ENTER/REPLACE DATA IN GREEN CELLS ONLY!

CALCULATED CAFE, GHG, AND LABEL VALUES

CAFE Values	City	Highway	Combined
✓ A. PHEV meets dual fuel criteria:	City	Highway	Combined
1. Default 50/50 Composite MPGe	42.7574	54.5734	47.3731
→ 2. Optional Utility Factor Composite MPGe	75.8094	52.1281	62.9421 ←
B. PHEV does NOT meet dual fuel criteria:	City	Highway	Combined
1. Utility Factor Composity MPGe	50.2894	43.7361	47.1127
Based on the all-electric range, is this PHEV a dual fuel vehicle for CAFE?			YES
	City	Highway	Combined
All-Electric Range (miles, unadjusted)	41.50	44.80	43.0

GHG Values	City	Highway	Combined
Composite CREE, no DF (g/mi)	78.2	147.5	109.4
Composite CREE, with DF (g/mi)	78.4	147.7	109.6

Label Values (5-Cycle Adjusted)			
Charge-Depleting	City	Highway	Combined
Charge-depleting Range (Miles)	31.43	31.43	31
All-Electric Range (Miles)	29.04	31.33	30
Total Driving Range (Miles)			400
CD Fuel Economy (MPGe)	46.8923	54.2272	50
CD Electricity Consumption (kW-hr/100mi)	62.8490	62.0840	62.5048
CD Gasoline Consumption (gal/100mi)	0.2	0.0	0.1
Charge-Sustaining	City	Highway	Combined
CS Fuel Economy (MPG)	19.2	22.1	20
CS Fuel Consumption (gal/100mi)	5.2	4.5	5.0
Composite CD/CS	City	Highway	Combined
Annual Fuel Cost ($/year)			$ 1,700
5-Year Fuel Savings Value ($/5 years)		You SPEND:	$ 1,000
Composite CO2 (g/mi)	193.2	159.5	178
Composite Fuel Economy (MPG)	30.0271	34.0493	32
MPG Rating (on scale of 1-10)			7
GHG Rating (on scale of 1-10)			9

Label Inputs Based on Model Year and Fuel Type (generally these should not be changed)	
Gasoline cost ($/gallon)	$ 3.25
Electricity cost ($/kW-hour)	$ 0.13
Average vehicle 5-year cost ($)	$ 7,500
Average vehicle MPG	27

ENTER BASIC VEHICLE INFORMATION HERE

Vehicle Information	
Model year:	2021
Vehicle category:	LT
Manufacturer name:	BMW
Model name:	X5 xDrive45e
Liquid fuel type:	Premium Unleaded
Additional descriptors as needed:	
Fuel tank size (U.S. gallons)	18.2
Deterioration Factors for GHG (CREE) Values (op	Yes
Select the type of DF to apply:	Additive
Enter a single DF for City and Highway:	0.2
Enter a City DF :	
Enter a Highway DF:	
Inputs & Conversions (most of these should not be changed)	
DOE Petroleum Equivalence Factor (PEF):	82049
Watt-hours of energy per gallon of gasoline:	33705
Grams of CO2 per gallon of gasoline/diesel:	8887
Fuel lower heating value (kJ/kg):	43020
Fuel density (kg/gal):	2.805

ERROR AND VALIDATION MESSAGES

This calculator automatically selects the appropriate CAFE value for 2016 and later model year PHEVs. If the PHEV is a dual fuel vehicle for purposes of CAFE, the better of a 50/50 weighting or a utility factor calculation will be selected. The statute requires manufacturers to request use of the utility factor method for 2016 and later PHEVs. Submitting this spreadsheet to EPA, filled out completely and correctly, will constitute such a request. Prior to 2016 the 50/50 weighting option must be used.

THE FOLLOWING VALUES ARE USED FOR OTHER EPA PUBLICATIONS OR PROGRAMS

Trends Report Values	City	Highway	
Fleet Utility Factor (43/57)	0.7850	0.4300	
Unadjusted Fuel Economy (MPG)	50.2894	43.7361	
Unadjusted GHG (g/mi)	78.2000	147.5000	
Adjusted Fuel Economy (MPG)	34.1475	28.5385	
Adjusted GHG (g/mi)	134.7	244.7	
HOV Lane Values	City	Highway	Combined
MDIUF based on unadjusted Rcda	0.7100	0.7120	
Composite CD/CS Fuel Economy (MPGe)	44.2	54.9	48.4

