Light-Duty Vehicle Fuel Consumption Displacement Potential up to 2045

Energy Systems Division

U.S. Department of Energy

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Argonne National Laboratory Report – Light-Duty Vehicle Fuel Consumption Displacement Potential Up to 2045

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by
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6. NOTATION

6.1. ACRONYMS AND ABBREVIATIONS

AEO	Annual Energy Outlook
AER	all-electric range
APRF	Advanced Powertrain Research Facility
BEV	battery-powered electric vehicle
BOL	beginning-of-life
CAFE	Corporate Average Fuel Economy
CD	charge depleting
CI	compression ignition
CS	charge sustaining
DOE	U.S. Department of Energy
E85	blend of 85% ethanol and 15% gasoline by weight
EIA	Energy Information Administration
EOL	end of life
EPA	U.S. Environmental Protection Agency
E-REV	extended-range EV
EVS	International Electric Vehicle Symposium
FC	fuel cell
FCV	fuel cell vehicle
GDI	gasoline direct injection
GHG	greenhouse gas
GPRA	Government Performance and Results Act
GREET	Greenhouse gases, Regulated Emissions, and Energy use in Transportation
GUI	graphical user interface
GVW	gross vehicle weight
H ₂	hydrogen
HEV	hybrid electric vehicle
HWFET	Highway Federal Emissions Test
ICE	internal combustion engine
IEA	International Energy Agency
IVM	initial vehicle movement

LHV	lower heating value
Li-ion	lithium ion
MPGGE	miles per gallon gasoline equivalent
MC2/GC	Motor2/Generator
costMY	model year
NEMS	National Energy Modeling System
NHTS	National Household Travel Survey
NiMH	nickel metal hydride
OEM	original equipment manufacturer
PHEV	plug-in hybrid electric vehicle
PHEV 10 and 20	PHEV with 10 or 20 miles of all-electric range
PHEV 30 and 40	PHEV with 30 or 40 miles of all-electric range
PSAT	Powertrain System Analysis Toolkit
P/W	power to weight ratio
SAE	Society of Automotive Engineers
SI	spark ignition
SOC	state of charge
SUV	sport utility vehicle
UDDS	Urban Dynamometer Driving Schedule
UF	utility factor
US06	duty cycle with aggressive highway driving
VCR	variable compression ratio
VTP	Vehicle Technologies Program
VVT	variable valve timing
WSFC	weight-specific fuel consumption
WTP	well to pump
WTW	well-to-wheels

6.2. UNITS OF MEASURE

A	ampere(s)	MPG	mile(s) per gallon
bbl	barrel(s)	MPGGE	mile(s) per gallon of gasoline equivalent
Gal	gallon(s)	MW	megawatt(s)
H	hour(s)	V	volt(s)
Mi	mile(s)	Wh/mi	Watt hour(s) per mile

7. ABSTRACT

The U.S. Department of Energy (DOE) Vehicle Technologies Program (VTP) is developing more energy-efficient and environmentally friendly highway transportation technologies that will enable America to use less petroleum. The long-term aim is to develop "leapfrog" technologies that will provide Americans with greater freedom of mobility and energy security, while lowering costs and reducing impacts on the environment. The U.S. Department of Energy Vehicle Technologies Program examines pre-competitive, high-risk research needed to develop

- Component and infrastructure technologies necessary to enable a full range of affordable cars and light trucks.
- Fueling infrastructure to reduce the dependence of the nation's personal transportation system on imported oil and minimize harmful vehicle emissions, without sacrificing freedom of mobility and freedom of vehicle choice.

As part of this ambitious program, numerous technologies are addressed, including engines, energy storage systems, fuel-cell systems, hydrogen storage, electric machines, and materials, among others.

The 1993 Government Performance and Results Act (GPRA) holds federal agencies accountable for using resources wisely and achieving program results. GPRA requires agencies to develop plans for what they intend to accomplish, measure how well they are doing, make appropriate decisions on the basis of the information they have gathered, and communicate information about their performance to Congress and to the public. The present study evaluates the benefits of the light-duty vehicle research conducted at DOE from fuel-efficiency and cost perspectives, to support GPRA activities.

Owing to the large number of component and powertrain technologies considered, the benefits were simulated using Autonomie. Argonne designed Autonomie to serve as a single tool that can be used to meet the requirements of automotive engineering throughout the development process, from modeling to control. Autonomie, a forward-looking model developed using MathWorks tools, offers the ability to quickly compare powertrain configurations and component technologies from a performance and fuel-efficiency point of view.

This report reviews the results of the DOE VTP, assessing the fuel and light-duty vehicle technologies that are most likely to be established, developed and eventually commercialized during the next 35 years (up to 2045). Owing to the rapid evolution of component technologies, this study is performed on a yearly basis to continuously update the results based on the latest state-of-the-art technologies.

While it is not possible to simulate all the different combinations, more than 2000 vehicles were simulated in the study to take the following into account:

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- Major powertrain configurations (i.e., conventional, power-split, series and battery electric drive)
- Major vehicle classes (i.e., compact car, midsize car, small sport utility vehicle [SUV], large SUV and pickup)
- Major fuels (i.e., gasoline, diesel, hydrogen and ethanol)

These technologies were assessed for four different timeframes (2010, 2015, 2030 and 2045). Finally, uncertainties were included for both performance and cost aspects by considering three cases:

- Low case (10% uncertainty) – aligned with original-equipment-manufacturer improvements based on regulations.
- Average case (50% uncertainty).
- High case (90% uncertainty) – aligned with aggressive technology advancement based on the U.S. DOE Vehicle Technologies program.

The objective of the report is to provide an assessment of the conventional-fuel displacement and cost-reduction potentials of advanced technologies up to the year 2045 including uncertainties.

8. EXECUTIVE SUMMARY

The U. S. Department of Energy (DOE) Vehicle Technologies Program (VTP) supports new technologies to increase energy security in the transportation sector at a critical time for global petroleum supply, demand, and pricing. Consequences of our vehicles' dependence on oil as their source of energy were shown by the "first oil shock" brought on by the petroleum embargo of October 1973 and the "second oil shock" of 1979. However, this oil dependence continues to increase unabated to the present, and the oil price run-up of July 2008 (\$147 per barrel of crude) illustrated the rapidity with which these discontinuities can occur. As such, the lack of widely available and viable alternative non-petroleum-based fueling options for ground transport vehicles constitutes a high risk to stable economic activity. Some means of providing energy to move vehicles that greatly reduces or eliminates petroleum consumption must be developed. This challenge is greatly complicated by the fact that virtually all alternatives have some inherent fossil-fuel component. The U.S. transportation sector used about 13.5 million barrels of oil equivalent per day in 2009. It consumed more oil than the total U.S. domestic oil production. On-highway vehicles (passenger and commercial vehicles) used over 11 million barrels of oil equivalent per day, which accounts for over 79 percent of the total transportation oil use and over 59 percent of total U.S. oil use. The Vehicle Technologies Program focuses on ground transportation vehicles because of their dominant contribution to the nation's oil use.

VTP works in collaboration with industry to identify the priority areas of research needed to develop advanced vehicle technologies to reduce and eventually eliminate petroleum use, and reduce emissions of greenhouse gases, primarily carbon dioxide from carbon-based fuels. The VTP works on numerous technologies, including the following:

- Development of hybrid electric vehicles (HEVs) and plug-in HEVs (PHEVs) can provide significant improvement in fuel economy and petroleum displacement. This research supports President Obama's goal of 1 million plug-in hybrid vehicles (PHEVs) and electric vehicles (EVs) by 2015.
- Deployment of alternative fuels can rapidly reduce oil imports.
- Reducing vehicle weight directly improves vehicle efficiency and fuel economy, and can potentially reduce vehicle operating costs.
- Improved combustion technologies and optimized fuel systems can improve near- and mid-term fuel economy for passenger vehicles by 25–40% for passenger vehicles by 2015.

The objective of the present study is to evaluate the benefits of the DOE VTP for a wide range of vehicle applications, powertrain configurations and component technologies for different timeframes and quantify the potential future petroleum displacement up to 2045 as well as the cost evolution. More than 2000 light-duty vehicles were simulated with Autonomie, Argonne's vehicle simulation tool.

Owing to the large number of powertrain and component technologies, only a limited number of combinations were taken into account (i.e., micro or “mild” HEVs were not included), leading to the consideration of more than 2000 vehicles. To address performance and cost uncertainties, three cases were considered: low (10%), average (50%), and high (90%) uncertainty. When available, the high-case assumptions are based on the FreedomCAR and Fuel Partnership program goals. The other assumptions have been developed through discussions with experts from companies, universities, and the national laboratories. While the uncertainties are expected to provide a range, it should be noted that several ongoing research projects or lack of data for specific technologies could lead to significantly higher fuel-efficiency gains than considered in the study. For example, the engine gains could be considered less aggressive than for other technologies, and readers should take this parameter into account during the analysis. More than 400 assumptions are necessary to define each vehicle. Some of the main assumptions are highlighted below:

- The difference in peak efficiency between gasoline and diesel engines is expected to narrow in the future owing to the combination of advanced gasoline engine technologies and the impact of ever more stringent after-treatment for diesel.
- Coupling ultra-capacitors with batteries was not considered, owing to higher cost and expected increase in Li-ion battery life and cold start performance in the short term.
- Because of the drive quality requirements in North America, automated manual transmissions were not included in the study. Continuously variable transmissions (CVT) have also shown issues with reliability and fuel-efficiency gains and are not considered either.
- The peak efficiencies of fuel-cell systems remain constant in the future, as most research is expected to focus on reducing cost and increasing durability. The costs used are based on the assumption that 500,000 units are produced per year.

The main results related to vehicle sizing, fuel efficiency, and cost are highlighted in the following sections.

8.1. VEHICLE SIZING FINDINGS

Advances in material substitution will play a significant role in reducing overall vehicle weight and, consequently, component power and energy requirements.

- Owing to the impact of the component max-torque shapes, maintaining a constant power-to-weight (P/W) ratio between all configurations leads to an inconsistent comparison between technologies due to different performances. Each vehicle should be sized independently to meet specific Vehicle Technical Specifications (VTS).
- Reducing the vehicle weight (“lightweighting”) has greater influence on conventional vehicles than on their electric-drive counterparts.

- While performance (i.e., time for 0-60 mph) is the primary factor used to size components for current technologies, aggressive future lightweighting can make gradeability requirements the critical sizing criteria.
 - Vehicle weight decreases in the range from 1 to 51% by 2045 across powertrain configurations. The weight reduction, however, varies with the configuration. For the configurations using an engine, the weight reduction for the gasoline conventional powertrain ranges from 1 to 30%, power-split HEVs from 2 to 33%, low-energy PHEVs (with all-electric ranges, or AERs, of 10 and 20 miles) from 3 to 34%, and high energy PHEVs (30- and 40-mile AERs) from 6 to 37%. Configurations with fuel-cell systems demonstrate a larger weight reduction, with fuel-cell HEV weight reductions ranging from 21 to 51%, low-energy PHEV10s and 20s (i.e., 10- and 20-mile AERs) from 19 to 49% and high-energy PHEV30s and 40s (30- and 40-mile AERs) from 18 to 47%. Finally, battery electric vehicles achieve a weight reduction ranging from 7 to 44%. Overall, significant weight reductions can be achieved compared to current technologies, especially for vehicles with large batteries and/or using hydrogen fuel
 - Most of the component peak powers show a strong linear correlation with the vehicle weight. As a result, it is necessary to include secondary effects when analyzing the lightweighting benefits.
 - Owing to lightweighting and component efficiency improvements, the peak power of engine and fuel-cell systems could be significantly reduced over time to meet current Vehicle Technical Specifications. Engine peak power could be reduced by 2045 over a 2-to-28% range for conventional gasoline, 5 to 34% for gasoline power-split HEVs, 4 to 28% for low-energy PHEVs, and 8 to 36% for high-energy PHEVs. As seen for vehicle weight, hydrogen-fueled vehicles demonstrate a larger peak-power improvement than gasoline-fueled vehicles over time, with fuel-cell system power decreasing in the range from 22 to 53% for HEVs, 18 to 48% for low-energy PHEVs and 15 to 38% for high-energy PHEVs.
 - Battery peak power is also expected to decrease over time to meet current vehicle performance. The battery power is expected to decrease up to 34% for gasoline-engine HEVs and PHEVs. For fuel-cell systems, the decrease could be as high as 48%.
 - Battery total energy will be decreasing significantly owing to other component improvements as well as a wider usable state-of-charge range. The reduction in energy required for PHEVs and battery-powered electric vehicles (BEVs) could range from 4 to 60%.
 - While the fuel selection influences the engine size for conventional vehicles (i.e., diesel has lower peak power than gasoline to higher maximum torque at low speed), the power required to meet the Vehicle Technical Specifications for electric-drive vehicles is comparable across all fuels.
- The different PHEVs show a linear relationship between the usable battery energy and the vehicle mass, with the slope increasing with the All Electric Range.

8.2. VEHICLE FUEL-EFFICIENCY FINDINGS

Overall, the combination of technology improvements leads to significant fuel-consumption reduction across vehicle applications. As a result, significant fuel can be displaced over the next few decades. There is a linear relationship between lightweighting and fuel and electrical consumption. However, as previously discussed, that relationship differs depending on the powertrain configuration.

Evolution of Fuel Consumption Compared to Reference 2010 Gasoline Conventional Vehicle

Table ES-1 shows the adjusted fuel-consumption reduction by 2045 on the combined driving cycle for each powertrain configuration and fuel, compared to the reference gasoline conventional vehicle.

The results demonstrate significant improvements over time across all powertrain configurations and fuels (Table ES-1). When considering the high-uncertainty case across all engines, conventional vehicles can achieve a 41-47% fuel-consumption improvement, engine HEVs, 62 to 67%, engine PHEV10s, 69 to 73%, and engine PHEV40s, 80 to 82%. Fuel-cell vehicles achieve an improvement of up to 70% for HEVs, 75% for PHEV10s, and 84% for PHEV40s.

Table 1 - ES - Percentage Fuel-Consumption Reduction (mi/gal gasoline equivalent or MPGGE) of Each Powertrain by 2045, Compared to 2010 Gasoline Conventional Powertrain. (Electrical consumption is not taken into account for PHEVs)

Fuel\Powertrain	Conventional	HEV	PHEV10	PHEV40
Gasoline	2-43	37-64	49-70	64-81
Diesel	16-42	42-62	51-69	65-80
Hydrogen Internal Combustion Engine (ICE)	4-41	50-67	56-73	69-82
Ethanol	1-47	32-62	46-69	62-80
Fuel Cell		57-70	62-75	77-84

Evolution of Specific Powertrains

Table ES-2 shows the 2045 adjusted fuel-consumption reduction, on the combined driving cycle, for each powertrain configuration and fuel, compared to each configuration's current status in 2010 (e.g., the diesel HEV in 2045 is compared to the reference diesel HEV in 2010).

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The results demonstrate that the maximum improvement expected for each powertrain technology compared to its current status ranges from 33 to 52%. The range depends on fuels (i.e., diesel vehicles show less improvement than gasoline vehicles) and powertrain (i.e., conventional engines have a lower maximum improvement than PHEV40s). When considering the entire uncertainty range, fuel-cell vehicles show the greatest improvement over time.

Table 2 - ES - Percentage Fuel Consumption Reduction for Each Powertrain by 2045, Compared to the Respective Current Status (Values show uncertainty range)

Fuel\Powertrain	Conventional	HEV	PHEV10	PHEV40
Gasoline	2-43	9-45	8-43	11-49
Diesel	5-33	10-39	9-39	12-43
Hydrogen ICE	19-49	24-52	23-50	25-50
Ethanol	1-41	10-46	8-44	10-50
Fuel Cell		23-48	20-45	18-42
Electricity (BEV)	6-41			

Powertrain Comparisons

- Conventional Gasoline Vehicles vs. Engine HEVs
 - o The comparison between these powertrains shows that the fuel-consumption reductions due to hybridization stay fairly constant over time for all power-split HEVs.
 - o For gasoline HEVs, fuel-consumption reductions range from 36 to 40% for compact cars, 34 to 40% for midsize cars, 60 to 36% for small sport utility vehicles (SUVs), 29 to 35% for large SUVs and 28 to 33% for pickup trucks.
- Conventional Gasoline Vehicles vs. Engine PHEVs
 - o As is the case for power-split HEVs, the fuel-consumption reduction observed for PHEVs relative to conventional gasoline vehicles remains fairly constant over time, ranging from 59 to 71%.
 - o However, while the percentages decreased for higher vehicle weight classes, the benefits remain fairly constant across platforms, with 63 to 69% fuel consumption reduction for compacts, 65 to 71% for midsize cars, and 59 to 64% for small SUVs, large SUVs and pickup trucks.
- Conventional Gasoline Vehicles vs. Fuel-Cell HEVs

- The current fuel-consumption reductions for fuel-cell HEVs compared to conventional gasoline vehicles are 45% for compacts, 43% for midsize cars, 39% for small and large SUVs, and 30% for pickups.
- Owing to the expected improvements in fuel-cell system and hydrogen-storage technologies, the fuel-consumption percentage improvements are expected to increase over time. By 2045, the benefits increase from 5 to 20%, depending upon the vehicle class and uncertainties considered
- Engine HEVs vs. Fuel-Cell HEVs
 - Fuel-cell system technology offers consistently lower fuel consumption than power-split HEV technology.
 - The current fuel-consumption benefits of fuel-cell HEVs compared to gasoline power-split HEVs are fairly constant across all vehicle classes, ranging from 12 to 14%
 - Owing to the engine and fuel-cell system operating conditions for HEVs, the fuel consumption improvement remains constant across all vehicle classes. However, owing to the expected improvement of hydrogen technologies, the percentage is expected to increase by 18 to 26% by 2045.
- Conventional Hydrogen Engines vs. Fuel-Cell HEVs
 - The percentage of fuel-consumption reduction for fuel-cell vehicles compared to hydrogen conventional vehicles remains at around 50%.
 - The percentage of fuel-consumption reduction remains fairly constant over time for each vehicle class: 50 to 52% for compacts, 50 to 55% for midsize cars, 46 to 48% for small SUVs, 44 to 47% for large SUVs, and 42 to 46% for pickup trucks
- Hydrogen Engine HEVs vs. Fuel Cell HEVs
 - The fuel-consumption reduction for fuel-cell HEVs compared to hydrogen engine HEVs remains fairly constant across vehicle classes for the reference case ranging from 13 to 17%.
 - The percentage decreases over time owing to the faster improvement of hydrogen engine performance compared to fuel-cell system performance, reaching 8 to 15% by 2045.

Evolution of Fuel Comparisons

- Gasoline vs. diesel
 - The differences between gasoline and diesel-engine fuel consumption for conventional vehicles will tend to decrease in the future.
 - For conventional vehicles, the fuel consumption advantage of diesel engines, when considering MPGE, goes from 11–15% in 2010 to -1–15% by 2045.

- For HEVs, the fuel consumption benefit of diesel is smaller than for conventional vehicles, ranging from 5 to 8% in 2010. However, the gap between these fuels is also expected to decrease over time, with gasoline achieving lower fuel consumption for high-uncertainty cases.
- For PHEVs, the benefits of diesel compared to gasoline are minimal, ranging from 1 to 2% in 2010.
- However, the diesel engine retains the best fuel consumption for the vast majority of uncertainties and timeframes.
- Ethanol
 - In most cases, ethanol-engine vehicles have the highest fuel consumption among conventional vehicles.
 - Ethanol-fuel conventional vehicles are expected to narrow their fuel consumption penalty over gasoline engines with time. In 2010, the penalty ranges from 7 to 8%; it could be lowered to 5-7% by 2045.
 - The fuel-consumption penalty for ethanol decreases for increased hybridization degree and battery energy
- Hydrogen Engine
 - The hydrogen-engine conventional vehicle shows the greatest improvements in fuel consumption over time, owing to the introduction of direct injection. The fuel penalty compared to its gasoline counterpart is 10-17% in 2010; by 2045, hydrogen-fueled conventional vehicles could range from a fuel-consumption penalty of 3% up to an advantage of 12%.
 - By 2045, the hydrogen-fueled engine configurations consistently achieve the lowest fuel consumption of any configuration.

8.3. MANUFACTURING COST FINDINGS:

Overall, the combination of technology improvements leads to significant manufacturing cost reduction across vehicle applications. As a result, advanced technologies are expected to have significant market penetration over the next decades.

Cost Evolution Compared to Reference 2010 Gasoline Conventional Vehicle

Table ES-3 shows the additional manufacturing cost by 2045, compared to the reference gasoline conventional vehicle. The table shows a significant uncertainty range for the additional manufacturing cost across all technologies. This high uncertainty highlights the need to pursue aggressive research over the next decades to bring the cost of advanced technologies to a level that will favor high market penetrations.

Table 3 - ES - Additional manufacturing Cost (\$) of Each Powertrain by 2045 compared to Reference 2010 Gasoline Conventional Engine for Compact Cars

Fuel\Powertrain	Conventional	HEV	PHEV10	PHEV40
Gasoline	584-1240	560-3091	1029-4086	2188-8402
Diesel	1782-2609	2037-4831	2290-5543	3700-10159
Hydrogen ICE	452-951	828-2706	1099-3500	2432-7935
Ethanol	511-1209	583-3111	802-3695	2205-8426
Fuel Cell		-264-1812	-186-2661	721-6035
BEV	1446-10649			

Evolution of Costs for Specific Powertrains

Table ES-4 compares the percentage change in the manufacturing cost between 2010 and 2045 for each configuration relative to its current value.

