuesday, February 20, 2018 at 10:00am.

Please advise if this could work on your end.

Emily

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Lee Janger [mailto:lee@armitagellc.com]
Sent: Friday, February 02, 2018 2:19 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: Meeting Request (2-20-2018) with Asst. Adm. Wehrum

Ms. Atkinson,

Thank you so much for taking the time to speak with me just now. This email is a follow up on to our brief discussion.

I represent a group of large auto suppliers (BorgWarner, Honeywell, Bosch, and others). Our focus is on advanced powertrain and emission control technologies. We advocate for technology neutral standards that encourage and support innovation across the auto industry.

We are very interested in speaking with Assistant Administrator Wehrum and others in the Office of Air and Radiation regarding the Midterm Evaluation (MTE). In response to the anticipated review, we have prepared data that we believe will assist EPA with their review of the appropriateness of the emissions standards for vehicle model years 2022-2025.

A few months ago, we had a great meeting with Mike Catanzaro at the White House, and after learning about our data review, strongly urged us to meet with your office to discuss our concerns on long term certainty, job growth and future technology investments as these are some of the key factors being looked at for the MTE.

As we finalize our data, I am hoping to arrange a meeting with Mr. Wehrum for **the late morning of February 20th** while many of members will be in Washington, DC. Please let me know if a meeting at that time is possible. We would likely be a group of 5-6 people.

More information on our group can be found at www.VehicleEfficiency.com Please let me know if I can provide any additional information. My contact information is also below.

Thank you again for your time and help.
-Lee

Alliance for Vehicle Efficiency

Lee J. Janger
Director, Legislative and Regulatory Affairs
202.607.0723
Lee@ArmitageLLC.com

>www.VehicleEfficiency.com<

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Message

From: Atkinson, Emily [Atkinson.Emily@epa.gov]
Sent: 2/2/2018 7:23:45 PM
To: Lewis, Josh [Lewis.Josh@epa.gov]
Subject: FW: Meeting Request (2-20-2018) with Asst. Adm. Wehrum

Meeting request for Bill

From: Lee Janger [mailto:lee@armitagellc.com]
Sent: Friday, February 02, 2018 2:19 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: Meeting Request (2-20-2018) with Asst. Adm. Wehrum

Ms. Atkinson,

Thank you so much for taking the time to speak with me just now. This email is a follow up on to our brief discussion.

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Thank you again for your time and help.
-Lee

Alliance for Vehicle Efficiency

Lee J. Janger
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Message

From: Atkinson, Emily [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=BB2155ADEF6A44AEA9410741F0C01D27-ATKINSON, EMILY]
Sent: 2/5/2018 2:33:52 PM
To: Laurie Holmes [lholmes@mema.org]
CC: Lewis, Josh [Lewis.Josh@epa.gov]; Resendez, Mary [Resendez.Mary@epa.gov]
BCC: Atkinson, Emily [Atkinson.Emily@epa.gov]
Subject: RE: Auto Suppliers Meeting on the Midterm Evaluation for Vehicle GHG Standards

Hi Laurie,

Yes, below is a call in number and we will open the line for today's 4pm meeting. See the rest of the group later today.

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Laurie Holmes [mailto:lholmes@mema.org]
Sent: Monday, February 05, 2018 9:19 AM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: Auto Suppliers Meeting on the Midterm Evaluation for Vehicle GHG Standards

Good morning Emily,
I have at least one member that cannot make it into DC because of the snowstorm in Detroit last night. Is there anyway we could have a call-in number for this member?

Also, I'd like to add Tim Lynch (Morgan Lewis) to the list of attendees in place of Joe Fengler, Honeywell.

Best,
Laurie

From: Laurie Holmes
Sent: Friday, February 02, 2018 10:56 AM
To: Emily Atkinson (atkinson.emily@epa.gov) <atkinson.emily@epa.gov>
Subject: Auto Suppliers Meeting on the Midterm Evaluation for Vehicle GHG Standards

Emily,
One more thing, attached are a few slides we plan on having hard copies of at the meeting on Monday to provide visuals to our discussion points.
I've provided these to Ann Arbor staff too but thought I'd make sure you were aware.

Best,

Laurie

Laurie Holmes
Senior Director, Environmental Policy
Motor & Equipment Manufacturers Association
1030 15th Street NW, Suite 500 East
Washington, DC 20005
Direct: 202-312-9247

[redacted]

2018 LEGISLATIVE SUMMIT
April 10-11 | Washington, DC
www.mema.org/dcsummit

From: Laurie Holmes
Sent: Thursday, February 01, 2018 9:38 AM
To: 'Atkinson, Emily' <Atkinson.Emily@epa.gov>
Cc: Lewis, Josh <Lewis.Josh@epa.gov>
Subject: Confirmed 2/5 at 4:15pm: Auto Suppliers Meeting Request on the Midterm Evaluation for Vehicle GHG Standards

Hi Emily,
As requested, below is a list of participants for the meeting with Mr. Wehrum at 4:15 on Monday, February 5.
Thank you so much for your assistance in setting up this meeting.

Attendees:

1. Laurie Holmes, MEMA
2. Catherine Boland, MEMA
3. Dave Cetola, Johnson Matthey
4. Greg Garr, Umicore
5. Mike Belwood, Arconic
6. Joseph Fengler, Honeywell
7. Jennifer Heckmann, DENSO
8. Ana Meuweissen, Bosch
9. Erika Nielson, BW
10. Andrew Kenny, Magna

Best,
Laurie

From: Atkinson, Emily [mailto:Atkinson.Emily@epa.gov]
Sent: Thursday, January 18, 2018 3:44 PM

To: Laurie Holmes <lholmes@mema.org>
Cc: Lewis, Josh <Lewis.Josh@epa.gov>
Subject: Confirmed 2/5 at 4:15pm: Auto Suppliers Meeting Request on the Midterm Evaluation for Vehicle GHG Standards

Hi Laurie,
You are confirmed for a 45 minute in person meeting on Monday, February 5, 2018 at 4:15pm with Bill Wehrum.
Directions and procedures to 1200 Pennsylvania Avenue NW:

> Metro: If you come by Metro get off at the Federal Triangle metro stop. Exit the metro station and go up two sets of escalators to the surface level and turn right. You will see a short staircase and wheelchair ramp leading to a set of glass doors with the EPA logo - that is the William Jefferson Clinton Federal Building, North Entrance.
>
> Taxi: Direct the taxi to drop you off on 12th Street NW, between Constitution and Pennsylvania Avenues, at the elevator for the Federal Triangle metro stop - this is almost exactly half way between the two avenues on 12th Street NW. Facing the building with the EPA logo and American flags, walk toward the building and take the glass door on your right hand side with the escalators going down to the metro on your left – that is the North Lobby of the William Jefferson Clinton building.
>
> Security Procedures: A government issued photo id is required to enter the building and it is suggested you arrive 15 minutes early in order to be cleared and arrive at the meeting room on time. Upon entering the lobby, the meeting attendees will be asked to pass through security and provide a photo ID for entrance. Let the guards know that you were instructed to call 202-564-7404 for a security escort.

Please send me a list of participants in advance of the meeting and feel free to contact me should you need any additional information. And based on the size of the room we plan to use, you should plan to bring no more than 10 attendees to this meeting.

Emily

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Laurie Holmes [mailto:lholmes@mema.org]
Sent: Thursday, January 18, 2018 3:08 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Cc: Lewis, Josh <Lewis.Josh@epa.gov>
Subject: Auto Suppliers Meeting Request on the Midterm Evaluation for Vehicle GHG Standards

Emily,
Yes, Mon. Feb. 5 at 4:15 will work for us.

Is there a number limit for the room? We will have some members with us.

Best,

Laurie

Sent from my iPhone

On Jan 18, 2018, at 11:08 AM, Atkinson, Emily <Atkinson.Emily@epa.gov> wrote:

Hi Laurie,

It looks like Bill Wehrum could be available for a 45 minute in person meeting on Monday, February 5 at 4:15pm.

Please advise if this could work on your end.

Emily

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Laurie Holmes [mailto:lholmes@mema.org]
Sent: Wednesday, January 17, 2018 10:34 AM
To: Lewis, Josh <Lewis.Josh@epa.gov>
Cc: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: Auto Suppliers Meeting Request on the Midterm Evaluation for Vehicle GHG Standards

Josh,
In addition to the week of the 29th we could also do Monday, February 5 or Tuesday, February 6 before 1.
Let me know if you need additional date ranges to work with.
Best,
Laurie

From: Lewis, Josh [mailto:Lewis.Josh@epa.gov]
Sent: Friday, January 12, 2018 2:16 PM
To: Laurie Holmes <lholmes@mema.org>; Catherine Boland <cboland@MEMA.ORG>
Cc: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: FW: Auto Suppliers Meeting Request on the Midterm Evaluation for Vehicle GHG Standards

+ Emily and – Bill.

Is there a rough date or dates you were looking to come in?

Josh Lewis
Chief of Staff
EPA/Office of Air and Radiation
Office: 202 564 2095
[redacted]

From: Laurie Holmes [mailto:lholmes@mema.org]
Sent: Friday, January 12, 2018 10:56 AM
To: Wehrum, Bill <Wehrum.Bill@epa.gov>
Cc: Catherine Boland <cboland@MEMA.ORG>; Lewis, Josh <Lewis.Josh@epa.gov>
Subject: Auto Suppliers Meeting Request on the Midterm Evaluation for Vehicle GHG Standards

Bill, Thank you so much.
Josh, Look forward to hearing from you.

From: Wehrum, Bill [mailto:Wehrum.Bill@epa.gov]
Sent: Friday, January 12, 2018 7:38 AM
To: Laurie Holmes <lholmes@mema.org>
Cc: Catherine Boland <cboland@MEMA.ORG>; Lewis, Josh <Lewis.Josh@epa.gov>
Subject: Re: Auto Suppliers Meeting Request on the Midterm Evaluation for Vehicle GHG Standards

Hi Laurie. I'd be happy to talk with you. I've copied my chief of staff, Josh Lewis, who can help coordinate.

_____
Bill Wehrum
Assistant Administrator
Office of Air and Radiation
U.S. Environmental Protection Agency
(202) 564-7404

On Jan 11, 2018, at 1:33 PM, Laurie Holmes <lholmes@mema.org> wrote:

> Bill:
> MEMA would like to request a meeting to discuss the midterm evaluation on the vehicle greenhouse gas emission standards.
>
> MEMA represents more than 1,000 companies that manufacture components, systems and materials for motor vehicles and represents the largest sector of manufacturing jobs in the U.S. Since auto suppliers play a major role in developing the technologies necessary for vehicle emission reduction, suppliers have a strong interest in the midterm evaluation and the standards. Our position is also not identical to the vehicle manufactures on the issue.
>
> It would be helpful if we could discuss with you the impact the program has had and will have on our industry.
>
> Look forward to hearing from you.
>
> Laurie Holmes
> Senior Director, Environmental Policy
> Motor & Equipment Manufacturers Association
> 1030 15th Street NW, Suite 500 East
> Washington, DC 20005
> Direct: 202-312-9247
> [redacted]

<image001.png>
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www.mema.org/dcsummit

Appointment

From: Atkinson, Emily [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=BB2155ADEF6A44AEA9410741F0C01D27-ATKINSON, EMILY]
Sent: 1/22/2018 9:27:06 PM
To: Grundler, Christopher [grundler.christopher@epa.gov]; Hengst, Benjamin [Hengst.Benjamin@epa.gov]; Burch, Julia [Burch.Julia@epa.gov]; Charmley, William [charmley.william@epa.gov]; Moran, Robin [moran.robin@epa.gov]; Olechiw, Michael [olechiw.michael@epa.gov]; Simon, Karl [Simon.Karl@epa.gov]
CC: Alson, Jeff [alson.jeff@epa.gov]

Subject: Meet with Toyota re: MidTerm Review (MTR) for autos/light duty trucks (Confirmed)
Attachments: RE: Meeting Requests for Toyota ; FW: Meeting Requests for Toyota from S. Fotis; Confirmed 12/15 at 3pm: Meeting Requests for Toyota from S. Fotis; Confirmed 1/23/18 at 10am: Meeting with USEPA's Bill Wehrum and Toyota from S. Fotis; RE: Rescheduling Meeting with USEPA's Bill Wehrum and Toyota from S. Fotis
Location: WJC-N 5400 + Video with AA [redacted]

Start: 1/23/2018 3:00:00 PM
End: 1/23/2018 3:45:00 PM
Show Time As: Tentative

To: Bill Wehrum, Chris Grundler, Ben Hengst, Julia Burch, Bill Charmley, Robin Moran, Mike Olechiw and Karl Simon
Outside Attendees (in person):

- Tom Stricker, Vice President, Technical and Regulatory Affairs, Toyota
- Fred Turatti, General Manager, Toyota Motor North America
- Rick Gezelle, Manager, Technical and Regulatory Affairs
- Andrea Campbell, Van Ness Feldman, legal counsel for Toyota

RE: Meeting Requests for Toy... | FW: Meeting Requests for Toy... | Confirmed 12/15 at 3pm: Meeting Re... | Confirmed 1/23/18 at 10am: Meetin... | RE: Rescheduling Meeting with US...

Message

From: Atkinson, Emily [Atkinson.Emily@epa.gov]
Sent: 12/11/2017 8:26:45 PM
To: Stephen Fotis [scf@vnf.com]
CC: Loving, Shanita [Loving.Shanita@epa.gov]; Lewis, Josh [Lewis.Josh@epa.gov]
Subject: Confirmed 1/23/18 at 10am: Meeting with USEPA's Bill Wehrum and Toyota from S. Fotis

Hi Stephen,

You are confirmed for a 45 minute in person meeting on Tuesday, January 23, 2018 at 10:00am EDT with Bill Wehrum.
Directions and procedures to 1200 Pennsylvania Avenue NW:

Metro: If you come by Metro get off at the Federal Triangle metro stop. Exit the metro station and go up two sets of escalators to the surface level and turn right. You will see a short staircase and wheelchair ramp leading to a set of glass doors with the EPA logo - that is the William Jefferson Clinton Federal Building, North Entrance.

Taxi: Direct the taxi to drop you off on 12th Street NW, between Constitution and Pennsylvania Avenues, at the elevator for the Federal Triangle metro stop - this is almost exactly half way between the two avenues on 12th Street NW. Facing the building with the EPA logo and American flags, walk toward the building and take the glass door on your right hand side with the escalators going down to the metro on your left – that is the North Lobby of the William Jefferson Clinton building.

Security Procedures: A government issued photo id is required to enter the building and it is suggested you arrive 15 minutes early in order to be cleared and arrive at the meeting room on time. Upon entering the lobby, the meeting attendees will be asked to pass through security and provide a photo ID for entrance. Let the guards know that you were instructed to call 202-564-7404 for a security escort.
Please send me a list of participants in advance of the meeting and feel free to contact me should you need any additional information.

Emily

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Stephen Fotis [mailto:scf@vnf.com]
Sent: Monday, December 11, 2017 3:22 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Cc: Loving, Shanita <Loving.Shanita@epa.gov>; Lewis, Josh <Lewis.Josh@epa.gov>
Subject: RE: Rescheduling Meeting with USEPA's Bill Wehrum and Toyota from S. Fotis

Emily – I would like to confirm January 23, 2018 at 10:00am EDT for the Toyota meeting with Bill. I will shortly provide you with the names of individuals who will be participating in the meeting on behalf of Toyota.
Many thanks for your assistance!

Stephen

Stephen Fotis
Partner
Van Ness Feldman LLP
scf@vnf.com
(202) 298-1908

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From: Atkinson, Emily [mailto:Atkinson.Emily@epa.gov]
Sent: Monday, December 11, 2017 3:00 PM
To: Stephen Fotis
Cc: Loving, Shanita; Lewis, Josh
Subject: RE: Rescheduling Meeting with USEPA's Bill Wehrum and Toyota from S. Fotis

Hi Stephen,

Yes, Josh Lewis and I have coordinated on this to review scheduling options and January 23, 2018 at 10:00am EDT is the first available time to slot this meeting in for Bill Wehrum.

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Stephen Fotis [mailto:scf@vnf.com]
Sent: Monday, December 11, 2017 2:48 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Cc: Loving, Shanita <Loving.Shanita@epa.gov>; Lewis, Josh <Lewis.Josh@epa.gov>
Subject: RE: Rescheduling Meeting with USEPA's Bill Wehrum and Toyota from S. Fotis

Thanks Emily. In my conversations with Josh earlier today, we were talking about trying to schedule a Toyota meeting with Bill in early January, either at the end of the first week of January (January 4 or 5) or the following week (January 8-12). Before we schedule a meeting for the January 23, I want to confirm that there is no chance of scheduling a meeting during either of these two weeks.
Best,
Stephen

Stephen Fotis
Partner
Van Ness Feldman LLP
scf@vnf.com
(202) 298-1908

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From: Atkinson, Emily [mailto:Atkinson.Emily@epa.gov]
Sent: Monday, December 11, 2017 2:39 PM
To: Stephen Fotis
Cc: Loving, Shanita; Lewis, Josh
Subject: Rescheduling Meeting with USEPA's Bill Wehrum and Toyota from S. Fotis

Hi Stephen,

It looks like the earliest date we could fit this in is for 45 minutes on Tuesday, January 23, 2018 at 10:00am EDT.

Please advise if this could work on your end.

Emily

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Stephen Fotis [mailto:scf@vnf.com]
Sent: Friday, December 08, 2017 5:22 PM
To: Lewis, Josh <Lewis.Josh@epa.gov>
Cc: Atkinson, Emily <Atkinson.Emily@epa.gov>; Loving, Shanita <Loving.Shanita@epa.gov>
Subject: RE: Confirmed 12/15 at 3pm: Meeting Requests for Toyota from S. Fotis

Thanks Josh for your email. I totally understand and very much appreciate your efforts to meet with Toyota. Please let me check with the client and will get back to you on Monday. Have a great weekend.
Best,
Stephen

Stephen Fotis
Partner
Van Ness Feldman LLP
scf@vnf.com
(202) 298-1908

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From: Lewis, Josh [mailto:Lewis.Josh@epa.gov]
Sent: Friday, December 08, 2017 2:14 PM
To: Stephen Fotis
Cc: Atkinson, Emily; Loving, Shanita
Subject: FW: Confirmed 12/15 at 3pm: Meeting Requests for Toyota from S. Fotis

Hi Stephen,

Bill now will be out of the office next Friday for work travel. We could keep the meeting for Friday (EPA participants would include a combination of the political team – Mandy Gunasekara/David Harlow/maybe others – along with career folks from OTAQ); or, if you want to reschedule with Bill, we'd be looking to early January to schedule. What is your preference?

Josh Lewis
Chief of Staff
EPA/Office of Air and Radiation
Office: 202 564 2095
[redacted]

From: Atkinson, Emily
Sent: Thursday, November 30, 2017 4:36 PM
To: Stephen Fotis <scf@vnf.com>
Cc: Loving, Shanita <Loving.Shanita@epa.gov>
Subject: Confirmed 12/15 at 3pm: Meeting Requests for Toyota from S. Fotis

Hi Stephen,

You are confirmed for a 45 minute in person meeting on Friday, December 15, 2017 at 3:00pm with Bill Wehrum.
Directions and procedures to 1200 Pennsylvania Avenue NW:

> Metro: If you come by Metro get off at the Federal Triangle metro stop. Exit the metro station and go up two sets of escalators to the surface level and turn right. You will see a short staircase and wheelchair ramp leading to a set of glass doors with the EPA logo - that is the William Jefferson Clinton Federal Building, North Entrance.
>
> Taxi: Direct the taxi to drop you off on 12th Street NW, between Constitution and Pennsylvania Avenues, at the elevator for the Federal Triangle metro stop - this is almost exactly half way between the two avenues on 12th Street NW. Facing the building with the EPA logo and American flags, walk toward the building and take the glass door on your right hand side with the escalators going down to the metro on your left – that is the North Lobby of the William Jefferson Clinton building.
>
> Security Procedures: A government issued photo id is required to enter the building and it is suggested you arrive 15 minutes early in order to be cleared and arrive at the meeting room on time. Upon entering the lobby, the meeting attendees will be asked to pass through security and provide a photo ID for entrance. Let the guards know that you were instructed to call 202-564-7404 for a security escort.

Please send me a list of participants in advance of the meeting and feel free to contact me should you need any additional information.

Emily

Emily Atkinson
Management Analyst/Office Manager

Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Stephen Fotis [mailto:scf@vnf.com]
Sent: Thursday, November 30, 2017 4:27 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Cc: Loving, Shanita <Loving.Shanita@epa.gov>
Subject: RE: Meeting Requests for Toyota from S. Fotis

Emily - Friday, December 15, 2017 at 3:00 PM works for Toyota. I will get back to you shortly with the names and titles of those individuals who will be attending the meeting with Bill on behalf of Toyota.
Again, many thanks for all of your assistance here.
Have a great rest of the day.
Best,
Stephen

Stephen Fotis
Partner
Van Ness Feldman LLP
scf@vnf.com
(202) 298-1908

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From: Atkinson, Emily [mailto:Atkinson.Emily@epa.gov]
Sent: Thursday, November 30, 2017 3:43 PM
To: Stephen Fotis
Cc: Loving, Shanita
Subject: FW: Meeting Requests for Toyota from S. Fotis

Hi Stephen,

It looks like Bill Wehrum could be available for a 45 minute in person meeting on Friday, December 15, 2017 at 3:00pm with Toyota.

Please advise if this could work on your end.

Thank you.
Emily

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW

Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Stephen Fotis [mailto:scf@vnf.com]
Sent: Wednesday, November 29, 2017 12:37 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: RE: Meeting Requests for Toyota and Shell

Thank you Emily for your assistance.
Best,
Stephen

Stephen Fotis
Partner
Van Ness Feldman LLP
scf@vnf.com
(202) 298-1908

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From: Atkinson, Emily [mailto:Atkinson.Emily@epa.gov]
Sent: Wednesday, November 29, 2017 11:51 AM
To: Stephen Fotis
Subject: RE: Meeting Requests for Toyota and Shell

Hi Stephen,

We are reviewing scheduling options now and will get back to you shortly.

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Stephen Fotis [mailto:scf@vnf.com]
Sent: Tuesday, November 28, 2017 5:32 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: RE: Meeting Requests for Toyota and Shell

Hi Emily – As suggested by Bill in his email below, I am following up with you regarding the scheduling of two separate meetings with Bill – one with Toyota on the Mid Term Review (MTR) for autos/light duty trucks, and the other with Shell on the OOOOa NSPS reconsideration rulemaking. Could you please advise me as to possible times that we might schedule these meetings? If possible, I'd like to try to schedule meetings for later this December before the holidays. Many thanks for your assistance.

Stephen

Stephen Fotis
Partner
Van Ness Feldman LLP
scf@vnf.com
(202) 298-1908

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From: Wehrum, Bill [mailto:Wehrum.Bill@epa.gov]
Sent: Monday, November 27, 2017 12:29 PM
To: Stephen Fotis
Cc: Atkinson, Emily
Subject: RE: Meeting Requests for Toyota and Shell

Thanks Stephen. I'm copying Emily Atkinson. She can work with you to find times.

From: Stephen Fotis [mailto:scf@vnf.com]
Sent: Monday, November 27, 2017 11:29 AM
To: Wehrum, Bill <Wehrum.Bill@epa.gov>; Wehrum, Bill <Wehrum.Bill@epa.gov>
Subject: Meeting Requests for Toyota and Shell

Bill – I hope that you had a good Thanksgiving and had some time to relax. As a follow-up to our discussions of last week, both Toyota and Shell are happy to accommodate your request and delay their meetings until later this December or early January. However, I would like to see if we can schedule the meeting time for each now given that your calendar will no doubt be filling up quickly and the issues both want to raise are time sensitive.
Would it be appropriate for me to follow-up with Shanita or someone else on scheduling meeting dates?
Best,
Stephen

Stephen Fotis
Partner
Van Ness Feldman LLP
scf@vnf.com
(202) 298-1908

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From: Stephen Fotis
Sent: Wednesday, November 22, 2017 2:46 PM
To: wehrum.bill@epa.gov; wehrum.william@epa.gov
Subject: Follow-up to Your Message on Meeting Requests

Bill – Many thanks for your call last night regarding my two meeting requests. I am now checking with the client in each case but will most likely not be getting back to you with answer until after the Thanksgiving holiday. However, I would

be very surprised if there is anything compelling or urgent that would require scheduling either one of the meetings over the next few weeks.
Have a great Thanksgiving and I will be getting back to you next week.
Best,
Stephen

Stephen Fotis
Partner
Van Ness Feldman LLP
scf@vnf.com
(202) 298-1908

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Message

From: Atkinson, Emily [Atkinson.Emily@epa.gov]
Sent: 11/30/2017 9:35:51 PM
To: Stephen Fotis [scf@vnf.com]
CC: Loving, Shanita [Loving.Shanita@epa.gov]
Subject: Confirmed 12/15 at 3pm: Meeting Requests for Toyota from S. Fotis

Hi Stephen,

You are confirmed for a 45 minute in person meeting on Friday, December 15, 2017 at 3:00pm with Bill Wehrum.
Directions and procedures to 1200 Pennsylvania Avenue NW:

Metro: If you come by Metro get off at the Federal Triangle metro stop. Exit the metro station and go up two sets of escalators to the surface level and turn right. You will see a short staircase and wheelchair ramp leading to a set of glass doors with the EPA logo - that is the William Jefferson Clinton Federal Building, North Entrance.

Taxi: Direct the taxi to drop you off on 12th Street NW, between Constitution and Pennsylvania Avenues, at the elevator for the Federal Triangle metro stop - this is almost exactly half way between the two avenues on 12th Street NW. Facing the building with the EPA logo and American flags, walk toward the building and take the glass door on your right hand side with the escalators going down to the metro on your left – that is the North Lobby of the William Jefferson Clinton building.

Security Procedures: A government issued photo id is required to enter the building and it is suggested you arrive 15 minutes early in order to be cleared and arrive at the meeting room on time. Upon entering the lobby, the meeting attendees will be asked to pass through security and provide a photo ID for entrance. Let the guards know that you were instructed to call 202-564-7404 for a security escort.
Please send me a list of participants in advance of the meeting and feel free to contact me should you need any additional information.

Emily

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Stephen Fotis [mailto:scf@vnf.com]
Sent: Thursday, November 30, 2017 4:27 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Cc: Loving, Shanita <Loving.Shanita@epa.gov>
Subject: RE: Meeting Requests for Toyota from S. Fotis

Emily - Friday, December 15, 2017 at 3:00 PM works for Toyota. I will get back to you shortly with the names and titles of those individuals who will be attending the meeting with Bill on behalf of Toyota.
Again, many thanks for all of your assistance here.

Have a great rest of the day.
Best,
Stephen

Stephen Fotis
Partner
Van Ness Feldman LLP
scf@vnf.com
(202) 298-1908

This communication may contain information and/or metadata that is legally privileged, confidential or exempt from disclosure. If you are not the intended recipient, please do not read or review the content and/or metadata and do not disseminate, distribute or copy this communication. Anyone who receives this message in error should notify the sender immediately by telephone (202-298-1800) or by return e-mail and delete it from his or her computer.

From: Atkinson, Emily [mailto:Atkinson.Emily@epa.gov]
Sent: Thursday, November 30, 2017 3:43 PM
To: Stephen Fotis
Cc: Loving, Shanita
Subject: FW: Meeting Requests for Toyota from S. Fotis

Hi Stephen,

It looks like Bill Wehrum could be available for a 45 minute in person meeting on Friday, December 15, 2017 at 3:00pm with Toyota.

Please advise if this could work on your end.

Thank you.
Emily

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Stephen Fotis [mailto:scf@vnf.com]
Sent: Wednesday, November 29, 2017 12:37 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: RE: Meeting Requests for Toyota and Shell

Thank you Emily for your assistance.
Best,
Stephen

Stephen Fotis
Partner
Van Ness Feldman LLP

scf@vnf.com
(202) 298-1908

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From: Atkinson, Emily [mailto:Atkinson.Emily@epa.gov]
Sent: Wednesday, November 29, 2017 11:51 AM
To: Stephen Fotis
Subject: RE: Meeting Requests for Toyota and Shell

Hi Stephen,

We are reviewing scheduling options now and will get back to you shortly.

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Stephen Fotis [mailto:scf@vnf.com]
Sent: Tuesday, November 28, 2017 5:32 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: RE: Meeting Requests for Toyota and Shell

Hi Emily – As suggested by Bill in his email below, I am following up with you regarding the scheduling of two separate meetings with Bill – one with Toyota on the Mid Term Review (MTR) for autos/light duty trucks, and the other with Shell on the OOOOa NSPS reconsideration rulemaking. Could you please advise me as to possible times that we might schedule these meetings? If possible, I'd like to try to schedule meetings for later this December before the holidays. Many thanks for your assistance.
Stephen

Stephen Fotis
Partner
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From: Wehrum, Bill [mailto:Wehrum.Bill@epa.gov]
Sent: Monday, November 27, 2017 12:29 PM
To: Stephen Fotis

Cc: Atkinson, Emily
Subject: RE: Meeting Requests for Toyota and Shell

Thanks Stephen. I'm copying Emily Atkinson. She can work with you to find times.

From: Stephen Fotis [mailto:scf@vnf.com]
Sent: Monday, November 27, 2017 11:29 AM
To: Wehrum, Bill <Wehrum.Bill@epa.gov>; Wehrum, Bill <Wehrum.Bill@epa.gov>
Subject: Meeting Requests for Toyota and Shell

Bill – I hope that you had a good Thanksgiving and had some time to relax. As a follow-up to our discussions of last week, both Toyota and Shell are happy to accommodate your request and delay their meetings until later this December or early January. However, I would like to see if we can schedule the meeting time for each now given that your calendar will no doubt be filling up quickly and the issues both want to raise are time sensitive.
Would it be appropriate for me to follow-up with Shanita or someone else on scheduling meeting dates?
Best,
Stephen

Stephen Fotis
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Van Ness Feldman LLP
scf@vnf.com
(202) 298-1908

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From: Stephen Fotis
Sent: Wednesday, November 22, 2017 2:46 PM
To: wehrum.bill@epa.gov; wehrum.william@epa.gov
Subject: Follow-up to Your Message on Meeting Requests

Bill – Many thanks for your call last night regarding my two meeting requests. I am now checking with the client in each case but will most likely not be getting back to you with answer until after the Thanksgiving holiday. However, I would be very surprised if there is anything compelling or urgent that would require scheduling either one of the meetings over the next few weeks.
Have a great Thanksgiving and I will be getting back to you next week.
Best,
Stephen

Stephen Fotis
Partner
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Message

From: Atkinson, Emily [Atkinson.Emily@epa.gov]
Sent: 11/30/2017 8:42:58 PM
To: scf@vnf.com
CC: Loving, Shanita [Loving.Shanita@epa.gov]
Subject: FW: Meeting Requests for Toyota from S. Fotis

Hi Stephen,

It looks like Bill Wehrum could be available for a 45 minute in person meeting on Friday, December 15, 2017 at 3:00pm with Toyota.

Please advise if this could work on your end.

Thank you.
Emily

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Stephen Fotis [mailto:scf@vnf.com]
Sent: Wednesday, November 29, 2017 12:37 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: RE: Meeting Requests for Toyota and Shell

Thank you Emily for your assistance.
Best,
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From: Atkinson, Emily [mailto:Atkinson.Emily@epa.gov]
Sent: Wednesday, November 29, 2017 11:51 AM
To: Stephen Fotis
Subject: RE: Meeting Requests for Toyota and Shell

Hi Stephen,

We are reviewing scheduling options now and will get back to you shortly.

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Stephen Fotis [mailto:scf@vnf.com]
Sent: Tuesday, November 28, 2017 5:32 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: RE: Meeting Requests for Toyota and Shell

Hi Emily – As suggested by Bill in his email below, I am following up with you regarding the scheduling of two separate meetings with Bill – one with Toyota on the Mid Term Review (MTR) for autos/light duty trucks, and the other with Shell on the OOOOa NSPS reconsideration rulemaking. Could you please advise me as to possible times that we might schedule these meetings? If possible, I'd like to try to schedule meetings for later this December before the holidays. Many thanks for your assistance.
Stephen

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From: Wehrum, Bill [mailto:Wehrum.Bill@epa.gov]
Sent: Monday, November 27, 2017 12:29 PM
To: Stephen Fotis
Cc: Atkinson, Emily
Subject: RE: Meeting Requests for Toyota and Shell

Thanks Stephen. I'm copying Emily Atkinson. She can work with you to find times.

From: Stephen Fotis [mailto:scf@vnf.com]
Sent: Monday, November 27, 2017 11:29 AM
To: Wehrum, Bill <Wehrum.Bill@epa.gov>; Wehrum, Bill <Wehrum.Bill@epa.gov>
Subject: Meeting Requests for Toyota and Shell

Bill – I hope that you had a good Thanksgiving and had some time to relax. As a follow-up to our discussions of last week, both Toyota and Shell are happy to accommodate your request and delay their meetings until later this December

or early January. However, I would like to see if we can schedule the meeting time for each now given that your calendar will no doubt be filling up quickly and the issues both want to raise are time sensitive.
Would it be appropriate for me to follow-up with Shanita or someone else on scheduling meeting dates?
Best,
Stephen

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From: Stephen Fotis
Sent: Wednesday, November 22, 2017 2:46 PM
To: wehrum.bill@epa.gov; wehrum.william@epa.gov
Subject: Follow-up to Your Message on Meeting Requests

Bill – Many thanks for your call last night regarding my two meeting requests. I am now checking with the client in each case but will most likely not be getting back to you with answer until after the Thanksgiving holiday. However, I would be very surprised if there is anything compelling or urgent that would require scheduling either one of the meetings over the next few weeks.
Have a great Thanksgiving and I will be getting back to you next week.
Best,
Stephen

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Message

From: Hengst, Benjamin [Hengst.Benjamin@epa.gov]
Sent: 11/30/2017 8:32:26 PM
To: Atkinson, Emily [Atkinson.Emily@epa.gov]
CC: Burch, Julia [Burch.Julia@epa.gov]
Subject: RE: Meeting Requests for Toyota

Yes, working on that now. I need to hear from some folks on whether a pre-brief is needed.

For now, you can add the following people. I may ask that you add more later.

Chris G
Ben H
Julia Burch
Bill Charmley

From: Atkinson, Emily
Sent: Thursday, November 30, 2017 3:17 PM
To: Hengst, Benjamin <Hengst.Benjamin@epa.gov>
Cc: Burch, Julia <Burch.Julia@epa.gov>
Subject: RE: Meeting Requests for Toyota

Thanks – let us know who to include in the Toyota meeting and if you all think Bill needs a prep meeting.

From: Hengst, Benjamin
Sent: Thursday, November 30, 2017 11:36 AM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Cc: Burch, Julia <Burch.Julia@epa.gov>
Subject: RE: Meeting Requests for Toyota and Shell

Working on this one (Toyota). CC'ing Julia as she helps me staff the LD issues.

Thanks
Ben

From: Atkinson, Emily
Sent: Thursday, November 30, 2017 11:28 AM
To: Hengst, Benjamin <Hengst.Benjamin@epa.gov>; Krieger, Jackie <Krieger.Jackie@epa.gov>; Koerber, Mike <Koerber.Mike@epa.gov>
Cc: Loving, Shanita <Loving.Shanita@epa.gov>; Lewis, Josh <Lewis.Josh@epa.gov>
Subject: FW: Meeting Requests for Toyota and Shell

Hi Ben, Jackie and Mike,

Bill has reviewed this request and agreed we will set up the two one hour meetings, as outlined below. Please advise if anyone from OAP, OAQPS, OGC and OTAQ should be included and whether or not a prep meeting is needed.

(1) Toyota on the Mid Term Review (MTR) for autos/light duty trucks
Prep – Y/N
OAP:
OAQPS:
OTAQ:

(2) Shell on the OOOOa NSPS reconsideration rulemaking
Prep – Y/N
OAP:
OAQPS:
OTAQ:

And for completeness, a note to the IO staff that Bill clarified these meeting do not require us to advise the requestor to bring four other groups in with them as we advise when the meeting is with former clients of Bill's.

I will wait to hear from you all before getting back to the requestor.

Thank you.
Emily

From: Stephen Fotis [mailto:scf@vnf.com]
Sent: Wednesday, November 29, 2017 12:37 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: RE: Meeting Requests for Toyota and Shell

Thank you Emily for your assistance.
Best,
Stephen

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Partner
Van Ness Feldman LLP
scf@vnf.com
(202) 298-1908

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From: Atkinson, Emily [mailto:Atkinson.Emily@epa.gov]
Sent: Wednesday, November 29, 2017 11:51 AM
To: Stephen Fotis
Subject: RE: Meeting Requests for Toyota and Shell

Hi Stephen,

We are reviewing scheduling options now and will get back to you shortly.

Emily Atkinson
Management Analyst/Office Manager

Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Stephen Fotis [mailto:scf@vnf.com]
Sent: Tuesday, November 28, 2017 5:32 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: RE: Meeting Requests for Toyota and Shell

Hi Emily – As suggested by Bill in his email below, I am following up with you regarding the scheduling of two separate meetings with Bill – one with Toyota on the Mid Term Review (MTR) for autos/light duty trucks, and the other with Shell on the OOOOa NSPS reconsideration rulemaking. Could you please advise me as to possible times that we might schedule these meetings? If possible, I'd like to try to schedule meetings for later this December before the holidays. Many thanks for your assistance.
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From: Wehrum, Bill [mailto:Wehrum.Bill@epa.gov]
Sent: Monday, November 27, 2017 12:29 PM
To: Stephen Fotis
Cc: Atkinson, Emily
Subject: RE: Meeting Requests for Toyota and Shell

Thanks Stephen. I'm copying Emily Atkinson. She can work with you to find times.

From: Stephen Fotis [mailto:scf@vnf.com]
Sent: Monday, November 27, 2017 11:29 AM
To: Wehrum, Bill <Wehrum.Bill@epa.gov>; Wehrum, Bill <Wehrum.Bill@epa.gov>
Subject: Meeting Requests for Toyota and Shell

Bill – I hope that you had a good Thanksgiving and had some time to relax. As a follow-up to our discussions of last week, both Toyota and Shell are happy to accommodate your request and delay their meetings until later this December or early January. However, I would like to see if we can schedule the meeting time for each now given that your calendar will no doubt be filling up quickly and the issues both want to raise are time sensitive.
Would it be appropriate for me to follow-up with Shanita or someone else on scheduling meeting dates?
Best,
Stephen

Stephen Fotis
Partner
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scf@vnf.com
(202) 298-1908

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From: Stephen Fotis
Sent: Wednesday, November 22, 2017 2:46 PM
To: wehrum.bill@epa.gov; wehrum.william@epa.gov
Subject: Follow-up to Your Message on Meeting Requests

Bill – Many thanks for your call last night regarding my two meeting requests. I am now checking with the client in each case but will most likely not be getting back to you with answer until after the Thanksgiving holiday. However, I would be very surprised if there is anything compelling or urgent that would require scheduling either one of the meetings over the next few weeks.
Have a great Thanksgiving and I will be getting back to you next week.
Best,
Stephen

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Message

From: Stephen Fotis [scf@vnf.com]
Sent: 1/21/2018 11:33:25 PM
To: Atkinson, Emily [Atkinson.Emily@epa.gov]
CC: Loving, Shanita [Loving.Shanita@epa.gov]; Lewis, Josh [Lewis.Josh@epa.gov]
Subject: RE: Rescheduling Meeting with USEPA's Bill Wehrum and Toyota from S. Fotis

Hi Emily --
Below are names and titles of the individuals who will be attending the Toyota meeting with Bill Wehrum that is scheduled for Tuesday, January 23, 2018 at 10:00am EDT:
Tom Stricker, Vice President, Technical and Regulatory Affairs, Toyota
Fred Turatti, General Manager, Toyota Motor North America
Rick Gezelle, Manager, Technical and Regulatory Affairs
Andrea Campbell, Van Ness Feldman, legal counsel for Toyota
Please let me know if you have any questions, and many thanks for all of your assistance.
Best,
Stephen

From: Stephen Fotis
Sent: Monday, December 11, 2017 3:22 PM
To: 'Atkinson, Emily'
Cc: Loving, Shanita; Lewis, Josh
Subject: RE: Rescheduling Meeting with USEPA's Bill Wehrum and Toyota from S. Fotis

Emily -- I would like to confirm January 23, 2018 at 10:00am EDT for the Toyota meeting with Bill. I will shortly provide you with the names of individuals who will be participating in the meeting on behalf of Toyota.
Many thanks for your assistance!
Stephen

Stephen Fotis
Partner
Van Ness Feldman LLP
scf@vnf.com
(202) 298-1908

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From: Atkinson, Emily [mailto:Atkinson.Emily@epa.gov]
Sent: Monday, December 11, 2017 3:00 PM
To: Stephen Fotis
Cc: Loving, Shanita; Lewis, Josh
Subject: RE: Rescheduling Meeting with USEPA's Bill Wehrum and Toyota from S. Fotis

Hi Stephen,

Yes, Josh Lewis and I have coordinated on this to review scheduling options and January 23, 2018 at 10:00am EDT is the first available time to slot this meeting in for Bill Wehrum.

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Stephen Fotis [mailto:scf@vnf.com]
Sent: Monday, December 11, 2017 2:48 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Cc: Loving, Shanita <Loving.Shanita@epa.gov>; Lewis, Josh <Lewis.Josh@epa.gov>
Subject: RE: Rescheduling Meeting with USEPA's Bill Wehrum and Toyota from S. Fotis

Thanks Emily. In my conversations with Josh earlier today, we were talking about trying to schedule a Toyota meeting with Bill in early January, either at the end of the first week of January (January 4 or 5) or the following week (January 8-12). Before we schedule a meeting for the January 23, I want to confirm that there is no chance of scheduling a meeting during either of these two weeks.
Best,
Stephen

Stephen Fotis
Partner
Van Ness Feldman LLP
scf@vnf.com
(202) 298-1908

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From: Atkinson, Emily [mailto:Atkinson.Emily@epa.gov]
Sent: Monday, December 11, 2017 2:39 PM
To: Stephen Fotis
Cc: Loving, Shanita; Lewis, Josh
Subject: Rescheduling Meeting with USEPA's Bill Wehrum and Toyota from S. Fotis

Hi Stephen,

It looks like the earliest date we could fit this in is for 45 minutes on Tuesday, January 23, 2018 at 10:00am EDT.

Please advise if this could work on your end.

Emily

Emily Atkinson
Management Analyst/Office Manager

Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Stephen Fotis [mailto:scf@vnf.com]
Sent: Friday, December 08, 2017 5:22 PM
To: Lewis, Josh <Lewis.Josh@epa.gov>
Cc: Atkinson, Emily <Atkinson.Emily@epa.gov>; Loving, Shanita <Loving.Shanita@epa.gov>
Subject: RE: Confirmed 12/15 at 3pm: Meeting Requests for Toyota from S. Fotis

Thanks Josh for your email. I totally understand and very much appreciate your efforts to meet with Toyota. Please let me check with the client and will get back to you on Monday. Have a great weekend.
Best,
Stephen

Stephen Fotis
Partner
Van Ness Feldman LLP
scf@vnf.com
(202) 298-1908

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From: Lewis, Josh [mailto:Lewis.Josh@epa.gov]
Sent: Friday, December 08, 2017 2:14 PM
To: Stephen Fotis
Cc: Atkinson, Emily; Loving, Shanita
Subject: FW: Confirmed 12/15 at 3pm: Meeting Requests for Toyota from S. Fotis

Hi Stephen,

Bill now will be out of the office next Friday for work travel. We could keep the meeting for Friday (EPA participants would include a combination of the political team – Mandy Gunasekara/David Harlow/maybe others – along with career folks from OTAQ); or, if you want to reschedule with Bill, we'd be looking to early January to schedule. What is your preference?

Josh Lewis
Chief of Staff
EPA/Office of Air and Radiation
Office: 202 564 2095

From: Atkinson, Emily
Sent: Thursday, November 30, 2017 4:36 PM
To: Stephen Fotis <scf@vnf.com>
Cc: Loving, Shanita <Loving.Shanita@epa.gov>
Subject: Confirmed 12/15 at 3pm: Meeting Requests for Toyota from S. Fotis

Hi Stephen,

You are confirmed for a 45 minute in person meeting on Friday, December 15, 2017 at 3:00pm with Bill Wehrum.
Directions and procedures to 1200 Pennsylvania Avenue NW:

Metro: If you come by Metro get off at the Federal Triangle metro stop. Exit the metro station and go up two sets of escalators to the surface level and turn right. You will see a short staircase and wheelchair ramp leading to a set of glass doors with the EPA logo - that is the William Jefferson Clinton Federal Building, North Entrance.

Taxi: Direct the taxi to drop you off on 12th Street NW, between Constitution and Pennsylvania Avenues, at the elevator for the Federal Triangle metro stop - this is almost exactly half way between the two avenues on 12th Street NW. Facing the building with the EPA logo and American flags, walk toward the building and take the glass door on your right hand side with the escalators going down to the metro on your left – that is the North Lobby of the William Jefferson Clinton building.

Security Procedures: A government issued photo id is required to enter the building and it is suggested you arrive 15 minutes early in order to be cleared and arrive at the meeting room on time. Upon entering the lobby, the meeting attendees will be asked to pass through security and provide a photo ID for entrance. Let the guards know that you were instructed to call 202-564-7404 for a security escort.

Please send me a list of participants in advance of the meeting and feel free to contact me should you need any additional information.

Emily

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Stephen Fotis [mailto:scf@vnf.com]
Sent: Thursday, November 30, 2017 4:27 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Cc: Loving, Shanita <Loving.Shanita@epa.gov>
Subject: RE: Meeting Requests for Toyota from S. Fotis

Emily - Friday, December 15, 2017 at 3:00 PM works for Toyota. I will get back to you shortly with the names and titles of those individuals who will be attending the meeting with Bill on behalf of Toyota.
Again, many thanks for all of your assistance here.
Have a great rest of the day.
Best,
Stephen

Stephen Fotis
Partner
Van Ness Feldman LLP

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(202) 298-1908

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From: Atkinson, Emily [mailto:Atkinson.Emily@epa.gov]
Sent: Thursday, November 30, 2017 3:43 PM
To: Stephen Fotis
Cc: Loving, Shanita
Subject: FW: Meeting Requests for Toyota from S. Fotis

Hi Stephen,

It looks like Bill Wehrum could be available for a 45 minute in person meeting on Friday, December 15, 2017 at 3:00pm with Toyota.

Please advise if this could work on your end.

Thank you.
Emily

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Stephen Fotis [mailto:scf@vnf.com]
Sent: Wednesday, November 29, 2017 12:37 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: RE: Meeting Requests for Toyota and Shell

Thank you Emily for your assistance.
Best,
Stephen

Stephen Fotis
Partner
Van Ness Feldman LLP
scf@vnf.com
(202) 298-1908

This communication may contain information and/or metadata that is legally privileged, confidential or exempt from disclosure. If you are not the intended recipient, please do not read or review the content and/or metadata and do not disseminate, distribute or copy this communication. Anyone who receives this message in error should notify the sender immediately by telephone (202-298-1800) or by return e-mail and delete it from his or her computer.

From: Atkinson, Emily [mailto:Atkinson.Emily@epa.gov]
Sent: Wednesday, November 29, 2017 11:51 AM
To: Stephen Fotis
Subject: RE: Meeting Requests for Toyota and Shell

Hi Stephen,

We are reviewing scheduling options now and will get back to you shortly.

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Stephen Fotis [mailto:scf@vnf.com]
Sent: Tuesday, November 28, 2017 5:32 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: RE: Meeting Requests for Toyota and Shell

Hi Emily – As suggested by Bill in his email below, I am following up with you regarding the scheduling of two separate meetings with Bill – one with Toyota on the Mid Term Review (MTR) for autos/light duty trucks, and the other with Shell on the OOOOa NSPS reconsideration rulemaking. Could you please advise me as to possible times that we might schedule these meetings? If possible, I'd like to try to schedule meetings for later this December before the holidays. Many thanks for your assistance.
Stephen

Stephen Fotis
Partner
Van Ness Feldman LLP
scf@vnf.com
(202) 298-1908

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From: Wehrum, Bill [mailto:Wehrum.Bill@epa.gov]
Sent: Monday, November 27, 2017 12:29 PM
To: Stephen Fotis
Cc: Atkinson, Emily
Subject: RE: Meeting Requests for Toyota and Shell

Thanks Stephen. I'm copying Emily Atkinson. She can work with you to find times.

From: Stephen Fotis [mailto:scf@vnf.com]
Sent: Monday, November 27, 2017 11:29 AM

To: Wehrum, Bill <Wehrum.Bill@epa.gov>; Wehrum, Bill <Wehrum.Bill@epa.gov>
Subject: Meeting Requests for Toyota and Shell

Bill – I hope that you had a good Thanksgiving and had some time to relax. As a follow-up to our discussions of last week, both Toyota and Shell are happy to accommodate your request and delay their meetings until later this December or early January. However, I would like to see if we can schedule the meeting time for each now given that your calendar will no doubt be filling up quickly and the issues both want to raise are time sensitive.
Would it be appropriate for me to follow-up with Shanita or someone else on scheduling meeting dates?
Best,
Stephen

Stephen Fotis
Partner
Van Ness Feldman LLP
scf@vnf.com
(202) 298-1908

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From: Stephen Fotis
Sent: Wednesday, November 22, 2017 2:46 PM
To: wehrum.bill@epa.gov; wehrum.william@epa.gov
Subject: Follow-up to Your Message on Meeting Requests

Bill – Many thanks for your call last night regarding my two meeting requests. I am now checking with the client in each case but will most likely not be getting back to you with answer until after the Thanksgiving holiday. However, I would be very surprised if there is anything compelling or urgent that would require scheduling either one of the meetings over the next few weeks.
Have a great Thanksgiving and I will be getting back to you next week.
Best,
Stephen

Stephen Fotis
Partner
Van Ness Feldman LLP
scf@vnf.com
(202) 298-1908

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Message

From: Atkinson, Emily [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=BB2155ADEF6A44AEA9410741F0C01D27-ATKINSON, EMILY]
Sent: 1/10/2018 1:47:37 PM
To: Tucker, Jamie [jtucker@AKINGUMP.COM]
CC: Feeley, Drew (Robert) [Feeley.Drew@epa.gov]; Lewis, Josh [Lewis.Josh@epa.gov]
BCC: Atkinson, Emily [Atkinson.Emily@epa.gov]
Subject: Confirmed 1/30 at 4pm: Meeting Request re: Natural Gas Vehicles

Hi Jamie,
You are confirmed for a 45 minute meeting on Tuesday, January 30, 2018 at 4:00pm with Bill Wehrum. Directions and procedures to 1200 Pennsylvania Avenue NW:

Metro: If you come by Metro get off at the Federal Triangle metro stop. Exit the metro station and go up two sets of escalators to the surface level and turn right. You will see a short staircase and wheelchair ramp leading to a set of glass doors with the EPA logo - that is the William Jefferson Clinton Federal Building, North Entrance.

Taxi: Direct the taxi to drop you off on 12th Street NW, between Constitution and Pennsylvania Avenues, at the elevator for the Federal Triangle metro stop - this is almost exactly half way between the two avenues on 12th Street NW. Facing the building with the EPA logo and American flags, walk toward the building and take the glass door on your right hand side with the escalators going down to the metro on your left – that is the North Lobby of the William Jefferson Clinton building.

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Please send me a list of participants in advance of the meeting and feel free to contact me should you need any additional information.

Emily

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Tucker, Jamie [mailto:jtucker@AKINGUMP.COM]
Sent: Tuesday, January 09, 2018 3:02 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Cc: Feeley, Drew (Robert) <Feeley.Drew@epa.gov>; Lewis, Josh <Lewis.Josh@epa.gov>
Subject: RE: Meeting Request re: Natural Gas Vehicles

That's terrific and will work on our end. I will follow up shortly with a complete list of attendees on our part, but let's go ahead and book it.

Thanks.

From: Atkinson, Emily [mailto:Atkinson.Emily@epa.gov]
Sent: Tuesday, January 09, 2018 10:53 AM
To: Tucker, Jamie
Cc: Feeley, Drew (Robert); Lewis, Josh
Subject: FW: Meeting Request re: Natural Gas Vehicles

Hi Jamie,

It looks like Bill Wehrum could be available for a 45 minute meeting on Tuesday, January 30, 2018 at 4:00pm.

Please advise if this could work on your end.

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Tucker, Jamie [mailto:jtucker@AKINGUMP.COM]
Sent: Wednesday, January 03, 2018 3:21 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>; Lewis, Josh <Lewis.Josh@epa.gov>
Cc: Feeley, Drew (Robert) <Feeley.Drew@epa.gov>
Subject: Meeting Request re: Natural Gas Vehicles

Emily/Josh - On behalf of VNG.Co, a natural gas vehicle fueling infrastructure company, we wanted to see if Assistant Administrator Wehrum would be available this month to discuss a number of administrative and legislative policy changes the company is advocating to promote the adoption of natural gas vehicles largely by leveling the playing field with electric vehicles. We have had recent conversations with the Office of Policy as well as the Office of Transportation and Air Quality to discuss these proposals as well as with staff at the White House and Department of Transportation. With Mr. Wehrum's confirmation we would like to fold him into the conversation as well.

Natural gas vehicles provide a cost effective and additional pathway for automaker emissions compliance while preserving the products' consumer appeal, and are therefore worthy of being included in a portfolio of solutions along with EVs to achieve the objectives.

Among the key advantages of the proposed regulatory changes is the benefit to achieving emissions reductions in the light-duty truck category which accounts for 64% of new vehicle purchases (and are responsible for even greater amounts of fuel use and pollution if you take into account the differential in fuel economy between light-duty trucks and passenger cars), and for which there is not a viable electrification solution.

Specifically, we would encourage the Administration to consider:

- **Restoring the 0.15 "divisor"** in EPA's compliance calculations, equivalent to NHTSA's statutory Petroleum Equivalency Factor that counts a gallon-equivalent of natural gas as 0.15 gallons of gasoline. The previous Administration ended this powerful incentive while simultaneously providing electric vehicles with additional emissions incentives on the hope that EVs would be "game changers." The game has now changed for NGVs. The

shale revolution that has occurred since the current rules were set as well the development of Renewable Natural Gas as the lowest carbon vehicle fuel are true game changers that strongly justify returning to the 0.15 divisor.

The powerful and well-justified incentive of the 0.15 divisor would be complemented and made even more effective by additional changes including:

- **Eliminating range requirements on bi-fuel NGVs** that results in an impractical natural gas tank size requirement that is twice the size of the gasoline tank and costly design requirements for NGVs, whereas no such range requirements exists for hybrid electric vehicles. This is the most important regulatory change as a complement to the 0.15 divisor of the three.

- **Providing NGV pick-ups with the bonus credits** provided to "strong electric hybrid pick-ups" and **eliminating the existing minimum 10% deployment threshold** to qualify for pickup bonus credits.

- **Establishing a new incentive to encourage retrofitting existing gasoline and diesel vehicles to run on natural gas**, something that isn't feasible for electric drives but which will reduce emissions by the existing fleet of vehicles

Enclosed for your further consideration are our Midterm Evaluation comments as well as information outlining the rationale for the recommended regulatory changes.

Thank you for your consideration.

Jamie

Jamie Tucker
AKIN GUMP STRAUSS HAUER & FELD LLP
1333 New Hampshire Avenue, N.W. | Washington, DC 20036-1564 | USA | Direct: +1 202.887.4279 | Internal: 24279
Fax: +1 202.887.4288 | jtucker@akingump.com | akingump.com | Bio

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Message

From: Atkinson, Emily [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=BB2155ADEF6A44AEA9410741F0C01D27-ATKINSON, EMILY]
Sent: 2/5/2018 7:40:36 PM
To: Lee Janger [lee@armitagellc.com]
BCC: Atkinson, Emily [Atkinson.Emily@epa.gov]
Subject: Confirmed 2/20 at 10am: Meeting Request (2-20-2018) with Asst. Adm. Wehrum

Hi Lee,
You are confirmed for 45 minute meeting on Tuesday, February 20, 2018 at 10:00am with Bill Wehrum. Directions and procedures to 1200 Pennsylvania Avenue NW:

Metro: If you come by Metro get off at the Federal Triangle metro stop. Exit the metro station and go up two sets of escalators to the surface level and turn right. You will see a short staircase and wheelchair ramp leading to a set of glass doors with the EPA logo - that is the William Jefferson Clinton Federal Building, North Entrance.

Taxi: Direct the taxi to drop you off on 12th Street NW, between Constitution and Pennsylvania Avenues, at the elevator for the Federal Triangle metro stop - this is almost exactly half way between the two avenues on 12th Street NW. Facing the building with the EPA logo and American flags, walk toward the building and take the glass door on your right hand side with the escalators going down to the metro on your left – that is the North Lobby of the William Jefferson Clinton building.

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Please send me a list of participants in advance of the meeting and feel free to contact me should you need any additional information.

Emily

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Lee Janger [mailto:lee@armitagellc.com]
Sent: Monday, February 05, 2018 12:58 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: RE: Meeting Request (2-20-2018) with Asst. Adm. Wehrum

Emily,

That works great on our end. Thank you very much for making these arrangements. I will make sure to reach out a few days beforehand to brief you on attendees and materials to be discussed.

Best regards,
-Lee

From: Atkinson, Emily [mailto:Atkinson.Emily@epa.gov]
Sent: Monday, February 05, 2018 12:53 PM
To: Lee Janger <lee@armitagellc.com>
Subject: FW: Meeting Request (2-20-2018) with Asst. Adm. Wehrum

Hi Lee,

It looks like Bill Wehrum and Mandy Gunasekara could be available for a 45 minute meeting on Tuesday, February 20, 2018 at 10:00am.

Please advise if this could work on your end.

Emily

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Lee Janger [mailto:lee@armitagellc.com]
Sent: Friday, February 02, 2018 2:19 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: Meeting Request (2-20-2018) with Asst. Adm. Wehrum

Ms. Atkinson,

Thank you so much for taking the time to speak with me just now. This email is a follow up on to our brief discussion.

I represent a group of large auto suppliers (BorgWarner, Honeywell, Bosch, and others). Our focus is on advanced powertrain and emission control technologies. We advocate for technology neutral standards that encourage and support innovation across the auto industry.

We are very interested in speaking with Assistant Administrator Wehrum and others in the Office of Air and Radiation regarding the Midterm Evaluation (MTE). In response to the anticipated review, we have prepared data that we believe will assist EPA with their review of the appropriateness of the emissions standards for vehicle model years 2022-2025.

A few months ago, we had a great meeting with Mike Catanzaro at the White House, and after learning about our data review, strongly urged us to meet with your office to discuss our concerns on long term certainty, job growth and future technology investments as these are some of the key factors being looked at for the MTE.

As we finalize our data, I am hoping to arrange a meeting with Mr. Wehrum for **the late morning of February 20th** while many of members will be in Washington, DC. Please let me know if a meeting at that time is possible. We would likely be a group of 5-6 people.

More information on our group can be found at www.VehicleEfficiency.com Please let me know if I can provide any additional information. My contact information is also below.

Thank you again for your time and help.
-Lee

Alliance for Vehicle Efficiency

Lee J. Janger
Director, Legislative and Regulatory Affairs
202.607.0723
Lee@ArmitageLLC.com

>www.VehicleEfficiency.com<

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Appointment

From: Atkinson, Emily [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=BB2155ADEF6A44AEA9410741F0C01D27-ATKINSON, EMILY]
Sent: 2/5/2018 7:39:08 PM
To: Gunasekara, Mandy [Gunasekara.Mandy@epa.gov]; Grundler, Christopher [grundler.christopher@epa.gov]; Hengst, Benjamin [Hengst.Benjamin@epa.gov]; Cook, Leila [cook.leila@epa.gov]; Charmley, William [charmley.william@epa.gov]

Subject: Meet with Aluminum Association - Aluminum Transport Group Members (Confirmed)
Attachments: Aluminum Association Meeting Request; Confirmed 3/2 at 3pm: Aluminum Association Meeting Request
Location: WJC-N 5400 + Video with AA

Start: 3/2/2018 8:00:00 PM
End: 3/2/2018 8:45:00 PM
Show Time As: Tentative

Re: automotive GHG emissions and fuel economy regulations
To: Bill Wehrum, Mandy Gunasekara, Chris Grundler, Ben Hengst, Lee Cook, Bill Charmley
Outside Attendees (in person): TBD

Aluminum Association Meet...

Confirmed 3/2 at 3pm: Aluminum ...

Message

From: Lauren Wilk [lwilk@aluminum.org]
Sent: 2/1/2018 5:05:48 PM
To: Atkinson, Emily [Atkinson.Emily@epa.gov]; Lewis, Josh [Lewis.Josh@epa.gov]
Subject: Aluminum Association Meeting Request

Emily and Josh --

Will Lovett suggested I connect with you on scheduling a meeting with Assistant Administrator Wehrum for a few representatives of the aluminum industry. We have availability on the following dates: February 16, 20, 21, 23, 26, 27, 28 or March 1 (but we can certainly be flexible if an alternative date is necessary).

The Aluminum Association is active with EPA on a number of issues -- and specifically, the members of our Aluminum Transportation Group (ATG) would very much like to hear directly from Mr. Wehrum about the Administration's priorities related to automotive GHG emissions and fuel economy regulations. The ATG represents the Association's member companies that produce aluminum for use in cars and trucks, including Alcoa, Arconic, Novelis, Rio Tinto and others.

The aluminum industry plays a significant role in the automotive supply chain, and the pounds of aluminum content per vehicle has grown by more than 30 percent over the past decade. Driven by that auto sector growth, the aluminum industry has announced or completed U.S. plant expansions and investments of more than $2.6 billion since 2013. Already this year, Novelis announced that it was investing $300 million in a new greenfield automotive finishing facility in Guthrie, Kentucky. The industry is acutely interested in the outcome of the midterm review on vehicle fuel economy, and we have met previously with the White House, OMB, NHTSA, CARB and others on this topic.

I'd be happy to answer any questions or provide additional background, if that's helpful.

Thanks so much,

Lauren

The Aluminum Association

Lauren Wilk
Vice President, Policy & International Trade
The Aluminum Association
1400 Crystal Drive, Suite 430
Arlington, VA 22202
T 703.358.2981 | [redacted] | F 703.358.2961
JOIN THE CONVERSATION:

Message

From: Atkinson, Emily [Atkinson.Emily@epa.gov]
Sent: 2/5/2018 7:38:19 PM
To: Lauren Wilk [lwilk@aluminum.org]
Subject: Confirmed 3/2 at 3pm: Aluminum Association Meeting Request

Hi Lauren,
You are confirmed for 45 minute meeting on Friday, March 2, 2018 at 3:00pm with Bill Wehrum.
Directions and procedures to 1200 Pennsylvania Avenue NW:

Metro: If you come by Metro get off at the Federal Triangle metro stop. Exit the metro station and go up two sets of escalators to the surface level and turn right. You will see a short staircase and wheelchair ramp leading to a set of glass doors with the EPA logo - that is the William Jefferson Clinton Federal Building, North Entrance.

Taxi: Direct the taxi to drop you off on 12th Street NW, between Constitution and Pennsylvania Avenues, at the elevator for the Federal Triangle metro stop - this is almost exactly half way between the two avenues on 12th Street NW. Facing the building with the EPA logo and American flags, walk toward the building and take the glass door on your right hand side with the escalators going down to the metro on your left – that is the North Lobby of the William Jefferson Clinton building.

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Please send me a list of participants in advance of the meeting and feel free to contact me should you need any additional information.

Emily

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Lauren Wilk [mailto:lwilk@aluminum.org]
Sent: Monday, February 05, 2018 12:56 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: RE: Aluminum Association Meeting Request

Thanks, Emily. We'll take the meeting on March 2 at 3pm, and I'll firm up attendees on our end.

Let me know what details you need in advance of the meeting.

Much appreciated!

Lauren

Lauren Wilk
Vice President, Policy & International Trade
The Aluminum Association
1400 Crystal Drive, Suite 430
Arlington, VA 22202
T 703.358.2981 | [redacted] | F 703.358.2961
JOIN THE CONVERSATION:

From: Atkinson, Emily [mailto:Atkinson.Emily@epa.gov]
Sent: Monday, February 05, 2018 12:48 PM
To: Lauren Wilk <lwilk@aluminum.org>
Subject: RE: Aluminum Association Meeting Request

Hi Lauren,

It looks like Bill Wehrum could be available for a 45 minute meeting on Friday, March 2, 2018 at 3:00pm.

Please advise if this could work on your end.

Emily

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Lauren Wilk [mailto:lwilk@aluminum.org]
Sent: Thursday, February 01, 2018 12:06 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>; Lewis, Josh <Lewis.Josh@epa.gov>
Subject: Aluminum Association Meeting Request

Emily and Josh –

Will Lovett suggested I connect with you on scheduling a meeting with Assistant Administrator Wehrum for a few representatives of the aluminum industry. We have availability on the following dates: February 16, 20, 21, 23, 26, 27, 28 or March 1 (but we can certainly be flexible if an alternative date is necessary).

The Aluminum Association is active with EPA on a number of issues – and specifically, the members of our Aluminum Transportation Group (ATG) would very much like to hear directly from Mr. Wehrum about the Administration's priorities related to automotive GHG emissions and fuel economy regulations. The ATG represents the Association's member companies that produce aluminum for use in cars and trucks, including Alcoa, Arconic, Novelis, Rio Tinto and others.

The aluminum industry plays a significant role in the automotive supply chain, and the pounds of aluminum content per vehicle has grown by more than 30 percent over the past decade. Driven by that auto sector growth, the aluminum industry has announced or completed U.S. plant expansions and investments of more than $2.6 billion since 2013. Already this year, Novelis announced that it was investing $300 million in a new greenfield automotive finishing facility in Guthrie, Kentucky. The industry is acutely interested in the outcome of the midterm review on vehicle fuel economy, and we have met previously with the White House, OMB, NHTSA, CARB and others on this topic.

I'd be happy to answer any questions or provide additional background, if that's helpful.

Thanks so much,

Lauren

The Aluminum Association

Lauren Wilk
Vice President, Policy & International Trade
The Aluminum Association
1400 Crystal Drive, Suite 430
Arlington, VA 22202
T 703.358.2981 [redacted] F 703.358.2961
JOIN THE CONVERSATION:

Appointment

From: Atkinson, Emily [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=BB2155ADEF6A44AEA9410741F0C01D27-ATKINSON, EMILY]
Sent: 1/30/2018 2:20:12 PM
To: Gunasekara, Mandy [Gunasekara.Mandy@epa.gov]; Grundler, Christopher [grundler.christopher@epa.gov]; Charmley, William [charmley.william@epa.gov]; Hengst, Benjamin [Hengst.Benjamin@epa.gov]; Moran, Robin [moran.robin@epa.gov]; Alson, Jeff [alson.jeff@epa.gov]; Burch, Julia [Burch.Julia@epa.gov]; Orlin, David [Orlin.David@epa.gov]; Kataoka, Mark [Kataoka.Mark@epa.gov]

Subject: Meet with VNG Co re: natural gas vehicles program (Confirmed)
Attachments: Updated VNG Comments on EPA-HQ-OAR-2015-0827.pdf; NGV Executive Action Summary.docx; RE: Meeting Request re: Natural Gas Vehicles; Confirmed 1/30 at 4pm: Meeting Request re: Natural Gas Vehicles; RE: Confirmed 1/30 at 4pm: Meeting Request re: Natural Gas Vehicles; EPA Memo 1.26.18.pdf; A Regulatory Reform Agenda for NGVs v2 (002).pdf; EPA presentation Dec 14 vF.PDF
Location: WJC-N 5400 + Video with AA Room C174

Start: 1/30/2018 9:00:00 PM
End: 1/30/2018 9:45:00 PM
Show Time As: Tentative

Materials attached (last three PDFs)
To: Bill Wehrum, Mandy Gunasekara, Chris Grundler, Bill Charmley, Ben Hengst, Robin Moran, Jeff Alson, Julia Burch, David Orlin, Mark Kataoka
Outside Attendees (in person):

- Robert Friedman, COO
- Bob Atkinson, Chief Regulatory Officer
- Larry Highbloom, Chief Administrative Officer
- Susan Lent, Akin Gump
- Jamie Tucker, Akin Gump

A Regulatory Reform Agenda for NGVs

A fast-track rulemaking to reform natural gas vehicle (NGV) incentives can be accomplished simply. The reforms necessary to achieve this goal are straightforward and fully justified by the game-changing environmental benefits of NGV technology, including the use of renewable natural gas (RNG), the potential for high-efficiency engines, and synergies with hydrogen fuel cell vehicles. We recommend four actions:

- **Restore 0.15 Divisor:** NGV emissions calculations should return to the "0.15 divisor" effective immediately, with emissions calculated as 85% below a gasoline vehicle (as was the case before 2016). This is justified by the game-changing real-world emissions benefits of RNG, and is moreover harmonized with Congressionally-mandated incentives under the CAFE program.