Fueleconomy.gov Values		
Charge-sustaining Efficiency		MPG
City FE (Guide) - Conventional Fuel		19
Hwy FE (Guide) - Conventional Fuel		22
Comb FE (Guide) - Conventional Fuel		20
City Unadj FE - Conventional Fuel		24.3
Hwy Unadj FE - Conventional Fuel		31.9
Comb Unadj FE - Conventional Fuel		27.2180
City Unrd Adj FE - Conventional Fuel		19.2381
Hwy Unrd Adj FE - Conventional Fuel		22.0961
Comb Unrd Adj FE - Conventional Fuel		20.4271
Charge-sustaining CO2		g/mi
City CO2 Rounded Adjusted		465
Hwy CO2 Rounded Adjusted		396
Comb CO2 Rounded Adjusted		434
*City CO2 Unadj		361.3
*Hwy CO2 Unadj		274.7
*Comb CO2 Unadj		322.3
*City CO2 Unrd Adj		465.4
*Hwy CO2 Unrnd Adj		396.5
*Comb CO2 Unrnd Adj		434.4
Charge-sustaining Driving Range (Adjusted)		
*Range1 - Model Type Driving Range - Conventional Fuel - City		349
*Range1 - Model Type Driving Range - Conventional Fuel - Hwy		402
Range1 - Model Type Driving Range - Conventional Fuel - Comb		373
Charge-depleting Efficiency	kW-hr/100mi	MPGe
City2 FE (Guide) - Alternative Fuel	63	47
Hwy2 Fuel FE (Guide) - Alternative Fuel	62	54
Comb2 Fuel FE (Guide) - Alternative Fuel	63	50
City2 Unadj FE - Alternative Fuel	45.9	66.4
Hwy2 Unadj FE - Alternative Fuel	43.5	77.4
Comb2 Unadj FE - Alternative Fuel	44.8200	70.9366
City2 Unrd Adj FE - Alternative Fuel	62.8490	46.8923
Hwy2 Unrd Adj FE - Alternative Fuel	62.0840	54.2272
Cmb2 Unrd Adj FE - Alternative Fuel	62.5048	49.9315
Charge-depleting CO2		g/mi
City CO2 Rounded Adj		18
Hwy CO2 Rounded Adj		0
Comb CO2 Rounded Adj		10
*City CO2 Unadj		12.7
*Hwy CO2 Unadj		0
*Comb CO2 Unadj		7
*City CO2 Unrd Adj		17.9
*Hwy CO2 Unrnd Adj		0
*Comb CO2 Unrnd Adj		9.8
Charge-depleting Driving Range (Adjusted)		miles
City Range on Electricity (miles)		31.43
Hwy Range on Electricity (miles)		31.42
Comb Range on Electricity as shown on FE Label (miles)		31
All-Electric Driving Range (Adjusted)		miles
City All-Electric Range		29.04
Hwy All-Electric Range		31.33
Comb All-Electric Range as shown on FE Label (miles)		30.0
Charge-depleting Utility Factors		UF
City Utility Factor (MDIUF)		0.601
Hwy Utility Factor (MDIUF)		0.601
Comb Utility Factor (MDIUF)		0.601
Composite Efficiency (Adjusted)		MPGe
City PHEV Composite MPGe		30
Hwy PHEV Composite MPGe		34
Comb PHEV Composite MPGe		32
Composite CO2 (Adjusted)		g/mi
City CO2-PHEV Composite Rounded Adjusted Combined CO2		193
Hwy CO2-PHEV Composite Rounded Adjusted Combined CO2		160
CO2-PHEV Composite Rounded Adjusted Combined CO2		178
PHEV Total Driving Range (Adjusted)		miles
		400

Test Set #1

Test Set name (e.g., Eco, Power):	Default-D
Production Volume (projected or actual):	

ENTER CHARGE-SUSTAINING TEST RESULTS HERE	City	Highway
Fuel Economy, Unadjusted (MPG):	24.3	31.9
Fuel Economy, Adjusted (MPG):	19.2381	22.0961
CREE (g/mi):	362.0	274.7
CO2, Unadjusted (g/mi):	361	275
CO2, Adjusted (g/mi):	465.4	396.5
CS FE Method:	5C FE	

Test Number: MBMX10063330

ENTER CHARGE-DEPLETING UDDS (CITY) DATA HERE

Cycle No.	Cycle/Phase Measured Distance	Integrated Amp-Hours Electricity Used	Average Cycle Voltage	Fuel Economy	CO2	CREE
No.	Miles [3]	Amp-hrs [3]	Volts [2]	MPG [1]	g/mi [0]	g/mi [0]
1	7.425	7.947	394.40	61454.1	0	0
2	7.388	15.735	382.05	65048.9	0	0
3	7.392	23.749	371.55	65385.0	0	0
4	7.444	32.011	361.70	58220.8	0	0
5	7.443	40.459	353.60	78273.6	0	0
6	7.415	48.041	348.15	114.3	76	76
7	7.429	46.555	346.85	22.1	396	396
8	7.433	46.413	347.45	25.1	349	349
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Recharge energy (AC kilowatt-hours):						19.756
All-Electric Range (miles):						41.482
Calculated transition cycle: ERROR			To override transition cycle, enter here--->			7

Test Number: MBMX10063332

ENTER CHARGE-DEPLETING HFET (HIGHWAY) DATA HERE

Cycle No.	Cycle/Phase Measured Distance	Integrated Amp-Hours Electricity Used	Average Cycle Voltage	Fuel Economy	CO2	CREE
No.	Miles [3]	Amp-hrs [3]	Volts [2]	MPG [1]	g/mi [0]	g/mi [0]
1	10.260	10.519	392.50	106838.3	0	0
2	10.249	20.841	376.95	52672.7	0	0
3	10.252	31.374	363.40	68611.4	0	0
4	10.250	42.191	352.80	55377.1	0	0
5	10.257	46.257	348.30	47.9	183	183
6	10.266	46.253	347.80	32.8	268	268
7						
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Recharge energy (AC kilowatt-hours):						19.510
All-Electric Range (miles):						44.760
Calculated transition cycle: 5			To override transition cycle, enter here--->			