Vehicle manufacturing costs for gasoline, diesel, and ethanol conventional vehicles increase over time because of several factors, including lightweighting (vehicle body mass decreases up to 37% by 2045 and its cost increases owing to the use of aluminum or carbon fiber) and advanced component technologies such as direct injection. In contrast, the greatest reductions are noticed for the vehicles with high-energy batteries, fuel-cell systems and hydrogen storage.

Owing to the expected improvements in batteries, the higher the battery energy, the greater will be the manufacturing cost reduction. As a result, PHEV40 demonstrates a larger cost reduction than PHEV10 across all fuels. PHEV40s with gasoline engines show cost reductions ranging from 32 to 41% from 2010 to 2045, while PHEV10s only show a cost reduction ranging from 11 to 18%.

The fuel-cell vehicle manufacturing costs decrease significantly over time. From 2010 to 2045, the manufacturing for the fuel-cell HEV decreases by 29 to 41%, for the fuel-cell PHEV10 by 30 to 42%, and for the fuel-cell PHEV40 by 35 to 45%.

Table 4 - ES - Percentage manufacturing cost Reduction for Each Powertrain by 2045, Compared to the Respective Current manufacturing cost, for Compact Cars

Fuel\Powertrain	Conventional	HEV	PHEV10	PHEV40
Gasoline	-9 to 4	-1 to -2	-18 to -11	-41 to -32
Diesel	1 to 4	-12 to -5	-20 to -13	-40 to -33
Hydrogen ICE	-10 to 7	-21 to -5	-27 to -14	-45 to -35
Ethanol	4 to 9	-10 to -2	-18 to -11	-40 to -33
Fuel Cell		-41 to -29	-42 to -30	-45 to -35
Electricity (BEV)	-66 to -55			

Powertrain Comparison

- The manufacturing cost differences between different powertrain options tend to decrease over time. In 2010, for midsize cars, the gasoline power-split HEV is 26% more expensive than the conventional vehicle, the PHEV10 45% more expensive and the PHEV40 150% more expensive. By 2045, these percentages are 8-13% for HEVs, 11-17% for PHEV10s, and 32-50% for PHEV40s.
- While vehicles with hydrogen engines will remain more expensive than fuel-cell vehicles, the technology will become more cost-competitive with the fuel-cell system over time. By 2045, conventional hydrogen-engine vehicles will be slightly cheaper to manufacture than their gasoline counterpart.

Fuel-Comparison Evolution

- Gasoline vs. diesel
 - o The conventional diesel vehicle manufacturing cost will remain between 10 and 13% more expensive than gasoline vehicles.
 - o The diesel HEV is between 10 and 14% more expensive to manufacture than the gasoline vehicle, but this difference tends to decrease after 2010.
- Ethanol
 - o Gasoline and ethanol vehicles have similar manufacturing costs across timeframes. Their manufacturing cost increases between 4 and 8% between 2010 and 2045, whereas the diesel-vehicle manufacturing cost increases by only 1 to 5% in that timeframe.

- From 2010 forward, the relative cost of ethanol vehicles decreases, reaching almost the same level as gasoline HEVs in 2045.
- Hydrogen Engine
 - Vehicle cost for the hydrogen engine decreases as the additional cost of reducing the vehicle weight (“lightweighting”) is compensated by larger cost reductions in the hydrogen storage system.

8.4. CONCLUSION

The combination of the technology improvements leads to significant fuel consumption and cost reduction across light duty vehicle applications. Due to the uncertainty of the evolution of the technologies considered, research should continue to be conducted in the different area showing high fuel displacement potential.

Due to expected improvements, advanced technologies are expected to have significant market penetration over the next decades. In the short term, both engine HEVs and PHEVs allow for significant fuel displacement with acceptable additional cost. While electric vehicles do provide a promising solution, they are likely to remain expensive and range limited in the near future. In the medium term, hydrogen engine HEVs will offer significant fuel improvements and could potentially offer a bridging technology that would help establish the infrastructure required for fuel cell vehicles. For the long term, fuel cell vehicles demonstrate very high fuel displacement potential at a competitive cost

This research will be updated on a yearly bases to include the latest powertrain technologies (i.e., multi-mode HEV, E-REV...), component technologies, as well as additional timeframes (i.e., 2020) and vehicle applications.

9. INTRODUCTION

9.1. THE ENERGY SITUATION

The current international energy situation has brought about serious concerns in most of the developed countries about their use of fossil fuels and their need for developing renewable energy sources. This energy crisis takes place in the context of oil-stock reduction and a dramatic demand increase from developing countries. A study by M. Wang (2006) shows that Chinese on-road vehicles could consume up to 20.6 million bbl of oil per day by 2050. Moreover, China could face a tremendous increase in highway vehicles (including cars, trucks, and buses) in the next 40 years. Indeed, depending upon the case scenario developed in the study, there could be between 486 and 662 million highway vehicles in China in 2050, compared to roughly 27 million in 2004. Such a dramatic evolution could have severe impacts on climate change and on the oil market. The dilemma cannot be solved without creating new energy and/or transportation systems that either consume less oil or are not dependent on oil.

With a consumption of almost 20 million bbl/day, the United States is by far the world's highest-oil-consuming country (Central Intelligence Agency, 2008). As illustrated in **Error! Reference source not found.**, the United States, with only 4.5% of the world's population, consumes almost a quarter of the world's oil.

Figure 1 - Fraction of the world's oil consumption per country or continent

As shown in Figure 2, only 49% of the oil imported by the U.S. (8.1 million bbl/day) comes from the Western hemisphere, (World energy keys statistics from IEA), and the rest is imported from other regions of the world such as Africa and the Persian Gulf (20% and 16%, respectively, of the imported oil). The unstable and unpredictable political situations in these regions have led the U.S. to focus on reducing its oil dependency through various programs in different sectors.

Figure 2 - Fraction of American imported oil per geographical region (International Energy Agency, 2010)

The data shown in Figures 3 and 4 separate the total energy consumption by the transportation, industry, and other sectors according to energy type (coal, natural gas, oil, nuclear, etc.). Although the development of nuclear, coal, and renewable energy could in the future help decrease the need for oil in the industrial sector, the primary focus should be the transportation sector, which is almost entirely dependent on oil as its primary energy source.

Figure 3 - U.S. consumption distribution (left) and role of transportation in global consumption (right)

Figure 4 - Sources of energy used in major U.S. economic sectors in 1973 and 2005 (Mtoe = Million Tons of Oil Equivalent) (International Energy Agency, 2010)

Such a strong dependence on oil has important consequences for the current world energy situation. As shown in Figure 5, in July 2008, the price of oil barrel exceeded \$140/bbl, having doubled in less than a year. Consequently, the gasoline consumer price has also dramatically increased in past years, reaching the historic threshold of \$4/gallon in the United States in June 2008. Even with a huge decrease at the end of 2008, the oil barrel price remains high in 2010 compared to what it was before the crisis.

Figure 5 - Evolution of price of a barrel of oil from 1990 to 2010 [EIA]

To address the issue, the U.S. government and, in particular, the U.S. Department of Energy (DOE) have developed various projects to find alternative energy solutions for the transportation domain. Among the different possibilities that could be the key for the future, three main categories can be highlighted:

- The development of inexpensive and high-energy batteries to enable the commercialization of hybrid electric vehicles (HEVs) and plug-in hybrid electric vehicles (PHEVs). PHEVs would allow the driver to travel certain distances in electric-only mode and charge the vehicle overnight by plugging the car into the regular electric network.
- The development of biofuels such as ethanol. The current ethanol vehicles (also called flex-fuel or E85 vehicles) use a fuel made of 85% ethanol and 15% gasoline.
- The development of hydrogen/fuel-cell vehicles that would entirely eliminate oil dependency.

A DOE report (U.S. Department of Energy, 2010) states that the Obama Administration is investing in a broad portfolio of advanced vehicle technologies:

“As part of the Department of Energy’s \$12 billion investment in advanced vehicle technologies, the Department is investing more than \$5 billion to electrify America’s transportation sector. These investments under the American Recovery and Reinvestment Act and DOE’s Advanced Technology Vehicle Manufacturing (ATVM) Loan Program are supporting the development, manufacturing, and deployment of the batteries, components, vehicles, and chargers necessary to put millions of electric vehicles on America’s roads.”

9.2. THE AMERICAN AUTOMOTIVE MARKET

The automotive market in the United States has greatly evolved over the past 30 years. These modifications include not only the distribution of vehicle types sold but also changes in performance, weight, and thus fuel consumption for all light-duty vehicles. Prior to the oil embargo of 1973, domestic oil was inexpensive and abundant, and car companies produced large and heavy cars with powerful engines and poor fuel economy. A combination of events, including increasing public desire for better fuel economy, increasing concern about carbon emissions that resulted in state regulations on fuel economy and carbon emissions, key court decisions, and a stated desire by the federal executive branch to decrease gasoline consumption, led to increasing Corporate Average Fuel Economy (CAFE) standards, which automakers preferred to state-level regulations.

The fuel-economy evolution for both cars and trucks is shown in Figure 6. In 1975, a dramatic increase in the miles per gallon (mpg) began, and passenger-car fuel economy reached its peak in 1988, when cars averaged 24 mpg (a 71% improvement compared to 1975). However, since 1988, fuel economy has remained constant at around 23 mpg for cars, and if we consider all light-duty vehicles, it has even gradually declined from 1988 to 2004. Finally, since 2004, the light-duty vehicle adjusted fuel economy has increased from 20.2 mpg in 2006 to 21.2 mpg in 2009. Since tailpipe CO₂ emissions have an inverse relationship to fuel economy, emissions showed a rapid decrease from 1975 through 1981; a slower decrease to a valley in 1987; a gradual increase until 2004; and a decrease for the six years beginning in 2005, with the largest decrease in 2009. It is interesting to see that model year (MY) 2009 had the lowest CO₂ emission rate and highest fuel economy.

Figure 6 - Light-duty automotive technology, fuel economy, and emission trends: 1975 through 2010 (Environmental Protection Agency, 2010)

A study from the Civil Society Institute (Civil Society Institute [CSI], 2007) states that the average fuel economy of European light-duty vehicles is around 40 mpg, twice as high as in the United States. Also, CSI reports

that, in 2008, only two cars in the U.S. (the Honda Civic Hybrid and the Toyota Prius) got 40+ mpg, whereas 113 cars in Europe could claim such an achievement. This means that more efficient vehicle technologies are available in the world, but because American customers prefer larger and more powerful cars such as pickup trucks and sport utility vehicles (SUVs), the more efficient vehicles do not penetrate the U.S. automotive market.

Figure 7 shows the U.S. sales fractions for four different classes of light-duty vehicles: cars, SUVs, vans, and pickups. If we group the last three vehicle types under the truck category, we notice that nearly half of the light-duty vehicles sold in 2007 were “trucks.” In addition, the truck sales fraction has been increasing for the past 20 years. However, owing to higher gasoline prices in 2008, the pickup-truck sales fraction decreased from 13% in February 2008 to 9.1% in May 2008 (DOE AutoInfoBank). Also, from June 2007 to June 2008, SUV sales dropped 54.7% and pickup-truck sales dropped 35.6%, reflecting a deep change in consumers’ behavior and expectations. Van and pickup-truck sales continued to decrease in the following years until 2009. Truck market share is now at the lowest level since model year (MY) 1995. The MY 2010 light-truck market share is projected to be 41%, based on pre-MY production projections by automakers.

Figure 7 - Light-duty automotive technology and market share trends: 1975 through 2009 (Environmental Protection Agency, 2010)

In May 2008, for the first time in 17 years, the Ford F-150 pickup truck was not the best-selling light-duty vehicle in the U.S. With 42,973 vehicles sold that month, it fell to fifth place after the Honda Accord (43,728), the Toyota Camry (51,291), the Toyota Corolla (52,826), and the Honda Civic (53,299) (Autoblog, 2008).

Vehicle weight and performance are two of the most important engineering parameters that help determine a vehicle's CO₂ emissions and fuel consumption. Figure 8 shows that the MY 2009 light-vehicle weight averaged 3917 pounds, the lowest average weight since MY 2001. This weight reflects a decrease of 168 pounds (4 percent) from MY 2008, and the largest annual decrease since MY 1980. The average truck weight dropped by about 100 pounds, the average car weight dropped by about 60 pounds, and the remaining difference was due to lower truck market share. In MY 2009, the average vehicle power was 208 horsepower, the lowest value since MY 2003. Average horsepower dropped by 11 (5 percent), the largest annual decrease since MY 1980, with most of the decrease explained by cars having lower horsepower levels and trucks having a lower market share. The four-cylinder-engine market share grew from 38 percent in MY 2008 to 51 percent in MY 2009 (and to nearly 70 percent for the car market). Estimated MY 2009 0-to-60 acceleration time remained constant at 9.7 seconds.

Figure 8 - Vehicle weight and performance evolution from 1975 to 2010

In summary, the American automotive market is steadily changing, with the automakers trying to adapt their light-duty vehicle offerings to consumers' needs.

9.3. HYBRID ELECTRIC VEHICLES (HEVS)

9.3.1. CHARACTERISTICS

Hybrid electric vehicles are powered by at least two different sources of energy. In general, they combine an electrical storage system (i.e., battery, ultra-capacitor, etc.) and thermal source (i.e., engine, fuel-cell system, etc.).

The idea behind HEVs is to combine the advantages of conventional vehicles and battery electric vehicles (BEVs), so as to limit the drawbacks of each. EVs have excellent efficiency, owing to high electric-machine efficiency (usually above 80% average on a cycle) and low battery losses. Furthermore, they can recover part of the energy usually lost during deceleration. For electric vehicles (EVs), batteries are the critical component owing to their cost and life.

An HEV offers the following features:

- **Idling stop:** The engine is turned off at zero vehicle speed to avoid idling. The engine is started using the electric machine. Depending on the electrical power available, the engine is started as soon as the vehicle moves (low power) or at higher vehicle speeds (high power).
- **Braking energy recovery:** The energy usually wasted by friction during deceleration can be recovered as electrical energy by an electric machine. The process is often called regenerative braking, as it regenerates (part of) the energy that the vehicle had to provide to overcome the effect of inertia when accelerating.
- **Low-speed electric machine propelling:** When the electric machine has sufficient power, it can be used alone to propel the vehicle, to avoid operating the engine at low load and low efficiency.
- **Electric machine assist:** At high power demand (i.e., when accelerating), the electric machine can assist the engine, allowing downsizing as well as lower transients and emissions.

The features mentioned above are not all available for all HEVs and depend on the powertrain configurations considered. The following section provides an overview of the main families of HEVs.

9.3.2. PRIMARY POWERTRAIN CONFIGURATIONS

The various HEV powertrain configurations can be classified on the basis of their hybridization degree, as shown in Figure 9. The hybridization degree is defined as the percentage of total power that can be delivered electrically. The higher the hybridization degree, the greater the ability to propel the vehicle using electrical energy.

Figure 9 - Hybridization degree

There are numerous hybrid powertrain designs. The main families are described below and illustrated in Figure 10.

Series Configuration

The first hybrids were generally based on a series configuration. In this case, the vehicle is propelled solely by electrical energy. When an engine is used, it provides a generator with mechanical power, which then converts it into electricity. In the case of a fuel-cell system, the electrical energy is directly used by the electric machine. The main advantage is that the engine speed is decoupled from the vehicle speed, allowing an operating condition at or close to its most efficient operating point. The main drawback is that the main components have to be oversized to be able to maintain the same performance, leading to higher vehicle weight. Finally, the large number of components leads to a low powertrain efficiency.

Parallel Configuration

In a parallel configuration, the vehicle can be directly propelled by either electrical or mechanical power. Direct connection between the energy sources and the wheels leads to lower powertrain losses compared to the pure series configuration. However, since all of the components' speeds are linked to the vehicle's speed, the engine cannot constantly be operated close to its best efficiency curve.

Several subcategories exist within the parallel configuration:

- Start-stop: A small electric machine is used to turn the engine OFF when the vehicle is stopped. Examples include the Citroen C3.
- Starter-alternator: This configuration is based on a small electric machine (usually 5 to 15 kW) located between the engine and the transmission. Because of the low electric-machine power, this configuration is mostly focused on reducing consumption by eliminating idling. While some energy can be recuperated through regenerative braking, most of the negative electric-machine torque available is usually used to absorb the engine's negative torque. Examples include the Honda Civic, Honda Accord, and Citroen C3.
- Pre- and post-transmission: Both configurations allow the driver to propel the vehicle in electric-only mode as well as recover energy through regenerative braking. The electric-machine power usually ranges from 20 to 50 kW. The main difference between these two options is the location of the electric machine (before or after the transmission). The post-transmission configuration has the advantage of maximizing the regenerative energy path by avoiding transmission losses. On the other hand, the pre-transmission configuration can take advantage of different gear ratios that allow the electric machine to operate at higher efficiency and provide high torque for a longer operating range.

Power-Split Configuration

The power-split configuration, composed of an engine and two electric machines, allows both parallel and series paths. The main feature is that all component speeds are decoupled, allowing a higher degree of control.

Each configuration is represented in Figure 10.

Figure 10 - Hybrid powertrain configurations

It is important to note that many different variations exist within each configuration (i.e., power-split configurations can be single-mode, two-mode, three-mode, etc.) and between configurations (i.e., several configurations are considered to be a mix of series, parallel and/or power-split). Overall, several hundred configurations are feasible for electric-drive vehicles.

9.3.3. THE HEV MARKET

Figure 11 shows the evolution of the hybrid-vehicle market from 1999 to November 2010. The first HEV introduced in the American market was the Honda Insight in 1999, a small two-seater with an aggressive design that has had limited success despite its excellent fuel economy (49 mpg city and 61 mpg highway in MY 2000, according to the U.S. Environmental Protection Agency [EPA]).

Toyota released its first Prius in the U.S. in 2000, and Honda released its hybrid version of the popular Civic in 2002. After a redesigned, larger version of the Prius was released in 2004, Prius sales significantly increased and exceeded sales of the hybrid Civic.

Figure 11 - HEV sales in U.S. from 1999 to November 2010 (Source - Anant Vyas, personal communication)

Since 2000, the hybrid vehicles offered have expanded across multiple carmakers and vehicle classes. Some SUVs (e.g., Toyota Highlander, Ford Escape, Tahoe HEV, etc.) are now hybrid vehicles. In 2007, hybrid-vehicle sales increased by 38% compared to 2006 and represented 2.2% of the total vehicle sales in the U.S. Several reasons explain the decrease of hybrid-vehicle sales since 2007:

1. Total vehicle sales decreased during that period.
2. Economic conditions made people cautious about investing in a more expensive technology.
3. The price of fuel dropped.

The results can be seen clearly in Figure 12.

Figure 12 – U.S. HEV sales trends from 1999 to November 2010 (Source - Anant Vyas, personal communication)

As shown in Figure 13, hybrid vehicle sales also correlate with gasoline prices, since people are more likely to invest in an electric-drive vehicle if gasoline prices are high. For example, between April 2008 and October 2008, the U.S. average gasoline price went down from \$4.10 per gallon to \$1.80 per gallon. Simultaneously, hybrid-vehicle sales decreased by more than 50%, with only 15,000 vehicles sold in January 2009.

Figure 13 – U.S. gasoline prices and HEV sales, 2005-2010 (Source - Anant Vyas, personal communication)

Figure 14 shows worldwide sales of various types of hybrid vehicles as percentages of total sales from 1999 to 2010. In 2009, 4.4% of cars (midsize and large) were HEVs, whereas roughly 1% of light trucks (SUVs, trucks, vans) were HEVs. In total, 290,000 hybrid vehicles were sold worldwide in 2009 and cumulative sales data show that slightly more than 1,612,000 hybrid vehicles have been sold since HEVs have been on the market.

Figure 14 – HEV car and light-truck sales as share of worldwide vehicle sales (Source - Anant Vyas, personal communication)

9.4. PLUG-IN HYBRID ELECTRIC VEHICLES

9.4.1. DEFINITION AND CHARACTERISTICS

A plug-in hybrid electric vehicle (PHEV), also called grid-connected HEV or extended-range EV (E-REV), is a HEV whose batteries can be charged from a wall-outlet. In other words, the energy storage system can be plugged into an external electric-power source. Owing to their ability to be recharged from an outlet, PHEV batteries have a lower power-to-energy ratio compared to their HEV counterparts. In addition, the increase in energy capacity for PHEV batteries vs. HEV batteries is more substantial than the increase in power requirements for PHEV batteries vs. HEV batteries. Their higher energy and power allow extended usage of the electric-only mode, leading to fewer engine ON/OFF cycles. While the engine is started at a power demand of ~7-9 kW at the wheel for most HEVs, PHEVs offer the ability to start it later, at from 10 to 30 kW, depending on the battery's available energy, its state of charge (SOC), and the trip distance.

Because of their ability to operate mostly in all-electric mode, PHEVs offer a very promising solution to fuel displacement. PHEVs share the same powertrain components as HEVs, with a higher hybridization degree. However, the vehicle's ability to operate in electric mode requires different energy storage system technology compared to current hybrids:

- **Higher energy:** the batteries have higher capacity and discharge range, as a function of all-electric-mode range (AER);
- **Higher power:** the electric system is in general more powerful, to be able to be the only source of power in a wider range of situations; and
- **Increased control freedom:** the higher degree of hybridization allows a greater number of possible electric-machine/engine-power combinations, leading to significant added complexity in determining the optimal control strategy compared to HEVs.