  We recommend reinstating language from the MY 2011-2016 regulations under 40 C.F.R. § 600.510–12, Calculation of average fuel economy and average carbon-related exhaust emissions.

- **Remove Dual-Fuel Design Requirements:** EPA should remove the utility factor requirements for a 2:1 ratio of CNG-to-gasoline range, as well as the requirement for dual-fuel NGVs to only use gasoline when the CNG tank is empty. These unnecessary design requirements add cost and reduce the appeal of these vehicles to consumers, and analogous plug-in hybrid electric (PHEV) vehicles face no such requirements despite having far lower driving range on electricity (<40 miles) compared to the typical natural gas range of a dual-fuel NGV pickup (250+ miles).

  This could be achieved by deleting the requirements in 40 C.F.R. § 600.510–12, Calculation of average fuel economy and average carbon-related exhaust emissions, part (c)(2)(vii)(B) for fuel economy and (j)(2)(vii)(B) for emissions.

- **NGV Pickup Incentive:** EPA has recognized the unique challenges facing full-sized pickups, and natural gas could be the ideal low-emission platform for these vehicles. This could be encouraged by offering a "Natural Gas Pickup" incentive similar to current hybrid-electric and "performance-based" pickup incentives; however, for the natural gas pickup credit, minimum deployment thresholds (10% of all full-size pickups for existing credits) should be eliminated to reflect the greater market challenges faced by NGVs - since, unlike hybrids, they use an alternative fuel.

  This could be accomplished by inserting a new section (c) under 40 C.F.R. § 86.1870–12, CO2 credits for qualifying full-size pickup trucks, titled "Credits for implementation of natural gas technology." The structure of these credits would be similar to those for sections (a) and (b), but without requirements for the "required minimum percent of full size pickup trucks."

- **Recognize Retrofits:** Encouraging retrofits of older gasoline vehicles to run on CNG is slightly more complex, but offers a unique opportunity to reduce vehicle emissions throughout their useful life instead of just at the point of sale. EPA should allow certified converters to "opt in" to the program and generate credits for CNG retrofits and upfits, prorated in proportion to their remaining useful life. Retrofits could also be encouraged by providing credits for CNG "prep packages" that reduce the costs of subsequent conversion to natural gas, as part of the off-cycle credit technologies menu listed at *40 C.F.R. § 86.1869–12, CO2 credits for off-cycle CO2-reducing technologies.*

For further info: Robert Atkinson, Chief Reg. Officer, VNG. rcatkinson@vng.co; 908-447-4201

VNG

Message

From: Atkinson, Emily [Atkinson.Emily@epa.gov]
Sent: 1/10/2018 1:47:37 PM
To: Tucker, Jamie [jtucker@AKINGUMP.COM]
CC: Feeley, Drew (Robert) [Feeley.Drew@epa.gov]; Lewis, Josh [Lewis.Josh@epa.gov]
Subject: Confirmed 1/30 at 4pm: Meeting Request re: Natural Gas Vehicles

Hi Jamie,
You are confirmed for a 45 minute meeting on Tuesday, January 30, 2018 at 4:00pm with Bill Wehrum. Directions and procedures to 1200 Pennsylvania Avenue NW:

Metro: If you come by Metro get off at the Federal Triangle metro stop. Exit the metro station and go up two sets of escalators to the surface level and turn right. You will see a short staircase and wheelchair ramp leading to a set of glass doors with the EPA logo - that is the William Jefferson Clinton Federal Building, North Entrance.

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Please send me a list of participants in advance of the meeting and feel free to contact me should you need any additional information.

Emily

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

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Subject: RE: Meeting Request re: Natural Gas Vehicles

That's terrific and will work on our end. I will follow up shortly with a complete list of attendees on our part, but let's go ahead and book it.

Thanks.

From: Atkinson, Emily [mailto:Atkinson.Emily@epa.gov]
Sent: Tuesday, January 09, 2018 10:53 AM
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Cc: Feeley, Drew (Robert); Lewis, Josh
Subject: FW: Meeting Request re: Natural Gas Vehicles

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Immediate Office of the Assistant Administrator
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From: Tucker, Jamie [mailto:jtucker@AKINGUMP.COM]
Sent: Wednesday, January 03, 2018 3:21 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>; Lewis, Josh <Lewis.Josh@epa.gov>
Cc: Feeley, Drew (Robert) <Feeley.Drew@epa.gov>
Subject: Meeting Request re: Natural Gas Vehicles

Emily/Josh - On behalf of VNG.Co, a natural gas vehicle fueling infrastructure company, we wanted to see if Assistant Administrator Wehrum would be available this month to discuss a number of administrative and legislative policy changes the company is advocating to promote the adoption of natural gas vehicles largely by leveling the playing field with electric vehicles. We have had recent conversations with the Office of Policy as well as the Office of Transportation and Air Quality to discuss these proposals as well as with staff at the White House and Department of Transportation. With Mr. Wehrum's confirmation we would like to fold him into the conversation as well.

Natural gas vehicles provide a cost effective and additional pathway for automaker emissions compliance while preserving the products' consumer appeal, and are therefore worthy of being included in a portfolio of solutions along with EVs to achieve the objectives.

Among the key advantages of the proposed regulatory changes is the benefit to achieving emissions reductions in the light-duty truck category which accounts for 64% of new vehicle purchases (and are responsible for even greater amounts of fuel use and pollution if you take into account the differential in fuel economy between light-duty trucks and passenger cars), and for which there is not a viable electrification solution.

Specifically, we would encourage the Administration to consider:

- **Restoring the 0.15 "divisor"** in EPA's compliance calculations, equivalent to NHTSA's statutory Petroleum Equivalency Factor that counts a gallon-equivalent of natural gas as 0.15 gallons of gasoline. The previous Administration ended this powerful incentive while simultaneously providing electric vehicles with additional emissions incentives on the hope that EVs would be "game changers." The game has now changed for NGVs. The shale revolution that has occurred since the current rules were set as well the development of Renewable Natural Gas as the lowest carbon vehicle fuel are true game changers that strongly justify returning to the 0.15 divisor.

The powerful and well-justified incentive of the 0.15 divisor would be complemented and made even more effective by additional changes including:

- **Eliminating range requirements on bi-fuel NGVs** that results in an impractical natural gas tank size requirement that is twice the size of the gasoline tank and costly design requirements for NGVs, whereas no such range requirements exists for hybrid electric vehicles. This is the most important regulatory change as a complement to the 0.15 divisor of the three.

- **Providing NGV pick-ups with the bonus credits** provided to "strong electric hybrid pick-ups" and **eliminating the existing minimum 10% deployment threshold** to qualify for pickup bonus credits.

- **Establishing a new incentive to encourage retrofitting existing gasoline and diesel vehicles to run on natural gas**, something that isn't feasible for electric drives but which will reduce emissions by the existing fleet of vehicles

Enclosed for your further consideration are our Midterm Evaluation comments as well as information outlining the rationale for the recommended regulatory changes.

Thank you for your consideration.

Jamie

Jamie Tucker
AKIN GUMP STRAUSS HAUER & FELD LLP
1333 New Hampshire Avenue, N.W. | Washington, DC 20036-1564 | USA | Direct: +1 202.887.4279 | Internal: 24279
Fax: +1 202.887.4288 | jtucker@akingump.com | akingump.com | Bio

The information contained in this e-mail message is intended only for the personal and confidential use of the recipient(s) named above. If you have received this communication in error, please notify us immediately by e-mail, and delete the original message.
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A Rulemaking to Unlock the Potential of Natural Gas Vehicles

During the previous administration, EPA pushed automakers to manufacture light duty electric vehicles (EVs) as a means of meeting fuel economy and emission standards, ignoring the benefits of natural gas vehicles (NGVs). Not only did EPA remove the NGV incentives provided by Congress under the law, it failed to consider NGV technology development, the full impact of the shale revolution, or the growth of renewable natural gas (RNG) in its Technical Assessment Report on the regulations.

Natural gas is an abundant resource and is uniquely suited as a fuel for light trucks, which make up 64% of the passenger vehicle market and an even greater percentage of fuel use and pollution due to their lower fuel economy. EVs, on the other hand, are limited to lighter weight and luxury passenger cars. With automakers struggling to meet emissions standards, it is critical that EPA provide alternative compliance options, including incentivizing automakers to add NGVs to their product lines.

EPA can solve this urgent problem with a rulemaking to reform light-duty vehicle regulations for NGVs. With appropriate support, NGVs can deliver these much-needed benefits:

- **Game-Changing Lifecycle Emissions:** NGVs reduce greenhouse emissions by up to 25% with fossil natural gas and can achieve *negative* lifecycle emissions with RNG from landfills, dairy farms, and other sources. With 35% of NGV fueling coming from RNG already, these vehicles are clearly delivering game-changing emissions on par with EVs – and should be incentivized as such.
- **Alternative Fuel for Light Trucks:** EVs are an option for small cars, but battery cost and weight are prohibitive for electrifying larger vehicles like pickups and light trucks. By contrast, NGVs are a proven alternative for light trucks, with both OEM and conversion-certified pickup models as well as bi-fuel configurations that can run on gasoline (key for addressing "range anxiety" for early adopters).
- **Cleaning Up Older Vehicles:** While it's impossible to electrify existing vehicles, they *can* be converted to natural gas – as in states like Oklahoma and Utah that have encouraged thriving retrofit industries. Automaker support of NGVs will reduce retrofit costs and presents a unique opportunity to reduce emissions from the highly polluting used vehicle fleet and expand the benefits of the rules.
- **Economic Benefits:** In addition to the environmental benefits of NGVs, they offer the opportunity to bolster economic growth in the automotive industry, the natural gas industry, and even the agriculture and waste industries, which can benefit from the production and sale of RNG fuel.

The fact that the considerable benefits of NGVs have been previously ignored by EPA is reason enough to convene a rulemaking as proposed by VNG last year in its Regulatory Reform comments, instead of waiting for the Mid-Term Evaluation. Another compelling reason to fast-track these reforms is to unlock a win-win compromise by expanding the portfolio of low-emission solutions for automakers beyond EVs.

- **Breaking Through the Logjam on Vehicle Rules:** Automakers need a reform of the rules because they currently have no cost-effective way to meet their emission targets for pickups and light trucks, which are essential to their economic health. Meanwhile, California policymakers are demanding that the targets remain, threatening years of legal uncertainty and a fractured regulatory landscape.

NGVs are the missing piece of the puzzle. The massive environmental benefits of RNG have already been acknowledged by the California Air Resources Board, and the potential of NGVs as a light truck alternative have already been demonstrated by automakers. By reforming regulations to recognize the benefits of NGVs (and harmonize with CAFE incentives in the process), EPA can provide automakers a cost-effective compliance option for light trucks. This would help the environment *and* the economy, through job creation, GDP growth, and trade deficit reduction.

For further info: Robert Atkinson, Chief Reg. Officer, VNG. rcatkinson@vng.co; 908-447-4201

VNG

ARIEL

NGVs, Light Trucks, & the Mid-Term Evaluation

Meeting with Environmental Protection Agency, 12/14/17

Robert Atkinson, VNG Chief Regulatory Officer
RCAtkinson@vng.co, 908-447-4201

Dec-17

VNG and Ariel – Who We Are

- VNG and Ariel are collaborating on this regulatory initiative
- Ariel is the largest manufacturer of reciprocating gas compressors in the world
- VNG builds CNG fueling for light- & medium-duty fleets at existing gasoline stations
  - High-visibility locations that are accessible, convenient, and consumer-friendly, with full service C-store retail amenities; major contrast to heavy-duty CNG private fleet depots, utility yards
  - Locations in Philadelphia, Houston, Dallas, and Milwaukee
  - Discussions with major light-duty fleet for fueling in California (operates ~4,000 NGVs in state)
- VNG has been a leading voice for light-duty NGVs, cited in original 2017-2025 rule

Expanding Compliance Options for Light Trucks

The Problem With Low Gasoline Prices

- As noted in TAR, market shift towards light trucks reduces aggregate emissions benefits of regulations, even if individual OEM targets adjust to compensate
- Battery cost and weight means no EV pickups for foreseeable future – the OEMs' most popular, profitable, and polluting vehicles

NGVs Could Be The Solution – With EPA Support

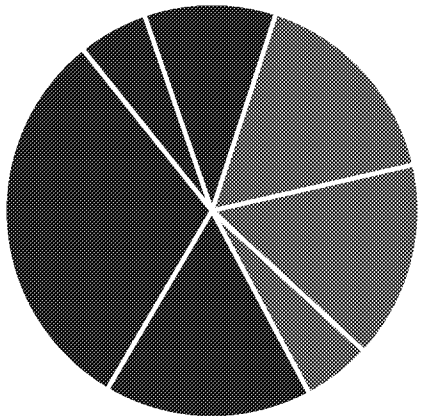
- NGVs have seen dramatic, game-changing reductions in lifecycle emissions since original rulemaking, thanks to major uptake of renewable natural gas (RNG)
- OEMs have already experimented with NGV pickups with limited production of Dodge Ram and Chevy Silverado bi-fuels, CNG-ready Ford F-150

With revised incentives that recognize rapid growth of RNG fueling, NGVs could be a key low-emission compliance pathway for light trucks for 2025 and beyond.

Shift To Light Trucks Eroding Benefits of Rules

YTD 2017 Sales

LIGHT TRUCKS
63% of YTD 2017 auto sales
+4.6% from YTD 2016



CARS
42% of YTD 2017 auto sales
-10.3% from YTD 2016

Source: Wall Street Journal

- Gasoline prices have plunged since rulemaking, shifting market to larger vehicles
- Not a current compliance problem for OEMs, since targets adjust to sales mix
- BUT shift will reduce aggregate emissions benefits of regulations
- Growing OEM concerns about limited compliance options for light trucks - and pickups especially

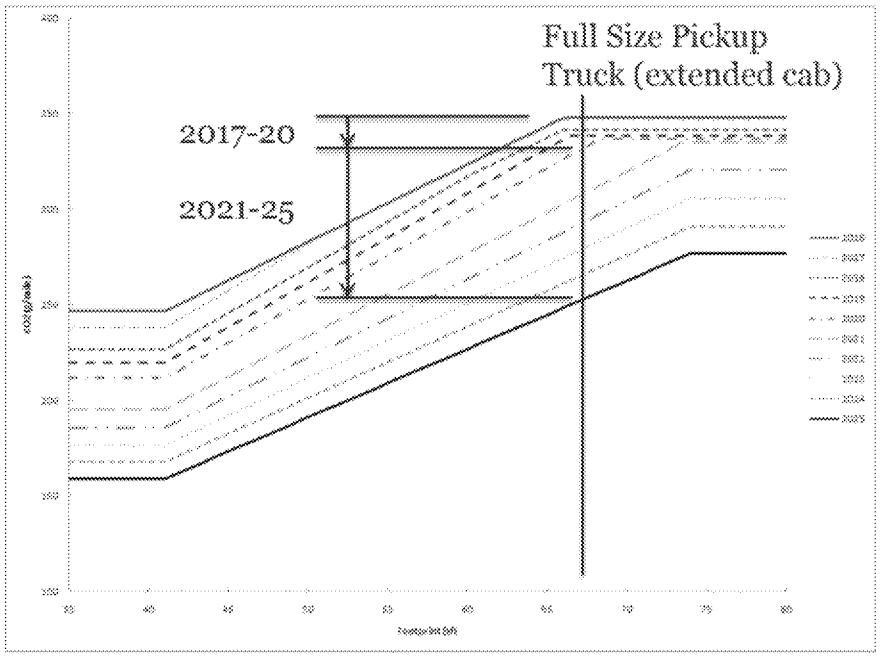
Emission Solutions for Pickups Most Urgently Needed

- Pickups are the top-selling vehicles, most profitable, and most polluting
- Pickups also face the most dramatic increase in CO2 emission requirements in 2021-2025 period – biggest challenge for automakers, few tech options

- No EV alternatives for foreseeable future (2025+) due to weight and utility requirements (2016 TAR)
- Natural gas (or natural gas-ready) versions of Chevy Silverado, Dodge Ram, and Ford F-150 have already been rolled out by OEMs

With support from EPA, NGVs could be best compliance pathway for automakers for light trucks for 2025 and beyond.

Figure I-4 CO2 (g/mile) Light-Truck Standard Curves



Source: Westport

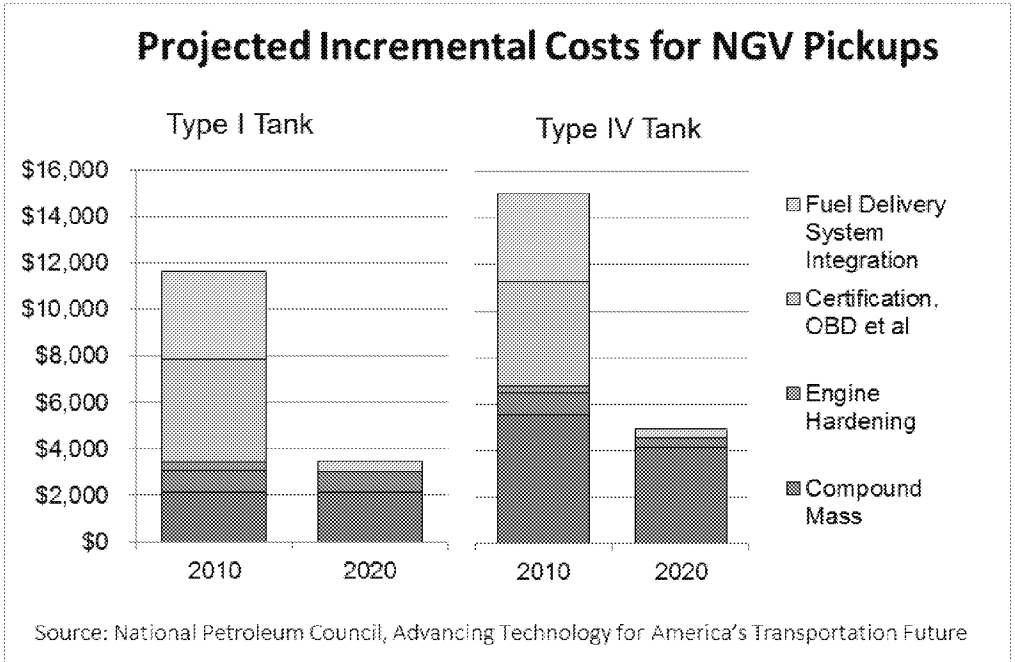
RNG: From 0% to 35% of NGV Fueling Since 2012

- **Original rulemaking:** *"Biomethane will remain a small part of the overall natural gas market for the foreseeable future"…*
- **Today:** Biomethane/RNG accounts for about 35% of national NGV fueling, 60% in California (Fleets & Fuels) – and growing as fast as RNG projects can come online
- **Why?** Regulations - and economics. RNG reclassified as cellulosic biofuel in 2014, RIN revenues of ~$23/MMBTU (UC Davis) make it more profitable than fossil.
  - —3x revenues from transportation vs electricity sales (CARB)
  - —California adds another $11+/MMBTU for LCFS sales (UC Davis)
- **Game-Changing Emissions:** Lowest carbon intensity of any fuel measured under California's Low Carbon Fuel Standard – **pathways up to -304 gCO2e/MJ** (CARB)

Economics of RFS and LCFS will ensure continued growth in RNG use for NGVs, and growth in NGV market will be primary driver of new RNG capture projects.

Major NGV Cost Reductions With Scale

- NGVs have far greater potential for rapid incremental cost reductions than EVs, as costs come from design/regulatory – not components (i.e. batteries)
- Fuel system integration + certification are >50% of NGV incremental costs (NPC)
- Fixed costs virtually eliminated overnight if spread over large number of vehicles
- Precedent in Europe (e.g. Italy), where OEM-produced NGVs retail for <$3,000 more than gasoline model (BCG)
- $3,000 is projected cost to lightweight pickup truck for 10% emissions improvement (TAR)
- NGVs offer comparable cost with much greater emission reduction



Advanced Tech for Ultra-Low NGV Pickup Emissions

- NGVs already commercial tech – but can be pushed much farther by taking advantage of high octane, clean-burning properties of gas
- Westport (Cummins JV partner) has proposed "Super Pickup Truck" NGV concept with >30% greater fuel economy, ultra-low NOx
- Advanced tank technologies (e.g. adsorption) another avenue of improvement
- Hybrid/Plug-In Hybrid pathway offers further potential emission reductions

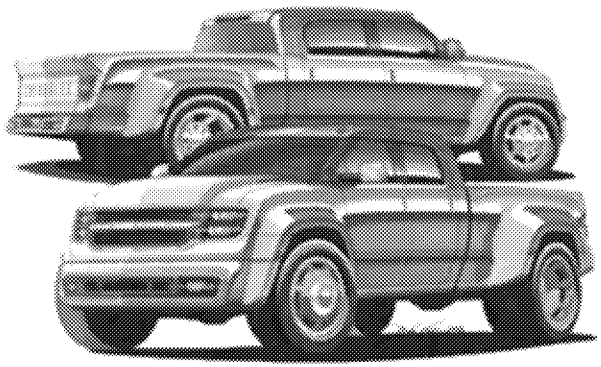
Advanced powertrains that fully exploit ultra high-octane low-carbon fuel properties of methane

a. Not been done to-date – missed opportunity

b. High efficiency and high performance at the same time, outperform gasoline and diesel

c. >30% CO2 reduction TTW

- Westport, "Methane: The Performance Fuel"

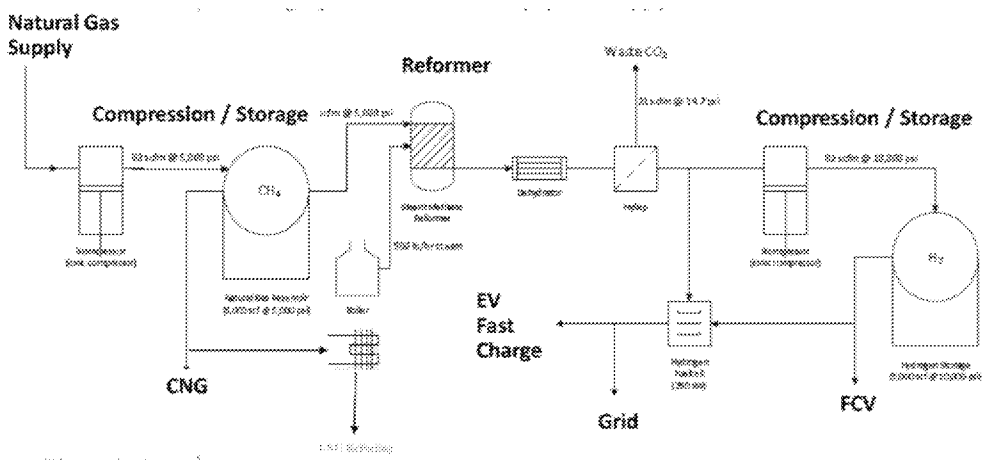


NGV Synergies With Hydrogen

- Vehicle synergy via gaseous fuel storage tech (e.g. adsorption tanks)
- CNG/H2 fueling can be combined, or else CNG stations can be transitioned to H2 at a later date due to shared components
- RNG is also fuel for ultra-low GHG H2 production – NGVs develop market for production infrastructure today for H2 fueling tomorrow

"Planning for the addition of H2 infrastructure at CNG fueling locations can facilitate the adoption of hydrogen at a later date and smooth the transition to near zero carbon technologies."

- **UC Davis STEPS Program**



Proposed Reforms to GHG Rules – 0.15 Divisor

Return to "0.15 divisor": Calculate CNG emissions as 0.15x gasoline emissions, as in the pre-MY 2016 GHG regulations

- Equivalent to 85% reduction, reflects game-changing lifecycle RNG emissions (some pathways achieve 100% or more)
- Analogous to EV 0 g/mi incentive that assumes 100% renewable electricity; instead, assumes 100% RNG use
  - *RNG use of 35% nationally and growing is equal to % of zero-carbon electricity (renewables + nuclear) in national mix*
- Like EV incentive, can be transitioned to real-world lifecycle emissions based on national RNG use (can use RFS data)
- Harmonizes with CAFE Petroleum Equivalency Factor (PEF)

A return to the 0.15 divisor could enable OEMs to achieve existing 2025 targets and establish NGVs as long-term compliance pathway for light trucks.

Proposed Reforms to GHG Rules – Dual-Fuel Design

Remove utility factor design requirements for dual-fuel NGVs: Eliminate need for 2:1 CNG-to-gasoline range ratio, use of gasoline only when CNG tank is empty

- Dual-fuel vehicles critical to building NGV market as fueling develops, like PHEVs
- Fastest, lowest-cost pathway is adding CNG tank to existing gasoline vehicle
- However dual-fuel NGVs face unique design requirements to receive utility factor, despite having much greater CNG range vs PHEV electric-only range
- Forces automakers to add cost (from shrinking and redesigning gasoline tank) and decrease total range and utility (from increased size of CNG tanks) if they want to receive full utility factor incentives
  - **Example:** FCA chose design simplicity over incentives with Dodge Ram dual-fuel, with 255 miles of CNG range and nearly 400 miles of gasoline range

These design requirements are as unnecessary for dual-fuel NGVs as for PHEVs, and will force OEMs to either limit consumer appeal or lose incentives.

Proposed Reforms to GHG Rules – Pickup Incentive

NGV Pickup Incentive: Create full-size pickup incentive equivalent to hybrid incentives for both dedicated and dual-fuel NGVs with **no** minimum penetration

- Cleaner technologies for pickups badly needed, but currently no projected use of existing full-size pickup advanced technology incentives (2016 TAR)
- NGVs are ideal next-gen pickup platform and could qualify for performance-based incentive (<15% emission reduction)…
- But 10% minimum penetration threshold too high for alternative fuel vehicles; too risky for OEMs to make big, immediate move in critical profit segment
- Removing threshold and awarding incentives for every NGV pickup would encourage OEMs to experiment, invest in new technology

NGV-specific incentive would surpass original goals of full-size pickup incentives by providing new platform for continuous, long-term efficiency improvements

Proposed Reforms to GHG Rules – Retrofits

Retrofit Credits: Create credits based on remaining useful life of converted vehicle: for instance, conversion of 5 year-old pickup would get credit for 50% emission reductions as a new vehicle; credits awarded to converter, can be sold to OEMs

- Vehicle life steadily increasing beyond 10 years, likely to continue growing as vehicle prices increase – how to avoid erosion of program benefits?
- NGV retrofits offer pathway to reduce emissions from vehicles significantly during their useful life – very successful in Utah, Oklahoma
- These emission benefits not currently captured in (or incentivized by) rules
- Synergies with EPA reforms to certification rules in 2011
- Could also add off-cycle credits for CNG-ready "prep packages" (e.g. Ford F-150)

Incorporating retrofits is an "outside the box" solution that would accelerate progress and honor EPA mandate to regulate emissions throughout useful life

Action On NGV Light Trucks is Major Opportunity

Incentivizing NGVs as part of GHG rules ensures continued progress on not only emission reductions but on vehicle and fuel technologies:

- Introduces low-emission options for pickups a decade or more in advance of EV technologies in this segment
- Shifts trajectory of potential emissions improvements for light truck segment, allowing more ambitious post-2025 targets
- Pathway to near-zero emissions and beyond with advanced ICE engines, RNG, and hydrogen synergies
- Drives market for RNG capture, realizing massive lifecycle emission reductions and cost-effective waste recovery that compliments broader EPA agenda

Robert Atkinson, VNG Chief Regulatory Officer
RCAtkinson@vng.co, 908-447-4201

VNG

VNG

Natural Gas Vehicles (NGVs):
The Common Sense Solution To Achieving Emissions Reduction Compliance At Low Cost and Low Risk

NGVs ideally suited to help pickups, light duty trucks reach 2025 emissions goals

- Light duty trucks face biggest compliance challenge, are critical to Big Three future
- EVs not an option – batteries too expensive, too heavy for larger vehicles
  - NGVs are proven: Ford F150, Chevy Silverado, Dodge Ram

Correcting NGV incentives is straightforward – and justified

- No consideration of NGV technology in 2016 Technical Assessment Report despite availability of abundant domestic fuel and vehicle technology
  - Game-changing Renewable Natural Gas (RNG) delivers more than 85% lifecycle emission reductions
- Restore pre-2015 "0.15 divisor" to harmonize EPA with statutory CAFE incentives,
  - Parity with EV incentives: just as EV incentives reflect renewable energy, restoring 0.15 divisor for NGVs would reflect emissions benefits of RNG (85%)
  - Would allow OEMs to easily meet 2025 targets for pickups
- Parity: eliminate arbitrary driving range requirement imposed on bi-fuel NGVs
  - Plug-in hybrids have no requirements despite much shorter electric range
- Provide NGV pickups with same emissions credits as "Strong Hybrids"
  - Eliminate minimum penetration for NGV pickup incentives: NGVs as 10% of all pickups not immediately feasible for alt fuel like natural gas

Additional opportunity for smarter regulations: encourage retrofits

- Retrofitting deployed vehicles with natural gas reduces emissions of existing fleet
- Build on NGV retrofit successes in Oklahoma, greatly expand benefits of rules
- Allow converters to receive credits based on vehicle's remaining useful life, sell/transfer to OEMs

Restoring parity between NGVs and EVs, and between EPA and NHTSA, will provide automakers much-needed compliance flexibility for light trucks and pickups – and by making these changes effective immediately, we can start building this industry today.

Message

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Sent: 1/29/2018 3:11:31 PM
To: Atkinson, Emily [Atkinson.Emily@epa.gov]
CC: Feeley, Drew (Robert) [Feeley.Drew@epa.gov]; Lewis, Josh [Lewis.Josh@epa.gov]
Subject: RE: Confirmed 1/30 at 4pm: Meeting Request re: Natural Gas Vehicles
Attachments: EPA Memo 1.26.18.pdf; A Regulatory Reform Agenda for NGVs v2 (002).pdf; EPA presentation Dec 14 vF.PDF

Please find below the list of attendees for tomorrow afternoon and I've also enclosed for your use a one-pager providing a brief overview as well as separate one-pager describing the four proposed regulatory changes. Lastly, I've also enclosed a more in-depth presentation which we shared in December during a conversation with your team at OTAQ.

We are looking forward to meeting with Mr. Wehrum tomorrow and please let us know if you need any additional background in advance of the meetings.

Attending:
Robert Friedman, COO
Bob Atkinson, Chief Regulatory Officer
Larry Highbloom, Chief Administrative Officer

Susan Lent, Akin Gump
Jamie Tucker, Akin Gump

From: Atkinson, Emily [mailto:Atkinson.Emily@epa.gov]
Sent: Wednesday, January 10, 2018 8:48 AM
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Emily

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Immediate Office of the Assistant Administrator
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Sent: Wednesday, January 03, 2018 3:21 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>; Lewis, Josh <Lewis.Josh@epa.gov>
Cc: Feeley, Drew (Robert) <Feeley.Drew@epa.gov>
Subject: Meeting Request re: Natural Gas Vehicles

Emily/Josh - On behalf of VNG.Co, a natural gas vehicle fueling infrastructure company, we wanted to see if Assistant Administrator Wehrum would be available this month to discuss a number of administrative and legislative policy changes the company is advocating to promote the adoption of natural gas vehicles largely by leveling the playing field with electric vehicles. We have had recent conversations with the Office of Policy as well as the Office of Transportation and Air Quality to discuss these proposals as well as with staff at the White House and Department of Transportation. With Mr. Wehrum's confirmation we would like to fold him into the conversation as well.

Natural gas vehicles provide a cost effective and additional pathway for automaker emissions compliance while preserving the products' consumer appeal, and are therefore worthy of being included in a portfolio of solutions along with EVs to achieve the objectives.

Among the key advantages of the proposed regulatory changes is the benefit to achieving emissions reductions in the light-duty truck category which accounts for 64% of new vehicle purchases (and are responsible for even greater amounts of fuel use and pollution if you take into account the differential in fuel economy between light-duty trucks and passenger cars), and for which there is not a viable electrification solution.

Specifically, we would encourage the Administration to consider:

- **Restoring the 0.15 "divisor"** in EPA's compliance calculations, equivalent to NHTSA's statutory Petroleum Equivalency Factor that counts a gallon-equivalent of natural gas as 0.15 gallons of gasoline. The previous Administration ended this powerful incentive while simultaneously providing electric vehicles with additional emissions incentives on the hope that EVs would be "game changers." The game has now changed for NGVs. The shale revolution that has occurred since the current rules were set as well the development of Renewable Natural Gas as the lowest carbon vehicle fuel are true game changers that strongly justify returning to the 0.15 divisor.

The powerful and well-justified incentive of the 0.15 divisor would be complemented and made even more effective by additional changes including:

- **Eliminating range requirements on bi-fuel NGVs** that results in an impractical natural gas tank size requirement that is twice the size of the gasoline tank and costly design requirements for NGVs, whereas no such range requirements exists for hybrid electric vehicles. This is the most important regulatory change as a complement to the 0.15 divisor of the three.

- **Providing NGV pick-ups with the bonus credits** provided to "strong electric hybrid pick-ups" and **eliminating the existing minimum 10% deployment threshold** to qualify for pickup bonus credits.

- **Establishing a new incentive to encourage retrofitting existing gasoline and diesel vehicles to run on natural gas**, something that isn't feasible for electric drives but which will reduce emissions by the existing fleet of vehicles

Enclosed for your further consideration are our Midterm Evaluation comments as well as information outlining the rationale for the recommended regulatory changes.

Thank you for your consideration.

Jamie

Jamie Tucker
AKIN GUMP STRAUSS HAUER & FELD LLP
1333 New Hampshire Avenue, N.W. | Washington, DC 20036-1564 | USA | Direct: +1 202.887.4279 | Internal: 24279
Fax: +1 202.887.4288 | jtucker@akingump.com | akingump.com | Bio

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A Regulatory Reform Agenda for NGVs

A fast-track rulemaking to reform natural gas vehicle (NGV) incentives can be accomplished simply. The reforms necessary to achieve this goal are straightforward and fully justified by the game-changing environmental benefits of NGV technology, including the use of renewable natural gas (RNG), the potential for high-efficiency engines, and synergies with hydrogen fuel cell vehicles. We recommend four actions:

- **Restore 0.15 Divisor:** NGV emissions calculations should return to the "0.15 divisor" effective immediately, with emissions calculated as 85% below a gasoline vehicle (as was the case before 2016). This is justified by the game-changing real-world emissions benefits of RNG, and is moreover harmonized with Congressionally-mandated incentives under the CAFE program.

  We recommend reinstating language from the MY 2011-2016 regulations under 40 C.F.R. § 600.510–12, Calculation of average fuel economy and average carbon-related exhaust emissions.

- **Remove Dual-Fuel Design Requirements:** EPA should remove the utility factor requirements for a 2:1 ratio of CNG-to-gasoline range, as well as the requirement for dual-fuel NGVs to only use gasoline when the CNG tank is empty. These unnecessary design requirements add cost and reduce the appeal of these vehicles to consumers, and analogous plug-in hybrid electric (PHEV) vehicles face no such requirements despite having far lower driving range on electricity (<40 miles) compared to the typical natural gas range of a dual-fuel NGV pickup (250+ miles).

  This could be achieved by deleting the requirements in 40 C.F.R. § 600.510–12, Calculation of average fuel economy and average carbon-related exhaust emissions, part (c)(2)(vii)(B) for fuel economy and (j)(2)(vii)(B) for emissions.

- **NGV Pickup Incentive:** EPA has recognized the unique challenges facing full-sized pickups, and natural gas could be the ideal low-emission platform for these vehicles. This could be encouraged by offering a "Natural Gas Pickup" incentive similar to current hybrid-electric and "performance-based" pickup incentives; however, for the natural gas pickup credit, minimum deployment thresholds (10% of all full-size pickups for existing credits) should be eliminated to reflect the greater market challenges faced by NGVs - since, unlike hybrids, they use an alternative fuel.

  This could be accomplished by inserting a new section (c) under 40 C.F.R. § 86.1870–12, CO2 credits for qualifying full-size pickup trucks, titled "Credits for implementation of natural gas technology." The structure of these credits would be similar to those for sections (a) and (b), but without requirements for the "required minimum percent of full size pickup trucks."

- **Recognize Retrofits:** Encouraging retrofits of older gasoline vehicles to run on CNG is slightly more complex, but offers a unique opportunity to reduce vehicle emissions throughout their useful life instead of just at the point of sale. EPA should allow certified converters to "opt in" to the program and generate credits for CNG retrofits and upfits, prorated in proportion to their remaining useful life. Retrofits could also be encouraged by providing credits for CNG "prep packages" that reduce the costs of subsequent conversion to natural gas, as part of the off-cycle credit technologies menu listed at *40 C.F.R. § 86.1869–12, CO2 credits for off-cycle CO2-reducing technologies.*

For further info: Robert Atkinson, Chief Reg. Officer, VNG. rcatkinson@vng.co; 908-447-4201

VNG

ARIEL

A Rulemaking to Unlock the Potential of Natural Gas Vehicles

During the previous administration, EPA pushed automakers to manufacture light duty electric vehicles (EVs) as a means of meeting fuel economy and emission standards, ignoring the benefits of natural gas vehicles (NGVs). Not only did EPA remove the NGV incentives provided by Congress under the law, it failed to consider NGV technology development, the full impact of the shale revolution, or the growth of renewable natural gas (RNG) in its Technical Assessment Report on the regulations.

Natural gas is an abundant resource and is uniquely suited as a fuel for light trucks, which make up 64% of the passenger vehicle market and an even greater percentage of fuel use and pollution due to their lower fuel economy. EVs, on the other hand, are limited to lighter weight and luxury passenger cars. With automakers struggling to meet emissions standards, it is critical that EPA provide alternative compliance options, including incentivizing automakers to add NGVs to their product lines.

EPA can solve this urgent problem with a rulemaking to reform light-duty vehicle regulations for NGVs. With appropriate support, NGVs can deliver these much-needed benefits:

- **Game-Changing Lifecycle Emissions:** NGVs reduce greenhouse emissions by up to 25% with fossil natural gas and can achieve *negative* lifecycle emissions with RNG from landfills, dairy farms, and other sources. With 35% of NGV fueling coming from RNG already, these vehicles are clearly delivering game-changing emissions on par with EVs – and should be incentivized as such.
- **Alternative Fuel for Light Trucks:** EVs are an option for small cars, but battery cost and weight are prohibitive for electrifying larger vehicles like pickups and light trucks. By contrast, NGVs are a proven alternative for light trucks, with both OEM and conversion-certified pickup models as well as bi-fuel configurations that can run on gasoline (key for addressing "range anxiety" for early adopters).
- **Cleaning Up Older Vehicles:** While it's impossible to electrify existing vehicles, they *can* be converted to natural gas – as in states like Oklahoma and Utah that have encouraged thriving retrofit industries. Automaker support of NGVs will reduce retrofit costs and presents a unique opportunity to reduce emissions from the highly polluting used vehicle fleet and expand the benefits of the rules.
- **Economic Benefits:** In addition to the environmental benefits of NGVs, they offer the opportunity to bolster economic growth in the automotive industry, the natural gas industry, and even the agriculture and waste industries, which can benefit from the production and sale of RNG fuel.

The fact that the considerable benefits of NGVs have been previously ignored by EPA is reason enough to convene a rulemaking as proposed by VNG last year in its Regulatory Reform comments, instead of waiting for the Mid-Term Evaluation. Another compelling reason to fast-track these reforms is to unlock a win-win compromise by expanding the portfolio of low-emission solutions for automakers beyond EVs.

- **Breaking Through the Logjam on Vehicle Rules:** Automakers need a reform of the rules because they currently have no cost-effective way to meet their emission targets for pickups and light trucks, which are essential to their economic health. Meanwhile, California policymakers are demanding that the targets remain, threatening years of legal uncertainty and a fractured regulatory landscape.

NGVs are the missing piece of the puzzle. The massive environmental benefits of RNG have already been acknowledged by the California Air Resources Board, and the potential of NGVs as a light truck alternative have already been demonstrated by automakers. By reforming regulations to recognize the benefits of NGVs (and harmonize with CAFE incentives in the process), EPA can provide automakers a cost-effective compliance option for light trucks. This would help the environment *and* the economy, through job creation, GDP growth, and trade deficit reduction.

For further info: Robert Atkinson, Chief Reg. Officer, VNG. rcatkinson@vng.co; 908-447-4201

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NGVs, Light Trucks, & the Mid-Term Evaluation

Meeting with Environmental Protection Agency, 12/14/17

Robert Atkinson, VNG Chief Regulatory Officer
RCAtkinson@vng.co, 908-447-4201

Dec-17

VNG and Ariel – Who We Are

- VNG and Ariel are collaborating on this regulatory initiative
- Ariel is the largest manufacturer of reciprocating gas compressors in the world
- VNG builds CNG fueling for light- & medium-duty fleets at existing gasoline stations
  - High-visibility locations that are accessible, convenient, and consumer-friendly, with full service C-store retail amenities; major contrast to heavy-duty CNG private fleet depots, utility yards
  - Locations in Philadelphia, Houston, Dallas, and Milwaukee
  - Discussions with major light-duty fleet for fueling in California (operates ~4,000 NGVs in state)
- VNG has been a leading voice for light-duty NGVs, cited in original 2017-2025 rule

Expanding Compliance Options for Light Trucks

The Problem With Low Gasoline Prices

- As noted in TAR, market shift towards light trucks reduces aggregate emissions benefits of regulations, even if individual OEM targets adjust to compensate
- Battery cost and weight means no EV pickups for foreseeable future – the OEMs' most popular, profitable, and polluting vehicles

NGVs Could Be The Solution – With EPA Support

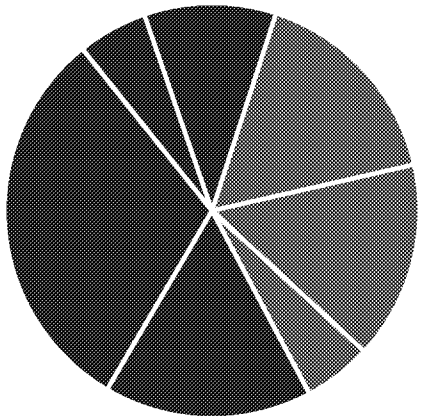
- NGVs have seen dramatic, game-changing reductions in lifecycle emissions since original rulemaking, thanks to major uptake of renewable natural gas (RNG)
- OEMs have already experimented with NGV pickups with limited production of Dodge Ram and Chevy Silverado bi-fuels, CNG-ready Ford F-150

With revised incentives that recognize rapid growth of RNG fueling, NGVs could be a key low-emission compliance pathway for light trucks for 2025 and beyond.

Shift To Light Trucks Eroding Benefits of Rules

YTD 2017 Sales

LIGHT TRUCKS
63% of YTD 2017 auto sales
+4.6% from YTD 2016



CARS
42% of YTD 2017 auto sales
-10.3% from YTD 2016

Source: Wall Street Journal

- Gasoline prices have plunged since rulemaking, shifting market to larger vehicles
- Not a current compliance problem for OEMs, since targets adjust to sales mix
- BUT shift will reduce aggregate emissions benefits of regulations
- Growing OEM concerns about limited compliance options for light trucks - and pickups especially

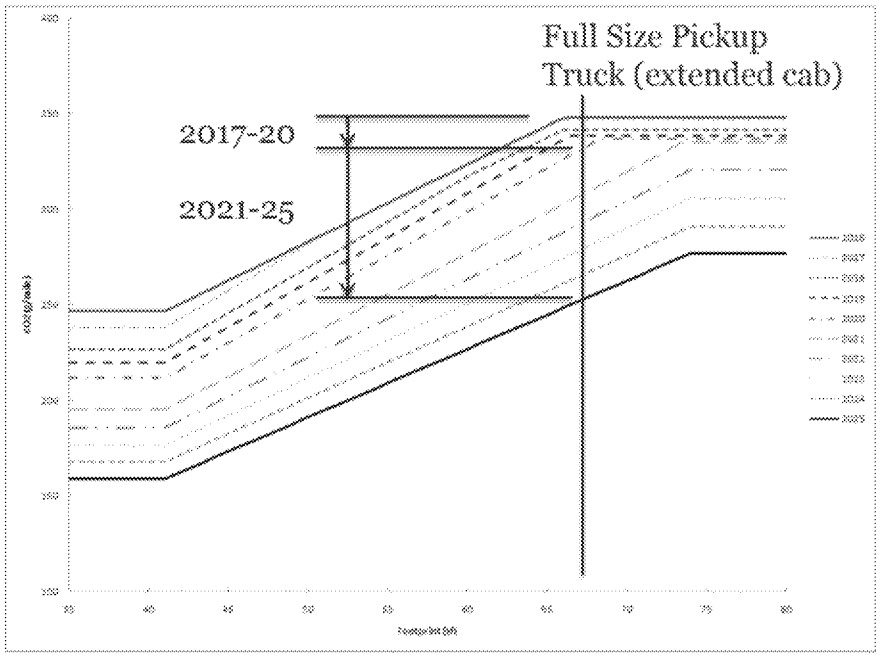
Emission Solutions for Pickups Most Urgently Needed

- Pickups are the top-selling vehicles, most profitable, and most polluting
- Pickups also face the most dramatic increase in CO2 emission requirements in 2021-2025 period – biggest challenge for automakers, few tech options

- No EV alternatives for foreseeable future (2025+) due to weight and utility requirements (2016 TAR)
- Natural gas (or natural gas-ready) versions of Chevy Silverado, Dodge Ram, and Ford F-150 have already been rolled out by OEMs

With support from EPA, NGVs could be best compliance pathway for automakers for light trucks for 2025 and beyond.

Figure I-4 CO2 (g/mile) Light-Truck Standard Curves



Source: Westport

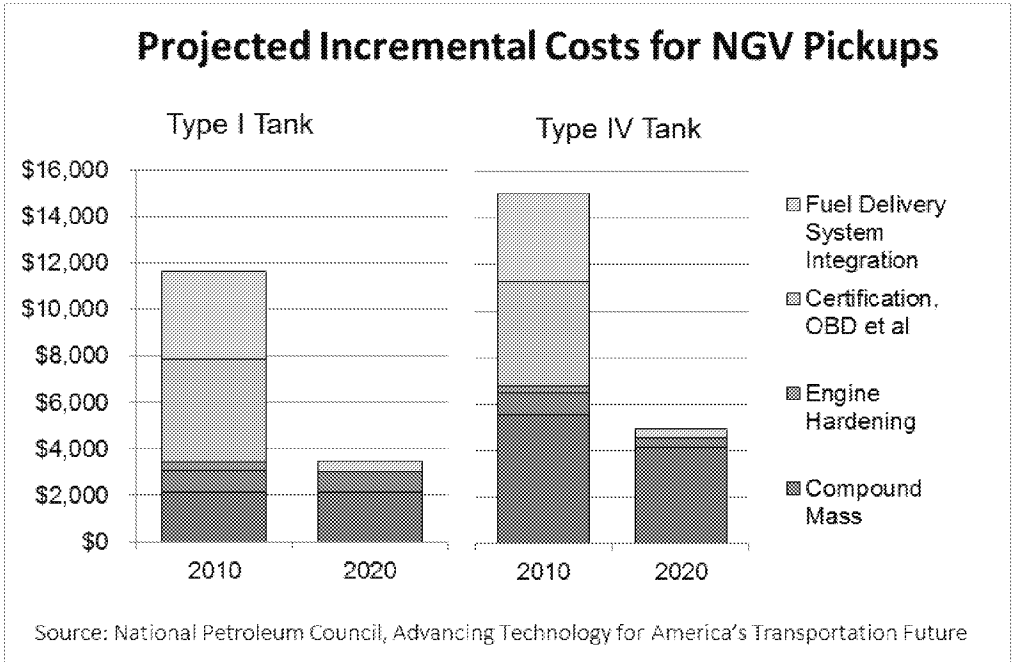
RNG: From 0% to 35% of NGV Fueling Since 2012

- **Original rulemaking:** *"Biomethane will remain a small part of the overall natural gas market for the foreseeable future"…*
- **Today:** Biomethane/RNG accounts for about 35% of national NGV fueling, 60% in California (Fleets & Fuels) – and growing as fast as RNG projects can come online
- **Why?** Regulations - and economics. RNG reclassified as cellulosic biofuel in 2014, RIN revenues of ~$23/MMBTU (UC Davis) make it more profitable than fossil.
  - —3x revenues from transportation vs electricity sales (CARB)
  - —California adds another $11+/MMBTU for LCFS sales (UC Davis)
- **Game-Changing Emissions:** Lowest carbon intensity of any fuel measured under California's Low Carbon Fuel Standard – **pathways up to -304 gCO2e/MJ** (CARB)

Economics of RFS and LCFS will ensure continued growth in RNG use for NGVs, and growth in NGV market will be primary driver of new RNG capture projects.

Major NGV Cost Reductions With Scale

- NGVs have far greater potential for rapid incremental cost reductions than EVs, as costs come from design/regulatory – not components (i.e. batteries)
- Fuel system integration + certification are >50% of NGV incremental costs (NPC)
- Fixed costs virtually eliminated overnight if spread over large number of vehicles
- Precedent in Europe (e.g. Italy), where OEM-produced NGVs retail for <$3,000 more than gasoline model (BCG)
- $3,000 is projected cost to lightweight pickup truck for 10% emissions improvement (TAR)
- NGVs offer comparable cost with much greater emission reduction



Advanced Tech for Ultra-Low NGV Pickup Emissions

- NGVs already commercial tech – but can be pushed much farther by taking advantage of high octane, clean-burning properties of gas
- Westport (Cummins JV partner) has proposed "Super Pickup Truck" NGV concept with >30% greater fuel economy, ultra-low NOx
- Advanced tank technologies (e.g. adsorption) another avenue of improvement
- Hybrid/Plug-In Hybrid pathway offers further potential emission reductions

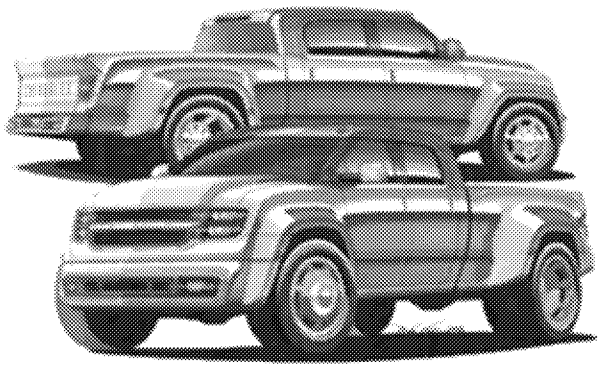
Advanced powertrains that fully exploit ultra high-octane low-carbon fuel properties of methane

a. Not been done to-date – missed opportunity

b. High efficiency and high performance at the same time, outperform gasoline and diesel

c. >30% CO2 reduction TTW

- Westport, "Methane: The Performance Fuel"

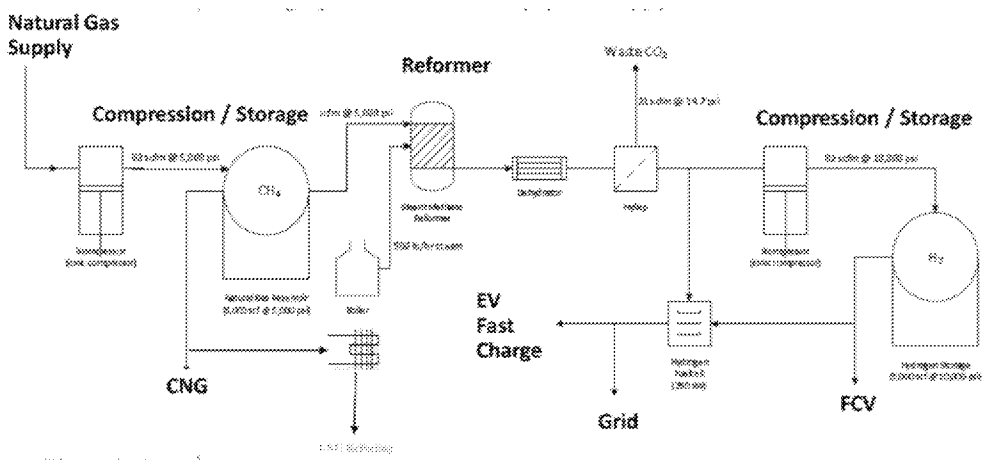


NGV Synergies With Hydrogen

- Vehicle synergy via gaseous fuel storage tech (e.g. adsorption tanks)
- CNG/H2 fueling can be combined, or else CNG stations can be transitioned to H2 at a later date due to shared components
- RNG is also fuel for ultra-low GHG H2 production – NGVs develop market for production infrastructure today for H2 fueling tomorrow

"Planning for the addition of H2 infrastructure at CNG fueling locations can facilitate the adoption of hydrogen at a later date and smooth the transition to near zero carbon technologies."

- **UC Davis STEPS Program**



Proposed Reforms to GHG Rules – 0.15 Divisor

Return to "0.15 divisor": Calculate CNG emissions as 0.15x gasoline emissions, as in the pre-MY 2016 GHG regulations

- Equivalent to 85% reduction, reflects game-changing lifecycle RNG emissions (some pathways achieve 100% or more)
- Analogous to EV 0 g/mi incentive that assumes 100% renewable electricity; instead, assumes 100% RNG use
  - *RNG use of 35% nationally and growing is equal to % of zero-carbon electricity (renewables + nuclear) in national mix*
- Like EV incentive, can be transitioned to real-world lifecycle emissions based on national RNG use (can use RFS data)
- Harmonizes with CAFE Petroleum Equivalency Factor (PEF)

A return to the 0.15 divisor could enable OEMs to achieve existing 2025 targets and establish NGVs as long-term compliance pathway for light trucks.

Proposed Reforms to GHG Rules – Dual-Fuel Design

Remove utility factor design requirements for dual-fuel NGVs: Eliminate need for 2:1 CNG-to-gasoline range ratio, use of gasoline only when CNG tank is empty

- Dual-fuel vehicles critical to building NGV market as fueling develops, like PHEVs
- Fastest, lowest-cost pathway is adding CNG tank to existing gasoline vehicle
- However dual-fuel NGVs face unique design requirements to receive utility factor, despite having much greater CNG range vs PHEV electric-only range
- Forces automakers to add cost (from shrinking and redesigning gasoline tank) and decrease total range and utility (from increased size of CNG tanks) if they want to receive full utility factor incentives
  - **Example:** FCA chose design simplicity over incentives with Dodge Ram dual-fuel, with 255 miles of CNG range and nearly 400 miles of gasoline range

These design requirements are as unnecessary for dual-fuel NGVs as for PHEVs, and will force OEMs to either limit consumer appeal or lose incentives.

Proposed Reforms to GHG Rules – Pickup Incentive

NGV Pickup Incentive: Create full-size pickup incentive equivalent to hybrid incentives for both dedicated and dual-fuel NGVs with **no** minimum penetration

- Cleaner technologies for pickups badly needed, but currently no projected use of existing full-size pickup advanced technology incentives (2016 TAR)
- NGVs are ideal next-gen pickup platform and could qualify for performance-based incentive (<15% emission reduction)…
- But 10% minimum penetration threshold too high for alternative fuel vehicles; too risky for OEMs to make big, immediate move in critical profit segment
- Removing threshold and awarding incentives for every NGV pickup would encourage OEMs to experiment, invest in new technology

NGV-specific incentive would surpass original goals of full-size pickup incentives by providing new platform for continuous, long-term efficiency improvements

Proposed Reforms to GHG Rules – Retrofits

Retrofit Credits: Create credits based on remaining useful life of converted vehicle: for instance, conversion of 5 year-old pickup would get credit for 50% emission reductions as a new vehicle; credits awarded to converter, can be sold to OEMs

- Vehicle life steadily increasing beyond 10 years, likely to continue growing as vehicle prices increase – how to avoid erosion of program benefits?
- NGV retrofits offer pathway to reduce emissions from vehicles significantly during their useful life – very successful in Utah, Oklahoma
- These emission benefits not currently captured in (or incentivized by) rules
- Synergies with EPA reforms to certification rules in 2011
- Could also add off-cycle credits for CNG-ready "prep packages" (e.g. Ford F-150)

Incorporating retrofits is an "outside the box" solution that would accelerate progress and honor EPA mandate to regulate emissions throughout useful life

Action On NGV Light Trucks is Major Opportunity

Incentivizing NGVs as part of GHG rules ensures continued progress on not only emission reductions but on vehicle and fuel technologies:

- Introduces low-emission options for pickups a decade or more in advance of EV technologies in this segment
- Shifts trajectory of potential emissions improvements for light truck segment, allowing more ambitious post-2025 targets
- Pathway to near-zero emissions and beyond with advanced ICE engines, RNG, and hydrogen synergies
- Drives market for RNG capture, realizing massive lifecycle emission reductions and cost-effective waste recovery that compliments broader EPA agenda

Robert Atkinson, VNG Chief Regulatory Officer
RCAtkinson@vng.co, 908-447-4201

VNG

Message

From: Atkinson, Emily [Atkinson.Emily@epa.gov]
Sent: 1/8/2018 5:01:19 PM
To: Hengst, Benjamin [Hengst.Benjamin@epa.gov]
CC: Lewis, Josh [Lewis.Josh@epa.gov]
Subject: RE: Meeting Request re: Natural Gas Vehicles
Attachments: Updated VNG Comments on EPA-HQ-OAR-2015-0827.pdf; NGV Executive Action Summary.docx

Ok sounds good – thanks Ben.

From: Hengst, Benjamin
Sent: Monday, January 08, 2018 11:59 AM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Cc: Lewis, Josh <Lewis.Josh@epa.gov>
Subject: RE: Meeting Request re: Natural Gas Vehicles

I think 45 min would be appropriate.

OTAQ invitees would be:
Chris G
Bill Charmley
Ben Hengst
Robin Moran
Jeff Alson
Julia Burch
David Orlin
Mark Kataoka

In talking to Bill, you guys can convey that we don't think that this is a big priority, but that they seem to be heavily engaged with OP political management already, so it makes sense to make sure OAR political management is up to speed, too.

Thanks-Ben

From: Atkinson, Emily
Sent: Monday, January 08, 2018 11:25 AM
To: Hengst, Benjamin <Hengst.Benjamin@epa.gov>
Cc: Lewis, Josh <Lewis.Josh@epa.gov>
Subject: RE: Meeting Request re: Natural Gas Vehicles

Thanks Ben – we can run this recommendation by Bill and then I can reach out to set this one up. If Bill wants to take this meeting – who from OTAQ would you like included on the scheduler? And would 30 minutes be enough or is 45 minutes more appropriate for this group?

From: Hengst, Benjamin
Sent: Monday, January 08, 2018 10:57 AM
To: Lewis, Josh <Lewis.Josh@epa.gov>
Cc: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: RE: Meeting Request re: Natural Gas Vehicles

Josh—I ran the traps on this. OTAQ's recommendation is that Bill Wehrum should take the meeting, but that it should be on a later timeline (e.g., early to mid-February).

Please let me know if you want to discuss more. Thanks--Ben

From: Lewis, Josh
Sent: Friday, January 05, 2018 1:16 PM
To: Hengst, Benjamin <Hengst.Benjamin@epa.gov>
Cc: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: FW: Meeting Request re: Natural Gas Vehicles

Drew Feely in OP called me about something yesterday and mentioned the meeting below in passing...if I'm recalling correctly he said you were part of the OTAQ mtg that Jamie references. If that's true, wondering if you think a follow up meeting now w/ Bill is appropriate?

From: Tucker, Jamie [mailto:jtucker@AKINGUMP.COM]
Sent: Wednesday, January 03, 2018 3:21 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>; Lewis, Josh <Lewis.Josh@epa.gov>
Cc: Feeley, Drew (Robert) <Feeley.Drew@epa.gov>
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Specifically, we would encourage the Administration to consider:

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requirements exists for hybrid electric vehicles. This is the most important regulatory change as a complement to the 0.15 divisor of the three.

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Enclosed for your further consideration are our Midterm Evaluation comments as well as information outlining the rationale for the recommended regulatory changes.

Thank you for your consideration.

Jamie

Jamie Tucker
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Fax: +1 202.887.4288 | jtucker@akingump.com | akingump.com | Bio

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VNG

Natural Gas Vehicles (NGVs):
The Common Sense Solution To Achieving Emissions Reduction Compliance At Low Cost and Low Risk

NGVs ideally suited to help pickups, light duty trucks reach 2025 emissions goals

- Light duty trucks face biggest compliance challenge, are critical to Big Three future
- EVs not an option – batteries too expensive, too heavy for larger vehicles
  - NGVs are proven: Ford F150, Chevy Silverado, Dodge Ram

Correcting NGV incentives is straightforward – and justified

- No consideration of NGV technology in 2016 Technical Assessment Report despite availability of abundant domestic fuel and vehicle technology
  - Game-changing Renewable Natural Gas (RNG) delivers more than 85% lifecycle emission reductions
- Restore pre-2015 "0.15 divisor" to harmonize EPA with statutory CAFE incentives,
  - Parity with EV incentives: just as EV incentives reflect renewable energy, restoring 0.15 divisor for NGVs would reflect emissions benefits of RNG (85%)
  - Would allow OEMs to easily meet 2025 targets for pickups
- Parity: eliminate arbitrary driving range requirement imposed on bi-fuel NGVs
  - Plug-in hybrids have no requirements despite much shorter electric range
- Provide NGV pickups with same emissions credits as "Strong Hybrids"
  - Eliminate minimum penetration for NGV pickup incentives: NGVs as 10% of all pickups not immediately feasible for alt fuel like natural gas

Additional opportunity for smarter regulations: encourage retrofits

- Retrofitting deployed vehicles with natural gas reduces emissions of existing fleet
- Build on NGV retrofit successes in Oklahoma, greatly expand benefits of rules
- Allow converters to receive credits based on vehicle's remaining useful life, sell/transfer to OEMs

Restoring parity between NGVs and EVs, and between EPA and NHTSA, will provide automakers much-needed compliance flexibility for light trucks and pickups – and by making these changes effective immediately, we can start building this industry today.

VNG

Comments by VNG.co LLC on
Reconsideration of the Final Determination of the Mid-Term
Evaluation of Greenhouse Gas Emissions Standards
For Model Year 2022–2025 Light-Duty Vehicles

Docket ID: EPA–HQ–OAR–2015–0827

VNG.co LLC is a developer of compressed natural gas (CNG) fuel dispensing infrastructure for light- and medium-duty natural gas vehicles (NGVs). We welcome this opportunity to comment on the Midterm Evaluation (MTE) of light-duty vehicle greenhouse gas standards established for model years 2022-2025 and provide the agencies[1] with much-needed updated information on NGVs and their ability to contribute to the goals of the regulations.

Indeed, NGVs are perhaps the largest and most consequential knowledge gap in the agencies' work on these regulations to date. The only substantive discussion of NGVs in the 1,217 page Technical Assessment Review (TAR) issued by EPA, NHTSA and CARB was one short paragraph noting the growth in CNG fueling infrastructure,[2] and NGVs were not included in the TAR's models for automaker compliance.[3] This is inexplicable considering that U.S. OEMs (the "Big Three") have each produced pickups that operate on compressed natural gas (CNG) in recent years, as well as the fact that there are 22 million NGVs on the road globally - including many produced by OEMs that also serve the U.S. market.

However, this decision to exclude NGVs from serious analysis becomes even more confounding when one considers the radical changes that have occurred in the emissions profile of this technology since the original rulemaking. Renewable natural gas (RNG) can reduce lifecycle greenhouse emissions by 85% or more compared to gasoline, and this ultra-low carbon biofuel now accounts for over 35% of NGV fueling nationally and over 60% of NGV fueling in California. Furthermore, engine manufacturers are beginning to explore the potential of advanced engine designs to take advantage of CNG's high-octane, inherently low-emission properties - another major opportunity to meet the agencies' goals that has been completely unexplored to date.

The virtual exclusion of NGVs from the analysis and discussion has led to the perception of regulators having a false choice between siding with automakers and consumers on one side and environmentalists on the other. Automakers assert that they cannot stop consumers from buying the larger, less fuel-efficient vehicles they want (and in many cases need), and that meeting the current emissions targets for 2025 would impose major costs and risks on their business. Meanwhile, environmentalists insist that we need to transition our entire vehicle fleet to electric vehicles (including hydrogen fuel cell vehicles) as soon as possible, despite the fact

[1] While these Comments are being submitted in the EPA's docket, it is VNG's expectation that they will be also be considered by the National Highway Traffic Safety Administration (NHTSA) and the California Air Resources Board (CARB), collectively "the agencies."
[2] *Draft Technical Assessment Report: Midterm Evaluation of Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards for Model Years 2022-2025*, ENVIRONMENTAL PROTECTION AGENCY (July 2016), at 9-41, https://nepis.epa.gov/Exe/ZyPDF.cgi/P100OXEO.PDF?Dockey=P100OXEO.PDF (hereinafter "Draft TAR").
[3] *Id.* at 5-502.

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that they are not projected to have more than 1-2% market share through at least 2025 – and are especially unlikely to be a practical choice for SUVs and pickups due to their weight and utility requirements.

NGVs are the missing piece of the puzzle. From an automaker's perspective, they offer a proven pathway to dramatically reducing emissions from their large-footprint vehicles, with similar costs and much greater benefits than lightweighting for pickup trucks. For environmentalists, the use of RNG offers similar or even superior emissions benefits to EVs, while also immediately addressing the segments of the auto market (e.g. light trucks) that are unlikely to have an electric alternative for the foreseeable future.

Reforming the light-duty emission regulations to make NGVs a practical compliance path for automakers thus offers the agencies a way to preserve the stringency of existing targets while simultaneously making it easier for automakers to meet them cost-effectively. Equally important, individual Americans will benefit from the use of a cleaner transportation fuel with lower and more stable pricing, compared to gasoline, all while purchasing the vehicles they want and need at reasonable costs. That's a win-win-win.

The following comments detail the reasons for providing robust regulatory support for NGVs on par with previous regulatory support for EVs, organized into the following sections.

- **The Need for Light Truck Alternatives in a Changing Market Context:** Consumer demand is shifting towards large vehicles with relatively low fuel economy. NGVs are ideally suited to provide a low-emission, non-petroleum alternative for the light truck segment, which is unlikely to be served by electric vehicle (EV) alternatives for the foreseeable future.

- **Renewable Natural Gas - A "Waste-to-Wheels" Emissions Game-Changer:** RNG is a game-changer that puts NGVs on par with an EV powered with wind or solar power - and it accounts for a much higher percentage of NGV fuel use than renewable electricity in the overall electricity mix. The rules must account for this dramatic shift and provide incentives for NGVs similar to those provided for EVs.

- **Potential for Rapid Cost Reductions, Consumer Savings with NGVs:** Unlike EVs, NGVs do not depend on inherently-expensive components like batteries, giving them much greater potential for rapid cost reductions with production at scale. This potential has already been demonstrated by European OEMs and gives NGVs much greater potential for mass-market adoption than the agencies have recognized to date.

- **Importance of Dual-Fuel NGVs:** Dual-fuel (commonly referred to as "bi-fuel") vehicles will play an important role in the market development of NGVs during early years of infrastructure buildout. The agencies took steps towards providing important support for bi-fuel NGVs in the original rulemaking, yet also placed unfair restrictions on this support that were not placed on similarly-important plug-in hybrid electric vehicles.

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- **Advanced NGV Technologies Promise Best Emissions Path for Internal Combustion Engines (ICEs):** The development of new engine technologies optimized for CNG's inherently high-octane, clean-burning qualities gives NGVs unsurpassed potential for environmental performance on a mass-market-ready ICE platform.

- **"Bridge to Hydrogen" Needed More Than Ever:** The agencies have previously recognized the ability of NGVs to provide a "bridge" to hydrogen-fueled vehicles thanks to numerous technology synergies on the vehicle as well as the fueling side. The opportunities for such synergies have expanded in recent years, and are as urgently-needed as ever due to the slow market uptake of hydrogen fuel cell vehicles.

- **Emissions Solution for Mid-Life Vehicles:** Sec. 202(a) of the Clean Air Act requires the agencies to regulate vehicle emissions throughout their useful life, but the current light-duty program only provides incentives for low-emission technologies deployed in *new* vehicles. As states like Oklahoma and Utah have shown, there is significant potential to reduce emissions and petroleum use from older vehicles with CNG retrofits, and these benefits should be recognized and encouraged in these regulations.

- **Addressing the Threat of Petroleum Dependence:** The CAFE program was originally created as a response to the oil crisis of 1973; yet, more than 40 years later, the program has done very little to reduce our near-total dependence on petroleum, and the agencies project that the 2017-2025 rules will not make a meaningful difference either. The current regulations ensure this in part by disadvantaging natural gas, perhaps our best hope for a long-term solution to this problem.

- **NGV Reform Needed Today for 2017-2021 Targets:** Because the current disparity between treatment of NGVs and EVs is so clearly arbitrary and contrary to real-world lifecycle GHG emissions, and because automakers need this compliance flexibility and regulatory certainty in order to confidently invest in NGV production, these changes should be made effective immediately – without waiting for the 2022-2025 period. EPA's review of the 2021 targets as part of this proceeding is an excellent opportunity to do so.