Results from Test Set #1: Default-D

CAFE Values	City	Highway	Combined
A. PHEV meets dual fuel criteria:	City	Highway	Combined
1. Default 50/50 Composite MPGe [4]	42.7574	54.5734	47.3731
2. Optional Utility Factor Composite MPGe [4]	75.8094	52.1281	62.9421
B. PHEV does NOT meet dual fuel criteria:	City	Highway	Combined
1. Utility Factor Composite MPGe [4]	50.2894	43.7361	47.1127
GHG Values	City	Highway	Combined
Composite CREE, (g/mi) [1]	78.2	147.5	109.4
Label Values (5-Cycle Adjusted)			
Charge-Depleting			Combined
CD range, adjusted (miles) [0]			31
CD All-Electric Range, adjusted (mi) [0]			30
Total Driving Range (Miles) [0]			400
CD Fuel Economy (MPGe) [0]			50
CD Electricity Consumption (kW-hr/100mi) [0]			63
CD Gasoline Consumption (gal/100mi) [0]			0.1
Charge-Sustaining			Combined
CS Fuel Economy (MPG) [0]	19.2381	22.0961	20
CS Fuel Consumption (gal/100mi) [1]	5.2	4.5	5
Composite CD/CS			Combined
Annual Fuel Cost ($/year) [0]			1,700
5-Year Fuel Savings Value ($/5 years) [0]			(1,000)
Composite CO2 (g/mi) [0]			178
Composite Fuel Economy (MPG) [0]			32
HOV Lane Values	City	Highway	Combined
MDIUF based on unadjusted Rcda [3]	0.710	0.712	
Composite CD/CS Fuel Economy (MPGe) [4]	44.1947	54.8722	48.4360
Trends Report Values	City	Highway	Combined
Fleet Utility Factor (43/57) [3]	0.785	0.430	0.6253
Unadjusted Fuel Economy (MPG) [4]	50.2894	43.7361	47.1127
Unadjusted GHG (g/mi) [1]	78.2	147.5	109.4
Adjusted Fuel Economy (MPG) [4]	34.1475	28.5385	31.3728
Adjusted GHG (g/mi) [1]	134.7	244.7	184.2

INTERMEDIATE CALCULATIONS AND INPUTS — Test Set #1: Default-D

Charge-Depleting (CD) Test Results	CITY	HIGHWAY
DRIVING DISTANCE VALUES	CITY	HIGHWAY
CD driving distance (Rcda), unadjusted (miles) [3]	44.507	44.868
CD driving distance (Rcda), adjusted (miles) [3]	31.434	31.425
CD all-electric driving distance, unadjusted (miles) [3]	41.482	44.760
CD All-Electric Range, adjusted (mi) [3]	29.037	31.332
FUEL CONSUMPTION & ECONOMY VALUES	CITY	HIGHWAY
NEW CD AC electricity consumption (Rcdc), unadjusted (Watt-hours) [1]	19813.3	19511.0
CD AC electricity consumption rate (Rcda), adjusted (kW-hr/100mi) [3]	62.849	62.084
CD test total DC energy consumed, unadjusted (Watt-hours) [1]	17137.5	17078.4
NEW CD Rcda total fuel consumption (Rcda), unadjusted (gal equiv) [4]	0.6703	0.5795
CD utilitized total fuel consumption rate (55/45 FUF, Rcdc), unadjusted (gal-equiv/mile) [6]	0.013424	0.007692
NEW CD utilitized total fuel consumption rate (43/57 FUF, Rcdc), adjusted (gal-equiv/mile) [6]	0.018109	0.009244
NEW CD utilitized total fuel consumption rate (MDIUF, Rcdc), adjusted (gal-equiv/mile) [6]	0.015474	0.013303
CD gasoline consumption (Rcda), unadjusted (gal) [1]	0.06487314	0
CD fuel economy (Rcda), adjusted (MPGe) [4]	46.8923	54.2272
CD gasoline consumption rate (Rcda), adjusted (gal/100mi) [4]	0.2064	0.0000
NEW CD fuel economy (Rcda), unadjusted (MPGe) [4]	66.3943	77.4245
NEW CD AC electricity consumption rate (Rcda), unadjusted (kW-hr/100mi) [3]	45.852	43.533
GHG EMISSIONS VALUES	CITY	HIGHWAY
CD CO2 emissions rate (Rcda), unadjusted (g/mi) [1]	12.7	0.0
NEW CD CO2 emissions rate (Rcda), adjusted (g/mi) [1]	17.9	0.0
NEW CD utilitized CO2 (MDIUF, Rcdc), adjusted (g/mi) [1]	33.6	18.7
CD utilitized CREE (55/45 FUF, Rcdc), unadjusted (g/mi) [1]	21.4	14.5
NEW CD utilitized CREE (43/57 FUF, Rcdc), adjusted (g/mi) [1]	34.6	18.7
UTILITY FACTORS & OTHER METRICS	CITY	HIGHWAY
CD 55/45 Fleet Utility Factor (FUF) for Rcdc [3]	0.843	0.516
MDIUF based on adjusted Rcda [3]	0.601	0.601
MDIUF based on adjusted Rcdc [3]	0.657	0.645
Fraction of transition cycle that is charge-depleting operation (Zn) [3]	0.000	0.376
Number of last cycle number with charge-depleting operation (transition cycle) [0]	7	5
Intermediate Results Requiring Charge-Sustaining (CS) Test Results or Other Inputs		
DRIVING DISTANCE VALUES	CITY	HIGHWAY
CD Equivalent All-Electric Range (EAER), Unadjusted (mi) [3]	42.943	44.868
Charge-sustaining driving range, adjusted (mi) [3]	348.885	402.149
UTILITY FACTORS & OTHER METRICS	CITY	HIGHWAY
CD 55/45 Fleet Utility Factor (FUF) for EAER [3]	0.787	0.467
FUEL COSTS: PROCESS FOR DERIVING A COMPOSITE CD/CS COST PER MILE	CITY	HIGHWAY
CD cost per mile - electricity ($/mi) [3]	$ 0.082	$ 0.081
CD cost per mile - gasoline ($/mi) [3]	$ 0.007	$ -
CD total cost per mile ($/mi) [3]	$ 0.089	$ 0.081
CS cost per mile ($/mi) [3]	$ 0.169	$ 0.147
Composite CD/CS cost ($/mi) [3]	$ 0.121	$ 0.107
COMPOSITE CD/CS FUEL ECONOMY AND CO2 VALUES, ADJUSTED	CITY	HIGHWAY
Composite CD/CS CO2, adjusted (g/mi) [1]	193.2	159.5
Composite CD/CS Fuel Economy, adjusted (MPG) [4]	30.0271	34.0493