The DOE envisions a key future role for HEVs and PHEVs in reducing oil consumption and enabling a dramatic shift from petroleum-based transportation fuels to electricity, taking advantage of U.S. investments in renewable energy that will result in a flexible, clean and reliable power generation and distribution system in the future. A draft plan was released in June 2007 (U.S. Department of Energy, 2007); it was based on early benchmark testing of PHEV conversion vehicles (i.e., stock hybrids with added battery capacity and control modifications), vehicle modeling and simulation, and the status of batteries, power electronics, and electric motors in the DOE technology R&D programs.

9.4.2. CHALLENGES

Battery Technology

Batteries are the most critical technology for PHEVs. They are characterized by

- High capacity, for greater AER (charge depleting [CD]);
- High power, to meet the power demand in all-electric mode;
- High range of state-of-charge (SOC) use; while conventional hybrids use between 10 and 15% of the total battery energy, PHEVs use a larger percentage (e.g., 65% for the GM Volt or higher for other prototypes);
- Longer continuous periods of discharge and recharging; and
- Thermal management issues (heating).

The last two points have a major impact on battery life and performance variation.

Lithium batteries are believed to be the best solution at the present time, as they possess twice the specific energy of nickel metal hydride (NiMH) batteries. However, they require sophisticated battery-management systems and significant circuitry to prevent overcharging and over-discharge. Some safety problems remain to be solved. Further battery R&D is still needed before long-life, compact, and inexpensive batteries are available. The future market penetration of PHEVs will depend greatly on the success of battery R&D. Figure 15 shows the current status of lithium-ion (Li-ion) batteries compared to DOE goals.

Figure 15 – Status of Li-Ion batteries vs. DOE goals (Source – Howell, 2008)

Electric Machine and Power Electronics

The electric-drive system entails substantial technical and economic challenges as well. PHEVs with full performance (i.e., competitive acceleration and top speed) in electric mode require power electronics and electric motors with twice the power of today’s hybrids—at lower cost (this requirement is, however, not considered a “showstopper”). And the need for “smart” onboard battery chargers (to ensure efficient and cost-effective recharging) adds more pressure for cost reduction.

Vehicle System

Special attention has to be paid to the design of the vehicle as a system. Because of the existence of two power sources, multiple design and control choices affect overall efficiency. For PHEVs, one of the key questions is the degree of hybridization, and more particularly, the “zero emission mode.” Will the electric machine provide all the mechanical power or will it be assisted by the intermittent use of the engine? If so, what will be the level of this assistance? Each possible solution has to be considered, and environmental/economic benefits assessed. Several studies have been published to assess the impact of powertrain configuration and component sizing on fuel efficiency (Sharer, 2007; Fella et al., 2009), but more work needs to be performed.

Advanced energy management control strategies will provide the opportunity to use the vehicle at its optimum efficiency (Karbowski et al., 2006; Rousseau and Moawad, 2010), but additional applied R&D will be required. One of the current research approaches is to adapt the control strategy to the trip conditions and even to the driver’s behavior through global optimization.

The ultimate goal is to develop a vehicle that would be beneficial from a macroscopic as well as a customer point of view. Driving habits and patterns have to be reviewed to design one or several types of PHEVs that would be potentially adapted to a significant number of customers.

Charging Infrastructure

Charging at home will require appropriate circuits: 220V AC is preferred for Level 2 charging of vehicles with longer electric ranges, compared to the standard U.S. household receptacle voltage of 110V. Innovative solutions will have to be found to provide convenient charging locations (e.g., in garages, parking lots and other structures) for those who do not have private garages.

In order to prepare for a significant market penetration of PHEVs, utilities have to develop their generation facilities as well as specific management of their generation, transmission, and distribution assets to balance the impact of PHEVs on the grid. Specific generation sites can also be developed, such as wind turbines for night charging, or “solar” parking for day-charging. The possibility of bidirectional energy flow between the grid and PHEVs will require communication systems to optimize the leveling effect. Numerous studies have been performed and are currently under way to examine these issues (Morrow et al., 2008).

9.5. INPUT DEVELOPMENTS

The inputs for the present study (i.e., component assumptions, control strategies, vehicle technical specifications, sizing algorithms, etc.) were developed over several years through numerous discussions with both components and systems experts.

To define an assumption, several experts were contacted independently to provide their inputs related to their area of expertise for each uncertainty and timeframe considered. At least three experts were contacted before defining an input.

10.METHODOLOGY

10.1. AUTONOMIE OVERVIEW

Many of today's automotive control-system simulation tools are suitable for simulation, but they provide rather limited support for model building and management. Setting up a simulation model requires more than writing down state equations and running them on a computer. With the introduction of electric-drive vehicles, the number of components that can populate a vehicle has increased considerably, and more components translate into more possible drivetrain configurations. In addition, building hardware is expensive. Traditional design paradigms in the automotive industry often delay control-system design until late in the process—in some cases requiring several costly hardware iterations. To reduce costs and improve time to market, it is imperative that greater emphasis be placed on modeling and simulation. This only becomes truer as time goes on because of the increasing complexity of vehicles and the greater number of vehicle configurations.

Because of the large number of possible advanced vehicle architectures and time and cost constraints, it is impossible to manually build every powertrain configuration model. As a result, processes have to be automated.

Autonomie (Argonne National Laboratory, 2011a; Rousseau, n.d.) is a MATLAB[®]-based software environment and framework for automotive control-system design, simulation, and analysis. The tool is designed for rapid and easy integration of models with varying levels of detail (low to high fidelity) and abstraction (from subsystems to systems and entire architectures), as well as processes (calibration, validation, etc.). Developed by Argonne in collaboration with General Motors, Autonomie was designed to serve as a single tool that can be used to meet the requirements of automotive engineering throughout the development process from modeling to control. Autonomie was built to accomplish the following:

- Support proper methods, from model-in-the-loop, software-in-the-loop, and hardware-in-the-loop to rapid-control-prototyping;
- Integrate math-based engineering activities through all stages of development, from feasibility studies to production release;
- Promote re-use and exchange of models industry-wide through its modeling architecture and framework;
- Support users' customization of the entire software package, including system architecture, processes, and post-processing;
- Mix and match models of different levels of abstraction for execution efficiency with higher-fidelity models where analysis and high-detail understanding is critical;

- Link with commercial off-the-shelf software applications, including GT-Power[®], AMESim[®], and CarSim[®], for detailed, physically-based models;
- Provide configuration and database management; and
- Protect proprietary models and processes.

By building models automatically, Autonomie allows the simulation of a very large number of component technologies and powertrain configurations. Autonomie can

- Simulate subsystems, systems, or entire vehicles;
- Predict and analyze fuel efficiency and performance;
- Perform analyses and tests for virtual calibration, verification, and validation of hardware models and algorithms;
- Support system hardware and software requirements;
- Link to optimization algorithms; and
- Supply libraries of models for propulsion architectures of conventional powertrains as well as electric-drive vehicles.

Autonomie will be used to assess the fuel consumption and cost of advanced powertrain technologies. Autonomie has been validated for several powertrain configurations and vehicle classes using Argonne's Advanced Powertrain Research Facility (APRF) vehicle test data (Kim et al., 2009; Rousseau et al., 2006; Cao, 2007; Rousseau et al., 2000; Pasquier, 2001).

With more than 400 different pre-defined powertrain configurations, Autonomie is an ideal tool to analyze the advantages and drawbacks of the different options within each family, including conventional, parallel, series, and power-split hybrid vehicles. Various approaches have been used in previous studies to compare options ranging from global optimization (Karbowski et al., 2009) to rule-based control (Freyermuth, 2008).

Autonomie also allows users to evaluate the impact of component sizing on fuel consumption for different powertrain technologies (Nelson et al., 2007; Karbowski et al., 2007) as well as to define the component requirements (power, energy, etc.) to maximize fuel displacement for a specific application (Fellah, 2009; Rousseau et al., 2004). To properly evaluate any powertrain-configuration or component-sizing impact, the vehicle-level control is critical, especially for electric drives. Argonne has extensive expertise in developing vehicle-level controls based on different approaches, from global optimization [7] to instantaneous optimization (Karbowski et al., 2010), rule-based optimization (Sharer et al., 2008) and heuristic optimization (Rousseau et al., 2008).

The ability to simulate a large number of powertrain configurations, component technologies, and vehicle-level controls over numerous drive cycles has been used to support many DOE as well as manufacturers' studies, focusing on fuel efficiency (Delorme et al., 2008), cost-benefit analysis (Rousseau, 2005), or greenhouse gases

(Elgowainy et al., 2009; Wu, 2006). All the development performed in simulation can then be implemented in hardware to take into account non-modeled parameters such as emissions and temperature (Vijayagopal et al., 2010).

Autonomie is the primary vehicle simulation tool selected by DOE to support its FreedomCAR program and VTP (U.S. Department of Energy, n.d.[b]; Vehicle Systems Analysis Technical Team [2006]). Autonomie has been used for numerous studies to provide the U.S. government with guidance for future research (www.autonomie.net). More than 150 companies and research entities, including major automotive companies and suppliers, are also using Autonomie to support advanced vehicle development programs.

10.2. STUDY PROCESS

The process to estimate the fuel consumption of various advanced powertrains can be divided into three steps:

- **Define the Architecture**

The vehicle architecture is built using the different components available in the main database. In this study, each component is associated with different uncertainties (low, average, and high), which will be presented later.

- **Size the Components**

Algorithms are used to size the vehicle components to compare vehicles with the same vehicle technical specifications. Once the sizing is complete, all the components' features are known, and thus it is possible to estimate the retail price of the vehicle. The sizing algorithms are specific for each configuration and will be discussed later in detail.

- **Run the Simulation**

The third step calculates the vehicle fuel consumption by simulating the different standard U.S. test procedures.

10.3. TIMEFRAMES AND UNCERTAINTIES

To evaluate the fuel-efficiency benefits of advanced vehicles, each vehicle is designed from the ground up based on each component's assumptions. The fuel efficiency is then simulated using the Urban Dynamometer Driving Schedule (UDDS) and Highway Federal Emissions Test (HWFET) cycles. The vehicle costs are calculated from the component characteristics (power, energy, weight, etc.). Both cost and fuel efficiency are then used to define the market penetration of each technology to finally estimate the amount of fuel saved. The process is highlighted in Figure 16. This report will focus on the first phase of the project: fuel efficiency and cost.

Figure 16 - Process to evaluate fuel efficiency of advanced vehicle technologies

To properly assess the benefits of future technologies, several options were considered, as shown in Figure 17:

- Five vehicle classes: compact, midsize car, small SUV, medium SUV, and pickup truck
- Five timeframes: reference (same as 2010 low), 2010, 2015, 2030, and 2045
- Five powertrain configurations: conventional, HEV, PHEV, fuel-cell HEV, and EV
- Four fuels: gasoline, diesel, ethanol, and hydrogen
- Three risk levels: low, average, and high cases. These correspond, respectively, to 10% uncertainty (aligned with original equipment-manufacturer [OEM] improvements based on regulations), 50% uncertainty, and 90% uncertainty (aligned with aggressive technology advancement based on the DOE VTP). These levels are explained more fully below.

Overall, more than 2000 vehicles were defined and simulated in Autonomie. The study does not include micro or mild hybrids and does not focus on emissions.

Figure 17 - Vehicle classes, timeframes, configurations, fuels, and risk levels considered

When dealing with uncertainties, numerous methodologies are available. In previous studies, Argonne has compared Monte Carlo simulation with a triangular distribution analysis (Faron et al., 2009). By allowing the introduction of uncertainty into our algorithm inputs, the Monte Carlo method increases the amount of useful information to describe a vehicle's possible behaviors. The major improvement concerns the introduction of the risk notion associated with each result. Instead of providing a single forecast value, Monte Carlo simulation provides the probability of occurrences associated with every possible output value. As a result, forecasts are more fully and accurately described and confidence intervals can be derived for each output.

The results from Monte Carlo simulations based on a midsize PHEV were defined, providing a mode for both fuel economy and cost within a certain confidence interval. The approach was then compared with the existing three-point option. Results demonstrated that, as expected, Monte Carlo simulation provided a narrower range. However, increasing the amount of information available in the results has a computational cost. The experiments carried out so far led us to a first evaluation of the number of points required to simulate. This number varies from 100 to 200, depending on the number of uncertain inputs considered. While computational time varies for each configuration, the average time required to simulate a PHEV on all these points was 150 minutes.

Owing to the large number of vehicles considered in the study, the triangular distribution approach (low, average, and high) was employed, as shown in Figure 18. For each component, assumptions were made (i.e., efficiency, power density), and three separate values were defined to represent the 1) 90th percentile, 2) 50th percentile, and 3) 10th percentile. A 90% probability means that the technology has a 90% chance of being available at the time considered. For each vehicle considered, the cost assumptions also follow the triangular uncertainty. Each set of assumptions is, however, used for each vehicle, and the most efficient components are not

automatically the cheapest ones. As a result, for each vehicle considered, we simulated three options for fuel efficiency. Each of these three options also has three values representing the cost uncertainties. A more detailed description of the uncertainty process is available (Henrion, 2008).

Figure 18 – Uncertainty Process Description

The “reference case” used in the study is considered to be the low-uncertainty 2010 case.

10.4. COMPUTER CLUSTER UTILIZATION

As shown previously, the number of combinations is very large, since a very large number of vehicles need to be sized and simulated. Taking into account that the sizing algorithms run as an iterative process, it becomes clear that a lot of simulating and calculating power is required from the computer hardware system. For such applications, a high-performance computing center is available at Argonne. It is composed of a stack of 32 calculating machines and a server computer.

An algorithm was developed for optimizing the distribution of jobs for vehicle simulations and parametric studies (Mathworks, n.d.; Pagerit, 2007). This system (Figure 19) was used to run the entire study. However, even with this powerful tool, the total simulation time is about 20 hours for sizing and 15 hours for simulation. This distributive computing operation tremendously decreased the sizing and simulation time, which otherwise would have taken many weeks. The distributed computing also greatly facilitated the reruns of simulations, which occurred numerous times during this study.

Figure 19 - Matlab distributive computing process diagram

11.COMPONENT ASSUMPTIONS

The assumptions for each component were developed in collaboration with experts from the DOE, national laboratories, industry, and academia. The following paragraph represents a compromise reached by the authors of the study and should not be attributed to any specific company.

Several hundred assumptions are required to run a single vehicle simulation. Figures 20 and 21 show a short list of these assumptions for the components and vehicles, respectively. The following section only provides information regarding a very limited set of assumptions, since most of the assumptions have been provided by industry partners and are considered proprietary.

Figure 20 – Main Component Assumptions

Figure 21 - Main Vehicle Assumptions

When available, the high-case assumptions are based on the FreedomCAR and Fuel Partnership program goals (Ward). The other assumptions have been developed through discussions with experts from companies, universities, and the national laboratories.

11.1. ENGINE

11.1.1. REFERENCE ENGINE AND PROJECTIONS

Several state-of-the-art internal combustion engines (ICEs) were selected as the baseline for the fuels considered: gasoline (spark ignition or SI), diesel (compression ignition or CI), ethanol (E85), and hydrogen (H₂). The gasoline, diesel, and ethanol engines used for reference conventional vehicles were provided by automotive car manufacturers, while the port-injected hydrogen engine data were generated at Argonne (Wallner and Lohse-Busch, 2007). The engines used for HEVs and PHEVs are based on Atkinson cycles, generated from test data collected at Argonne's dynamometer testing facility (Bohn, 2005). Table 1 shows the engines selected as a baseline for the study.

Table 5: Definition of the baseline engines used in the present study

Fuel	Source	Displacement (L)	Peak Power (kW)
SI (Conv)	Car Manufacturer	2.4	123
CI	Car Manufacturer	1.9	110
H2	Argonne	2.2	84
E85 (Conv)	Car Manufacturer	2.2	106
SI/E85 (HEV)	Argonne	1.5	57

Technologies available to increase the efficiency of engines include

- Low-friction lubricants
- Reduced engine friction losses
- Cylinder deactivation
- Variable valve timing (VVT) and variable valve lift
- Turbocharging and downsizing
- Variable compression ratio (VCR)
- Stoichiometric and lean-burn gasoline direct injection (GDI)
- Diesel engine

A literature review (Morrow et al., 2008) was performed to select the preceding technologies and define their impacts on both peak efficiency and engine map. Since all the technologies could not be represented owing to lack of data, a few technologies were selected, including low-friction lubricants, reduced friction losses, direct injection and VVT. Cylinder deactivation, turbocharging, and VCR were not included. It should be noted that several ongoing engine research projects could lead to technologies affording significantly higher fuel-efficiency gains than those considered in this study (Ciatti and Subramanian, 2010). As such, the engine gains should be considered less aggressive than gains for other technologies and this should be taken into account during the analysis.

The peak efficiencies of the different fuels and technologies are shown in Figure 22 - ICE efficiency for diesel, hydrogen, and gasoline fuels

. Among the different ICEs, the hydrogen engine shows the most significant efficiency increase, from 38% in the reference case to 51% in the 2045 high case (a 34% improvement), owing to the introduction of direct injection. The other engines show a lower increase in efficiency, since they are already well-developed technologies. The efficiencies of the other ICEs increase from 41% in the reference case to 45% in the 2045 high case (diesel), 38% to 45% (gasoline), and 36% to 43% (ethanol for HEV and PHEV applications). One also notes that the difference in peak efficiency between gasoline and diesel is expected to narrow in the future, owing to the combination of advanced gasoline engine technologies and the impact of ever more stringent after-treatments for diesel.

Figure 22 - ICE efficiency for diesel, hydrogen, and gasoline fuels

Figure 23 shows the evolution of the emission control systems for each fuel. Diesel emission-system costs are expected to increase in the short term, because of stricter regulations, and decrease later with improved technology.

Figure 23 - Emission control costs for gasoline, diesel and Flex-Fuel (ethanol) engines

11.1.2. DETERMINATION OF NUMBER OF CYLINDERS

To properly select the reference engine and calculate its cost, it is necessary to decide how many cylinders are needed for a given power.

Figure 24 shows the relationship between the number of cylinders in a gasoline engine and the peak power. This figure is based on data in the literature. On the basis of Figure 24, 4 cylinder engines were used up to a power of 140 kW, 6 cylinder engines for a power between 140 kW and 220 kW, and 8 cylinder engines for a power above 220 kW.

Figure 24 - Number of cylinders vs. engine power for database gasoline engines.
(Blue) values from the database; (red) thresholds chosen for the study

The same approach was taken for diesel engines, as shown in Figure 25. The small number of diesel engines in the U.S. database does not provide as clear a distribution as the gasoline case, but from the distribution shown in Figure 24, the same thresholds have been used. The hydrogen and ethanol engines will use the same cylinder/engine-power equation as the gasoline and the diesel engines.

Figure 25 - Number of cylinders vs. engine power for database diesel engines. (Blue) values from the database; (red) thresholds chosen for the study.

11.2. FUEL-CELL SYSTEM

Fuel-cell vehicles are undergoing extensive R&D because of their potential for high efficiency and low emissions (zero-emission). Because fuel-cell vehicles remain expensive and there is limited demand for hydrogen at present, very few fueling stations are being built. To try to accelerate the development of a hydrogen economy, some original equipment manufacturers (OEMs in the automotive industry have been working on a hydrogen-fueled ICE as an intermediate step.

Figure 26 - Specific power and power density for fuel cell system.

shows the specific power and specific energy of the fuel-cell system. As shown, the specific power and power density continuously increase. Between the reference case and 2045, the specific power increases by 113% to 178% and the power density increases by 132% to 310%. It should be noted that in the case of the fuel-cell systems, all the assumptions other than the efficiency curve were provided by DOE.

Figure 26 - Specific power and power density for fuel cell system.

The fuel-cell system model used for the study is based on a steady-state look-up table. The efficiency curve has been provided by a car manufacturer. As a result, the additional losses from the balance of plant due to transient operating conditions are not taken into account.

Figure 27 shows the evolution of the fuel-cell system peak efficiencies and cost. The peak fuel-cell efficiency is assumed to be at 55% currently, and it will increase to 60% by 2015. A value of 60% has already been demonstrated in laboratories and therefore is expected to be implemented soon in vehicles. The peak efficiencies will remain constant in the future, as most research is expected to focus on reducing cost and increasing durability. The costs are projected to decrease from \$80/kW currently (values based on high production volume) to an average of \$25/kW in 2045 (uncertainty from \$15 to \$30/kW). These costs are based on an assumed production of 500,000 units per year.

Figure 27 - Fuel-cell system efficiency and cost.

11.3. HYDROGEN STORAGE

The evolution of hydrogen storage systems is vital to the introduction of hydrogen-powered vehicles. As in the case of the fuel-cell systems, all the assumptions used for hydrogen storage were based on values provided by DOE.

Figures 28 and 29 show the evolution of the hydrogen storage capacity. One notices a large uncertainty for both parameters. Consequently, there will be an important storage-system mass difference between the vehicles corresponding to these cases. Overall, the volumetric capacity dramatically increases by 177% to 288% between the reference case and 2045.

Figure 28 - Hydrogen storage energy: gravimetric and volumetric capacity.

Figure 29 - Hydrogen storage capacity in terms of hydrogen quantity.

Figure 30 shows the evolution of the hydrogen storage cost from \$1000/kg H2 in the reference case to an average of \$120/kg H2 by 2045. The values provided are based on production of 500,000 units per year.