In addition to providing information on each of these topics for use in the rulemaking process, we will indicate the specific topics from EPA's Request for Comment that each section is relevant to, and we will conclude each section with a list of recommended changes to the regulations. By updating the regulations to incentivize the deployment of NGVs similar to the previous administration's focus on incentivizing EVs, the agencies will provide automakers with a greater range of compliance pathways that will help achieve the goals of the regulations sooner and more cost-effectively, to the collective benefit of consumers, the environment and industry.

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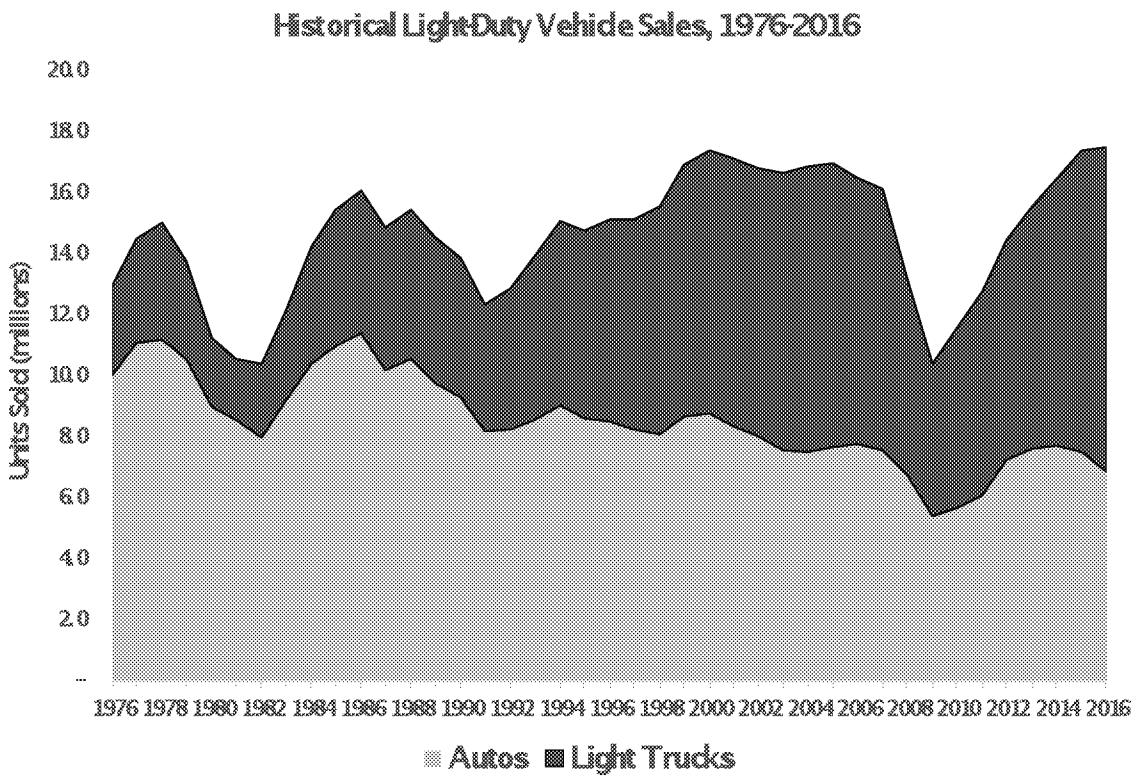
The Need for Light Truck Alternatives in a Changing Market Context

Issues Addressed:

- *The impact of the standards on the automobile industry*
- *The feasibility and practicability of the standards*

As the agencies acknowledged in the 2016 draft Technical Assessment Report (TAR), low gasoline prices have encouraged U.S. consumers to gravitate towards the purchase of larger and less fuel-efficient vehicles. After the Great Recession of 2008 decimated all classes of vehicle sales as well as oil prices, light truck sales have rebounded much more strongly than passenger vehicles and are approaching all-time highs and a market share of over 60%.[4] As the experience of the 1980s-2000s demonstrated, this shift in the market towards light trucks is likely to be sustained if gasoline prices stay low for the long term, as many observers have speculated - including oil majors like Shell, whose CEO recently said that oil prices may be "lower forever."[5]



Source: Bureau of Economic Analysis, 2017[6]

[4] *Auto and Truck Seasonal Adjustment*, BUREAU OF ECONOMIC ANALYSIS (August 2, 2017), https://www.bea.gov/national/xls/gap_hist.xlsx

[5] Sarah Kent, *Shell Prepares for 'Lower Forever' Oil Prices*, WALL ST. J. (July 27, 2017), https://www.wsj.com/articles/royal-dutch-shells-second-quarter-earnings-rise-sharply-1501137915

[6] *Auto and Truck Seasonal Adjustment*, BUREAU OF ECONOMIC ANALYSIS (August 2, 2017), https://www.bea.gov/national/xls/gap_hist.xlsx

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Even if gasoline prices rise again, these large light duty vehicles will always account for a sizable part of the market due to their unique ability to meet specific consumer and business needs. While the footprint-based structure of the rules ensures that automakers will have to increase the fuel economy of all vehicles in order to achieve compliance, the TAR projected that this trend will nonetheless reduce the original projected impacts of the rules on petroleum dependence and greenhouse gas emissions.

The size of light trucks limits the availability of cost-effective solutions to increasing fuel economy and reducing emissions – particularly for full-size pickups, which have added performance requirements. For example, the TAR estimated that the total cost of a 20% mass reduction for towing-capable pickups, which would improve fuel economy and emissions by only 10%, would be roughly $3,000. It is also particularly challenging to electrify light trucks and pickups due to the added cost and weight of the battery packs needed to move these larger vehicles, particularly those built for carrying or towing heavy loads. Indeed, there are very few electric light trucks on the market today and no pickups, and the TAR does not even consider the possibility of electric towing-capable vehicles within the 2025 timeframe.[7]

Pickup trucks are the best-selling vehicles in America, as well as the most important source of profits for the "Big Three" U.S. automakers. Thus, a cost-effective solution to their emissions and petroleum dependence is absolutely essential to ensuring that these companies, their hundreds of thousands of employees, and the millions of consumers and businesses that rely on pickup trucks are not unnecessarily harmed by the agencies' regulations.

Fortunately, and in contrast to electrification, compressed natural gas (CNG) is ideally suited to be a low-emission, non-petroleum alternative fuel for light trucks and pickups especially. Larger vehicle envelopes provide ample room for CNG storage tanks, and since natural gas offers far greater energy density than batteries, it is much better-suited for moving heavy vehicles. These characteristics are why natural gas has long been the clean fuel of choice for heavy-duty vehicles like transit buses and refuse trucks, and the same logic holds true for the heavier side of the light-duty vehicle spectrum.

Indeed, automakers have demonstrated that NGVs are already a viable commercial technology. All three U.S. automakers have offered either CNG-equipped or CNG-ready versions of their flagship full-size pickups, including GM's Chevy Silverado,[8] FCA's Dodge Ram,[9] and Ford's F-

[7] Draft TAR, supra note 2, at 4-40.
[8] Brandon Turkus, *2015 Chevy Silverado HD gets CNG option*, AUTOBLOG (Feb. 6, 2014), http://www.autoblog.com/2014/02/06/2015-chevrolet-silverado-hd-cng-official/.
[9] Richard Truett, *Ram will expand lineup of CNG-powered trucks*, AUTOMOTIVE NEWS (Mar. 4, 2015), http://www.autonews.com/article/20150304/OEM05/150309913/ram-will-expand-lineup-of-cng-powered-trucks.

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150. In fact, in addition to being the best-selling vehicle of any model, the 2016 Ford F-150 was named Green Car Journal's "Green Car of the Year" in part due to the availability of a CNG prep package as an option.[10]

Thus, the rules should encourage automakers to transition these vehicle segments to natural gas in two ways. First, they should be provided strong incentives to do so, including special incentives for pickup trucks similar to the incentive previously created for hybrid-electric pickups. Second, natural gas should be factored into setting targets for what can be reasonably achieved for light trucks and pickups, since this is a mature, proven, commercially-available technology that automakers have already deployed in recent years.

Summary and Recommendations

Because light trucks and pickups especially are a critical market segment for consumers, businesses and automakers, and because neither electrification nor lightweighting are practical alternatives for these heavier vehicles, EPA should provide a clear regulatory pathway for automakers to transition these segments to natural gas.

- Provide emissions credits for all NGVs that reflect the emissions benefits of renewable natural gas (RNG), as discussed in the following section.

- Offer a "Natural Gas Pickup" incentive similar to current hybrid-electric and "performance-based" pickup credits; however, for the natural gas pickup credit, minimum deployment thresholds should be eliminated to reflect the greater market challenges faced by NGVs - since, unlike hybrid-electrics, they use an alternative fuel. Expecting an automaker to immediately transition at least 10% of their critical pickup fleet to an alternative fuel is simply not realistic, and renders the current "performance-based" credit useless despite the fact that natural gas can meet the credit's performance threshold of 20% emission reductions.

    - This goal could be accomplished by inserting a new section (c) under 40 C.F.R. § 86.1870–12, *CO_2 credits for qualifying full-size pickup trucks*, titled "Credits for implementation of natural gas technology." The structure of these credits would be similar to those for sections (a) and (b), but with reduced or eliminated requirements for the "required minimum percent of full size pickup trucks."

[10] *Fuel Efficiency, Alternative Fuels and Sustainability Earn Ford F-150 2016 Green Truck of the Year Award*, FORD MOTOR CO. (Nov. 19, 2015), https://media.ford.com/content/fordmedia/fna/us/en/news/2015/11/19/ford-f-150-earns-2016-green-truck-of-the-year-award.html.

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- Incorporate the use of natural gas when setting targets for practical, achievable emissions improvements for light trucks and full-size pickups.

Renewable Natural Gas - A "Waste-to-Wheels" Emissions Game-Changer

Issues Addressed:

- *The availability and effectiveness of technology, and the appropriate lead time for introduction of technology*
- *Any relevant information in light of newly available information.*
- *The impact of the greenhouse gas emission standards on the Corporate Average Fuel Economy standards and a national harmonized program*

Since the original rulemaking, there has been a dramatic transformation of the lifecycle emissions profile of NGVs due to the rapid adoption of renewable natural gas (RNG) in the transportation sector. Indeed, this is likely the biggest change in the lifecycle emissions of any fuel or vehicle type since the 2011 rulemaking – yet it was completely absent in the draft TAR for reasons that are not clear.

RNG, also known as biogas or biomethane, captures methane produced from a variety of sources including landfills, dairy and livestock operations, and wastewater treatment plants. Once impurities are removed, this methane can be used as a perfect substitute for fossil natural gas, including distribution in the existing natural gas pipeline system and use in NGVs.

Since methane is a powerful greenhouse gas, the use of RNG can achieve massive emission reductions on a CO2-equivalent basis when used as a transportation fuel. While lifecycle emissions can vary significantly depending on the pathway for RNG production, according to the most recent values for the California Low Carbon Fuel Standard (LCFS) it can yield emission cuts of between 70% and *130%*[11] - in other words, NGVs powered by RNG can be carbon-negative, potentially yielding even greater emissions benefits than an electric vehicle powered entirely by solar or wind energy.

[11] Staff Report, CALIFORNIA AIR RESOURCES BOARD, Proposed Re-Adoption of the California Low Carbon Fuel Standard. Dec. 2014. https://www.arb.ca.gov/regact/2015/lcfs2015/lcfs15isor.pdf.

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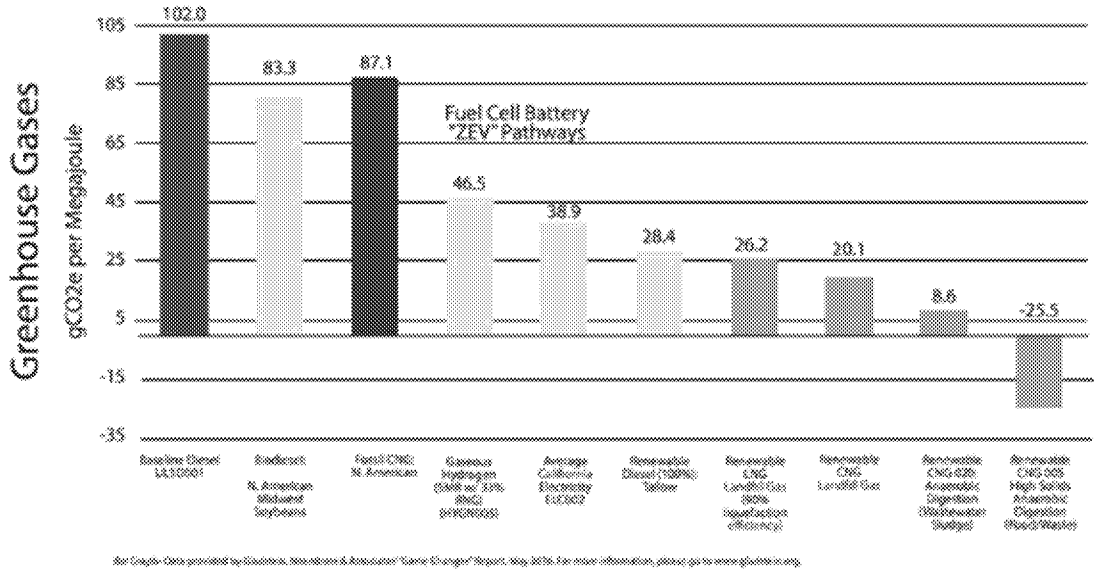


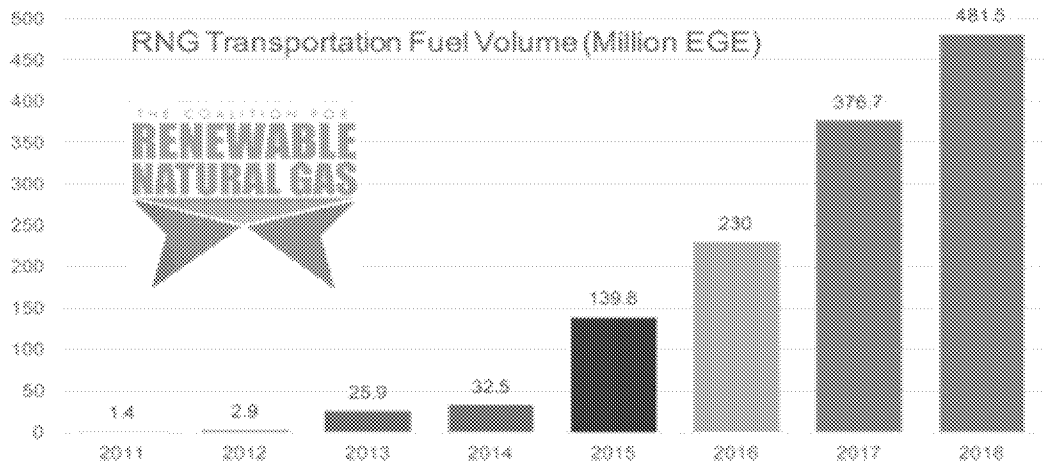
Source: Gladstein, Neandross & Associates[12]

In the original 2017-2025 rulemaking, EPA recognized the potential for RNG to deliver "game-changing" lifecycle GHG emissions for NGVs, but stated that the agency "believe[d] that biomethane will remain a small part of the overall natural gas market for the foreseeable future."[13] This belief is, simply put, outdated. Today, RNG fueling is increasingly the norm for NGVs thanks to the federal Renewable Fuel Standard (RFS) and the California Low Carbon Fuel Standard (LCFS). While these programs were in their infancy during the original rulemaking in 2011, they have since emerged as powerful economic drivers for RNG use in transportation, thanks to the reclassification of RNG as a cellulosic biofuel by EPA[14] as well as CARB's ranking of it as the lowest GHG fuel on the market. [15] Today, the value of these RFS and LCFS credits has made RNG commercially competitive with fossil natural gas.[16]

This economic driver has led to the very rapid increase in the production and sale of RNG fuel to the transportation sector – particularly in California, where fuel retailers can benefit from sales of both LCFS and RFS credits and where there are the largest number of NGVs and natural gas fueling stations. According to the RNG Coalition, over 60% of NGV fueling in California and 35%

[12] *Game-Changer: Next Generation Heavy Duty Natural Gas Engines Fueled By Renewable Natural Gas*, GLADSTEIN, NEANDROSS AND ASSOCIATES (May 2016), http://ngvgamechanger.com/pdfs/GameChanger_FullReport.pdf
[13] 2017 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions and Corporate Average Fuel Economy Standards, 77 Fed. Reg. 62815 (Oct. 15, 2012) (hereinafter "*2012 Light Duty GHG Standards*").
[14] "Renewable Fuel Pathways II Final Rule to Identify Additional Fuel Pathways under Renewable Fuel Standard Program Documents." ENVIRONMENTAL PROTECTION AGENCY. July 18, 2014. https://www.epa.gov/renewable-fuel-standard-program/renewable-fuel-pathways-ii-final-rule-identify-additional-fuel-0
[15] Staff Report, CALIFORNIA AIR RESOURCES BOARD, Proposed Re-Adoption of the California Low Carbon Fuel Standard (Dec. 2014), https://www.arb.ca.gov/regact/2015/lcfs2015/lcfs15isor.pdf
[16] *The Feasibility of Renewable Natural Gas as a Large-Scale, Low Carbon Substitute*, UC DAVIS INSTITUTE OF TRANSPORTATION STUDIES, June 2016. https://www.arb.ca.gov/research/apr/past/13-307.pdf

nationally comes from RNG.[17] In terms of absolute volumes, RNG fuel use in transportation increased fivefold between 2013 and 2015, and the Coalition projects it will more than quadruple between 2015 and 2018.



Source: RNG Coalition, Fleets & Fuels Magazine[18]

With this trajectory of RNG growth, the emissions benefits of NGVs today are already at least as powerful as EVs and likely even greater. Thus, ignoring the growth of RNG is not only outdated, but it renders the regulations ineffective in their stated goal of reducing GHG emissions. It also inhibits job creation not only in the NGV industry but the RNG industry as well, which has the potential to create jobs at farms and municipalities across the country through the capture and sale of locally-produced renewable fuel.

In addition to missing an opportunity to achieve the goals of the regulations, the failure to recognize the emissions benefits of RNG has also resulted in EPA effectively negating Congressional incentives for NGVs under the CAFE program. According to Sec. 6 of the Alternative Motor Fuels Act (AMFA)[19] codified as 49 U.S. Code § 32905, the fuel economy of NGVs and EVs alike is to be calculated using the Petroleum Equivalency Factor (PEF) that treats every gallon-equivalent of compressed natural gas or equivalent electrical energy as 0.15 gallons of gasoline. The goal of this technology-neutral statutory calculation was to provide automakers with a strong incentive to manufacture ***both*** types of alternative fuel vehicles to achieve the goal of American energy independence. By encouraging the production of vehicles that reduce the use of higher-carbon petroleum fuels, the statute also reduces emissions.

While the statute requires that NGVs and EVs be treated the same in terms of measuring fuel economy, there is no equivalent law governing measurement of GHGs. EPA chose to follow

[17] Patrick Couch, *RNG in California: More Than You Think*, FLEETS AND FUELS (Apr. 20, 2016), http://www.fleetsandfuels.com/fuels/cng/2016/04/rng-in-california-more-than-you-think/.
[18] *Id.*
[19] Alternative Motor Fuels Act of 1988, Public Law 100-494, 102 Stat. 2441.

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Congressional CAFE incentives through model year (MY) 2015[20] but thereafter to give NGVs credit for only their tailpipe emissions reductions of approximately 20% compared to gasoline instead of the "0.15 divisor,"[21] while temporarily treating EVs as having *zero* emissions.[22] In its original 2017-2025 rulemaking, EPA acknowledged that this calculation for EVs failed to account for the upstream emissions produced by EVs from power generation but claimed that the long-term potential of EVs to produce "game-changing" emissions when charged with renewable electricity justified this unprecedented incentive.[23]

By contrast, in the same rulemaking EPA recognized the potential for RNG to deliver "game-changing" lifecycle GHG emissions for NGVs, but stated that the agency "believe[d] that biomethane will remain a small part of the overall natural gas market for the foreseeable future."[24] As discussed above, this expectation has been proven wrong for natural gas transportation. To be consistent with this new reality and the goals of the regulation, as well as with the goal of harmonizing EPA's regulations with the statutory CAFE program, the rules should give *both* fuels incentives that reflect their "game-changing" emissions potential: for NGVs, this means credits that are equivalent to 100% RNG fueling, in the same way that the 0 g/mi incentive for EVs is equivalent to the use of 100% renewable electricity.

It would be justifiable to calculate the emissions of a 100% RNG-fueled NGV as 85% below that of a gasoline vehicle - which would be in line with the average cited in the NPC's topic paper on the subject[25] as well as a return to the "0.15 divisor" in line with CAFE's PEF calculation. And, because the present bias towards EV incentives represents the most egregious inconsistency of EPA's regulations with the CAFE program, we believe it is also justifiable to make this change effective immediately, instead of waiting for 2022.

Summary and Recommendations

RNG has transformed the emissions of NGVs since the original rulemaking, accounting for 35% of NGV fueling nationally and delivering emission reductions of 70% to 130%. Because of this game-changing emissions potential, and because existing EPA incentives for alternative fuels are biased towards EVs and disruptive of Congressionally-mandated CAFE incentives for NGVs, the emission calculation for NGVs should be reformed effective immediately.

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[20] Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards, 75 Fed. Reg. 25716 (May 7, 2010)
[21] *2012 Light Duty GHG Standards* at 62623, 62816.
[22] *Id.* at 62819.
[23] *Id. at* 62820.
[24] *Id.* at 62815.
[25] Report, NATIONAL PETROLEUM COUNCIL, *Advancing Technology for America's Transportation* (2012), http://www.npc.org/reports/trans.html.

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- NGV emissions calculations should return to the "0.15" divisor used before 2016, with emissions calculated as 85% below a gasoline vehicle. This is both justified by the real-world emissions benefits of RNG and is consistent with the CAFE program.

    - We recommend reinstating language from the MY 2011-2016 regulations under 40 C.F.R. § 600.510–12, *Calculation of average fuel economy and average carbon-related exhaust emissions*: "For natural gas-fueled model types . . . the carbon-related exhaust emissions value calculated for that model type in accordance with paragraph (b)(2) of this section multiplied by 0.15 and rounded to the nearest gram per mile, except that manufacturers complying with the fleet averaging option for N_2O and CH_4 as allowed under § 86.1818 of this chapter must perform this calculation such that N_2O and CH_4 values are not multiplied by 0.15.[26]"

- This change should be effective retroactively to model year 2017, given the major impediment to NGV adoption posed by the current incentive structure as well as the uniquely egregious regulatory overreach it represents compared to the CAFE program.

- To mirror EV incentives, EPA could consider a similar volume-based transition after 2022 to a regime that considers the real-world use of RNG just as EV incentives will ultimately be calculated based on real-world lifecycle emissions; this would be relatively simple to do since EPA already tracks RNG use under the RFS program.

Potential For Rapid Cost Reductions, Consumer Savings with NGVs

Issues Addressed:
- *The cost on the producers or purchasers of new motor vehicles*
- *The feasibility and practicability of the standards*

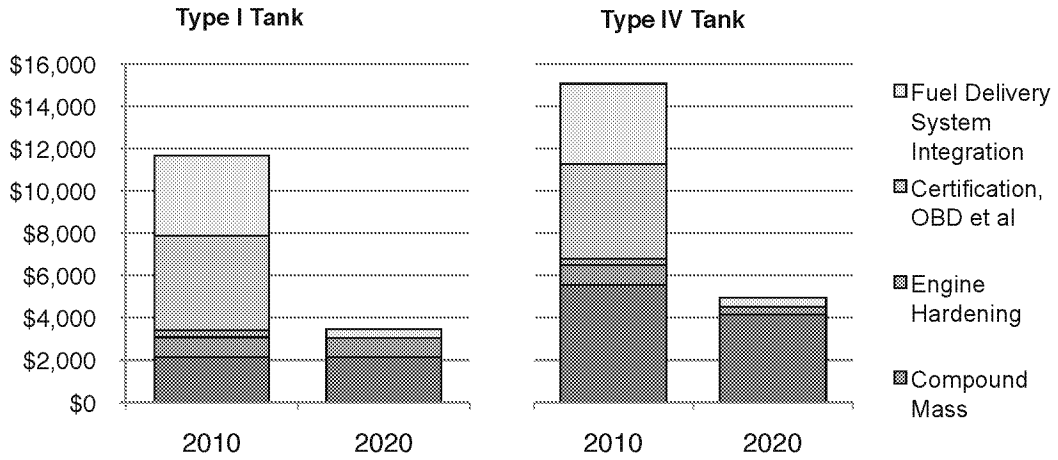
As part of a shift towards a serious analysis of NGVs in the MTE, the agencies must consider not only the current costs of NGVs but their potential for very rapid cost reductions with production at scale. Indeed, while the current incremental prices of CNG pickups are typically $10,000 or more (including upfitting costs), these high costs are primarily due to the need to spread significant up-front design and certification costs over a small number of vehicle sales.

The 2012 report "Advancing Technologies for America's Transportation Future" by the National Petroleum Council (NPC) estimates that about two thirds of the incremental cost of a NGV pickup comes from these areas, and that incremental costs could be reduced to $3,500 per vehicle by 2020 simply by moving to high-volume production (over 100,000 vehicles per year).[27]

[26] 40 C.F.R. § 600.510–12(j)(2)(iii)(A).
[27] Report, NATIONAL PETROLEUM COUNCIL, *Advancing Technology for America's Transportation* (2012), http://www.npc.org/reports/trans.html.

These projections are based in part on experiences in major NGV markets in Europe like Italy and Germany, where volume production has driven incremental costs down to $3,000 or less.[28]

Projected NGV Pickup Incremental Costs, National Petroleum Council



This compares very favorably to the current and projected incremental costs of electric and plug-in electric vehicles. Unlike NGVs, which use the same internal combustion engine platforms as gasoline vehicles and mostly only require the addition of a compressed gas tank made of steel or composites, EVs use batteries that require numerous expensive components and can only reduce costs relatively slowly. This is a critical difference for the agencies to incorporate into their planning, given much greater potential for near-term mass-market adoption of NGVs.

The mass-market potential of NGVs is due to the combination of (potentially) low incremental costs along with the lower and more stable price of natural gas compared to petroleum fuels, which allows the incremental cost to be recouped relatively quickly. According to modeling done in conjunction with the NPC study, this combination gave NGVs the potential to achieve a 17 percent light-duty vehicle market share by 2020 - more than twice the combined market share of electric and plug-in electric vehicles given their projected cost improvements.[29] While this 2012 forecast is clearly unrealistic from the perspective of 2017, the impressive potential for mass-market adoption of a cleaner fuel - and *much* cleaner when RNG is used instead of fossil natural gas - remains an opportunity that should be seriously considered in the agencies' analysis and target-setting.

Indeed, putting aside the comparison to EVs, the potential incremental costs for NGV pickups are comparable to the projected costs for 20% mass reduction via lightweighting cited earlier - $3,000 per pickup. However, as previously stated, lightweighting is forecasted to yield a fuel economy and emissions improvement of only 10%. NGV pickups at scale would have a similar

[28] Rohan Nath et al., *A Realistic View of CNG Vehicles in the US*, BCG PERSPECTIVES (June 16, 2014), https://www.bcgperspectives.com/content/articles/energy_environment_automotive_realistic_view_cng_vehicles_us/.
[29] *Id.*

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incremental cost, yet deliver *twice* the emission reductions with fossil natural gas and many times that with RNG. NGV pickups also completely eliminate petroleum dependence, protecting this critical market segment (and all the consumers, businesses, and workers that depend on it) from oil price swings.

Thus, natural gas deserves to be included in the formulation of the targets for pickups and other light trucks just like other fuel efficiency technologies that have been proven to be cost-effective at scale. This would significantly increase the achievable fuel economy and emissions improvements for these segments within the timeframe of the rulemaking and thus provides a strong rationale for potentially maintaining the existing targets. [30]

Summary and Recommendations

Because NGVs have been proven to deliver rapid and deep cost reductions with high-volume production, the agencies should incorporate them as such into their analysis.

- Modeling used to set achievable emissions curves for pickups and light trucks should include natural gas as a proven technology at costs based on high-volume adoption, not their current incremental costs at low production volumes.

Importance of Dual-Fuel NGVs

Issues Addressed:
- *The impact of the standards on the automobile industry*
- *The feasibility and practicability of the standards*

Dual-fuel NGVs (referred to in the industry as "bi-fuel" NGVs) that operate primarily on CNG but can also operate on gasoline as a backup fuel are likely to play a critical role in winning market adoption of NGVs more broadly. The ability to fuel on gasoline as a backup fuel effectively eliminates consumers' "range anxiety" while CNG fueling infrastructure is not yet as widely available as gasoline, in the same way that dual-fuel electric vehicles (referred to in the industry as plug-in hybrid electric vehicles, or PHEVs) like GM's Chevy Volt have played an important role in expanding the early market for EVs.

The 2017-2025 rulemaking made a major stride towards recognizing the potential benefits of dual-fuel NGVs, which had previously only been assumed to fuel on CNG for 50% of the time. EPA recognized that drivers purchasing dual-fuel NGVs as well as PHEVs are likely to live in areas where fueling (or charging, respectively) infrastructure is reasonably available, and will also preferentially use these alternative fuels whenever possible given their lower cost

[30] Starting the NPC's eight-year projection in 2017 instead of 2012 would imply that an NGV market share of 17 percent could be achieved by 2025 with huge reductions of emissions and petroleum consumption.

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compared to gasoline. Thus, the rules allowed automakers to calculate the fuel usage of both dual-fuel NGVs and PHEVs using a method called the "utility factor" which bases relative consumption of alternative fuels versus gasoline on the vehicle's range on the alternative fuel.[31]

Using this method, a dual-fuel NGV with 250 miles of CNG range – such as the 2015 Dodge Ram[32] – would be assumed to operate on CNG 97.1% of the time, making them nearly as beneficial as a dedicated NGV. PHEVs would receive a similar calculation, although their much shorter all-electric range makes the incentive relatively less beneficial. For example, in the original rulemaking EPA estimated that the Chevy Volt would receive a utility factor of 69% for an all-electric range of 50 miles. [33]

However, despite the fact that utility factors for dual-fuels are ostensibly to be calculated based on their range on alternative fuels, EPA has saddled dual-fuel NGVs with a unique and onerous additional requirement: they must have a CNG range at least double that of their gasoline range in order to qualify for the utility factor calculation, or else they default to an assumed baseline 50% CNG fuel use.[34] Not only that, to be eligible for the incentive, the dual-fuel NGVs must be designed to only use gasoline when the CNG tank is empty.

This requirement is inconsistent with the EPA's assumption that dual-fuel vehicles will fuel as often as possible on CNG for economic reasons, which would imply that their proportion of CNG use should be solely determined by their CNG range according to the utility factors – and not by their gasoline range. Adding further inconsistency, PHEVs face no such requirements, despite the fact of their much more limited all-electric range.

In addition to rendering incentives for dual-fuel NGVs less effective, this requirement adds marketing challenges and, significantly, unnecessary costs to automakers and consumers. To date, the configurations offered by automakers have focused on vehicles that maintain full range on gasoline in order to provide as long of a combined range as possible as well as flexibility; for instance, the dual-fuel GM Silverado has a combined CNG and gasoline range of 650 miles (with the majority coming from gasoline) and allows drivers to switch fuels by flipping a switch.[35]

Beyond unnecessarily restricting customer appeal, the CNG-to-gasoline driving range requirement would require automakers to reduce the size and capacity of the existing gasoline fueling systems in dual-fuel NGVs, which will impose additional costs on manufacturers that will

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[31] *2012 Light Duty GHG Standards* at 62829.
[32] Richard Truett, *Ram will expand lineup of CNG-powered trucks*, AUTOMOTIVE NEWS (Mar. 4, 2015), http://www.autonews.com/article/20150304/OEM05/150309913/ram-will-expand-lineup-of-cng-powered-trucks.
[33] *2012 Light Duty GHG Standards* at 62828.
[34] *Id.* at 62829.
[35] Brandon Turkus, *2015 Chevy Silverado HD gets CNG option*, AUTOBLOG (Feb. 6, 2014), http://www.autoblog.com/2014/02/06/2015-chevrolet-silverado-hd-cng-official/.

have to be passed on to consumers. Today's dual-fuel pickup truck designs leave the existing gasoline fueling systems intact and simply add CNG storage capacity by placing the CNG tank in the bed of the pickup truck. Downsizing the gasoline fueling system would require additional design, manufacturing, and certification costs that would serve no purpose other than meeting an arbitrary and unnecessary regulatory requirement.

Of course, automakers could also pursue an alternative pathway and maintain the existing gasoline tank size and instead greatly increase CNG fueling capacity. However, this would require tripling or quadrupling the number of CNG tanks currently installed in vehicles like the dual-fuel Dodge Ram, which would add so much weight and take up so much space in the pickup bed that it would be completely unusable for the work fleets that depend on these vehicles. Once again, the current requirement forces automakers to make changes that would increase costs and reduce market acceptance in order to receive full regulatory benefits.

Allowing all NGVs to receive the full utility factor credit for CNG use would remove an unnecessary, ineffective, and arbitrary regulatory impediment to the development of this crucial market segment for stimulating growth in the wider NGV industry.

Summary and Recommendations

Because dual-fuel NGVs are critical for market development and consumer acceptance, and because the agencies should strive to be consistently technology-neutral in their incentives, the unique requirements for dual-fuel NGVs to receive credits based on utility factor calculations should be eliminated.

- Remove the utility factor requirements for a 2:1 ratio of CNG-to-gasoline range, as well as the requirement for dual-fuel NGVs to only use gasoline when the CNG tank is empty.
    - This goal could be achieved by deleting the requirements contained in 40 C.F.R. § 600.510–12, *Calculation of average fuel economy and average carbon-related exhaust emissions*, part (c)(2)(vii)(B) for fuel economy and (j)(2)(vii)(B) for emissions.

Advanced NGV Technologies Promise Best Emissions Path For ICEs

Issues Addressed:

- *The impact of the standards on advanced fuels technology, including but not limited to the potential for high-octane blends*
- *The impact of the standards on compliance with other air quality standards;*
- *The availability of realistic technological concepts for improving efficiency in automobiles that consumers demand, as well as any indirect impacts on emissions;*

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Going beyond today's NGV technology, the agencies should consider the enormous untapped potential of natural gas to deliver even greater environmental and fuel economy benefits in the future. As the highest-octane, cleanest hydrocarbon fuel, natural gas has very favorable physical properties for unsurpassed performance from an internal combustion engine – if automakers are sufficiently incentivized to invest in developing this fuel to its full potential.

Natural gas has 130 octane, far beyond what gasoline – even ethanol-blended gasoline – can provide. In the "Advancing Technologies for America's Transportation Future" study, the NPC projected that this could yield fuel economy up to double that of conventional vehicles when combined with direct injection technologies that fully utilize the properties of CNG.[36] The leading CNG conversion company Westport Innovations is already investigating the potential for natural gas-fueled advanced powertrains that exploit these properties for pickup trucks, with a turbocharged direct injection platform that could reduce carbon emissions by at least 30%.[37]

The potential environmental benefits of CNG aren't limited to greenhouse gases. In 2015, Cummins Westport International (CWI) introduced a heavy-duty CNG engine that was the first engine of any kind to meet the California Air Resources Board (CARB) optional low-NOx emission standard of 0.02 g/bhp-hr NOx – 90% below the 2010 EPA certification level.[38] Owing to the inherently cleaner chemistry of natural gas compared to petroleum-based fuels, similar improvements in performance for NOx emissions could likely be achieved for light-duty vehicles given sufficient automaker interest and investment. While NOx emissions are much lower for gasoline-fueled vehicles compared to diesel vehicles, they are still significant, making this a major untapped opportunity to address smog-forming emissions on our roads.

Agency staff should study the potential of advanced technology to further improve the emissions profile of NGVs, in the same in-depth manner that it has investigated the current and future state of EV and FCV technology. Furthermore, it should incorporate this potential in its assessment of the "game-changing" potential of NGVs as justification for strong incentives.

Summary and Recommendations

[36] Report, NATIONAL PETROLEUM COUNCIL, *Advancing Technology for America's Transportation* (2012), http://www.npc.org/reports/trans.html.
[37] *Methane: The Performance Fuel*, WESTPORT INNOVATIONS (October 2015) https://cleancities.energy.gov/files/u/news_events/document/document_url/128/Brad_Douville__Westport_NGVTF_.pdf
[38] *Game-Changer: Next Generation Heavy Duty Natural Gas Engines Fueled By Renewable Natural Gas*, GLADSTEIN, NEANDROSS AND ASSOCIATES (May 2016), http://ngvgamechanger.com/pdfs/GameChanger_FullReport.pdf

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Because of the high-octane, low-emission properties of natural gas, the agencies should fully study the ability of advanced NGV technologies to further reduce CO2 and smog-forming pollutants and incorporate the results into regulatory incentives and long-term target setting.

- The ability of NGVs to deliver unsurpassed fuel economy for an ICE vehicle should be used as a further rationale for returning to the use of the "0.15 divisor" for calculating NGV emissions, as discussed in the above section on RNG.

"Bridge to Hydrogen" Needed More Than Ever

Issues Addressed:
- *The availability and effectiveness of technology, and the appropriate lead time for introduction of technology*
- *Any relevant information in light of newly available information.*

In awarding advanced technology multiplier incentives to NGVs, the original light-duty vehicle rulemaking in 2012 recognized that there are numerous technical synergies between the development and commercialization of NGVs and hydrogen fuel cell electric vehicles (FCVs) owing to the physical similarities between methane and hydrogen. The agencies wrote that "CNG investments have the potential to facilitate the introduction of hydrogen FCVs in several respects," including innovations in advanced storage materials and tube trailer designs, improved designs for compressors and fuel dispensers, and on-site production of hydrogen from natural gas feedstock. VNG helped to lay out this rationale in a white paper, "NGVs: An Essential Bridge to Hydrogen," commissioned from the consultancy Energy Futures.[39]

Since 2012, the FCV industry has taken its first steps towards commercialization, with Toyota, Honda, and Hyundai each offering models for the U.S. market. The TAR was cautiously optimistic about the uptake of these technologies, with an estimated 125,000 FCVs deployed in California by 2025 thanks to the Zero Emissions Vehicle (ZEV) mandate. However, this does not mean they are fully commercial technologies; indeed, it means that the need for NGV synergies to accelerate the development of this market has been elevated from the realm of the theoretical to the practical. The need is particularly urgent in the area of hydrogen fueling infrastructure, as the TAR estimated that hydrogen fuel demand could begin to outpace infrastructure availability as early as 2019 and as late as 2026.

As noted in the original rulemaking, some of the strongest synergies between these fuels are in the area of infrastructure development. Both CNG and hydrogen fueling stations require the same types of equipment, including compressors, high-pressure storage tanks, and gaseous fuel dispensers. Shared standards, equipment designs, production and operational economies

[39] *Natural Gas: An Essential Bridge to Hydrogen Fuel Cell Vehicles,* ENERGY FUTURES (2011) http://vng.co/wp-content/uploads/2012/05/Natural-Gas-An-Essential-Bridge-To-Hydrogen-Fuel-Cell-Vehicles.pdf

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of scale, and technology innovations in this area could simultaneously drive down costs for both fuels. The September 2014 report "Transitioning the Transportation Sector: Exploring the Intersection of Hydrogen Fuel Cell and Natural Gas Vehicles" by the Sandia National Laboratory[40] goes further, with a concept design for a combined hydrogen and natural gas fueling station that "could improve operational expenditures and also take advantage of common supply chains."

The TAR also noted that "implementation of renewable hydrogen sourcing has posed a financial challenge" for stations developed to date, despite a minimum renewable content of 33% to receive grants from the California Energy Commission and greater incentives for 100% renewable hydrogen stations. RNG is an ideal feedstock for renewable hydrogen production via steam methane reforming (SMR) technology, but the market for FCVs is currently too small to drive widespread development of these resources. As discussed earlier in these comments, increasing the deployment of RNG-fueled NGVs is key to building the market and growing demand for this ultra-low GHG fuel in the near term, ensuring sufficient supplies of RNG for renewable hydrogen production in the longer term.

Finally, these synergies may also yield benefits in the opposite direction, with advances in hydrogen improving the emissions profile of NGVs. The TAR recognizes the potential benefits of power-to-gas applications, in which large-scale wind and solar generation can be used to create hydrogen for blending into natural gas pipelines. While it is discussed in the context of reducing the lifecycle emissions of hydrogen production, this is also clearly relevant to reducing the lifecycle emissions of CNG. The 2013 report "Blending Hydrogen into Natural Gas Pipeline Networks" by the National Renewable Energy Laboratory[41] estimates that natural gas pipelines could accommodate blends of 5-20% hydrogen content with no technical changes by end users (e.g. NGVs), which would not only reduce the overall carbon content of natural gas but also reduce methane leakage from the pipeline system (since hydrogen, as a lighter molecule, would escape from leaks first and 'crowd out' methane).

The NREL report notes that "conceivably, a credit trading system could apply to natural gas with a specified blend content of renewable hydrogen, paralleling the renewable energy credit system used in the electricity sector." In fact, such programs already exist in the transportation sector: the LCFS and RFS programs both allow for the addition of new low-carbon and renewable fuel pathways, and renewable hydrogen-enriched natural gas sold as fuel for NGVs could readily fit within these schema. As with RNG, NGVs can play a crucial role in building this

[40] *Transitioning the Transportation Sector: Exploring the Intersection of Hydrogen Fuel Cell and Natural Gas Vehicles*, SANDIA NATIONAL LABORATORY (2014), https://energy.gov/sites/prod/files/2015/02/f19/2015-01_H2NG-Report-FINAL.pdf

[41] *Blending Hydrogen into Natural Gas Pipeline Networks: A Review of Key Issues*, NATIONAL RENEWABLE ENERGY LABORATORY (2013), http://www1.eere.energy.gov/hydrogenandfuelcells/pdfs/blending_h2_nat_gas_pipeline.pdf

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market in the near term to ensure the availability of renewable, low-emission feedstocks for hydrogen fuel production in the long term.

In all these ways, NGVs could provide much-needed boosts to the development of the FCV industry. On the commercialization side, NGVs will help stimulate adoption of FCVs through lower costs and expanded infrastructure availability, and on the environmental side the expansion of availability of renewable gas feedstocks will maximize the climate benefits of these vehicles. Indeed, NGVs and FCVs should be considered part of the same gaseous fuel pathway and recognized as such in regulations that fully account for and promote the lifecycle benefits of ultra-low GHG gaseous fuel blends.

Summary and Recommendations

The widespread adoption of RNG fueling for NGVs has only increased the synergies between NGVs and FCVs. As such, the agencies should continue to recognize the linkage between these fuels as part of an advanced gaseous fuel pathway for game-changing, long-term emission reductions.

- The mutually-reinforcing ability of both NGVs and FCVs to deliver "game-changing" emission reductions should be used as a further rationale for returning to the use of the "0.15 divisor" for calculating NGV emissions, as discussed in the above section on RNG.

Emissions Solution for Mid-Life Vehicles

Issues Addressed:
- *The impact of the standards on consumer behavior, including but not limited to consumer purchasing behavior and consumer automobile usage behavior.*

Sec. 202(a) of the Clean Air Act requires the agencies to regulate vehicle emissions throughout their useful life, but the current light-duty program only provides incentives for low-emission technologies deployed in *new* vehicles. This is becoming an issue because the past decade has seen a slow, steady increase in the average life of vehicles on our roads, and particularly for light trucks. According to data from the Bureau of Transportation Statistics, the average life of cars on US roads has increased from 9.5 years in 2005 to 11.5 years in 2015[42] - surpassing the 10 year vehicle life currently considered by the agencies.

This trend will likely continue and accelerate if regulations drive up the cost of new vehicles by thousands of dollars, as the agencies themselves have estimated. This will encourage drivers to hold onto their older, less fuel-efficient, and more polluting cars and light trucks for longer and longer, undermining the benefits of the regulations.

[42] *Transportation Energy Databook 2016*, OAK RIDGE NATIONAL LABORATORY, http://cta.ornl.gov/data/index.shtml

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With conventional gasoline cars and trucks, it is essentially impossible to improve the fuel economy and emissions of a given vehicle after it rolls off the assembly line. However, retrofitting existing vehicles to fuel on natural gas has long been a major part of the NGV industry, particularly in states like Oklahoma[43] and Utah[44] that have actively sought to promote the retrofit market. The robust retrofit ecosystem in place for NGVs is fully capable of addressing this market, and the updated certification requirements for remarketed and used vehicles established by EPA in 2012[45] could make this a very cost-effective way to deliver real emissions and petroleum consumption benefits.

While expanding the rules to include emission and petroleum reductions from vehicles that have already been sold is novel, the environmental and energy security benefits that would result are just as meaningful as those stemming from sales of cleaner, more efficient new vehicles.

One way to incentivize retrofits of existing vehicles would be to allow EPA-certified conversion companies to "opt in" to the regulation for the purpose of generating credits for every vehicle they retrofit to operate on natural gas. These credits would be pro-rated based on the vehicle's projected remaining useful life - for instance, a vehicle that is five years old (halfway through the current 10 year/100,000 mile definition of useful life used by the agencies) would receive credits equal to 50% of the emissions benefits of a new NGV, including the "0.15 divisor" and the full-size pickup bonuses proposed in previous sections. The conversion company could then sell the credits to automakers looking to reduce their compliance costs in a given vehicle category.

Incentives for the development of the aftermarket upfit and retrofit ecosystem could also be incorporated into regulations for new vehicles, by including credits for CNG "prep packages" in the off-cycle credit program. For instance, the previously-mentioned 2016 Ford F-150 pickup has a CNG "prep package" including hardened valves, valve seats, pistons and piston rings, which significantly reduces the future cost of upfitting/retrofitting the vehicle for CNG operation.[46] Since this feature increases the likelihood that vehicles will be converted to a low-emission, non-petroleum fuel, it should be included on the off-cycle credit menu.

We encourage the agencies to consider these and other creative solutions to incorporate retrofits and aftermarket upfits into the rules. Doing so would help to counter the environmental and petroleum consumption impacts of increasing vehicle life, encourage closer collaboration between automakers and conversion companies, and improve the rules' cost-effectiveness.

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[43] Jay F. Marks, *CNG vehicle conversion business is booming for Oklahoma company*, THE OKLAHOMAN (Mar. 16, 2012), http://newsok.com/article/3658028.

[44] Clifford Krauss, *Surge in Natural Gas Has Utah Driving Cheaply*, N.Y. TIMES (Aug. 29, 2008), http://www.nytimes.com/2008/08/30/business/30gascars.html.

[45] *Certification and Compliance for Vehicles and Engines*, ENVIRONMENTAL PROTECTION AGENCY, https://www3.epa.gov/otaq/consumer/fuels/altfuels/altfuels.htm.

[46] *First Compressed Natural Gas and Propane-Capable 2016 Ford F-150 Rolls Off The Line At Kansas City*, FORD MOTOR CO. (Dec. 9, 2015), https://media.ford.com/content/fordmedia/fna/us/en/news/2015/12/09/first-compressed-natural-gas-and-propane-capable-2016-ford-f-150.html.

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Summary and Recommendations

NGVs offer a unique, proven pathway to reducing the emissions and petroleum consumption of the existing vehicle fleet, which is likely to be a growing issue as vehicle lifespans continue to be extended. Accordingly, the existing ecosystem of NGV conversion companies (as exemplified by states like Oklahoma and Utah) as well as OEMs should benefit from regulatory incentives for serving this important potential market.

- Allow EPA-certified converters to "opt in" to the program and generate credits for CNG retrofits and upfits that can subsequently be sold to automakers.

- Provide emission credits for CNG "prep packages" that reduce the costs of subsequent conversion to natural gas, as part of the off-cycle credit technologies listed at 40 C.F.R. § 86.1869–12, *CO_2 credits for off-cycle CO_2-reducing technologies.*

Addressing the Threat of Petroleum Dependence

Issues Addressed:

- *The cost on the producers or purchasers of new motor vehicles or new motor vehicle engines*
- *The impact of the standards on consumer behavior, including but not limited to consumer purchasing behavior and consumer automobile usage behavior (e.g. impacts on rebound, fleet turnover, consumer welfare effects, etc.)*
- *The impact of the standards on the automobile industry*

While EPA's emission regulations under the Clean Air Act serve an important purpose, they currently overshadow the original reason that Congress created the CAFE program in 1975: to reduce America's dependence on the petroleum fuels. The Energy Policy and Conservation Act was a direct response by lawmakers to the catastrophic economic and geopolitical effects of the 1973 oil crisis, but this purpose should also be fresh in the minds of today's policymakers and regulators. Like virtually every other economic recession, the oil price spike of 2007 is widely regarded as triggering the Great Recession in 2008, which devastated the global economy and cost over a hundred thousand jobs in the automotive sector as Chrysler and GM went into bankruptcy.[47]

Much more recently, Hurricane Harvey's devastation seriously disrupted the nation's gasoline fuel supplies[48] – a reminder (along with Superstorm Sandy in 2012[49]) that our dependency on one fuel source poses inherent risks beyond political or economic events.

[47] James Hamilton, "Oil Prices and the Economic Downturn." Testimony Prepared for the Joint Economic Committee of the U.S. Congress (May 20, 2009), https://www.jec.senate.gov/public/_cache/files/a6fca8ca-4c4f-4006-bca5-67e972dc19e2/hamilton-testimony.pdf

[48] Gaurav Sharma, *Hurricane Harvey Has Morphed Into A Major U.S. Gasoline Supply Disruption Event*, FORBES (August 28, 2017), https://www.forbes.com/sites/gauravsharma/2017/08/28/hurricane-harvey-has-morphed-into-a-major-u-s-gasoline-supply-disruption-event/#319555b72872

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The U.S. shale oil boom of recent years, while welcome, does not change this near-total dependence on petroleum fuels, nor the associated vulnerabilities. Despite increased production and exports, we still import nearly half of the oil consumed in this country.[50] Moreover, regardless of the degree of oil imports, the TAR acknowledges that "the price impacts of an oil disruption anywhere will continue to be transmitted to U.S. markets"[51] because oil is a global commodity. And Middle East and North African countries – which have triggered 8 of the 10 oil price shocks in history, and face significant threats from the rise of ISIS and Saudi/Iranian tensions – still account for 30% of global production, a share that the TAR expects to rise.[52]

Despite this ever-present danger hanging over our country, and despite the original intent of the CAFE rules, the TAR chapter on energy security acknowledges that the present regulations will barely make a dent in this dependence. In 2025, the TAR projects that U.S. oil imports will be reduced by 169,000 barrels a day thanks to the rules – less than 6% of imports, which will continue to *rise*, not fall. And with sales of EVs and FCVs projected to be less than 2% of the total market as late as 2030[53] - and NGV sales not projected at all – there is no expectation for alternative fuels to break oil's stranglehold on the transportation sector.

This does not have to be the case. As discussed in previous sections, NGVs are a proven, feasible solution for petroleum-free transportation, with 22 million on the road worldwide and currently-untapped potential for mass-market adoption here in America. In terms of a resource base, the shale gas revolution has created an enormous supply of domestic fossil natural gas supplies, and potential sources of RNG are found in communities and farms across the country. With this combination of a market-ready technology and an abundant, cleaner fuel supply, there is no reason for regulators to give up and resign the country to an oil-dependent future.

This is why restoring the "0.15 divisor" calculation for NGV emissions and removing other unreasonable restrictions on NGV incentives, as discussed earlier in these comments, is so important: not only is it justified based on the game-changing environmental benefits of RNG, but it also returns the joint EPA/NHTSA program to Congress's original purpose in passing the Energy Policy and Conservation Act as well as the Alternative Motor Fuels Act. By effectively removing Congress's CAFE incentives for NGVs, the current EPA rules create a conflict between environmental progress and America's energy security that does not need to exist.

Summary and Recommendations

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[49] Kate Zernike, *Gasoline Runs Short, Adding Woes to Storm Recovery,* N.Y. TIMES (Nov 1, 2012) http://www.nytimes.com/2012/11/02/nyregion/gasoline-shortages-disrupting-recovery-from-hurricane.html?pagewanted=all

[50] *How much petroleum does the United States import and export?* ENERGY INFORMATION ADMINISTRATION (April 4, 2017). https://www.eia.gov/tools/faqs/faq.php?id=727&t=6

[51] Draft TAR, 10-22

[52] *Id.*

[53] *Id.,* 13-64

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The current rules fail to meaningfully address the massive risks to America's economic prosperity and security posed by our near-total dependence on petroleum fuels in transportation. NGVs have unsurpassed potential to provide a practical solution to this dependence, but the current EPA rules effectively undercut the original Congressional intent of the CAFE program and later Congressional incentives for NGVs by eliminating the "0.15 divisor" from emission calculations.

- The potential for NGVs to provide a mass-market solution for petroleum dependence is one more reason for pursuing the comprehensive agenda of reform for NGV regulations discussed in these comments – and making these reforms effective immediately.

NGV Reform Needed Today for 2017-2021 Targets

Issues Addressed:

- *Whether the light-duty vehicle greenhouse gas standards established for model year 2021 are appropriate.*

In addition to the MTE's original focus on the 2022-2025 standards, EPA has also requested comments on whether the standards for 2021 remain appropriate. As with the 2025 targets, we believe that automakers can indeed deliver these reductions in emissions as well as petroleum consumption – but only if they are provided with appropriate incentives that recognize the contributions that NGVs make to these goals.

For all of the reasons discussed in previous sections, we believe that the challenges of meeting the targets without NGVs pose a fundamental threat to the economic viability of U.S. automakers, and thus to the hundreds of thousands of jobs that they support. And, while this challenge is likely to become dire by 2025, it is likely that it will begin impacting automakers sooner, and potentially within the 2017-2021 timeframe. Moreover, automakers will need time to ramp up their production of NGVs, and infrastructure developers like VNG will similarly need time to build fueling networks to serve the light-duty market.

Thus, EPA's desire to review the 2021 targets is an excellent opportunity to make the recommended reforms to NGV incentives sooner, rather than waiting until 2022-2025. By reforming NGV incentives effective immediately, the industry will have the regulatory certainty needed to make these long-term investments and get to work right away. Given the importance of reducing the risks of petroleum dependence to our environment and the economy, there is simply no reason to wait.

Summary and Recommendations

Because the current disparity between the treatment of NGVs and EVs is so clearly arbitrary and contrary to real-world lifecycle GHG emissions, and because automakers need this compliance flexibility and regulatory certainty in order to confidently invest in NGV production, a reform of NGV incentives should be made effective immediately – without waiting for the 2022-

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2025 period. EPA's review of the 2021 targets as part of this proceeding is an opportunity to do so.

- In the process of reviewing the 2021 targets, the agencies should adopt the recommended changes to NGV incentives discussed in these comments effective immediately.

Conclusion and Summary of Recommendations

Discussions of the future of automotive emissions are too often characterized by pessimism from all sides. On one hand, environmentalists have pushed for a widespread adoption of EVs that the EPA's own projections (e.g. the TAR) show is decades away, with very limited penetration projected through 2025. On the other hand, the auto industry argues that it has no way to keep consumers from buying larger and more-polluting vehicles, nor any way to cost-effectively reduce their emissions. And those hoping for an end to the U.S.'s decades-long vulnerability to shocks from global oil markets have little hope at all.

This picture is so gloomy because NGVs are wrongly absent from the conversation. Proven, practical NGV technology and RNG fuel can benefit light truck drivers and the environment in the near term at competitive costs, and next-generation NGVs - with high-octane engines fueled by both RNG and hydrogen-enriched gas - have the potential to dramatically improve the trajectory of these vehicles for decades to come. And with America's unrivaled gas resources, NGVs also have the potential to finally break our near-total dependence on petroleum-based fuels with an affordable, cleaner, domestically-abundant fuel.

The MTE is a critical opportunity for the agencies to correct this glaring oversight. By seriously studying the promise of NGVs and by including a robust suite of incentives for their deployment comparable to those provided to EVs, the agencies can offer a compromise to please all sides. The existing targets for 2025 can be maintained as environmentalists wish; automakers can have an expanded set of compliance pathways that address their area of biggest need - light trucks and full-size pickups; and individual consumers get the vehicles they want and need while reducing petroleum dependence and environmental impacts at a reasonable cost.

In doing so, the agencies can deliver a win-win-win for America in line with the "pro-environment, pro-growth" philosophy espoused by this Administration.[54] VNG looks forward to working with the agencies as the MTE process continues to create a final rule that reduces emissions and petroleum dependence while boosting the domestic economy through maximizing our country's unsurpassed traditional fossil and renewable natural gas resources.

[54] *EPA chief: Trump's energy order sends 'pro-growth, pro-environment message'*, Fox News (Mar. 29, 2017), http://www.foxnews.com/politics/2017/03/29/epa-chief-trumps-energy-order-sends-pro-growth-pro-environment-message.html.

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As a final summary, we recommend the following changes to the rules:

- NGV emissions calculations should return to the "0.15" divisor effective immediately, with emissions calculated as 85% below a gasoline vehicle. This is both justified by the real-world emissions benefits of RNG and is consistent with the CAFE program. The potential for future improvements to NGV emissions from advanced engine technologies, as well as synergies with hydrogen FCVs, provides further justification for this incentive.
    - We recommend reinstating language from the MY 2011-2016 regulations under 40 C.F.R. § 600.510–12, *Calculation of average fuel economy and average carbon-related exhaust emissions*: "For natural gas-fueled model types . . . the carbon-related exhaust emissions value calculated for that model type in accordance with paragraph (b)(2) of this section multiplied by 0.15 and rounded to the nearest gram per mile, except that manufacturers complying with the fleet averaging option for N_2O and CH_4 as allowed under § 86.1818 of this chapter must perform this calculation such that N_2O and CH_4 values are not multiplied by 0.15."
- Offer a "Natural Gas Pickup" incentive similar to current hybrid-electric and "performance-based" pickup credits; however, for the natural gas pickup credit, minimum deployment thresholds should be eliminated to reflect the greater market challenges faced by NGVs - since, unlike hybrid-electrics, they use an alternative fuel.
    - This goal could be accomplished by inserting a new section (c) under 40 C.F.R. § 86.1870–12, *CO_2 credits for qualifying full-size pickup trucks*, titled "Credits for implementation of natural gas technology." The structure of these credits would be similar to those for sections (a) and (b), but with reduced or eliminated requirements for the "required minimum percent of full size pickup trucks."
- Remove the utility factor requirements for a 2:1 ratio of CNG-to-gasoline range, as well as the requirement for dual-fuel NGVs to only use gasoline when the CNG tank is empty.
    - This could be achieved by deleting the requirements in 40 C.F.R. § 600.510–12, *Calculation of average fuel economy and average carbon-related exhaust emissions*, part (c)(2)(vii)(B) for fuel economy and (j)(2)(vii)(B) for emissions.
- Incorporate the potential for use of natural gas when setting targets for practical, achievable emissions improvements for light trucks and full-size pickups. Modeling used to set achievable emissions curves for pickups and light trucks should include natural

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gas as a proven technology at costs based on high-volume adoption, not their current incremental costs at low production volumes.

- Allow EPA-certified converters to "opt in" to the program and generate credits for CNG retrofits and upfits that can subsequently be sold to automakers.

- Provide emission credits for CNG "prep packages" that reduce the costs of subsequent conversion to natural gas, as part of the off-cycle credit technologies listed at 40 C.F.R. § 86.1869–12, *CO_2 credits for off-cycle CO_2-reducing technologies.*

Respectfully submitted,

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Comments by VNG.co LLC on
Reconsideration of the Final Determination of the Mid-Term
Evaluation of Greenhouse Gas Emissions Standards
For Model Year 2022–2025 Light-Duty Vehicles

Docket ID: EPA–HQ–OAR–2015–0827

VNG.co LLC is a developer of compressed natural gas (CNG) fuel dispensing infrastructure for light- and medium-duty natural gas vehicles (NGVs). We welcome this opportunity to comment on the Midterm Evaluation (MTE) of light-duty vehicle greenhouse gas standards established for model years 2022-2025 and provide the agencies[1] with much-needed updated information on NGVs and their ability to contribute to the goals of the regulations.

Indeed, NGVs are perhaps the largest and most consequential knowledge gap in the agencies' work on these regulations to date. The only substantive discussion of NGVs in the 1,217 page Technical Assessment Review (TAR) issued by EPA, NHTSA and CARB was one short paragraph noting the growth in CNG fueling infrastructure,[2] and NGVs were not included in the TAR's models for automaker compliance.[3] This is inexplicable considering that U.S. OEMs (the "Big Three") have each produced pickups that operate on compressed natural gas (CNG) in recent years, as well as the fact that there are 22 million NGVs on the road globally - including many produced by OEMs that also serve the U.S. market.

However, this decision to exclude NGVs from serious analysis becomes even more confounding when one considers the radical changes that have occurred in the emissions profile of this technology since the original rulemaking. Renewable natural gas (RNG) can reduce lifecycle greenhouse emissions by 85% or more compared to gasoline, and this ultra-low carbon biofuel now accounts for over 35% of NGV fueling nationally and over 60% of NGV fueling in California. Furthermore, engine manufacturers are beginning to explore the potential of advanced engine designs to take advantage of CNG's high-octane, inherently low-emission properties - another major opportunity to meet the agencies' goals that has been completely unexplored to date.

The virtual exclusion of NGVs from the analysis and discussion has led to the perception of regulators having a false choice between siding with automakers and consumers on one side and environmentalists on the other. Automakers assert that they cannot stop consumers from buying the larger, less fuel-efficient vehicles they want (and in many cases need), and that meeting the current emissions targets for 2025 would impose major costs and risks on their business. Meanwhile, environmentalists insist that we need to transition our entire vehicle fleet to electric vehicles (including hydrogen fuel cell vehicles) as soon as possible, despite the fact

[1] While these Comments are being submitted in the EPA's docket, it is VNG's expectation that they will be also be considered by the National Highway Traffic Safety Administration (NHTSA) and the California Air Resources Board (CARB), collectively "the agencies."
[2] *Draft Technical Assessment Report: Midterm Evaluation of Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards for Model Years 2022-2025*, ENVIRONMENTAL PROTECTION AGENCY (July 2016), at 9-41, https://nepis.epa.gov/Exe/ZyPDF.cgi/P100OXEO.PDF?Dockey=P100OXEO.PDF (hereinafter "Draft TAR").
[3] *Id.* at 5-502.

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that they are not projected to have more than 1-2% market share through at least 2025 – and are especially unlikely to be a practical choice for SUVs and pickups due to their weight and utility requirements.

NGVs are the missing piece of the puzzle. From an automaker's perspective, they offer a proven pathway to dramatically reducing emissions from their large-footprint vehicles, with similar costs and much greater benefits than lightweighting for pickup trucks. For environmentalists, the use of RNG offers similar or even superior emissions benefits to EVs, while also immediately addressing the segments of the auto market (e.g. light trucks) that are unlikely to have an electric alternative for the foreseeable future.

Reforming the light-duty emission regulations to make NGVs a practical compliance path for automakers thus offers the agencies a way to preserve the stringency of existing targets while simultaneously making it easier for automakers to meet them cost-effectively. Equally important, individual Americans will benefit from the use of a cleaner transportation fuel with lower and more stable pricing, compared to gasoline, all while purchasing the vehicles they want and need at reasonable costs. That's a win-win-win.

The following comments detail the reasons for providing robust regulatory support for NGVs on par with previous regulatory support for EVs, organized into the following sections.

- **The Need for Light Truck Alternatives in a Changing Market Context:** Consumer demand is shifting towards large vehicles with relatively low fuel economy. NGVs are ideally suited to provide a low-emission, non-petroleum alternative for the light truck segment, which is unlikely to be served by electric vehicle (EV) alternatives for the foreseeable future.

- **Renewable Natural Gas - A "Waste-to-Wheels" Emissions Game-Changer:** RNG is a game-changer that puts NGVs on par with an EV powered with wind or solar power - and it accounts for a much higher percentage of NGV fuel use than renewable electricity in the overall electricity mix. The rules must account for this dramatic shift and provide incentives for NGVs similar to those provided for EVs.

- **Potential for Rapid Cost Reductions, Consumer Savings with NGVs:** Unlike EVs, NGVs do not depend on inherently-expensive components like batteries, giving them much greater potential for rapid cost reductions with production at scale. This potential has already been demonstrated by European OEMs and gives NGVs much greater potential for mass-market adoption than the agencies have recognized to date.

- **Importance of Dual-Fuel NGVs:** Dual-fuel (commonly referred to as "bi-fuel") vehicles will play an important role in the market development of NGVs during early years of infrastructure buildout. The agencies took steps towards providing important support for bi-fuel NGVs in the original rulemaking, yet also placed unfair restrictions on this support that were not placed on similarly-important plug-in hybrid electric vehicles.

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- **Advanced NGV Technologies Promise Best Emissions Path for Internal Combustion Engines (ICEs):** The development of new engine technologies optimized for CNG's inherently high-octane, clean-burning qualities gives NGVs unsurpassed potential for environmental performance on a mass-market-ready ICE platform.

- **"Bridge to Hydrogen" Needed More Than Ever:** The agencies have previously recognized the ability of NGVs to provide a "bridge" to hydrogen-fueled vehicles thanks to numerous technology synergies on the vehicle as well as the fueling side. The opportunities for such synergies have expanded in recent years, and are as urgently-needed as ever due to the slow market uptake of hydrogen fuel cell vehicles.

- **Emissions Solution for Mid-Life Vehicles:** Sec. 202(a) of the Clean Air Act requires the agencies to regulate vehicle emissions throughout their useful life, but the current light-duty program only provides incentives for low-emission technologies deployed in *new* vehicles. As states like Oklahoma and Utah have shown, there is significant potential to reduce emissions and petroleum use from older vehicles with CNG retrofits, and these benefits should be recognized and encouraged in these regulations.

- **Addressing the Threat of Petroleum Dependence:** The CAFE program was originally created as a response to the oil crisis of 1973; yet, more than 40 years later, the program has done very little to reduce our near-total dependence on petroleum, and the agencies project that the 2017-2025 rules will not make a meaningful difference either. The current regulations ensure this in part by disadvantaging natural gas, perhaps our best hope for a long-term solution to this problem.

- **NGV Reform Needed Today for 2017-2021 Targets:** Because the current disparity between treatment of NGVs and EVs is so clearly arbitrary and contrary to real-world lifecycle GHG emissions, and because automakers need this compliance flexibility and regulatory certainty in order to confidently invest in NGV production, these changes should be made effective immediately – without waiting for the 2022-2025 period. EPA's review of the 2021 targets as part of this proceeding is an excellent opportunity to do so.

In addition to providing information on each of these topics for use in the rulemaking process, we will indicate the specific topics from EPA's Request for Comment that each section is relevant to, and we will conclude each section with a list of recommended changes to the regulations. By updating the regulations to incentivize the deployment of NGVs similar to the previous administration's focus on incentivizing EVs, the agencies will provide automakers with a greater range of compliance pathways that will help achieve the goals of the regulations sooner and more cost-effectively, to the collective benefit of consumers, the environment and industry.