DETAILED CALCULATIONS

Cycle No.	Gasoline Consumed
No.	gal
1	0.0000
2	0.0000
3	0.0000
4	0.0000
5	0.0000
6	0.0649
7	0.3362
8	0.2961
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Test Set #2

Test Set name (e.g., Eco, Power):	
Production Volume (projected or actual):	

ENTER CHARGE-SUSTAINING TEST RESULTS HERE	City	Highway
Fuel Economy, Unadjusted (MPG):		
Fuel Economy, Adjusted (MPG):		
CREE (g/mi):		
CO2, Unadjusted (g/mi):		
CO2, Adjusted (g/mi):		

ENTER CHARGE-DEPLETING UDDS (CITY) DATA HERE

Cycle No.	Cycle/Phase Measured Distance	Integrated Amp-Hours Electricity Used	Average Cycle Voltage	Fuel Economy	CO2	CREE
No.	Miles [3]	Amp-hrs [3]	Volts [2]	MPG [1]	g/mi [0]	g/mi [0]
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Recharge energy (AC kilowatt-hours):						
All-Electric Range (miles):						
Calculated transition cycle: ERROR			To override transition cycle, enter here--->			

ENTER CHARGE-DEPLETING HFET (HIGHWAY) DATA HERE

Cycle No.	Cycle/Phase Measured Distance	Integrated Amp-Hours Electricity Used	Average Cycle Voltage	Fuel Economy	CO2	CREE
No.	Miles [3]	Amp-hrs [3]	Volts [2]	MPG [1]	g/mi [0]	g/mi [0]
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35						
Recharge energy (AC kilowatt-hours):						
All-Electric Range (miles):						
Calculated transition cycle: ERROR			To override transition cycle, enter here--->			

Results from Test Set #2: 0

CAFE Values	City	Highway	Combined
A. PHEV meets dual fuel criteria:	City	Highway	Combined
1. Default 50/50 Composite MPGe [4]	-	-	-
2. Optional Utility Factor Composite MPGe [4]	-	-	-
B. PHEV does NOT meet dual fuel criteria:	City	Highway	Combined
1. Utility Factor Composite MPGe [4]	-	-	-
GHG Values	City	Highway	Combined
Composite CREE, without upstream emissions [1]	0.0	0.0	0.0
Label Values (5-Cycle Adjusted)			
Charge-Depleting			Combined
CD range, adjusted (miles) [0]			0
CD All-Electric Range, adjusted (mi) [0]			0
Total Driving Range (Miles) [0]			0
CD Fuel Economy (MPGe) [0]			0
CD Electricity Consumption (kW-hr/100mi) [0]			0
CD Gasoline Consumption (gal/100mi) [0]			0
Charge-Sustaining			Combined
CS Fuel Economy (MPG) [0]	0.0000	0.0000	0
CS Fuel Consumption (gal/100mi) [1]	0.0	0.0	0
Composite CD/CS			Combined
Annual Fuel Cost ($/year) [0]			-
5-Year Fuel Savings Value ($/5 years) [0]			7,500
Composite CO2 (g/mi) [0]			0
Composite Fuel Economy (MPG) [0]			0
HOV Lane Values	City	Highway	Combined
MDIUF based on unadjusted Rcda [3]	0.000	0.000	
Composite CD/CS Fuel Economy (MPGe) [4]	0.0000	0.0000	0.0000
Trends Report Values	City	Highway	Combined
Fleet Utility Factor (43/57) [3]	0.000	0.000	0.0000
Unadjusted Fuel Economy (MPG) [4]	0.0000	0.0000	0.0000
Unadjusted GHG (g/mi) [1]	-	-	-
Adjusted Fuel Economy (MPG) [4]	0.0000	0.0000	0.0000
Adjusted GHG (g/mi) [1]	0.0	0.0	0.0