Figure 30 - Hydrogen storage cost.

To compare hydrogen-fueled vehicles with their ICE counterparts, driving ranges of 300 miles in 2010 and 2015 and 500 miles in 2030 and 2045 on the UDDS driving cycle have been selected. No fuel-consumption

adjustments were performed. The amount of on-board hydrogen will be defined for each vehicle to meet these requirements. For the PHEVs, the total range of the vehicle is the value shown below plus the AER. Figure 31 summarizes the target range for each timeframe.

Figure 31 - Hydrogen storage vehicle range on UDDS cycle, based on unadjusted fuel consumption.

11.4. ELECTRIC MACHINE

Two different electric machines will be used as references in this study:

- Power-split vehicles operate with a permanent-magnet electric machine (similar to that used in the Toyota Camry) with a peak efficiency of 95%.
- Series configurations (both engine and fuel cell) and EVs use an induction primary electric machine with a peak efficiency of 95%.

The reference electric-machine data have been provided by car companies, suppliers, and Oak Ridge National Laboratory.

As shown in Figure 32, the power-electronic specific power will significantly increase between 2010 and 2015; the low case will be multiplied by 2. From the reference case to 2045, the power-electronic specific power will be multiplied by more than 2 to 3. The electric-machine specific power does not show such an aggressive increase: from the reference case to 2045; it increases by 36%.

Figure 32 - Electric-machine and power-electronic specific power.

Both electric machines used in the study have a reference peak efficiency of 95%. As shown in Figure 33, it will increase from 95% to 98% between 2010 and 2030 and will remain at that value in 2045.

Figure 33 - Electric-machine peak efficiency.

As shown in Figure 34, the controller cost is decreased by 25%–58% between 2010 and 2015, whereas the electric-machine cost is only decreased by 15%–46%. For both the electric machine and the controller, the cost decreases slightly from 2015 to 2030 and then stays constant through 2045.

Figure 34 - Electric-machine and controller cost.

11.5. ENERGY STORAGE SYSTEM

Only batteries were used in the present study, on the assumption that ultra-capacitors alone could not provide sufficient available energy for full hybrid applications. We also considered that coupling ultra-capacitors with batteries would be cost-prohibitive and that Li-ion battery life would be significantly improved in the short term, making the combination ineffective.

The batteries used in the study as the reference have been provided by Argonne, Idaho National Laboratory, and major battery suppliers. A scaling algorithm developed by Argonne's battery experts is used for the high-energy cases (Nelson et al., 2007).

The battery used for the HEV reference case is a NiMH battery. It is assumed that this technology is the most likely to be used until 2015. This is why we simulated the HEVs with this battery for the reference case; 2010 low, average, and high cases; and the 2015 low case. The model used is similar to the one found in the Toyota Prius. For PHEV applications, all the vehicles are run with a Li-ion battery from Argonne. Tables 2 and 3 provide a summary of the battery characteristics and technologies.

Table 6: Description of Reference Battery Characteristics

	Source	Technology	Reference Cell Capacity [Ah]
HEV	Idaho National Laboratory	NiMH	6.5
	Battery manufacturer	Li-ion	6
PHEV	Argonne National Laboratory	Li-ion	41

Table 7: Battery Technology Selection for Each Timeframe

	2010			2015			2030			2045		
	ref/low	avg	high	low	avg	high	low	avg	high	low	avg	high
HEV	NiMH	NiMH	NiMH	NiMH	Li-ion		Li-ion			Li-ion		

After a long period of time, batteries lose some of their power and energy capacity. To be able to maintain the same performance at the end of life (EOL) compared to the beginning of life (BOL), an oversize factor is applied while sizing the batteries for both power and energy. These factors are supposed to represent the percentage of power and energy that will not be provided by the battery at the EOL compared to the initial power and energy given by the manufacturer. The oversize factor is decreased over time to reflect an improvement in the ability of batteries to uniformly deliver the same performance throughout their life cycles. Figure 35 shows that the reference vehicles are sized with a 20% power oversize factor for all hybrid vehicles and energy oversize factors of 20% for HEVs and 30% for PHEVs. In 2045, these values will be reduced to 10%–14% for power oversize, 10%–16% for HEV energy oversize, and 20%–24% for PHEV energy oversize. These oversizing factors influence the cost and weight; however, all the simulations are run at EOL (i.e., the additional weight is taken into account, but the power and energy used for the simulation are the ones from EOL).

Figure 35 - Power and energy oversize for HEVs and PHEVs.

The battery cost for HEV applications will decrease over time for all cases, but the decrease is more aggressive for the high case between 2010 and 2015, with a 37.5% cost reduction (Figure 36). The batteries are expected to be less than 1/3 the cost in the 2045 high case (\$18/kW) in comparison to the reference case (\$60/kW). PHEV and EV battery energy costs are very close to each other. For both of them, the battery cost significantly decreases over time, starting at \$600/kWh and ending up, in the 2045 high case, at \$150/kWh for PHEVs and \$100/kWh for EVs; these correspond, respectively, to a 75% decrease and a 83% decrease.

Figure 36 - Battery cost for (top left) HEVs, (top right) PHEVs, and (bottom) EV.

Figure 37 shows the relationship between the power/energy ratio and the battery energy cost.

Figure 37 - Relation between power/energy ratio and battery energy cost.

Figure 38 shows that the SOC values used for PHEVs and EVs are 30% for the minimum and 90% for the maximum in the reference case and they change slightly over time to reach 20% for the minimum and 100% for the maximum in the 2045 high case.

Figure 38 - Battery SOC for PHEVs and EVs.

11.6. DRIVELINE

Several types of transmission technologies are considered in this study:

- Increased number of gears for automatic transmissions.** Additional gears allow the engine to be operated closer to its best efficiency line. While they are now limited to high-end vehicles, high-

speed transmissions (i.e., up to eight gears) are expected to be used in a larger number of vehicles in the near future.

- **Dual-clutch transmission (DCT).** Every car manufacturer, if it does not already have some DCT models in production, is working on developing the technology. DCTs are likely to be the next dominant transmission technology in the future, since they combine the advantages of automatic transmissions (drive quality—no torque interruption) and manual transmissions (efficiency—no torque converter).

Owing to the drive-quality requirements in North America, automated manual transmissions have not been included in this study. Continuously variable transmissions have issues related to reliability and fuel-efficiency gains (the engine gains are often offset by higher transmission losses) and are not considered either.

Conventional vehicles are simulated with an automatic transmission, since that option best represents the American car market. However, a midsize car with a DCT is simulated for a few timeframes.

Power-split HEVs and PHEVs both have a planetary gearset with 78 ring teeth and 30 sun teeth. Finally, the fuel-cell vehicles and EVs use a two-speed manual transmission to increase the powertrain efficiency as well as allow them to achieve a maximum vehicle speed of at least 100 mph. Characteristics of all transmissions used in the study are shown Tables 4-7.

Table 8: Transmission technologies modeled for different vehicle classes*

Parameter	Current	2010			2015			2030			2045		
		Low	Med	High	Low	Med	High	Low	Med	High	Low	Med	High
Peak Efficiency (%)													
Automatic Trans	95	95	96	97	96	97	97.5	97	97	97.5	97	97	97.5
DCT	97.5	97.5	97.5	97.5	97.5	97.5	98	97.5	98	98	97.5	98	98
Planetary gearset	97	97	97	98	97	97.5	98	97.5	98	98.5	97.5	98	98.5
Final Drive Peak Efficiency (%)	97.5	97.5	97.5	97.5	97.5	97.5	98	97.5	98	98	97.5	98	98
Conventional Vehicle (1)													
gb Compact	MCOM4	MCOM4	MCOM4	MCOM5	MCOM4	MCOM5	MCOM5	MCOM5	MCOM5	MCOM6	MCOM6	MCOM6	MCOM6
gb Midsize	MCAR5	MCAR5	MCAR5	MCAR6	MCAR6	MCAR6D	AA80E	MCAR6	MCAR6D	AA80E	MCAR6D	AA80E	AA80E
gb Small_SUV	SSUV4	SSUV4	5-45RFE	5-45RFE	SSUV4	5-45RFE	SSUV6	5-45RFE	SSUV6	SSUV6	SSUV6	SSUV6	SSUV6
gb Midsize_SUV	4L60-E	4L60-E	MSUV5	MSUV5	4L60-E	MSUV5	MSUV6	MSUV5	MSUV6	MSUV6	MSUV6	MSUV6	MSUV6
gb Pickup	45RFE	45RFE	45RFE	5-45RFE	45RFE	45RFE	5-45RFE	45RFE	5-45RFE	5-45RFE	5-45RFE	5-45RFE	5-45RFE

*The code names of the transmissions are based on the vehicle class (i.e., COM for compact, MCAR for midsize car) and the number of gears. For example, SSUV4 means a small SUV with a 4 gear transmission.

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Table 9: Gear ratios, final drive and cost for all transmissions

	Name	Type	Cost \$										
Compact car	MCOM4	AU	1100	Gear Ratios	3.64	2.01	1.3	0.89					
				Final Drive	2.96								
	MCOM5	AU	1150	Gear Ratios	2.66	1.533	1.02	0.72	0.52				
				Final Drive	4.44								
	MCOM6	AU	1200	Gear Ratios	4.15	2.34	1.52	1.14	0.86	0.69			
				Final Drive	2.63								
Midsize CAR	MCAR5	AU	1200	Gear Ratios	2.563	1.552	1.022	0.727	0.52				
				Final Drive	4.43								
	MCAR6	AU	1236	Gear Ratios	4.15	2.37	1.56	1.16	0.86	0.69			
				Final Drive	2.74								
	MCAR6D	DCT	1273	Gear Ratios	3.454	2.045	1.452	1.114	1.078	0.921			
				Final Drive	3.29								
Small SUV	AA80E	AU	1311	Gear Ratios	4.596	2.72	1.863	1.464	1.23	1	0.824	0.82	0.685
				Final Drive	2.47								
	SSUV4	AU	1220	Gear Ratios	2.89	1.57	1	0.7					
				Final Drive	3.78								
	SSUV5	AU	1257	Gear Ratios	3.5	1.94	1.26	0.95	0.81				
				Final Drive	3.12								
Midsize SUV	SSUV6	AU	1294	Gear Ratios	4.15	2.34	1.52	1.14	0.86	0.69			
				Final Drive	2.63								
	5-45RFE	AU	1368	Gear Ratios	3	1.67	1	0.75	0.67				
				Final Drive	3.64								
	4L60-E	AU	1320	Gear Ratios	3.06	1.63	1	0.7					
				Final Drive	3.42								
Pickup Truck	MSUV5	AU	1360	Gear Ratios	3.22	2.32	1.55	1	0.71				
				Final Drive	3.25								
	MSUV6	AU	1400	Gear Ratios	4.15	2.34	1.52	1.14	0.86	0.69			
				Final Drive	2.52								
	45RFE	AU	1409	Gear Ratios	3	1.67	1	0.75					
				Final Drive	3.55								
Pickup Truck	5-45RFE	AU	1368	Gear Ratios	3	1.67	1	0.75	0.67				
				Final Drive	3.55								

Table 10: Power-split transmission characteristics for all vehicle classes

Cost	840
Gear Ratios	Sun number of teeth = 30. Ring number of teeth = 78
Final Drive	4.059

Table 11: Fuel-cell and electric-vehicle transmission characteristics for all vehicle classes

Cost	840
Gear Ratios	1.86/1
Final Drive	4.44

The efficiencies of the transmission types other than automatic, and of the final drive, are already very high and will increase only slightly over time, as shown in Figure 39. The planetary gearset will have the best efficiency in 2030 and 2045 and will constitute the high case, with 98.5% efficiency.

Figure 39 - Transmission peak efficiencies.

The shifting algorithm that is used automatically defines the shifting strategy based on the powertrain ratios and the component efficiencies to minimize fuel consumption while maintaining acceptable drive quality (i.e., torque reserve). The algorithm has been validated using APRF test data with several conventional vehicles over the past 10 years.

11.7. BODY AND VEHICLE

11.7.1. TECHNOLOGY OVERVIEW

One of the main factors affecting fuel consumption is vehicle weight. Lowering the weight (“lightweighting”) reduces the forces required to follow the vehicle speed trace. As a result, the components can be downsized, resulting in smaller components and decreased fuel consumption. However, the impact of lightweighting is not the same for all the powertrain configurations, with studies showing that the technology has greater influence in conventional vehicles than their electric-drive counterparts (Pagerit et al., 2006).

The principal methodologies include material substitution (i.e., high-strength low-alloy steel, aluminum, magnesium, etc.), improved packaging (i.e., ratio of interior volume to exterior size and weight), and unit body construction (elimination of conventional chassis/body structure). Several studies have shown the potential to decrease the weight by as much as 20% without cost penalties, which highlights the great potential of the technology (USCAR, 2010).

Reductions in rolling resistance, frontal area, and drag coefficient also have the potential to significantly improve fuel consumption as they also lead to a reduction in the force required at the wheel. In this study, the assumption is that frontal area will be increased rather than decreased because American consumers have demanded vehicles with greater passenger and cargo volume, i.e., more room inside the vehicle.

The main characteristics used as a reference are shown in Table 8.

Table 12: Main characteristics of the different vehicle classes

	Glider Mass (Ref) in kg	Frontal Area (Ref) in m²	Tire	Wheel Radius in m
Compact	805	2.19	P195/65/R15	0.317
Midsize	996	2.24	P195/65/R15	0.317
Small SUV	1006	2.57	P225/75/R15	0.359
Midsize SUV	1268	2.93	P235/70/R16	0.367
Pickup	1509	3.27	P255/65/R17	0.381

11.7.2. LIGHTWEIGHTING

The same glider mass reduction factor will be applied to all vehicle classes (Figure 40 - Glider mass reduction for all vehicle classes).

The glider mass will be linearly reduced by up to 37% in the 2045 high case relative to the reference case. The reduction is due to the use of different materials and technologies like aluminum. Note that the mass reduction of the glider has been separated into three sections: body mass, chassis mass, and rest of weight. First, the glider weight in this study is considered as the vehicle weight minus the powertrain components: engine, after-treatment, electric machines, fuel cell, fuel storage, energy storage system, transmission, final drive, wheels, and accessories. A fixed percentage of the glider mass was used for each section. It is assumed that 44% of the glider is due to its body weight, 26% to its chassis weight, and 30% to other components (e.g., seats).

Figure 40 - Glider mass reduction for all vehicle classes.

The glider cost changes are due to the technologies used to achieve the glider mass reduction (Figure 41). For a midsize car, the reference-case glider costs \$9955 and is steel unibody. The other mass-reduction characteristics are shown in Table 9.

Figure 41 - Glider costs for the five vehicle classes.

Table 13: Incremental cost and glider composition associated with glider mass reduction

	Incremental cost	Glider composition
5% reduction	-\$65	Ultra-light steel auto body
10% reduction	+\$660	Combination of ultra-light steel and aluminum components
15% reduction	+\$790	All-aluminum unibody structure
20% reduction	+\$844	Aluminum unibody structure, panels, bumper beam, etc.
30% reduction	+\$1311	Carbon fiber polymer composites

11.7.3. DRAG COEFFICIENT AND ROLLING RESISTANCE

The same frontal-area increase factor will be applied to all vehicle classes (see Figure 42). The frontal area is expected to be increased up to 6% in the 2045 low case relative to the reference case. The increase pattern is not the same between cases. Whereas the average and low cases will continuously increase, the high-case increase will be maintained at 0% until 2015 and will be at 2% for the rest of the timeframes.

Figure 42 - Frontal-area increase for all vehicle classes.

As shown in Figure 43, the drag coefficient and rolling resistance show similar evolutions across vehicle classes.

Figure 43 - (Left) drag coefficient and (right) rolling resistance values for the five vehicle classes.

11.7.4. ACCESSORIES

As shown in Figure 44, the accessory load is expected to increase over time as the power needed to supply electrical and electronic components increases in accordance with customers' expectations (i.e., GPS, etc.) and powertrain complexity (i.e., added controllers, etc.). However, in all timeframes, the non-conventional powertrains generally consume less power, except in the high cases. The values shown in Figure 44 are representative of an average consumption during the standard cycle testing (i.e., dynamometer test). Real-world accessory consumption would be higher.

Figure 44 - Electrical accessory load.

12. POWERTRAIN SELECTION

As discussed previously, hundreds of powertrain options are possible. The following powertrains were selected for the electric-drive vehicles:

- Single mode power-split hybrid with fixed gear ratio (HEV, PHEV10, PHEV20)
- Series engine with two-speed gearbox (PHEV30, PHEV40)
- Series fuel cell with two-speed gearbox (HEV, PHEVs)
- Electric drive with two-speed gearbox for BEV

The selection of the single-mode power-split hybrid was based on the current sales volume of both Toyota and Ford hybrid vehicles, which makes that configuration the dominant one on the market. However, multi-mode configurations, such as the one implemented in the GM Tahoe (Grewe et al., 2007), are interesting options, especially for SUV applications (Kim et al., 2010), and will be added in future studies.

The series engine configuration selected is the simplest one and has been used by many companies. For this option, the E-REV powertrain used in the GM Volt (Tate and Savagian, 2009) offers significant advantages, especially during high-vehicle-speed operations. Since the Volt configuration was not yet public at the beginning of this project, it has not been used but will also be added in future updates.

All the vehicles driven solely by electrical power use a two-speed gearbox. This choice was made to reach the vehicle maximum-speed requirement of at least 100 mph. This transmission also allows an increase in the powertrain efficiency. Another option to improve the electrical consumption is to use two electric machines (as is the case in the GM Volt), but the multi-speed option was preferred in order to meet the vehicle maximum-speed requirements.

This study will be regularly updated, and the authors are planning to use both the multi-mode transmission and E-REV configurations in future work. A significant amount of work has already been done with the two-mode hybrid as the powertrain, and vehicle-level controls have been developed and validated using vehicle test data from the APRF at Argonne (Kim et al., 2009; Karbowski et al., 2010). Models of the E-REV as well as its preliminary vehicle-level energy management have also been developed and will be validated in the upcoming months.

13.VEHICLE-LEVEL CONTROL STRATEGIES

It is easy to create a bad HEV, fuel-cell vehicle, etc., if all one is doing is assembling the various parts, but it takes significant knowledge to design one that meets all customers' expectations, from performance to fuel consumption and drive quality. The vehicle-level control strategies used for the powertrain described previously have been developed over the past 12 years (Pasquier, 2001; Pagerit et al., 2005; Sharer, 2008; Cao, 2007; Karbowski et al., 2006). Generic processes were developed over the years to not only create but also validate the vehicle-level control strategies.

Figure 45 shows the generic process developed by Argonne for energy management. The process is defined in three steps:

- Global Optimization (Karbowski et al., 2006): The objective of this step is to define the main rules. For example, the engine turns ON based on the battery SOC, vehicle speed, and wheel torque demand.
- Rule-Based Control: In this step, the rules previously defined are implemented into an algorithm (generally Simulink and StateFlow) and exercised to make sure they operate properly.
- Heuristic Optimization: The objective of the last step is to define the values of the parameters of the main control strategy. For example, at which wheel torque does the engine turn ON for a specific SOC? The algorithm Argonne generally uses to automatically define the parameters is DIRECT (Divided RECTangles).

Other approaches, such as instantaneous optimizations (Karbowski et al., 2010) have also been developed and implemented into Autonomie, but were not used in the present study.

Figure 45 - Vehicle-level control strategy development.

Argonne has several state-of-the-art vehicle dynamometers and has been involved in testing and developing test procedures for advanced vehicles for many years. Over the past 12 years, numerous vehicle configurations from different classes have been tested at the APRF. More than 20 of them were modeled and validated into the Powertrain System Analysis Toolkit (PSAT) and now Autonomie, including conventional starter-alternators, full hybrids (input power-split, dual-mode power-split), plug-in hybrids (both after-market and manufacturer prototypes), and EVs. The vehicles were validated within 1% for the conventional vehicles, 2% for starter-alternators, and 5% for hybrids, which in all cases is within the test-to-test repeatability.

14.VEHICLE DEFINITION

14.1. VEHICLE TECHNICAL SPECIFICATIONS

All the vehicles have been sized to meet the same requirements:

- Initial vehicle movement (IVM) to 60 mi/h in 9 sec +/-0.1 sec
- Maximum grade of 6% at 65 mi/h at gross vehicle weight (GVW)
- Maximum vehicle speed >100 mi/h

These requirements are a good representation of the current American automotive market as well as American drivers' expectations. A relationship between curb weight and gross vehicle weight (GVW) was developed based on current technologies.

Table 10 summarizes the travel distances with a full tank of fuel for the different powertrains. The vehicles using gasoline, diesel or ethanol fuel have been sized for a distance of 500 miles on the combined driving cycle based on unadjusted fuel consumption. All vehicles have a range of at least 320 miles except the EV (150 miles) and the hydrogen vehicles.

Table 14: Summary of travel distances for all vehicles on the UDDS cycle based on unadjusted consumption

	Timeframe				
Vehicle Type	Ref	2010	2015	2030	2045
Conv H2	300	300	300	500	500
HEV H2, FC	300	300	300	500	500
PHEV H2, FC	300 + AER	300 + AER	300 + AER	500 + AER	500 + AER
EV	150	150	150	150	150

14.2. SIZING ALGORITHMS

Owing to the large number of vehicles (several thousand) and the diversity of powertrain options, it is not feasible to manually size each vehicle's components to match the performance targets. Some studies (Kromer and Heywood, 2008) defined their vehicles by maintaining a constant power-to-weight (P/W) ratio between all powertrain configurations. Owing to the impact of the component max torque shapes, maintaining a constant

power to weight (P/W) ratio between all configurations leads to an inconsistent comparison between technologies because of different performances. Each vehicle should be sized independently to meet specific vehicle technical specifications.