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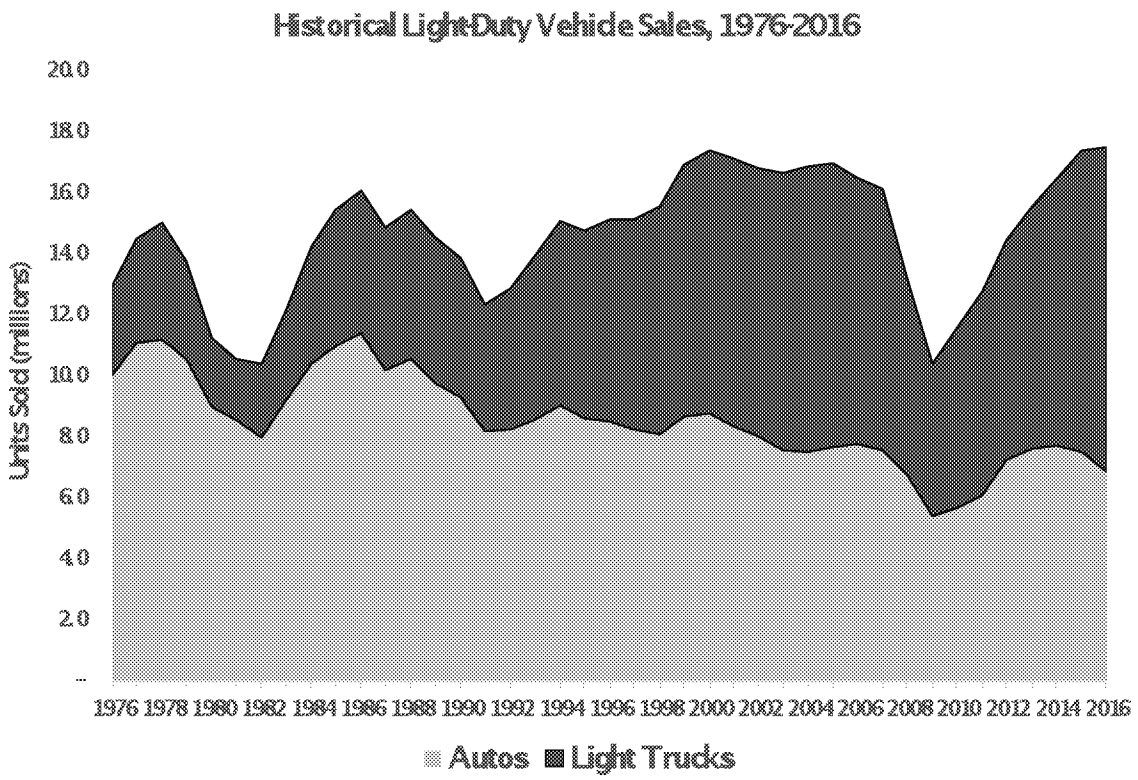
The Need for Light Truck Alternatives in a Changing Market Context

Issues Addressed:

- *The impact of the standards on the automobile industry*
- *The feasibility and practicability of the standards*

As the agencies acknowledged in the 2016 draft Technical Assessment Report (TAR), low gasoline prices have encouraged U.S. consumers to gravitate towards the purchase of larger and less fuel-efficient vehicles. After the Great Recession of 2008 decimated all classes of vehicle sales as well as oil prices, light truck sales have rebounded much more strongly than passenger vehicles and are approaching all-time highs and a market share of over 60%.[4] As the experience of the 1980s-2000s demonstrated, this shift in the market towards light trucks is likely to be sustained if gasoline prices stay low for the long term, as many observers have speculated - including oil majors like Shell, whose CEO recently said that oil prices may be "lower forever."[5]



Source: Bureau of Economic Analysis, 2017[6]

[4] *Auto and Truck Seasonal Adjustment*, BUREAU OF ECONOMIC ANALYSIS (August 2, 2017), https://www.bea.gov/national/xls/gap_hist.xlsx
[5] Sarah Kent, *Shell Prepares for 'Lower Forever' Oil Prices*, WALL ST. J. (July 27, 2017), https://www.wsj.com/articles/royal-dutch-shells-second-quarter-earnings-rise-sharply-1501137915
[6] *Auto and Truck Seasonal Adjustment*, BUREAU OF ECONOMIC ANALYSIS (August 2, 2017), https://www.bea.gov/national/xls/gap_hist.xlsx

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Even if gasoline prices rise again, these large light duty vehicles will always account for a sizable part of the market due to their unique ability to meet specific consumer and business needs. While the footprint-based structure of the rules ensures that automakers will have to increase the fuel economy of all vehicles in order to achieve compliance, the TAR projected that this trend will nonetheless reduce the original projected impacts of the rules on petroleum dependence and greenhouse gas emissions.

The size of light trucks limits the availability of cost-effective solutions to increasing fuel economy and reducing emissions – particularly for full-size pickups, which have added performance requirements. For example, the TAR estimated that the total cost of a 20% mass reduction for towing-capable pickups, which would improve fuel economy and emissions by only 10%, would be roughly $3,000. It is also particularly challenging to electrify light trucks and pickups due to the added cost and weight of the battery packs needed to move these larger vehicles, particularly those built for carrying or towing heavy loads. Indeed, there are very few electric light trucks on the market today and no pickups, and the TAR does not even consider the possibility of electric towing-capable vehicles within the 2025 timeframe.[7]

Pickup trucks are the best-selling vehicles in America, as well as the most important source of profits for the "Big Three" U.S. automakers. Thus, a cost-effective solution to their emissions and petroleum dependence is absolutely essential to ensuring that these companies, their hundreds of thousands of employees, and the millions of consumers and businesses that rely on pickup trucks are not unnecessarily harmed by the agencies' regulations.

Fortunately, and in contrast to electrification, compressed natural gas (CNG) is ideally suited to be a low-emission, non-petroleum alternative fuel for light trucks and pickups especially. Larger vehicle envelopes provide ample room for CNG storage tanks, and since natural gas offers far greater energy density than batteries, it is much better-suited for moving heavy vehicles. These characteristics are why natural gas has long been the clean fuel of choice for heavy-duty vehicles like transit buses and refuse trucks, and the same logic holds true for the heavier side of the light-duty vehicle spectrum.

Indeed, automakers have demonstrated that NGVs are already a viable commercial technology. All three U.S. automakers have offered either CNG-equipped or CNG-ready versions of their flagship full-size pickups, including GM's Chevy Silverado,[8] FCA's Dodge Ram,[9] and Ford's F-

[7] Draft TAR, supra note 2, at 4-40.
[8] Brandon Turkus, *2015 Chevy Silverado HD gets CNG option*, AUTOBLOG (Feb. 6, 2014), http://www.autoblog.com/2014/02/06/2015-chevrolet-silverado-hd-cng-official/.
[9] Richard Truett, *Ram will expand lineup of CNG-powered trucks*, AUTOMOTIVE NEWS (Mar. 4, 2015), http://www.autonews.com/article/20150304/OEM05/150309913/ram-will-expand-lineup-of-cng-powered-trucks.

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150. In fact, in addition to being the best-selling vehicle of any model, the 2016 Ford F-150 was named Green Car Journal's "Green Car of the Year" in part due to the availability of a CNG prep package as an option.[10]

Thus, the rules should encourage automakers to transition these vehicle segments to natural gas in two ways. First, they should be provided strong incentives to do so, including special incentives for pickup trucks similar to the incentive previously created for hybrid-electric pickups. Second, natural gas should be factored into setting targets for what can be reasonably achieved for light trucks and pickups, since this is a mature, proven, commercially-available technology that automakers have already deployed in recent years.

Summary and Recommendations

Because light trucks and pickups especially are a critical market segment for consumers, businesses and automakers, and because neither electrification nor lightweighting are practical alternatives for these heavier vehicles, EPA should provide a clear regulatory pathway for automakers to transition these segments to natural gas.

- Provide emissions credits for all NGVs that reflect the emissions benefits of renewable natural gas (RNG), as discussed in the following section.

- Offer a "Natural Gas Pickup" incentive similar to current hybrid-electric and "performance-based" pickup credits; however, for the natural gas pickup credit, minimum deployment thresholds should be eliminated to reflect the greater market challenges faced by NGVs - since, unlike hybrid-electrics, they use an alternative fuel. Expecting an automaker to immediately transition at least 10% of their critical pickup fleet to an alternative fuel is simply not realistic, and renders the current "performance-based" credit useless despite the fact that natural gas can meet the credit's performance threshold of 20% emission reductions.

    - This goal could be accomplished by inserting a new section (c) under 40 C.F.R. § 86.1870–12, *CO_2 credits for qualifying full-size pickup trucks*, titled "Credits for implementation of natural gas technology." The structure of these credits would be similar to those for sections (a) and (b), but with reduced or eliminated requirements for the "required minimum percent of full size pickup trucks."

[10] *Fuel Efficiency, Alternative Fuels and Sustainability Earn Ford F-150 2016 Green Truck of the Year Award*, FORD MOTOR CO. (Nov. 19, 2015), https://media.ford.com/content/fordmedia/fna/us/en/news/2015/11/19/ford-f-150-earns-2016-green-truck-of-the-year-award.html.

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- Incorporate the use of natural gas when setting targets for practical, achievable emissions improvements for light trucks and full-size pickups.

Renewable Natural Gas - A "Waste-to-Wheels" Emissions Game-Changer

Issues Addressed:

- *The availability and effectiveness of technology, and the appropriate lead time for introduction of technology*
- *Any relevant information in light of newly available information.*
- *The impact of the greenhouse gas emission standards on the Corporate Average Fuel Economy standards and a national harmonized program*

Since the original rulemaking, there has been a dramatic transformation of the lifecycle emissions profile of NGVs due to the rapid adoption of renewable natural gas (RNG) in the transportation sector. Indeed, this is likely the biggest change in the lifecycle emissions of any fuel or vehicle type since the 2011 rulemaking – yet it was completely absent in the draft TAR for reasons that are not clear.

RNG, also known as biogas or biomethane, captures methane produced from a variety of sources including landfills, dairy and livestock operations, and wastewater treatment plants. Once impurities are removed, this methane can be used as a perfect substitute for fossil natural gas, including distribution in the existing natural gas pipeline system and use in NGVs.

Since methane is a powerful greenhouse gas, the use of RNG can achieve massive emission reductions on a CO2-equivalent basis when used as a transportation fuel. While lifecycle emissions can vary significantly depending on the pathway for RNG production, according to the most recent values for the California Low Carbon Fuel Standard (LCFS) it can yield emission cuts of between 70% and *130%*[11] - in other words, NGVs powered by RNG can be carbon-negative, potentially yielding even greater emissions benefits than an electric vehicle powered entirely by solar or wind energy.

[11] Staff Report, CALIFORNIA AIR RESOURCES BOARD, Proposed Re-Adoption of the California Low Carbon Fuel Standard. Dec. 2014. https://www.arb.ca.gov/regact/2015/lcfs2015/lcfs15isor.pdf.

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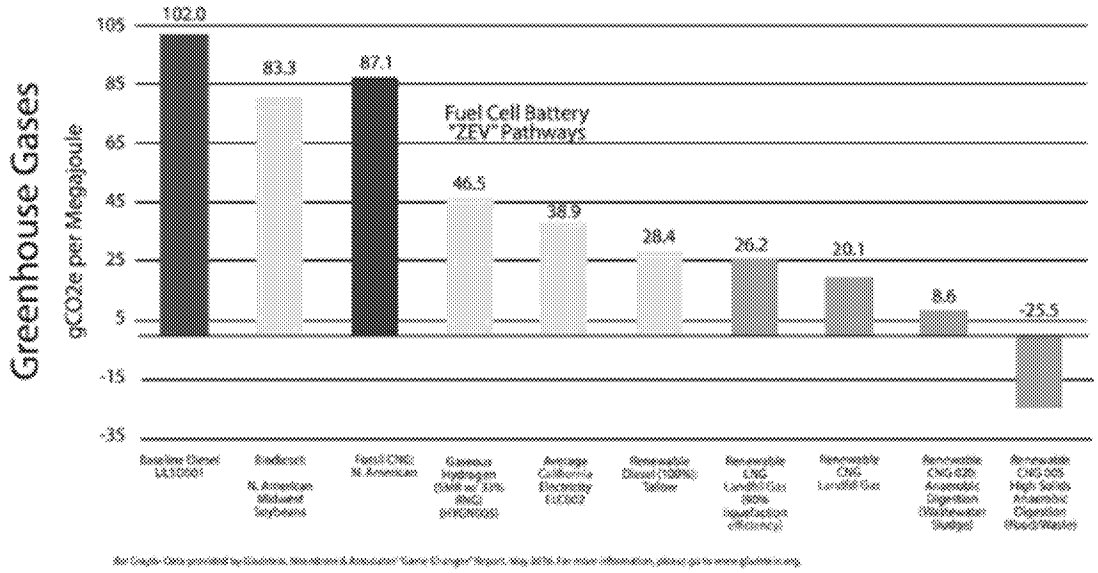

Source: Gladstein, Neandross & Associates[12]

In the original 2017-2025 rulemaking, EPA recognized the potential for RNG to deliver "game-changing" lifecycle GHG emissions for NGVs, but stated that the agency "believe[d] that biomethane will remain a small part of the overall natural gas market for the foreseeable future."[13] This belief is, simply put, outdated. Today, RNG fueling is increasingly the norm for NGVs thanks to the federal Renewable Fuel Standard (RFS) and the California Low Carbon Fuel Standard (LCFS). While these programs were in their infancy during the original rulemaking in 2011, they have since emerged as powerful economic drivers for RNG use in transportation, thanks to the reclassification of RNG as a cellulosic biofuel by EPA[14] as well as CARB's ranking of it as the lowest GHG fuel on the market. [15] Today, the value of these RFS and LCFS credits has made RNG commercially competitive with fossil natural gas.[16]

This economic driver has led to the very rapid increase in the production and sale of RNG fuel to the transportation sector – particularly in California, where fuel retailers can benefit from sales of both LCFS and RFS credits and where there are the largest number of NGVs and natural gas fueling stations. According to the RNG Coalition, over 60% of NGV fueling in California and 35%

[12] *Game-Changer: Next Generation Heavy Duty Natural Gas Engines Fueled By Renewable Natural Gas*, GLADSTEIN, NEANDROSS AND ASSOCIATES (May 2016), http://ngvgamechanger.com/pdfs/GameChanger_FullReport.pdf
[13] 2017 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions and Corporate Average Fuel Economy Standards, 77 Fed. Reg. 62815 (Oct. 15, 2012) (hereinafter "*2012 Light Duty GHG Standards*").
[14] "Renewable Fuel Pathways II Final Rule to Identify Additional Fuel Pathways under Renewable Fuel Standard Program Documents." ENVIRONMENTAL PROTECTION AGENCY. July 18, 2014. https://www.epa.gov/renewable-fuel-standard-program/renewable-fuel-pathways-ii-final-rule-identify-additional-fuel-0
[15] Staff Report, CALIFORNIA AIR RESOURCES BOARD, Proposed Re-Adoption of the California Low Carbon Fuel Standard (Dec. 2014), https://www.arb.ca.gov/regact/2015/lcfs2015/lcfs15isor.pdf
[16] *The Feasibility of Renewable Natural Gas as a Large-Scale, Low Carbon Substitute*, UC DAVIS INSTITUTE OF TRANSPORTATION STUDIES, June 2016. https://www.arb.ca.gov/research/apr/past/13-307.pdf

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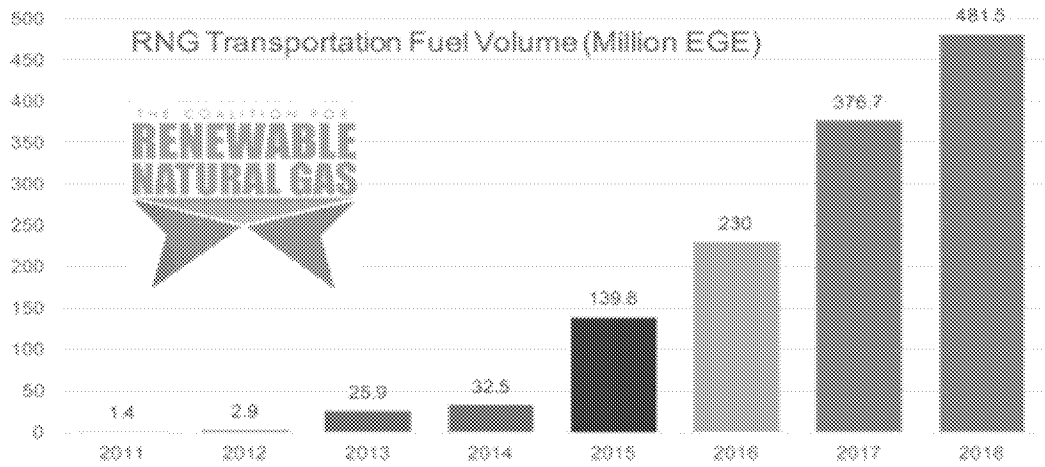
nationally comes from RNG.[17] In terms of absolute volumes, RNG fuel use in transportation increased fivefold between 2013 and 2015, and the Coalition projects it will more than quadruple between 2015 and 2018.



Source: RNG Coalition, Fleets & Fuels Magazine[18]

With this trajectory of RNG growth, the emissions benefits of NGVs today are already at least as powerful as EVs and likely even greater. Thus, ignoring the growth of RNG is not only outdated, but it renders the regulations ineffective in their stated goal of reducing GHG emissions. It also inhibits job creation not only in the NGV industry but the RNG industry as well, which has the potential to create jobs at farms and municipalities across the country through the capture and sale of locally-produced renewable fuel.

In addition to missing an opportunity to achieve the goals of the regulations, the failure to recognize the emissions benefits of RNG has also resulted in EPA effectively negating Congressional incentives for NGVs under the CAFE program. According to Sec. 6 of the Alternative Motor Fuels Act (AMFA)[19] codified as 49 U.S. Code § 32905, the fuel economy of NGVs and EVs alike is to be calculated using the Petroleum Equivalency Factor (PEF) that treats every gallon-equivalent of compressed natural gas or equivalent electrical energy as 0.15 gallons of gasoline. The goal of this technology-neutral statutory calculation was to provide automakers with a strong incentive to manufacture ***both*** types of alternative fuel vehicles to achieve the goal of American energy independence. By encouraging the production of vehicles that reduce the use of higher-carbon petroleum fuels, the statute also reduces emissions.

While the statute requires that NGVs and EVs be treated the same in terms of measuring fuel economy, there is no equivalent law governing measurement of GHGs. EPA chose to follow

[17] Patrick Couch, *RNG in California: More Than You Think*, FLEETS AND FUELS (Apr. 20, 2016), http://www.fleetsandfuels.com/fuels/cng/2016/04/rng-in-california-more-than-you-think/.
[18] *Id.*
[19] Alternative Motor Fuels Act of 1988, Public Law 100-494, 102 Stat. 2441.

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Congressional CAFE incentives through model year (MY) 2015[20] but thereafter to give NGVs credit for only their tailpipe emissions reductions of approximately 20% compared to gasoline instead of the "0.15 divisor,"[21] while temporarily treating EVs as having *zero* emissions.[22] In its original 2017-2025 rulemaking, EPA acknowledged that this calculation for EVs failed to account for the upstream emissions produced by EVs from power generation but claimed that the long-term potential of EVs to produce "game-changing" emissions when charged with renewable electricity justified this unprecedented incentive.[23]

By contrast, in the same rulemaking EPA recognized the potential for RNG to deliver "game-changing" lifecycle GHG emissions for NGVs, but stated that the agency "believe[d] that biomethane will remain a small part of the overall natural gas market for the foreseeable future."[24] As discussed above, this expectation has been proven wrong for natural gas transportation. To be consistent with this new reality and the goals of the regulation, as well as with the goal of harmonizing EPA's regulations with the statutory CAFE program, the rules should give *both* fuels incentives that reflect their "game-changing" emissions potential: for NGVs, this means credits that are equivalent to 100% RNG fueling, in the same way that the 0 g/mi incentive for EVs is equivalent to the use of 100% renewable electricity.

It would be justifiable to calculate the emissions of a 100% RNG-fueled NGV as 85% below that of a gasoline vehicle - which would be in line with the average cited in the NPC's topic paper on the subject[25] as well as a return to the "0.15 divisor" in line with CAFE's PEF calculation. And, because the present bias towards EV incentives represents the most egregious inconsistency of EPA's regulations with the CAFE program, we believe it is also justifiable to make this change effective immediately, instead of waiting for 2022.

Summary and Recommendations

RNG has transformed the emissions of NGVs since the original rulemaking, accounting for 35% of NGV fueling nationally and delivering emission reductions of 70% to 130%. Because of this game-changing emissions potential, and because existing EPA incentives for alternative fuels are biased towards EVs and disruptive of Congressionally-mandated CAFE incentives for NGVs, the emission calculation for NGVs should be reformed effective immediately.

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[20] Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards, 75 Fed. Reg. 25716 (May 7, 2010)
[21] *2012 Light Duty GHG Standards* at 62623, 62816.
[22] *Id.* at 62819.
[23] *Id. at* 62820.
[24] *Id.* at 62815.
[25] Report, NATIONAL PETROLEUM COUNCIL, *Advancing Technology for America's Transportation* (2012), http://www.npc.org/reports/trans.html.

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- NGV emissions calculations should return to the "0.15" divisor used before 2016, with emissions calculated as 85% below a gasoline vehicle. This is both justified by the real-world emissions benefits of RNG and is consistent with the CAFE program.

    - We recommend reinstating language from the MY 2011-2016 regulations under 40 C.F.R. § 600.510–12, *Calculation of average fuel economy and average carbon-related exhaust emissions*: "For natural gas-fueled model types . . . the carbon-related exhaust emissions value calculated for that model type in accordance with paragraph (b)(2) of this section multiplied by 0.15 and rounded to the nearest gram per mile, except that manufacturers complying with the fleet averaging option for N_2O and CH_4 as allowed under § 86.1818 of this chapter must perform this calculation such that N_2O and CH_4 values are not multiplied by 0.15.[26]"

- This change should be effective retroactively to model year 2017, given the major impediment to NGV adoption posed by the current incentive structure as well as the uniquely egregious regulatory overreach it represents compared to the CAFE program.

- To mirror EV incentives, EPA could consider a similar volume-based transition after 2022 to a regime that considers the real-world use of RNG just as EV incentives will ultimately be calculated based on real-world lifecycle emissions; this would be relatively simple to do since EPA already tracks RNG use under the RFS program.

Potential For Rapid Cost Reductions, Consumer Savings with NGVs

Issues Addressed:
- *The cost on the producers or purchasers of new motor vehicles*
- *The feasibility and practicability of the standards*

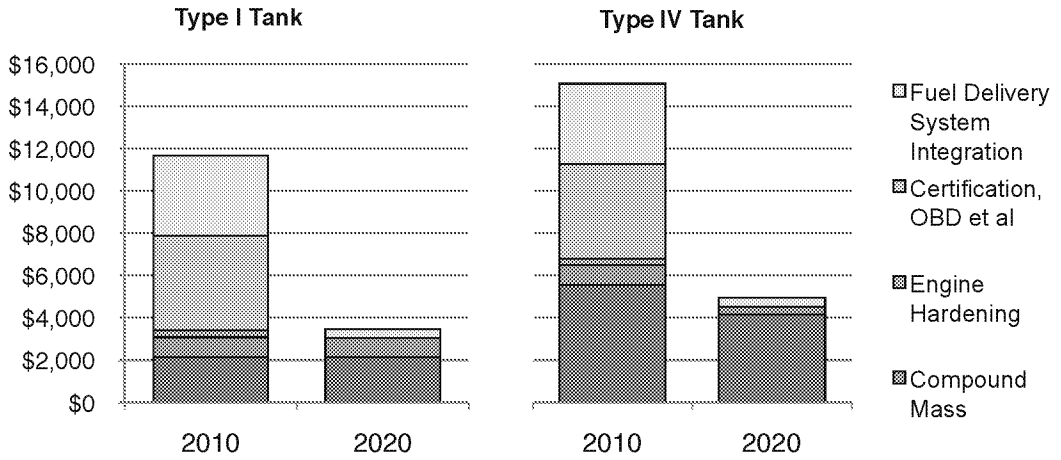
As part of a shift towards a serious analysis of NGVs in the MTE, the agencies must consider not only the current costs of NGVs but their potential for very rapid cost reductions with production at scale. Indeed, while the current incremental prices of CNG pickups are typically $10,000 or more (including upfitting costs), these high costs are primarily due to the need to spread significant up-front design and certification costs over a small number of vehicle sales.

The 2012 report "Advancing Technologies for America's Transportation Future" by the National Petroleum Council (NPC) estimates that about two thirds of the incremental cost of a NGV pickup comes from these areas, and that incremental costs could be reduced to $3,500 per vehicle by 2020 simply by moving to high-volume production (over 100,000 vehicles per year).[27]

[26] 40 C.F.R. § 600.510–12(j)(2)(iii)(A).
[27] Report, NATIONAL PETROLEUM COUNCIL, *Advancing Technology for America's Transportation* (2012), http://www.npc.org/reports/trans.html.

These projections are based in part on experiences in major NGV markets in Europe like Italy and Germany, where volume production has driven incremental costs down to $3,000 or less.[28]

Projected NGV Pickup Incremental Costs, National Petroleum Council



This compares very favorably to the current and projected incremental costs of electric and plug-in electric vehicles. Unlike NGVs, which use the same internal combustion engine platforms as gasoline vehicles and mostly only require the addition of a compressed gas tank made of steel or composites, EVs use batteries that require numerous expensive components and can only reduce costs relatively slowly. This is a critical difference for the agencies to incorporate into their planning, given much greater potential for near-term mass-market adoption of NGVs.

The mass-market potential of NGVs is due to the combination of (potentially) low incremental costs along with the lower and more stable price of natural gas compared to petroleum fuels, which allows the incremental cost to be recouped relatively quickly. According to modeling done in conjunction with the NPC study, this combination gave NGVs the potential to achieve a 17 percent light-duty vehicle market share by 2020 - more than twice the combined market share of electric and plug-in electric vehicles given their projected cost improvements.[29] While this 2012 forecast is clearly unrealistic from the perspective of 2017, the impressive potential for mass-market adoption of a cleaner fuel - and *much* cleaner when RNG is used instead of fossil natural gas - remains an opportunity that should be seriously considered in the agencies' analysis and target-setting.

Indeed, putting aside the comparison to EVs, the potential incremental costs for NGV pickups are comparable to the projected costs for 20% mass reduction via lightweighting cited earlier - $3,000 per pickup. However, as previously stated, lightweighting is forecasted to yield a fuel economy and emissions improvement of only 10%. NGV pickups at scale would have a similar

[28] Rohan Nath et al., *A Realistic View of CNG Vehicles in the US*, BCG PERSPECTIVES (June 16, 2014), https://www.bcgperspectives.com/content/articles/energy_environment_automotive_realistic_view_cng_vehicles_us/.
[29] *Id.*

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incremental cost, yet deliver *twice* the emission reductions with fossil natural gas and many times that with RNG. NGV pickups also completely eliminate petroleum dependence, protecting this critical market segment (and all the consumers, businesses, and workers that depend on it) from oil price swings.

Thus, natural gas deserves to be included in the formulation of the targets for pickups and other light trucks just like other fuel efficiency technologies that have been proven to be cost-effective at scale. This would significantly increase the achievable fuel economy and emissions improvements for these segments within the timeframe of the rulemaking and thus provides a strong rationale for potentially maintaining the existing targets. [30]

Summary and Recommendations

Because NGVs have been proven to deliver rapid and deep cost reductions with high-volume production, the agencies should incorporate them as such into their analysis.

- Modeling used to set achievable emissions curves for pickups and light trucks should include natural gas as a proven technology at costs based on high-volume adoption, not their current incremental costs at low production volumes.

Importance of Dual-Fuel NGVs

Issues Addressed:
- *The impact of the standards on the automobile industry*
- *The feasibility and practicability of the standards*

Dual-fuel NGVs (referred to in the industry as "bi-fuel" NGVs) that operate primarily on CNG but can also operate on gasoline as a backup fuel are likely to play a critical role in winning market adoption of NGVs more broadly. The ability to fuel on gasoline as a backup fuel effectively eliminates consumers' "range anxiety" while CNG fueling infrastructure is not yet as widely available as gasoline, in the same way that dual-fuel electric vehicles (referred to in the industry as plug-in hybrid electric vehicles, or PHEVs) like GM's Chevy Volt have played an important role in expanding the early market for EVs.

The 2017-2025 rulemaking made a major stride towards recognizing the potential benefits of dual-fuel NGVs, which had previously only been assumed to fuel on CNG for 50% of the time. EPA recognized that drivers purchasing dual-fuel NGVs as well as PHEVs are likely to live in areas where fueling (or charging, respectively) infrastructure is reasonably available, and will also preferentially use these alternative fuels whenever possible given their lower cost

[30] Starting the NPC's eight-year projection in 2017 instead of 2012 would imply that an NGV market share of 17 percent could be achieved by 2025 with huge reductions of emissions and petroleum consumption.

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compared to gasoline. Thus, the rules allowed automakers to calculate the fuel usage of both dual-fuel NGVs and PHEVs using a method called the "utility factor" which bases relative consumption of alternative fuels versus gasoline on the vehicle's range on the alternative fuel.[31]

Using this method, a dual-fuel NGV with 250 miles of CNG range – such as the 2015 Dodge Ram[32] – would be assumed to operate on CNG 97.1% of the time, making them nearly as beneficial as a dedicated NGV. PHEVs would receive a similar calculation, although their much shorter all-electric range makes the incentive relatively less beneficial. For example, in the original rulemaking EPA estimated that the Chevy Volt would receive a utility factor of 69% for an all-electric range of 50 miles. [33]

However, despite the fact that utility factors for dual-fuels are ostensibly to be calculated based on their range on alternative fuels, EPA has saddled dual-fuel NGVs with a unique and onerous additional requirement: they must have a CNG range at least double that of their gasoline range in order to qualify for the utility factor calculation, or else they default to an assumed baseline 50% CNG fuel use.[34] Not only that, to be eligible for the incentive, the dual-fuel NGVs must be designed to only use gasoline when the CNG tank is empty.

This requirement is inconsistent with the EPA's assumption that dual-fuel vehicles will fuel as often as possible on CNG for economic reasons, which would imply that their proportion of CNG use should be solely determined by their CNG range according to the utility factors – and not by their gasoline range. Adding further inconsistency, PHEVs face no such requirements, despite the fact of their much more limited all-electric range.

In addition to rendering incentives for dual-fuel NGVs less effective, this requirement adds marketing challenges and, significantly, unnecessary costs to automakers and consumers. To date, the configurations offered by automakers have focused on vehicles that maintain full range on gasoline in order to provide as long of a combined range as possible as well as flexibility; for instance, the dual-fuel GM Silverado has a combined CNG and gasoline range of 650 miles (with the majority coming from gasoline) and allows drivers to switch fuels by flipping a switch.[35]

Beyond unnecessarily restricting customer appeal, the CNG-to-gasoline driving range requirement would require automakers to reduce the size and capacity of the existing gasoline fueling systems in dual-fuel NGVs, which will impose additional costs on manufacturers that will

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[31] *2012 Light Duty GHG Standards* at 62829.
[32] Richard Truett, *Ram will expand lineup of CNG-powered trucks*, AUTOMOTIVE NEWS (Mar. 4, 2015), http://www.autonews.com/article/20150304/OEM05/150309913/ram-will-expand-lineup-of-cng-powered-trucks.
[33] *2012 Light Duty GHG Standards* at 62828.
[34] *Id.* at 62829.
[35] Brandon Turkus, *2015 Chevy Silverado HD gets CNG option*, AUTOBLOG (Feb. 6, 2014), http://www.autoblog.com/2014/02/06/2015-chevrolet-silverado-hd-cng-official/.

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have to be passed on to consumers. Today's dual-fuel pickup truck designs leave the existing gasoline fueling systems intact and simply add CNG storage capacity by placing the CNG tank in the bed of the pickup truck. Downsizing the gasoline fueling system would require additional design, manufacturing, and certification costs that would serve no purpose other than meeting an arbitrary and unnecessary regulatory requirement.

Of course, automakers could also pursue an alternative pathway and maintain the existing gasoline tank size and instead greatly increase CNG fueling capacity. However, this would require tripling or quadrupling the number of CNG tanks currently installed in vehicles like the dual-fuel Dodge Ram, which would add so much weight and take up so much space in the pickup bed that it would be completely unusable for the work fleets that depend on these vehicles. Once again, the current requirement forces automakers to make changes that would increase costs and reduce market acceptance in order to receive full regulatory benefits.

Allowing all NGVs to receive the full utility factor credit for CNG use would remove an unnecessary, ineffective, and arbitrary regulatory impediment to the development of this crucial market segment for stimulating growth in the wider NGV industry.

Summary and Recommendations

Because dual-fuel NGVs are critical for market development and consumer acceptance, and because the agencies should strive to be consistently technology-neutral in their incentives, the unique requirements for dual-fuel NGVs to receive credits based on utility factor calculations should be eliminated.

- Remove the utility factor requirements for a 2:1 ratio of CNG-to-gasoline range, as well as the requirement for dual-fuel NGVs to only use gasoline when the CNG tank is empty.
    - This goal could be achieved by deleting the requirements contained in 40 C.F.R. § 600.510–12, *Calculation of average fuel economy and average carbon-related exhaust emissions*, part (c)(2)(vii)(B) for fuel economy and (j)(2)(vii)(B) for emissions.

Advanced NGV Technologies Promise Best Emissions Path For ICEs

Issues Addressed:

- *The impact of the standards on advanced fuels technology, including but not limited to the potential for high-octane blends*
- *The impact of the standards on compliance with other air quality standards;*
- *The availability of realistic technological concepts for improving efficiency in automobiles that consumers demand, as well as any indirect impacts on emissions;*

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Going beyond today's NGV technology, the agencies should consider the enormous untapped potential of natural gas to deliver even greater environmental and fuel economy benefits in the future. As the highest-octane, cleanest hydrocarbon fuel, natural gas has very favorable physical properties for unsurpassed performance from an internal combustion engine – if automakers are sufficiently incentivized to invest in developing this fuel to its full potential.

Natural gas has 130 octane, far beyond what gasoline – even ethanol-blended gasoline – can provide. In the "Advancing Technologies for America's Transportation Future" study, the NPC projected that this could yield fuel economy up to double that of conventional vehicles when combined with direct injection technologies that fully utilize the properties of CNG.[36] The leading CNG conversion company Westport Innovations is already investigating the potential for natural gas-fueled advanced powertrains that exploit these properties for pickup trucks, with a turbocharged direct injection platform that could reduce carbon emissions by at least 30%.[37]

The potential environmental benefits of CNG aren't limited to greenhouse gases. In 2015, Cummins Westport International (CWI) introduced a heavy-duty CNG engine that was the first engine of any kind to meet the California Air Resources Board (CARB) optional low-NOx emission standard of 0.02 g/bhp-hr NOx – 90% below the 2010 EPA certification level.[38] Owing to the inherently cleaner chemistry of natural gas compared to petroleum-based fuels, similar improvements in performance for NOx emissions could likely be achieved for light-duty vehicles given sufficient automaker interest and investment. While NOx emissions are much lower for gasoline-fueled vehicles compared to diesel vehicles, they are still significant, making this a major untapped opportunity to address smog-forming emissions on our roads.

Agency staff should study the potential of advanced technology to further improve the emissions profile of NGVs, in the same in-depth manner that it has investigated the current and future state of EV and FCV technology. Furthermore, it should incorporate this potential in its assessment of the "game-changing" potential of NGVs as justification for strong incentives.

Summary and Recommendations

[36] Report, NATIONAL PETROLEUM COUNCIL, *Advancing Technology for America's Transportation* (2012), http://www.npc.org/reports/trans.html.
[37] *Methane: The Performance Fuel*, WESTPORT INNOVATIONS (October 2015) https://cleancities.energy.gov/files/u/news_events/document/document_url/128/Brad_Douville__Westport_NGVTF_.pdf
[38] *Game-Changer: Next Generation Heavy Duty Natural Gas Engines Fueled By Renewable Natural Gas*, GLADSTEIN, NEANDROSS AND ASSOCIATES (May 2016), http://ngvgamechanger.com/pdfs/GameChanger_FullReport.pdf

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Because of the high-octane, low-emission properties of natural gas, the agencies should fully study the ability of advanced NGV technologies to further reduce CO2 and smog-forming pollutants and incorporate the results into regulatory incentives and long-term target setting.

- The ability of NGVs to deliver unsurpassed fuel economy for an ICE vehicle should be used as a further rationale for returning to the use of the "0.15 divisor" for calculating NGV emissions, as discussed in the above section on RNG.

"Bridge to Hydrogen" Needed More Than Ever

Issues Addressed:
- *The availability and effectiveness of technology, and the appropriate lead time for introduction of technology*
- *Any relevant information in light of newly available information.*

In awarding advanced technology multiplier incentives to NGVs, the original light-duty vehicle rulemaking in 2012 recognized that there are numerous technical synergies between the development and commercialization of NGVs and hydrogen fuel cell electric vehicles (FCVs) owing to the physical similarities between methane and hydrogen. The agencies wrote that "CNG investments have the potential to facilitate the introduction of hydrogen FCVs in several respects," including innovations in advanced storage materials and tube trailer designs, improved designs for compressors and fuel dispensers, and on-site production of hydrogen from natural gas feedstock. VNG helped to lay out this rationale in a white paper, "NGVs: An Essential Bridge to Hydrogen," commissioned from the consultancy Energy Futures.[39]

Since 2012, the FCV industry has taken its first steps towards commercialization, with Toyota, Honda, and Hyundai each offering models for the U.S. market. The TAR was cautiously optimistic about the uptake of these technologies, with an estimated 125,000 FCVs deployed in California by 2025 thanks to the Zero Emissions Vehicle (ZEV) mandate. However, this does not mean they are fully commercial technologies; indeed, it means that the need for NGV synergies to accelerate the development of this market has been elevated from the realm of the theoretical to the practical. The need is particularly urgent in the area of hydrogen fueling infrastructure, as the TAR estimated that hydrogen fuel demand could begin to outpace infrastructure availability as early as 2019 and as late as 2026.

As noted in the original rulemaking, some of the strongest synergies between these fuels are in the area of infrastructure development. Both CNG and hydrogen fueling stations require the same types of equipment, including compressors, high-pressure storage tanks, and gaseous fuel dispensers. Shared standards, equipment designs, production and operational economies

[39] *Natural Gas: An Essential Bridge to Hydrogen Fuel Cell Vehicles,* ENERGY FUTURES (2011) http://vng.co/wp-content/uploads/2012/05/Natural-Gas-An-Essential-Bridge-To-Hydrogen-Fuel-Cell-Vehicles.pdf

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of scale, and technology innovations in this area could simultaneously drive down costs for both fuels. The September 2014 report "Transitioning the Transportation Sector: Exploring the Intersection of Hydrogen Fuel Cell and Natural Gas Vehicles" by the Sandia National Laboratory[40] goes further, with a concept design for a combined hydrogen and natural gas fueling station that "could improve operational expenditures and also take advantage of common supply chains."

The TAR also noted that "implementation of renewable hydrogen sourcing has posed a financial challenge" for stations developed to date, despite a minimum renewable content of 33% to receive grants from the California Energy Commission and greater incentives for 100% renewable hydrogen stations. RNG is an ideal feedstock for renewable hydrogen production via steam methane reforming (SMR) technology, but the market for FCVs is currently too small to drive widespread development of these resources. As discussed earlier in these comments, increasing the deployment of RNG-fueled NGVs is key to building the market and growing demand for this ultra-low GHG fuel in the near term, ensuring sufficient supplies of RNG for renewable hydrogen production in the longer term.

Finally, these synergies may also yield benefits in the opposite direction, with advances in hydrogen improving the emissions profile of NGVs. The TAR recognizes the potential benefits of power-to-gas applications, in which large-scale wind and solar generation can be used to create hydrogen for blending into natural gas pipelines. While it is discussed in the context of reducing the lifecycle emissions of hydrogen production, this is also clearly relevant to reducing the lifecycle emissions of CNG. The 2013 report "Blending Hydrogen into Natural Gas Pipeline Networks" by the National Renewable Energy Laboratory[41] estimates that natural gas pipelines could accommodate blends of 5-20% hydrogen content with no technical changes by end users (e.g. NGVs), which would not only reduce the overall carbon content of natural gas but also reduce methane leakage from the pipeline system (since hydrogen, as a lighter molecule, would escape from leaks first and 'crowd out' methane).

The NREL report notes that "conceivably, a credit trading system could apply to natural gas with a specified blend content of renewable hydrogen, paralleling the renewable energy credit system used in the electricity sector." In fact, such programs already exist in the transportation sector: the LCFS and RFS programs both allow for the addition of new low-carbon and renewable fuel pathways, and renewable hydrogen-enriched natural gas sold as fuel for NGVs could readily fit within these schema. As with RNG, NGVs can play a crucial role in building this

[40] *Transitioning the Transportation Sector: Exploring the Intersection of Hydrogen Fuel Cell and Natural Gas Vehicles*, SANDIA NATIONAL LABORATORY (2014), https://energy.gov/sites/prod/files/2015/02/f19/2015-01_H2NG-Report-FINAL.pdf

[41] *Blending Hydrogen into Natural Gas Pipeline Networks: A Review of Key Issues*, NATIONAL RENEWABLE ENERGY LABORATORY (2013), http://www1.eere.energy.gov/hydrogenandfuelcells/pdfs/blending_h2_nat_gas_pipeline.pdf

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market in the near term to ensure the availability of renewable, low-emission feedstocks for hydrogen fuel production in the long term.

In all these ways, NGVs could provide much-needed boosts to the development of the FCV industry. On the commercialization side, NGVs will help stimulate adoption of FCVs through lower costs and expanded infrastructure availability, and on the environmental side the expansion of availability of renewable gas feedstocks will maximize the climate benefits of these vehicles. Indeed, NGVs and FCVs should be considered part of the same gaseous fuel pathway and recognized as such in regulations that fully account for and promote the lifecycle benefits of ultra-low GHG gaseous fuel blends.

Summary and Recommendations

The widespread adoption of RNG fueling for NGVs has only increased the synergies between NGVs and FCVs. As such, the agencies should continue to recognize the linkage between these fuels as part of an advanced gaseous fuel pathway for game-changing, long-term emission reductions.

- The mutually-reinforcing ability of both NGVs and FCVs to deliver "game-changing" emission reductions should be used as a further rationale for returning to the use of the "0.15 divisor" for calculating NGV emissions, as discussed in the above section on RNG.

Emissions Solution for Mid-Life Vehicles

Issues Addressed:
- *The impact of the standards on consumer behavior, including but not limited to consumer purchasing behavior and consumer automobile usage behavior.*

Sec. 202(a) of the Clean Air Act requires the agencies to regulate vehicle emissions throughout their useful life, but the current light-duty program only provides incentives for low-emission technologies deployed in *new* vehicles. This is becoming an issue because the past decade has seen a slow, steady increase in the average life of vehicles on our roads, and particularly for light trucks. According to data from the Bureau of Transportation Statistics, the average life of cars on US roads has increased from 9.5 years in 2005 to 11.5 years in 2015[42] - surpassing the 10 year vehicle life currently considered by the agencies.

This trend will likely continue and accelerate if regulations drive up the cost of new vehicles by thousands of dollars, as the agencies themselves have estimated. This will encourage drivers to hold onto their older, less fuel-efficient, and more polluting cars and light trucks for longer and longer, undermining the benefits of the regulations.

[42] *Transportation Energy Databook 2016*, OAK RIDGE NATIONAL LABORATORY, http://cta.ornl.gov/data/index.shtml

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With conventional gasoline cars and trucks, it is essentially impossible to improve the fuel economy and emissions of a given vehicle after it rolls off the assembly line. However, retrofitting existing vehicles to fuel on natural gas has long been a major part of the NGV industry, particularly in states like Oklahoma[43] and Utah[44] that have actively sought to promote the retrofit market. The robust retrofit ecosystem in place for NGVs is fully capable of addressing this market, and the updated certification requirements for remarketed and used vehicles established by EPA in 2012[45] could make this a very cost-effective way to deliver real emissions and petroleum consumption benefits.

While expanding the rules to include emission and petroleum reductions from vehicles that have already been sold is novel, the environmental and energy security benefits that would result are just as meaningful as those stemming from sales of cleaner, more efficient new vehicles.

One way to incentivize retrofits of existing vehicles would be to allow EPA-certified conversion companies to "opt in" to the regulation for the purpose of generating credits for every vehicle they retrofit to operate on natural gas. These credits would be pro-rated based on the vehicle's projected remaining useful life - for instance, a vehicle that is five years old (halfway through the current 10 year/100,000 mile definition of useful life used by the agencies) would receive credits equal to 50% of the emissions benefits of a new NGV, including the "0.15 divisor" and the full-size pickup bonuses proposed in previous sections. The conversion company could then sell the credits to automakers looking to reduce their compliance costs in a given vehicle category.

Incentives for the development of the aftermarket upfit and retrofit ecosystem could also be incorporated into regulations for new vehicles, by including credits for CNG "prep packages" in the off-cycle credit program. For instance, the previously-mentioned 2016 Ford F-150 pickup has a CNG "prep package" including hardened valves, valve seats, pistons and piston rings, which significantly reduces the future cost of upfitting/retrofitting the vehicle for CNG operation.[46] Since this feature increases the likelihood that vehicles will be converted to a low-emission, non-petroleum fuel, it should be included on the off-cycle credit menu.

We encourage the agencies to consider these and other creative solutions to incorporate retrofits and aftermarket upfits into the rules. Doing so would help to counter the environmental and petroleum consumption impacts of increasing vehicle life, encourage closer collaboration between automakers and conversion companies, and improve the rules' cost-effectiveness.

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[43] Jay F. Marks, *CNG vehicle conversion business is booming for Oklahoma company*, THE OKLAHOMAN (Mar. 16, 2012), http://newsok.com/article/3658028.
[44] Clifford Krauss, *Surge in Natural Gas Has Utah Driving Cheaply*, N.Y. TIMES (Aug. 29, 2008), http://www.nytimes.com/2008/08/30/business/30gascars.html.
[45] *Certification and Compliance for Vehicles and Engines*, ENVIRONMENTAL PROTECTION AGENCY, https://www3.epa.gov/otaq/consumer/fuels/altfuels/altfuels.htm.
[46] *First Compressed Natural Gas and Propane-Capable 2016 Ford F-150 Rolls Off The Line At Kansas City*, FORD MOTOR CO. (Dec. 9, 2015), https://media.ford.com/content/fordmedia/fna/us/en/news/2015/12/09/first-compressed-natural-gas-and-propane-capable-2016-ford-f-150.html.

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Summary and Recommendations

NGVs offer a unique, proven pathway to reducing the emissions and petroleum consumption of the existing vehicle fleet, which is likely to be a growing issue as vehicle lifespans continue to be extended. Accordingly, the existing ecosystem of NGV conversion companies (as exemplified by states like Oklahoma and Utah) as well as OEMs should benefit from regulatory incentives for serving this important potential market.

- Allow EPA-certified converters to "opt in" to the program and generate credits for CNG retrofits and upfits that can subsequently be sold to automakers.

- Provide emission credits for CNG "prep packages" that reduce the costs of subsequent conversion to natural gas, as part of the off-cycle credit technologies listed at 40 C.F.R. § 86.1869–12, *CO_2 credits for off-cycle CO_2-reducing technologies.*

Addressing the Threat of Petroleum Dependence

Issues Addressed:

- *The cost on the producers or purchasers of new motor vehicles or new motor vehicle engines*
- *The impact of the standards on consumer behavior, including but not limited to consumer purchasing behavior and consumer automobile usage behavior (e.g. impacts on rebound, fleet turnover, consumer welfare effects, etc.)*
- *The impact of the standards on the automobile industry*

While EPA's emission regulations under the Clean Air Act serve an important purpose, they currently overshadow the original reason that Congress created the CAFE program in 1975: to reduce America's dependence on the petroleum fuels. The Energy Policy and Conservation Act was a direct response by lawmakers to the catastrophic economic and geopolitical effects of the 1973 oil crisis, but this purpose should also be fresh in the minds of today's policymakers and regulators. Like virtually every other economic recession, the oil price spike of 2007 is widely regarded as triggering the Great Recession in 2008, which devastated the global economy and cost over a hundred thousand jobs in the automotive sector as Chrysler and GM went into bankruptcy.[47]

Much more recently, Hurricane Harvey's devastation seriously disrupted the nation's gasoline fuel supplies[48] – a reminder (along with Superstorm Sandy in 2012[49]) that our dependency on one fuel source poses inherent risks beyond political or economic events.

[47] James Hamilton, "Oil Prices and the Economic Downturn." Testimony Prepared for the Joint Economic Committee of the U.S. Congress (May 20, 2009), https://www.jec.senate.gov/public/_cache/files/a6fca8ca-4c4f-4006-bca5-67e972dc19e2/hamilton-testimony.pdf

[48] Gaurav Sharma, *Hurricane Harvey Has Morphed Into A Major U.S. Gasoline Supply Disruption Event*, FORBES (August 28, 2017), https://www.forbes.com/sites/gauravsharma/2017/08/28/hurricane-harvey-has-morphed-into-a-major-u-s-gasoline-supply-disruption-event/#319555b72872

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The U.S. shale oil boom of recent years, while welcome, does not change this near-total dependence on petroleum fuels, nor the associated vulnerabilities. Despite increased production and exports, we still import nearly half of the oil consumed in this country.[50] Moreover, regardless of the degree of oil imports, the TAR acknowledges that "the price impacts of an oil disruption anywhere will continue to be transmitted to U.S. markets"[51] because oil is a global commodity. And Middle East and North African countries – which have triggered 8 of the 10 oil price shocks in history, and face significant threats from the rise of ISIS and Saudi/Iranian tensions – still account for 30% of global production, a share that the TAR expects to rise.[52]

Despite this ever-present danger hanging over our country, and despite the original intent of the CAFE rules, the TAR chapter on energy security acknowledges that the present regulations will barely make a dent in this dependence. In 2025, the TAR projects that U.S. oil imports will be reduced by 169,000 barrels a day thanks to the rules – less than 6% of imports, which will continue to *rise*, not fall. And with sales of EVs and FCVs projected to be less than 2% of the total market as late as 2030[53] - and NGV sales not projected at all – there is no expectation for alternative fuels to break oil's stranglehold on the transportation sector.

This does not have to be the case. As discussed in previous sections, NGVs are a proven, feasible solution for petroleum-free transportation, with 22 million on the road worldwide and currently-untapped potential for mass-market adoption here in America. In terms of a resource base, the shale gas revolution has created an enormous supply of domestic fossil natural gas supplies, and potential sources of RNG are found in communities and farms across the country. With this combination of a market-ready technology and an abundant, cleaner fuel supply, there is no reason for regulators to give up and resign the country to an oil-dependent future.

This is why restoring the "0.15 divisor" calculation for NGV emissions and removing other unreasonable restrictions on NGV incentives, as discussed earlier in these comments, is so important: not only is it justified based on the game-changing environmental benefits of RNG, but it also returns the joint EPA/NHTSA program to Congress's original purpose in passing the Energy Policy and Conservation Act as well as the Alternative Motor Fuels Act. By effectively removing Congress's CAFE incentives for NGVs, the current EPA rules create a conflict between environmental progress and America's energy security that does not need to exist.

Summary and Recommendations

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[49] Kate Zernike, *Gasoline Runs Short, Adding Woes to Storm Recovery,* N.Y. TIMES (Nov 1, 2012) http://www.nytimes.com/2012/11/02/nyregion/gasoline-shortages-disrupting-recovery-from-hurricane.html?pagewanted=all

[50] *How much petroleum does the United States import and export?* ENERGY INFORMATION ADMINISTRATION (April 4, 2017). https://www.eia.gov/tools/faqs/faq.php?id=727&t=6

[51] Draft TAR, 10-22

[52] *Id.*

[53] *Id.,* 13-64

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The current rules fail to meaningfully address the massive risks to America's economic prosperity and security posed by our near-total dependence on petroleum fuels in transportation. NGVs have unsurpassed potential to provide a practical solution to this dependence, but the current EPA rules effectively undercut the original Congressional intent of the CAFE program and later Congressional incentives for NGVs by eliminating the "0.15 divisor" from emission calculations.

- The potential for NGVs to provide a mass-market solution for petroleum dependence is one more reason for pursuing the comprehensive agenda of reform for NGV regulations discussed in these comments – and making these reforms effective immediately.

NGV Reform Needed Today for 2017-2021 Targets

Issues Addressed:

- *Whether the light-duty vehicle greenhouse gas standards established for model year 2021 are appropriate.*

In addition to the MTE's original focus on the 2022-2025 standards, EPA has also requested comments on whether the standards for 2021 remain appropriate. As with the 2025 targets, we believe that automakers can indeed deliver these reductions in emissions as well as petroleum consumption – but only if they are provided with appropriate incentives that recognize the contributions that NGVs make to these goals.

For all of the reasons discussed in previous sections, we believe that the challenges of meeting the targets without NGVs pose a fundamental threat to the economic viability of U.S. automakers, and thus to the hundreds of thousands of jobs that they support. And, while this challenge is likely to become dire by 2025, it is likely that it will begin impacting automakers sooner, and potentially within the 2017-2021 timeframe. Moreover, automakers will need time to ramp up their production of NGVs, and infrastructure developers like VNG will similarly need time to build fueling networks to serve the light-duty market.

Thus, EPA's desire to review the 2021 targets is an excellent opportunity to make the recommended reforms to NGV incentives sooner, rather than waiting until 2022-2025. By reforming NGV incentives effective immediately, the industry will have the regulatory certainty needed to make these long-term investments and get to work right away. Given the importance of reducing the risks of petroleum dependence to our environment and the economy, there is simply no reason to wait.

Summary and Recommendations

Because the current disparity between the treatment of NGVs and EVs is so clearly arbitrary and contrary to real-world lifecycle GHG emissions, and because automakers need this compliance flexibility and regulatory certainty in order to confidently invest in NGV production, a reform of NGV incentives should be made effective immediately – without waiting for the 2022-

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2025 period. EPA's review of the 2021 targets as part of this proceeding is an opportunity to do so.

- In the process of reviewing the 2021 targets, the agencies should adopt the recommended changes to NGV incentives discussed in these comments effective immediately.

Conclusion and Summary of Recommendations

Discussions of the future of automotive emissions are too often characterized by pessimism from all sides. On one hand, environmentalists have pushed for a widespread adoption of EVs that the EPA's own projections (e.g. the TAR) show is decades away, with very limited penetration projected through 2025. On the other hand, the auto industry argues that it has no way to keep consumers from buying larger and more-polluting vehicles, nor any way to cost-effectively reduce their emissions. And those hoping for an end to the U.S.'s decades-long vulnerability to shocks from global oil markets have little hope at all.

This picture is so gloomy because NGVs are wrongly absent from the conversation. Proven, practical NGV technology and RNG fuel can benefit light truck drivers and the environment in the near term at competitive costs, and next-generation NGVs - with high-octane engines fueled by both RNG and hydrogen-enriched gas - have the potential to dramatically improve the trajectory of these vehicles for decades to come. And with America's unrivaled gas resources, NGVs also have the potential to finally break our near-total dependence on petroleum-based fuels with an affordable, cleaner, domestically-abundant fuel.

The MTE is a critical opportunity for the agencies to correct this glaring oversight. By seriously studying the promise of NGVs and by including a robust suite of incentives for their deployment comparable to those provided to EVs, the agencies can offer a compromise to please all sides. The existing targets for 2025 can be maintained as environmentalists wish; automakers can have an expanded set of compliance pathways that address their area of biggest need - light trucks and full-size pickups; and individual consumers get the vehicles they want and need while reducing petroleum dependence and environmental impacts at a reasonable cost.

In doing so, the agencies can deliver a win-win-win for America in line with the "pro-environment, pro-growth" philosophy espoused by this Administration.[54] VNG looks forward to working with the agencies as the MTE process continues to create a final rule that reduces emissions and petroleum dependence while boosting the domestic economy through maximizing our country's unsurpassed traditional fossil and renewable natural gas resources.

[54] *EPA chief: Trump's energy order sends 'pro-growth, pro-environment message'*, Fox News (Mar. 29, 2017), http://www.foxnews.com/politics/2017/03/29/epa-chief-trumps-energy-order-sends-pro-growth-pro-environment-message.html.

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As a final summary, we recommend the following changes to the rules:

- NGV emissions calculations should return to the "0.15" divisor effective immediately, with emissions calculated as 85% below a gasoline vehicle. This is both justified by the real-world emissions benefits of RNG and is consistent with the CAFE program. The potential for future improvements to NGV emissions from advanced engine technologies, as well as synergies with hydrogen FCVs, provides further justification for this incentive.
    - We recommend reinstating language from the MY 2011-2016 regulations under 40 C.F.R. § 600.510–12, *Calculation of average fuel economy and average carbon-related exhaust emissions*: "For natural gas-fueled model types . . . the carbon-related exhaust emissions value calculated for that model type in accordance with paragraph (b)(2) of this section multiplied by 0.15 and rounded to the nearest gram per mile, except that manufacturers complying with the fleet averaging option for N_2O and CH_4 as allowed under § 86.1818 of this chapter must perform this calculation such that N_2O and CH_4 values are not multiplied by 0.15."
- Offer a "Natural Gas Pickup" incentive similar to current hybrid-electric and "performance-based" pickup credits; however, for the natural gas pickup credit, minimum deployment thresholds should be eliminated to reflect the greater market challenges faced by NGVs - since, unlike hybrid-electrics, they use an alternative fuel.
    - This goal could be accomplished by inserting a new section (c) under 40 C.F.R. § 86.1870–12, *CO_2 credits for qualifying full-size pickup trucks*, titled "Credits for implementation of natural gas technology." The structure of these credits would be similar to those for sections (a) and (b), but with reduced or eliminated requirements for the "required minimum percent of full size pickup trucks."
- Remove the utility factor requirements for a 2:1 ratio of CNG-to-gasoline range, as well as the requirement for dual-fuel NGVs to only use gasoline when the CNG tank is empty.
    - This could be achieved by deleting the requirements in 40 C.F.R. § 600.510–12, *Calculation of average fuel economy and average carbon-related exhaust emissions*, part (c)(2)(vii)(B) for fuel economy and (j)(2)(vii)(B) for emissions.
- Incorporate the potential for use of natural gas when setting targets for practical, achievable emissions improvements for light trucks and full-size pickups. Modeling used to set achievable emissions curves for pickups and light trucks should include natural

gas as a proven technology at costs based on high-volume adoption, not their current incremental costs at low production volumes.

- Allow EPA-certified converters to "opt in" to the program and generate credits for CNG retrofits and upfits that can subsequently be sold to automakers.

- Provide emission credits for CNG "prep packages" that reduce the costs of subsequent conversion to natural gas, as part of the off-cycle credit technologies listed at 40 C.F.R. § 86.1869–12, *CO_2 credits for off-cycle CO_2-reducing technologies.*

Respectfully submitted,

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Message

From: Atkinson, Emily [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=BB2155ADEF6A44AEA9410741F0C01D27-ATKINSON, EMILY]
Sent: 1/18/2018 4:08:41 PM
To: Laurie Holmes [lholmes@mema.org]
CC: Lewis, Josh [Lewis.Josh@epa.gov]
BCC: Atkinson, Emily [Atkinson.Emily@epa.gov]
Subject: RE: Auto Suppliers Meeting Request on the Midterm Evaluation for Vehicle GHG Standards

Hi Laurie,

It looks like Bill Wehrum could be available for a 45 minute in person meeting on Monday, February 5 at 4:15pm.

Please advise if this could work on your end.

Emily

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Laurie Holmes [mailto:lholmes@mema.org]
Sent: Wednesday, January 17, 2018 10:34 AM
To: Lewis, Josh <Lewis.Josh@epa.gov>
Cc: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: Auto Suppliers Meeting Request on the Midterm Evaluation for Vehicle GHG Standards

Josh,
In addition to the week of the 29th we could also do Monday, February 5 or Tuesday, February 6 before 1.
Let me know if you need additional date ranges to work with.
Best,
Laurie

From: Lewis, Josh [mailto:Lewis.Josh@epa.gov]
Sent: Friday, January 12, 2018 2:16 PM
To: Laurie Holmes <lholmes@mema.org>; Catherine Boland <cboland@MEMA.ORG>
Cc: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: FW: Auto Suppliers Meeting Request on the Midterm Evaluation for Vehicle GHG Standards

+ Emily and – Bill.

Is there a rough date or dates you were looking to come in?

Josh Lewis
Chief of Staff

EPA/Office of Air and Radiation
Office: 202 564 2095
[redacted]

From: Laurie Holmes [mailto:lholmes@mema.org]
Sent: Friday, January 12, 2018 10:56 AM
To: Wehrum, Bill <Wehrum.Bill@epa.gov>
Cc: Catherine Boland <cboland@MEMA.ORG>; Lewis, Josh <Lewis.Josh@epa.gov>
Subject: Auto Suppliers Meeting Request on the Midterm Evaluation for Vehicle GHG Standards

Bill, Thank you so much.
Josh, Look forward to hearing from you.

From: Wehrum, Bill [mailto:Wehrum.Bill@epa.gov]
Sent: Friday, January 12, 2018 7:38 AM
To: Laurie Holmes <lholmes@mema.org>
Cc: Catherine Boland <cboland@MEMA.ORG>; Lewis, Josh <Lewis.Josh@epa.gov>
Subject: Re: Auto Suppliers Meeting Request on the Midterm Evaluation for Vehicle GHG Standards

Hi Laurie. I'd be happy to talk with you. I've copied my chief of staff, Josh Lewis, who can help coordinate.

Bill Wehrum
Assistant Administrator
Office of Air and Radiation
U.S. Environmental Protection Agency
(202) 564-7404

On Jan 11, 2018, at 1:33 PM, Laurie Holmes <lholmes@mema.org> wrote:

> Bill:
> MEMA would like to request a meeting to discuss the midterm evaluation on the vehicle greenhouse gas emission standards.
>
> MEMA represents more than 1,000 companies that manufacture components, systems and materials for motor vehicles and represents the largest sector of manufacturing jobs in the U.S. Since auto suppliers play a major role in developing the technologies necessary for vehicle emission reduction, suppliers have a strong interest in the midterm evaluation and the standards. Our position is also not identical to the vehicle manufactures on the issue.
>
> It would be helpful if we could discuss with you the impact the program has had and will have on our industry.
>
> Look forward to hearing from you.
>
> Laurie Holmes
> Senior Director, Environmental Policy
> Motor & Equipment Manufacturers Association
> 1030 15th Street NW, Suite 500 East
> Washington, DC 20005
> Direct: 202-312-9247

[redacted]

<image001.png>

April 10-11 | Washington, DC

www.mema.org/dcsummit

Message

From: Atkinson, Emily [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=BB2155ADEF6A44AEA9410741F0C01D27-ATKINSON, EMILY]
Sent: 2/5/2018 7:38:19 PM
To: Lauren Wilk [lwilk@aluminum.org]
BCC: Atkinson, Emily [Atkinson.Emily@epa.gov]
Subject: Confirmed 3/2 at 3pm: Aluminum Association Meeting Request

Hi Lauren,
You are confirmed for 45 minute meeting on Friday, March 2, 2018 at 3:00pm with Bill Wehrum.
Directions and procedures to 1200 Pennsylvania Avenue NW:

Metro: If you come by Metro get off at the Federal Triangle metro stop. Exit the metro station and go up two sets of escalators to the surface level and turn right. You will see a short staircase and wheelchair ramp leading to a set of glass doors with the EPA logo - that is the William Jefferson Clinton Federal Building, North Entrance.

Taxi: Direct the taxi to drop you off on 12th Street NW, between Constitution and Pennsylvania Avenues, at the elevator for the Federal Triangle metro stop - this is almost exactly half way between the two avenues on 12th Street NW. Facing the building with the EPA logo and American flags, walk toward the building and take the glass door on your right hand side with the escalators going down to the metro on your left – that is the North Lobby of the William Jefferson Clinton building.

Security Procedures: A government issued photo id is required to enter the building and it is suggested you arrive 15 minutes early in order to be cleared and arrive at the meeting room on time. Upon entering the lobby, the meeting attendees will be asked to pass through security and provide a photo ID for entrance. Let the guards know that you were instructed to call 202-564-7404 for a security escort.
Please send me a list of participants in advance of the meeting and feel free to contact me should you need any additional information.

Emily

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Lauren Wilk [mailto:lwilk@aluminum.org]
Sent: Monday, February 05, 2018 12:56 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: RE: Aluminum Association Meeting Request

Thanks, Emily. We'll take the meeting on March 2 at 3pm, and I'll firm up attendees on our end.

Let me know what details you need in advance of the meeting.

Much appreciated!

Lauren

Lauren Wilk
Vice President, Policy & International Trade
The Aluminum Association
1400 Crystal Drive, Suite 430
Arlington, VA 22202
T 703.358.2981 [redacted] F 703.358.2961
JOIN THE CONVERSATION:

From: Atkinson, Emily [mailto:Atkinson.Emily@epa.gov]
Sent: Monday, February 05, 2018 12:48 PM
To: Lauren Wilk <lwilk@aluminum.org>
Subject: RE: Aluminum Association Meeting Request

Hi Lauren,

It looks like Bill Wehrum could be available for a 45 minute meeting on Friday, March 2, 2018 at 3:00pm.

Please advise if this could work on your end.

Emily

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Lauren Wilk [mailto:lwilk@aluminum.org]
Sent: Thursday, February 01, 2018 12:06 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>; Lewis, Josh <Lewis.Josh@epa.gov>
Subject: Aluminum Association Meeting Request

Emily and Josh --

Will Lovett suggested I connect with you on scheduling a meeting with Assistant Administrator Wehrum for a few representatives of the aluminum industry. We have availability on the following dates: February 16, 20, 21, 23, 26, 27, 28 or March 1 (but we can certainly be flexible if an alternative date is necessary).

The Aluminum Association is active with EPA on a number of issues -- and specifically, the members of our Aluminum Transportation Group (ATG) would very much like to hear directly from Mr. Wehrum about the Administration's priorities related to automotive GHG emissions and fuel economy regulations. The ATG represents the Association's member companies that produce aluminum for use in cars and trucks, including Alcoa, Arconic, Novelis, Rio Tinto and others.

The aluminum industry plays a significant role in the automotive supply chain, and the pounds of aluminum content per vehicle has grown by more than 30 percent over the past decade. Driven by that auto sector growth, the aluminum industry has announced or completed U.S. plant expansions and investments of more than $2.6 billion since 2013. Already this year, Novelis announced that it was investing $300 million in a new greenfield automotive finishing facility in Guthrie, Kentucky. The industry is acutely interested in the outcome of the midterm review on vehicle fuel economy, and we have met previously with the White House, OMB, NHTSA, CARB and others on this topic.

I'd be happy to answer any questions or provide additional background, if that's helpful.

Thanks so much,

Lauren

The Aluminum Association

Lauren Wilk
Vice President, Policy & International Trade
The Aluminum Association
1400 Crystal Drive, Suite 430
Arlington, VA 22202
T 703.358.2981 | [redacted] F 703.358.2961
JOIN THE CONVERSATION:

Message

From: Atkinson, Emily [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=BB2155ADEF6A44AEA9410741F0C01D27-ATKINSON, EMILY]
Sent: 2/28/2018 3:42:35 PM
To: Matt Meenan [mmeenan@aluminum.org]; Lauren Wilk [lwilk@aluminum.org]
Subject: RE: Confirmed 3/1 at 4pm: Aluminum Association Meeting Request

Thank you Matt.

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Matt Meenan [mailto:mmeenan@aluminum.org]
Sent: Wednesday, February 28, 2018 10:22 AM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>; Lauren Wilk <lwilk@aluminum.org>
Subject: RE: Confirmed 3/1 at 4pm: Aluminum Association Meeting Request

Thanks, Emily. One small change from the list below. Swapping out a name.

Also my cell is 2[redacted] should you need it.

Thanks,
Matt

- Henry Gordinier, Tri-Arrows
- Ganesh Panneer, Novelis
- Ed Olivares, Constellium (consultant)
- Dan Minwell, Constellium
- Mario Greco, Arconic
- Mike Belwood, Arconic
- Joe Quinn, Aluminum Association
- Matt Meenan, Aluminum Association
- John Fitzpatrick, Stratacomm

From: Atkinson, Emily [mailto:Atkinson.Emily@epa.gov]
Sent: Wednesday, February 28, 2018 10:18 AM
To: Lauren Wilk <lwilk@aluminum.org>
Cc: Matt Meenan <mmeenan@aluminum.org>
Subject: RE: Confirmed 3/1 at 4pm: Aluminum Association Meeting Request

Thank you Lauren!

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Lauren Wilk [mailto:lwilk@aluminum.org]
Sent: Wednesday, February 28, 2018 10:13 AM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Cc: Matt Meenan <mmeenan@aluminum.org>
Subject: RE: Confirmed 3/1 at 4pm: Aluminum Association Meeting Request

Hi, Emily. I wanted to send you a list of attendees for tomorrow's meeting at EPA. My colleague Matt Meenan (copied here) will be with the group, if you need to reach him for any reason. Please let me know if you need any additional information from me in advance of the meeting.

- Henry Gordinier, Tri-Arrows
- Ganesh Panneer, Novelis
- Delphine Dahan-Kocher, Constellium
- Dan Minwell, Constellium
- Mario Greco, Arconic
- Mike Belwood, Arconic
- Joe Quinn, Aluminum Association
- Matt Meenan, Aluminum Association
- John Fitzpatrick, Stratacomm

Much appreciated!

Lauren

The Aluminum Association
Lauren Wilk
Vice President, Policy & International Trade
The Aluminum Association
1400 Crystal Drive, Suite 430
Arlington, VA 22202
T 703.358.2981 | [redacted] F 703.358.2961
JOIN THE CONVERSATION:

From: Atkinson, Emily [mailto:Atkinson.Emily@epa.gov]
Sent: Wednesday, February 07, 2018 3:02 PM
To: Lauren Wilk <lwilk@aluminum.org>
Subject: Confirmed 3/1 at 4pm: Aluminum Association Meeting Request

Hi Lauren,
You are confirmed for 45 minute meeting on Thursday, March 1, 2018 at 4:00pm with Bill Wehrum.
Directions and procedures to 1200 Pennsylvania Avenue NW:

Metro: If you come by Metro get off at the Federal Triangle metro stop. Exit the metro station and go up two sets of escalators to the surface level and turn right. You will see a short staircase and wheelchair ramp leading to a set of glass doors with the EPA logo - that is the William Jefferson Clinton Federal Building, North Entrance.