INTERMEDIATE CALCULATIONS AND INPUTS — Test Set #2: 0

Charge-Depleting (CD) Test Results	CITY	HIGHWAY
DRIVING DISTANCE VALUES	CITY	HIGHWAY
CD driving distance (Rcda), unadjusted (miles) [3]	0.000	0.000
CD driving distance (Rcda), adjusted (miles) [3]	0.000	0.000
CD all-electric driving distance, unadjusted (miles) [3]	0.000	0.000
CD All-Electric Range, adjusted (mi) [3]	0.000	0.000
FUEL CONSUMPTION & ECONOMY VALUES	CITY	HIGHWAY
NEW CD AC electricity consumption (Rcdc), unadjusted (Watt-hours) [1]	0.0	0.0
CD AC electricity consumption rate (Rcda), adjusted (kW-hr/100mi) [3]	0.000	0.000
CD test total DC energy consumed, unadjusted (Watt-hours) [1]	0.0	0.0
NEW CD Rcda total fuel consumption (Rcda), unadjusted (gal equiv) [4]	0.0000	0.0000
CD utilitized total fuel consumption rate (55/45 FUF, Rcdc), unadjusted (gal-equiv/mile) [6]	0.000000	0.000000
NEW CD utilitized total fuel consumption rate (43/57 FUF, Rcdc), adjusted (gal-equiv/mile) [6]	0.000000	0.000000
NEW CD utilitized total fuel consumption rate (MDIUF, Rcdc), adjusted (gal-equiv/mile) [6]	0.000000	0.000000
CD gasoline consumption (Rcda), adjusted (gal) [1]	0	0
CD fuel economy (Rcda), adjusted (MPGe) [4]	0.0000	0.0000
CD gasoline consumption rate (Rcda), adjusted (gal/100mi) [4]	0.0000	0.0000
NEW CD fuel economy (Rcda), unadjusted (MPGe) [4]	0	0
NEW CD AC electricity consumption rate (Rcda), unadjusted (kW-hr/100mi) [3]	0	0
GHG EMISSIONS VALUES	CITY	HIGHWAY
CD CO2 emissions rate (Rcda), unadjusted (g/mi) [1]	0.0	0.0
NEW CD CO2 emissions rate (Rcda), adjusted (g/mi) [1]	0.0	0.0
NEW CD utilitized CO2 (MDIUF, Rcdc), adjusted (g/mi) [1]	0.0	0.0
CD utilitized CREE (55/45 FUF, Rcdc), unadjusted (g/mi) [1]	0.0	0.0
NEW CD utilitized CREE (43/57 FUF, Rcdc), adjusted (g/mi) [1]	0.0	0.0
UTILITY FACTORS & OTHER METRICS	CITY	HIGHWAY
CD 55/45 Fleet Utility Factor (FUF) for Rcdc [3]	0.000	0.000
MDIUF based on adjusted Rcda [3]	0.000	0.000
MDIUF based on adjusted Rcdc [3]	0.000	0.000
Fraction of transition cycle that is charge-depleting operation (Zn) [3]	#VALUE!	#VALUE!
Number of last cycle number with charge-depleting operation (transition cycle) [0]	EOT ERROR	EOT ERROR
Intermediate Results Requiring Charge-Sustaining (CS) Test Results or Other Inputs		
DRIVING DISTANCE VALUES	CITY	HIGHWAY
CD Equivalent All-Electric Range (EAER), Unadjusted (mi) [3]	#VALUE!	#VALUE!
Charge-sustaining driving range, adjusted (mi) [3]	0.000	0.000
UTILITY FACTORS & OTHER METRICS	CITY	HIGHWAY
CD 55/45 Fleet Utility Factor (FUF) for EAER [3]	#VALUE!	#VALUE!
FUEL COSTS: PROCESS FOR DERIVING A COMPOSITE CD/CS COST PER MILE	CITY	HIGHWAY
CD cost per mile - electricity ($/mi) [3]	$ -	$ -
CD cost per mile - gasoline ($/mi) [3]	#VALUE!	#VALUE!
CD total cost per mile ($/mi) [3]	#VALUE!	#VALUE!
CS cost per mile ($/mi) [3]	#VALUE!	#VALUE!
Composite CD/CS cost ($/mi) [3]	#VALUE!	#VALUE!
COMPOSITE CD/CS FUEL ECONOMY AND CO2 VALUES, ADJUSTED	CITY	HIGHWAY
Composite CD/CS CO2, adjusted (g/mi) [1]	0.0	0.0
Composite CD/CS Fuel Economy, adjusted (MPG) [4]	0	0

DETAILED CALCULATIONS

Cycle No.	Gasoline Consumed
No.	gal
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Test Set #3

Test Set name (e.g., Eco, Power):	
Production Volume (projected or actual):	

ENTER CHARGE-SUSTAINING TEST RESULTS HERE	City	Highway
Fuel Economy, Unadjusted (MPG):		
Fuel Economy, Adjusted (MPG):		
CREE (g/mi):		
CO2, Unadjusted (g/mi):		
CO2, Adjusted (g/mi):		

ENTER CHARGE-DEPLETING UDDS (CITY) DATA HERE

Cycle No.	Cycle/Phase Measured Distance	Integrated Amp-Hours Electricity Used	Average Cycle Voltage	Fuel Economy	CO2	CREE
No.	Miles [3]	Amp-hrs [3]	Volts [2]	MPG [1]	g/mi [0]	g/mi [0]
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ENTER CHARGE-DEPLETING HFET (HIGHWAY) DATA HERE

Cycle No.	Cycle/Phase Measured Distance	Integrated Amp-Hours Electricity Used	Average Cycle Voltage	Fuel Economy	CO2	CREE
No.	Miles [3]	Amp-hrs [3]	Volts [2]	MPG [1]	g/mi [0]	g/mi [0]
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Results from Test Set #3: 0