Not properly sizing the components will lead to differences in both fuel consumption and cost and will influence the results. For example, the P/W ratio for a 2010 midsize vehicle with IVM = 60 mi/h in 9 sec varies from 85 to 75 W/kg, depending on the powertrain configuration. This difference will increase in the future because of a decrease in weight penalty for the electrified powertrains.

On this basis, we developed several automated sizing algorithms to provide a fair comparison between technologies. Different algorithms have been defined depending on the powertrain (i.e., conventional, power-split, series, electric) and the application (i.e., HEV, PHEV).

All algorithms are based on the same concept: the vehicle is built from the bottom up, meaning each component assumption (i.e., specific power, efficiency, etc.) is taken into account to define the entire set of vehicle attributes (i.e., weight, etc.). This process is always iterative in the sense that the main component characteristics (i.e., maximum power, vehicle weight, etc.) are changed until all the vehicle technical specifications are met. On average, the algorithm takes between 5 and 10 iterations to converge. Figure 46 shows an example of the iterative process for a conventional vehicle.

Figure 46 - Conventional-powertrain sizing algorithm.

Since each powertrain and application is different, the rules are specific. For example:

- For HEVs, the electric-machine and battery powers are determined to capture all the regenerative energy from a UDDS cycle. The engine and the generator are then sized to meet the grade ability and performance (IVM-60 mi/h) requirements.
- For PHEV10s and PHEV20s, the electric machine and battery powers are sized to be able to follow the UDDS cycle in electric-only mode (this control is only used for the sizing; a blended approach is used to evaluate consumptions). The battery usable energy is defined to follow the UDDS drive cycle for 10 or 20 miles, depending on the requirements. The engine is then sized to meet both performance and grade ability requirements (usually, grade ability is the determining factor for PHEVs).
- For PHEV30s and PHEV40s, the main electric-machine and battery powers are sized to be able to follow the aggressive US06 drive cycle (duty cycle with aggressive highway driving) in electric-only mode. The battery usable energy is defined to follow the UDDS drive cycle for 30 or 40 miles, depending on the requirements. The genset (engine + generator) or the fuel-cell systems are sized to meet the grade ability requirements.

It is important to note that the sizing algorithms provide the optimum component sizes when OEMs would have to select among the available choices.

14.3. SIZING RESULTS

This section describes the maximum power, energy, and weight of the different vehicles after sizing. The details for all the vehicles simulated are located in Appendix 1.

14.3.1. CONVENTIONAL POWERTRAIN

The component characteristics of each vehicle class evolve similarly. In the following section, to avoid having too many figures and plots, only the compact class is presented.

Figure 47 shows the gasoline-engine peak power. One notices a small decrease in peak power due to lightweighting.

Figure 47 - Engine peak power with conventional powertrain for compact car.

Figure 48 shows the peak power of the diesel, hydrogen, and ethanol engines compared to the gasoline engine. One notices that the diesel, hydrogen and ethanol ratios stay roughly constant over time at around 0.9, indicating that technology improvements (i.e., weight reduction, aerodynamics, etc.) influence all engine technologies similarly with respect to engine peak efficiency.

Figure 48 - Engine peak power compared to the same-year, same-case conventional gasoline engine for a compact car.

Figure 49 shows that engine power changes linearly with vehicle weight. The fuel order tracks the power ratios previously described. All engine technologies cover the same mass range but do not require the same power; higher torque is present at lower engine speed in the diesel case.

Figure 49 - Engine peak power as a function of vehicle mass for conventional gasoline engine.

The linear interpolation follows the equation

$$ICE\ Power\ (kW) = a \times Mass\ (kg) + b$$

Table 11 gives the values of a and b for the different vehicle classes and fuels for conventional engines.

Table 15: Relationship between engine power and vehicle weight

	SI		CI		H2		E85	
	a	b	a	b	a	b	a	b
Compact	0.0575	44.9358	0.0756	-1.6804	0.0797	4.7481	0.0700	20.7229
Midsize	0.0791	10.6411	0.0777	-10.5299	0.0994	-24.7923	0.0853	-5.0726
Small SUV	0.1009	-9.6079	0.0725	0.6402	0.0934	-12.4518	0.0927	-4.6159
Midsize SUV	0.0949	-3.7142	0.0792	-15.4696	0.0954	-16.3857	0.0947	-9.9181
Pickup	0.1030	-17.5006	0.0746	-10.2896	0.0935	-13.9417	0.1004	-20.5003

Figure 50 shows the vehicle curb weights.

Figure 50 - Vehicle curb weights for compact cars with conventional powertrains.

14.3.2. ENGINE HEV

ENGINE

Figure 51 shows the peak power for compact HEVs with gasoline engines. The engine power for HEVs is determined by both the performance and grade requirements. While performance is the primary factor for current technologies, future lightweighting makes grade ability requirements critical for some cases.

Figure 51 - Engine peak power for compact cars with conventional powertrains.

The ICE peak-power ratios also stay roughly constant over time for the power-split HEVs (Figure 52). Hydrogen and ethanol have approximately the same ratio over time, around 1, whereas diesel stays at 0.9. Engine sizes are comparable across fuels for HEVs over time, unlike for conventional engines (cf. Fig 49), where using diesel, hydrogen or ethanol fuels lead to engine downsizing.

Figure 52 - Engine peak power compared to the same-year, same-case gasoline split-HEV engine for a compact car.

ELECTRIC MACHINE

Figure 53 shows the electric-machine power for HEVs with different fuels.

Figure 53 - Electric-machine power for compact split HEVs.

As shown in Figure 54, the peak-power ratios stay roughly constant over time. The diesel split HEV has a more powerful electric machine than the gasoline split HEV, but on the other hand, the hydrogen split HEV electric machine is less powerful than the gasoline vehicle or equal to it, in some cases. For the ethanol vehicle, the electric-machine ratios are in the same range as the ICE power ratios. We also noticed that the hydrogen vehicle

has a peak power ratio of 1 in 2030 and 2045; high cases are explained by the bigger hydrogen storage system needed starting in 2030, which requires more electric machine power during the sizing.

Figure 54 - Electric-machine peak power compared to the gasoline HEV engine for a compact car.

BATTERY

Figure 55 shows the HEV battery power. The powers are determined to capture the entire energy during deceleration on the UDDS drive cycle. Lightweighting and increased component efficiencies contribute to lower battery peak power.

Figure 55 - Battery power for compact gasoline HEVs.

Since the sizing algorithm for HEVs does not modify the battery capacity, the trend of the total energy follows the total power.

Figure 56 - Total battery energy for compact HEVs.

VEHICLE WEIGHT

Figure 57 shows the compact vehicles' curb weights. Vehicle weight reductions could range from 2% to 30% for gasoline, from 3% to 28% for diesel, from 7% to 34% for hydrogen and from 2% to 30% for ethanol.

Figure 57 - Vehicle curb weight for compact engine-HEV powertrains.

14.3.3. PHEV

ENGINE

Figure 58 shows the gasoline-engine peak power for the various PHEV powertrains and timeframes. In this case, owing to the large electric machine, the engines are all sized to provide gradeability.

Figure 58 - Engine peak power for compact PHEV powertrains.

Across all the AERs for power-split PHEVs, the hydrogen engines consistently have a lower peak power than the gasoline engines except for the reference case, owing to the introduction of direct injection. Flex-Fuel engines have similar power to their gasoline counterpart while diesel are the most powerful. The power ratios between the various engines and the gasoline engine (Figure 59) are stable over time and from one AER to another. The trends are similar for the PHEV30 and PHEV40.

Figure 59 - ICE power for compact PHEV10s and PHEV20s relative to gasoline PHEV with matching AER.

ELECTRIC MACHINE

Figure 60 shows the peak power of the different electric machines for the PHEVs. The electric machines for the PHEV10 and PHEV20 cases are sized to have the capability to follow the UDDS drive cycle in EV mode, while the ones for the PHEV30 and PHEV40 cases allow the vehicles to follow the US06 drive cycle. Technology evolution leads to power reductions ranging from 3% to 28% by 2045 for PHEV10s, from 3% to 28% for PHEV20s, from 5% to 28% for PHEV30s, and from 5% to 29% for PHEV40s (gasoline).

Figure 60 - Electric machine power for compact PHEVs.

BATTERY

Figure 61 shows that the battery power for the PHEV10 and PHEV20 decreases by 16% over time. The battery for the PHEV30 and PHEV40 has nearly 3 times more power than for the PHEV10 and PHEV20, owing to the need to follow the US06 cycle in electric-only mode. From one AER to the next, the battery power increases by an average of 1.8% for power-split and by an average of 2.6% for series powertrains.

Figure 61 - Battery power for compact gasoline HEV and PHEVs.

Figure 62 shows that the usable battery energy is proportional to the AER for the various PHEVs. If the AER is multiplied by 2, the usable battery energy will also be multiplied by 2. For all of the AERs, the usable-energy decrease ranges from 4% to 32% by 2045.

Figure 62 - Usable battery energy for compact PHEV10, 20, 30, and 40.

The PHEVs all show a linear relationship between the usable battery energy and the vehicle mass (Figure 63). However, it appears that the higher the AER, the greater the slope.

Figure 63 - Total battery energy as a function of vehicle mass for gasoline PHEVs.

The linear interpolation follows the equation

$$ESS \text{ Power (kW)} = a \times \text{Mass (kg)} + b$$

Table 12 gives the values of a and b for the different vehicle classes and powertrains for gasoline fuel.

Table 16: Relationship between battery energy and vehicle weight for gasoline PHEVs

	Split PHEV10		Split PHEV20		Split PHEV30		Split PHEV40	
	a	b	a	b	a	b	a	b
Compact	0.0045	-3.2846	0.0088	-6.4548	0.0133	-9.7926	0.0171	-12.5408
Midsize	0.0046	-3.9992	0.0089	-7.8101	0.0136	-12.1493	0.0177	-15.7462
Small SUV	0.0049	-4.0780	0.0101	-9.0512	0.0142	-12.1689	0.0184	-16.1091
Midsize SUV	0.0037	-2.7155	0.0094	-9.0786	0.0135	-12.5776	0.0172	-16.0397
Pickup	0.0040	-3.6998	0.0104	-12.0598	0.0153	-18.1235	0.0181	-19.9827

VEHICLE WEIGHT

Figure 64 shows the vehicles' curb weights.

Figure 64 - Vehicle curb weights for compact PHEVs.

14.3.4. FUEL-CELL HEV

Fuel-cell systems, like other components, show a decrease in peak power over time (Figure 65), which is mostly due to vehicle lightweighting. The total decrease from the reference case to the 2045 case ranges from 26% to 52%.

Figure 65 - Fuel-cell system power for compact fuel-cell HEVs.

Figure 66 shows that the electric-machine peak power shows a decrease ranging from 20% to 43% by 2045.

Figure 66 - Electric-machine power for compact fuel-cell HEVs.

The total battery energy does not show a continuous decrease over time. The pattern shown in 2010 and 2015 (Figure 67) can be explained by the battery technology used. HEV applications use a NiMH battery in the 2010 low and average cases and in the 2015 low case. For the rest of the timeframes, a Li-ion battery is used for

HEVs. The cell voltage is much higher for the Li-ion battery than for the NiMH battery and thus the battery energy is a little higher

Figure 67 - Total battery energy for compact fuel-cell HEVs.

Figure 68 shows the vehicle curb weights. The fuel-cell vehicles show one of the most aggressive weight decreases compared to other powertrain configurations, owing to the hydrogen storage and fuel-cell system specific-power predictions. The vehicle-weight decrease by 2045 ranges from 20% to 43%.

Figure 68 - Vehicle curb weight for compact fuel-cell HEVs.

14.3.5. FUEL-CELL PHEV

The fuel-cell system power decreases over time for all the AERs, with a reduction that ranges from 18% to 41% (Figure 69). From one AER to another, the changes in fuel-cell power are very small.

Figure 69 - Fuel-cell system power for compact fuel-cell PHEVs.

As shown in Figure 70, in terms of usable battery energy, the same pattern described for power-split PHEVs can be observed for fuel-cell PHEVs. The energy is proportional to the AER and the energy decreases continuously over time. For all of the AERs, the usable battery energy is from 14% to 42% lower by 2045 compared to the reference case.

Figure 70 - Usable battery energy for compact fuel-cell PHEVs.

The electric-machine power continuously decreases by between 11% and 41% over time from the reference case to 2045 (Figure 71). The higher the AER, the higher the electric-machine power within the same year and case.

Figure 71 - Electric-machine power for compact fuel-cell PHEVs.

Figure 72 shows the vehicle curb weights.

Figure 72 - Vehicle curb weights for compact fuel-cell PHEVs.

As shown in Figure 73, the battery energy has a linear relationship to vehicle mass, with a slope that increases with the AER.

Figure 73 - Battery energy as a function of vehicle mass for compact fuel-cell PHEVs.

The relationship follows the equation

$$ESS\ Power\ (kW) = a \times Mass(kg) + b$$

Table 13 gives the values of a and b for the various fuel-cell vehicle classes and powertrains.

Table 17: Relationship between battery energy and vehicle weight for fuel-cell PHEVs

	FC PHEV10		FC PHEV20		FC PHEV30		FC PHEV40	
	a	b	a	b	a	b	a	b
Compact	0.0034	-1.6171	0.0067	-3.1784	0.0101	-5.5256	0.0129	-6.9619
Midsize	0.0040	-2.9492	0.0066	-3.8277	0.0101	-6.5327	0.0130	-8.5352
Small SUV	0.0036	-1.8772	0.0069	-3.5100	0.0115	-7.6782	0.0138	-8.6667
Midsize SUV	0.0041	-3.0393	0.0065	-3.3493	0.0110	-7.8634	0.0131	-8.6881
Pickup	0.0040	-2.7255	0.0065	-3.1824	0.0113	-8.9508	0.0134	-9.7746

14.3.6. BATTERY ELECTRIC VEHICLE

Figure 74 shows the impact of lightweighting and improved aerodynamics and tires on the electric-machine peak power for BEVs. The electric machine is from 7% to 36% less powerful by 2045 compared to the reference case. The battery-power decrease between these timeframes ranges from 8% to 38%, as shown in Figure 75.

Figure 74 - Electric-machine power for compact BEVs.

Figure 75 - Battery power for compact BEVs.

The decrease in usable energy for BEVs between the reference case and 2045 ranges from 8% to 42% (Figure 76).

Figure 76 - Usable battery energy for compact BEVs.

Figure 77 shows the vehicles' curb weight.

Figure 77 - Vehicle curb weights for compact BEVs.

14.3.7. COMPARISON OF VEHICLE CLASSES

IMPACT ON ENGINE POWER

Since all the engine technologies and fuels show similar trends, only the compact-vehicle results will be shown. Figure 78 shows the gasoline-engine peak power for different powertrains and timeframes. One notices that the power-split HEV has the highest engine-power reduction. In addition, the engine power for PHEVs is higher than that for HEVs, owing to added vehicle weight and powertrain losses for the series configuration

Figure 78 - Engine peak power for compact vehicles with various gasoline powertrains.

IMPACT ON BATTERY POWER

Each powertrain shows a linear relationship between the battery power and the vehicle mass (Figure 79). The figure shows similar peak power for each specific configuration type (i.e., engine and fuel-cell HEVs). Power-split PHEVs show a slightly higher power compared to the HEVs, owing to the required ability to follow the UDDS cycle in EV mode. All configurations with high-energy batteries are close in value, owing to the required ability to follow the US06 drive cycle. The remaining difference between the configurations is due to the powertrain efficiencies.

Figure 79 - Battery power as a function of vehicle mass for compact vehicles with five types of powertrains.

The linear interpolation follows the equation

$$ESS \text{ Power (kW)} = a \times \text{Mass (kg)} + b$$

Table 14 gives the values of a and b for the different vehicle classes and powertrains for gasoline fuel.

Table 18: Relationship between battery power and vehicle weight for different gasoline-fueled powertrains

	SI Split HEV		SI Split PHEV		FC HEV		FC PHEV		EV	
	a	b	a	b	a	b	a	b	a	b
Compact	0.0176	-0.5508	0.1647	-145.7609	0.0102	14.4036	0.0907	-45.2499	0.0923	1.7059
Midsize	0.0174	-0.3014	0.1768	-193.1543	0.0096	16.9290	0.0893	-54.7386	0.0899	-1.4800
Small SUV	0.0167	0.1445	0.1827	-203.0809	0.0096	15.8316	0.0941	-62.2804	0.0972	-2.4403
Midsize SUV	0.0173	-1.1403	0.1632	-199.2899	0.0100	16.5342	0.0829	-52.7671	0.0920	6.4817
Pickup	0.0168	-0.3424	0.2194	-368.3199	0.0098	18.2793	0.0943	-93.6248	0.0969	-5.9693

IMPACT ON VEHICLE WEIGHT

Figure 80 shows the vehicle curb weights across powertrain configurations.

Figure 80 - Vehicle curb weights for compact vehicles with gasoline engine powertrains.

Figure 81 shows incremental weight compared to the reference conventional gasoline vehicle. One notices that significant weight savings can be achieved as early as 2015 when considering the high case for numerous configurations, including HEVs and PHEVs.

Figure 81 - Impact of hybridization degree on weight for compact vehicles.

IMPACT ON ELECTRIC MACHINE

Figure 82 shows that like the engine power, the electric-machine power continuously and linearly decreases over time for all the powertrains. The PHEVs' electric machines are sized on the UDDS (10- and 20-mile AERs) or the US06 (30- and 40-mile AERs) cycle and must provide enough power to complete the drive cycles. Since increased AER leads to higher vehicle weight, the electric-machine power needs to be higher for a PHEV30 and for a PHEV40.

Figure 82 - Electric-machine peak power for compact gasoline HEVs and PHEVs.

IMPACT OF VEHICLE WEIGHT ON FUEL CONVERTER POWER

Figure 83 shows the engine and fuel-cell system power as a function of vehicle mass for HEVs and PHEVs. Since the electric machines used for PHEVs have higher power than the ones for HEVs, the engine is only sized for the grade ability requirement for PHEVs, while it is also sized by performance for both power-split and fuel-cell HEVs. As a result, both engine and fuel-cell powers are smaller for PHEVs than for HEVs. The different AER ranges for PHEVs have been plotted using the same colors (green for gasoline split PHEVs and red for fuel-cell PHEVs).

Figure 83 - Fuel converter power as a function of vehicle mass for compact HEVs and PHEVs.

The relationship follows the equation

$$ICE\ Power\ (kW) = a \times Mass\ (kg) + b$$

Table 15 gives the values of a and b for the different vehicle classes and powertrains.

Table 19: Relationship between fuel converter and vehicle weight for different powertrains

	SI Split HEV		SI Split PHEV		FC HEV		FC PHEV	
	a	b	a	b	a	b	a	b
Compact	0.0628	-13.6199	0.0483	-11.8809	0.0616	-20.6343	0.0309	7.2258
Midsize	0.0623	-15.8684	0.0491	-17.3049	0.0618	-24.5270	0.0302	8.4857
Small SUV	0.0727	-21.4843	0.0527	-18.5476	0.0628	-19.8390	0.0322	10.6523
Midsize SUV	0.0692	-16.3279	0.0495	-15.3066	0.0642	-24.0012	0.0320	13.3286
Pickup	0.0763	-29.4236	0.0559	-31.8264	0.0661	-28.1510	0.0307	21.1423

15. TEST PROCEDURE AND CONSUMPTION CALCULATIONS

All the simulations were performed under hot conditions. The cold-start penalties were assessed after the simulations, on the basis of test data collected at Argonne’s APRF and literature search. A two-cycle test procedure, based on the UDDS and HWFET drive cycles, was used.

15.1. CONVENTIONAL VEHICLES

The conventional-vehicle test procedure follows the current EPA two-cycle test procedure (U.S. Environmental Protection Agency, n.d.).

The urban cycle for a non-hybrid vehicle (Figure 84) is composed of four parts:

- Bag 1: cold start
- Bag 2: stop and go
- Idling
- Bag 3: hot start

Figure 84 - The urban cycle for a non-hybrid vehicle.

The highway cycle for a non-hybrid vehicle is composed of only one part, the HWFET (Figure 85).

Figure 85 - The highway cycle for a non-hybrid vehicle.

15.2. HYBRID ELECTRIC VEHICLES

The HEV procedure is similar to the conventional-vehicle procedure except that the drive cycles are repeated until the initial and final battery SOC's are within a tolerance of 0.5%. (See Figures 86 and 87.)

Figure 86 - The urban cycle for a hybrid vehicle.

Figure 87 - The highway cycle for a hybrid vehicle. Only the results from the second cycle are used.

15.2.1. TWO-CYCLE PROCEDURE CALCULATIONS FOR CONVENTIONAL AND HYBRID VEHICLES

Fuel Consumption

For the urban procedure, the fuel consumption is computed via Equation (1):

$$(1) \quad FC = 0.43 \frac{V_{Fuel}^1 + V_{Fuel}^2}{Dist_1 + Dist_2} + 0.57 \frac{V_{Fuel}^3 + V_{Fuel}^Z}{Dist_3 + Dist_Z}$$

Where

- V_{Fuel}^y = Volume of fuel from Bag y
- $Dist_y$ = Distance driven by the vehicle for the Bag y part of the cycle
- Z = Bag 2 for a non-hybrid vehicle and Bag 4 for a hybrid

The same equation is used to compute the gas-equivalent fuel consumption as well as the SOC-adjusted fuel consumption by replacing V_{Fuel} with the corresponding physical quantity.