Taxi: Direct the taxi to drop you off on 12th Street NW, between Constitution and Pennsylvania Avenues, at the elevator for the Federal Triangle metro stop - this is almost exactly half way between the two avenues on 12th Street NW. Facing the building with the EPA logo and American flags, walk toward the building and take the glass door on your right hand side with the escalators going down to the metro on your left – that is the North Lobby of the William Jefferson Clinton building.

Security Procedures: A government issued photo id is required to enter the building and it is suggested you arrive 15 minutes early in order to be cleared and arrive at the meeting room on time. Upon entering the lobby, the meeting attendees will be asked to pass through security and provide a photo ID for entrance. Let the guards know that you were instructed to call 202-564-7404 for a security escort.

Please send me a list of participants in advance of the meeting and feel free to contact me should you need any additional information.

Emily

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Lauren Wilk [mailto:lwilk@aluminum.org]
Sent: Wednesday, February 07, 2018 2:59 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: RE: Confirmed 3/2 at 3pm: Aluminum Association Meeting Request

Thanks so much, Emily. That's perfect.

I'll circle back, closer to the meeting, with a list of attendees. Let me know if you need anything else in the meantime.

Lauren

The Aluminum Association
Lauren Wilk
Vice President, Policy & International Trade
The Aluminum Association
1400 Crystal Drive, Suite 430
Arlington, VA 22202
T 703.358.2981 | [redacted] F 703.358.2961
JOIN THE CONVERSATION:

From: Atkinson, Emily [mailto:Atkinson.Emily@epa.gov]
Sent: Wednesday, February 07, 2018 12:33 PM
To: Lauren Wilk <lwilk@aluminum.org>
Subject: RE: Confirmed 3/2 at 3pm: Aluminum Association Meeting Request

Hi Lauren,

It looks like we could fit this in on Thursday, March 1 at 4:00pm. Let me know if this could work on your end.

Emily

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Lauren Wilk [mailto:lwilk@aluminum.org]
Sent: Wednesday, February 07, 2018 11:01 AM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: RE: Confirmed 3/2 at 3pm: Aluminum Association Meeting Request

Hi, Emily. One of the technical experts I was hoping to bring in for our meeting with Mr. Wehrum will unfortunately be out of the country on Friday 3/2. Is there any chance that Mr. Wehrum would be available to meet on Thursday 3/1, or sometime March 12-16? If not, we'll keep our March 2 meeting and I'll have my colleague prepare his technical materials in advance.

Thanks so much,

Lauren

The Aluminum Association
Lauren Wilk
Vice President, Policy & International Trade
The Aluminum Association
1400 Crystal Drive, Suite 430
Arlington, VA 22202
T 703.358.2981 | [redacted] F 703.358.2961
JOIN THE CONVERSATION:

From: Atkinson, Emily [mailto:Atkinson.Emily@epa.gov]
Sent: Tuesday, February 06, 2018 9:25 AM
To: Lauren Wilk <lwilk@aluminum.org>
Subject: RE: Confirmed 3/2 at 3pm: Aluminum Association Meeting Request

Hi Lauren,

Yes, we could accommodate a group of 8 attending this meeting.

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Lauren Wilk [mailto:lwilk@aluminum.org]
Sent: Monday, February 05, 2018 2:52 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: Re: Confirmed 3/2 at 3pm: Aluminum Association Meeting Request

Thanks, Emily. I appreciate your help in getting this nailed down.

I would like to invite a few member company representatives to join, so I'm curious if there's a hard limit on number of attendees — would 6-8 (as a total group size) be workable?

Best,

Lauren

Lauren Wilk
The Aluminum Association
Office: (703) 358-2981

On Mon, Feb 5, 2018 at 2:38 PM -0500, "Atkinson, Emily" <Atkinson.Emily@epa.gov> wrote:

> Hi Lauren,
> You are confirmed for 45 minute meeting on Friday, March 2, 2018 at 3:00pm with Bill Wehrum.
> Directions and procedures to 1200 Pennsylvania Avenue NW:
>
> Metro: If you come by Metro get off at the Federal Triangle metro stop. Exit the metro station and go up two sets of escalators to the surface level and turn right. You will see a short staircase and wheelchair ramp leading to a set of glass doors with the EPA logo - that is the William Jefferson Clinton Federal Building, North Entrance.
>
> Taxi: Direct the taxi to drop you off on 12th Street NW, between Constitution and Pennsylvania Avenues, at the elevator for the Federal Triangle metro stop - this is almost exactly half way between the two avenues on 12th Street NW. Facing the building with the EPA logo and American flags, walk toward the building and take the glass door on your right hand side with the escalators going down to the metro on your left – that is the North Lobby of the William Jefferson Clinton building.
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> Please send me a list of participants in advance of the meeting and feel free to contact me should you need any additional information.

Emily

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Lauren Wilk [mailto:lwilk@aluminum.org]
Sent: Monday, February 05, 2018 12:56 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: RE: Aluminum Association Meeting Request

Thanks, Emily. We'll take the meeting on March 2 at 3pm, and I'll firm up attendees on our end.

Let me know what details you need in advance of the meeting.

Much appreciated!

Lauren

The Aluminum Association
Lauren Wilk
Vice President, Policy & International Trade
The Aluminum Association
1400 Crystal Drive, Suite 430
Arlington, VA 22202
T 703.358.2981 [redacted] F 703.358.2961
JOIN THE CONVERSATION:

From: Atkinson, Emily [mailto:Atkinson.Emily@epa.gov]
Sent: Monday, February 05, 2018 12:48 PM
To: Lauren Wilk <lwilk@aluminum.org>
Subject: RE: Aluminum Association Meeting Request

Hi Lauren,

It looks like Bill Wehrum could be available for a 45 minute meeting on Friday, March 2, 2018 at 3:00pm.

Please advise if this could work on your end.

Emily

Emily Atkinson
Management Analyst/Office Manager

Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Lauren Wilk [mailto:lwilk@aluminum.org]
Sent: Thursday, February 01, 2018 12:06 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>; Lewis, Josh <Lewis.Josh@epa.gov>
Subject: Aluminum Association Meeting Request

Emily and Josh –

Will Lovett suggested I connect with you on scheduling a meeting with Assistant Administrator Wehrum for a few representatives of the aluminum industry. We have availability on the following dates: February 16, 20, 21, 23, 26, 27, 28 or March 1 (but we can certainly be flexible if an alternative date is necessary).

The Aluminum Association is active with EPA on a number of issues – and specifically, the members of our Aluminum Transportation Group (ATG) would very much like to hear directly from Mr. Wehrum about the Administration's priorities related to automotive GHG emissions and fuel economy regulations. The ATG represents the Association's member companies that produce aluminum for use in cars and trucks, including Alcoa, Arconic, Novelis, Rio Tinto and others.

The aluminum industry plays a significant role in the automotive supply chain, and the pounds of aluminum content per vehicle has grown by more than 30 percent over the past decade. Driven by that auto sector growth, the aluminum industry has announced or completed U.S. plant expansions and investments of more than $2.6 billion since 2013. Already this year, Novelis announced that it was investing $300 million in a new greenfield automotive finishing facility in Guthrie, Kentucky. The industry is acutely interested in the outcome of the midterm review on vehicle fuel economy, and we have met previously with the White House, OMB, NHTSA, CARB and others on this topic.

I'd be happy to answer any questions or provide additional background, if that's helpful.

Thanks so much,

Lauren

The Aluminum Association
Lauren Wilk
Vice President, Policy & International Trade
The Aluminum Association
1400 Crystal Drive, Suite 430
Arlington, VA 22202
T 703.358.2981 | [redacted] F 703.358.2961
JOIN THE CONVERSATION:

Appointment

From: Atkinson, Emily [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=BB2155ADEF6A44AEA9410741F0C01D27-ATKINSON, EMILY]
Sent: 12/12/2017 5:45:50 PM
To: Woods, Clinton [woods.clinton@epa.gov]

Subject: Meet with National Coalition for Advanced Transportation (NCAT) (Confirmed)
Attachments: RE: Request for Meeting; Confirmed 12/13 at 4pm: Request for Meeting
Location: WJC-N 5400 + Video with AA [redacted]

Start: 12/13/2017 9:00:00 PM
End: 12/13/2017 9:45:00 PM
Show Time As: Tentative

To: Bill Wehrum, Mandy Gunasekara, David Harlow, Alex Dominguez, Ben Hengst, Tia Sutton, Chris Grundler, Bill Charmley, Robin Moran, and Mike Olechiw, Clint Woods
Outside Attendees (in person): TBD

Confirmed 12/13 at 4pm: Request for...

RE: Request for Meeting

Message

From: Atkinson, Emily [Atkinson.Emily@epa.gov]
Sent: 11/22/2017 1:49:21 PM
To: Robert.Wyman@LW.com
CC: Loving, Shanita [Loving.Shanita@epa.gov]
Subject: Confirmed 12/13 at 4pm: Request for Meeting

Hi Bob,

You are confirmed for a 45 minute in person meeting on Wednesday, December 13, 2017 at 4:00pm with Bill Wehrum.

Directions and procedures to 1200 Pennsylvania Avenue NW:

Metro: If you come by Metro get off at the Federal Triangle metro stop. Exit the metro station and go up two sets of escalators to the surface level and turn right. You will see a short staircase and wheelchair ramp leading to a set of glass doors with the EPA logo - that is the William Jefferson Clinton Federal Building, North Entrance.

Taxi: Direct the taxi to drop you off on 12th Street NW, between Constitution and Pennsylvania Avenues, at the elevator for the Federal Triangle metro stop - this is almost exactly half way between the two avenues on 12th Street NW. Facing the building with the EPA logo and American flags, walk toward the building and take the glass door on your right hand side with the escalators going down to the metro on your left – that is the North Lobby of the William Jefferson Clinton building.

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Please send me a list of participants in advance of the meeting and feel free to contact me should you need any additional information.

Emily

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Acting Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

-----Original Message-----
From: ROBERT.WYMAN@lw.com [mailto:ROBERT.WYMAN@lw.com]
Sent: Tuesday, November 21, 2017 4:57 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Cc: Loving, Shanita <Loving.Shanita@epa.gov>
Subject: RE: Request for Meeting

Yes, definitely. Thank you.

From: Atkinson, Emily <Atkinson.Emily@epa.gov>
Sent: Tuesday, November 21, 2017 1:48:14 PM
To: Wyman, Robert (LA)
Cc: Loving, Shanita
Subject: RE: Request for Meeting

Hi Bob,

It looks like Bill Wehrum could be available for a 45 minute in person meeting on Wednesday, December 13, 2017 at 4:00pm.

Please advise if this could work on your end.

Thank you.
Emily

Emily Atkinson
Management Analyst/Office Manager

Immediate Office of the Acting Assistant Administrator Office of Air and Radiation, USEPA Room 5412B, 1200 Pennsylvania Avenue NW Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: ROBERT.WYMAN@lw.com [mailto:ROBERT.WYMAN@lw.com]
Sent: Friday, November 17, 2017 6:03 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: Request for Meeting

Emily - thank you for speaking with me by telephone earlier today. I am writing to request a meeting with Bill Wehrum on the subject of the midterm evaluation and the national greenhouse gas emissions standards for motor vehicles. I make this request on behalf of the National Coalition for Advanced Transportation (NCAT).

NCAT is a coalition of leading companies that support electric vehicle and other advanced transportation technologies and related infrastructure, including through: energy supply, transmission and distribution; vehicle and component design and manufacturing; charging infrastructure, battery and other energy-storage technology design, production and implementation; infrastructure engineering and construction; and the movement of passengers, goods and services; among other activities. Prior to our meeting, I will provide a list of NCAT attendees.

If possible, we would like to meet with Mr. Wehrum and appropriate staff, as he determines, on Wednesday, December 13, at any time. Of course, we recognize that his schedule may not permit meeting on this date, in which case we will do our best to accommodate whatever date he selects.

Sincere thanks.

Bob

Robert A. Wyman, Jr.
LATHAM & WATKINS LLP
Email: robert.wyman@lw.com<mailto:robert.wyman@lw.com>

355 South Grand Avenue
Los Angeles, CA 90071-1560
Direct: +1.213.891.8346

555 Eleventh Street, NW
Washington, DC 20004-1304
Direct: +1.202.654.7119

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Latham & Watkins LLP

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Latham & Watkins LLP or any of its affiliates may monitor electronic communications sent or received by our networks in order to protect our business and verify compliance with our policies and relevant legal requirements.

Latham & Watkins LLP

Message

From: Hengst, Benjamin [Hengst.Benjamin@epa.gov]
Sent: 11/21/2017 10:07:15 PM
To: Atkinson, Emily [Atkinson.Emily@epa.gov]; Sutton, Tia [sutton.tia@epa.gov]
CC: Lewis, Josh [Lewis.Josh@epa.gov]
Subject: RE: Request for Meeting

Thanks. Please add Bill Charmley, Robin Moran, and Mike Olechiw to the invite.

I don't think a pre-brief will be needed but I can ask the team to put a backgrounder together that we can send in advance.

Ben

From: Atkinson, Emily
Sent: Tuesday, November 21, 2017 4:50 PM
To: Hengst, Benjamin <Hengst.Benjamin@epa.gov>; Sutton, Tia <sutton.tia@epa.gov>
Cc: Lewis, Josh <Lewis.Josh@epa.gov>
Subject: FW: Request for Meeting

Hi Ben and Tia,

Checking in on this meeting . . . . Bill has said he will do it and I've put a tentative hold on for 12/13 at 4pm. Please advise who should be included on the invite – right now I just have you two and Chris + the OAR political team.

And let me know if you want time for a prep meeting with Bill.

Thanks.
Emily

From: ROBERT.WYMAN@lw.com [mailto:ROBERT.WYMAN@lw.com]
Sent: Friday, November 17, 2017 6:03 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: Request for Meeting

Emily – thank you for speaking with me by telephone earlier today. I am writing to request a meeting with Bill Wehrum on the subject of the midterm evaluation and the national greenhouse gas emissions standards for motor vehicles. I make this request on behalf of the ***National Coalition for Advanced Transportation (NCAT)***.

NCAT is a coalition of leading companies that support electric vehicle and other advanced transportation technologies and related infrastructure, including through: energy supply, transmission and distribution; vehicle and component design and manufacturing; charging infrastructure, battery and other energy-storage technology design, production and implementation; infrastructure engineering and construction; and the movement of passengers, goods and services; among other activities. Prior to our meeting, I will provide a list of ***NCAT*** attendees.

If possible, we would like to meet with Mr. Wehrum and appropriate staff, as he determines, on Wednesday, December 13, at any time. Of course, we recognize that his schedule may not permit meeting on this date, in which case we will do our best to accommodate whatever date he selects.

Sincere thanks.

Bob

Robert A. Wyman, Jr.
LATHAM & WATKINS LLP
Email: robert.wyman@lw.com

355 South Grand Avenue
Los Angeles, CA 90071-1560
Direct: +1.213.891.8346

555 Eleventh Street, NW
Washington, DC 20004-1304
Direct: +1.202.654.7119

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Latham & Watkins LLP

Message

From: Atkinson, Emily [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=BB2155ADEF6A44AEA9410741F0C01D27-ATKINSON, EMILY]
Sent: 1/9/2018 3:53:08 PM
To: jtucker@AKINGUMP.COM
CC: Feeley, Drew (Robert) [Feeley.Drew@epa.gov]; Lewis, Josh [Lewis.Josh@epa.gov]
BCC: Atkinson, Emily [Atkinson.Emily@epa.gov]
Subject: FW: Meeting Request re: Natural Gas Vehicles

Hi Jamie,

It looks like Bill Wehrum could be available for a 45 minute meeting on Tuesday, January 30, 2018 at 4:00pm.

Please advise if this could work on your end.

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Tucker, Jamie [mailto:jtucker@AKINGUMP.COM]
Sent: Wednesday, January 03, 2018 3:21 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>; Lewis, Josh <Lewis.Josh@epa.gov>
Cc: Feeley, Drew (Robert) <Feeley.Drew@epa.gov>
Subject: Meeting Request re: Natural Gas Vehicles

Emily/Josh - On behalf of VNG.Co, a natural gas vehicle fueling infrastructure company, we wanted to see if Assistant Administrator Wehrum would be available this month to discuss a number of administrative and legislative policy changes the company is advocating to promote the adoption of natural gas vehicles largely by leveling the playing field with electric vehicles. We have had recent conversations with the Office of Policy as well as the Office of Transportation and Air Quality to discuss these proposals as well as with staff at the White House and Department of Transportation. With Mr. Wehrum's confirmation we would like to fold him into the conversation as well.

Natural gas vehicles provide a cost effective and additional pathway for automaker emissions compliance while preserving the products' consumer appeal, and are therefore worthy of being included in a portfolio of solutions along with EVs to achieve the objectives.

Among the key advantages of the proposed regulatory changes is the benefit to achieving emissions reductions in the light-duty truck category which accounts for 64% of new vehicle purchases (and are responsible for even greater amounts of fuel use and pollution if you take into account the differential in fuel economy between light-duty trucks and passenger cars), and for which there is not a viable electrification solution.

Specifically, we would encourage the Administration to consider:

- **Restoring the 0.15 "divisor"** in EPA's compliance calculations, equivalent to NHTSA's statutory Petroleum Equivalency Factor that counts a gallon-equivalent of natural gas as 0.15 gallons of gasoline. The previous Administration ended this powerful incentive while simultaneously providing electric vehicles with additional

emissions incentives on the hope that EVs would be "game changers." The game has now changed for NGVs. The shale revolution that has occurred since the current rules were set as well the development of Renewable Natural Gas as the lowest carbon vehicle fuel are true game changers that strongly justify returning to the 0.15 divisor.

The powerful and well-justified incentive of the 0.15 divisor would be complemented and made even more effective by additional changes including:

- **Eliminating range requirements on bi-fuel NGVs** that results in an impractical natural gas tank size requirement that is twice the size of the gasoline tank and costly design requirements for NGVs, whereas no such range requirements exists for hybrid electric vehicles. This is the most important regulatory change as a complement to the 0.15 divisor of the three.

- **Providing NGV pick-ups with the bonus credits** provided to "strong electric hybrid pick-ups" and **eliminating the existing minimum 10% deployment threshold** to qualify for pickup bonus credits.

- **Establishing a new incentive to encourage retrofitting existing gasoline and diesel vehicles to run on natural gas**, something that isn't feasible for electric drives but which will reduce emissions by the existing fleet of vehicles

Enclosed for your further consideration are our Midterm Evaluation comments as well as information outlining the rationale for the recommended regulatory changes.

Thank you for your consideration.

Jamie

Jamie Tucker
AKIN GUMP STRAUSS HAUER & FELD LLP
1333 New Hampshire Avenue, N.W. | Washington, DC 20036-1564 | USA | Direct: +1 202.887.4279 | Internal: 24279
Fax: +1 202.887.4288 | jtucker@akingump.com | akingump.com | Bio

The information contained in this e-mail message is intended only for the personal and confidential use of the recipient(s) named above. If you have received this communication in error, please notify us immediately by e-mail, and delete the original message.

Message

From: Atkinson, Emily [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=BB2155ADEF6A44AEA9410741F0C01D27-ATKINSON, EMILY]
Sent: 2/28/2018 3:18:09 PM
To: Lauren Wilk [lwilk@aluminum.org]
CC: Matt Meenan [mmeenan@aluminum.org]
Subject: RE: Confirmed 3/1 at 4pm: Aluminum Association Meeting Request

Thank you Lauren!

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Lauren Wilk [mailto:lwilk@aluminum.org]
Sent: Wednesday, February 28, 2018 10:13 AM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Cc: Matt Meenan <mmeenan@aluminum.org>
Subject: RE: Confirmed 3/1 at 4pm: Aluminum Association Meeting Request

Hi, Emily. I wanted to send you a list of attendees for tomorrow's meeting at EPA. My colleague Matt Meenan (copied here) will be with the group, if you need to reach him for any reason. Please let me know if you need any additional information from me in advance of the meeting.

- Henry Gordinier, Tri-Arrows
- Ganesh Panneer, Novelis
- Delphine Dahan-Kocher, Constellium
- Dan Minwell, Constellium
- Mario Greco, Arconic
- Mike Belwood, Arconic
- Joe Quinn, Aluminum Association
- Matt Meenan, Aluminum Association
- John Fitzpatrick, Stratacomm

Much appreciated!

Lauren

The Aluminum Association
Lauren Wilk
Vice President, Policy & International Trade
The Aluminum Association
1400 Crystal Drive, Suite 430
Arlington, VA 22202

T 703.358.2981 | C 913.244.2796| F 703.358.2961
JOIN THE CONVERSATION:

From: Atkinson, Emily [mailto:Atkinson.Emily@epa.gov]
Sent: Wednesday, February 07, 2018 3:02 PM
To: Lauren Wilk <lwilk@aluminum.org>
Subject: Confirmed 3/1 at 4pm: Aluminum Association Meeting Request

Hi Lauren,
You are confirmed for 45 minute meeting on Thursday, March 1, 2018 at 4:00pm with Bill Wehrum.
Directions and procedures to 1200 Pennsylvania Avenue NW:

Metro: If you come by Metro get off at the Federal Triangle metro stop. Exit the metro station and go up two sets of escalators to the surface level and turn right. You will see a short staircase and wheelchair ramp leading to a set of glass doors with the EPA logo - that is the William Jefferson Clinton Federal Building, North Entrance.

Taxi: Direct the taxi to drop you off on 12th Street NW, between Constitution and Pennsylvania Avenues, at the elevator for the Federal Triangle metro stop - this is almost exactly half way between the two avenues on 12th Street NW. Facing the building with the EPA logo and American flags, walk toward the building and take the glass door on your right hand side with the escalators going down to the metro on your left – that is the North Lobby of the William Jefferson Clinton building.

Security Procedures: A government issued photo id is required to enter the building and it is suggested you arrive 15 minutes early in order to be cleared and arrive at the meeting room on time. Upon entering the lobby, the meeting attendees will be asked to pass through security and provide a photo ID for entrance. Let the guards know that you were instructed to call 202-564-7404 for a security escort.
Please send me a list of participants in advance of the meeting and feel free to contact me should you need any additional information.

Emily

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Lauren Wilk [mailto:lwilk@aluminum.org]
Sent: Wednesday, February 07, 2018 2:59 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: RE: Confirmed 3/2 at 3pm: Aluminum Association Meeting Request

Thanks so much, Emily. That's perfect.

I'll circle back, closer to the meeting, with a list of attendees. Let me know if you need anything else in the meantime.

Lauren

Lauren Wilk
Vice President, Policy & International Trade
The Aluminum Association
1400 Crystal Drive, Suite 430
Arlington, VA 22202
T 703.358.2981 | [redacted] | F 703.358.2961
JOIN THE CONVERSATION:

From: Atkinson, Emily [mailto:Atkinson.Emily@epa.gov]
Sent: Wednesday, February 07, 2018 12:33 PM
To: Lauren Wilk <lwilk@aluminum.org>
Subject: RE: Confirmed 3/2 at 3pm: Aluminum Association Meeting Request

Hi Lauren,

It looks like we could fit this in on Thursday, March 1 at 4:00pm. Let me know if this could work on your end.

Emily

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Lauren Wilk [mailto:lwilk@aluminum.org]
Sent: Wednesday, February 07, 2018 11:01 AM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: RE: Confirmed 3/2 at 3pm: Aluminum Association Meeting Request

Hi, Emily. One of the technical experts I was hoping to bring in for our meeting with Mr. Wehrum will unfortunately be out of the country on Friday 3/2. Is there any chance that Mr. Wehrum would be available to meet on Thursday 3/1, or sometime March 12-16? If not, we'll keep our March 2 meeting and I'll have my colleague prepare his technical materials in advance.

Thanks so much,

Lauren

Lauren Wilk
Vice President, Policy & International Trade
The Aluminum Association
1400 Crystal Drive, Suite 430

Arlington, VA 22202
T 703.358.2981 | [redacted] F 703.358.2961
JOIN THE CONVERSATION:

From: Atkinson, Emily [mailto:Atkinson.Emily@epa.gov]
Sent: Tuesday, February 06, 2018 9:25 AM
To: Lauren Wilk <lwilk@aluminum.org>
Subject: RE: Confirmed 3/2 at 3pm: Aluminum Association Meeting Request

Hi Lauren,

Yes, we could accommodate a group of 8 attending this meeting.

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Lauren Wilk [mailto:lwilk@aluminum.org]
Sent: Monday, February 05, 2018 2:52 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: Re: Confirmed 3/2 at 3pm: Aluminum Association Meeting Request

Thanks, Emily. I appreciate your help in getting this nailed down.

I would like to invite a few member company representatives to join, so I'm curious if there's a hard limit on number of attendees — would 6-8 (as a total group size) be workable?

Best,

Lauren

Lauren Wilk
The Aluminum Association
Office: (703) 358-2981

On Mon, Feb 5, 2018 at 2:38 PM -0500, "Atkinson, Emily" <Atkinson.Emily@epa.gov> wrote:

> Hi Lauren,
> You are confirmed for 45 minute meeting on Friday, March 2, 2018 at 3:00pm with Bill Wehrum.
> Directions and procedures to 1200 Pennsylvania Avenue NW:
>
> > Metro: If you come by Metro get off at the Federal Triangle metro stop. Exit the metro station and go up two sets of escalators to the surface level and turn right. You will see a short staircase and wheelchair ramp leading to a set of glass doors with the EPA logo - that is the William Jefferson Clinton Federal Building, North Entrance.

Taxi: Direct the taxi to drop you off on 12th Street NW, between Constitution and Pennsylvania Avenues, at the elevator for the Federal Triangle metro stop - this is almost exactly half way between the two avenues on 12th Street NW. Facing the building with the EPA logo and American flags, walk toward the building and take the glass door on your right hand side with the escalators going down to the metro on your left – that is the North Lobby of the William Jefferson Clinton building.

Security Procedures: A government issued photo id is required to enter the building and it is suggested you arrive 15 minutes early in order to be cleared and arrive at the meeting room on time. Upon entering the lobby, the meeting attendees will be asked to pass through security and provide a photo ID for entrance. Let the guards know that you were instructed to call 202-564-7404 for a security escort.

Please send me a list of participants in advance of the meeting and feel free to contact me should you need any additional information.

Emily

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Lauren Wilk [mailto:lwilk@aluminum.org]
Sent: Monday, February 05, 2018 12:56 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: RE: Aluminum Association Meeting Request

Thanks, Emily. We'll take the meeting on March 2 at 3pm, and I'll firm up attendees on our end.

Let me know what details you need in advance of the meeting.

Much appreciated!

Lauren

The Aluminum Association
Lauren Wilk
Vice President, Policy & International Trade
The Aluminum Association
1400 Crystal Drive, Suite 430
Arlington, VA 22202
T 703.358.2981 | [redacted] | F 703.358.2961
JOIN THE CONVERSATION:

From: Atkinson, Emily [mailto:Atkinson.Emily@epa.gov]
Sent: Monday, February 05, 2018 12:48 PM
To: Lauren Wilk <lwilk@aluminum.org>
Subject: RE: Aluminum Association Meeting Request

Hi Lauren,

It looks like Bill Wehrum could be available for a 45 minute meeting on Friday, March 2, 2018 at 3:00pm.

Please advise if this could work on your end.

Emily

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Lauren Wilk [mailto:lwilk@aluminum.org]
Sent: Thursday, February 01, 2018 12:06 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>; Lewis, Josh <Lewis.Josh@epa.gov>
Subject: Aluminum Association Meeting Request

Emily and Josh –

Will Lovett suggested I connect with you on scheduling a meeting with Assistant Administrator Wehrum for a few representatives of the aluminum industry. We have availability on the following dates: February 16, 20, 21, 23, 26, 27, 28 or March 1 (but we can certainly be flexible if an alternative date is necessary).

The Aluminum Association is active with EPA on a number of issues – and specifically, the members of our Aluminum Transportation Group (ATG) would very much like to hear directly from Mr. Wehrum about the Administration's priorities related to automotive GHG emissions and fuel economy regulations. The ATG represents the Association's member companies that produce aluminum for use in cars and trucks, including Alcoa, Arconic, Novelis, Rio Tinto and others.

The aluminum industry plays a significant role in the automotive supply chain, and the pounds of aluminum content per vehicle has grown by more than 30 percent over the past decade. Driven by that auto sector growth, the aluminum industry has announced or completed U.S. plant expansions and investments of more than $2.6 billion since 2013. Already this year, Novelis announced that it was investing $300 million in a new greenfield automotive finishing facility in Guthrie, Kentucky. The industry is acutely interested in the outcome of the midterm review on vehicle fuel economy, and we have met previously with the White House, OMB, NHTSA, CARB and others on this topic.

I'd be happy to answer any questions or provide additional background, if that's helpful.

Thanks so much,

Lauren

The Aluminum Association
Lauren Wilk
Vice President, Policy & International Trade

The Aluminum Association
1400 Crystal Drive, Suite 430
Arlington, VA 22202
T 703.358.2981 [redacted] F 703.358.2961
JOIN THE CONVERSATION:

Message

From: Atkinson, Emily [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=BB2155ADEF6A44AEA9410741F0C01D27-ATKINSON, EMILY]
Sent: 2/2/2018 4:11:21 PM
To: Laurie Holmes [lholmes@mema.org]
Subject: RE: Auto Suppliers Meeting on the Midterm Evaluation for Vehicle GHG Standards

Wonderful – thank you Laurie!

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Laurie Holmes [mailto:lholmes@mema.org]
Sent: Friday, February 02, 2018 10:56 AM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: Auto Suppliers Meeting on the Midterm Evaluation for Vehicle GHG Standards

Emily,
One more thing, attached are a few slides we plan on having hard copies of at the meeting on Monday to provide visuals to our discussion points.
I've provided these to Ann Arbor staff too but thought I'd make sure you were aware.

Best,

Laurie

Laurie Holmes
Senior Director, Environmental Policy
Motor & Equipment Manufacturers Association
1030 15th Street NW, Suite 500 East
Washington, DC 20005
Direct: 202-312-9247

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From: Laurie Holmes
Sent: Thursday, February 01, 2018 9:38 AM
To: 'Atkinson, Emily' <Atkinson.Emily@epa.gov>
Cc: Lewis, Josh <Lewis.Josh@epa.gov>
Subject: Confirmed 2/5 at 4:15pm: Auto Suppliers Meeting Request on the Midterm Evaluation for Vehicle GHG Standards

Hi Emily,
As requested, below is a list of participants for the meeting with Mr. Wehrum at 4:15 on Monday, February 5.
Thank you so much for your assistance in setting up this meeting.

Attendees:

1. Laurie Holmes, MEMA
2. Catherine Boland, MEMA
3. Dave Cetola, Johnson Matthey
4. Greg Garr, Umicore
5. Mike Belwood, Arconic
6. Joseph Fengler, Honeywell
7. Jennifer Heckmann, DENSO
8. Ana Meuweissen, Bosch
9. Erika Nielson, BW
10. Andrew Kenny, Magna

Best,
Laurie

From: Atkinson, Emily [mailto:Atkinson.Emily@epa.gov]
Sent: Thursday, January 18, 2018 3:44 PM
To: Laurie Holmes <lholmes@mema.org>
Cc: Lewis, Josh <Lewis.Josh@epa.gov>
Subject: Confirmed 2/5 at 4:15pm: Auto Suppliers Meeting Request on the Midterm Evaluation for Vehicle GHG Standards

Hi Laurie,
You are confirmed for a 45 minute in person meeting on Monday, February 5, 2018 at 4:15pm with Bill Wehrum.
Directions and procedures to 1200 Pennsylvania Avenue NW:

Metro: If you come by Metro get off at the Federal Triangle metro stop. Exit the metro station and go up two sets of escalators to the surface level and turn right. You will see a short staircase and wheelchair ramp leading to a set of glass doors with the EPA logo - that is the William Jefferson Clinton Federal Building, North Entrance.

Taxi: Direct the taxi to drop you off on 12th Street NW, between Constitution and Pennsylvania Avenues, at the elevator for the Federal Triangle metro stop - this is almost exactly half way between the two avenues on 12th Street NW. Facing the building with the EPA logo and American flags, walk toward the building and take the glass door on your right hand side with the escalators going down to the metro on your left – that is the North Lobby of the William Jefferson Clinton building.

Security Procedures: A government issued photo id is required to enter the building and it is suggested you arrive 15 minutes early in order to be cleared and arrive at the meeting room on time. Upon entering

the lobby, the meeting attendees will be asked to pass through security and provide a photo ID for entrance. Let the guards know that you were instructed to call 202-564-7404 for a security escort.

Please send me a list of participants in advance of the meeting and feel free to contact me should you need any additional information. And based on the size of the room we plan to use, you should plan to bring no more than 10 attendees to this meeting.

Emily

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Laurie Holmes [mailto:lholmes@mema.org]
Sent: Thursday, January 18, 2018 3:08 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Cc: Lewis, Josh <Lewis.Josh@epa.gov>
Subject: Auto Suppliers Meeting Request on the Midterm Evaluation for Vehicle GHG Standards

Emily,
Yes, Mon. Feb. 5 at 4:15 will work for us.

Is there a number limit for the room? We will have some members with us.

Best,
Laurie

Sent from my iPhone

On Jan 18, 2018, at 11:08 AM, Atkinson, Emily <Atkinson.Emily@epa.gov> wrote:

Hi Laurie,

It looks like Bill Wehrum could be available for a 45 minute in person meeting on Monday, February 5 at 4:15pm.

Please advise if this could work on your end.

Emily

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Laurie Holmes [mailto:lholmes@mema.org]
Sent: Wednesday, January 17, 2018 10:34 AM
To: Lewis, Josh <Lewis.Josh@epa.gov>
Cc: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: Auto Suppliers Meeting Request on the Midterm Evaluation for Vehicle GHG Standards

Josh,
In addition to the week of the 29th we could also do Monday, February 5 or Tuesday, February 6 before 1.
Let me know if you need additional date ranges to work with.
Best,
Laurie

From: Lewis, Josh [mailto:Lewis.Josh@epa.gov]
Sent: Friday, January 12, 2018 2:16 PM
To: Laurie Holmes <lholmes@mema.org>; Catherine Boland <cboland@MEMA.ORG>
Cc: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: FW: Auto Suppliers Meeting Request on the Midterm Evaluation for Vehicle GHG Standards

+ Emily and – Bill.

Is there a rough date or dates you were looking to come in?

Josh Lewis
Chief of Staff
EPA/Office of Air and Radiation
Office: 202 564 2095
[redacted]

From: Laurie Holmes [mailto:lholmes@mema.org]
Sent: Friday, January 12, 2018 10:56 AM
To: Wehrum, Bill <Wehrum.Bill@epa.gov>
Cc: Catherine Boland <cboland@MEMA.ORG>; Lewis, Josh <Lewis.Josh@epa.gov>
Subject: Auto Suppliers Meeting Request on the Midterm Evaluation for Vehicle GHG Standards

Bill, Thank you so much.
Josh, Look forward to hearing from you.

From: Wehrum, Bill [mailto:Wehrum.Bill@epa.gov]
Sent: Friday, January 12, 2018 7:38 AM
To: Laurie Holmes <lholmes@mema.org>
Cc: Catherine Boland <cboland@MEMA.ORG>; Lewis, Josh <Lewis.Josh@epa.gov>
Subject: Re: Auto Suppliers Meeting Request on the Midterm Evaluation for Vehicle GHG Standards

Hi Laurie. I'd be happy to talk with you. I've copied my chief of staff, Josh Lewis, who can help coordinate.

_____
Bill Wehrum
Assistant Administrator
Office of Air and Radiation

U.S. Environmental Protection Agency
(202) 564-7404

On Jan 11, 2018, at 1:33 PM, Laurie Holmes <lholmes@mema.org> wrote:

Bill:
MEMA would like to request a meeting to discuss the midterm evaluation on the vehicle greenhouse gas emission standards.

MEMA represents more than 1,000 companies that manufacture components, systems and materials for motor vehicles and represents the largest sector of manufacturing jobs in the U.S. Since auto suppliers play a major role in developing the technologies necessary for vehicle emission reduction, suppliers have a strong interest in the midterm evaluation and the standards. Our position is also not identical to the vehicle manufactures on the issue.

It would be helpful if we could discuss with you the impact the program has had and will have on our industry.

Look forward to hearing from you.

Laurie Holmes
Senior Director, Environmental Policy
Motor & Equipment Manufacturers Association
1030 15th Street NW, Suite 500 East
Washington, DC 20005
Direct: 202-312-9247
[redacted]
<image001.png>
April 10-11 | Washington, DC
www.mema.org/dcsummit

Appointment

From: Atkinson, Emily [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=BB2155ADEF6A44AEA9410741F0C01D27-ATKINSON, EMILY]
Sent: 2/28/2018 3:17:59 PM
To: Gunasekara, Mandy [Gunasekara.Mandy@epa.gov]; Grundler, Christopher [grundler.christopher@epa.gov]; Hengst, Benjamin [Hengst.Benjamin@epa.gov]; Cook, Leila [cook.leila@epa.gov]; Charmley, William [charmley.william@epa.gov]
CC: Moran, Robin [moran.robin@epa.gov]; Olechiw, Michael [olechiw.michael@epa.gov]; Caffrey, Cheryl [caffrey.cheryl@epa.gov]

Subject: Meet with Aluminum Association - Aluminum Transport Group Members (Confirmed)
Attachments: Aluminum Association Meeting Request; Confirmed 3/2 at 3pm: Aluminum Association Meeting Request; Confirmed 3/1 at 4pm: Aluminum Association Meeting Request; RE: Confirmed 3/1 at 4pm: Aluminum Association Meeting Request
Location: WJC-N 5400 + Video with AA

Start: 3/1/2018 9:00:00 PM
End: 3/1/2018 9:45:00 PM
Show Time As: Tentative

Re: automotive GHG emissions and fuel economy regulations
To: Bill Wehrum, Mandy Gunasekara, Chris Grundler, Ben Hengst, Lee Cook, Bill Charmley
Outside Attendees (in person):

- Henry Gordinier, Tri-Arrows
- Ganesh Panneer, Novelis
- Delphine Dahan-Kocher, Constellium
- Dan Minwell, Constellium
- Mario Greco, Arconic
- Mike Belwood, Arconic
- Joe Quinn, Aluminum Association
- Matt Meenan, Aluminum Association
- John Fitzpatrick, Stratacomm

Aluminum Association Meet... | Confirmed 3/2 at 3pm: Aluminum ... | Confirmed 3/1 at 4pm: Aluminum ... | RE: Confirmed 3/1 at 4pm: Aluminu...

Appointment

From: Atkinson, Emily [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=BB2155ADEF6A44AEA9410741F0C01D27-ATKINSON, EMILY]
Sent: 12/11/2017 8:27:05 PM
To: Grundler, Christopher [grundler.christopher@epa.gov]; Hengst, Benjamin [Hengst.Benjamin@epa.gov]; Burch, Julia [Burch.Julia@epa.gov]; Charmley, William [charmley.william@epa.gov]; Moran, Robin [moran.robin@epa.gov]; Olechiw, Michael [olechiw.michael@epa.gov]; Simon, Karl [Simon.Karl@epa.gov]

Subject: Meet with Toyota re: MidTerm Review (MTR) for autos/light duty trucks (Confirmed)
Attachments: RE: Meeting Requests for Toyota ; FW: Meeting Requests for Toyota from S. Fotis; Confirmed 12/15 at 3pm: Meeting Requests for Toyota from S. Fotis; Confirmed 1/23/18 at 10am: Meeting with USEPA's Bill Wehrum and Toyota from S. Fotis
Location: WJC-N 5400 [redacted]

Start: 1/23/2018 3:00:00 PM
End: 1/23/2018 3:45:00 PM
Show Time As: Tentative

To: Bill Wehrum, Chris Grundler, Ben Hengst, Julia Burch, Bill Charmley, Robin Moran, Mike Olechiw and Karl Simon
Outside Attendees (in person): TBD

RE: Meeting Requests for Toy... | FW: Meeting Requests for Toy... | Confirmed 12/15 at 3pm: Meeting Re... | Confirmed 1/23/18 at 10am: Meetin...

Message

From: Atkinson, Emily [Atkinson.Emily@epa.gov]
Sent: 12/11/2017 8:26:45 PM
To: Stephen Fotis [scf@vnf.com]
CC: Loving, Shanita [Loving.Shanita@epa.gov]; Lewis, Josh [Lewis.Josh@epa.gov]
Subject: Confirmed 1/23/18 at 10am: Meeting with USEPA's Bill Wehrum and Toyota from S. Fotis

Hi Stephen,

You are confirmed for a 45 minute in person meeting on Tuesday, January 23, 2018 at 10:00am EDT with Bill Wehrum.
Directions and procedures to 1200 Pennsylvania Avenue NW:

Metro: If you come by Metro get off at the Federal Triangle metro stop. Exit the metro station and go up two sets of escalators to the surface level and turn right. You will see a short staircase and wheelchair ramp leading to a set of glass doors with the EPA logo - that is the William Jefferson Clinton Federal Building, North Entrance.

Taxi: Direct the taxi to drop you off on 12th Street NW, between Constitution and Pennsylvania Avenues, at the elevator for the Federal Triangle metro stop - this is almost exactly half way between the two avenues on 12th Street NW. Facing the building with the EPA logo and American flags, walk toward the building and take the glass door on your right hand side with the escalators going down to the metro on your left – that is the North Lobby of the William Jefferson Clinton building.

Security Procedures: A government issued photo id is required to enter the building and it is suggested you arrive 15 minutes early in order to be cleared and arrive at the meeting room on time. Upon entering the lobby, the meeting attendees will be asked to pass through security and provide a photo ID for entrance. Let the guards know that you were instructed to call 202-564-7404 for a security escort.
Please send me a list of participants in advance of the meeting and feel free to contact me should you need any additional information.

Emily

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Stephen Fotis [mailto:scf@vnf.com]
Sent: Monday, December 11, 2017 3:22 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Cc: Loving, Shanita <Loving.Shanita@epa.gov>; Lewis, Josh <Lewis.Josh@epa.gov>
Subject: RE: Rescheduling Meeting with USEPA's Bill Wehrum and Toyota from S. Fotis

Emily – I would like to confirm January 23, 2018 at 10:00am EDT for the Toyota meeting with Bill. I will shortly provide you with the names of individuals who will be participating in the meeting on behalf of Toyota.
Many thanks for your assistance!

Stephen

Stephen Fotis
Partner
Van Ness Feldman LLP
scf@vnf.com
(202) 298-1908

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From: Atkinson, Emily [mailto:Atkinson.Emily@epa.gov]
Sent: Monday, December 11, 2017 3:00 PM
To: Stephen Fotis
Cc: Loving, Shanita; Lewis, Josh
Subject: RE: Rescheduling Meeting with USEPA's Bill Wehrum and Toyota from S. Fotis

Hi Stephen,

Yes, Josh Lewis and I have coordinated on this to review scheduling options and January 23, 2018 at 10:00am EDT is the first available time to slot this meeting in for Bill Wehrum.

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Stephen Fotis [mailto:scf@vnf.com]
Sent: Monday, December 11, 2017 2:48 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Cc: Loving, Shanita <Loving.Shanita@epa.gov>; Lewis, Josh <Lewis.Josh@epa.gov>
Subject: RE: Rescheduling Meeting with USEPA's Bill Wehrum and Toyota from S. Fotis

Thanks Emily. In my conversations with Josh earlier today, we were talking about trying to schedule a Toyota meeting with Bill in early January, either at the end of the first week of January (January 4 or 5) or the following week (January 8-12). Before we schedule a meeting for the January 23, I want to confirm that there is no chance of scheduling a meeting during either of these two weeks.
Best,
Stephen

Stephen Fotis
Partner
Van Ness Feldman LLP
scf@vnf.com
(202) 298-1908

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From: Atkinson, Emily [mailto:Atkinson.Emily@epa.gov]
Sent: Monday, December 11, 2017 2:39 PM
To: Stephen Fotis
Cc: Loving, Shanita; Lewis, Josh
Subject: Rescheduling Meeting with USEPA's Bill Wehrum and Toyota from S. Fotis

Hi Stephen,

It looks like the earliest date we could fit this in is for 45 minutes on Tuesday, January 23, 2018 at 10:00am EDT.

Please advise if this could work on your end.

Emily

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Stephen Fotis [mailto:scf@vnf.com]
Sent: Friday, December 08, 2017 5:22 PM
To: Lewis, Josh <Lewis.Josh@epa.gov>
Cc: Atkinson, Emily <Atkinson.Emily@epa.gov>; Loving, Shanita <Loving.Shanita@epa.gov>
Subject: RE: Confirmed 12/15 at 3pm: Meeting Requests for Toyota from S. Fotis

Thanks Josh for your email. I totally understand and very much appreciate your efforts to meet with Toyota. Please let me check with the client and will get back to you on Monday. Have a great weekend.
Best,
Stephen

Stephen Fotis
Partner
Van Ness Feldman LLP
scf@vnf.com
(202) 298-1908

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From: Lewis, Josh [mailto:Lewis.Josh@epa.gov]
Sent: Friday, December 08, 2017 2:14 PM
To: Stephen Fotis
Cc: Atkinson, Emily; Loving, Shanita
Subject: FW: Confirmed 12/15 at 3pm: Meeting Requests for Toyota from S. Fotis

Hi Stephen,

Bill now will be out of the office next Friday for work travel. We could keep the meeting for Friday (EPA participants would include a combination of the political team – Mandy Gunasekara/David Harlow/maybe others – along with career folks from OTAQ); or, if you want to reschedule with Bill, we'd be looking to early January to schedule. What is your preference?

Josh Lewis
Chief of Staff
EPA/Office of Air and Radiation
Office: 202 564 2095
[redacted]

From: Atkinson, Emily
Sent: Thursday, November 30, 2017 4:36 PM
To: Stephen Fotis <scf@vnf.com>
Cc: Loving, Shanita <Loving.Shanita@epa.gov>
Subject: Confirmed 12/15 at 3pm: Meeting Requests for Toyota from S. Fotis

Hi Stephen,

You are confirmed for a 45 minute in person meeting on Friday, December 15, 2017 at 3:00pm with Bill Wehrum.
Directions and procedures to 1200 Pennsylvania Avenue NW:

> Metro: If you come by Metro get off at the Federal Triangle metro stop. Exit the metro station and go up two sets of escalators to the surface level and turn right. You will see a short staircase and wheelchair ramp leading to a set of glass doors with the EPA logo - that is the William Jefferson Clinton Federal Building, North Entrance.
>
> Taxi: Direct the taxi to drop you off on 12th Street NW, between Constitution and Pennsylvania Avenues, at the elevator for the Federal Triangle metro stop - this is almost exactly half way between the two avenues on 12th Street NW. Facing the building with the EPA logo and American flags, walk toward the building and take the glass door on your right hand side with the escalators going down to the metro on your left – that is the North Lobby of the William Jefferson Clinton building.
>
> Security Procedures: A government issued photo id is required to enter the building and it is suggested you arrive 15 minutes early in order to be cleared and arrive at the meeting room on time. Upon entering the lobby, the meeting attendees will be asked to pass through security and provide a photo ID for entrance. Let the guards know that you were instructed to call 202-564-7404 for a security escort.

Please send me a list of participants in advance of the meeting and feel free to contact me should you need any additional information.

Emily

Emily Atkinson
Management Analyst/Office Manager

Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Stephen Fotis [mailto:scf@vnf.com]
Sent: Thursday, November 30, 2017 4:27 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Cc: Loving, Shanita <Loving.Shanita@epa.gov>
Subject: RE: Meeting Requests for Toyota from S. Fotis

Emily - Friday, December 15, 2017 at 3:00 PM works for Toyota. I will get back to you shortly with the names and titles of those individuals who will be attending the meeting with Bill on behalf of Toyota.
Again, many thanks for all of your assistance here.
Have a great rest of the day.
Best,
Stephen

Stephen Fotis
Partner
Van Ness Feldman LLP
scf@vnf.com
(202) 298-1908

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From: Atkinson, Emily [mailto:Atkinson.Emily@epa.gov]
Sent: Thursday, November 30, 2017 3:43 PM
To: Stephen Fotis
Cc: Loving, Shanita
Subject: FW: Meeting Requests for Toyota from S. Fotis

Hi Stephen,

It looks like Bill Wehrum could be available for a 45 minute in person meeting on Friday, December 15, 2017 at 3:00pm with Toyota.

Please advise if this could work on your end.

Thank you.
Emily

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW

Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Stephen Fotis [mailto:scf@vnf.com]
Sent: Wednesday, November 29, 2017 12:37 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: RE: Meeting Requests for Toyota and Shell

Thank you Emily for your assistance.
Best,
Stephen

Stephen Fotis
Partner
Van Ness Feldman LLP
scf@vnf.com
(202) 298-1908

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From: Atkinson, Emily [mailto:Atkinson.Emily@epa.gov]
Sent: Wednesday, November 29, 2017 11:51 AM
To: Stephen Fotis
Subject: RE: Meeting Requests for Toyota and Shell

Hi Stephen,

We are reviewing scheduling options now and will get back to you shortly.

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Stephen Fotis [mailto:scf@vnf.com]
Sent: Tuesday, November 28, 2017 5:32 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: RE: Meeting Requests for Toyota and Shell

Hi Emily – As suggested by Bill in his email below, I am following up with you regarding the scheduling of two separate meetings with Bill – one with Toyota on the Mid Term Review (MTR) for autos/light duty trucks, and the other with Shell on the OOOOa NSPS reconsideration rulemaking. Could you please advise me as to possible times that we might schedule these meetings? If possible, I'd like to try to schedule meetings for later this December before the holidays. Many thanks for your assistance.

Stephen

Stephen Fotis
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From: Wehrum, Bill [mailto:Wehrum.Bill@epa.gov]
Sent: Monday, November 27, 2017 12:29 PM
To: Stephen Fotis
Cc: Atkinson, Emily
Subject: RE: Meeting Requests for Toyota and Shell

Thanks Stephen. I'm copying Emily Atkinson. She can work with you to find times.

From: Stephen Fotis [mailto:scf@vnf.com]
Sent: Monday, November 27, 2017 11:29 AM
To: Wehrum, Bill <Wehrum.Bill@epa.gov>; Wehrum, Bill <Wehrum.Bill@epa.gov>
Subject: Meeting Requests for Toyota and Shell

Bill – I hope that you had a good Thanksgiving and had some time to relax. As a follow-up to our discussions of last week, both Toyota and Shell are happy to accommodate your request and delay their meetings until later this December or early January. However, I would like to see if we can schedule the meeting time for each now given that your calendar will no doubt be filling up quickly and the issues both want to raise are time sensitive.
Would it be appropriate for me to follow-up with Shanita or someone else on scheduling meeting dates?
Best,
Stephen

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From: Stephen Fotis
Sent: Wednesday, November 22, 2017 2:46 PM
To: wehrum.bill@epa.gov; wehrum.william@epa.gov
Subject: Follow-up to Your Message on Meeting Requests

Bill – Many thanks for your call last night regarding my two meeting requests. I am now checking with the client in each case but will most likely not be getting back to you with answer until after the Thanksgiving holiday. However, I would

be very surprised if there is anything compelling or urgent that would require scheduling either one of the meetings over the next few weeks.
Have a great Thanksgiving and I will be getting back to you next week.
Best,
Stephen

Stephen Fotis
Partner
Van Ness Feldman LLP
scf@vnf.com
(202) 298-1908

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Message

From: Atkinson, Emily [Atkinson.Emily@epa.gov]
Sent: 11/30/2017 9:35:51 PM
To: Stephen Fotis [scf@vnf.com]
CC: Loving, Shanita [Loving.Shanita@epa.gov]
Subject: Confirmed 12/15 at 3pm: Meeting Requests for Toyota from S. Fotis

Hi Stephen,

You are confirmed for a 45 minute in person meeting on Friday, December 15, 2017 at 3:00pm with Bill Wehrum.
Directions and procedures to 1200 Pennsylvania Avenue NW:

Metro: If you come by Metro get off at the Federal Triangle metro stop. Exit the metro station and go up two sets of escalators to the surface level and turn right. You will see a short staircase and wheelchair ramp leading to a set of glass doors with the EPA logo - that is the William Jefferson Clinton Federal Building, North Entrance.

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Please send me a list of participants in advance of the meeting and feel free to contact me should you need any additional information.

Emily

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Stephen Fotis [mailto:scf@vnf.com]
Sent: Thursday, November 30, 2017 4:27 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Cc: Loving, Shanita <Loving.Shanita@epa.gov>
Subject: RE: Meeting Requests for Toyota from S. Fotis

Emily - Friday, December 15, 2017 at 3:00 PM works for Toyota. I will get back to you shortly with the names and titles of those individuals who will be attending the meeting with Bill on behalf of Toyota.
Again, many thanks for all of your assistance here.

Have a great rest of the day.
Best,
Stephen

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(202) 298-1908

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From: Atkinson, Emily [mailto:Atkinson.Emily@epa.gov]
Sent: Thursday, November 30, 2017 3:43 PM
To: Stephen Fotis
Cc: Loving, Shanita
Subject: FW: Meeting Requests for Toyota from S. Fotis

Hi Stephen,

It looks like Bill Wehrum could be available for a 45 minute in person meeting on Friday, December 15, 2017 at 3:00pm with Toyota.

Please advise if this could work on your end.

Thank you.
Emily

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Stephen Fotis [mailto:scf@vnf.com]
Sent: Wednesday, November 29, 2017 12:37 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: RE: Meeting Requests for Toyota and Shell

Thank you Emily for your assistance.
Best,
Stephen

Stephen Fotis
Partner
Van Ness Feldman LLP

scf@vnf.com
(202) 298-1908

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From: Atkinson, Emily [mailto:Atkinson.Emily@epa.gov]
Sent: Wednesday, November 29, 2017 11:51 AM
To: Stephen Fotis
Subject: RE: Meeting Requests for Toyota and Shell

Hi Stephen,

We are reviewing scheduling options now and will get back to you shortly.

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Stephen Fotis [mailto:scf@vnf.com]
Sent: Tuesday, November 28, 2017 5:32 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: RE: Meeting Requests for Toyota and Shell

Hi Emily – As suggested by Bill in his email below, I am following up with you regarding the scheduling of two separate meetings with Bill – one with Toyota on the Mid Term Review (MTR) for autos/light duty trucks, and the other with Shell on the OOOOa NSPS reconsideration rulemaking. Could you please advise me as to possible times that we might schedule these meetings? If possible, I'd like to try to schedule meetings for later this December before the holidays. Many thanks for your assistance.
Stephen

Stephen Fotis
Partner
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(202) 298-1908

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From: Wehrum, Bill [mailto:Wehrum.Bill@epa.gov]
Sent: Monday, November 27, 2017 12:29 PM
To: Stephen Fotis

Cc: Atkinson, Emily
Subject: RE: Meeting Requests for Toyota and Shell

Thanks Stephen. I'm copying Emily Atkinson. She can work with you to find times.

From: Stephen Fotis [mailto:scf@vnf.com]
Sent: Monday, November 27, 2017 11:29 AM
To: Wehrum, Bill <Wehrum.Bill@epa.gov>; Wehrum, Bill <Wehrum.Bill@epa.gov>
Subject: Meeting Requests for Toyota and Shell

Bill – I hope that you had a good Thanksgiving and had some time to relax. As a follow-up to our discussions of last week, both Toyota and Shell are happy to accommodate your request and delay their meetings until later this December or early January. However, I would like to see if we can schedule the meeting time for each now given that your calendar will no doubt be filling up quickly and the issues both want to raise are time sensitive.
Would it be appropriate for me to follow-up with Shanita or someone else on scheduling meeting dates?
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From: Stephen Fotis
Sent: Wednesday, November 22, 2017 2:46 PM
To: wehrum.bill@epa.gov; wehrum.william@epa.gov
Subject: Follow-up to Your Message on Meeting Requests

Bill – Many thanks for your call last night regarding my two meeting requests. I am now checking with the client in each case but will most likely not be getting back to you with answer until after the Thanksgiving holiday. However, I would be very surprised if there is anything compelling or urgent that would require scheduling either one of the meetings over the next few weeks.
Have a great Thanksgiving and I will be getting back to you next week.
Best,
Stephen

Stephen Fotis
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scf@vnf.com
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Message

From: Atkinson, Emily [Atkinson.Emily@epa.gov]
Sent: 11/30/2017 8:42:58 PM
To: scf@vnf.com
CC: Loving, Shanita [Loving.Shanita@epa.gov]
Subject: FW: Meeting Requests for Toyota from S. Fotis

Hi Stephen,

It looks like Bill Wehrum could be available for a 45 minute in person meeting on Friday, December 15, 2017 at 3:00pm with Toyota.

Please advise if this could work on your end.

Thank you.
Emily

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Stephen Fotis [mailto:scf@vnf.com]
Sent: Wednesday, November 29, 2017 12:37 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: RE: Meeting Requests for Toyota and Shell

Thank you Emily for your assistance.
Best,
Stephen

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From: Atkinson, Emily [mailto:Atkinson.Emily@epa.gov]
Sent: Wednesday, November 29, 2017 11:51 AM
To: Stephen Fotis
Subject: RE: Meeting Requests for Toyota and Shell

Hi Stephen,

We are reviewing scheduling options now and will get back to you shortly.

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Stephen Fotis [mailto:scf@vnf.com]
Sent: Tuesday, November 28, 2017 5:32 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: RE: Meeting Requests for Toyota and Shell

Hi Emily – As suggested by Bill in his email below, I am following up with you regarding the scheduling of two separate meetings with Bill – one with Toyota on the Mid Term Review (MTR) for autos/light duty trucks, and the other with Shell on the OOOOa NSPS reconsideration rulemaking. Could you please advise me as to possible times that we might schedule these meetings? If possible, I'd like to try to schedule meetings for later this December before the holidays. Many thanks for your assistance.
Stephen

Stephen Fotis
Partner
Van Ness Feldman LLP
scf@vnf.com
(202) 298-1908

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From: Wehrum, Bill [mailto:Wehrum.Bill@epa.gov]
Sent: Monday, November 27, 2017 12:29 PM
To: Stephen Fotis
Cc: Atkinson, Emily
Subject: RE: Meeting Requests for Toyota and Shell

Thanks Stephen. I'm copying Emily Atkinson. She can work with you to find times.

From: Stephen Fotis [mailto:scf@vnf.com]
Sent: Monday, November 27, 2017 11:29 AM
To: Wehrum, Bill <Wehrum.Bill@epa.gov>; Wehrum, Bill <Wehrum.Bill@epa.gov>
Subject: Meeting Requests for Toyota and Shell

Bill – I hope that you had a good Thanksgiving and had some time to relax. As a follow-up to our discussions of last week, both Toyota and Shell are happy to accommodate your request and delay their meetings until later this December

or early January. However, I would like to see if we can schedule the meeting time for each now given that your calendar will no doubt be filling up quickly and the issues both want to raise are time sensitive.
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From: Stephen Fotis
Sent: Wednesday, November 22, 2017 2:46 PM
To: wehrum.bill@epa.gov; wehrum.william@epa.gov
Subject: Follow-up to Your Message on Meeting Requests

Bill – Many thanks for your call last night regarding my two meeting requests. I am now checking with the client in each case but will most likely not be getting back to you with answer until after the Thanksgiving holiday. However, I would be very surprised if there is anything compelling or urgent that would require scheduling either one of the meetings over the next few weeks.
Have a great Thanksgiving and I will be getting back to you next week.
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Message

From: Hengst, Benjamin [Hengst.Benjamin@epa.gov]
Sent: 11/30/2017 8:32:26 PM
To: Atkinson, Emily [Atkinson.Emily@epa.gov]
CC: Burch, Julia [Burch.Julia@epa.gov]
Subject: RE: Meeting Requests for Toyota

Yes, working on that now. I need to hear from some folks on whether a pre-brief is needed.

For now, you can add the following people. I may ask that you add more later.

Chris G
Ben H
Julia Burch
Bill Charmley

From: Atkinson, Emily
Sent: Thursday, November 30, 2017 3:17 PM
To: Hengst, Benjamin <Hengst.Benjamin@epa.gov>
Cc: Burch, Julia <Burch.Julia@epa.gov>
Subject: RE: Meeting Requests for Toyota

Thanks – let us know who to include in the Toyota meeting and if you all think Bill needs a prep meeting.

From: Hengst, Benjamin
Sent: Thursday, November 30, 2017 11:36 AM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Cc: Burch, Julia <Burch.Julia@epa.gov>
Subject: RE: Meeting Requests for Toyota and Shell

Working on this one (Toyota). CC'ing Julia as she helps me staff the LD issues.

Thanks
Ben

From: Atkinson, Emily
Sent: Thursday, November 30, 2017 11:28 AM
To: Hengst, Benjamin <Hengst.Benjamin@epa.gov>; Krieger, Jackie <Krieger.Jackie@epa.gov>; Koerber, Mike <Koerber.Mike@epa.gov>
Cc: Loving, Shanita <Loving.Shanita@epa.gov>; Lewis, Josh <Lewis.Josh@epa.gov>
Subject: FW: Meeting Requests for Toyota and Shell

Hi Ben, Jackie and Mike,

Bill has reviewed this request and agreed we will set up the two one hour meetings, as outlined below. Please advise if anyone from OAP, OAQPS, OGC and OTAQ should be included and whether or not a prep meeting is needed.

(1) Toyota on the Mid Term Review (MTR) for autos/light duty trucks
Prep – Y/N
OAP:
OAQPS:
OTAQ:

(2) Shell on the OOOOa NSPS reconsideration rulemaking
Prep – Y/N
OAP:
OAQPS:
OTAQ:

And for completeness, a note to the IO staff that Bill clarified these meeting do not require us to advise the requestor to bring four other groups in with them as we advise when the meeting is with former clients of Bill's.

I will wait to hear from you all before getting back to the requestor.

Thank you.
Emily

From: Stephen Fotis [mailto:scf@vnf.com]
Sent: Wednesday, November 29, 2017 12:37 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: RE: Meeting Requests for Toyota and Shell

Thank you Emily for your assistance.
Best,
Stephen

Stephen Fotis
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From: Atkinson, Emily [mailto:Atkinson.Emily@epa.gov]
Sent: Wednesday, November 29, 2017 11:51 AM
To: Stephen Fotis
Subject: RE: Meeting Requests for Toyota and Shell

Hi Stephen,

We are reviewing scheduling options now and will get back to you shortly.

Emily Atkinson
Management Analyst/Office Manager

Immediate Office of the Assistant Administrator
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From: Wehrum, Bill [mailto:Wehrum.Bill@epa.gov]
Sent: Monday, November 27, 2017 12:29 PM
To: Stephen Fotis
Cc: Atkinson, Emily
Subject: RE: Meeting Requests for Toyota and Shell

Thanks Stephen. I'm copying Emily Atkinson. She can work with you to find times.

From: Stephen Fotis [mailto:scf@vnf.com]
Sent: Monday, November 27, 2017 11:29 AM
To: Wehrum, Bill <Wehrum.Bill@epa.gov>; Wehrum, Bill <Wehrum.Bill@epa.gov>
Subject: Meeting Requests for Toyota and Shell

Bill – I hope that you had a good Thanksgiving and had some time to relax. As a follow-up to our discussions of last week, both Toyota and Shell are happy to accommodate your request and delay their meetings until later this December or early January. However, I would like to see if we can schedule the meeting time for each now given that your calendar will no doubt be filling up quickly and the issues both want to raise are time sensitive.
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From: Stephen Fotis
Sent: Wednesday, November 22, 2017 2:46 PM
To: wehrum.bill@epa.gov; wehrum.william@epa.gov
Subject: Follow-up to Your Message on Meeting Requests

Bill – Many thanks for your call last night regarding my two meeting requests. I am now checking with the client in each case but will most likely not be getting back to you with answer until after the Thanksgiving holiday. However, I would be very surprised if there is anything compelling or urgent that would require scheduling either one of the meetings over the next few weeks.
Have a great Thanksgiving and I will be getting back to you next week.
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Appointment

From: Atkinson, Emily [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=BB2155ADEF6A44AEA9410741F0C01D27-ATKINSON, EMILY]
Sent: 12/11/2017 7:26:46 PM
To: Grundler, Christopher [grundler.christopher@epa.gov]; Hengst, Benjamin [Hengst.Benjamin@epa.gov]; Burch, Julia [Burch.Julia@epa.gov]; Charmley, William [charmley.william@epa.gov]; Moran, Robin [moran.robin@epa.gov]; Olechiw, Michael [olechiw.michael@epa.gov]; Simon, Karl [Simon.Karl@epa.gov]

Subject: HOLD || Meet with Toyota re: MidTerm Review (MTR) for autos/light duty trucks (Tentative)
Attachments: RE: Meeting Requests for Toyota ; FW: Meeting Requests for Toyota from S. Fotis; Confirmed 12/15 at 3pm: Meeting Requests for Toyota from S. Fotis
Location: WJC-N 5400 [redacted]

Start: 1/23/2018 3:00:00 PM
End: 1/23/2018 3:45:00 PM
Show Time As: Tentative

To: Bill Wehrum, Chris Grundler, Ben Hengst, Julia Burch, Bill Charmley, Robin Moran, Mike Olechiw and Karl Simon
Outside Attendees (in person): TBD

RE: Meeting Requests for Toy...
FW: Meeting Requests for Toy...
Confirmed 12/15 at 3pm: Meeting Re...

Message

From: Atkinson, Emily [Atkinson.Emily@epa.gov]
Sent: 11/30/2017 9:35:51 PM
To: Stephen Fotis [scf@vnf.com]
CC: Loving, Shanita [Loving.Shanita@epa.gov]
Subject: Confirmed 12/15 at 3pm: Meeting Requests for Toyota from S. Fotis

Hi Stephen,

You are confirmed for a 45 minute in person meeting on Friday, December 15, 2017 at 3:00pm with Bill Wehrum.
Directions and procedures to 1200 Pennsylvania Avenue NW:

Metro: If you come by Metro get off at the Federal Triangle metro stop. Exit the metro station and go up two sets of escalators to the surface level and turn right. You will see a short staircase and wheelchair ramp leading to a set of glass doors with the EPA logo - that is the William Jefferson Clinton Federal Building, North Entrance.

Taxi: Direct the taxi to drop you off on 12th Street NW, between Constitution and Pennsylvania Avenues, at the elevator for the Federal Triangle metro stop - this is almost exactly half way between the two avenues on 12th Street NW. Facing the building with the EPA logo and American flags, walk toward the building and take the glass door on your right hand side with the escalators going down to the metro on your left – that is the North Lobby of the William Jefferson Clinton building.

Security Procedures: A government issued photo id is required to enter the building and it is suggested you arrive 15 minutes early in order to be cleared and arrive at the meeting room on time. Upon entering the lobby, the meeting attendees will be asked to pass through security and provide a photo ID for entrance. Let the guards know that you were instructed to call 202-564-7404 for a security escort.
Please send me a list of participants in advance of the meeting and feel free to contact me should you need any additional information.

Emily

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Stephen Fotis [mailto:scf@vnf.com]
Sent: Thursday, November 30, 2017 4:27 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Cc: Loving, Shanita <Loving.Shanita@epa.gov>
Subject: RE: Meeting Requests for Toyota from S. Fotis

Emily - Friday, December 15, 2017 at 3:00 PM works for Toyota. I will get back to you shortly with the names and titles of those individuals who will be attending the meeting with Bill on behalf of Toyota.
Again, many thanks for all of your assistance here.

Have a great rest of the day.
Best,
Stephen

Stephen Fotis
Partner
Van Ness Feldman LLP
scf@vnf.com
(202) 298-1908

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From: Atkinson, Emily [mailto:Atkinson.Emily@epa.gov]
Sent: Thursday, November 30, 2017 3:43 PM
To: Stephen Fotis
Cc: Loving, Shanita
Subject: FW: Meeting Requests for Toyota from S. Fotis

Hi Stephen,

It looks like Bill Wehrum could be available for a 45 minute in person meeting on Friday, December 15, 2017 at 3:00pm with Toyota.

Please advise if this could work on your end.

Thank you.
Emily

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Stephen Fotis [mailto:scf@vnf.com]
Sent: Wednesday, November 29, 2017 12:37 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: RE: Meeting Requests for Toyota and Shell

Thank you Emily for your assistance.
Best,
Stephen

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Partner
Van Ness Feldman LLP

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Sent: Wednesday, November 29, 2017 11:51 AM
To: Stephen Fotis
Subject: RE: Meeting Requests for Toyota and Shell

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Immediate Office of the Assistant Administrator
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Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
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Email: atkinson.emily@epa.gov

From: Stephen Fotis [mailto:scf@vnf.com]
Sent: Tuesday, November 28, 2017 5:32 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: RE: Meeting Requests for Toyota and Shell

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To: Stephen Fotis

Cc: Atkinson, Emily
Subject: RE: Meeting Requests for Toyota and Shell

Thanks Stephen. I'm copying Emily Atkinson. She can work with you to find times.