CAFE Values	City	Highway	Combined
A. PHEV meets dual fuel criteria:	City	Highway	Combined
1. Default 50/50 Composite MPGe [4]	-	-	-
2. Optional Utility Factor Composite MPGe [4]	-	-	-
B. PHEV does NOT meet dual fuel criteria:	City	Highway	Combined
1. Utility Factor Composite MPGe [4]	-	-	-
GHG Values	City	Highway	Combined
Composite CREE, without upstream emissions [1]	0.0	0.0	0.0
Label Values (5-Cycle Adjusted)			
Charge-Depleting			Combined
CD range, adjusted (miles) [0]			0
CD All-Electric Range, adjusted (mi) [0]			0
Total Driving Range (Miles) [0]			0
CD Fuel Economy (MPGe) [0]			0
CD Electricity Consumption (kW-hr/100mi) [0]			0
CD Gasoline Consumption (gal/100mi) [0]			0
Charge-Sustaining			Combined
CS Fuel Economy (MPG) [0]	0.0000	0.0000	0
CS Fuel Consumption (gal/100mi) [1]	0.0	0.0	0
Composite CD/CS			Combined
Annual Fuel Cost ($/year) [0]			-
5-Year Fuel Savings Value ($/5 years) [0]			7,500
Composite CO2 (g/mi) [0]			0
Composite Fuel Economy (MPG) [0]			0
HOV Lane Values	City	Highway	Combined
MDIUF based on unadjusted Rcda [3]	0.000	0.000	
Composite CD/CS Fuel Economy (MPGe) [4]	0.0000	0.0000	0.0000
Trends Report Values	City	Highway	Combined
Fleet Utility Factor (43/57) [3]	0.000	0.000	0.0000
Unadjusted Fuel Economy (MPG) [4]	0.0000	0.0000	0.0000
Unadjusted GHG (g/mi) [1]	-	-	-
Adjusted Fuel Economy (MPG) [4]	0.0000	0.0000	0.0000
Adjusted GHG (g/mi) [1]	0.0	0.0	0.0

INTERMEDIATE CALCULATIONS AND INPUTS — Test Set #3: 0

Charge-Depleting (CD) Test Results	CITY	HIGHWAY
DRIVING DISTANCE VALUES	CITY	HIGHWAY
CD driving distance (Rcda), unadjusted (miles) [3]	0.000	0.000
CD driving distance (Rcda), adjusted (miles) [3]	0.000	0.000
CD all-electric driving distance, unadjusted (miles) [3]	0.000	0.000
CD All-Electric Range, adjusted (mi) [3]	0.000	0.000
FUEL CONSUMPTION & ECONOMY VALUES	CITY	HIGHWAY
NEW CD AC electricity consumption (Rcdc), unadjusted (Watt-hours) [1]	0.0	0.0
CD AC electricity consumption rate (Rcda), adjusted (kW-hr/100mi) [3]	0.000	0.000
CD test total DC energy consumed, unadjusted (Watt-hours) [1]	0.0	0.0
NEW CD Rcda total fuel consumption (Rcda), unadjusted (gal equiv) [4]	0.0000	0.0000
CD utilitized total fuel consumption rate (55/45 FUF, Rcdc), unadjusted (gal-equiv/mile) [6]	0.000000	0.000000
NEW CD utilitized total fuel consumption rate (43/57 FUF, Rcdc), adjusted (gal-equiv/mile) [6]	0.000000	0.000000
NEW CD utilitized total fuel consumption rate (MDIUF, Rcdc), adjusted (gal-equiv/mile) [6]	0.000000	0.000000
CD gasoline consumption (Rcda), adjusted (gal) [1]	0	0
CD fuel economy (Rcda), adjusted (MPGe) [4]	0.0000	0.0000
CD gasoline consumption rate (Rcda), adjusted (gal/100mi) [4]	0.0000	0.0000
NEW CD fuel economy (Rcda), unadjusted (MPGe) [4]	0	0
NEW CD AC electricity consumption rate (Rcda), unadjusted (kW-hr/100mi) [3]	0	0
GHG EMISSIONS VALUES	CITY	HIGHWAY
CD CO2 emissions rate (Rcda), unadjusted (g/mi) [1]	0.0	0.0
NEW CD CO2 emissions rate (Rcda), adjusted (g/mi) [1]	0.0	0.0
NEW CD utilitized CO2 (MDIUF, Rcdc), adjusted (g/mi) [1]	0.0	0.0
CD utilitized CREE (55/45 FUF, Rcdc), unadjusted (g/mi) [1]	0.0	0.0
NEW CD utilitized CREE (43/57 FUF, Rcdc), adjusted (g/mi) [1]	0.0	0.0
UTILITY FACTORS & OTHER METRICS	CITY	HIGHWAY
CD 55/45 Fleet Utility Factor (FUF) for Rcdc [3]	0.000	0.000
MDIUF based on adjusted Rcda [3]	0.000	0.000
MDIUF based on adjusted Rcdc [3]	0.000	0.000
Fraction of transition cycle that is charge-depleting operation (Zn) [3]	#VALUE!	#VALUE!
Number of last cycle number with charge-depleting operation (transition cycle) [0]	EOT ERROR	EOT ERROR
Intermediate Results Requiring Charge-Sustaining (CS) Test Results or Other Inputs		
DRIVING DISTANCE VALUES	CITY	HIGHWAY
CD Equivalent All-Electric Range (EAER), Unadjusted (mi) [3]	#VALUE!	#VALUE!
Charge-sustaining driving range, adjusted (mi) [3]	0.000	0.000
UTILITY FACTORS & OTHER METRICS	CITY	HIGHWAY
CD 55/45 Fleet Utility Factor (FUF) for EAER [3]	#VALUE!	#VALUE!
FUEL COSTS: PROCESS FOR DERIVING A COMPOSITE CD/CS COST PER MILE	CITY	HIGHWAY
CD cost per mile - electricity ($/mi) [3]	$ -	$ -
CD cost per mile - gasoline ($/mi) [3]	#VALUE!	#VALUE!
CD total cost per mile ($/mi) [3]	#VALUE!	#VALUE!
CS cost per mile ($/mi) [3]	#VALUE!	#VALUE!