The highway procedure results are the same as for a simple cycle, except for the hybrid case, where only the results from Bag 1 are used to compute the values:

$$(2) \quad FC = \frac{V_{Fuel}^2}{Dist}$$

Combined Fuel Consumption

The combined fuel consumption is a weighted value lying between the urban and highway cycles:

$$(3) \quad FC^{combined} = 0.55 \times FC^{urban} + 0.45 \times FC^{highway}$$

15.3. PLUG-IN HYBRID ELECTRIC VEHICLES

This section describes the methodology currently implemented in Autonomie to support the GPRA. The implementation is based on the J1711 procedure (Duoba, 2010). The procedure is divided into several phases, as described below.

Charge-Sustaining on the UDDS Cycle

1. Set battery SOC to charge-sustaining (CS) value.
2. Run UDDS.
3. 10 minute soak with the key off.
4. Run UDDS.
5. Assume the cycle charge is balanced. Display warning if it does not meet 1%.

Weightings and cold factor correction:

The following equations demonstrate the cold compensation:

$$(4) \quad M_{0-505}^* = \frac{M_{0-505}}{1 - CF_{75F}}$$

Where

M_{0-505} = fuel mass consumed during the time window between 0 and 505 seconds.

CF_{75F} = cold-factor correction at 75°F.

M_{0-505}^* = cold-corrected mass of fuel.

$$(5) \quad Vol_{0-505}^* = \frac{M_{0-505}^*}{\delta_{gasoline}}$$

Where

Vol_{0-505}^* = volume of fuel consumed during the time window between 0 and 505 seconds.

$\delta_{gasoline}$ = density of gasoline.

One can then calculate FC^{UDDS} , the fuel consumed on the UDDS cycle:

$$(6) \quad FC^{UDDS} = 0.43 \times \left(\frac{Vol_{0-505}^* + Vol_{506-1372}}{D_{0-505} + D_{506-1372}} \right) + 0.57 \times \left(\frac{Vol_{1972-2477} + Vol_{2478-3340}}{D_{1972-2477} + D_{2478-3340}} \right)$$

Charge-Sustaining on the HWFET Cycle

1. Set battery SOC to CS value.
2. Run HWFET.
3. Wait 4 sec.
4. Run HWFET.
5. Assume the cycle is charge balanced.
6. Perform calculations on the second HWFET cycle.

$$(7) \quad FC^{HWFET} = \frac{Vol_{765-1529}}{D_{765-1529}}$$

Where

$Vol_{765-1529}$ = volume of fuel consumed during the time window between 765 and 1529 seconds.

$D_{765-1529}$ = distance traveled during the time window between 765 and 1529 seconds.

FC^{HWFET} = highway fuel consumption

Charge-Depleting on the UDDS and HWFET Cycles

1. The calculations are identical for the UDDS and HWFET cycles.
2. Set battery SOC to full charge test initial SOC.
3. Run UDDS (HWFET).
4. 10-minute soak with the key off (15-sec pause with key on).
5. Run UDDS (HWFET).
6. 10-minute soak with the key off (15-sec pause with key on).
7. Repeat until SOC reaches the CD/CS crossover point and the last cycle is completed.
8. Round down the number of cycles unless the CD range is less than one cycle. In that case, round up the number of cycles. At least 1 CD cycle is required to run the analysis.

Cold weighting calculation:

The user specifies the number of cycles over which to apply the cold correction factor.

$$(8) \quad N_{cold} = \min(N_{cold}^{user}, N_{cd})$$

$$(9) \quad N_{hot} = N_{cd} - N_{cold}$$

Where:

N_{cold} = number of cold cycles.

N_{hot} = number of hot cycles.

N_{cold}^{user} = number of user-specified cold cycles.

N_{cd} = total number of CD cycles.

$$(10) \quad M_{cd} = \left[\frac{\alpha_{cold} M_{cd-cold}^1}{1 - CF_{75F}}, \dots, \frac{\alpha_{cold} M_{cd-cold}^{N_{cold}}}{1 - CF_{75F}}, \alpha_{hot} M_{cd-hot}^1, \dots, \alpha_{hot} M_{cd-hot}^{N_{hot}} \right]^T$$

Where

$M_{cd-cold}^1$ = mass of fuel consumed during the first cold CD cycle.

$M_{cd-cold}^{N_{cold}}$ = mass of fuel consumed during the last cold CD cycle.

CF_{75F} = cold-start fuel economy penalty at 75°F.

M_{cd-hot}^1 = mass of fuel consumed during the first hot CD cycle.

$M_{cd-hot}^{N_{hot}}$ = mass of fuel consumed during the last hot CD cycle.

α_{cold} = user-specified cold weighting factor (default value = 0.43).

α_{hot} = user-specified hot weighting factor (default value = 0.57).

M_{cd} = column vector of cold-corrected fuel mass.

$$(11) \quad Vol_{cd} = \frac{M_{cd}}{\delta_{gasoline}}$$

Where

Vol_{cd} = column vector of cold-corrected fuel volumes.

Note that each element in the Vol_{cd} vector is divided by its respective distance.

$$(12) \quad FC_{cd} = \frac{Vol_{cd}}{D_{udds}}$$

Where

FC_{cd} = column vector of cold-corrected fuel consumptions.

The net battery energy used is calculated for each cycle using the open-circuit voltage and the current.

$$(13) \quad \text{for } i = 1, \dots, N_{cd}; E_{cd}^i = \int_{(i-1)T_{udds}}^{(i)T_{udds}+t} V_{oc}(\tau) * I(\tau) d\tau$$

Where

E_{cd}^i = net battery energy used during the i^{th} CD cycle.

T_{udds} = duration of the UDDS cycle + soak time or (HWFET + 15 sec).

i = index of the CD cycle.

N_{cd} = total number of CD cycles.

V_{oc} = open-circuit voltage as a function of time during the cycle.

I = battery current as a function of time during the cycle.

$$(14) \quad E_{cd} = [E_{cd}^1, \dots, E_{cd}^{N_{cd}}]^T$$

Where

E_{cd} = column vector of net battery energy used on each cycle.

Note that each element in the E_{cd} vector is divided by its respective distance.

$$(15) \quad EC_{cd} = \frac{E_{cd}}{D_{udds} * \eta_{chg}^{ess} * \eta_{charger}}$$

Where

EC_{cd} = column vector of electrical-energy consumption in AC-Joules (wall outlet).

D_{udds} = distance traveled on a UDDS (or HWFET – D_{HWFET}) cycle.

η_{chg}^{ess} = user-definable efficiency of the battery during charging (default value = 0.99).

$\eta_{charger}$ = user-definable efficiency of the charger (wall or in-vehicle) (default value = 0.94).

$$(16) \quad \text{for } i = 1, \dots, N_{cd}; \mu_i = \mu(i * D_{udds}^i) - \mu(i - 1) * D_{udds}^i$$

$$\mu_{cd} = [\mu_1, \dots, \mu_{N_{cd}}]$$

Where

μ_{cd} = row vector of utility factors.

μ_1 = utility factor on the first CD cycle.

μ_i = utility factor on the i^{th} CD cycle.

$\mu_{N_{cd}}$ = utility factor on the last CD cycle.

μ = fleet Mileage Fraction Utility Factor as a function of distance.

$$(17) \quad FC = \mu_{cd}FC_{cd} + \left(1 - \sum_i^{N_{cd}} \mu_i\right)FC_{cs}$$

Where

FC = fuel consumed on the city or highway portion of the PHEV procedure.

$$(18) \quad EC = \mu_{cd}EC_{cd}$$

Where

EC = electrical energy consumed during the city or highway portion of the PHEV procedure.

Consumption adjustment factors:

Although **ONLY unadjusted values are used to support NEMS, MARKAL, and SEDS**, this section describes the adjusted fuel-consumption values provided:

$$(19) \quad FE_{adj}^{udds} = 0.003259 + 1.1805 * FE^{udds}$$

$$(20) \quad FE_{adj}^{hwfet} = 0.001376 + 1.3466 * FE^{hwfet}$$

$$(21) \quad FC_{adj}^{combined} = 0.55 * FC_{adj}^{udds} + 0.45 * FC_{adj}^{hwfet}$$

Electrical consumption (corrected) = 0.7 * electrical consumption, per communication with U.S. EPA.

15.4. ELECTRIC VEHICLES

Start the battery at full SOC and run until minimum SOC is reached.

$$(22) \quad C = \frac{\int V_{oc} * I_{ess}}{\eta_{ess} \eta_{charger}}$$

Where

η_{ess} = efficiency of the battery while charging.

$\eta_{charger}$ = average efficiency of the charger while charging.

V_{oc} = open-circuit voltage as a function of time over the cycle.

I_{ess} = current as a function of time over the cycle.

15.5. COLD-START PENALTY

A cold-start penalty of 20% is applied over 4 UDDS cycles for the CD results.

Table 20 summarizes the cold-start penalties applied to the UDDS CS results for the different powertrains.

Table 20: Cold-start (20°C) penalties for the different powertrain configurations (%)

Powertrain	Ref	2010			2015			2030			2045		
		Low	Med	High	Low	Med	High	Low	Med	High	Low	Med	High
Conventional	15	15	15	15	15	15	15	15	15	15	15	15	15
Power-Split HEV	18	18	18	18	18	18	18	18	18	18	18	18	18
Power-Split PHEV	14	14	14	14	14	14	14	14	14	14	14	14	14
Fuel Cell HEV	25	25	25	25	25	25	25	25	25	25	25	25	25
Fuel Cell PHEV	15	15	15	15	15	15	15	15	15	15	15	15	15
Electric	10	10	10	10	10	10	10	10	10	10	10	10	10

16.SIMULATION RESULTS

All the fuel-consumption results shown in this report are expressed in liters per 100 km. The reasons behind this decision came from the analysis of the data shown in Figure 88, which shows the relationship between fuel economy (expressed in miles per gallon) and fuel consumption (expressed in gallons per 1000 miles). There is no linear relationship between fuel consumption and fuel economy. For example, if you improve your fuel economy from 15 to 30 mpg, you will save approximately 37 gallons of fuel per 1000 miles, whereas if you improve your fuel economy from 50 to 100 mpg, you will save only 10 gallons per 1000 miles. By comparing two different values of fuel consumption, one immediately knows the amount of fuel saved and thus the amounts of money and emissions saved, since they are linearly linked to the fuel consumption.

Moreover, whereas different vehicles can drive miles at a different pace, they all have roughly the same lifetime mileage.

Figure 88 - Fuel economy vs. fuel consumption.

Unless otherwise specified, all the fuel-consumption results are provided for the combined drive cycle using unadjusted values based on gasoline equivalent. The details for all the vehicles are located in Appendix 2.

16.1. EVOLUTION OF SPECIFIC POWERTRAIN CONFIGURATIONS

16.1.1. CONVENTIONAL POWERTRAIN

Figure 89 shows that fuel consumption decreases over time across fuels. Gasoline conventional compact vehicles consume from 10% to 42% less fuel by 2045 compared to the reference case; the change is different for diesel vehicles, with a reduction in fuel consumption ranging from 10% to 33%. Hydrogen vehicles will achieve the

highest improvements in fuel consumption between the reference case and 2045, with a decrease ranging from 26% to 48%, whereas ethanol shows the widest range of improvement, with a decrease ranging from 4% to 41%.

The ethanol-engine vehicle has the highest fuel consumption among conventional vehicles for all timeframes (except for the reference case). The hydrogen ICE vehicle starts with very high fuel consumption but decreases quickly to end up at 4.9 L/100 km, owing to the introduction of direct injection. Note that its fuel consumption is roughly 15% higher than for the gasoline vehicle in the reference case; the difference between these two fuels becomes smaller with time. As expected, diesel ICE shows the lowest fuel consumption across timeframes.

Figure 89 - Fuel consumption (gasoline equivalent) for conventional compact cars.

Table 21 shows the evolution of fuel consumption for the different fuels from the reference to the 2045 case.

Table 21: Fuel consumption of conventional compact vehicles for reference and 2045 technologies

	Fuel Cons. (l/100 km)		% Fuel Cons. improvement
	Ref	2045 low/avg/high	
SI	6.85	6.13/5.58/4	10%/18.5%/42%
CI	5.89	5.3/4.65/3.9	10%/21%/33%
H2	7.86	5.8/4.95/4	26%/37%/48%
E85	7.07	6.8/6.14/4.2	4%/13.1%/41%

Figure 90 shows the fuel consumption relative to the reference gasoline conventional vehicle. In 2045, compared to the gasoline reference case, the ranges of improvement are as follows: gasoline engine, 10% to 42%; diesel-engine, 23% to 43%; hydrogen engine, 15% to 40%; and ethanol engine, 1% to 39%.

Figure 90 - Gasoline-equivalent fuel consumption for conventional compact cars, compared to the reference conventional gasoline vehicle.

Figure 91 shows the fuel consumption relative to that of the conventional gasoline vehicle of the same year. Notice that the differences between gasoline and diesel will tend to decrease in the future. In some cases (i.e., 2045 high

case), both fuels achieve similar gasoline-equivalent fuel consumption. In addition, improvements in the hydrogen engine lead it to become more efficient than the gasoline engines. Overall, even if the fuel consumption of the ethanol engine improves in the future (Figure 90), ethanol will still remain less efficient than any other fuel on a volumetric basis.

Figure 91 - Gasoline-equivalent fuel consumption for conventional compact cars, compared to the same-year conventional gasoline vehicle.

16.1.2. HEV ENGINE

Figure 92 shows that fuel consumption for HEVs is expected to decrease significantly over time. For HEVs, the fuel-consumption reduction with diesel fuel, ranging from 5% to 8% by 2010, is smaller than with gasoline. However, the gap between the two fuels is also expected to decrease over time.

Figure 92 - Gasoline-equivalent fuel consumption for compact split HEVs.

Table 22 shows the fuel consumption of HEVs for reference and 2045 technologies. The results show consistent improvements for all fuels.

Table 22: Fuel consumption of compact HEVs for reference and 2045 technologies

	Power-Split HEV		
	Fuel Cons. (L/100 km)		Improvement
	2010	2045 low/avg/high	
SI	4.17	3.7/3.16/2.2	11%/24.2%/46%
CI	3.93	3.5/2.92/2.3	12%/25.7%/40%
H2	4.34	3.2/2.6/2	27%/40%/54%
E85	4.49	4/3.39/2.4	11%/24.5%/47%

Figure 93 shows the fuel consumption compared to the HEV reference gasoline vehicle. The ratio between hydrogen and gasoline reaches 0.624 in the 2045 high-uncertainty case, which shows the dramatic improvements that can be expected from hydrogen ICE power-split vehicles.

Figure 93 - Gasoline-equivalent fuel consumption of compact split HEVs, compared to the reference gasoline split-HEV.

Figure 94 shows the fuel-consumption ratios for HEVs with various fuels compared to the HEV gasoline vehicle of the same year. The results show that the ethanol fuel will maintain a fuel consumption between 6.4% and 8% higher than the gasoline case and it will have the highest fuel consumption over all the timeframes. Finally, the diesel power-split vehicles will have about 7% lower fuel consumption than the gasoline vehicles across all timeframes.

Figure 94 - Gasoline-equivalent fuel consumption for split-HEV compact cars, compared to the same-year, same-case gasoline HEV.

The fuel-consumption evolution for power-split PHEVs is similar to that for power-split HEVs. The ethanol vehicles always have the highest fuel consumption (~7% more than the gasoline vehicles), whereas the diesel vehicles' fuel consumption is between 6 and 9% lower than for gasoline vehicles. As is the case for HEVs, the hydrogen PHEVs have higher fuel consumption than gasoline PHEVs in 2010, but the ratio between these two fuels then goes below 1 and reaches 0.77 in 2045; i.e., hydrogen PHEVs have 23% lower fuel consumption than gasoline PHEVs in 2045.

For the same fuel, the fuel consumption decreases slowly with the AER. The bigger the battery, the less fuel is consumed. However, there is no clear relationship between battery size and specific fuel-consumption improvement. For instance, between the reference case and 2045, the fuel-consumption improvement of gasoline engines is about 21.6% for PHEV10, 16.8% for PHEV20, 26.2% for PHEV30, and 34.2% for PHEV40. These variations do not show a trend related to battery size and improvement over the years. Data for PHEV10s and PHEV20s are shown in Figure 95, and for PHEV30s and 40s in Figure 96.

Figure 95 - Gasoline-equivalent fuel consumption for compact split PHEV10s and PHEV20s. All the fuel-consumption values are CD+CS.

Figure 96 - Gasoline-equivalent fuel consumption for compact split PHEV30s and PHEV40s. All the fuel-consumption values are CD+CS.

Table 23 shows the PHEV10 fuel consumption for the reference and 2045 technologies; as in the HEV case, H2 shows the most improvement of any fuel between 2010 and 2045. The results for HEVs and PHEVs are very close to each other, since the engines are used under similar conditions.

Table 23: Fuel consumption of compact PHEV10s with 2010 and 2045 technologies

	Power-Split PHEV10		
	Fuel Cons. (L/100 km)		Improvement
	Ref	2045 low/med/high	
SI	3.19	2.9/2.5/1.8	9%/21.6%/44%
CI	3.18	2.8/2.4/1.9	12%/24.5%/40%
H2	3.31	2.5/2.06/1.6	24%/37.7%/54%
E85	3.42	3.1/2.67/1.9	11%/21.9%/47%

Figure 97 shows the fuel consumption for the PHEV10 and PHEV20 compared to the same-year PHEV gasoline vehicle.

Figure 97 - Gasoline-equivalent fuel consumption for split PHEV10 and -20 compact cars, compared to the same-year, same-case gasoline PHEV with matching AER. All the fuel-consumption values are CD+CS.

Figure 98 shows the fuel-consumption ratios for the PHEV10 and PHEV20 compared to the reference PHEV gasoline vehicle. Overall, as in the HEV case, the H2 vehicle remains the most efficient vehicle in 2045, with improvements of 35% for PHEV10, 31% for PHEV20, 38% for PHEV30, and 45% for PHEV40 compared to the reference PHEV gasoline vehicle.

Figure 98 - Gasoline-equivalent fuel consumption for split PHEV10 and -20 compact cars, compared to the reference PHEV gasoline vehicle. All the fuel consumption values are CD+CS.

Figure 99 shows the fuel consumption for the PHEV30 and PHEV40 compared to the same-year PHEV gasoline vehicle. It is interesting to see that there is not really a linear trend for fuel-consumption ratios vs. the same-year gasoline PHEV.

Figure 99 - Gasoline-equivalent fuel consumption for split PHEV30 and -40 compact cars, compared to the reference PHEV gasoline vehicle.. All the fuel consumption values are CD+CS.

Figure 100 - Gasoline-equivalent fuel consumption for split PHEV30 and -40 compact cars, compared to the same-year, same-case gasoline PHEV with matching AER. All the fuel consumption values are CD+CS.

Figure 101 shows that there is a linear relationship between vehicle mass and electric consumption. The bigger the vehicle, the higher the electrical consumption. This observation is consistent with the fuel-consumption increase with vehicle mass.

Figure 101 - Electric consumption in CD+CS mode for gasoline-powered-split PHEVs.

16.1.4. FUEL-CELL HEV

The fuel-cell HEV's fuel consumption (Figures 102 and 103) decreases at a higher rate from 2010 to 2030 than from 2030 to 2045, when the average and high cases hardly change. In 2045, the fuel consumption is from 27% to 50% lower than in the reference case, which is in the same range as for power-split HEVs H2.

Figure 102 - Gasoline-equivalent fuel consumption for compact fuel-cell HEVs.

Figure 103 - Gasoline-equivalent fuel consumption compared to the compact fuel cell HEV reference case.

16.1.5. FUEL-CELL PHEV

For fuel-cell PHEVs, the fuel consumption decreases slowly (Figures 104 and 105) as the AER goes from one range to the next higher range, for the same reasons discussed for power-split PHEVs. From the reference case to 2045, the consumption decreases by 22%–47% for all the AERs.

Figure 104 - Gasoline-equivalent fuel consumption for compact fuel-cell PHEVs. The fuel consumption values are CD+CS.

Figure 105 - Gasoline-equivalent fuel consumption for compact fuel-cell PHEV10s compared to the reference case.

Figure 106 - Electric consumption in CD+CS mode for compact fuel-cell PHEVs.

16.1.6. ELECTRIC VEHICLES

For electric vehicles, the results are given in terms of electric-energy consumption for the two drive cycles used in the simulations: UDDS and HWFET. The combination of lightweighting and component improvements leads to a significant decrease in electrical consumption over time: from 8% to 41% on UDDS and from 9% to 39% on HWFET.

The values expressed in Wh/mile represent the average energy provided by the battery to drive the vehicle for 1 mile. As shown in Figure 107, the HWFET electric consumption is consistently higher than for a UDDS cycle. This can be explained by looking at the two drive-cycle shapes and the energy recoverable by regenerative braking. The UDDS cycle has many strong and steep braking periods, which offer ample opportunities to recover some energy through braking. On the other hand, the HWFET cycle features more stable speeds and only limited braking times. Consequently, the battery recuperates more energy through regenerative braking during a UDDS cycle than during a HWFET cycle.