From: Stephen Fotis [mailto:scf@vnf.com]
Sent: Monday, November 27, 2017 11:29 AM
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Subject: Meeting Requests for Toyota and Shell

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From: Stephen Fotis
Sent: Wednesday, November 22, 2017 2:46 PM
To: wehrum.bill@epa.gov; wehrum.william@epa.gov
Subject: Follow-up to Your Message on Meeting Requests

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Message

From: Atkinson, Emily [Atkinson.Emily@epa.gov]
Sent: 11/30/2017 8:42:58 PM
To: scf@vnf.com
CC: Loving, Shanita [Loving.Shanita@epa.gov]
Subject: FW: Meeting Requests for Toyota from S. Fotis

Hi Stephen,

It looks like Bill Wehrum could be available for a 45 minute in person meeting on Friday, December 15, 2017 at 3:00pm with Toyota.

Please advise if this could work on your end.

Thank you.
Emily

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Immediate Office of the Assistant Administrator
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Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

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Cc: Atkinson, Emily
Subject: RE: Meeting Requests for Toyota and Shell

Thanks Stephen. I'm copying Emily Atkinson. She can work with you to find times.

From: Stephen Fotis [mailto:scf@vnf.com]
Sent: Monday, November 27, 2017 11:29 AM
To: Wehrum, Bill <Wehrum.Bill@epa.gov>; Wehrum, Bill <Wehrum.Bill@epa.gov>
Subject: Meeting Requests for Toyota and Shell

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Sent: Wednesday, November 22, 2017 2:46 PM
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Subject: Follow-up to Your Message on Meeting Requests

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Message

From: Atkinson, Emily [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=BB2155ADEF6A44AEA9410741F0C01D27-ATKINSON, EMILY]
Sent: 2/5/2018 5:53:20 PM
To: lee@armitagellc.com
BCC: Atkinson, Emily [Atkinson.Emily@epa.gov]
Subject: FW: Meeting Request (2-20-2018) with Asst. Adm. Wehrum

Hi Lee,

It looks like Bill Wehrum and Mandy Gunasekara could be available for a 45 minute meeting on Tuesday, February 20, 2018 at 10:00am.

Please advise if this could work on your end.

Emily

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Lee Janger [mailto:lee@armitagellc.com]
Sent: Friday, February 02, 2018 2:19 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Subject: Meeting Request (2-20-2018) with Asst. Adm. Wehrum

Ms. Atkinson,

Thank you so much for taking the time to speak with me just now. This email is a follow up on to our brief discussion.

I represent a group of large auto suppliers (BorgWarner, Honeywell, Bosch, and others). Our focus is on advanced powertrain and emission control technologies. We advocate for technology neutral standards that encourage and support innovation across the auto industry.

We are very interested in speaking with Assistant Administrator Wehrum and others in the Office of Air and Radiation regarding the Midterm Evaluation (MTE). In response to the anticipated review, we have prepared data that we believe will assist EPA with their review of the appropriateness of the emissions standards for vehicle model years 2022-2025.

A few months ago, we had a great meeting with Mike Catanzaro at the White House, and after learning about our data review, strongly urged us to meet with your office to discuss our concerns on long term certainty, job growth and future technology investments as these are some of the key factors being looked at for the MTE.

As we finalize our data, I am hoping to arrange a meeting with Mr. Wehrum for **the late morning of February 20th** while many of members will be in Washington, DC. Please let me know if a meeting at that time is possible. We would likely be a group of 5-6 people.

More information on our group can be found at www.VehicleEfficiency.com Please let me know if I can provide any additional information. My contact information is also below.

Thank you again for your time and help.
-Lee

Alliance for Vehicle Efficiency

Lee J. Janger
Director, Legislative and Regulatory Affairs
202.607.0723
Lee@ArmitageLLC.com

>www.VehicleEfficiency.com<

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Message

From: Atkinson, Emily [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=BB2155ADEF6A44AEA9410741F0C01D27-ATKINSON, EMILY]
Sent: 2/5/2018 5:48:26 PM
To: Lauren Wilk [lwilk@aluminum.org]
BCC: Atkinson, Emily [Atkinson.Emily@epa.gov]
Subject: RE: Aluminum Association Meeting Request

Hi Lauren,

It looks like Bill Wehrum could be available for a 45 minute meeting on Friday, March 2, 2018 at 3:00pm.

Please advise if this could work on your end.

Emily

Emily Atkinson
Management Analyst/Office Manager
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5412B, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Lauren Wilk [mailto:lwilk@aluminum.org]
Sent: Thursday, February 01, 2018 12:06 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>; Lewis, Josh <Lewis.Josh@epa.gov>
Subject: Aluminum Association Meeting Request

Emily and Josh –

Will Lovett suggested I connect with you on scheduling a meeting with Assistant Administrator Wehrum for a few representatives of the aluminum industry. We have availability on the following dates: February 16, 20, 21, 23, 26, 27, 28 or March 1 (but we can certainly be flexible if an alternative date is necessary).

The Aluminum Association is active with EPA on a number of issues – and specifically, the members of our Aluminum Transportation Group (ATG) would very much like to hear directly from Mr. Wehrum about the Administration's priorities related to automotive GHG emissions and fuel economy regulations. The ATG represents the Association's member companies that produce aluminum for use in cars and trucks, including Alcoa, Arconic, Novelis, Rio Tinto and others.

The aluminum industry plays a significant role in the automotive supply chain, and the pounds of aluminum content per vehicle has grown by more than 30 percent over the past decade. Driven by that auto sector growth, the aluminum industry has announced or completed U.S. plant expansions and investments of more than $2.6 billion since 2013. Already this year, Novelis announced that it was investing $300 million in a new greenfield automotive finishing facility in Guthrie, Kentucky. The industry is acutely interested in the outcome of the midterm review on vehicle fuel economy, and we have met previously with the White House, OMB, NHTSA, CARB and others on this topic.

I'd be happy to answer any questions or provide additional background, if that's helpful.

Thanks so much,

Lauren

Lauren Wilk
Vice President, Policy & International Trade
The Aluminum Association
1400 Crystal Drive, Suite 430
Arlington, VA 22202
T 703.358.2981 | C[redacted] | F 703.358.2961
JOIN THE CONVERSATION:

Appointment

From: Atkinson, Emily [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=BB2155ADEF6A44AEA9410741F0C01D27-ATKINSON, EMILY]
Sent: 2/5/2018 5:47:39 PM
To: Gunasekara, Mandy [Gunasekara.Mandy@epa.gov]; Grundler, Christopher [grundler.christopher@epa.gov]; Hengst, Benjamin [Hengst.Benjamin@epa.gov]; Cook, Leila [cook.leila@epa.gov]; Charmley, William [charmley.william@epa.gov]

Subject: HOLD || Meet with Aluminum Association - Aluminum Transport Group Members (Tentative)
Attachments: Aluminum Association Meeting Request
Location: WJC-N 5400 + Video with AA

Start: 3/2/2018 8:00:00 PM
End: 3/2/2018 8:45:00 PM
Show Time As: Tentative

Re: automotive GHG emissions and fuel economy regulations
To: Bill Wehrum, Mandy Gunasekara, Chris Grundler, Ben Hengst, Lee Cook, Bill Charmley
Outside Attendees (in person): TBD

Appointment

From: Atkinson, Emily [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=BB2155ADEF6A44AEA9410741F0C01D27-ATKINSON, EMILY]
Sent: 11/30/2017 9:36:42 PM
To: Grundler, Christopher [grundler.christopher@epa.gov]; Hengst, Benjamin [Hengst.Benjamin@epa.gov]; Burch, Julia [Burch.Julia@epa.gov]; Charmley, William [charmley.william@epa.gov]

Subject: Meet with Toyota re: MidTerm Review (MTR) for autos/light duty trucks (Confirmed)
Attachments: RE: Meeting Requests for Toyota ; FW: Meeting Requests for Toyota from S. Fotis; Confirmed 12/15 at 3pm: Meeting Requests for Toyota from S. Fotis
Location: WJC-N 54[redacted]

Start: 12/15/2017 8:00:00 PM
End: 12/15/2017 8:45:00 PM
Show Time As: Tentative

To: Bill Wehrum, Chris Grundler, Ben Hengst, Julia Burch, Bill Charmley
Outside Attendees (in person): TBD

Message

From: Hearing Registration-ASD [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=34BAF91EEFAE4EB9B0700A0B672A52CF-HEARING REG]
Sent: 9/11/2017 5:56:43 PM
To: Sterlyn Richard [[redacted]
Subject: RE: Midterm Evaluation Hearing: Draft Testifier Panel Assignments

From: Sterlyn Richard [mailto:[redacted]
Sent: Sunday, September 03, 2017 12:17 PM
To: Hearing Registration-ASD <Hearing_Registration-ASD@epa.gov>
Subject: Re: Midterm Evaluation Hearing: Draft Testifier Panel Assignments

Sterlyn Richard
Private Citizen
Medical Scientist
Sept. 3, 2017

According to my current theory, the vibration and CO2 emissions, which is warm, acidic heat, from cars in Houston attracted rainfall. At the moment, the standards encourage the use of alternative, more quiet energy, clean energy. While in Houston traffic, It occurred to me with the thoughts of a rain dance on a very large scale. So what we saw in Houston could happen again in urban areas according to my theory. It may be due to a slight change in density in concentrated areas of carbon emissions and vehicles.
There's also second hand smoke while sitting in traffic. It's the quality of life for human beings that we investigate. Current research states we emit carbon like that of the jurassic period. While the dinosaurs did go extinct, which is fact, we continue to pollute the environment with excess heat and even more frail body habitus than that of the dinosaurs. Our habitat is more fine tuned in my opinion, thus we must help rather than hinder our environment.

Sorry I cannot attend the hearing that afternoon due to my work schedule. Here is my statement. I would like it read if possible.

On Sep 1, 2017, at 4:54 PM, Hearing Registration-ASD <Hearing_Registration-ASD@epa.gov> wrote:

Dear Stakeholder:

Thank you for registering to testify at the EPA Public Hearing on the Reconsideration of the Midterm Evaluation Final Determination being held on Wednesday, September 6, 2017, at the Renaissance Washington DC Downtown Hotel, 999 9th St. NW, Washington DC.

Approximately 110 people are registered to testify at this time. Attached is a preliminary list of the panel assignments, as well as an alphabetical listing by name. There may be additional changes to the panel assignments before the date of the hearing, though we hope to keep such changes to a minimum. If you see any errors in your name or affiliation, please let me know as soon as possible. At the hearing, we will have copies of the final panel list, and we will display any changes during the day in real time on a public video monitor.

Each speaker should plan to limit their verbal remarks to no more than 5 minutes, in order to make sure all testifiers have an opportunity to speak. The EPA presiding official will be monitoring the time allotted to each speaker in order to be sure all who wish to testify are able to do so. It is helpful for us to have electronic copies of the testimony, so please consider emailing your statement to me either before or after the hearing.

Thank you again for your participation in this important event, and please let me know if you have any questions.

Sincerely,
Robin Moran
Senior Policy Advisor
Office of Transportation and Air Quality
U.S. Environmental Protection Agency
(734) 214-4781

<Draft Panel Assignments-2017-09-01-v2.pdf>

<Alpha_Panel_Listing-2017-09-01.pdf>

Message

From: Tom Wenzel [tpwenzel@lbl.gov]
Sent: 3/30/2018 5:56:33 PM
To: Lieske, Christopher [lieske.christopher@epa.gov]
Subject: Re: draft LBNL Phase 1 report

Ok, does that mean if I email it anytime before 4/1 it will be eventually included in the docket, should the docket be closed on 4/1?

On 3/30/18 10:10 AM, Lieske, Christopher wrote:

Hi Tom –

I don't believe regulations.gov will accept comments directly for EPA's MTE docket because the comment period is closed. If you email the comments to the docket, the docket staff will record when the document was submitted in the information regarding the posting. Please be sure to note the MTE docket number (EPA-HQ-OAR-2015-0827) in the email to help the docket staff.

Hope this helps.

Chris

From: Tom Wenzel [mailto:TPWenzel@lbl.gov]
Sent: Friday, March 30, 2018 12:54 PM
To: Lieske, Christopher <lieske.christopher@epa.gov>
Subject: Re: draft LBNL Phase 1 report

Hi Chris-

When I look at the docket on the website, it says the last submittal was made 3/23/18. Should I just submit directly online? I have one other report I want to submit, and I want to make sure these documents get in before COB eastern today.

Thanks,
Tom

On 3/28/18 1:47 PM, Lieske, Christopher wrote:

Hi Tom -

The docket number is EPA-HQ-OAR-2015-0827. The comments may be submitted through email to a-and-r-Docket@epa.gov.

Thanks

Chris

-----Original Message-----
From: Tom Wenzel [mailto:TPWenzel@lbl.gov]
Sent: Wednesday, March 28, 2018 4:22 PM

To: Lieske, Christopher <lieske.christopher@epa.gov>
Cc: Li, Chi <Li.Chi@epa.gov>
Subject: Re: draft LBNL Phase 1 report

Hi Chris-

I have two reports I'd like to submit to the EPA Final Determination docket before it is closed March 31. Should I send them to you, or just submit directly to the docket? And what's the docket number?

Thanks,
Tom

On 3/28/18 5:54 AM, Li, Chi wrote:

> If the filing is delayed, please call Chris Lieske (734-214-4514, email: lieske.christopher@epa.gov) in advance to see what could be done. You might need to file the report first (one time) then submit the final one to replace the previous one. Again, please call me if you have any question.
>
> Regards,
>
> Chi Li
>
> Office of Transportation & air quality
> 2000 traverwood Dr.
> Ann arbor, MI 48105
> Tel: 734 214 4336
> Fax: 734 214 4050

Message

From: David McCusker[redacted]
Sent: 4/4/2018 3:40:56 PM
To: Lieske, Christopher [lieske.christopher@epa.gov]
Subject: EPA CO2 standards to 2025 support backing down

Mr. Lieske,

This a comment item on the topic of the Midterm Evaluation for EPA GHG and thus CAFE rules.

In my opinion the EPA and too-high CO2 and fuel economy standards have had and will promote a net negative effect on the public often from unanticipated effects. I have read the 38 page announcement and scanned over the nearly 600 pages of automotive sales mix fuel consumption rules. I favor major relaxing of the progression of CO2 and thus fuel economy standards.

1. Pushing technology has resulted in less safe and reliable transportation. Reasons are that technologies such as gasoline direct injection and dual clutch automated manual transmissions are troublesome for early adopters (me, both cases, unfortunately). Light-weighting has caused the removal of the basic backup system of a spare wheel and tire, adding a road service burden ironically to our newer cars (again, me). Are these costs and hazards figured into standards planning? I expect not.

2. People make decisions with their wallets, and better fuel economy makes for a larger acceptable circle around the home or work location. Our collective will degrades the accuracy of the planning model numbers for which we are as buyers affected. Who else thinks that the recent decades of observably higher job mobility and declining long term employment are related to a demonstrably bigger commuting radius as I do?

It irritates me that my mechanically basic US made rear wheel drive sedan had to be saddled with expensive premium branding - yet its roots in Australia are quite humble. It needs an extra step to maintain its early direct injection (vs. port injection) intake. Before that car fifty iterations of the check engine light limp along mode from a DCT hatchback resulted in a sort sale. The CVT equipped SUV that I once owned worked wonderfully but I said goodbye after the dealership noted the risky lack of continuing support. My newest US made car was selected for normally aspirated port fuel injection over a direct injected rival, ordinary (manual!) transmission and at least a place to carry a spare tire. Why not leave us to decide what we can buy and drive based on all of the many naturally occurring trade-offs without running up our costs? Especially since man made "global warming" is an economic competition hoax.

Thank you,
Dave McCusker
my credibility: Retired electrical engineer, automotive enthusiast, entrepreneur and past member Int'l SAE.

Message

From: Barbara J. Bauer [Barbara_Bauer@abtassoc.com]
Sent: 10/26/2017 12:00:43 PM
To: Lieske, Christopher [lieske.christopher@epa.gov]; Brunner, Christine [brunner.christine@epa.gov]
CC: Melissa Spivey [Melissa_Spivey@abtassoc.com]; Marissa Hoer [Marissa_hoer@abtassoc.com]; Vanessa Ehrenpreis [Vanessa_Ehrenpreis@abtassoc.com]
Subject: RE: MTE Comments--Question

15.1 is "General Comments Regarding EPA's Analysis of MY 2022-2025 GHG Standards." Did you mean 16.2 "Biofuels?"

Barbara Bauer | Associate | **CommentCounts Product Manager** | Abt Associates
5001 South Miami Blvd, Suite 210| Durham, NC 27703
O: 919-294-7781 | F: 301-828-9715| www.abtassociates.com

From: Lieske, Christopher [mailto:lieske.christopher@epa.gov]
Sent: Thursday, October 26, 2017 7:55 AM
To: Barbara J. Bauer; Brunner, Christine
Cc: Melissa Spivey; Marissa Hoer; Vanessa Ehrenpreis
Subject: RE: MTE Comments--Question

Hi Chris and Barbara –

I recommend placing anything ethanol related including FFVs under biofuels, section 15.1. Thanks.

From: Barbara J. Bauer [mailto:Barbara_Bauer@abtassoc.com]
Sent: Tuesday, October 24, 2017 9:10 AM
To: Brunner, Christine <brunner.christine@epa.gov>; Lieske, Christopher <lieske.christopher@epa.gov>
Cc: Melissa Spivey <Melissa_Spivey@abtassoc.com>; Marissa Hoer <Marissa_hoer@abtassoc.com>; Vanessa Ehrenpreis <Vanessa_Ehrenpreis@abtassoc.com>
Subject: MTE Comments--Question

Hi Chris and Chris,

I am reviewing several comment documents (NHTSA 0189, EPA 9009, EPA 6600, and EPA 10130 (Pearson, et al)), submitted by Noyes Law Corporation on behalf of Pearson Fuels. I need your input for correct placement in the outline. The theme of the comments revolves around the upcoming NHTSA EIS, FFVs, California data, and E85/ethanol. Here is a the basic argument:

A review of the Notice reveals that it does not contain a single reference to ethanol. Similarly, NHTSA's EIS analysis for the MY 2017-2025 CAFE standards failed to recognize that the quantity of ethanol substituted for petroleum is a critical policy and environmental variable that merits attention both in the EIS process and in the design of the CAFE policy framework. Since CAFE's fundamental purpose is to reduce U.S. reliance on foreign oil, this Comment asserts that NHTSA is legally obligated to consider various measures to maximize ethanol use in vehicles as a reasonable alternative since

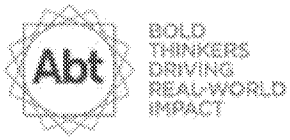
ethanol is a proven and feasible means to reduce petroleum imports, to reduce environmental impacts, and to provide significant GHG reduction benefits.

To support its arguments, this Comment provides E85 usage data and E85 pricing information from California due to the available high quality data, and because California is already using ethanol to reduce petroleum imports and GHG emissions. The Comment examines how changes to the CAFE policy framework have already caused both a boom and a bust in the manufacture of flex fuel vehicles (FFVs). Looking forward, it describes how a strategic CAFE policy framework can leverage FFVs and E85 stations as a bridge to facilitate the transition to high octane vehicles that will reduce costs to consumers and enable fulfillment of EPCA's and EISA's objectives. It concludes by emphasizing the importance of revisiting E85 and FFV assumptions, and initiating an immediate re-examination of the appropriate F factor for FFVs.

Outline sections 16.4, Other Fuels Issues and 22.3, Comments outside the scope of the MTE are possibilities. What do you think?

Thanks!

Barbara Bauer | Associate | CommentCounts Product Manager | Abt Associates
5001 South Miami Blvd, Suite 210| Durham, NC 27703
O: 919-294-7781 | F: 301-828-9715| www.abtassociates.com



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Message

From: Curt Wells [cwells@aluminum.org]
Sent: 10/16/2017 12:51:28 PM
To: Lieske, Christopher [lieske.christopher@epa.gov]
Subject: RE: Aluminum Association Midterm Evaluation Comments

Chris –

Thank you and please let me know if you have any questions. I appreciate you bringing this to my attention.

Curt.

From: Lieske, Christopher [mailto:lieske.christopher@epa.gov]
Sent: Monday, October 16, 2017 8:41 AM
To: Curt Wells <cwells@aluminum.org>
Subject: RE: Aluminum Association Midterm Evaluation Comments

Curt –

This is great, thanks. There is no need for you to submit the revised file through regulations.gov. We will swap out the file.

Thanks again,

Chris

From: Curt Wells [mailto:cwells@aluminum.org]
Sent: Sunday, October 15, 2017 9:56 PM
To: Lieske, Christopher <lieske.christopher@epa.gov>
Subject: RE: Aluminum Association Midterm Evaluation Comments

Chris –

Attached is the referenced attachment for public consumption. It is the same document submitted to the docket will all references to confidentiality removed. Please let me know if you or your staff will now place this in the docket or if I need to go into the docket and do it (which may not be possible since the comment period has closed)..

Thanks.

Curt.

From: Lieske, Christopher [mailto:lieske.christopher@epa.gov]
Sent: Thursday, October 12, 2017 11:05 AM
To: Curt Wells <cwells@aluminum.org>
Subject: Aluminum Association Midterm Evaluation Comments

Hello Mr. Wells –

I am contacting you regarding your comments on EPA's Midterm Evaluation Reconsideration. Our docket staff asked that I reach out to you regarding one of the documents, attached, that the Aluminum Association submitted with their comments through regulations.gov. The document's pages are marked confidential and copyrighted, although the file name is marked "PUBLIC." Documents that are confidential are withheld from the public docket and documents that are copyrighted have restricted public access (they are not available to the public online through regulations.gov).

Could you please confirm whether the document, a presentation titled "Aluminum Content in North American Light Vehicles 2016 to 2018," Summary Report, July 2017, should be treated as confidential and withheld from the public docket, should be treated as not confidential but copyrighted with restricted public access, or should be treated as not confidential or copyrighted and released with full access to the public through regulations.gov?

Thank you and please let me know if you have any questions.

Chris

Chris Lieske
EPA, Office of Transportation and Air Quality
2000 Traverwood
Ann Arbor, MI 48105
734-214-4584

Message

From: Rebekah Givens [Rebekah@CVEnergy.com]
Sent: 12/4/2017 6:38:35 PM
To: Lieske, Christopher [lieske.christopher@epa.gov]
Subject: RE: OTAQ Fuel Economy Link

Got it, thanks!

Rebekah Givens
Research Associate

ClearView Energy Partners, LLC
209 Constitution Avenue, NE
Washington, DC 20002

202-506-5744 (O)
[redacted]
202-747-1967 (F)

From: Lieske, Christopher [mailto:lieske.christopher@epa.gov]
Sent: Monday, December 4, 2017 1:32 PM
To: Rebekah Givens <Rebekah@CVEnergy.com>
Subject: RE: OTAQ Fuel Economy Link

The Midterm Evaluation web page is at: https://www.epa.gov/regulations-emissions-vehicles-and-engines/midterm-evaluation-light-duty-vehicle-greenhouse-gas

---

From: Rebekah Givens [mailto:Rebekah@CVEnergy.com]
Sent: Monday, December 04, 2017 1:28 PM
To: Lieske, Christopher <lieske.christopher@epa.gov>
Subject: OTAQ Fuel Economy Link

Chris,

Here is my email. Thanks so much.

Best,
Rebekah

Rebekah Givens
Research Associate

ClearView Energy Partners, LLC
209 Constitution Avenue, NE
Washington, DC 20002

202-506-5744 (O)
[redacted]
202-747-1967 (F)

Message

From: Barbara J. Bauer [Barbara_Bauer@abtassoc.com]
Sent: 11/15/2017 1:57:49 PM
To: Lieske, Christopher [lieske.christopher@epa.gov]; Brunner, Christine [brunner.christine@epa.gov]
CC: Vanessa Ehrenpreis [Vanessa_Ehrenpreis@abtassoc.com]; Marissa Hoer [Marissa_hoer@abtassoc.com]; Melissa Spivey [Melissa_Spivey@abtassoc.com]
Subject: RE: EDF Attachments Submitted to MTE Docket

Thanks for the direction, that's how we'll proceed.

Barbara Bauer | Associate | **CommentCounts Product Manager** | Abt Associates
5001 South Miami Blvd, Suite 210| Durham, NC 27703
O: 919-294-7781 | F: 301-828-9715| www.abtassociates.com

From: Lieske, Christopher [mailto:lieske.christopher@epa.gov]
Sent: Wednesday, November 15, 2017 8:51 AM
To: Barbara J. Bauer; Brunner, Christine
Cc: Vanessa Ehrenpreis; Marissa Hoer; Melissa Spivey
Subject: RE: EDF Attachments Submitted to MTE Docket

Hi Chris and Barbara –

The attached, which is a joint comment with EDF as the lead but with other organizations included as well, should be considered the primary EDF comment for purposes of the attachments. Also, that's great news regarding the comment coding. Thanks!

From: Barbara J. Bauer [mailto:Barbara_Bauer@abtassoc.com]
Sent: Wednesday, November 15, 2017 8:31 AM
To: Brunner, Christine <brunner.christine@epa.gov>; Lieske, Christopher <lieske.christopher@epa.gov>
Cc: Vanessa Ehrenpreis <Vanessa_Ehrenpreis@abtassoc.com>; Marissa Hoer <Marissa_hoer@abtassoc.com>; Melissa Spivey <Melissa_Spivey@abtassoc.com>
Subject: EDF Attachments Submitted to MTE Docket

Hello Chris and Chris,

EDF submitted multiple attachments under different docket ID numbers—see list below. However, we can't find the actual individual EDF comment document. EDF did join with other organizations on two comment submission, but we didn't find any individual comment submission from EDF only. We thought an EDF submission would eventually show up in the docket to accompany the many attachments, but it hasn't so far. I'm wondering if EPA has an individual submission from EDF??

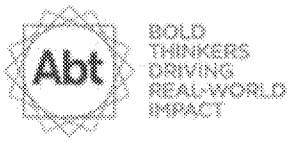
If there is no EDF individual comment, I'm a little puzzled about how to handle the 100+ attachments. We would normally attach them to EDF's record in CommentCounts, but since there is no comment submission and thus no

individual EDF record, I'm wondering about the best way to handle the attachments. We could add all the attachments to one of the group submissions that includes EDF, or we could just add a note in the CommentCounts Notes Field informing the reader of the attachments. Your thoughts?

Also, we completed the coding of all available MTE comments, including mass comment campaigns, and should have them entered in CommentCounts by the end of the week. We continue to review the citizen comments (hundreds more were added to the docket this week) and the public hearing transcript.

Thanks!

Barbara Bauer | Associate | CommentCounts Product Manager | Abt Associates
5001 South Miami Blvd, Suite 210| Durham, NC 27703
O: 919-294-7781 | F: 301-828-9715| www.abtassociates.com



From: Melissa Spivey
Sent: Tuesday, November 14, 2017 1:00 PM
To: Barbara J. Bauer
Subject: EDF attachments submitted to MTE docket

Hi Barbara,

Here is a breakdown of the various EDF documents submitted to the MTE docket. Each electronic cover letter had the same statement:

Environmental Defense Fund is submitting the attached documents in support of our comment, which is responsive to EPA's notice of reconsideration of the Final Determination of the Midterm Evaluation for light-duty vehicle GHG emissions standards.

Here is a list of the Docket Numbers along with the number of attachments:

EPA-HQ-OAR-2015-0827-9091 – Cover sheet only. Attachment information in on the cover sheet. Attachments were too big to submit to regulations.gov

EPA-HQ-OAR-2015-0827-9180 – 20 attachments

EPA-HQ-OAR-2015-0827-9181 – 20 attachments

EPA-HQ-OAR-2015-0827-9183 – 13 attachments

EPA-HQ-OAR-2015-0827-9184 – 20 attachments

EPA-HQ-OAR-2015-0827-9185 – 20 attachments

EPA-HQ-OAR-2015-0827-9190 – Cover sheet only. Attachment information in on the cover sheet. Attachments were too big to submit to regulations.gov

EPA-HQ-OAR-2015-0827-9192 – 20 attachments

EPA-HQ-OAR-2015-0827-9193 – 17 attachments

EPA-HQ-OAR-2015-0827-9578 – 13 attachments

EPA-HQ-OAR-2015-0827-9722 – 6 attachments

EPA-HQ-OAR-2015-0827-9726 – 1 attachment

Let me know if you have any questions!

Melissa Spivey | Analyst, Environment & Resources | Abt Associates
5001 South Miami Blvd, Suite 210| Durham, NC 27703
O: 919-294-7849 | F: 617-386-8611| www.abtassociates.com

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Message

From: Foor Jeff (FCA) [jeff.foor@fcagroup.com]
Sent: 10/5/2017 8:30:35 PM
To: Lieske, Christopher [lieske.christopher@epa.gov]
CC: Oshnock Gary (FCA) [gary.oshnock@fcagroup.com]
Subject: CONFIDENTIAL FCA Comments - RFC for Revised Final Determination, Docket ID No. EPA–HQ–OAR–2015–0827
Attachments: FCA Comments for MTE RFC CONF BUS INFO.PDF

CONFIDENTIAL AND PRIVILEGED

Chris,

Attached is FCA's Confidential Business Information submission on the:

> **Request for Comment on Reconsideration of the Final Determination of the Mid-Term Evaluation of Greenhouse Gas Emissions Standards for Model Year 2022–2025 Light-Duty Vehicles; Request for Comment on Model Year 2021 Greenhouse Gas Emissions Standards**

FCA will also upload a redacted public version to the docket.

Regards,
Jeff Foor
Emissions/Fuel Economy/Greenhouse Gases
Vehicle Safety & Regulatory Compliance
FCA US LLC
E-Mail: jeff.foor@fcagroup.com
[redacted]

Message

From: Barbara J. Bauer [Barbara_Bauer@abtassoc.com]
Sent: 11/15/2017 1:31:17 PM
To: Brunner, Christine [brunner.christine@epa.gov]; Lieske, Christopher [lieske.christopher@epa.gov]
CC: Vanessa Ehrenpreis [Vanessa_Ehrenpreis@abtassoc.com]; Marissa Hoer [Marissa_hoer@abtassoc.com]; Melissa Spivey [Melissa_Spivey@abtassoc.com]
Subject: EDF Attachments Submitted to MTE Docket

Hello Chris and Chris,

EDF submitted multiple attachments under different docket ID numbers—see list below. However, we can't find the actual individual EDF comment document. EDF did join with other organizations on two comment submission, but we didn't find any individual comment submission from EDF only. We thought an EDF submission would eventually show up in the docket to accompany the many attachments, but it hasn't so far. I'm wondering if EPA has an individual submission from EDF??

If there is no EDF individual comment, I'm a little puzzled about how to handle the 100+ attachments. We would normally attach them to EDF's record in CommentCounts, but since there is no comment submission and thus no individual EDF record, I'm wondering about the best way to handle the attachments. We could add all the attachments to one of the group submissions that includes EDF, or we could just add a note in the CommentCounts Notes Field informing the reader of the attachments. Your thoughts?

Also, we completed the coding of all available MTE comments, including mass comment campaigns, and should have them entered in CommentCounts by the end of the week. We continue to review the citizen comments (hundreds more were added to the docket this week) and the public hearing transcript.

Thanks!

Barbara Bauer | Associate | CommentCounts Product Manager | Abt Associates
5001 South Miami Blvd, Suite 210| Durham, NC 27703
O: 919-294-7781 | F: 301-828-9715| www.abtassociates.com

From: Melissa Spivey
Sent: Tuesday, November 14, 2017 1:00 PM
To: Barbara J. Bauer
Subject: EDF attachments submitted to MTE docket

Hi Barbara,

Here is a breakdown of the various EDF documents submitted to the MTE docket. Each electronic cover letter had the same statement:

Environmental Defense Fund is submitting the attached documents in support of our comment, which is responsive to EPA's notice of reconsideration of the Final Determination of the Midterm Evaluation for light-duty vehicle GHG emissions standards.

Here is a list of the Docket Numbers along with the number of attachments:

EPA-HQ-OAR-2015-0827-9091 – Cover sheet only. Attachment information in on the cover sheet. Attachments were too big to submit to regulations.gov

EPA-HQ-OAR-2015-0827-9180 – 20 attachments

EPA-HQ-OAR-2015-0827-9181 – 20 attachments

EPA-HQ-OAR-2015-0827-9183 – 13 attachments

EPA-HQ-OAR-2015-0827-9184 – 20 attachments

EPA-HQ-OAR-2015-0827-9185 – 20 attachments

EPA-HQ-OAR-2015-0827-9190 – Cover sheet only. Attachment information in on the cover sheet. Attachments were too big to submit to regulations.gov

EPA-HQ-OAR-2015-0827-9192 – 20 attachments

EPA-HQ-OAR-2015-0827-9193 – 17 attachments

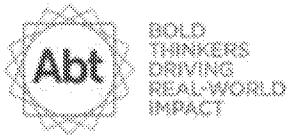
EPA-HQ-OAR-2015-0827-9578 – 13 attachments

EPA-HQ-OAR-2015-0827-9722 – 6 attachments

EPA-HQ-OAR-2015-0827-9726 – 1 attachment

Let me know if you have any questions!

Melissa Spivey | Analyst, Environment & Resources | Abt Associates
5001 South Miami Blvd, Suite 210| Durham, NC 27703
O: 919-294-7849 | F: 617-386-8611| www.abtassociates.com



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Message

From: Curt Wells [cwells@aluminum.org]
Sent: 10/16/2017 1:56:00 AM
To: Lieske, Christopher [lieske.christopher@epa.gov]
Subject: RE: Aluminum Association Midterm Evaluation Comments
Attachments: Ducker Public_FINAL.pdf

Chris –

Attached is the referenced attachment for public consumption. It is the same document submitted to the docket will all references to confidentiality removed. Please let me know if you or your staff will now place this in the docket or if I need to go into the docket and do it (which may not be possible since the comment period has closed)..

Thanks.

Curt.

From: Lieske, Christopher [mailto:lieske.christopher@epa.gov]
Sent: Thursday, October 12, 2017 11:05 AM
To: Curt Wells <cwells@aluminum.org>
Subject: Aluminum Association Midterm Evaluation Comments

Hello Mr. Wells –

I am contacting you regarding your comments on EPA's Midterm Evaluation Reconsideration. Our docket staff asked that I reach out to you regarding one of the documents, attached, that the Aluminum Association submitted with their comments through regulations.gov. The document's pages are marked confidential and copyrighted, although the file name is marked "PUBLIC." Documents that are confidential are withheld from the public docket and documents that are copyrighted have restricted public access (they are not available to the public online through regulations.gov).

Could you please confirm whether the document, a presentation titled "Aluminum Content in North American Light Vehicles 2016 to 2018," Summary Report, July 2017, should be treated as confidential and withheld from the public docket, should be treated as not confidential but copyrighted with restricted public access, or should be treated as not confidential or copyrighted and released with full access to the public through regulations.gov?

Thank you and please let me know if you have any questions.

Chris

Chris Lieske
EPA, Office of Transportation and Air Quality
2000 Traverwood
Ann Arbor, MI 48105
734-214-4584

ALUMINUM CONTENT IN NORTH AMERICAN LIGHT VEHICLES 2016 TO 2028

Summary Report

July 2017

This Report Has Been Prepared Solely For :

DRIVEALUMINUM

drivealuminum.org

DUCKER WORLDWIDE

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Final Comments

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INTRODUCTION AND METHODOLOGY

Ducker & Aluminum Association Project

- The Aluminum Association Auto & Light Truck Group (ATG) commissioned Ducker in October 2016 to determine the latest aluminum content in terms of net pounds per vehicle by vehicle and in aggregate for light vehicles produced in North America in CY 2016 through CY 2020 After 2020, Ducker agreed to provide a range of future aluminum sceanarios based on TAR

Data and Information Sources

- Ducker determined that in addition to our methodology of gathering the latest information and opinions on the future from our extensive internal database and network of OEMs and their suppliers, we would use all the latest data available from NHTSA, EPA and other sources such as the Center for Automotive Research (CAR) to establish an independent view of what the technology paths in TAR imply about weight savings by OEM, vehicle type and even specific vehicles beyond 2020
- The theoretical or top down analysis relies primarily on reports and databases provided by the EPA, NHTSA and CAR with insights and input from industry respondents throughout the supply chain

Process, Goals, and Objectives

- The goal of the top down analysis was to determine the weight savings* and material mix solutions implied by the latest government reports and their supporting documents and databases. The top down analysis examined the effect of fuel prices, vehicle mix, secondary weight savings, electrification, vehicle design and vehicle launch cadence on the amount of weight that is expected to be shed by vehicle type to reduce the MY 2015 average vehicle weight by 7% by MY 2025
- The top down analysis is not an attempt to predict what each OEM will do to meet the regulations. It provides a framework of what the regulators believe the OEMs could do to meet the regulations in the safest and most cost effective manner in the time period 2022 – 2025. Average weight savings and material forecasts are only valuable to create a frame work. Vehicle segment analysis and where possible, specific vehicle weight savings are the key to the success for both the top down and bottom up analyses. NHTSA and the EPA have established slightly different weight reduction goals for 2025 and beyond. The average of the targets amounts to a reduction of 270 net pounds per vehicle or 7% compared to the average vehicle weight of MY 2015. The NHTSA technology path to achieve 7% is highly vehicle specific, and was critical to the Ducker analysis of material substitution options after 2020
- The regulation driven weight reduction goals vary by type of vehicle and by OEM. Less than 25% of the vehicles have to contribute 50% of the total savings. Pickup trucks, large cars and SUVs, minivans and electric vehicles will bear most of the burden. Nearly 20% of the vehicles are likely to reduce mass by 20% while an equal number of vehicles are likely to reduce mass by less than 7.5% according to NHTSA Technology Path in Chapter 13 of the Technical Assessment Report (TAR)

**All weight savings references in the report are the direct savings from material substitution. Under the assumption that weight creep increases and secondary weight savings and engine resize weight decreases offset each other, the material sum after substitution is the equivalent of curb weight*

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EXECUTIVE SUMMARY

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EXECUTIVE SUMMARY: 2020 HIGHLIGHTS

This study is organized in two segments, 2015 to 2020 and Scenarios beyond 2020

- Mass reduction initiatives are influenced by CAFE regulations, consumer preferences, fuel prices, and OEM objectives. The CAFE regulation through 2021 is firm and the other influencing factors are recognized by OEM and in near-term reflected vehicle programs. Most vehicle programs through 2020 have been finalized, or are nearing final production commitments. The 2015 to 2020 section is the result of a detailed "Bottom up" model and component analysis of production vehicle materials content
- CAFE regulations have a major impact on mass reduction initiatives. Regulations after 2021 are currently the subject of the "Mid-Term Review" process and will have a draft regulation expected in April 2018. Content and timing of different Fuel Economy, CO2 levels and timing of future levels are being considered by OEMS and Regulators. To address that uncertainty, Ducker evaluated potential automotive materials utilization under three different mass reduction and timing assumptions:

Current Proposed Regulation	7% *Mass Reduction by 2025
Most Likely OEM Compromise	7% *Mass Reduction by 2028
Market Driven Solution (no CAFE regulation)	4.5% *Mass Reduction by 2028

**-based on 2015 average curb mass of 3834 Lbs.*

- Ducker believes that future CAFE regulations will be within the range defined by these bounds

Major Findings – 2020

- Aluminum content forecast for 2015 to 2020:

	2015	2020
Average Aluminum Pounds per Vehicle	397	466
% Share of Curb Mass per Vehicle	10%	13%
Average Curb Mass Pounds per Vehicle	3835	3735

- Fifty percent of total aluminum content growth over the next five years will be driven by aluminum for closures, crash management, steering knuckles and structural vacuum die cast parts
- Aluminum content by vehicle segment in 2020 will range from 262 pounds per vehicle in the A/B segment passenger cars to over 550 pounds per vehicle for the average pickup truck. The average passenger car will contain 362 pounds of aluminum and the average light truck will contain 523 pounds of aluminum by 2020
- The average aluminum content for five OEMs in 2020 will be over 600 pounds per vehicle

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EXECUTIVE SUMMARY: 2020 HIGHLIGHTS

Sheet Growth Trends - 2020

- Aluminum sheet for closures is expected to increase from 23 pounds per vehicle in 2015 to 61 pounds per vehicle in 2020, or over 2.5 times in five years which is more growth for closures than expected
- Aluminum hood penetration will increase from 50% in 2015 to 71% in 2020. Penetration for doors will increase from less than 5% in 2015 to slightly over 25% 2020. Hoods will account for 25% of the of the total 2020 closure weight, and doors will be 43%. Other than the Tesla Model S, there were essentially no aluminum doors in North American produced vehicles prior to 2014
- At current production levels that equates to 1.06 million tons (or 2.1B lb.'s) of gross sheet consumption including process scrap (blanking scrap, stamping scrap, etc.). Aluminum sheet for Body-in-White (BIW) components is expected to increase from 14 pounds per vehicle in 2015 to 26 pounds per vehicle, an increase of 83% from 2015 to 2020. Closure and BIW sheet combined will reach 87 pounds per vehicle by 2020

Extrusion Growth Trends - 2020

- Total extruded product content including shapes, tube, rod and bar increases from 36 pounds per vehicle in 2015 to 49 pounds per vehicle in 2020. Aluminum extrusions for crash management parts are expected to increase by nearly six pounds per vehicle, up 65%. Extruded BIW components are expected to increase by 4.4 pounds or 100% by 2020. Bumper beam penetration will increase from 33% in 2015 to 54% in 2020

Casting / Forging Growth Trends - 2020

- Aluminum vacuum die castings (structural HPDC) for body components and sub-frames are expected to increase from 2.6 pounds per vehicle in 2015 to 14.4 pounds per vehicle in 2020, significantly more than expected
- Aluminum castings and forgings for steering knuckles will increase from 12.1 pounds per vehicle in 2015 to 16.4 pounds per vehicle in 2020 or 35% over the period
- Overall aluminum forgings grow from 7.9 pounds per vehicle in 2015 to 9.3 pounds per vehicle in 2020, while all casting content (HPDC, PM, Sand, others) will decline from 285.8 pounds per vehicle to 153.8 pounds per vehicle. Most of the declines come from content losses from powertrain and drivetrain castings

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EXECUTIVE SUMMARY: MASS REDUCTION SCENARIOS AFTER 2020

Mass Reduction Scenarios: 2021 - 2028

- Based on EPA and NHTSA technology implementation pathways, mass reductions from zero percent for some passenger cars and small SUVs to 20% for large trucks and SUVs is technically feasible and required to achieve and overall industry average mass reduction of 7% (270 pounds) from 2015 to 2025 and beyond
- Vehicle launch cadence is a critical factor influencing the pace of new technology adoption. The next launch of a high volume vehicle with significant aluminum BIW content is 2024. A plethora of vehicles with significant aluminum body content are expected to launch within the 2024 – 2028 timeframe further indicating the need to examine attainment of mass savings goal beyond 2025
- A total mass savings of 270 pounds is the goal for 2025; however, the weight savings achieved from 2015 to 2020 will only be 100 pounds leaving 170 pounds to be removed from 2021 to 2025. Empirical evidence from Ducker's research with OEMs and their suppliers suggests achieving the 7% curb mass reductions is likely to be delayed to 2028 due in part to practical new model launch timing constraints
- Under all the scenarios, aluminum contributed to more than 50% of the total mass reduction ranging from 270 pounds (7% MR) to as little as 170 pounds (4.5% MR) by 2028
- Closures are the most consistent high growth application for aluminum under all scenarios. Crash management, steering and chassis aluminum parts don't vary a great deal under the three mass reduction scenarios. Like closures, these components are very compatible with vehicle utilizing steel within its BIW
- Net increase in aluminum content in all scenarios includes a decline of 12 pounds per vehicle in aluminum powertrain content after 2020

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EXECUTIVE SUMMARY: MASS REDUCTION SCENARIOS AFTER 2020

7% Mass Reduction Scenarios

- Ducker believes the 7% average mass reduction (270 pounds) by 2028, with nearly five million vehicle with 850 pounds of total aluminum content or greater is the most likely scenario.
- The 7% Mass Reduction Scenario uses the TAR as a guideline and requires a multi-material substitution strategy with significant quantities of aluminum, AHSS/UHSS, magnesium and some CFRP applied after 2020. Achieving the 7% goal requires nearly 5 million vehicles with a weight reduction of over 10% and a high content of aluminum BIW parts and all the pickup trucks and large SUVs with 15% to 20% mass savings
- Material content for mass reduction of 7% by 2025, or 7% mass reduction by 2028 are the same. The major difference is the technology implementation rates and the available vehicles for mass reduction based on vehicle model cadence
- In the 7% Mass Reduction scenarios, multi material / multi product BIW structures were assumed to be much more prevalent than all-aluminum body structures, and less prevalent that all-steel body structures in 2025 and 2028
- There were several parts identified as High Growth Aluminum parts and include: closures, BIW structures, crash management, sub-frame,/cradle, cross members and steering parts
- The 7% Mass Reduction (2025 or 2028) scenarios will result in:
  - Total aluminum content growing to 565 pounds per vehicle (16% of curb mass)
  - Aluminum share of curb mass growing from 10% in 2015 to 16% by 2028
  - Nearly 25% of 2028 vehicles having partial aluminum BIW and in some cases complete BIW. 2.1 million of those vehicle will be pickup trucks and 400,000 will have PHEV/ZEV powertrains

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EXECUTIVE SUMMARY: MASS REDUCTION SCENARIOS AFTER 2020

7% Mass Reduction Scenarios Continued

- Aluminum closures will grow to over 100 pounds per vehicle and 85 pounds per vehicle under 4.5% MR scenario)
- Thirty five critical vehicle programs will account for 25% of total vehicle production. These vehicles will provide over 50% of all weight savings from material substitution
- Aluminum stamped BIW parts will grow to 61 pounds per vehicle, but will drop to only 34 pounds per vehicle under the 4.5% MR scenario. Stamped aluminum BIW parts only grow under the need for significant mass reduction. Body extrusions display a similar pattern to body stampings
- Vacuum Die Castings are the most secure aluminum parts for BIW structures due to the parts consolidation available with VDC
- Steel, magnesium, CFRP and polycarbonate additions are critical, however, aluminum BIW and closure parts are the key to success for reaching the 7% MR goal sometime in the next decade

4.5% Mass Reduction Scenario

- A 4.5% Mass Reduction scenario reflects a more "market driven" scenario with less aluminum and polymer composites in the BIW. This scenario adds less than one million vehicles with a 10% weight savings after 2020
- The 4.5% MR scenario by 2028 results in total aluminum content of 494 pounds per vehicle, or only 28 pounds per vehicle over 2020
- Aluminum closures will grow to over 85 pounds per vehicle from 62 pounds per vehicle in 2020

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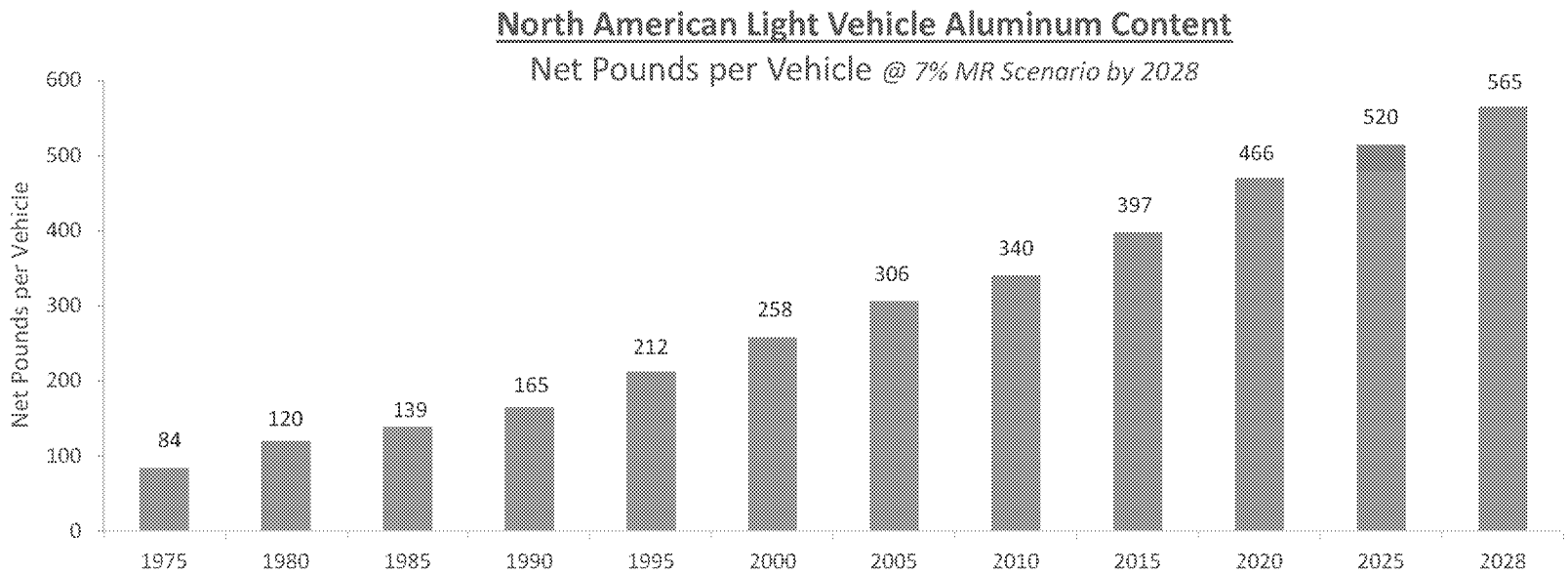
EXECUTIVE SUMMARY: ALUMINUM CONTENT 1975 TO 2028

Under all mass reduction scenarios, aluminum content in North American light vehicles will continue to show uninterrupted growth well into the next decade. The 7% mass reduction scenario by 2028 achieves an average addition of 15 pounds of aluminum content annually from 2015 onward.

55 Years of Uninterrupted Growth



Source: Ducker Analysis 1Q2017

STUDY FINDINGS – ALUMINUM 2020

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STUDY RESULTS: ALUMINUM 2020

The growth for aluminum over the next five years has been analyzed and determined by a vehicle by vehicle, bottoms-up, additions and changes, based on primary research.

- The North American auto industry will achieve mass reduction of 100 pounds, (a reduction of 2.6%) compared to total vehicle weight of 3835 pounds in 2015. Aluminum will contribute 57 direct pounds
- Total aluminum content for 2020 will reach 466 pounds. This is an increase of 69 pounds from 2015
- Other aluminum parts will decline in weight by 9 pounds due to losses in engine size including the number of cylinders needed to maintain the current horsepower to weight ratio.
- The principal growth product for aluminum will be sheet for aluminum closures. For example, aluminum hoods will grow from 50% penetration today to over 71% penetration by 2020
- Total aluminum BIW & Closure sheet content for 2020 will be 1.63 billion pounds. The gross requirement could be as much as 2.42 billion pounds (1.1 million metric tons). Aluminum vacuum die castings will grow from less than 3 pounds per vehicle in 2015 to 14 pounds per vehicle by 2020. These thin-walled castings will be used on several new platforms as a replacement of steel stampings and in competition with aluminum stampings and some applications for extrusions
- After 2020, Ducker looked at different scenarios for aluminum auto growth in the next decade

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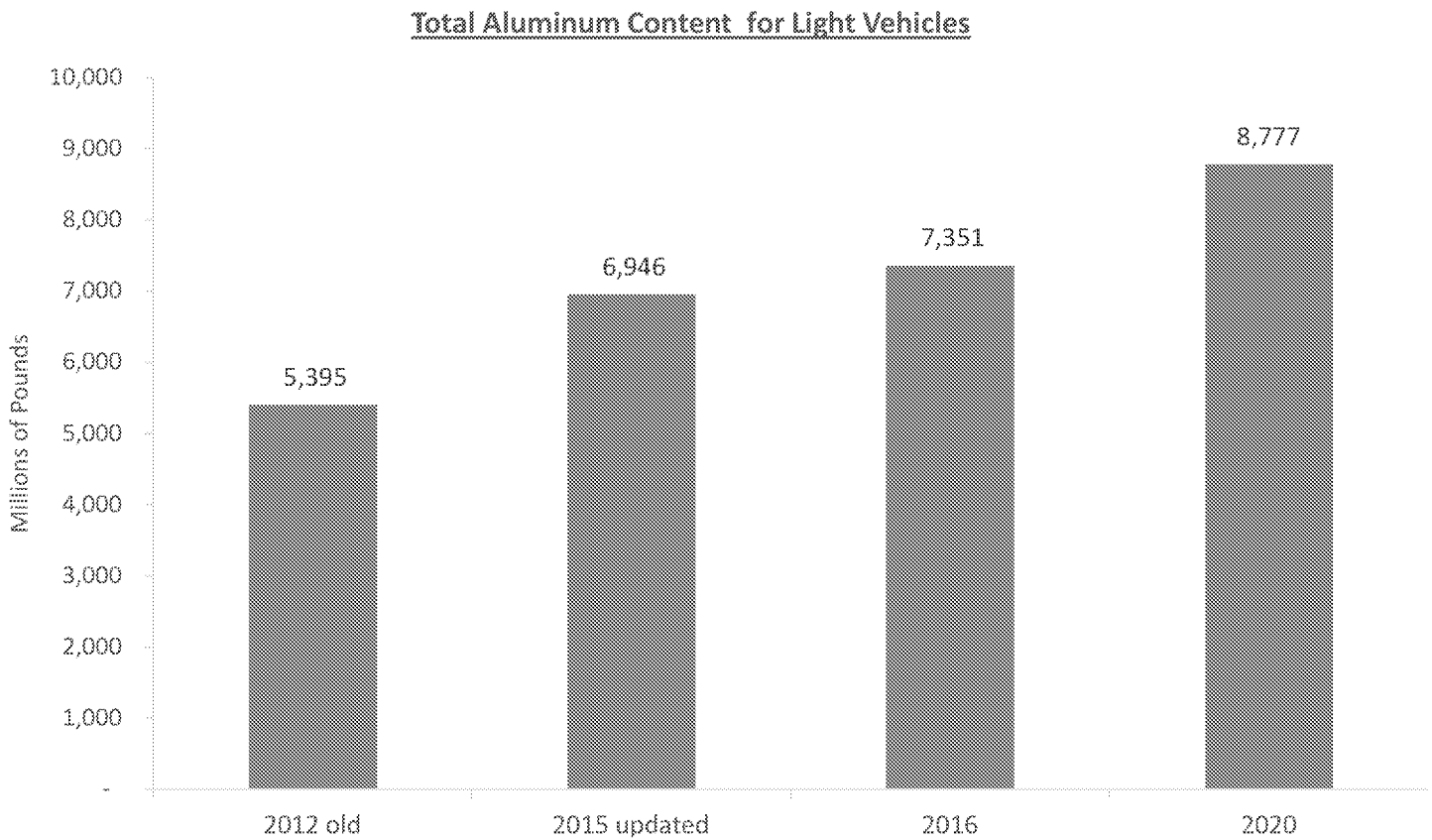
STUDY RESULTS: ALUMINUM 2020

Total North American light vehicle aluminum consumption will increase 29% in 2015 over 2012; this will increase another 6% in 2016 over 2015. Consumption in 2020 will surpass any records set before 2012 by nearly 3.5 billion pounds. This increase is an equal combination of more vehicles and aluminum content per vehicle.



	2012 old	2015 updated	2016	2020
Vehicle Production Units	15,434,338	17,495,388	17,885,647	18,835,325

Source: Ducker Analysis 1Q2017

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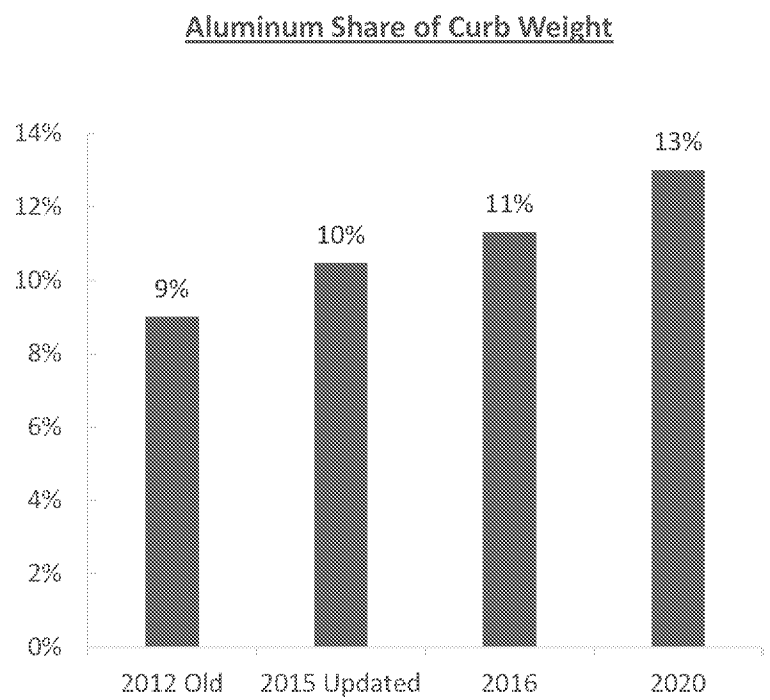
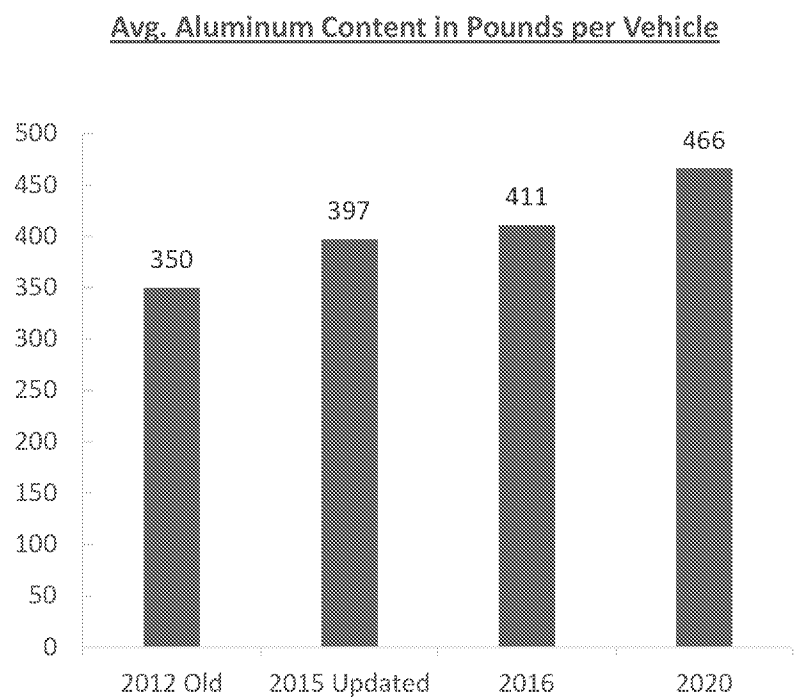
STUDY RESULTS: ALUMINUM 2020

Aluminum's share of the curb weight in 2015 is 10%, compared to 9% in 2012. Aluminum's share of the curb weight in 2016 is 11%.



Source: Ducker Analysis 1Q2017



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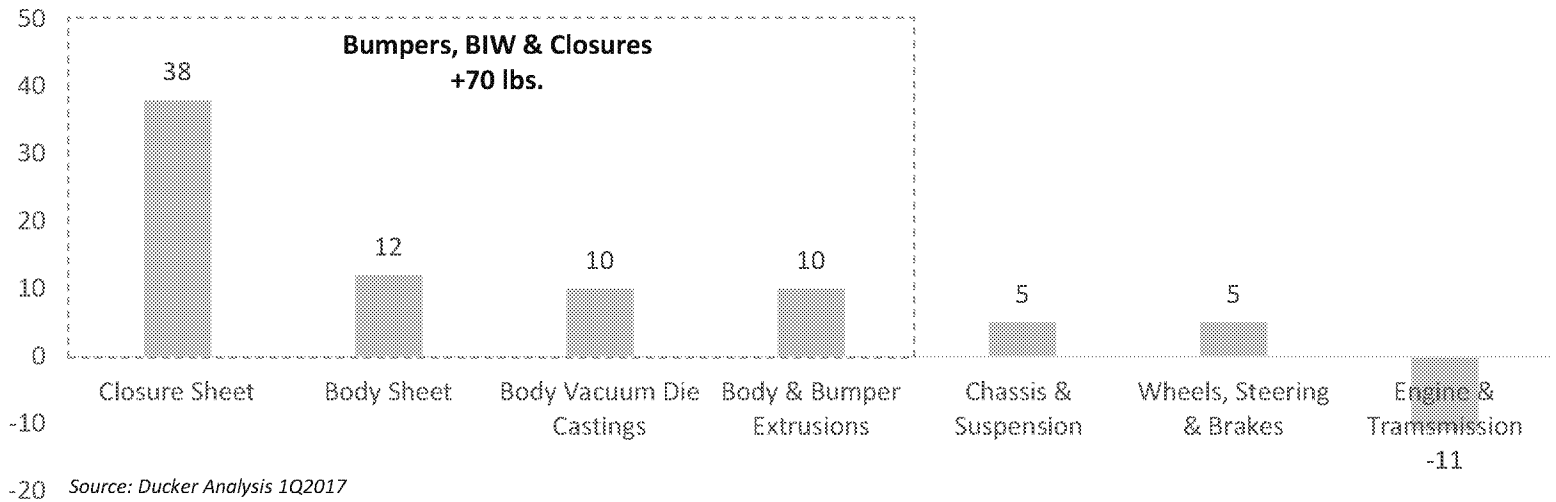
STUDY RESULTS: ALUMINUM 2020

Large content increases for closures, body-in-white parts and crash management parts are driving nearly 69 pounds of net aluminum content growth from 2015 to 2020. However, even when combined with over 150 pounds of growth for AHSS/UHSS steels, the mass savings will only be 100 pounds or 2.6% from 2015 to 2020.

Component or System Changes for Aluminum Content in 2015 versus 2020

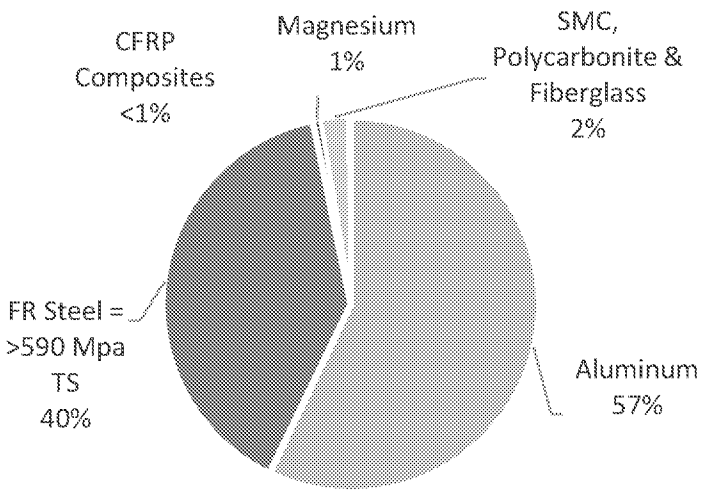


Source: Ducker Analysis 1Q2017

STUDY RESULTS: ALUMINUM 2020

Most of the major materiel decisions have been made for vehicles to launch in the next four years. Those decisions reveal that advanced grades of high strength steels and aluminum will be added to achieve a mass savings from material substitution of approximately 100 pounds.

2015-2020 Sources of Mass Savings from Material Substitution



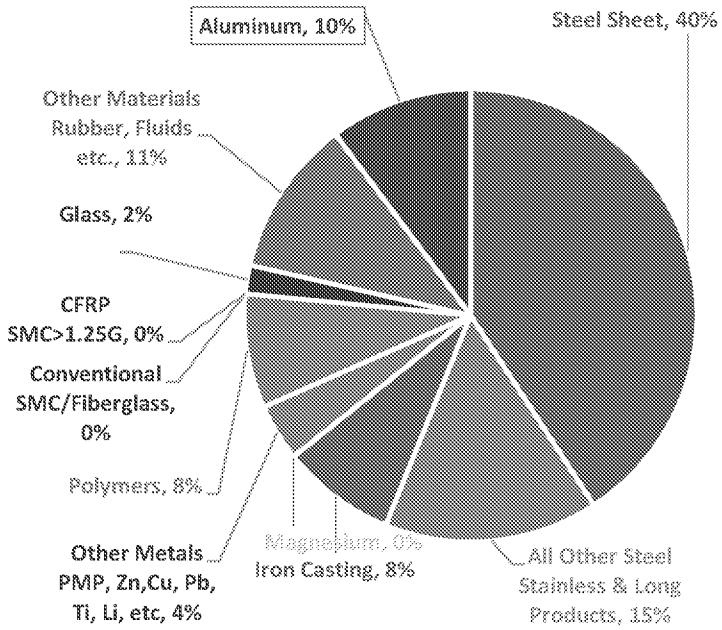
100 Pounds Saved

Source: Ducker Analysis 1Q2017

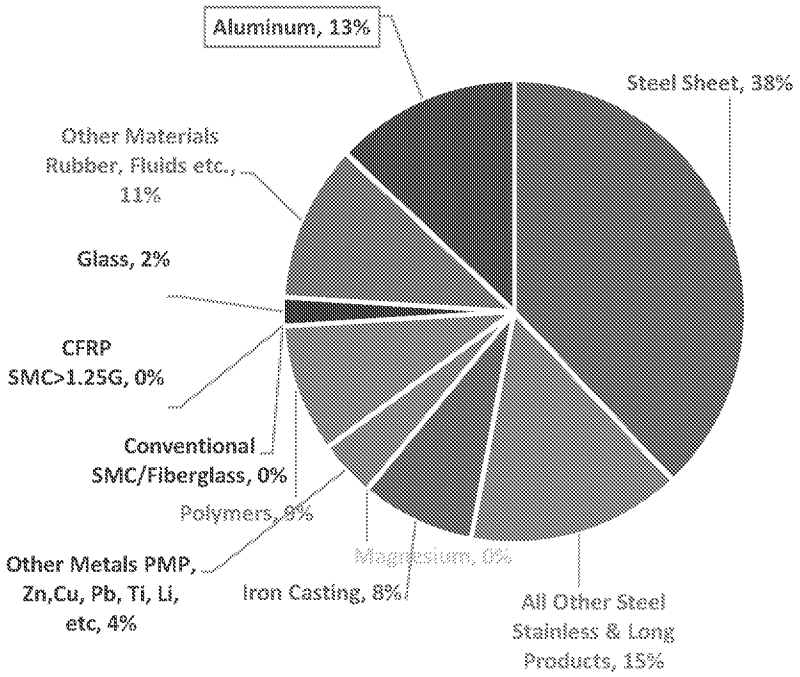
STUDY RESULTS: ALUMINUM 2020

Light Vehicle Material Mix shows aluminum will grow to 13% of total weight by 2020, and the mass savings will be 100 pounds with over 50% attributable to aluminum substitution for steel.

2015 CURB WEIGHT 3835 LBS



2020 CURB WEIGHT 3735 LBS

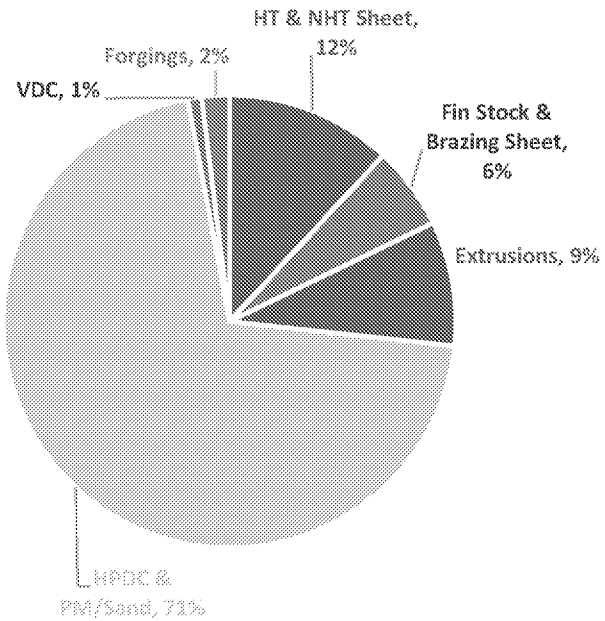


Source: Ducker Analysis 1Q2017

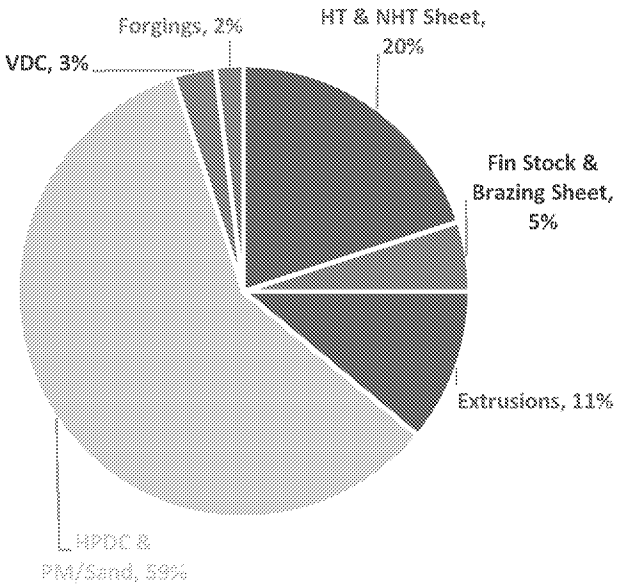
STUDY RESULTS: ALUMINUM 2020

Mill products and vacuum die castings will increase their share of all aluminum products from 29% in 2015 to 41% in 2020, as conventional HPDC, permanent mold and sand castings lose share.