DETAILED CALCULATIONS

Cycle No.	Gasoline Consumed
No.	gal
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UDDS | **Default-D**

CO2 [0]	Net Amp-Hours Used Per Cycle [3]	DC Electricity Consumed [1]	AC Electricity Consumed [1]	Theoretical Cumulative Cycle Distance	Electric Only Fuel Consumption Rate	Total Fuel Consumption Rate (gas + electric)	55/45 City Fleet Utility Factor [3]	55/45 City FUF x CREE	55/45 City FUF x Total Consumption	Total Fuel Consumption (gas + electric)	5-Cycle Adjustment	Adjusted Cycle Measured Distance	Adjusted Cycle Theoretical Cumulative Distance	MDIUF [3]	MDIUF x Adjusted CO2	MDIUF x Adjusted Total Fuel Consumption	43/57 City Fleet Utility Factor [3]	43/57 City FUF x Adjusted Total Fuel Consumption Rate	43/57 City FUF x Adjusted CREE	Is Cycle CD or CS based on NEC 1% Tolerance?	NEC Tolerance 1% Fuel Energy Criteria	Is Cycle CD or CS based on battery 2% Tolerance?	NEC Tolerance 2% Usable Battery Energy Criteria
grams	Amp-hours	W-hours	W-hours	mi	gal/mi equiv	gal/mi equiv	UF	UF	gal/mi equiv	gal-equiv	%	miles	miles	UF	g/mi	gal/mi equiv	UF	gal/mi equiv	g/mi	CD or CS		CD or CS	
0	7.947	3134.3	3613.2	7.45	0.014437806	0.0144	0.243	0.0000	0.0035	0.1072	0.7000	5.19750	5.215000	0.155	0	0.003196943	0.198	0.004083837	0	CD	1.000	CD	1.000
0	7.788	2975.4	3430.0	14.90	0.013774407	0.0138	0.183	0.0000	0.0025	0.1018	0.7000	5.17160	10.430000	0.126	0	0.002479393	0.159	0.003128758	0	CD	1.000	CD	0.487
0	8.013	2977.2	3432.1	22.35	0.013775382	0.0138	0.137	0.0000	0.0019	0.1018	0.7000	5.17440	15.645000	0.103	0	0.002026949	0.126	0.002479569	0	CD	1.000	CD	0.328
0	8.262	2988.4	3445.0	29.80	0.013730569	0.0137	0.103	0.0000	0.0014	0.1022	0.7000	5.21080	20.860000	0.086	0	0.001686898	0.100	0.001996151	0	CD	1.000	CD	0.247
0	8.449	2987.6	3444.1	37.25	0.013728826	0.0137	0.077	0.0000	0.0011	0.1022	0.7000	5.21010	26.075000	0.071	0	0.001392495	0.080	0.001569009	0	CD	1.000	CD	0.198
564	7.582	2639.7	3043.0	44.70	0.012175771	0.0209	0.057	4.3320	0.0012	0.1552	0.7377	5.46986	31.570678	0.061	6.284611584	0.001730309	0.066	0.001872137	6.799743681	CD	1.214	CD	0.149
2942	-1.486	-515.4	-594.1	52.15	-0.00233266	0.0429	0.043	17.0280	0.0018	0.3185	0.7965	5.91710	37.50	0.055	27.34509953	0.002960743	0.056	0.003014575	27.84228316	CD	-0.046	CD	-0.030
2594	-0.143	-49.7	-57.3	59.60	-0.00022872	0.0396	0.032	11.1680	0.0013	0.2944	0.7915	5.88344	43.40	0.045	19.84133561	0.002252016	0.043	0.002151928	18.95949848	CD	-0.027	CD	-0.033
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DETAILED CALCULATIONS | **HFET** | **Default-D**