Figure 107 - Electric consumption by compact EVs operating on UDDS and HWFET cycles.

Figure 108 shows the strong relationship between vehicle lightweighting and electrical consumption.

Figure 108 - Electric consumption by EVs.

16.2. EVOLUTION OF HEV ENGINES

16.2.1. HEV VS. CONVENTIONAL ENGINE

The comparison between power-split HEVs and conventional gasoline vehicles (same year, same case) in Figure 109 shows that the ratios stay fairly constant for diesel, gasoline, and ethanol. Indeed, the gasoline power-split compact vehicle consumes between 40 and 44% less fuel than the conventional gasoline vehicle, whereas the diesel consumes between 43 and 48% less. The ethanol power-split decrease is between 35 and 40%. However, the hydrogen case shows more significant variations. In the reference case, the hydrogen power-split vehicle consumes roughly 37% less fuel than the conventional gasoline vehicle, but in 2045, this advantage increases by 48%–54%. This observation confirms that hydrogen vehicles will benefit more from hybridization in the future. It would be interesting to study the same kinds of ratios, but comparing fuel to fuel. This would again demonstrate which fuel would be most advantageous, in terms of reduced consumption, in the transition from a conventional to a power-split HEV powertrain.

Figure 109 - Gasoline-equivalent fuel consumption for compact power-split HEVs, compared to the same-year, same-case conventional gasoline vehicle.

The power-split HEV fuel consumption changes differently over time from its conventional counterpart, as shown in Table 24. For gasoline, the fuel consumption is improved by 11%–47% in 2045 compared to 2010. For the other fuels, the fuel-consumption changes are slightly different than for the conventional case. For example, the diesel and hydrogen power-split HEVs show larger improvements than conventional powertrains, with an 11%–41% fuel-consumption improvement for diesel and 26%–54% for hydrogen (using the same two timeframes). On

the other hand, the ethanol-vehicle fuel consumption decreases by 11%–47% between 2010 and 2045, which is a faster decrease than for the ethanol conventional vehicle (4%–41%). Overall, improvements are greater for HEVs than for conventional vehicles.

Table 24: Comparison of fuel consumption with reference and 2045 technologies for conventional vehicles and HEVs

	Conventional			Power-Split HEV		
	Fuel Cons. (L/100 km)		Improvement	Fuel Cons. (L/100 km)		Improvement
	Ref	2045 low/avg/high		Ref	2045 low/avg/high	
SI	6.85	6.13/5.58/4	10%/18.5%/42%	4.17	3.7/3.16/2.2	11%/24.2%/46%
CI	5.89	5.3/4.65/3.9	10%/21%/33%	3.93	3.5/2.92/2.3	12%/25.7%/40%
H2	7.86	5.8/4.95/4	26%/37%/48%	4.34	3.2/2.6/2	27%/40%/54%
E85	7.07	6.8/6.14/4.2	4%/13.1%/41%	4.49	4/3.39/2.4	11%/24.5%/47%

In Figure 110, the reference is the same-year, same-fuel conventional vehicle (the reference was always the conventional gasoline vehicle in Figure 109). Figure 110 shows how much the transition of hydrogen vehicles from a conventional to a power-split powertrain affects the fuel consumption. On the other hand, it also clearly appears that ethanol power-split vehicles do not have such a significant fuel-consumption improvement compared to the corresponding conventional-powertrain vehicles. The ratio between the two vehicles even increases over time, whereas it remains stable or decreases for the other fuels. Finally, the fuel-consumption ratio for power-split versus conventional vehicles will be lower for diesel than for gasoline starting in 2015.

Figure 110 - Gasoline-equivalent fuel consumption for compact power-split HEVs, compared to same-fuel, same-year conventional compact vehicle.

16.2.2. ENGINE HEV VS. FUEL-CELL HEV

The fuel-consumption ratios for all types of power-split HEVs vs. fuel-cell HEVs (Figure 111) are higher than 1, showing that fuel-cell technology offers consistently lower fuel consumption than power-split HEV technology. However, the ratios vary over time and it is pertinent to study the evolution for each fuel. As previously discussed, hydrogen power-split technology shows the best fuel-consumption improvement compared to fuel-cell technology. In the reference case, this vehicle consumes nearly 22% more fuel than a fuel-cell HEV, but in 2045, this difference is reduced to the 12%–19% range. If we consider only the UDDS fuel consumption instead of the combined-cycle values, we find that the hydrogen power-split vehicle consumes only 2.5% more fuel than a fuel-cell HEV in the 2045 high case.

Ethanol, diesel, and gasoline power-split vehicles show similar trends. The ratios for these fuels increase from the reference case to 2030 before decreasing in 2045. For example, the gasoline-HEV fuel consumption is 26% higher than for the fuel-cell HEV in the reference case, and from 32% to 50% higher by 2045.

In 2045, one could expect power-split hydrogen vehicles with fuel consumption close to that of fuel-cell HEVs on an urban cycle and only around 10% higher on a combined cycle.

Figure 111 - Gasoline-equivalent fuel consumption for compact power-split HEVs compared to same-year, same-case compact fuel-cell HEV.

16.3. EVOLUTION OF HYDROGEN-FUELED VEHICLES

16.3.1. FUEL-CELL HEV VS. GASOLINE ENGINE

In the reference case, the fuel-cell HEVs consume about 48% less fuel than conventional gasoline vehicles, and this difference in fuel consumption increases to the 55%-60% range in 2045 (Figure 112), indicating that the gasoline conventional vehicle will not improve its fuel consumption as fast as the fuel-cell HEV.

Figure 112 - Gasoline-equivalent fuel consumption for compact fuel-cell HEV compared to same-year, same-case compact gasoline conventional vehicle.

Whereas the fuel-consumption ratios between fuel-cell HEVs and hydrogen power-split HEVs increase over time, indicating some real improvements in the hydrogen power-split powertrain, the same conclusion cannot be drawn from the comparison with the gasoline power-split powertrain. Indeed, the evolution pattern will be very similar to the one shown in Figure 111 for gasoline conventional vehicles, with increasing ratio values. The fuel-cell HEV will go from 25% lower fuel consumption in the reference case to 20%-29% lower in 2045 (Figure 113). From 2030 to 2045, the ratio will increase slightly.

Figure 113 - Gasoline-equivalent fuel consumption for compact fuel-cell HEVs compared to same-year, same-case compact gasoline split HEV.

On the other hand, Figure 114 shows that in the reference case, fuel-cell HEVs consume about 15% less fuel than gasoline HEVs. This difference in fuel consumption increases in the next two timeframes to reach 33% to 54% in 2030. In 2045, the trend remains almost constant. In 2045, the fuel-cell vehicle consumes from 45% to 57% less fuel than the gasoline HEV vehicle. This value is still higher than for the reference year, which means that the gasoline HEV vehicle will not improve its fuel consumption as fast as the fuel-cell HEV.

Figure 114 - Gasoline-equivalent fuel consumption for compact fuel-cell HEV compared to the compact gasoline split-HEV reference case.

Figure 115 - Gasoline-equivalent fuel consumption for compact fuel-cell HEV compared to the same-year, same-case compact gasoline split-HEV.

16.3.2. FUEL-CELL HEV VS. HYDROGEN ENGINE

The fuel consumption ratios between fuel-cell vehicles and hydrogen conventional vehicles (Figure 116) remain below 0.5 through 2045, meaning that the fuel-cell vehicle always has less than half the fuel consumption of the hydrogen conventional vehicle. From the reference case to 2045, the fuel-cell vehicle uses approximately 55% as much fuel as the hydrogen vehicle.

Figure 116 - Gasoline-equivalent fuel consumption for compact fuel-cell HEV compared to the same-year, same-case compact hydrogen conventional vehicle.

Figure 117 - Gasoline-equivalent fuel consumption for compact fuel-cell HEV compared to reference-case hydrogen power-split HEV.

The evolution of fuel-consumption ratios for fuel-cell HEVs in comparison to hydrogen power-split HEVs (Figure 118) is different than with the hydrogen conventional vehicle. The ratios increase over time, reflecting the faster improvement made by hydrogen power-split HEVs compared to fuel-cell HEVs. In the reference case, the fuel-cell vehicles consume about 18% less fuel than the hydrogen power-split HEVs, but this advantage decreases to the 11%-17% range in 2045, which confirms the trends described in the previous section.

Figure 118 - Gasoline-equivalent fuel consumption for compact fuel-cell HEVs compared to same-year, same-case compact hydrogen power split HEV.

1.1. All Powertrain Configurations

Weight-specific fuel consumption (WSFC) is used to compare vehicle efficiencies independently of their weight. Figure 119 shows the WSFC of a compact car as a function of vehicle mass.

Figure 119 - WSFC as a function of vehicle mass for compact cars.

Figure 120 shows the WSFC for different vehicle classes with a conventional gasoline configuration. Midsize vehicles in 2030 and 2045 achieve the lowest WSFC, followed by compacts and small SUVs from the same timeframe.

Figure 120 - WSFC as a function of vehicle mass for gasoline conventional vehicles.

Figure 121 shows the WSFC of various fuel-cell vehicles. The introduction of higher-energy batteries leads to a significant improvement. However, going from PHEV30 to PHEV40 provides a much smaller benefit than going from PHEV10 to PHEV20. This observation is consistent with previous studies that have shown a diminishing return on investment for PHEVs with a longer electric range.

Figure 121 - WSFC for fuel-cell compact cars.

17. VEHICLE FUEL CONSUMPTION VS. MANUFACTURING COST RESULTS

All costs are manufacturing costs. The details for all the vehicles are located in Appendix 3.

17.1. EVOLUTION OF SPECIFIC POWERTRAIN CONFIGURATIONS

17.1.1. CONVENTIONAL

Figure 122 shows incremental manufacturing cost for conventional compact vehicles. While the prices of gasoline, diesel, and ethanol vehicles increase from 2010 to 2045, the hydrogen vehicle becomes cheaper over time. The increase for the first three types is due to several factors, including lightweighting (the decrease in vehicle body mass by up to 37% by 2045 entails cost increases, owing to the use of aluminum or carbon fiber) and advanced component technologies such as direct injection. For the hydrogen engine, the increase due to lightweighting is compensated by larger cost reductions due to the hydrogen storage system. The cost of such a system for the reference vehicle is very significant. For example, the cost of a 4-kg hydrogen storage system is currently about \$3600. However, the technology improvements that are expected for hydrogen storage systems will significantly decrease their costs. Overall, even if the ICE cost as well as the body cost increases over time, the hydrogen-vehicle manufacturing cost will decrease because the hydrogen storage cost decrease will be more aggressive.

Figure 122 - WSFC as a function of vehicle mass for gasoline conventional vehicles.

Figure 123 shows the manufacturing cost of conventional compact diesel, hydrogen and ethanol vehicles compared to same-year conventional compact gasoline vehicles. The gasoline and ethanol vehicles have similar manufacturing costs for all the timeframes. Their manufacturing costs increase by 8% between the 2010 and 2045

timeframes, whereas the diesel-vehicle manufacturing cost increases by only 4%. However, the diesel vehicle remains between 10 and 13% more expensive than the ethanol and gasoline vehicles.

Finally, the hydrogen-vehicle manufacturing cost decreases by 10% from the reference case to 2045. In the reference case, this vehicle is about 18%-19% more expensive than the gasoline vehicle, but this difference is reduced with time until the trend is reversed, with the hydrogen vehicle 2% cheaper in 2045.

Figure 123 - Manufacturing Costs of diesel, hydrogen, and ethanol conventional compact cars compared to same-year gasoline conventional compact car.

17.1.2. ENGINE HEVS

Figure 124 shows the vehicle incremental manufacturing costs for the power-split HEVs. The gasoline power-split HEV is always the cheapest vehicle among all the HEVs except in the 2045 high case, where the hydrogen vehicle is cheaper. Figure 125 shows that overall, the diesel HEV is between 10 and 14% more expensive than the gasoline HEV, but this difference tends to decrease after 2010. From 2010 on, the ethanol-vehicle ratio decreases, reaching almost 1 in 2045. The same observation can be made for hydrogen vehicles, for which the average and high cases continuously decrease over time.

Figure 124 - Incremental manufacturing Costs of compact HEVs.

Figure 125 - Manufacturing Costs of compact HEVs compared with same-year conventional gasoline-powered vehicles.

17.1.3. ENGINE PHEVS

Figure 126 - Manufacturing Costs of compact PHEVs.

shows the incremental manufacturing cost evolution of PHEVs with different fuels. The overall trend is the same for all fuels; only the actual costs vary. PHEV40 costs show a sharp decrease over time, whereas PHEV10s show a very slight decrease over time. This observation can be explained by improvements in batteries over time.

Figure 126 - Manufacturing Costs of compact PHEVs.

Figure 127 shows the manufacturing cost of PHEVs compared to gasoline HEVs. Again, the PHEVs become more cost-competitive over time owing to improvements in batteries.

Figure 127 - Manufacturing Costs of compact PHEVs compared with same-year gasoline-powered HEV.

17.1.4. FUEL-CELL VEHICLES

Fuel-cell vehicle incremental manufacturing costs (Figure 128) show a pattern similar to that of previously described gasoline-vehicle incremental manufacturing cost. Indeed, as time goes on, the different vehicles' manufacturing costs become closer and closer to each other. In 2010, a fuel-cell PHEV40 is approximately 39% more expensive than a fuel-cell HEV, whereas it is only 20% more expensive in 2045. From 2010 to 2045, manufacturing cost reductions for fuel-cell vehicles are as follows: HEV, 40%-44%; PHEV10, 39%-44%; PHEV20, 42%-47%; PHEV30, 44%-50%; and PHEV40, 47%-53%. This finding confirms the pattern observed for power-split PHEVs, where the manufacturing cost reduction between the reference case and 2045 increases as the AER increases. Finally, it is interesting to note that in 2045, the fuel-cell vehicle manufacturing costs are under \$20,000 for all the average and high cases.

Figure 128 - Manufacturing Costs of compact fuel-cell vehicles.

17.1.5. ELECTRIC VEHICLES

As shown in Figure 129, improvements in battery costs and lightweighting affect EV costs, which are expected to decrease by a factor greater than 2.

Figure 129 - Manufacturing Costs for compact EVs.

17.2. POWERTRAIN COMPARISON

Figure 130 shows the manufacturing costs for all the gasoline-powertrain vehicles (conventional, power-split HEV and power-split PHEVs). The manufacturing costs tend to get closer to each other as time goes on. For example, in 2010, the power-split HEV is 23% more expensive than the conventional vehicle and the PHEV40 is 124% more expensive than the conventional vehicle. However, in the 2045, the situation has dramatically changed; only a 5% to 7% difference in manufacturing cost is observed for the power-split HEV, and 26% to 40% for the power-split PHEV40.

Whereas the conventional-vehicle manufacturing cost increases slightly over time, the opposite pattern is observed for power-split vehicles. The higher the AER, the greater the manufacturing cost reduction over time: the difference between the reference case and 2045 is 11%–15% for the PHEV10, 16%–21% for the PHEV20, 28%-35% for the PHEV30, and 32%-39% for the PHEV40.

Figure 130 - Manufacturing Costs of compact gasoline-powered vehicles.

Figure 131 shows the relative manufacturing costs of hydrogen-engine vehicles and conventional gasoline vehicles. While hydrogen engines will remain more expensive, the technology will become more cost-competitive over time. The main reason is the development of a cheaper fuel-cell system and less costly hydrogen storage. Note that in 2045, a conventional hydrogen vehicle will be slightly cheaper than a conventional gasoline vehicle.

Figure 131 - Manufacturing costs of compact H2 ICE vehicles compared with same-year conventional gasoline vehicles.

Figure 132 shows the manufacturing cost ratio between fuel-cell and conventional gasoline vehicles. The trend is similar to that for the hydrogen engine in the sense that the manufacturing cost ratio will decrease in the future. However, this decrease is more pronounced for the fuel-cell HEV because in addition to a significant manufacturing cost reduction for the hydrogen tanks, the vehicle also benefits from manufacturing cost reductions related to the fuel-cell system.

Figure 132 - Manufacturing Cost of compact fuel-cell HEV compared with same-year conventional gasoline vehicle.

18. TRADE-OFF BETWEEN VEHICLE FUEL CONSUMPTION AND MANUFACTURING COST

All costs are manufacturing costs.

18.1. CONVENTIONAL VEHICLES

It can be seen from Figure 133 that diesel vehicles remain more expensive relative to other conventional vehicles over time, with no advantage in fuel consumption, whereas hydrogen vehicles improve significantly, becoming similar to the conventional gasoline vehicle in cost and fuel consumption at some point.

Figure 133 - Incremental manufacturing cost (in comparison to the reference conventional gasoline vehicle manufacturing cost) as a function of fuel consumption for compact conventional vehicles.

18.2. HEVS

Figure 134 shows similar trends for HEVs independently of ICE technology. The overall trend is decreasing, which means lower fuel consumption and lower cost. Gasoline and ethanol HEVs offer the best trade-offs over time, with the hydrogen HEV becoming competitive in the 2045 timeframe.

Figure 134 - Incremental manufacturing cost (in comparison to the reference conventional gasoline vehicle manufacturing cost) as a function of fuel consumption for compact HEVs.

18.3. PHEVS

Figures 135 and 136 show, respectively, that PHEV10 and PHEV40 vehicles offer less future benefit than HEVs and conventional vehicles, although the overall trend is promising.

Figure 135 - Incremental manufacturing cost (in comparison to the reference conventional gasoline vehicle manufacturing cost) as a function of fuel consumption for PHEV10 vehicles.

Figure 136 - Incremental manufacturing cost (in comparison to the reference conventional gasoline vehicle manufacturing cost) as a function of fuel consumption for PHEV40 vehicles.

18.4. FUEL-CELL AND OTHER HYDROGEN-FUELED VEHICLES

Figure 137 shows the tradeoffs of incremental manufacturing cost vs. fuel consumption for fuel-cell HEVs and PHEVs compared to the reference conventional gasoline vehicles. For the HEV in 2045, at 0.76 gal/100 miles, the additional manufacturing cost is higher (ranging from \$12,230 to \$740) with the lowest fuel efficiency. For the PHEVs, we find a diminishing return on investment, since little fuel-efficiency gain is achieved for the higher AER despite a higher manufacturing cost. Overall, all configurations are trending towards good fuel efficiency at a low manufacturing cost.

Figure 137 - Incremental manufacturing cost (in comparison to the reference conventional gasoline vehicle manufacturing cost) as a function of fuel consumption for fuel-cell vehicles.

Figure 138 shows the trade-off between fuel efficiency and manufacturing cost for all the hydrogen-fueled vehicles, including hydrogen engines. The figure shows how the same fuel efficiency can be achieved with different technologies at different manufacturing costs.

Figure 138 - Incremental manufacturing cost (in comparison to the reference conventional gasoline vehicle manufacturing cost) as a function of fuel consumption for hydrogen-fueled vehicles.

18.5. ALL POWERTRAINS

Figure 139 shows the trade-offs between fuel consumption and increased manufacturing costs for all powertrains and fuels compared to the conventional gasoline reference. Overall, the vehicles on the bottom right would provide the best fuel consumption for the least additional cost. All years, all cases, and all fuels are presented.

Figure 139 - Incremental manufacturing cost (in comparison to the gasoline conventional reference vehicle) as a function of fuel consumption for all powertrains.

Figure 140 shows a comparison of all the powertrains, considering gasoline fuel only. The main conclusion from Figure 140 is that conventional vehicles are more likely to improve in fuel efficiency than in cost, whereas the higher the electrification level, the more the improvement focuses on cost. For example, the incremental manufacturing cost for the PHEV40 decreases from \$17,150 to \$4991 between 2010 and 2045, whereas the incremental manufacturing cost for the conventional gasoline vehicle increases from \$0 to \$2000 over the same period.

Figure 140 - Incremental manufacturing cost (in comparison to the reference conventional gasoline vehicle manufacturing cost) as a function of fuel consumption for gasoline vehicles.