2015 | 397 LBS



2020 | 466 LBS



Source: Ducker Analysis 1Q2017

COMPONENT ANALYSIS

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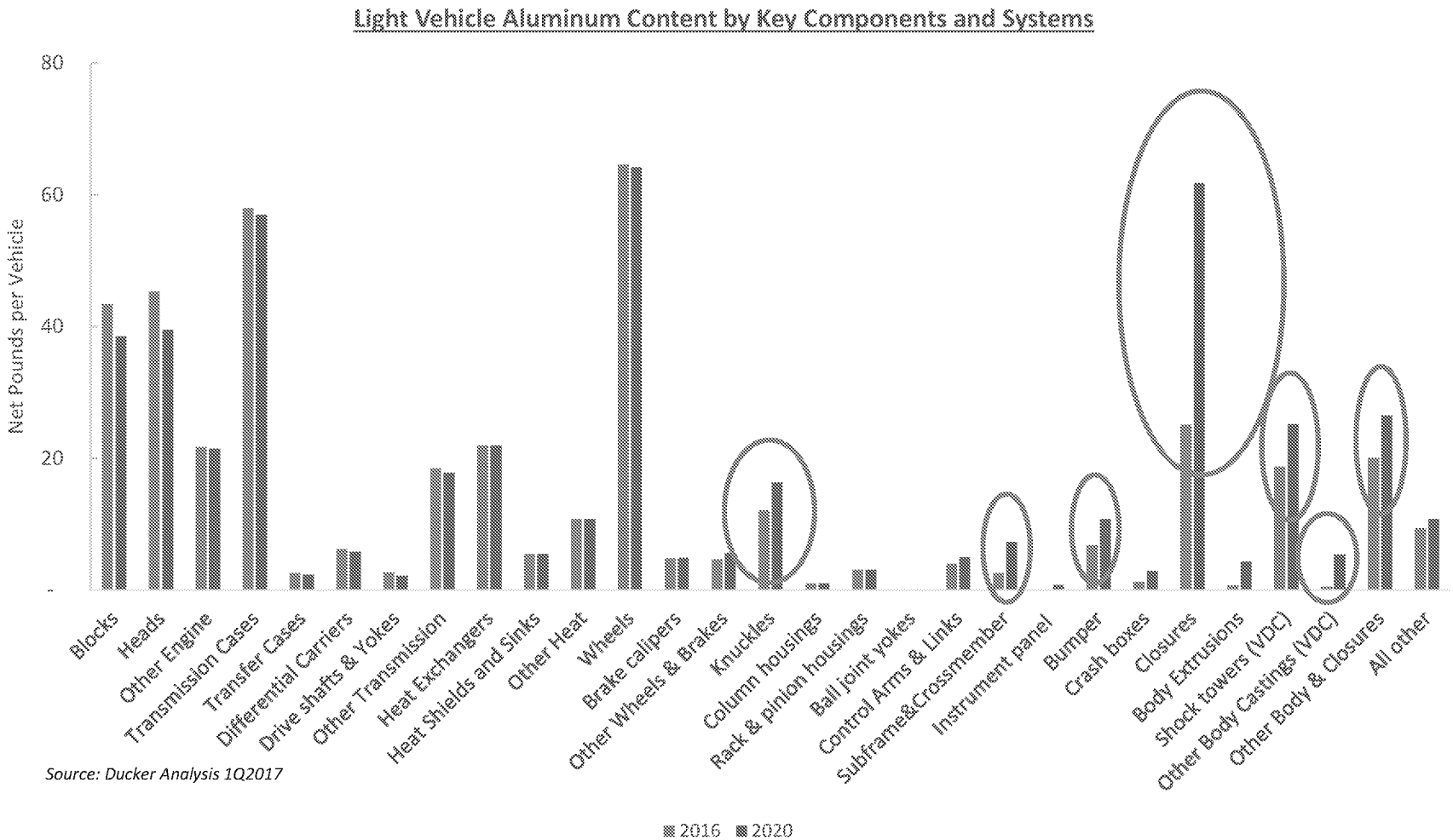
2016 VS. 2020 COMPARISONS

We can summarize the nearly 100 individual components being tracked into approximately 30 key components or systems. The key components for growth are indicated.



Source: Ducker Analysis 1Q2017

VEHICLE SEGMENT ANALYSIS

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VEHICLE SEGMENT ANALYSIS: ALUMINUM 2020

In 2020 the A/B Segment and VANs have decline in aluminum content overall due to downsize in aluminum castings primarily from the engine and other powertrain applications.

2020 Vehicle Segment Average Aluminum Pounds and Share of 2020 Production:

A/B Segment
Fiat 500
Ford Fiesta

240.6 lb.'s

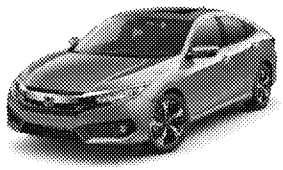
3% of Production

MPV Segment
Honda Odyssey
Chrysler Pacifica

399.7 lb.'s

3% of Production

C Segment
Ford Focus
Honda Civic



278.4 lb.'s

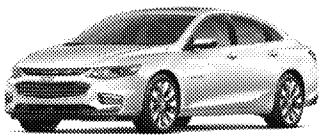
15% of Production

SUV Segment
Chevy Suburban
Jeep Grand Cherokee

475.1 lb.'s

41% of Production

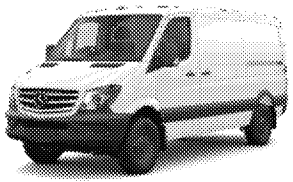
D Segment
Chevy Malibu
Dodge Charger
MUSTANG



447.6 lb.'s

17% of Production

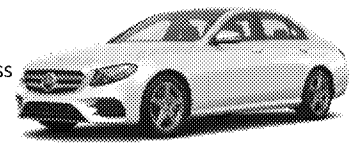
VAN Segment
Dodge Sprinter
Ford Transit



338.9 lb.'s

2% of Production

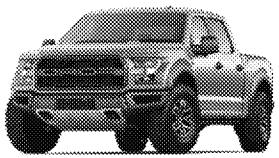
E Segment
Daimler E Class
Cadillac CT6



490.0 lb.'s

2% of Production

PUP Segment
Ford F150
Toyota Tundra



676.3 lb.'s

17% of Production

Source: Ducker Analysis

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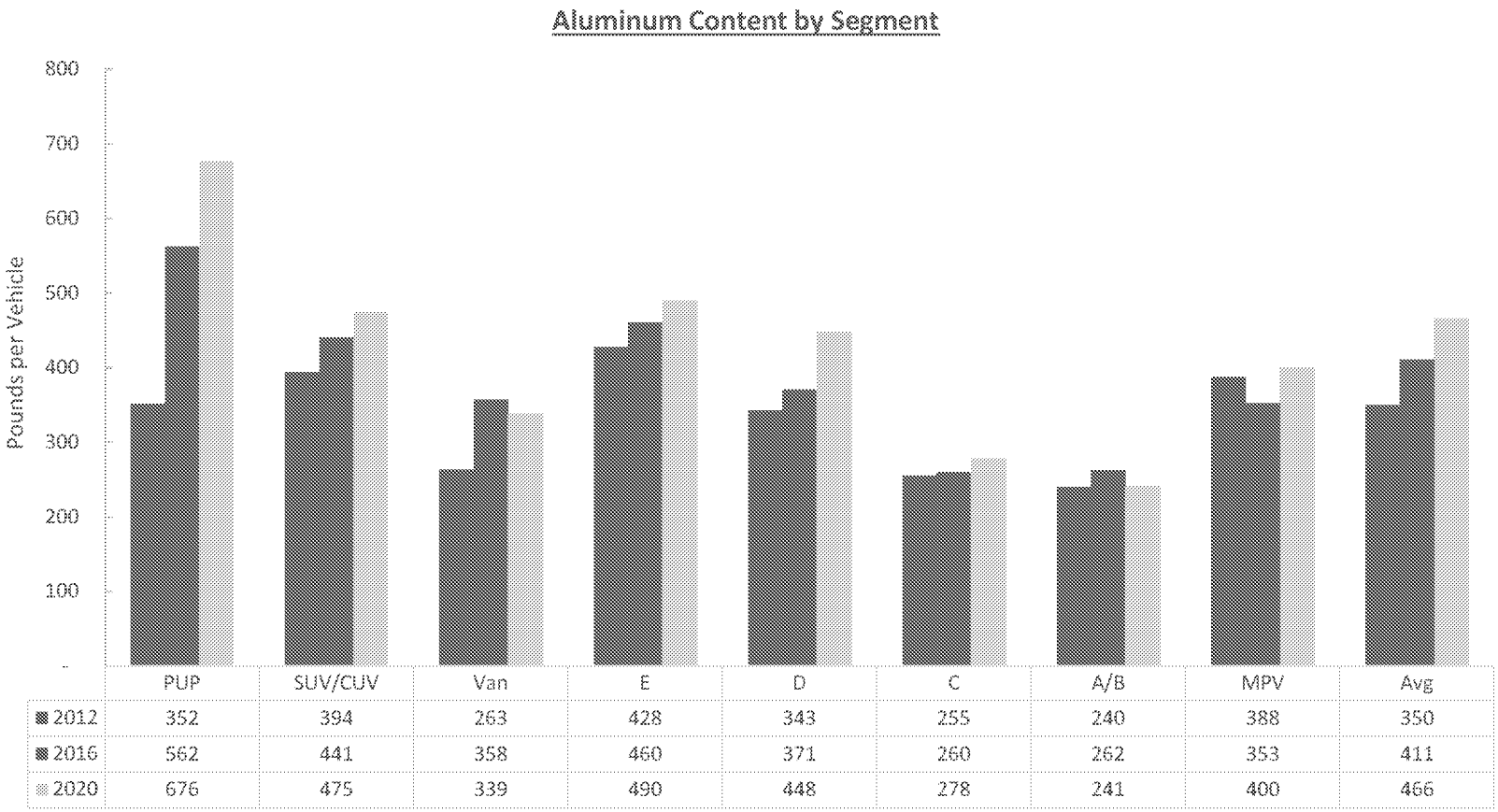
VEHICLE SEGMENT ANALYSIS: ALUMINUM 2020

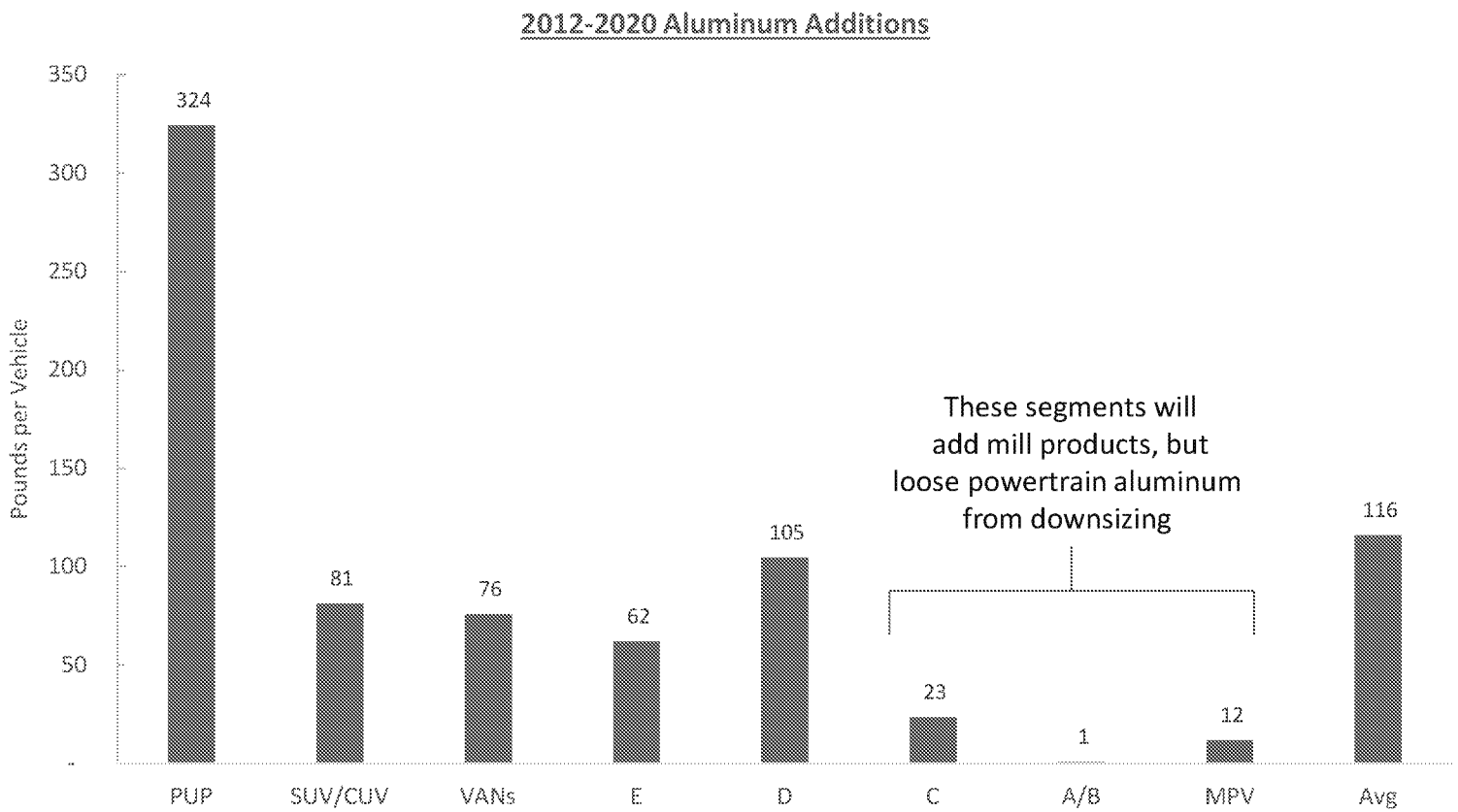
The average vehicle will add nearly 55 pounds of aluminum content between 2016 and 2020; PUP Segment will add the most aluminum with 114 pounds expected.



Source: Ducker Analysis

VEHICLE SEGMENT ANALYSIS: ALUMINUM 2020

Between 2012 and 2020, North American light vehicles add as much as 300 pounds for pickup trucks to less than 50 pounds for small cars and full size vans.



Source: Ducker Analysis

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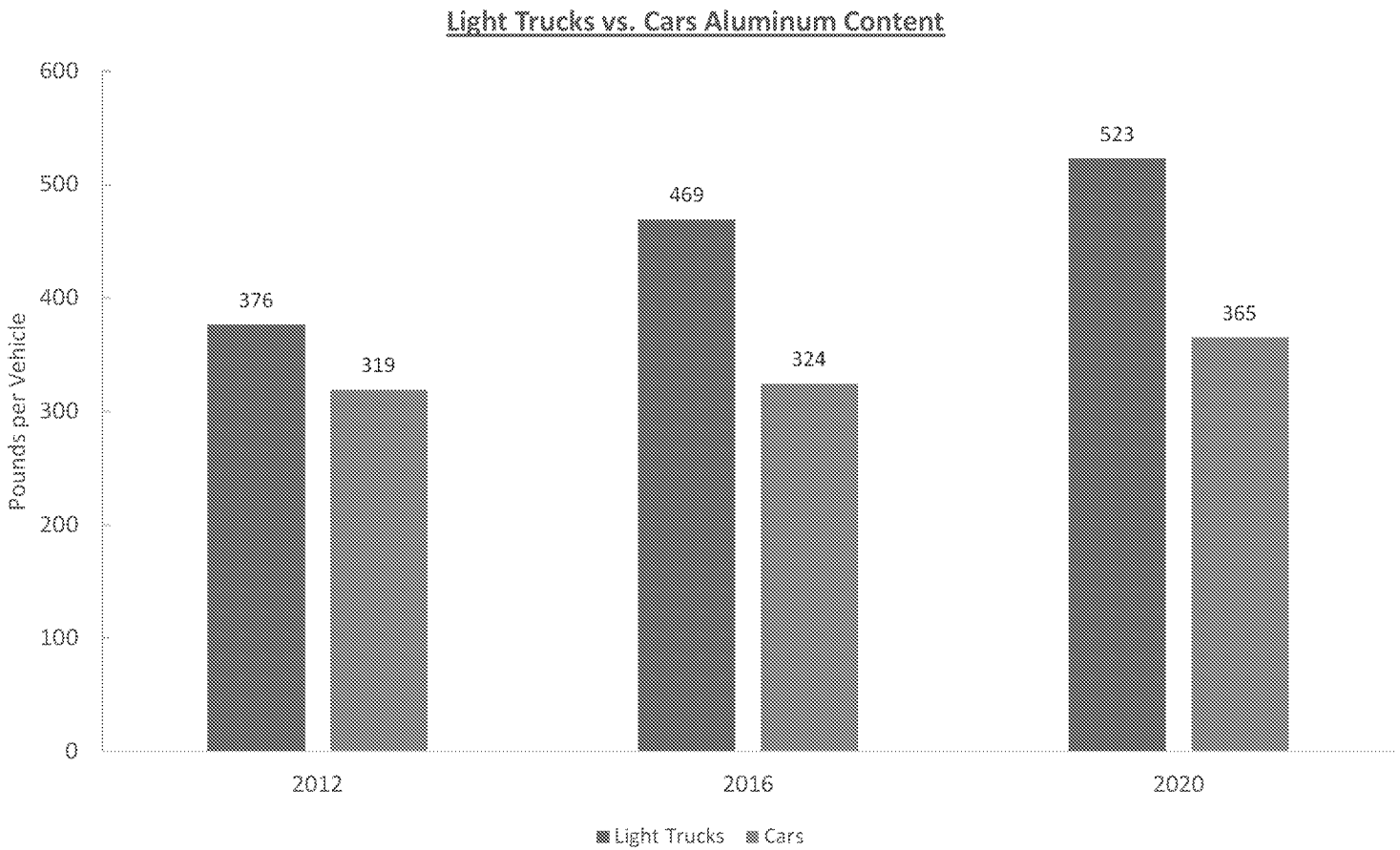
VEHICLE SEGMENT ANALYSIS: ALUMINUM 2020

Light trucks (pick ups, SUVs, vans and multipurpose vehicles) will add 150 pounds of new aluminum content from 2012 to 2020. These vehicles need to rely on weight savings for fuel economy improvement than cars. Passenger cars will only add approximately 50 pounds of new aluminum over the same period.



Source: Ducker Analysis

MASS REDUCTION SCENARIOS AFTER 2020

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MASS REDUCTION SCENARIOS

Duckers study and model is based on OEM and supplier tendecies and outlook and is further unconstrained by material bias.

Modeling Constraints:

- Overall weight savings from aluminum was constrained to 50% of the overall weight savings. Some vehicles used aluminum for over 75% of their weight savings, but overall 50% was still maintained for the fleet
- Significant weight savings was concentrated on full frame vehicles, large unibody SUVs, minivans, luxury sedans and PHEV/ZEVs
- Significant weight savings requires new vehicle designs in most cases. The model replacement cadence from 2023 to 2026 is conducive to some dramatic changes in materials and powertrains
- Ducker recognizes that many vehicles will save less than 100 pounds over the next fifteen years due to safety concerns, cost and competitive conditions
- OEM tendencies for spot welded body structures, aluminum structural castings, UHSS/AHSS (advanced steel) for occupant compartments and steel/polymer for pickup cargo boxes were taken into account. Multi material (MMV) body structures were assumed to be much more prevalent than 'all aluminum' body structures, but less prevalent than 'all steel' body structures
- Finally, the emphasis on proven technologies for mass production can not be overstated. Most of the alloy technology for 2025 has already been invented. It may not be well known, but the patents have been filed. It is unlikely that there is a material magic bullet for weight savings awaiting discovery

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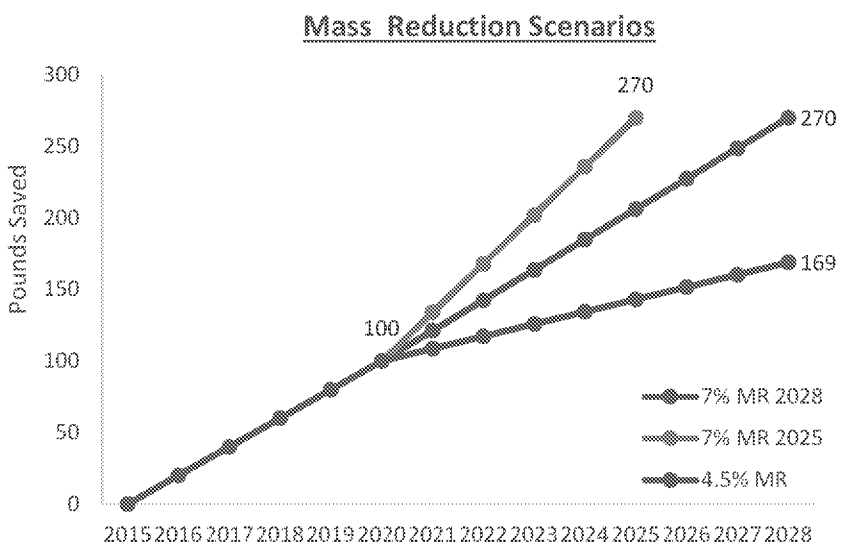
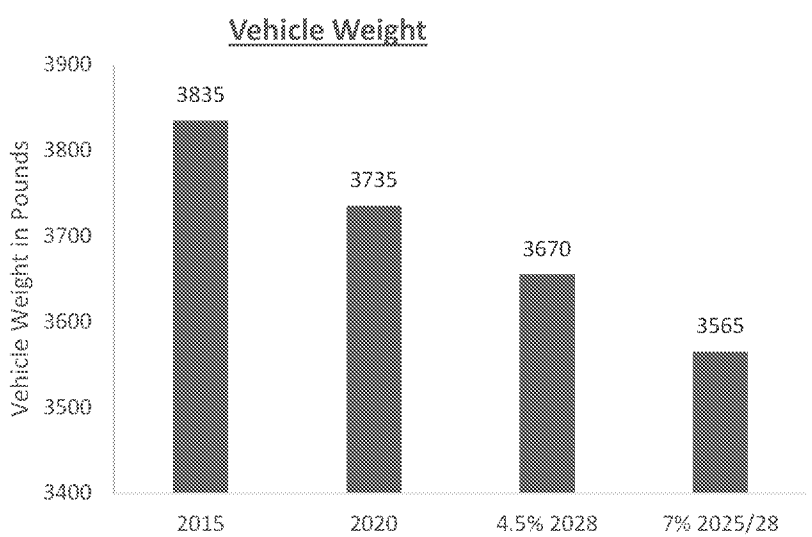
MASS REDUCTION SCENARIOS

The 7% Mass Reduction Scenario is consistent with the TAR, and maintains the current trend to save approximately 20 pounds per vehicle per year over the next ten years.

- The 7% Mass Reduction Scenario uses the TAR as a guideline, ultimately requires a multi-material substitution strategy with significant quantities of aluminum, AHSS/UHSS, magnesium and CFRP applied after 2020 to get to a 7% mass reduction by 2025 or by 2028.
  - To achieve a 7% MR by 2028 requires nearly 5 million vehicles with a weight reduction of over 10% and a high content of aluminum BIW parts with all the pickup trucks and large SUVs showing a 15% to 20% weight savings
  - Achieving a 7% MR by 2025 will require an accelerated adoption (than the 2028 scenario) by the OEMs in converting to greater levels of aluminum, AHSS, magnesium and CFRP. Based on calculations, discussions and analysis, Ducker believes the 7% MR by 2028 is a more achievable
- The 4.5% Mass Reduction by 2028 Scenario reflects a more market driven and performance requirement scenario with less aluminum and polymer composites in the BIW
- Ducker believes the 7% weight savings by 2028 is the most likely scenario for the next decade



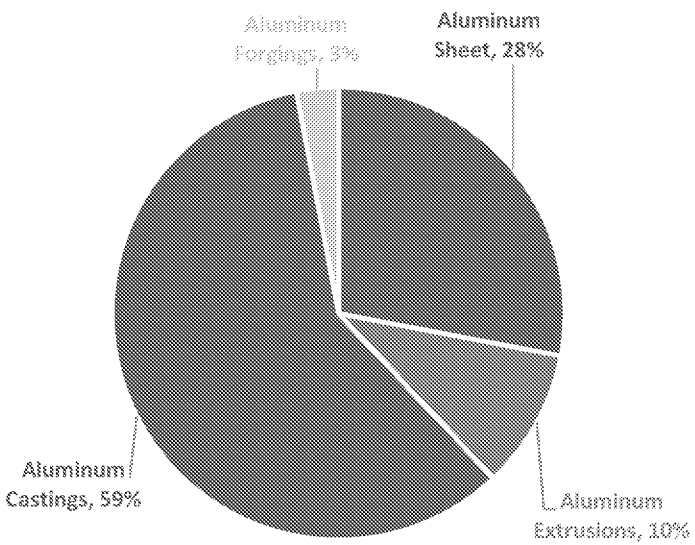


MASS REDUCTION SCENARIOS

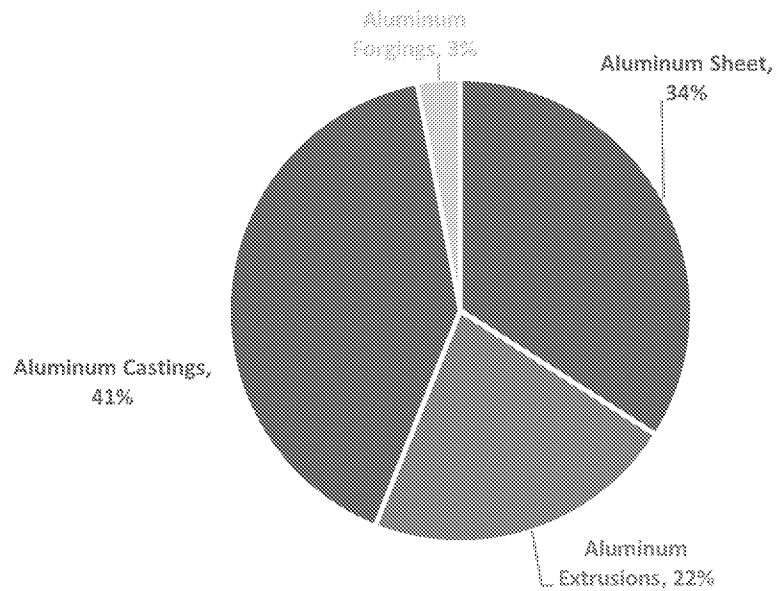
Depending on the level of mass reduction, aluminum content will range from 494 pounds per vehicle to 565 pounds per vehicle, flat rolled sheet will range from 28% to 34%of the total, extrusions will range from 10% to 22% and castings will range from 59% to 41%.

- Aluminum product mix will vary with the percent mass reduction

4.5% | 494 LBS



7% | 565 LBS



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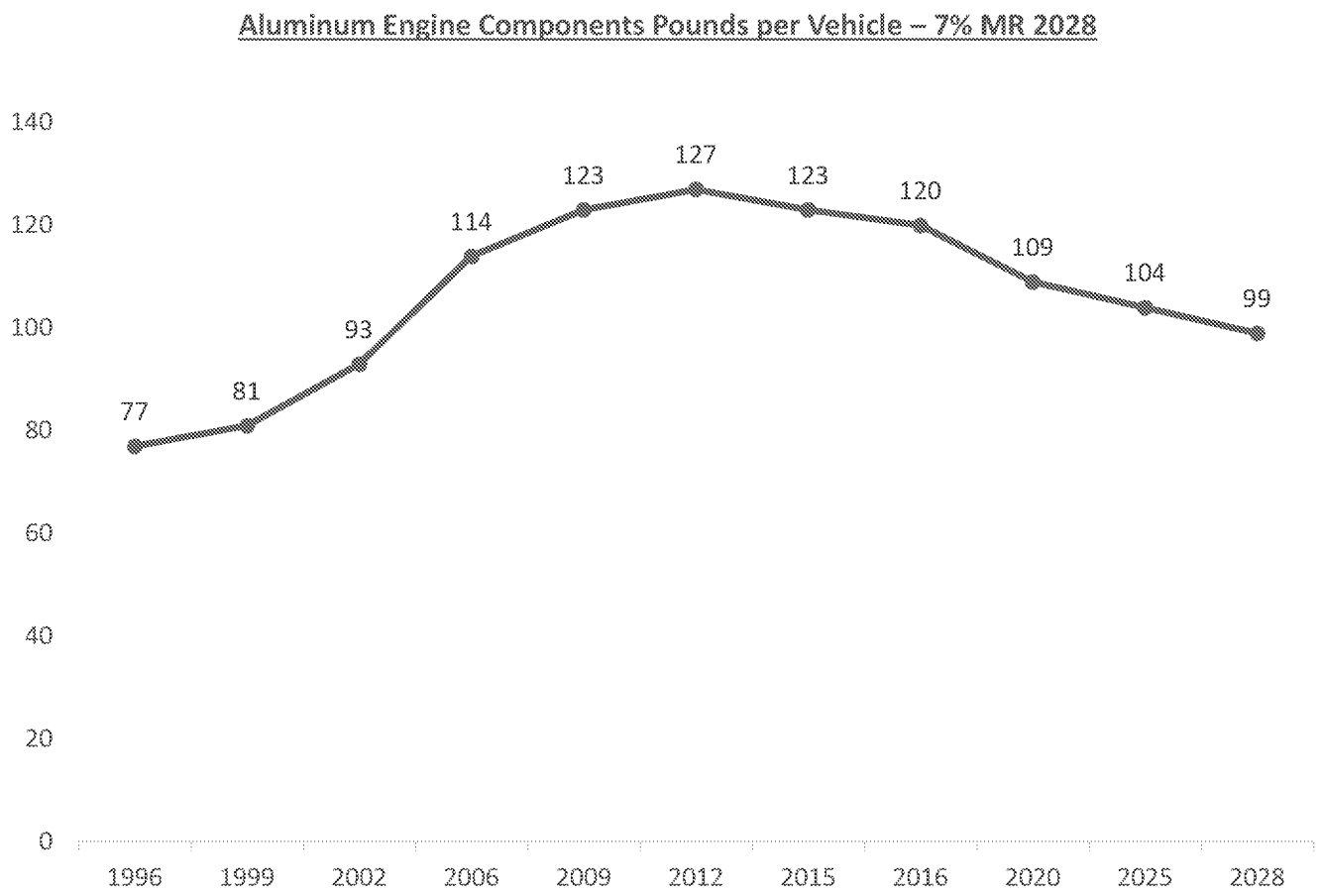
MASS REDUCTION SCENARIOS

Aluminum content continues steady growth in spite of significant losses of aluminum engine weight due to downsizing. Alternative powertrains will also negatively impact aluminum engine weight, particularly later in the decade.



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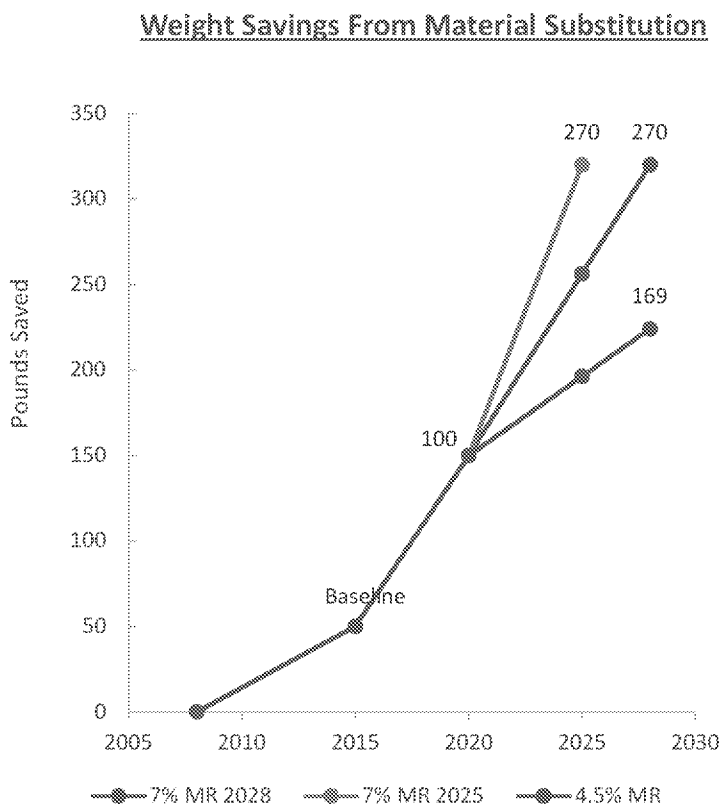
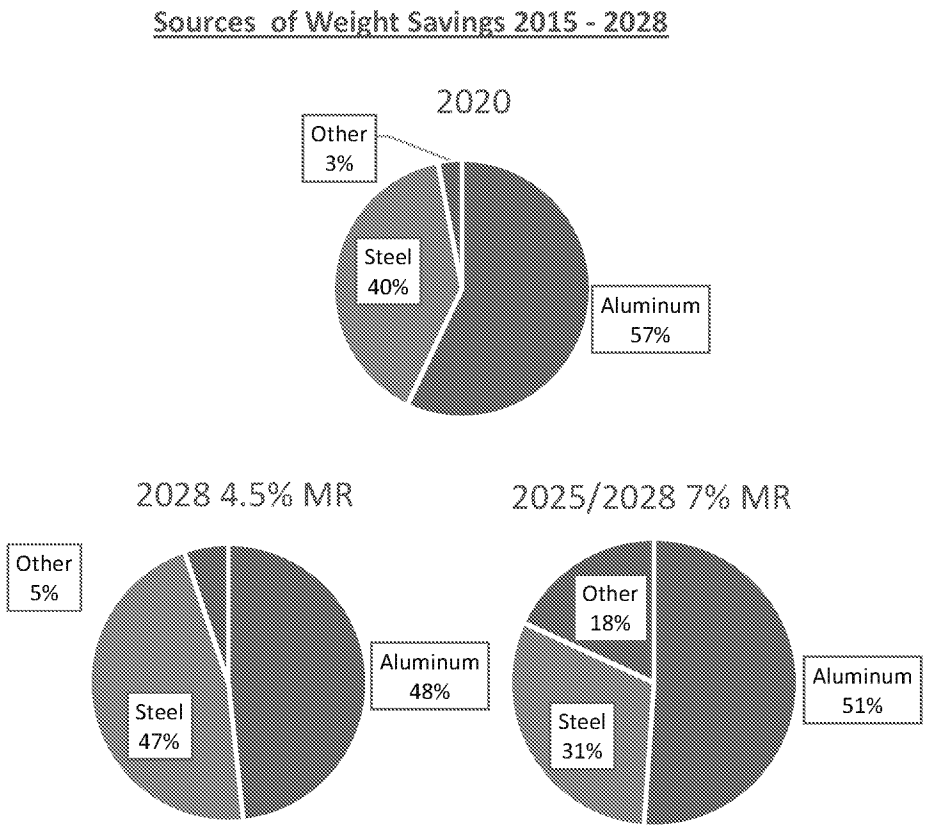
MASS REDUCTION SCENARIOS

In most cases aluminum will provide over 50% of the savings for the next fifteen years.





7% MASS REDUCTION BY 2025 SCENARIO DETAIL

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7% MASS REDUCTION SCENARIO BY 2025

A total mass savings of 270 pounds is the goal for 2025; however, the weight savings achieved from 2015 to 2020 will only be 100 pounds leaving 170 pounds to be removed from 2020 to 2025.

- The TAR technology implementation path provides a range of mass reduction from 0% for some cars and small SUVs to **20% for large light trucks and SUVs**, to get to an overall industry average weight savings reduction of 7% from 2015 sometime next decade
- The empirical evidence from Duckers research with the OEMs and their suppliers does not support achieving a 270 pound curb weight reduction by 2025
- Launch cadence is critical to the pace of new technology adoption. The next launch of a high volume vehicle with significant aluminum body content is in 2024
- A plethora of vehicles with significant aluminum body content are expected to launch within the 2024-2028 timeframe further indicating the need to examine attainment of mass savings goals beyond 2025
- For these reasons, Ducker believes the 7% mass reduction goal will be achieved in 2028 rather than 2025

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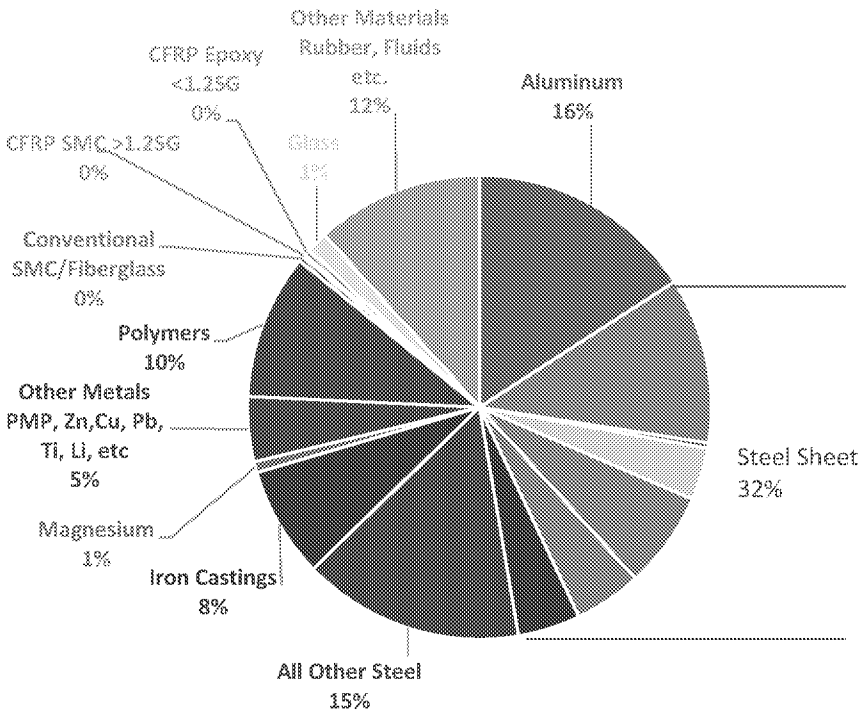
7% MASS REDUCTION SCENARIO BY 2025

This mix reduces 2015 vehicle weight by 270 pounds or 7% by 2025. The empirical evidence from Ducker's research supports achieving the 270 pound curb weight reduction; however, only by 2028.

Highlights:

- 565 total aluminum pounds (16% of total vehicle weight)
- Over 550 pounds per vehicle of flat rolled AHSS/UHSS steel content, but only 46% steel overall
- Twenty one pounds for CFRP Epoxy and SMC composites
- Twenty seven pounds of magnesium
- Polycarbonate windows, and fiberglass/composite leaf springs were applied where appropriate
- Aluminum hood penetration of 90% with door penetration near 60%

2025 CURB WEIGHT 3565 LBS.



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7% MASS REDUCTION BY 2028 SCENARIO DETAIL

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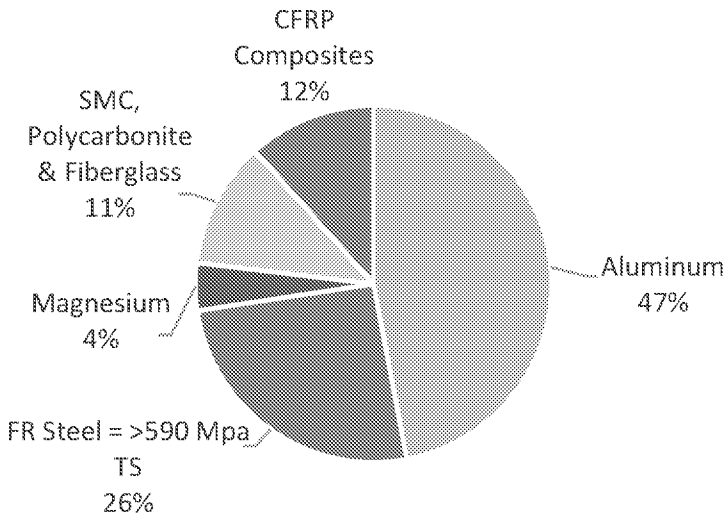
7% MASS REDUCTION SCENARIO BY 2028

Sometime next decade(2025/2028) at least another 170 pounds of gross mass reduction needs to be achieved through material substitution. Generation 3 steels, CFRP composites, polycarbonite windows, fiberglass leaf springs and multi material body structures with significant aluminum content will drive most of the mass savings.

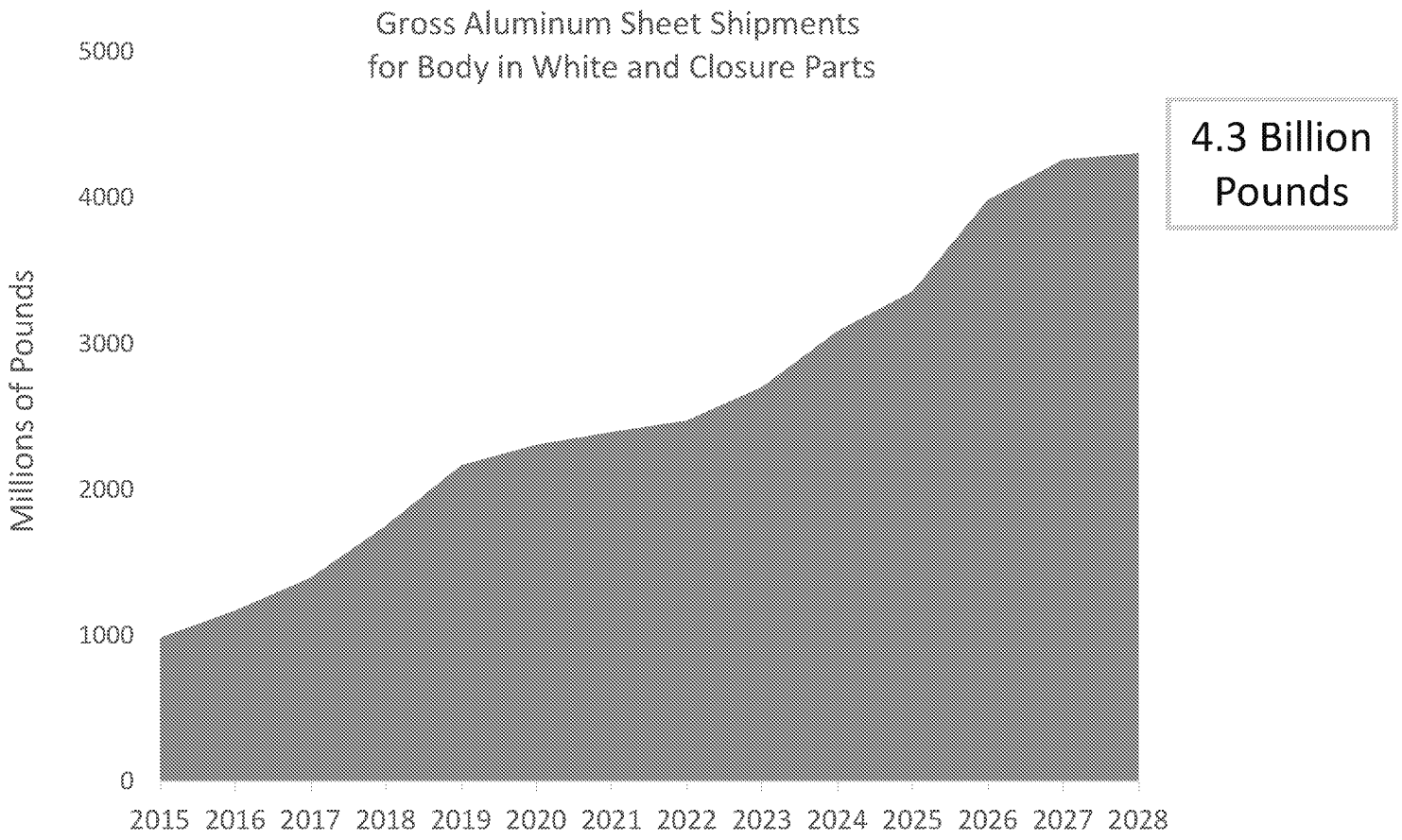
Sources of Mass Savings from Material Substitution



170 Pounds Saved

7% MASS REDUCTION SCENARIO BY 2028

At a **constant production level** of 17.5 million light vehicles in North America, aluminum sheet shipments for body in white and closure parts are expected to grow from less than one billion pounds in 2015 to 4.3 billion pounds by late next decade



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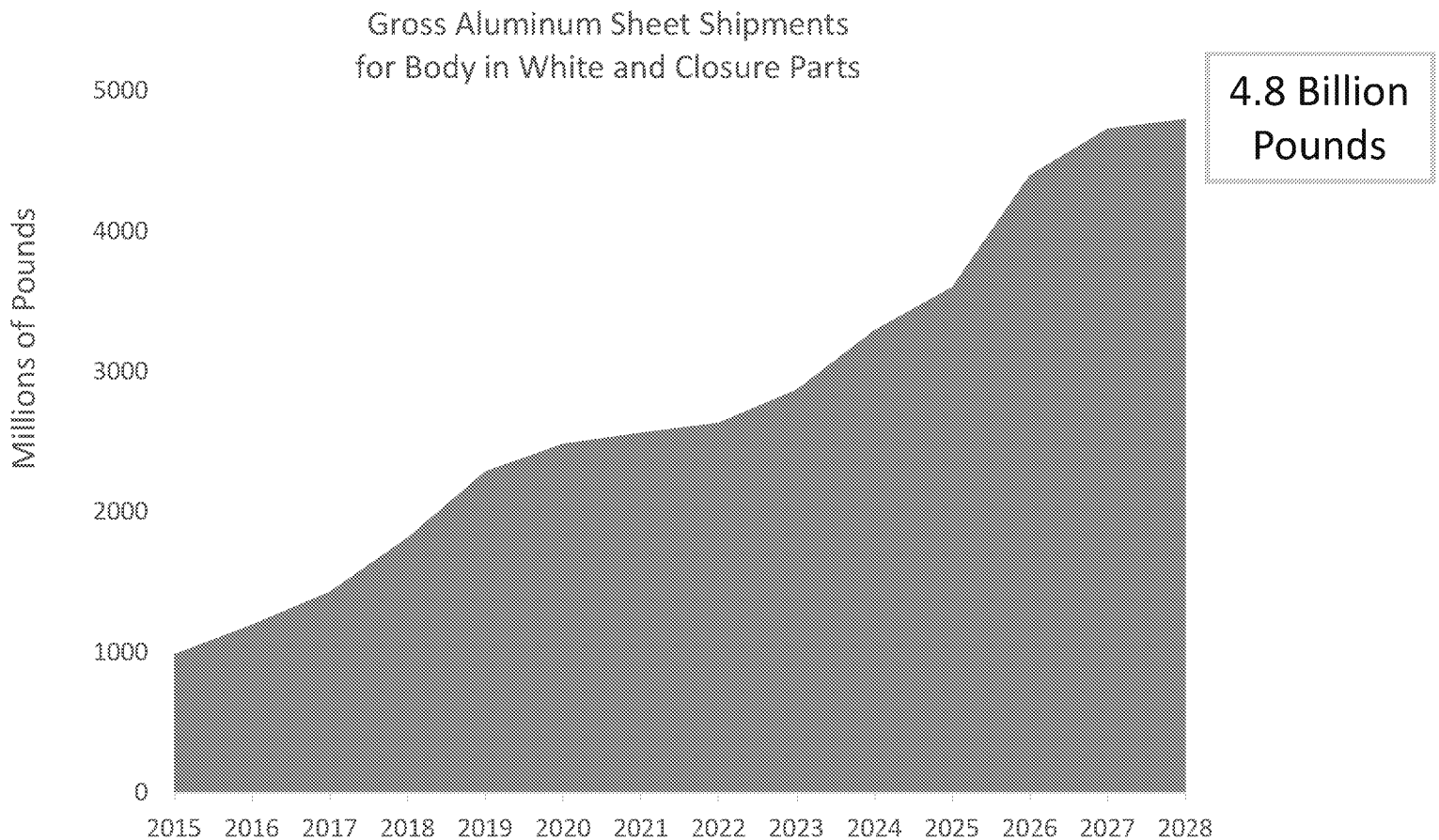
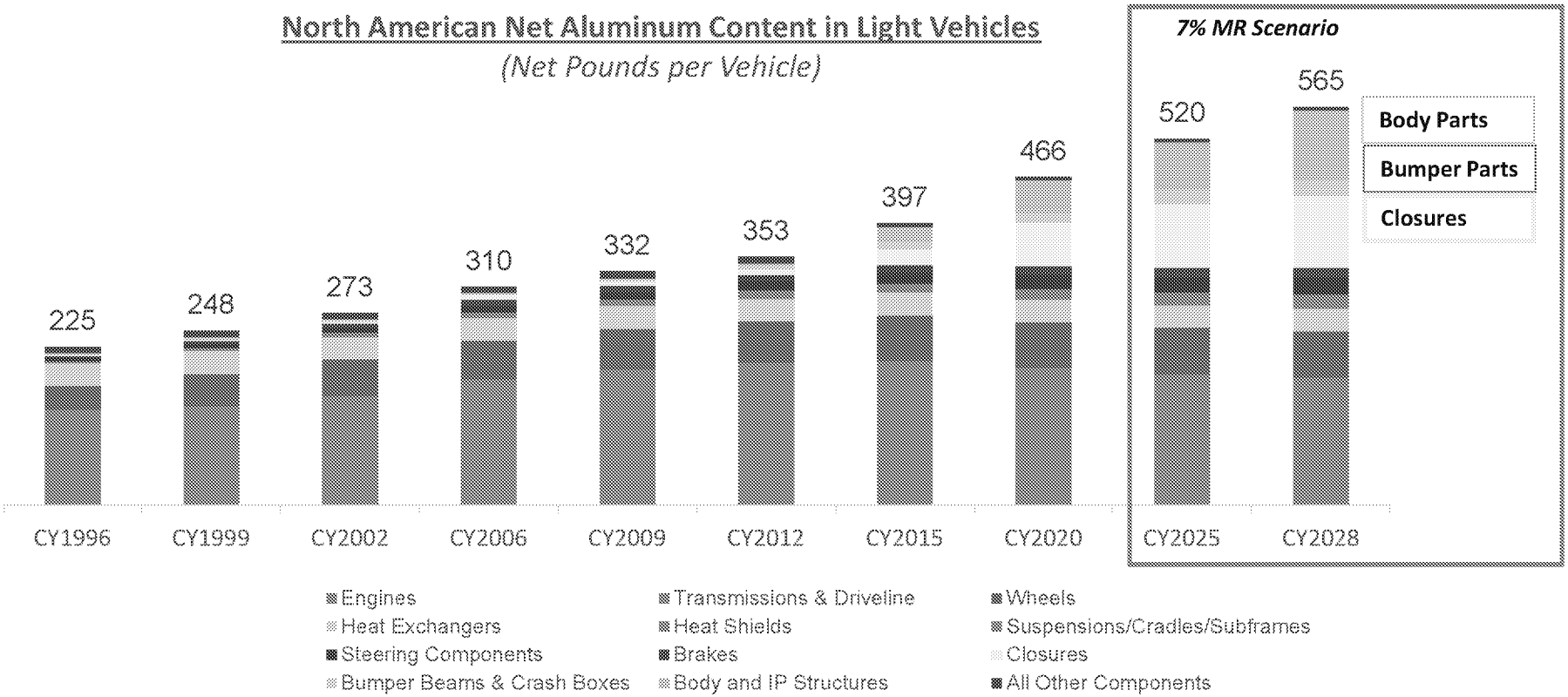
7% MASS REDUCTION SCENARIO BY 2028

At a vehicle **production levels of 19.2M vehicles by 2028 (I.H.S. 4Q2016)**, North American light vehicle aluminum sheet shipments for body in white and closure parts are expected to grow from less than one billion pounds in 2015 to 4.8 billion pounds by late next decade



7% MASS REDUCTION SCENARIO BY 2028

Twenty years of NA Light Vehicle Aluminum Content Research performed by Ducker is shown below. The 7% mass reduction scenario, which is based on meeting the TAR technology path by 2028 rather than 2025 yields 565 pounds of 2028 aluminum content.



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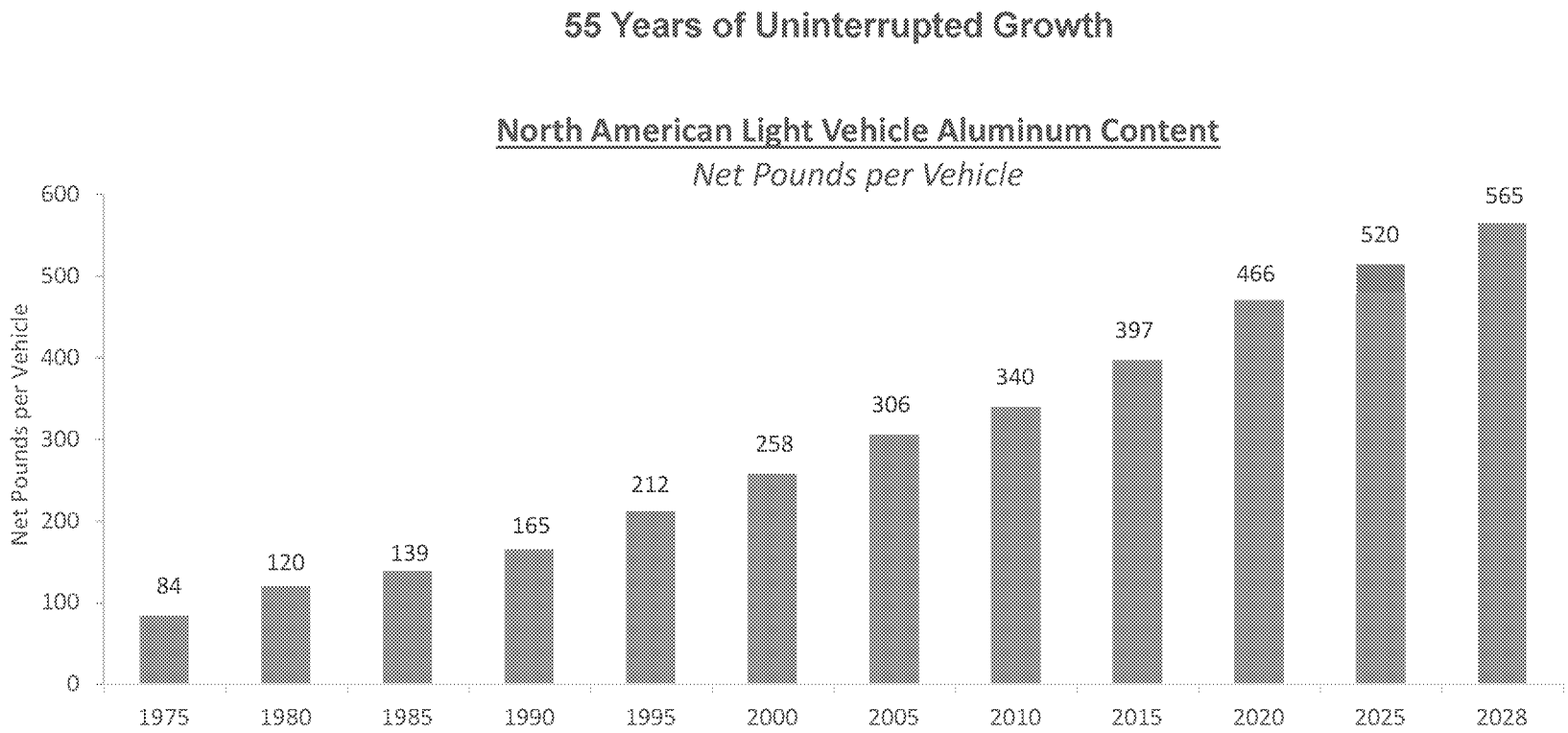
7% MASS REDUCTION SCENARIO BY 2028

Under all the mass reduction scenarios, aluminum content in North American light vehicles will continue to show uninterrupted growth well into the next decade.



4.5% MASS REDUCTION SCENARIO DETAIL

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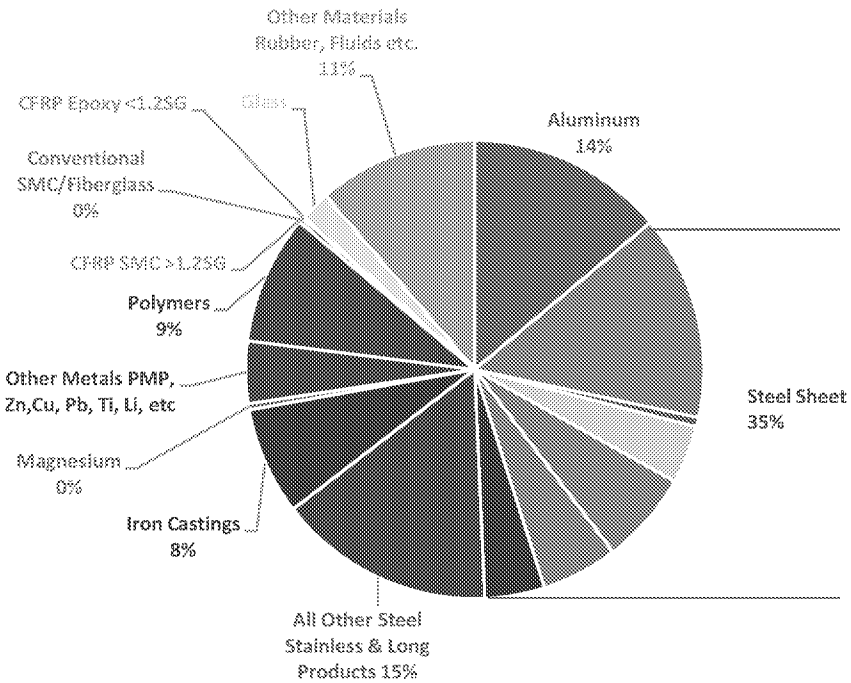
4.5% MASS REDUCTION SCENARIO - LOW ALUMINUM GROWTH AFTER 2020

The low aluminum growth scenario assumes that there is very little growth for aluminum body parts after 2020. The aluminum share of total vehicle weight will only grow to 14%.

CURB WEIGHT 3655 POUNDS

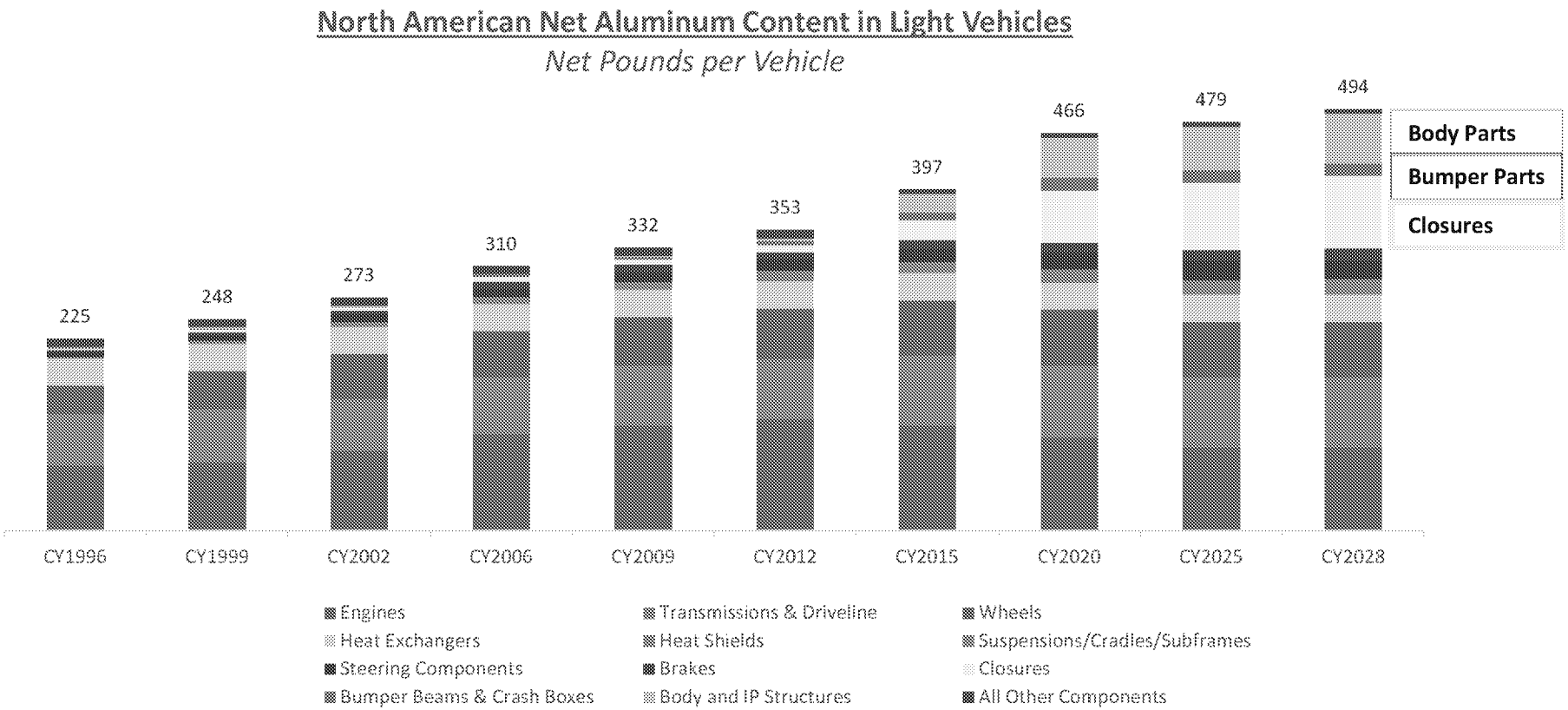
Highlights:

- This scenario only achieves a 4.5% mass savings from 2015 even with over 160 pounds per vehicle of new AHSS/UHSS parts added after 2020
- 494 total aluminum pounds (14% of total vehicle weight)
- At least 4.9 million high growth aluminum content vehicles (>400 lbs.)
- Over 550 pounds per vehicle of flat rolled AHSS/UHSS steel content, but only 46% steel overall
- Twenty one pounds for CFRP Epoxy and SMC composites
- Twenty seven pounds of magnesium
- Polycarbonate windows, and fiberglass/composite leaf springs were applied where appropriate
- Aluminum hood penetration of 90% with door penetration near 60%



4.5% MASS REDUCTION SCENARIO - LOW ALUMINUM GROWTH AFTER 2020

Total aluminum content will only increase by 28 pounds under the 4.5% mass reduction scenario due to less weight savings and aluminum losses to engine resize and magnesium substitution.



FINAL COMMENTS

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FINAL COMMENTS

- It is unclear, as yet, what the results of the 2018 Mid Term review will do to the technology path shown in TAR for 2025. It is possible that there will be no change from TAR. Ducker does believe that the effort to achieve U.S. energy independence along with a competitive market place will keep the pressure on the auto industry to keep improving the material efficiency and other characteristics of their vehicles in spite of any changes in the TAR technology path
- Assuming a curb weight reduction from 2015 of 5% or more is needed, aluminum content will continue to grow over the next ten to a fifteen years. The amount of growth will depend on the concentration of the weight savings on specific vehicle classes. 20% - 25% mass reduction on 20% of the vehicles is much better for aluminum than 5% on all the vehicles. Aluminum content growth will also depend on how much weight creep must be offset, and any improvements in the value proposition of other material relative to aluminum. Finally, an increase in the target mass reduction is estimated to be worth 30 pounds of increased aluminum content for every 1% the target mass reduction percent is increased over 5%
- Since the Ducker study for the ATG three years ago, there have been some significant changes. The most important change is in the timing of exactly when new aluminum closure and body parts are added, particulrliy for large trucks and SUVs. The emerging pattern has more aluminum added with each model change over a ten to fifteen year period until all the closures are aluminum and at least 50% the body is aluminum. This is a much different timing pattern than Ford exhibited on the F-150
- The consequences of this new patteren, which better manages the cost increases associated with aluminum BIW & Closure parts, gives competing materials and electrification a greater opportunity to impact the final outcome. Multimaterial body structures, with innovative joining methods, are much more likely than they where three years ago, and alternative powertrain technology continues to surprise everyone. Given enough time it would be a mistake to underestimate competing materials or the progress of competing technologies
- All things considered and after looking at the problem and the research from every angle, it has become clear that there is no affordable way to maintain vehicle size and achieve a 7%mass savings with concentration on light trucks without a very significant increase of high growth aluminum components
- Steel, magnesium, CFRP and polycarbonate additions are critical. Aluminum BIW & Closure parts, however, are the key to achieving both regulatory and OEM goals for vehicle improvements over the next ten to fifteen years

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THANK YOU.

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www.ducker.com | info@ducker.com

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Message

From: Yarrow, Jon [Jon.Yarrow@astonmartin.com]
Sent: 5/11/2018 11:37:02 AM
To: French, Roberts [french.roberts@epa.gov]
CC: Wiles, Steve [Steve.Wiles@astonmartin.com]; Olechiw, Michael [olechiw.michael@epa.gov]; Ott, William [ott.william@epa.gov]; Gillibrand, Karl [Karl.Gillibrand@astonmartin.com]; Lieske, Christopher [lieske.christopher@epa.gov]; Wehrly, Linc [wehrly.linc@epa.gov]
Subject: RE: Honda and Aston Martin GHG credit transfer

Rob

With no road map for the approval of the alternative standards, AML feel that the exemption should be extended and if needed we will request an exemption.

That potential exemption needs to be effective 2015. To make it effective 2017 would lead to punitive and unavoidable further credit purchase, absent sound reasoning given that the original alternative standard proposal included 2015 and 2016 carryback wording.

I would not expect a further exemption to need to last very long, as EPA need to act this year to agree alternative standards. Neither exemption nor alternative standard should trouble us or EPA as both give a balanced solution (assuming we got our Math correct!)

I feel that both parties are backed into a corner on this, would a short telcon be worthwhile?

ASTON MARTIN
Jon C Yarrow CEng MIMechE, Technical Specialist_Powertrain Certification
Aston Martin Lagonda Ltd, Banbury Road, Gaydon, Warwick, CV35 0DB, UK
Tel: +44 (0)1926 644192 Mobile: [redacted]
Email: jon.yarrow@astonmartin.com
www.astonmartin.com

Aston Martin Lagonda Limited, Banbury Road, Gaydon, Warwick CV35 0DB. Registered in England Number 01199255

From: French, Roberts [mailto:french.roberts@epa.gov]
Sent: 09 May 2018 18:50
To: Yarrow, Jon <Jon.Yarrow@astonmartin.com>
Cc: Wiles, Steve <Steve.Wiles@astonmartin.com>; Olechiw, Michael <olechiw.michael@epa.gov>; Ott, William <ott.william@epa.gov>; Gillibrand, Karl <Karl.Gillibrand@astonmartin.com>; Lieske, Christopher <lieske.christopher@epa.gov>; Wehrly, Linc <wehrly.linc@epa.gov>
Subject: RE: Honda and Aston Martin GHG credit transfer

Jon,

I generally concur with your assessment, with a couple of possible – but unresolved in my mind – modifications.

1. Under the regulations, is the "first model year to which the alternative standards would apply" 2015 or 2017. You interpret it as 2015, whereas I think it could also be interpreted as 2017. The applications for alternative standards are specific to the 2017 and later model years, and the regulations allow the 2017 standard to be "carried back" to 2015 and 2016. I'm not sure this makes a fundamental difference in the situation, however.
2. I follow your logic, but I think EPA would need to think more about how far into the future an exemption could be extended.

However, neither of these changes the fundamental fact that you do appear eligible to request an extension/revival of the exemption previously granted for model year 2012.

Rob

Roberts W. French, Jr.
U.S. Environmental Protection Agency
National Vehicle and Fuel Emissions Laboratory
2000 Traverwood Drive
Ann Arbor, Michigan 48105
(734) 214-4380

From: Yarrow, Jon [mailto:Jon.Yarrow@astonmartin.com]
Sent: Wednesday, May 9, 2018 1:03 PM
To: French, Roberts <french.roberts@epa.gov>
Cc: Wiles, Steve <Steve.Wiles@astonmartin.com>; Olechiw, Michael <olechiw.michael@epa.gov>; Ott, William <ott.william@epa.gov>; Gillibrand, Karl <Karl.Gillibrand@astonmartin.com>
Subject: RE: Honda and Aston Martin GHG credit transfer

Rob

As you have acknowledged in this email Aston Martin has now completed its obligation to balance its GHG debits for the 2013 and 2014 model years.
This now clears the way for the alternative standards to be agreed.