Cycle No.	Gasoline Consumed	CO2 [0]	Net Amp-Hours Used Per Cycle [3]	DC Electricity Consumed [1]	AC Electricity Consumed [1]	Theoretical Cumulative Cycle Distance	Electric Only Fuel Consumption Rate	Total Fuel Consumption Rate (gas + electric)	55/45 Highway Fleet Utility Factor [3]	55/45 Highway FUF x CREE	55/45 Highway FUF x Total Consumption	Total Fuel Consumption (gas + electric)	5-Cycle Adjustment	Adjusted Cycle Measured Distance	Adjusted Cycle Theoretical Cumulative Distance	MDIUF [3]	MDIUF x Adjusted CO2	MDIUF x Adjusted Total Fuel Consumption	43/57 Highway Fleet Utility Factor [3]	43/57 Highway FUF x Adjusted Total Fuel Consumption Rate	43/57 Highway FUF x Adjusted CREE	Is Cycle CD or CS based on NEC 1% Tolerance?	NEC Tolerance 1% Fuel Energy Criteria	Is Cycle CD or CS based on battery 2% Tolerance?	NEC Tolerance 2% Usable Battery Energy Criteria
No.	gal	grams	Amp-hours	W-hours	W-hours	mi	gal/mi equiv	gal/mi equiv	UF	UF	gal/mi equiv	gal-equiv	%	miles	miles	UF	g/mi	gal-equiv	UF	gal-equiv	g/mi	CD or CS		CD or CS	
1	0.0000	0.0000	10.519	4128.7000	4716.5000	10.30	0.013638862	0.0136	0.123	0.0000	0.0017	0.1399	0.7000	7.182	7.21	0.02060000	0	0.004013722	0.0970	0.00189997	0	CD	1.000	CD	1.000
2	0.0000	0.0000	10.321	3890.5000	4444.4000	20.60	0.012865815	0.0129	0.117	0.0000	0.0015	0.1319	0.7000	7.174	14.42	0.15600000	0	0.002867239	0.0940	0.001727695	0	CD	1.000	CD	0.485
3	0.0000	0.0000	10.534	3828.1000	4373.1000	30.90	0.012655709	0.0127	0.105	0.0000	0.0013	0.1297	0.7000	7.176	21.63	0.11900000	0	0.002151471	0.0870	0.001572924	0	CD	1.000	CD	0.323
4	0.0000	0.0000	10.816	3815.9000	4359.2000	41.20	0.012617944	0.0126	0.092	0.0000	0.0012	0.1293	0.7000	7.175	28.84	0.09200000	0	0.001658358	0.0800	0.001442051	0	CD	1.000	CD	0.244
5	0.2141	1877.0000	4.066	1416.2000	1617.8000	51.50	0.004679615	0.0256	0.079	14.4570	0.0020	0.2621	0.7045	7.226	36.10	0.07200000	18.70149904	0.002617715	0.0720	0.002617715	18.70149904	CD	0.197	CD	0.083
6	0.3130	2751.0000	-0.003	-1.0000	-1.1000	61.80	-3.179E-06	0.0305	0.067	17.9560	0.0020	0.3130	0.7147	7.337	43.46	0.05700000	21.37380822	0.002431241	0.0650	0.002772468	24.37364095	CS based on 1%	0.000	CS based on 2%	0.000
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UDDS | **0**

CO2 [0]	Net Amp-Hours Used Per Cycle [3]	DC Electricity Consumed [1]	AC Electricity Consumed [1]	Theoretical Cumulative Cycle Distance	Electric Only Fuel Consumption Rate	Total Fuel Consumption Rate (gas + electric)	55/45 City Fleet Utility Factor [3]	55/45 City FUF x CREE	55/45 City FUF x Total Consumption	Total Fuel Consumption (gas + electric)	5-Cycle Adjustment	Adjusted Cycle Measured Distance	Adjusted Cycle Theoretical Cumulative Distance	MDIUF [3]	MDIUF x Adjusted CO2	MDIUF x Adjusted Total Fuel Consumption	43/57 City Fleet Utility Factor [3]	43/57 City FUF x Adjusted Total Fuel Consumption Rate	43/57 City FUF x Adjusted CREE	Is Cycle CD or CS based on NEC 1% Tolerance?	NEC Tolerance 1% Fuel Energy Criteria	Is Cycle CD or CS based on battery 2% Tolerance?	NEC Tolerance 2% Usable Battery Energy Criteria
grams	Amp-hours	W-hours	W-hours	mi	gal/mi equiv	gal/mi equiv	UF	UF	gal/mi equiv	gal-equiv	%	miles	miles	UF	g/mi	gal/mi equiv	UF	gal/mi equiv	g/mi	CD or CS		CD or CS	
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DETAILED CALCULATIONS | **HFET** | **0**

Cycle No.	Gasoline Consumed	CO2 [0]	Net Amp-Hours Used Per Cycle [3]	DC Electricity Consumed [1]	AC Electricity Consumed [1]	Theoretical Cumulative Cycle Distance	Electric Only Fuel Consumption Rate	Total Fuel Consumption Rate (gas + electric)	55/45 Highway Fleet Utility Factor [3]	55/45 Highway FUF x CREE	55/45 Highway FUF x Total Consumption	Total Fuel Consumption (gas + electric)	5-Cycle Adjustment	Adjusted Cycle Measured Distance	Adjusted Cycle Theoretical Cumulative Distance	MDIUF [3]	MDIUF x Adjusted CO2	MDIUF x Adjusted Total Fuel Consumption	43/57 Highway Fleet Utility Factor [3]	43/57 Highway FUF x Adjusted Total Fuel Consumption Rate	43/57 Highway FUF x Adjusted CREE	Is Cycle CD or CS based on NEC 1% Tolerance?	NEC Tolerance 1% Fuel Energy Criteria	Is Cycle CD or CS based on battery 2% Tolerance?	NEC Tolerance 2% Usable Battery Energy Criteria
No.	gal	grams	Amp-hours	W-hours	W-hours	mi	gal/mi equiv	gal/mi equiv	UF	UF	gal/mi equiv	gal-equiv	%	miles	miles	UF	g/mi	gal-equiv	UF	gal-equiv	g/mi	CD or CS		CD or CS	
1																							1.000		1.000
2																							1.000		1.000
3																							1.000		1.000
4																							1.000		1.000
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