However, I have just completed the CAFE for 2017MY and it now falls to me to complete the end of model year report (noting the new requirements posted by EPA in the last week) and I will be doing this in the shadow of Aston Martin having no alternative standards agreed for the 2017-2019 model year period, this despite the request made in early 2014 and discussed with EPA on many occasions since that time.
So at this point I want to ask again that EPA expedite the federal register publication of the requested standards leading to a final determination that would provide stability for our GHG reporting going forward.

On a separate but very connected note, there is regulatory style wording in the Federal Register describing Alternative Standards that notes:

If the Administrator does not establish alternative standards for an eligible manufacturer prior to 12 months before the first model year to which the alternative standards would apply, the manufacturer may request an extension of the exemption under §86.1801-12(k) or an extension of previously approved alternative standards, whichever may apply.

This could be interpreted thus:

AML could request: that the MY 2012 AML exemption be extended (revived) since EPA did not reach a MY 2015 decision by Jan. 1, 2014 and
maintain that the revived exemption must be effective for MY 2015, 2016, 2017, 2018 and 2019 under the "EPA must decide 12 months ahead of time rule".

Is Aston Martin therefore eligible for a total GHG exemption for 2017MY (and by design 2015 and 2016MYs) along with 2018 and 2019 model years as they have, under this wording, also timed out?

Jon C Yarrow CEng MIMechE, Technical Specialist_Powertrain Certification
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Email: jon.yarrow@astonmartin.com
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From: French, Roberts [mailto:french.roberts@epa.gov]
Sent: 07 May 2018 14:57
To: Jamie Davies Shawhyde <jamie_davies@ahm.honda.com>
Cc: Yarrow, Jon <Jon.Yarrow@astonmartin.com>; Wiles, Steve <Steve.Wiles@astonmartin.com>; Robert Bienenfeld <Robert_Bienenfeld@ahm.honda.com>; James Kliesch <james_kliesch@ahm.honda.com>; Julie Ortloff <julie_ortloff@ahm.honda.com>
Subject: RE: Honda and Aston Martin GHG credit transfer

Greetings Jamie et al.,

I confirm that EPA has received notification of this trade and recorded it in our records.

All the best,
Rob

Roberts W. French, Jr.
U.S. Environmental Protection Agency
National Vehicle and Fuel Emissions Laboratory
2000 Traverwood Drive
Ann Arbor, Michigan 48105
(734) 214-4380

From: Jamie Davies [mailto:jamie_davies@ahm.honda.com]
Sent: Friday, May 4, 2018 7:25 PM
To: French, Roberts <french.roberts@epa.gov>
Cc: Yarrow, Jon <Jon.Yarrow@astonmartin.com>; Wiles, Steve <Steve.Wiles@astonmartin.com>; Robert Bienenfeld <Robert_Bienenfeld@ahm.honda.com>; James Kliesch <james_kliesch@ahm.honda.com>; Julie Ortloff <julie_ortloff@ahm.honda.com>
Subject: Honda and Aston Martin GHG credit transfer

Hi Rob,

Honda and Aston Martin have entered into an agreement to trade GHG credits. The attached document notes the specific vintages and amounts of credits transferred. To close the loop, could you reply all and acknowledge that EPA has received this document and notification of the trade? As always, please feel free to contact me if you have any questions or concerns.

Best regards,

Jamie Davies
Sr. Environmental Affairs Analyst
Product Regulatory Office
310-783-2893
Jamie_davies@ahm.honda.com

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Message

From: Susan Conti [sconti@autoalliance.org]
Sent: 1/25/2018 9:09:28 PM
To: Lieske, Christopher [lieske.christopher@epa.gov]
CC: Chris Nevers [CNevers@autoalliance.org]; Catherine M. Wilmarth [CWilmarth@autoalliance.org]; Michael Hartrick [MHartrick@autoalliance.org]
Subject: Alliance of Automobile Manufacturers' Supplemental Legal Comments on EPA's Reconsideration Final Determination MTE GHG Stds. MY 2022-2025 LDV
Attachments: MTE Suppl. Alliance Comments Final Determ. Jan. 25, 2018.pdf

Importance: High

RE: Supplemental Comments for Docket EPA-HQ-OAR-2015-0827; FRL-9966-62-OAR

Dear Mr. Lieske:

Attached please find supplemental comments for your consideration by the Alliance of Automobile Manufacturers ("Alliance") which are in addition to comments submitted by the Alliance on October 5, 2017 on U.S. EPA and NHTSA's August 21, 2017 Request for Comment on Reconsideration of the Final Determination of the Midterm Evaluation of Greenhouse Gas Emissions Standards for Model Year 2022-2025 Light Duty Vehicles.

These comments are being mailed today to Ms. Rebecca Schade, Office of Chief Counsel, U.S. NHTSA.

The Alliance respectively requests that EPA add these supplemental comments to the above docket and that the Agency allow the Alliance to continue supplementing its comments in order to respond to material issues and significant new data or analysis raised by other stakeholders.

If you have any questions, please contact me at 202-326-5512 or sconti@autoalliance.org.

Thank you for your consideration.

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January 25, 2018

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Re: Supplemental Comments on Reconsideration of the Final Determination of the Midterm Evaluation of Greenhouse Gas Emissions Standards for Model Year 2022–2025 Light-Duty Vehicles; Request for Comment on Model Year 2021 Greenhouse Gas Emissions Standards (EPA–HQ–OAR–2015–0827; FRL–9966–62–OAR)

Dear Ms. Lieske and Ms. Schade,

The Alliance of Automobile Manufacturers ("Alliance")[1] respectfully submits these supplemental comments for your consideration. These comments supplement previous Alliance comments, dated October 5, 2017, on the U.S. Environmental Protection Agency's ("EPA") and National Highway Traffic Safety Administration's ("NHTSA") (collectively, "the Agencies") August 21, 2017 Request for Comment on Reconsideration of the Final Determination of the Mid-Term Evaluation of Greenhouse Gas Emissions Standards for Model Year 2022–2025 Light-Duty Vehicles; Request for Comment on Model Year 2021 Greenhouse Gas Emissions Standards.[2]

The Alliance's supplemental comments address a range of legal and procedural issues raised by other commenters. For example, the Alliance's comments explain that EPA has ample reason to reconsider the January 2017 Final Determination and is not required to issue a new Proposed Determination if it intends to find that the MY 2022-2025 standards are no longer

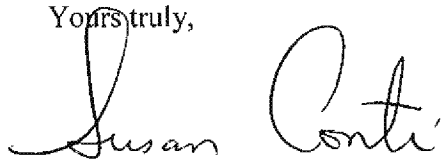
[1] The Alliance is a trade association of automobile manufacturers representing approximately seventy percent of all car and light truck sales in the United States. The Alliance's members include BMW Group, FCA US LLC, Ford Motor Company, General Motors Company, Jaguar Land Rover, Mazda, Mercedes-Benz USA, Mitsubishi Motors, Porsche, Toyota, Volkswagen Group of America, and Volvo Cars North America. For more information, go to https://autoalliance.org/.

[2] 82 Fed. Reg. 39,551 (Aug. 21, 2017).

appropriate. Rather, EPA has authority to initiate a new rulemaking process to revise the standards, and has broad discretion to consider a range of factors—including, contrary to some commenters' suggestions, consumer preference—in developing such standards. In addition, EPA is not required to meet a "heightened" standard regarding record evidence and legal analysis in order to revise the MY 2022-2025 standards; rather, as with any rulemaking in which EPA seeks to reconsider and revise rules, EPA must only provide a reasoned explanation for its decision. Further, the concerns raised by some commenters, that reliance interests preclude EPA from modifying the MY 2021 and MY 2022-2025, are misplaced. Stakeholder reliance is only one of many factors that EPA should consider in deciding whether to revise the standards and any reliance interests arising from the EPA's January 2017 Final Determination are minimal in light of the Agency's March 2017 notice that it intended to reconsider. Finally, the Alliance responds to comments raising Endangered Species Act consultation and monetization of the social cost of carbon as additional hurdles, explaining that EPA previously determined greenhouse gas-related rulemakings do not trigger the statutory consultation requirements of the Endangered Species Act and there is no need for EPA to resolve questions concerning the appropriate social cost of carbon methodology in order to reconsider the January 2017 Final Determination.

The Alliance respectfully requests that EPA allow the Alliance to continue supplementing its comments in order to respond to material issues and significant new data or analysis raised by other stakeholders.

Yours truly,



Susan Conti
Assistant General Counsel

Cc: Chris Nevers

Enclosure

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I. EPA Legal and Procedural Issues

A. EPA Should Decide to Revise the Standards and Initiate Rulemaking

Commenters contend that EPA's Mid-Term Evaluation ("MTE") is a rulemaking under Section 202(a) of the Clean Air Act and that procedural requirements for notice-and-comment rulemaking under Section 307(d) of the Clean Air Act apply. Commenters argue that, under these procedural requirements, EPA must issue a new proposed determination if it intends to find that the MY 2022-2025 standards are no longer appropriate under Section 202(a), hold a public hearing allowing interested persons to comment on the new proposed determination, and allow stakeholders to submit information to the record for thirty days after the hearing. Commenters contend that this is so because a determination that the standards are no longer appropriate would have prospective legal and policy consequences, thus requiring EPA to engage in notice-and-comment rulemaking in order to reach that determination.[3]

The Agency adopted greenhouse gas standards for MY 2017-2025 in a 2012 final rule, a full ten years in advance of MY 2022. 77 Fed. Reg. 62,624, 62,784 (Oct. 15, 2012), 40 C.F.R. § 86.1818-12(h). At the time, EPA laid out the process it would follow for the MTE, including issuing a draft Technical Assessment Report ("TAR") by November 15, 2017, 40 C.F.R. § 86.1818-12(h)(3), issuing a proposed determination, 40 C.F.R. § 86.1818-12(h), and then making a final determination. EPA took each of those steps, issuing the draft TAR on July 27, 2016, a proposed determination on November 30, 2016, and announcing a final determination to retain the standards on January 12, 2017. *See Final Determination on the Appropriateness of the Model Year 2022-2025 Light-duly Vehicle Greenhouse Gas Emissions Standards under the Midterm Evaluation* (hereinafter "January 2017 Final Determination") (January 2017, EPA-420-R-17-001).[4] Now, EPA is simply reconsidering its determination to retain the standards, announcing its intention to reconsider in March 2017, 82 Fed. Reg. 14,671 (March 22, 2017), and more recently requesting public comment on that reconsideration and on a possible reconsideration of the standards for MY 2021, 82 Fed. Reg. 39,551 (Aug. 21, 2017).

Upon reconsideration, EPA should determine that the MY 2022-2025 standards no longer "remain appropriate" and should be reopened, insofar as there are sufficient grounds to proceed with a new rulemaking. Any amendments to the standards and regulations adopted in 2012 would only become final and binding, if and when promulgated. Any determination to proceed with such rulemaking would impose no legal obligation on EPA itself or any stakeholders regarding such amendments until the time of promulgation. Accordingly, for purposes of reconsidering the MTE, EPA need only reach a conclusion that changes in policy, facts, analysis or other similar information, taking into account related uncertainties, are sufficient to warrant

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[3] Commenters further contend that EPA must initiate new notice-and-comment rulemaking to revise the existing MY 2021 and/or MY 2022-2025 standards if it determines that those standards are no longer appropriate. This point is uncontroversial, and in fact, EPA already has acknowledged that it must initiate notice-and-comment rulemaking to revise the standards. *See* 40 C.F.R. § 1818-12(h) ("If the Administrator determines [the MY 2022-2025 standards] are not appropriate, the Administrator shall initiate a rulemaking to revise the standards, to be either more or less stringent as appropriate.").

[4] *Available at* https://www.epa.gov/sites/production/files/2017-01/documents/420r17001.pdf.

proceeding with a new rulemaking process. EPA need not — and indeed cannot — reach any *final* decision now as to what such amendments will be.

In contrast, EPA's January 2017 "Final" Determination (albeit premature, as discussed below) was *not* a decision to proceed with further rulemaking. Had it stood, the 2017 Final Determination would have constituted a final promulgation of a new rule. In other words, EPA would have reopened the 2012 final rule, reassessed its validity, and came to a final decision *reaffirming*, as the culmination of the Agency's decisionmaking process, that the regulations setting forth the MY 2022-2025 standards should *remain unchanged.*[5]

This is consistent with EPA's own design for the MTE. As EPA itself explained in 2012, the appropriate process would depend on the outcome of the MTE: A final determination that the standards are appropriate marks the culmination of agency decisionmaking, whereas a determination that the standards are not appropriate is merely the beginning of a regulatory process to set new standards. *Compare* 77 Fed. Reg. at 62,784 ("If, based on the evaluation, EPA decides that the GHG standards are appropriate under section 202(a), then ... the decision will be final agency action which also will be subject to judicial review on its merits."), *with id.* at 62,784-85 ("Where EPA decides that the standards are not appropriate, EPA will *initiate a rulemaking* to adopt standards that are appropriate under section 202(a), which could result in standards that are either less or more stringent.... Any final action taken by EPA *at the end of that rulemaking* is also judicially reviewable.") (emphasis added).

If the reconsideration process leads EPA to the conclusion that the 2022-2025 standards are no longer appropriate, EPA must then undertake notice-and-comment rulemaking to revise or amend the standards. *See* 42 U.S.C. § 7607(d)(1)(K) (rulemaking requirements apply to "the promulgation or revision of regulations under section [202]. . . ."); *cf. Perez v. Mortgage Bankers Ass'n*, 135 S. Ct. 1199, 1206 (2015) (agencies must use the same procedures when they amend or repeal a rule as they used to issue the rule in the first instance). As in any other reconsideration process, EPA may embark upon such rulemaking at any time; EPA need not issue a formal "determination" before initiating a rulemaking process. The Alliance encourages EPA to issue a notice of proposed rulemaking or to seek comment on options it is considering when EPA might determine the current standards are not appropriate and further rulemaking is warranted. In any event, when EPA issues a proposed rule, all stakeholders including the Alliance will have a full and fair opportunity to participate and provide input.

In summary, a new final rule amending the standards would "mark the consummation of the agency's decision making process" and would constitute final action "by which rights or obligations have been determined or from which legal consequences will flow." *U.S. Army Corps of Engineers v. Hawkes Co.*, 136 S. Ct. 1807, 1813 (2016). In contrast, an EPA decision to *initiate* further rulemaking to revise the standards is *not* final agency action; it is the beginning of a process with an uncertain outcome. No "proposed determination" or hearing is required before EPA decides to initiate such a rulemaking process. The Alliance, however, encourages

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5 *See* Alliance Comments on Proposed Determination on Appropriateness of the Model Year 2022-2025 Light-Duty Vehicle Greenhouse Gas Emissions Standards under the Midterm Evaluation at 11-13 (Dec. 30, 2016, Docket ID No. EPA-HQ-OAR-2015-0827) and cases cited therein.

EPA to provide stakeholder input information about the options or proposal(s) it is considering when EPA determines to proceed with such rulemaking.

B. EPA's January 2017 Final Determination Was Premature and Therefore Warrants Reconsideration

Commenters further assert that EPA's early completion of the MTE prior to the April 1, 2018 deadline specified in its 2012 rule does not provide grounds for reopening or reconsidering the January 2017 Final Determination. They argue that, once EPA's prior analysis was complete, the Agency was within its statutory authority to issue a Final Determination.

As the Alliance explained in its February 21, 2017 letter to the EPA Administrator, EPA has ample reason to reconsider EPA's January 2017 Final Determination:

> First, EPA, in the prior Administration, rushed its decision without allowing adequate notice and opportunity for comment. The Final Determination was announced just ahead of the arrival of the new Administration and nearly eighteen months ahead of EPA's own deadline. EPA published its notice of availability proposal on November 30, 2016, providing the public until December 30, 2016 (just thirty days) to comment on nearly one thousand pages of documents, additional references and computer modeling results. After receiving extensive comments on the proposal, EPA issued its Final Determination less than two weeks later.
>
> Second, such early action inherently missed developments and analyses prepared for consideration by April 1, 2018, on the Agency's originally planned timetable. The Agency surely has authority to reconsider the determination in light of such additional information.
>
> Third, EPA's premature Final Determination violated the Agency's commitment to coordinate with NHTSA to consider the impact of the greenhouse gas standards "on the Corporate Average Fuel Economy standards and a national harmonized program." 40 C.F.R. §86.1818-12(h)(vii). EPA committed to issue its Proposed Determination at the same time that NHTSA issued a Notice of Proposed Rulemaking for its MY 2022-2025 fuel economy standards, and to coordinate to mitigate discrepancies in their factual analyses of costs, technology, pathways and other aspects of the GHG/fuel economy program. *See* 77 Fed. Reg. 62,624 at 62,784 (explaining EPA's commitment to coordinate with NHTSA). For all of these reasons, EPA reconsideration of the January 2017 Final Determination is appropriate to provide a robust opportunity for stakeholder input, to take into account additional information, and to coordinate with NHTSA.

C. EPA Previously Determined That GHG-Related Rulemakings Do Not Trigger the Endangered Species Act Consultation Requirements.

Commenters suggest that EPA must consider and apply the requirements of statutes other than the Clean Air Act when reconsidering the January 2017 Final Determination, including in particular the Endangered Species Act ("ESA"). Section 7(a)(2) of the ESA requires federal

agencies, in consultation with one or both of the U.S. Fish and Wildlife Service and the National Marine Fisheries Service (depending on the species at issue), to ensure that the actions they authorize, fund, or carry out are "not likely to jeopardize the continued existence" of federally listed endangered or threatened species or "result in the destruction or adverse modification" of designated critical habitat of such species. 16 U.S.C. § 1536(a)(2).

At the outset, as we explained above, should EPA determine on reconsideration that the standards are no longer appropriate and a new rulemaking process is warranted, such a determination clearly would not constitute final agency action. Such a determination, therefore, would not itself trigger statutory requirements, like ESA section 7 consultation, that apply only to final actions such as rulemakings.

In any event, EPA previously addressed whether rulemakings concerning GHG emissions trigger the ESA section 7(a)(2) consultation requirements and concluded that they do not. In adopting the light-duty vehicle GHG emission standards for MYs 2012-2016 and 2017-2025, for example, EPA found that the available modeling tools were insufficient to link the "small, time-attenuated changes in global metrics [from GHG emissions] to particular effects on listed species in particular areas" and that "[e]xtrapolating from global metric to local effect with such small numbers, and accounting for further links in a causative chain, remain beyond current modeling capabilities." *See* Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards, EPA Response to Comments Document for Joint Rulemaking, at 4-102 (Apr. 2010, Docket ID No. EPA-HQ-OAR-2009-0472-11581). Thus, EPA concluded that "any potential for a specific impact to listed species in their habitats associated with these very small changes in average global temperature and ocean pH is too remote to trigger the threshold for ESA section 7(a)(2) consultation." *Id.*

EPA reiterated this conclusion in its October 2015 final rule adopting the Clean Power Plan. There, EPA concluded that the GHG emission reductions projected to result from the final rule did not trigger ESA section 7(a)(2) consultation. *See* Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, 80 Fed. Reg. 64,662, 64,925 (Oct. 23, 2015). In reaching this determination, EPA referenced its April 2010 Response to Comments for the light-duty vehicle rulemaking—in which EPA found that the potential impacts on listed species were too remote to trigger the threshold for ESA consultation—and explained that "the same conclusion applies to the present rule." *Id.* at 64,925-26. EPA further explained that its conclusion was "entirely consistent with DOI's [the Department of the Interior's] analysis regarding ESA requirements in the context of federal actions involving GHG emissions." *Id.*; *see also* Endangered and Threatened Wildlife and Plants; Determination of Threatened Status for the Polar Bear (*Ursus Maritimus*) Throughout Its Range, 73 Fed. Reg. 28,212, 28,300 (May 15, 2008) (FWS and DOI finding—in the context of listing the polar bear as a threatened species—that the best scientific data available were insufficient to draw a causal connection between GHG emissions and effects on the species in its habitat); Memorandum from David Longly Bernhardt, Solicitor, U.S. Department of the Interior re: "Guidance on the Applicability of the Endangered Species Act's Consultation Requirements to Proposed Actions Involving the Emission of Greenhouse Gases," at 2 (Oct. 3, 2008) (hereinafter, "DOI Guidance") ("[W]here the effects at issue result from climate change potentially induced by GHGs, a proposed action that will involve the emission of GHG cannot pass the 'may affect' test, and is not subject to consultation under the ESA and its implementing regulations.").

Importantly, EPA's and DOI's prior statements make clear that "directionality" (*i.e.*, whether the agency action will increase or decrease GHG emissions) is irrelevant to their determination that agency actions affecting GHG emissions do not trigger ESA section 7(a)(2) consultation; in both cases, such actions do not trigger consultation because any impacts on listed species potentially attributable to GHG emissions are too remote and difficult to model to trigger the ESA requirements. *See, e.g.*, DOI Guidance at 6 (addressing whether agency actions that cause a small, incremental global temperature rise trigger ESA section 7 consultation); Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards, EPA Response to Comments Document for Joint Rulemaking, at 4-102 (noting directional differences between vehicle standards and actions contemplated in DOI Guidance letter and explaining that in both cases, the "predicted effects remain . . . small [and] time-attenuated" and "too remote to trigger the threshold for ESA Section 7(a)(2) consultation").

D. EPA Need Not Clear a "Higher Bar" Than Usual In Justifying Any Amendments To The Standards

Commenters suggest that EPA must meet a "heightened" standard regarding record evidence and legal analysis in order to revise the MY 2022-2025 standards. In particular, commenters contend that "[t]he context of this rulemaking heightens EPA's duty to explain any change in course."[6] The suggestion that, because of the MTE process, EPA must clear a "higher bar" to revise the standards than it would face in any other rulemaking in which the Agency seeks to change its position is legally incorrect.

The standards for EPA to reconsider and revise rules are well established. Courts have recognized that, "on matters to which courts accord administrative deference, agencies may change their interpretation and implementation of the law if doing so is reasonable, within the scope of the statutory delegation, and the departure from past precedent is sensibly explained." *FedEx Home Delivery v. Nat'l Labor Relations Bd.*, 849 F.3d 1123, 1127 (D.C. Cir. 2017). A new administration's change in policy direction can provide a basis for a shift in position: "A change in administration brought about by the people casting their votes is a perfectly reasonable basis for an executive agency's reappraisal of the costs and benefits of its programs and regulations. As long as the agency remains within the bounds established by Congress, it is entitled to assess administrative records and evaluate priorities in light of the philosophy of the administration." *Nat'l Ass'n of Home Builders v. EPA*, 682 F.3d 1032, 1043 (D.C. Cir. 2012) (quoting *Motor Vehicle Mfrs. Ass'n of U.S., Inc. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 59 (1983) (Rehnquist, J., concurring in part and dissenting in part)). The agency must "provide a reasoned explanation for the change." *Encino Motorcars, LLC v. Navarro*, 136 S. Ct. 2117, 2125 (2016) (citations omitted).

Regarding changes in statutory interpretation, the Agency is entitled to deference under *Chevron, U.S.A., Inc. v. Nat. Res. Def. Council, Inc.*, 467 U.S. 837, 842-44 (1984), as long as the Agency explains its decision. *Nat'l Cable & Telecomms. Ass'n v. Brand X Internet Servs.*, 545

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[6] Environmental Defense Fund, Center for Energy and Renewable Technologies, and Clean Power Campaign, Comments on Reconsideration of the Final Determination of the Mid-Term Evaluation of Greenhouse Gas Emissions Standards for Model Year 2022-2025 Light-Duty Vehicles; Comments on Model Year 2021 Greenhouse Gas Emissions Standards, at 14 (Oct. 5, 2017, Docket ID No. EPA-HQ-OAR-2015-0827-9203).

U.S. 967, 981 (2005) ("[I]f [an] agency adequately explains the reasons for a reversal of policy, [such] change is not invalidating, since the whole point of *Chevron* [deference] is to leave the discretion provided by the ambiguities of a statute with the implementing agency.") (citation and internal quotation marks omitted). As the D.C. Circuit has explained: "Where an agency changes a policy or practice [*i.e.*, through rulemaking that reflects a departure from a previous agency rulemaking], it is obligated to supply a reasoned analysis for the change." *Ark Initiative v. Tidwell*, 816 F.3d 119, 127 (D.C. Cir. 2016) (citation and internal quotation marks omitted). "But no specially demanding burden of justification ordinarily applies to a mere policy change." *Id.* To satisfy this burden, the agency must show that "the new policy is permissible under the statute, that there are good reasons for it, and that the agency *believes* it to be better, which the conscious change of course adequately indicates." *Id.* (emphasis in original) (citation and internal quotation marks omitted).

Similarly, EPA's reconsideration and revision of its standards based on its analysis of the factual and analytical record is subject to the usual arbitrary and capricious standard of review and the obligation to provide a "reasoned explanation" for its change in position. Where an agency simply reconsiders an existing factual record in light of "reevaluation of [] policy," such "reevaluation is well within an agency's discretion." *Nat'l Ass'n of Home Builders*, 682 F.3d at 1038; *see also id.* ("EPA did not rely on new facts, but rather on a reevaluation of which policy would be better in light of the facts . . . . *Fox* makes clear that this kind of reevaluation is well within an agency's discretion."); *see also Ark Initiative*, 816 F.3d at 127-128 (declining to apply the "elevated burden of justification" to the Forest Service's approval of a 2012 rule that departed from a 2001 rule because "the Service made no new factual findings contradictory to those supporting the nationwide 2001 Roadless Rule.").

Similarly, the Agency must provide a reasoned explanation when it changes course based on new facts contradicting the factual findings underlying its prior policy. *Perez v. Mortgage Banks Ass'n*, 135 S. Ct. 1199, 1209 (2015). In such cases, "the agency 'must' provide 'a more detailed justification' for its action." *Mingo Logan Coal Co. v. EPA*, 829 F.3d 710, 719 (D.C. Cir. 2016) (citations omitted). In *Mingo*, for example, EPA's revocation of permit to a mountaintop mining facility four years after issuance satisfied the "more detailed justification" standard because EPA "explained how new information arising after the [] permit issued informed its conclusion that the project would result in 'unacceptable adverse effect[s]' to wildlife," and thoroughly discussed relevant new information. *Mingo*, 829 F.3d at 726–27.

EPA may justify a change in standards based on new factual information or analyses as long as its decision is reasonably explained. EPA should consider such changes based on the entire record before the Agency at the time it makes its decision promulgating any such amendments. For example, EPA's consideration of issues addressed in the July 2016 draft TAR should be based on the overall record regarding such issues at the time of decision, including any additional analyses submitted since July 2016. EPA envisioned the draft TAR "to inform EPA's determination on the appropriateness of the GHG standards and to inform NHTSA's rulemaking for the CAFE standards for MY 2022-2025." 77 Fed. Reg. at 62,784. Far from commenters' suggestion that EPA might disregard factual determinations made in the draft TAR, EPA has been appropriately seeking new and additional information pertinent to whether to proceed with rulemaking to amend the standards in 2018. EPA need not seek comment specifically on any discrete part of the prior record, such as the draft TAR. Of course, EPA should consider all new

comments and information, including those regarding technology issues addressed in the draft TAR.

E. There Are No Valid "Reliance Interests" Precluding EPA from Amending the Standards

Commenters urge that reliance interests weigh in favor of EPA and NHTSA retaining the current GHG and fuel economy standards, particularly with respect to the agencies' potential to reconsider the MY 2021 standards. Commenters cite, in particular, *FCC v. Fox Television Stations, Inc.*, 556 U.S. 502, 515 (2009) (holding that an agency, in explaining changed position, must also be cognizant that longstanding policies may have "engendered serious reliance interests that must be taken into account"). Commenters contend that EPA and NHTSA have not previously revised emissions or fuel economy standards once adopted, and that time for rulemaking before MY 2021 is short. One such commenter also claims, without providing any verifiable evidence of concrete and specific harm to the business interests it represents, that revision of those standards would needlessly create regulatory uncertainty (a factor added to the mid-term evaluation process by EPA in early 2017, pursuant to 40 C.F.R. § 86.1818-12(h)(1)(viii)) and would undermine the MTE process.

As a threshold matter, there can be no "serious reliance interests" either to the GHG or CAFE standards specified for MYs 2022-2025 standards in the 2012 rule. It was well-documented that the 2012 rule was attempting to set standards much farther into the future than any previous fuel economy or GHG rulemaking, and that the MTE process was necessary to ensure that the most distant standards continued to be based on valid facts and assumptions. All stakeholders were on notice that the MTE process could result in changes to the standards, and EPA made it very clear that its decision in the MTE on whether to proceed with rulemaking to revise the GHG standards could take until April 2018. 40 C.F.R. § 86.1818-12(h). Likewise, NHTSA's fuel economy standards for MY 2022-2025 were never more than "augural," and throughout NHTSA has been clear that it was committed to future rulemaking to establish MY 2022-2025 standards. No stakeholder can credibly claim that it had a reasonable basis to "rely" on the proposition that the original GHG standards would emerge from the MTE process untouched and any stakeholder that actually did so was woefully misguided.[7]

Regarding MY 2021, as noted in the Alliance's October 5, 2017 comments, NHTSA has in fact changed the stringency of fuel economy standards for passenger automobiles set by Congress in EPCA, pursuant to Section 502(c) of EPCA, 49 U.S.C. § 32902(c). Those changes took place close to the start of the relevant model years. *See* Alliance Comments at 91-92. Similarly, NHTSA has changed standards for light trucks that it had established pursuant to EPCA under a delegation of authority by Congress near the start of the relevant model year. *See, e.g.*, Light Truck Average Fuel Economy Standards; Model Year 1981, 44 Fed. Reg. 36,975 (June 25, 1979). NHTSA is free to amend the MY 2021 CAFE standards if the record permits it

[7] Any assertion that "reliance interests" preclude reconsideration of the January 2017 "Final Determination" is equally implausible. As documented above, EPA had given no one any reason to expect an MTE decision for at least another six months; the decision was enveloped in controversy when it was issued; and EPA publicly announced its intention to reconsider the decision a little over two months later. In light of the short time period at issue and the overall circumstances, there is no reasonable basis to contend that the January 2017 Final Determination gave rise to meaningful reliance interests.

to do so pursuant to EPCA. Prudent stakeholders familiar with Section 502(c) of EPCA and NHTSA's administrative practice recognize that CAFE standards for future model years are subject to change.

For its part, the conceptual framework for EPA considering relaxation of standards under Section 202 of the Clean Air Act was addressed in *International Harvester Co. v. Ruckelshaus*, 478 F.2d 615 (D.C. Cir. 1973). In that case, Congress had itself specified stringent technology-forcing standards for automobiles, subject to a provision allowing manufacturers to seek a one-year suspension from EPA. *Id.* at 623. The court of appeals invalidated and remanded EPA's denial of the suspension. In doing so, the court identified the potential harm of a relaxation on the technological leader, among other relevant factors, and indeed weighed that harm in seeking to avoid a relaxation after the "base hour" for lead-time had passed and the leader had "tooled up," setting in motion its production sequence with more stringent technology. *Id.* at 637-638. The court considered this together with all of the other relevant factors, which included technological feasibility, emissions impacts, economic costs taking into account consumer behavior and fleet turnover, and the relative risks of an "incorrect" decision for the environment, the manufacturers and the economy. *Id.* at 633-638.

Reliance of stakeholders on existing EPA regulations may be one among many relevant factors to be considered under all of the circumstances but there is no evidence that reliance interests are a meaningful factor in the current situation. Unlike *International Harvester*, manufacturers are not imminently tooling up for MY 2021 production. *See also NRDC v. EPA*, 655 F.2d 318, 330-332 (D.C. Cir. 1981) (distinguishing challenge to EPA's prediction of particulate control technology five years in advance for MY 1985 from *International Harvester*). It should suffice at this juncture to recognize that administrative agencies have authority to revisit their prior decisions and to amend their rules based on a full consideration of the record at the time of decision. *See Ivy Sports Medicine v. Burwell*, 767 F.3d 81, 86 (D.C. Cir. 2014); *Koch, Administrative Law & Practice* § 4:60 ("Agencies have inherent authority to amend their rules.").

II. Other Relevant Factors

A. EPA Can Properly Consider All The Factors It Has Identified as Relevant In The Mid-Term Evaluation In Deciding Whether To Reconsider and Amend Previously Adopted Standards

The Alliance's October 5 comments explained that Section 202(a)(1) gives EPA broad discretion in setting GHG standards.[8] Some stakeholders, many of whom participated in the rulemaking that adopted the MTE regulation in 2012, now appear to question EPA's authority to consider each of the factors specified in the MTE regulation in deciding whether to reconsider and amend the MY 2022-2025 standards. The same stakeholders also challenge EPA's authority

[8] *See* Alliance comments at 86-90.

to consider evidence responsive to the questions on which EPA sought comment in its August 2017 *Federal Register* notice pursuant to 40 C.F.R. § 86.1818-12(h)(1)(viii).[9]

According to those stakeholders, EPA's GHG standards must be based solely on considerations of "public health and welfare," 42 U.S.C. § 7521(a)(1), and more particularly, those stakeholders' view of what would best protect the public health and welfare; any factors outside their own view of what should be relevant in a GHG rulemaking, they claim, are precluded by the statute. For example, one stakeholder argues that "factors like apparent 'consumer preference'" should be off-limits in the MTE process.[10]

None of those stakeholders discusses the relevant case law on the scope of EPA's discretion in setting standards through notice and comment rulemaking.[11] Congress did not and could not have been expected to include in Section 202(a) of the Clean Air Act all of the factors that EPA might need to consider in order to set GHG standards that protect the public health and welfare. The absence of such factors from the text of Section 202(a)(1) does not mean that Congress intended to preclude EPA from considering those factors. To the contrary, the absence of *any* specific criteria under Section 202(a)(1) that EPA must consider in determining appropriate GHG standards — other than that they must apply for the "useful life" of vehicles — confirms congressional intent to allow the Agency broad discretion. *See Entergy Corp. v. Riverkeeper, Inc.*, 556 U.S. 208, 222 (2009) ("[I]f silence here implies prohibition, then the EPA could not consider *any* factors in implementing [the statute] — an obvious logical impossibility."); *see also Nat. Res. Def. Council v. EPA*, 824 F.2d 1146, 1155 (D.C. Cir. 1987) (if the text of the statute "does not indicate that Congress intended to preclude consideration of any factor," a reviewing court should not itself impose such limitations). Meanwhile, Section 202(a)(2) requires that EPA determine the period "necessary to permit the development and application of the requisite technology," and consider "the cost of compliance within such

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[9] That subsection permits EPA in the MTE process to consider, in addition to the enumerated factors listed in the 2012 rule, "[t]he impact of the [adopted GHG standards] on other relevant factors." 40 C.F.R. § 86.1818-12(h)(1)(viii). The August 2017 *Federal Register* notice listed a number of factors that EPA appears to consider potentially relevant. *See* 82 Fed. Reg. at 39,553 (Aug. 21, 2017). Likewise, in its January 2017 discussion of the MTE process, EPA added considerations of regulatory certainty as a factor to be considered pursuant to 40 C.F.R. § 86.1818-12(h)(1)(viii). Final Determination at 28. As the Alliance indicates above, see p. 8, the Agency can properly consider such factors; their importance should depend on the evidence placed in the record, among other considerations, if EPA decides to reevaluate the MY 2022-2025 standards (as it should).

[10] California Air Resources Board, Comments on Reconsideration of the Final Determination of the Mid-Term Evaluation of Greenhouse Gas Emissions Standards for Model Year 2022-2025 Light-Duty Vehicles; Comments on Model Year 2021 Greenhouse Gas Emissions Standards, at 18 (Oct. 5, 2017, Docket No. EPA-HQ-OAR-2015-0827-9197) (hereinafter "CARB comments"). The CARB comments also claim that NHTSA cannot consider "consumer preference." *Id.* NHTSA's duty to consider how the market will respond to the CAFE standards, however, was confirmed long ago. *See* Alliance comments at 92-93.

[11] *See* Alliance comments at 85-89 and notes 253-279 (collecting and discussing cases). One stakeholder presents *Husqvarna AB v. EPA*, 254 F.3d 195 (D.C. Cir. 2001), as holding that any "goals" that EPA might seek to achieve in setting GHG standards are "subordinate[]" to considerations of "the public health and welfare." CARB comments at 18. As candor required that stakeholder to note, *Husqvarna* involved judicial review of standards adopted under Section 213 of the Clean Air Act, not Section 202. Section 213 requires in relevant part that certain off-road engine standards "achieve the greatest degree of emission reduction achievable" in light of specified factors. *Husqvarna AB* at 200. Section 202(a)(1)-(2) does not specify any such requirement for the "greatest degree of emission reduction achievable."

period," in determining when its standards should take effect. 42 U.S.C. §7521(a)(2). Specifying that the Agency must consider the time and cost necessary to develop new technology in determining when new standards should go into effect only reinforces that EPA should also consider those factors, and all other relevant factors, in determining the level at which to set emissions standards. *See* Alliance comments at 88.

Those stakeholders also ignore the practical connection between many of the factors included in the MTE regulation and the August 2017 *Federal Register* notice and considerations related to public health and welfare. New-vehicle standards can have the unintended effect of slowing the retirement of older, higher-emitting vehicles, and thereby increase fleet wide emissions of some pollutants. EPA cannot properly decide how best to protect the environment if it does not consider whether, and to what extent, performance effects or higher retail prices for the vehicles needed to meet new GHG standards will meet with customer resistance. If those prices decrease the fleet turnover rate, the nation will not achieve the same reductions in emissions than would be the case absent these effects.

In 1973, at the dawn of EPA's motor vehicle emissions regulatory program, Judge Leventhal recognized the "bedeviling" issue of fleet turnover:

> The willingness of the consumer to buy [new] cars may also be affected, to some degree, by the anticipated significant costs of pollution control devices. The problem is further bedeviled by the possibility that consumers albeit rightly assigned the cost burden of pollution devices, may seek to avoid that burden, however modest, and to exercise, at least in some measure, an option to use older cars. ... ***[T]his would have the thrust of increasing actual total emissions of cars in use.***

Int'l Harvester, 478 F.2d at 634 (emphasis added). Judge Leventhal properly adverted to the issue of consumer preference under the heading in the court's opinion entitled, "Potential Environmental Costs." Those costs cannot be ignored in the current proceeding. Stakeholders have no basis to quarrel with EPA's decision to make "[t]he impact of the [GHG] standards on reduction of emissions" a factor for consideration within 40 C.F.R. § 86.1818-12(h)(1). But because of the fleet turnover problem, standards that create market resistance can "increas[e] actual total emissions of cars in use." *Int'l Harvester*, 478 F.2d at 634. Market resistance can also affect the costs of compliance—which EPA must consider under Section 202(a)(2)—for manufacturers, their workforce and other stakeholders, as demand affects price and supply (*i.e.*, sales volume). As a result, there is no sound basis to question EPA's request in the August 2017 *Federal Register* notice for comments on "[t]he impact of the [GHG] standards on... consumer purchasing behavior and consumer automobile usage behavior," or "[t]he extent to which consumers value fuel savings from the greater efficiency of vehicles." 82 Fed. Reg. at 39,553.[12]

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[12] The August 2017 *Federal Register* notice also sought comment on the "rebound" effect. 82 Fed. Reg. at 39,553. The rebound effect recognizes that owners of vehicles with higher fuel economy may drive their vehicles more than vehicles with lower fuel economy because the cost of vehicle operation is lower once an investment has been made in fuel economy technology. By reducing the nominal GHG reductions that could otherwise be attributed to higher standards — and by increasing emissions of criteria and precursor pollutants — the rebound effect is another one of

Other factors included in the MTE regulation and in the August 2017 *Federal Register* notice have clear relevance to standard setting under Section 202(a). The August 2017 notice sought comment, for example, on "[t]he impact of the [GHG] standards on the automobile industry." *Id.* Section 202(a)(2) includes "appropriate consideration" of "the cost of compliance" with new-vehicle emissions standards when EPA determines the "period ... necessary to permit the development and application of the requisite technology." 42 U.S.C. § 7521(a)(2). The statutory text requires — and certainly does not prohibit — consideration of evidence showing, for example, the impacts on fleet turnover discussed above or that the current MY 2022-2025 GHG standards assume rates for the production and sale of zero-emission vehicles ("ZEVs") at zero cost marginal cost to the GHG rule despite the resources used comply the GHG and ZEV requirements come from a common pool. A regulation that requires massive cross-subsidization in the pricing of conventional vehicles, in order to make ZEVs affordable to a sufficient number of customers to meet the ZEV mandates in a given model year, could deter sales of low-emitting conventional and hybrid vehicles needed for the GHG standards. If the motoring public resists those higher prices and retains older, higher-emitting conventional vehicles, then the scenario against which *International Harvester* warned would become a reality.[13]

Other factors that EPA decided to consider in the MTE process, or on which EPA requested comment last fall pursuant to 40 C.F.R. § 86.1818-12(h)(1)(viii), are relevant to coordination with NHTSA. The purpose of including those factors in the MTE process is clear: EPA is properly attempting to comply with the Supreme Court's instruction in *Massachusetts v. EPA* to "avoid inconsistency" in the GHG and CAFE regulatory programs; and as the *Massachusetts* Court noted, EPA has "significant latitude" under the Clean Air Act to coordinate its work with other agencies, including NHTSA. 549 U.S. 497, 532-533 (2007). Considering these factors will allow EPA to ensure that its emissions standards will complement the NHTSA fuel economy standards, rather than creating unnecessary conflict. *Cf. POM Wonderful LLC v. Coca-Cola Co.*, 134 S. Ct. 2228, 2238 (2014) ("When two statutes complement each other, it would show disregard for the congressional design to hold that Congress nonetheless intended one federal statute to preclude the operation of the other.").

B. EPA Need Not Finalize Its "Social Cost Of Carbon" Methodology In Order to Reconsider Its January 2017 Final Determination

Commenters contend that legal standards for rational decision making require EPA to monetize the social cost of carbon.[14] In particular, they argue that, where an agency monetizes

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the "potential environmental costs" that EPA must consider in order to fulfill its mission under Section 202(a) to reduce emissions and protect the environment.

[13] If stakeholders had objections to the factors listed in 40 C.F.R. § 86.1818-12(h)(1) as inconsistent with the Clean Air Act, the time is long past for them to have lodged timely objections in the MTE rulemaking process, or to have sought judicial review of the MTE regulation

[14] *See, e.g.*, Environmental Defense Fund, Institute for Policy Integrity at NYU School of Law, Natural Resources Defense Council, Sierra Club, and Union of Concerned Scientists, Comments on Reconsideration of the Final Determination of the Mid-Term Evaluation of Greenhouse Gas Emissions Standards for Model Year 2022-2025 Light-Duty Vehicles; Comments on Model Year 2021 Greenhouse Gas Emissions Standards (Oct. 5, 2017, Docket ID No. EPA-HQ-OAR-2015-0827-9195).

uncertain costs and benefits of its decisions and bases a decision on cost-benefit analysis, failure to monetize the benefit of carbon emissions reduction would be arbitrary and capricious. We agree that EPA should consider the benefits of reducing GHG emissions in conjunction with analyzing the benefits and costs of GHG emissions standards. We disagree, however, with commenters who contend that EPA must continue to follow precisely the same methodology for monetizing these benefits that it employed in the January 2017 Final Determination.

As EPA has acknowledged, a wide range of approaches may be taken to derive a social cost of carbon value, each of which embodies a variety of assumptions and projections about future climate conditions and their potential impacts. EPA retains significant discretion in fashioning a reasonable approach that accounts for this uncertainty, while adequately informing policymakers and the public. The uncertainties and sensitivities inherent in the social cost of carbon metric are significant; small adjustments in the underlying assumptions and inputs in either direction can generate a wide range of outcomes. Alternative methodologies for estimating the social cost of carbon could affect EPA's previous conclusion in the January 2017 Final Determination (at p. 6) that the benefits of the standards will "far exceed the costs of the program."

The particular social cost of carbon metric that EPA employed relied on a number of significant technical and policy assumptions and followed guidance documents that have been withdrawn because they no longer reflect government policy. *See* Exec. Order 13783, Sec. 5(b), 82 Fed. Reg. 16,093, 16,095-96 (March 31, 2017) (withdrawing technical support documents developed under prior Administration); *id.* sec. 5(c), 82 Fed. Reg. 16,096 (requiring that any efforts to monetize value of changes in GHG emissions henceforth adhere to OMB Circular A-4 (Sept. 17, 2003)). As evidenced by EPA's recent proposed rule to rescind the Clean Power Plan (CPP), 82 Fed. Reg. 48,035 (Oct. 16, 2017), the Administration is in the process of reconsidering and modifying its approach to calculating the social benefits of reducing carbon emissions.

For example, for purposes of the January 2017 MTE, EPA employed a *global* social cost of carbon metric to quantify and monetize the estimated social benefits of such reductions. The global metric played a substantial role in EPA's conclusion that "in all cases, the net benefits and the fuel savings independently exceed the costs (*i.e.*, the net benefits exceed the costs without considering any fuel savings, and likewise fuel savings exceed the costs even without considering any other benefits)." Proposed Determination at 44; *accord*, Final Determination at 6-7.[15]

By contrast, in the draft Regulatory Impact Analysis ("Oct. 2017 Draft RIA") accompanying its October 2017 proposed rule to rescind the CPP, EPA significantly modified its previous methodology. EPA estimated the forgone climate benefits from the proposal by employing a *domestic* social cost of carbon metric, based on the direct impacts of climate change

[15] For example, in its central case, EPA arrived at an estimate of $41.9 billion (2015$) in non-fuel benefits over the lifetime of the MY 2022-2025 standards (using AEO 2016 reference fuel prices and fleet projections, overall 3% discount rate, and central SC-GHG values discounted at 3%). *See* Final Determination at 7, Table ES-4; Proposed Determination at 44, Table IV.13. Nearly one-half of that figure ($19.7 billion) consisted of EPA's Global-SCC estimate. Proposed Determination at A-176, Table C.80.

that are anticipated to occur within U.S. borders. Oct. 2017 Draft RIA at 5, 162.[16] In its CPP proposal, EPA frankly acknowledged the limitations and uncertainties associated with any social cost of carbon methodology. *Id.* at 41. Consistent with guidance in OMB Circular A-4 on the treatment of uncertainty, EPA provided a detailed discussion of the ways in which its modeling addressed quantitative sources of uncertainty, and presented a sensitivity analysis illustrating the uncertainty surrounding discount rates over long time horizons. *See, e.g., id.* at 41, 155-60. EPA further explained that "[t]he SC-CO2 estimates presented in this RIA are *interim values* developed under E.O. 13783 for use in regulatory analyses until an improved estimate of the impacts of climate change to the U.S. can be developed based on the best available science and economics." Oct. 2017 Draft RIA Sec. 3.4.1, at 37 (emphasis added). It indicated that its domestic social cost of carbon estimates were subject to change to the extent the underlying economics and science develops and improves. *See id.* at 38 (the current approach "will be used in regulatory analysis until improved domestic estimates can be developed, which would take into consideration the recent recommendations [January 2017] from the National Academies of Sciences, Engineering, and Medicine").[17]

For purposes of EPA's current MTE reconsideration process, however, the Agency need not fully resolve questions regarding the social cost of carbon methodology or definitively adopt a particular metric at this juncture. As explained above (*supra*, pp. 1-3), a determination that the MY 2022-2025 standards no longer remain "appropriate" (along with any decision to reopen the MY 2021 standards), is a decision to proceed with a new rulemaking process to amend the standards, rather than itself a final agency action. To support such a determination, EPA need only reach a conclusion that changes in policy, facts, analysis or other similar information, taking into account related uncertainties, are sufficient to warrant a new rulemaking. EPA may solicit stakeholder input on the social cost of carbon as part of that forthcoming rulemaking process. For now, there is ample justification in the record, even under the previous Administration's approach to the social cost of carbon, to support a determination that the standards are no longer appropriate and a new rulemaking is warranted, as demonstrated by stakeholder comments on a

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[16] EPA limited its central analysis to consideration of domestic climate impacts in accordance with OMB Circular A-4, which provides that analysis of economically significant proposed and final regulations "should focus on benefits and costs that accrue to citizens and residents of the United States." Oct. 2017 RIA at 37. EPA also followed Circular A-4's guidance that regulatory analyses "should provide estimates of net benefits using both 3 percent and 7 percent." *Id.* EPA has previously examined several discount rates "because the literature shows that the [SC-CO2] is quite sensitive to assumptions about the discount rate, and because no consensus exists on the appropriate rate to use in an intergenerational context (where costs and benefits are incurred by different generations)." Standards of Performance for Municipal Waste Landfills, 80 Fed. Reg. 52,162, 52,165 (Aug. 27, 2015).

[17] In light of the inherent uncertainties, and in the interest of ensuring transparency, EPA also included in the record a separate set of estimates of *global* benefits from reductions in carbon emissions based on both 3 and 7 percent discount rates. *See* Oct. 2017 Draft RIA at Appendix C, pp. 159-160. EPA took this approach consistent with OMB Circular A-4, which states that when an agency "evaluate[s] a regulation that is likely to have effects beyond the borders of the United States, these effects should be reported separately." Oct. 2017 Draft RIA at 42. EPA also included in the record estimates of the social cost of carbon at a discount rate lower than 3%, "[t]o account for ethical considerations of future generations and potential uncertainty in the discount rate over long time horizons." Oct. 2017 Draft RIA at Appendix C, p. 158. Accordingly, EPA calculated both the domestic and global SCC based on a 2.5 percent discount rate, in addition to the 3 and 7 percent used in its central economic analysis, and separately included the results in the record. *Id.* at 158, 160.

plethora of issues relating to the cost, availability, feasibility, effectiveness of and demand for technology, etc.

To the extent, EPA relies on a new or modified approach to the social cost of carbon as part of a determination to proceed with rulemaking to amend the standards, EPA should maintain consistency with current Administration policy across its GHG regulatory programs. EPA should do so in a manner that ensures transparency by disclosing and explaining the assumptions underlying its analysis. The Agency should ensure that its approach meets the usual standards for rationality and record support in exercising its scientific and technical judgment.

Some commenters incorrectly contend that EPA is legally *required* to follow the same methodology for the social cost of carbon metric that it employed in the Obama Administration. Recent D.C. Circuit precedent is to the contrary. In *Earthreports, Inc. v. FERC*, 828 F.3d 949 (D.C. Cir. 2016), which involved a NEPA challenge to a liquefied natural gas facility, for example, the Court upheld the reasonableness of the Federal Energy Regulatory Commission's ("FERC's") conclusion that it would be neither appropriate nor informative to rely on the "social cost of carbon." The court found FERC's conclusion reasonable given the tool's various shortcomings and uncertainties, including the significant variation in potential outputs based on the lack of consensus on the appropriate discount rate. *Id.* at 956.[18]

Commenters principally rely on two court of appeals decisions in contending that EPA must adhere to the prior Administration's analytical approach; however, those cases do not support their conclusion.

First, commenters rely on *Center for Biological Diversity v. National Highway Traffic Safety Administration*, 538 F.3d 1172, 1203 (9th Cir. 2008). In that case, the Ninth Circuit ruled that, because NHTSA had monetized other uncertain costs and benefits of its vehicle fuel efficiency standard, its "decision not to monetize the benefit of carbon emissions reduction was arbitrary and capricious." The court of appeals found fault with NHTSA's decision "not to monetize or quantify the value of carbon emissions reduction *at all*," *id.* at 1201 (emphasis added), which it held was inconsistent with, among other things, OMB Circular A-4's requirement that agencies "monetize costs and benefits whenever possible." *Id.* at 1200 n.48. Acknowledging the range of potential social cost of carbon approaches and values reflected in the scientific literature, *id.* at 1199, the court remanded for the agency "to include *a* monetized value for this benefit in its analysis of the proper CAFE standards," *id.* at 1203 (emphasis added). The court did not mandate which methodology, metric, or value to adopt.

Second, commenters rely on *Zero Zone, Inc. v. United States Department of Energy*, 832 F.3d 654 (7th Cir. 2016). In *Zero Zone*, the Seventh Circuit rejected challenges to the Department of Energy's ("DOE's") use of the Obama Administration's social cost of carbon

[18] The D.C. Circuit recently required FERC, in a subsequent NEPA case, to explain whether it continues to adhere to its position on the social cost of carbon. *See Sierra Club v. FERC*, No. 16-1329, 2017 WL 3597014, at *10 (D.C. Cir. Aug. 22, 2017). FERC affirmed on remand that the SCC tool "is not appropriate for use in any project-level NEPA review" in a draft supplemental environmental impact statement issued on Sept. 27, 2017, although it noted that a social cost of carbon metric could be useful for "rulemakings or comparing regulatory alternatives using cost-benefit analyses where the same discount rate is consistently applied." FERC, Southeast Market Pipelines Project - Draft Supplemental Environmental Impact Statement (Sept. 27, 2017), at 5.

metric in analyzing the benefits and costs of proposed rules concerning energy efficiency requirements for commercial refrigeration equipment under the Energy Policy Conservation Act. But the court held only that DOE had not acted arbitrarily or capriciously because the agency had reasonably considered and responded to comments on its methodology, *id.* at 678, and explained why it had compared global benefits to national costs under the particular statutory scheme at issue, based on the factual record before it, *id.* at 679. As with *Center for Biological Diversity*, the Court in *Zero Zone* did not mandate a particular methodology or value for the social cost of carbon, nor did it indicate that DOE's methodology was the only reasonable or permissible approach.[19]

Finally, the notion that there is only one correct methodology for calculating the social cost of carbon is belied by the principle that, under the "arbitrary and capricious" standard of review, EPA need only exercise its scientific and technical judgment in a reasonable way, explain its rationale, and disclose its assumptions. *See Coalition for Responsible Regulation, Inc. v. EPA*, 684 F.3d 102, 122 (D.C. Cir. 2012) ("When EPA evaluates scientific evidence in its bailiwick, we ask only that it take the scientific record into account in a rational manner."), *rev'd in part on other grounds by Utility Air Reg. Grp. v. EPA*, 134 S. Ct. 2427 (2014). The D.C. Circuit has frequently reiterated this deferential standard of review: "We must look at the decision not as the chemist, biologist or statistician that we are qualified neither by training nor experience to be, but as a reviewing court exercising our narrowly defined duty of holding agencies to certain minimal standards of rationality." *Ethyl Corp. v. EPA*, 541 F.2d 1, 24, 36 (D.C. Cir. 1976) (*en banc*) (citations and footnotes omitted).[20] The Supreme Court has confirmed that such deference to the agency is especially appropriate where a court is reviewing an agency action that "require[d] a high level of technical expertise." *Marsh v. Or. Nat. Res. Council*, 490 U.S. 360, 377 (1989); *see also Baltimore Gas & Elec. Co. v. Natural Res. Def. Council, Inc.*, 462 U.S. 87, 103 (1983) ("When examining this kind of scientific determination, as opposed to simple findings of fact, a reviewing court must generally be at its most deferential.").

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[19] Commenters also cite two district court cases that deemed arbitrary and capricious a particular agency's rationale, based on the record before it, for refusing to assign *any* value to the societal costs of GHG emissions. *See High Country Conservation Advocates v. U.S. Forest Serv.*, 52 F.Supp.3d 1174, 1193 (D. Colo. 2014) (noting that although "the agencies might have [had] justifiable reasons for not using (or assigning minimal weight to) the social cost of carbon protocol" for purposes of an environmental impact statement, which expressly quantified the benefits of mineral leasing, they failed to provide such reasons); *Montana Envtl. Info. Ctr. v. U.S. Office of Surface Mining*, CV 15-106-M-DWM, 2017 WL 3480262 (D. Mont. Aug. 14, 2017) (for purposes of NEPA review of a coal mining plan, it was arbitrary and capricious to quantify socioeconomic benefits while refusing to quantify societal costs of GHG emissions). Neither case, however, mandated the use of a particular metric. Moreover, other district courts have upheld an agency's decision not to rely on a social cost of carbon metric, where that decision was adequately explained and supported by the record. *See, e.g., WildEarth Guardians v. Zinke*, 1:16-CV00605-RJ 2017 WL 3442922, at *12, (D.N.M. Feb. 16, 2017); *League of Wilderness Defenders v. Connaughton*, 2014 WL 6977611, at *26-27 (D. Ore., Dec. 9, 2014).

[20] The D.C. Court recently confirmed this highly deferential standard for agency decisionmaking in *Ctr. for Biological Diversity v. EPA*, 749 F.3d 1079 (D.C. Cir. 2014), citing, *inter alia*, *Ethyl Corp*, *supra*; and *Hüls Am. Inc. v. Browner*, 83 F.3d 445, 452 (D.C. Cir. 1996) ("[W]e will give an extreme degree of deference to the agency when it 'is evaluating scientific data within its technical expertise.'") (quoting *Int'l Fabricare Inst. v. EPA*, 972 F.2d 384, 389 (D.C. Cir. 1992)).

In summary, the Alliance agrees to the extent EPA decides to initiate a new rulemaking process to revise GHG standards that EPA should consider the benefits of reducing GHG emissions but it disagrees that anything in the Clean Air Act or case law sets in stone any particular methodology for doing so. For purposes of these comments, the Alliance does not advocate a position on whether such an analysis must consider domestic or global impacts, or whether there is one correct discount rate. EPA need not definitively resolve these questions for purposes of its reconsideration of the MTE. Rather, the record is replete with new data and analyses on a host of technology-related issues that – under any approach to the social cost of carbon, including that of the previous administration – raise sufficiently serious questions about the assumptions underlying the agency's prior determination to warrant the initiation of a new rulemaking process. EPA may seek additional stakeholder input on the social cost of carbon as part of that process.

Message

From: French, Roberts [french.roberts@epa.gov]
Sent: 5/9/2018 5:50:18 PM
To: Yarrow, Jon [Jon.Yarrow@astonmartin.com]
CC: Wiles, Steve [Steve.Wiles@astonmartin.com]; Olechiw, Michael [olechiw.michael@epa.gov]; Ott, William [ott.william@epa.gov]; Gillibrand, Karl [Karl.Gillibrand@astonmartin.com]; Lieske, Christopher [lieske.christopher@epa.gov]; Wehrly, Linc [wehrly.linc@epa.gov]
Subject: RE: Honda and Aston Martin GHG credit transfer

Jon,

I generally concur with your assessment, with a couple of possible – but unresolved in my mind – modifications.

1. Under the regulations, is the "first model year to which the alternative standards would apply" 2015 or 2017. You interpret it as 2015, whereas I think it could also be interpreted as 2017. The applications for alternative standards are specific to the 2017 and later model years, and the regulations allow the 2017 standard to be "carried back" to 2015 and 2016. I'm not sure this makes a fundamental difference in the situation, however.
2. I follow your logic, but I think EPA would need to think more about how far into the future an exemption could be extended.

However, neither of these changes the fundamental fact that you do appear eligible to request an extension/revival of the exemption previously granted for model year 2012.

Rob

Roberts W. French, Jr.
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2000 Traverwood Drive
Ann Arbor, Michigan 48105
(734) 214-4380

From: Yarrow, Jon [mailto:Jon.Yarrow@astonmartin.com]
Sent: Wednesday, May 9, 2018 1:03 PM
To: French, Roberts <french.roberts@epa.gov>
Cc: Wiles, Steve <Steve.Wiles@astonmartin.com>; Olechiw, Michael <olechiw.michael@epa.gov>; Ott, William <ott.william@epa.gov>; Gillibrand, Karl <Karl.Gillibrand@astonmartin.com>
Subject: RE: Honda and Aston Martin GHG credit transfer

Rob

As you have acknowledged in this email Aston Martin has now completed its obligation to balance its GHG debits for the 2013 and 2014 model years.
This now clears the way for the alternative standards to be agreed.

However, I have just completed the CAFE for 2017MY and it now falls to me to complete the end of model year report (noting the new requirements posted by EPA in the last week) and I will be doing this in the shadow of Aston Martin having no alternative standards agreed for the 2017-2019 model year period, this despite the request made in early 2014 and discussed with EPA on many occasions since that time.
So at this point I want to ask again that EPA expedite the federal register publication of the requested standards leading to a final determination that would provide stability for our GHG reporting going forward.

On a separate but very connected note, there is regulatory style wording in the Federal Register describing Alternative Standards that notes:

If the Administrator does not establish alternative standards for an eligible manufacturer prior to 12 months before the first model year to which the alternative standards would apply, the manufacturer may request an extension of the exemption under §86.1801-12(k) or an extension of previously approved alternative standards, whichever may apply.

This could be interpreted thus:

AML could request: that the MY 2012 AML exemption be extended (revived) since EPA did not reach a MY 2015 decision by Jan. 1, 2014 and
maintain that the revived exemption must be effective for MY 2015, 2016, 2017, 2018 and 2019 under the "EPA must decide 12 months ahead of time rule".

Is Aston Martin therefore eligible for a total GHG exemption for 2017MY (and by design 2015 and 2016MYs) along with 2018 and 2019 model years as they have, under this wording, also timed out?

Jon C Yarrow CEng MIMechE, Technical Specialist_Powertrain Certification
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From: French, Roberts [mailto:french.roberts@epa.gov]
Sent: 07 May 2018 14:57
To: Jamie Davies Shawhyde <jamie_davies@ahm.honda.com>
Cc: Yarrow, Jon <Jon.Yarrow@astonmartin.com>; Wiles, Steve <Steve.Wiles@astonmartin.com>; Robert Bienenfeld <Robert_Bienenfeld@ahm.honda.com>; James Kliesch <james_kliesch@ahm.honda.com>; Julie Ortloff <julie_ortloff@ahm.honda.com>
Subject: RE: Honda and Aston Martin GHG credit transfer

Greetings Jamie et al.,

I confirm that EPA has received notification of this trade and recorded it in our records.

All the best,
Rob

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From: Jamie Davies [mailto:jamie_davies@ahm.honda.com]
Sent: Friday, May 4, 2018 7:25 PM
To: French, Roberts <french.roberts@epa.gov>
Cc: Yarrow, Jon <Jon.Yarrow@astonmartin.com>; Wiles, Steve <Steve.Wiles@astonmartin.com>; Robert Bienenfeld

<Robert_Bienenfeld@ahm.honda.com>; James Kliesch <james_kliesch@ahm.honda.com>; Julie Ortloff <julie_ortloff@ahm.honda.com>
Subject: Honda and Aston Martin GHG credit transfer

Hi Rob,

Honda and Aston Martin have entered into an agreement to trade GHG credits. The attached document notes the specific vintages and amounts of credits transferred. To close the loop, could you reply all and acknowledge that EPA has received this document and notification of the trade? As always, please feel free to contact me if you have any questions or concerns.

Best regards,

Jamie Davies
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Product Regulatory Office
310-783-2893
Jamie_davies@ahm.honda.com

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Message

From: Nicholas Colombo [nac@stateside.com]
Sent: 6/22/2017 8:39:48 AM
To: Lieske, Christopher [lieske.christopher@epa.gov]
Subject: Re: GHG Emissions Standards for MY 2022–2025 Light Duty Vehicles

Hello Chris,

Understood. Thanks for your reply. I'll keep watching for future notices.

Regards,
Nick

Nicholas Colombo
Regulatory Services
1101 Wilson Boulevard
Sixteenth Floor
Arlington, Virginia 22209
Office (703) 525-7466

From: Lieske, Christopher <lieske.christopher@epa.gov>
Sent: Wednesday, June 21, 2017 8:46 AM
To: Nicholas Colombo
Subject: RE: GHG Emissions Standards for MY 2022–2025 Light Duty Vehicles

Hello Mr. Colombo –

We will be considering this aspect of the analysis further as we move forward but have not made any decisions on how off-cycle credits will be addressed.

Thanks

Chris

Chris Lieske
EPA, Office of Transportation and Air Quality
2000 Traverwood
Ann Arbor, MI 48105
734-214-4584

From: Nicholas Colombo [mailto:nac@stateside.com]
Sent: Tuesday, June 20, 2017 12:03 PM
To: Lieske, Christopher <lieske.christopher@epa.gov>
Subject: GHG Emissions Standards for MY 2022–2025 Light Duty Vehicles

Hello Mr. Lieske,

Would you be able to help me clarify the scope of the review of USEPA's Final Determination re: GHG Emissions Standards for Model Year 2022–2025 Light Duty Vehicles ? Is USEPA working with US DOT solely to reconsider the potential overall feasibility & impacts of new CAFE standards, or is USEPA also reconsidering the estimated GHG reductions contributed by various components in the technical assessment? Specifically, I am interested in the off-cycle credits assumptions in the technical assessment. Will those be reconsidered as part of this process? Or will their treatment remain the same in the new Final Determination and the future Proposed Rule?

Thank you very much for your time and assistance.

Best Regards,
Nick Colombo

Nicholas Colombo
Regulatory Services
Stateside Associates
1101 Wilson Boulevard
Sixteenth Floor
Arlington, Virginia 22209
Office (703) 525-7466

Message

From: Nicholas Colombo [nac@stateside.com]
Sent: 6/20/2017 4:03:19 PM
To: Lieske, Christopher [lieske.christopher@epa.gov]
Subject: GHG Emissions Standards for MY 2022–2025 Light Duty Vehicles

Hello Mr. Lieske,

Would you be able to help me clarify the scope of the review of USEPA's Final Determination re: GHG Emissions Standards for Model Year 2022–2025 Light Duty Vehicles ? Is USEPA working with US DOT solely to reconsider the potential overall feasibility & impacts of new CAFE standards, or is USEPA also reconsidering the estimated GHG reductions contributed by various components in the technical assessment? Specifically, I am interested in the off-cycle credits assumptions in the technical assessment. Will those be reconsidered as part of this process? Or will their treatment remain the same in the new Final Determination and the future Proposed Rule?

Thank you very much for your time and assistance.

Best Regards,
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Office (703) 525-7466

Message

From: Lieske, Christopher [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=C836C7DEA7054DD8807120A1D401CAC8-LIESKE, CHRISTOPHER]
Sent: 3/30/2018 6:00:16 PM
To: Tom Wenzel [tpwenzel@lbl.gov]
Subject: RE: draft LBNL Phase 1 report

Yes. I expect that it would be posted sometime next week.

From: Tom Wenzel [mailto:tpwenzel@lbl.gov]
Sent: Friday, March 30, 2018 1:57 PM
To: Lieske, Christopher <lieske.christopher@epa.gov>
Subject: Re: draft LBNL Phase 1 report

Ok, does that mean if I email it anytime before 4/1 it will be eventually included in the docket, should the docket be closed on 4/1?

On 3/30/18 10:10 AM, Lieske, Christopher wrote:

Hi Tom –

I don't believe regulations.gov will accept comments directly for EPA's MTE docket because the comment period is closed. If you email the comments to the docket, the docket staff will record when the document was submitted in the information regarding the posting. Please be sure to note the MTE docket number (EPA-HQ-OAR-2015-0827) in the email to help the docket staff.

Hope this helps.

Chris

From: Tom Wenzel [mailto:TPWenzel@lbl.gov]
Sent: Friday, March 30, 2018 12:54 PM
To: Lieske, Christopher <lieske.christopher@epa.gov>
Subject: Re: draft LBNL Phase 1 report

Hi Chris-

When I look at the docket on the website, it says the last submittal was made 3/23/18. Should I just submit directly online? I have one other report I want to submit, and I want to make sure these documents get in before COB eastern today.

Thanks,
Tom

On 3/28/18 1:47 PM, Lieske, Christopher wrote:

Hi Tom –

The docket number is EPA-HQ-OAR-2015-0827. The comments may be submitted through email to a-and-r-Docket@epa.gov.

Thanks

Chris

-----Original Message-----
From: Tom Wenzel [mailto:TPWenzel@lbl.gov]
Sent: Wednesday, March 28, 2018 4:22 PM
To: Lieske, Christopher <lieske.christopher@epa.gov>
Cc: Li, Chi <Li.Chi@epa.gov>
Subject: Re: draft LBNL Phase 1 report

Hi Chris-

I have two reports I'd like to submit to the EPA Final Determination docket before it is closed March 31. Should I send them to you, or just submit directly to the docket? And what's the docket number?

Thanks,
Tom

On 3/28/18 5:54 AM, Li, Chi wrote:

> If the filing is delayed, please call Chris Lieske (734-214-4514, email: lieske.christopher@epa.gov) in advance to see what could be done. You might need to file the report first (one time) then submit the final one to replace the previous one. Again, please call me if you have any question.
>
> Regards,
>
> Chi Li
>
> Office of Transportation & air quality
> 2000 traverwood Dr.
> Ann arbor, MI 48105
> Tel: 734 214 4336
> Fax: 734 214 4050

Message

From: Lieske, Christopher [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=C836C7DEA7054DD8807120A1D401CAC8-LIESKE, CHRISTOPHER]
Sent: 3/30/2018 5:10:12 PM
To: Tom Wenzel [TPWenzel@lbl.gov]
Subject: RE: draft LBNL Phase 1 report

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> Cc: Li, Chi <Li.Chi@epa.gov>
> Subject: Re: draft LBNL Phase 1 report
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