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20.APPENDIX

Appendix A

Vehicle Sizing Tables

Compact Class

Argonne National Laboratory Report – Light-Duty Vehicle Fuel Consumption Displacement Potential Up to 2045

Power

		Compact												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Conv	ICE Power	128822	128822	123340	116488	126081	115117	112376	119229	113747	108539	123340	114569	109636
	Electric Machine													
	MC2/GC													
	Battery													
	Specific Power	94	94	92	90	92	88	91	87	92	99	90	93	104
CI Conv	ICE Power	110000	110000	105111	99190	106333	101444	93337	105111	95605	87593	106333	95700	84415
	Electric Machine													
	MC2/GC													
	Battery													
	Specific Power	77	77	75	73	74	74	72	73	73	75	74	74	75
H2 Conv	ICE Power	117693	117693	109320	104533	113970	106400	99224	113867	102086	87733	112933	99867	85867
	Electric Machine													
	MC2/GC													
	Battery													
	Specific Power	84	84	83	83	82	83	83	83	84	84	84	84	85
E85 Conv	ICE Power	119861	119861	114943	108611	117583	109792	102708	114514	106250	97986	116088	106250	96806
	Electric Machine													
	MC2/GC													
	Battery													
	Specific Power	87	87	86	84	86	84	84	84	86	90	85	87	92
SI Split HEV	ICE Power	79802	79802	75794	71856	79900	73098	65899	76360	68050	57516	75994	65931	55016
	Electric Machine	56951	56951	54615	52409	56626	53772	49826	56222	50784	44119	56041	49790	41898
	MC2/GC	46182	46182	43862	41583	46238	42302	38136	44190	39381	33285	43978	38155	31838
	Battery	25337	25337	24140	23142	24938	23902	22195	25040	22195	19349	25040	22195	18211
	Specific Power	71	71	71	70	72	70	69	70	69	68	70	69	68
SI Split HEV PHEV10	ICE Power	57997	57997	55370	52945	57277	53972	49813	56552	50875	44494	55726	49780	42090
	Electric Machine	63292	63292	60305	57875	62273	58776	53887	61589	54753	47108	61439	53705	45403
	MC2/GC	34809	34809	33232	31743	34376	32393	29897	33941	30534	26704	33446	29877	25262
	Battery	58701	58701	55512	52893	57727	53768	50015	56363	50796	44335	56380	51045	42948
	Specific Power	78	78	78	77	78	78	78	78	78	79	78	79	79

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		Compact													
		2010	2010				2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high	
SI Split HEV PHEV20	ICE Power	58733	58733	56167	53569	58075	54708	50317	57288	51435	44825	56457	50197	42393	
	Electric Machine	64445	64445	61979	58809	63419	59741	54557	62567	55551	47480	62419	54381	45870	
	MC2/GC	35250	35250	33693	32134	34839	32784	30182	34366	30853	26886	33851	30127	25443	
	Battery	59622	59622	56972	53592	58634	54431	49782	57088	50742	43563	57104	50709	42325	
	Specific Power	78	78	78	77	78	77	77	77	77	78	77	78	78	
SI Series HEV PHEV30	ICE Power	72284	72284	67720	63385	70932	65001	57014	68099	58534	49118	66605	56747	46372	
	Electric Machine	120498	120498	114516	109163	118131	111488	101504	116153	103842	90913	114126	101144	86514	
	MC2/GC	70115	70115	65688	61483	68804	63051	55304	66056	56778	47644	64607	55045	44981	
	Battery	148515	148515	140406	133119	145629	135998	122320	141722	125178	108161	139274	121967	102942	
	Specific Power	70	70	70	71	70	71	71	71	71	74	70	71	74	
SI Series HEV PHEV40	ICE Power	74773	74773	69982	65406	73408	67111	58502	70238	60079	50168	68670	58141	47312	
	Electric Machine	124494	124494	118047	112252	122011	114801	103930	119694	106393	92616	117528	103426	88160	
	MC2/GC	72530	72530	67883	63444	71206	65098	56747	68131	58277	48663	66610	56397	45893	
	Battery	153385	153385	144658	136829	150357	139981	125146	145983	128153	110100	143360	124619	104814	
	Specific Power	71	71	71	71	71	71	72	71	72	74	71	72	74	
CI Split HEV	ICE Power	72137	72137	68684	65339	69961	66296	60588	69177	61059	52534	68940	59193	50429	
	Electric Machine	62795	62795	60389	58151	60869	59298	55518	61887	55778	49213	61712	54688	47086	
	MC2/GC	60371	60371	57481	54682	58550	55483	50706	57894	51100	43965	57695	49538	42204	
	Battery	27132	27132	25935	24938	26334	25610	23902	26748	23902	21057	26748	23902	19919	
	Specific Power	63	63	62	62	62	62	61	62	61	60	62	60	60	
CI Split HEV PHEV10	ICE Power	61028	61028	58385	55891	60329	57002	52639	59582	53729	47225	58651	52646	44793	
	Electric Machine	64027	64027	61693	59699	63509	60219	55128	62800	55957	48924	62657	55026	46802	
	MC2/GC	51074	51074	48862	46775	50489	47705	44053	49864	44965	39522	49085	44059	37487	
	Battery	66875	66875	64095	61706	66366	62231	57496	64907	58341	51671	64838	58676	49470	
	Specific Power	80	80	80	80	81	80	80	80	80	81	80	80	80	
CI Split HEV PHEV20	ICE Power	61878	61878	59296	56599	61185	57796	53199	60376	54317	47611	59382	53119	45179	
	Electric Machine	65162	65162	63189	60604	64608	61431	55890	64227	56720	49488	63523	56229	47626	
	MC2/GC	51785	51785	49624	47367	51205	48369	44522	50528	45457	39845	49696	44455	37810	
	Battery	67881	67881	65485	62465	67333	63313	57654	66219	58521	51389	65553	59071	49540	
	Specific Power	80	80	80	80	80	80	79	80	79	80	79	80	80	

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		Compact													
		2010	2010				2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high	
CI Series HEV PHEV30	ICE Power	75288	75288	70675	66387	73958	68033	59847	71011	61395	51853	69526	59592	49108	
	Electric Machine	125310	125310	119258	113835	122930	116309	106146	120902	108549	95385	118831	105874	91164	
	MC2/GC	73029	73029	68555	64395	71739	65992	58052	68881	59553	50297	67440	57804	47635	
	Battery	154426	154426	146185	138808	151523	141853	127898	147494	130831	113461	144979	127648	108456	
	Specific Power	69	69	69	69	69	70	70	69	70	72	69	70	72	
CI Series HEV PHEV40	ICE Power	77838	77838	72998	68467	76495	70202	61420	73270	62911	52958	71592	60986	50020	
	Electric Machine	129327	129327	122975	117217	126925	119842	108719	124604	111016	97135	122241	108070	92621	
	MC2/GC	75503	75503	70808	66413	74200	68096	59577	71072	61024	51369	69444	59156	48519	
	Battery	159320	159320	150683	142861	156384	146103	130894	151954	133703	115450	149078	130192	110099	
	Specific Power	70	70	70	70	70	70	70	70	70	72	70	70	72	
H2 Split HEV	ICE Power	82423	82423	76998	72255	81013	73517	65314	78853	67086	56140	77140	65347	54606	
	Electric Machine	59410	59410	55747	52848	58060	54332	49439	57723	50754	43345	56382	49404	42050	
	MC2/GC	51953	51953	48534	45544	51064	46340	41169	49703	42286	35386	48623	41190	34420	
	Battery	26334	26334	24339	22943	25536	23902	21626	25040	22195	18780	24471	21626	18211	
	Specific Power	71	71	71	70	71	71	69	70	69	69	71	69	69	
H2 Split HEV PHEV10	ICE Power	59583	59583	55825	52804	58560	53887	49310	57430	50623	43584	55473	49335	41455	
	Electric Machine	67293	67293	63023	59750	65542	60065	54452	64332	55708	47014	62816	54907	45815	
	MC2/GC	41122	41122	38528	36443	40396	37191	33993	39636	34919	30080	38285	34049	28611	
	Battery	65808	65808	61157	57593	63933	57641	52143	61845	53297	45225	60612	54108	44589	
	Specific Power	81	81	81	81	81	81	80	80	80	81	81	82	82	
H2 Split HEV PHEV20	ICE Power	60405	60405	56565	53455	59359	54623	49757	58251	51099	43915	56232	49752	41731	
	Electric Machine	68479	68479	64124	60720	67360	61772	55187	66174	56446	47570	63911	55091	45835	
	MC2/GC	41669	41669	39020	36873	40947	37699	34321	40203	35267	30308	38809	34337	28801	
	Battery	66829	66829	62096	58389	65773	59369	52184	63687	53330	44932	61521	53137	43510	
	Specific Power	81	81	81	81	81	81	80	81	80	81	81	80	80	
H2 Series HEV PHEV30	ICE Power	73832	73832	67931	63058	72033	64674	56270	68753	58048	48068	66103	56036	45599	
	Electric Machine	123005	123005	114750	108599	119832	110974	100256	117271	103034	89095	113337	99946	85227	
	MC2/GC	71617	71617	65893	61166	69872	62734	54582	66690	56307	46626	64120	54355	44231	
	Battery	151593	151593	140681	132438	147715	135371	120822	143081	124211	106007	138311	120528	101420	
	Specific Power	70	70	70	71	70	71	72	70	72	75	71	72	74	

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		Compact												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
H2 Series HEV PHEV40	ICE Power	76411	76411	70163	64960	74508	66755	57701	70981	59564	49035	68080	57344	46483
	Electric Machine	127035	127035	118386	111645	123702	114241	102649	120949	105545	90820	116561	102145	86798
	MC2/GC	74119	74119	68058	63011	72273	64752	55970	68852	57777	47564	66038	55624	45089
	Battery	156496	156496	145080	136096	152421	139302	123610	147510	127139	107974	142174	123079	103205
	Specific Power	70	70	71	71	71	71	72	71	72	75	71	72	75
E85 Split HEV	ICE Power	79843	79843	76482	73492	79025	74801	65973	77203	68228	58217	76033	66004	54552
	Electric Machine	56975	56975	54918	53131	56250	54517	49830	56593	50854	44429	56037	49795	42161
	MC2/GC	46205	46205	44260	42530	45732	43288	38179	44678	39484	33690	44001	38197	31569
	Battery	25337	25337	24140	23142	24938	23902	22195	25040	22195	19349	25040	22195	18780
	Specific Power	71	71	71	71	71	71	69	70	69	69	70	68	68
E85 Split HEV PHEV10	ICE Power	58025	58025	55427	52974	57305	54028	49869	56580	50903	44522	55754	49836	42117
	Electric Machine	63361	63361	60322	57943	62342	58834	53991	61698	54818	47168	61507	53811	45463
	MC2/GC	34825	34825	33249	31760	34393	32426	29930	33958	30551	26721	33462	29910	25278
	Battery	58738	58738	55427	52930	57763	53731	50092	56443	50813	44394	56416	51146	43007
	Specific Power	78	78	78	77	78	78	78	78	78	79	78	79	79
E85 Split HEV PHEV20	ICE Power	58762	58762	56195	53597	58104	54765	50373	57316	51463	44853	56485	50253	42421
	Electric Machine	64515	64515	62049	58876	63488	59849	54662	62583	55616	47541	62530	54484	45930
	MC2/GC	35268	35268	33710	32151	34855	32818	30216	34383	30870	26903	33867	30161	25460
	Battery	59657	59657	57009	53627	58669	54506	49855	57024	50785	43610	57187	50792	42363
	Specific Power	78	78	78	77	78	77	77	77	77	78	77	78	78
E85 Series HEV PHEV30	ICE Power	72314	72314	67750	63445	70963	65061	57071	68128	58591	49145	66634	56804	46400
	Electric Machine	120546	120546	114563	109210	118180	111582	101599	116202	103937	90959	114173	101239	86608
	MC2/GC	70145	70145	65718	61542	68834	63109	55359	66084	56833	47671	64635	55100	45008
	Battery	148574	148574	140463	133176	145689	136111	122435	141781	125293	108216	139330	122082	103058
	Specific Power	70	70	70	71	70	71	71	71	71	74	70	71	74
E85 Series HEV PHEV40	ICE Power	74833	74833	70012	65436	73439	67171	58559	70268	60107	50195	68700	58198	47340
	Electric Machine	124542	124542	118095	112299	122060	114947	104072	119742	106440	92662	117576	103521	88207
	MC2/GC	72588	72588	67912	63473	71236	65156	56802	68160	58304	48689	66639	56452	45920
	Battery	153439	153439	144718	136885	150416	140156	125320	146042	128209	110154	143419	124732	104870
	Specific Power	71	71	71	71	71	71	72	71	72	74	71	72	74

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		Compact												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
FC HEV	FC Power	90737	90737	76778	68351	81791	66505	56049	71241	57491	46520	67215	55527	44024
	Electric Machine	108983	108983	93920	85434	98726	85857	75846	91712	77652	65238	87051	75327	62409
	MC2/GC													
	Battery	32718	32718	28728	26933	29726	30162	27886	31870	28455	25040	30731	27317	23902
	Specific Power	60	60	61	61	61	60	60	60	60	61	60	60	61
FC HEV PHEV10	FC Power	66597	66597	57939	51900	60984	53186	46387	57673	47543	40501	54349	48015	39076
	Electric Machine	107116	107116	92713	84509	97033	86212	76684	92786	78389	65873	88194	77712	63947
	MC2/GC													
	Battery	56383	56383	48985	44275	51772	45089	39507	48399	40413	33267	45990	39293	31845
	Specific Power	62	62	61	61	61	62	61	62	61	62	62	63	63
FC HEV PHEV20	FC Power	67394	67394	58629	53071	62370	53794	47413	58302	48057	40466	54935	48404	38803
	Electric Machine	108076	108076	94103	86258	99135	87518	78083	94108	79379	66257	89398	78490	63385
	MC2/GC													
	Battery	57521	57521	49987	45153	52950	45983	40135	49383	41027	33674	46833	39815	32175
	Specific Power	61	61	61	61	61	61	61	61	61	62	61	62	62
FC HEV PHEV30	FC Power	61314	61314	54816	50702	57681	51674	46354	55218	47689	40400	52465	45895	38143
	Electric Machine	122524	122524	112180	105338	116668	107067	97135	112769	99334	86675	108667	96129	82211
	MC2/GC													
	Battery	150942	150942	137482	128412	143769	130564	117121	137561	119809	103138	132572	115998	97841
	Specific Power	66	66	69	70	68	70	72	69	72	76	70	73	76
FC HEV PHEV40	FC Power	62526	62526	55805	51561	58851	52532	46956	56152	48290	40821	53292	46444	38539
	Electric Machine	125742	125742	114842	107799	119833	109566	99292	115380	101696	88436	110962	98025	83828
	MC2/GC													
	Battery	154838	154838	140700	131357	147609	133567	119610	140694	122544	105150	135321	118172	99685
	Specific Power	66	66	69	70	68	71	73	69	73	77	70	73	76
BEV	ICE Power													
	Electric Machine	144236	144236	136072	127921	142191	131804	113585	138418	116359	97847	134086	110853	91756
	MC2/GC	0	0	0	0	0	0	0	0	0	0	0	0	0
	Battery	177718	177718	166472	155682	175117	160594	136861	168528	140228	116760	163264	133632	109512
	Specific Power	94	94	93	93	94	93	93	93	93	95	92	92	95

Percentage of power reduction based on the respective 2010 reference case

		compact												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Conv	ICE Power	0%	0%	-4%	-10%	-2%	-11%	-13%	-7%	-12%	-16%	-4%	-11%	-15%
	Electric Machine													
	MC2/GC													
	Battery													
	Specific Power	0%	0%	-1%	-4%	-2%	-6%	-2%	-7%	-2%	6%	-4%	-1%	11%
CI Conv	ICE Power	0%	0%	-4%	-10%	-3%	-8%	-15%	-4%	-13%	-20%	-3%	-13%	-23%
	Electric Machine													
	MC2/GC													
	Battery													
	Specific Power	0%	0%	-2%	-5%	-3%	-3%	-6%	-4%	-4%	-2%	-3%	-3%	-1%
H2 Conv	ICE Power	0%	0%	-7%	-11%	-3%	-10%	-16%	-3%	-13%	-25%	-4%	-15%	-27%
	Electric Machine													
	MC2/GC													
	Battery													
	Specific Power	0%	0%	-2%	-2%	-2%	-1%	-1%	-1%	0%	0%	1%	0%	1%
E85 Conv	ICE Power	0%	0%	-4%	-9%	-2%	-8%	-14%	-4%	-11%	-18%	-3%	-11%	-19%
	Electric Machine													
	MC2/GC													
	Battery													
	Specific Power	0%	0%	-1%	-4%	-2%	-4%	-4%	-4%	-2%	3%	-3%	-1%	5%
SI Split HEV	ICE Power	0%	0%	-5%	-10%	0%	-8%	-17%	-4%	-15%	-28%	-5%	-17%	-31%
	Electric Machine	0%	0%	-4%	-8%	-1%	-6%	-13%	-1%	-11%	-23%	-2%	-13%	-26%
	MC2/GC	0%	0%	-5%	-10%	0%	-8%	-17%	-4%	-15%	-28%	-5%	-17%	-31%
	Battery	0%	0%	-5%	-9%	-2%	-6%	-12%	-1%	-12%	-24%	-1%	-12%	-28%
	Specific Power	0%	0%	-1%	-2%	1%	-2%	-4%	-2%	-3%	-4%	-2%	-4%	-5%
SI Split HEV PHEV10	ICE Power	0%	0%	-5%	-9%	-1%	-7%	-14%	-2%	-12%	-23%	-4%	-14%	-27%
	Electric Machine	0%	0%	-5%	-9%	-2%	-7%	-15%	-3%	-13%	-26%	-3%	-15%	-28%
	MC2/GC	0%	0%	-5%	-9%	-1%	-7%	-14%	-2%	-12%	-23%	-4%	-14%	-27%
	Battery	0%	0%	-5%	-10%	-2%	-8%	-15%	-4%	-13%	-24%	-4%	-13%	-27%
	Specific Power	0%	0%	-1%	-1%	0%	-1%	-1%	-1%	-1%	1%	-1%	0%	1%

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		compact												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Split HEV PHEV20	ICE Power	0%	0%	-4%	-9%	-1%	-7%	-14%	-2%	-12%	-24%	-4%	-15%	-28%
	Electric Machine	0%	0%	-4%	-9%	-2%	-7%	-15%	-3%	-14%	-26%	-3%	-16%	-29%
	MC2/GC	0%	0%	-4%	-9%	-1%	-7%	-14%	-3%	-12%	-24%	-4%	-15%	-28%
	Battery	0%	0%	-4%	-10%	-2%	-9%	-17%	-4%	-15%	-27%	-4%	-15%	-29%
	Specific Power	0%	0%	0%	-1%	0%	-1%	-2%	-1%	-1%	0%	-1%	-1%	0%
SI Series HEV PHEV30	ICE Power	0%	0%	-6%	-12%	-2%	-10%	-21%	-6%	-19%	-32%	-8%	-21%	-36%
	Electric Machine	0%	0%	-5%	-9%	-2%	-7%	-16%	-4%	-14%	-25%	-5%	-16%	-28%
	MC2/GC	0%	0%	-6%	-12%	-2%	-10%	-21%	-6%	-19%	-32%	-8%	-21%	-36%
	Battery	0%	0%	-5%	-10%	-2%	-8%	-18%	-5%	-16%	-27%	-6%	-18%	-31%
	Specific Power	0%	0%	0%	1%	0%	1%	2%	1%	2%	5%	0%	1%	5%
SI Series HEV PHEV40	ICE Power	0%	0%	-6%	-13%	-2%	-10%	-22%	-6%	-20%	-33%	-8%	-22%	-37%
	Electric Machine	0%	0%	-5%	-10%	-2%	-8%	-17%	-4%	-15%	-26%	-6%	-17%	-29%
	MC2/GC	0%	0%	-6%	-13%	-2%	-10%	-22%	-6%	-20%	-33%	-8%	-22%	-37%
	Battery	0%	0%	-6%	-11%	-2%	-9%	-18%	-5%	-16%	-28%	-7%	-19%	-32%
	Specific Power	0%	0%	0%	1%	0%	1%	1%	1%	1%	5%	0%	1%	4%
CI Split HEV	ICE Power	0%	0%	-5%	-9%	-3%	-8%	-16%	-4%	-15%	-27%	-4%	-18%	-30%
	Electric Machine	0%	0%	-4%	-7%	-3%	-6%	-12%	-1%	-11%	-22%	-2%	-13%	-25%
	MC2/GC	0%	0%	-5%	-9%	-3%	-8%	-16%	-4%	-15%	-27%	-4%	-18%	-30%
	Battery	0%	0%	-4%	-8%	-3%	-6%	-12%	-1%	-12%	-22%	-1%	-12%	-27%
	Specific Power	0%	0%	-1%	-1%	-1%	-2%	-3%	-2%	-4%	-4%	-1%	-4%	-5%
CI Split HEV PHEV10	ICE Power	0%	0%	-4%	-8%	-1%	-7%	-14%	-2%	-12%	-23%	-4%	-14%	-27%
	Electric Machine	0%	0%	-4%	-7%	-1%	-6%	-14%	-2%	-13%	-24%	-2%	-14%	-27%
	MC2/GC	0%	0%	-4%	-8%	-1%	-7%	-14%	-2%	-12%	-23%	-4%	-14%	-27%
	Battery	0%	0%	-4%	-8%	-1%	-7%	-14%	-3%	-13%	-23%	-3%	-12%	-26%
	Specific Power	0%	0%	0%	-1%	0%	-1%	-1%	0%	-1%	1%	-1%	0%	0%
CI Split HEV PHEV20	ICE Power	0%	0%	-4%	-9%	-1%	-7%	-14%	-2%	-12%	-23%	-4%	-14%	-27%
	Electric Machine	0%	0%	-3%	-7%	-1%	-6%	-14%	-1%	-13%	-24%	-3%	-14%	-27%
	MC2/GC	0%	0%	-4%	-9%	-1%	-7%	-14%	-2%	-12%	-23%	-4%	-14%	-27%
	Battery	0%	0%	-4%	-8%	-1%	-7%	-15%	-2%	-14%	-24%	-3%	-13%	-27%
	Specific Power	0%	0%	0%	-1%	0%	0%	-1%	0%	-1%	0%	-1%	0%	0%

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		compact												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
CI Series HEV PHEV30	ICE Power	0%	0%	-6%	-12%	-2%	-10%	-21%	-6%	-18%	-31%	-8%	-21%	-35%
	Electric Machine	0%	0%	-5%	-9%	-2%	-7%	-15%	-4%	-13%	-24%	-5%	-16%	-27%
	MC2/GC	0%	0%	-6%	-12%	-2%	-10%	-21%	-6%	-18%	-31%	-8%	-21%	-35%
	Battery	0%	0%	-5%	-10%	-2%	-8%	-17%	-4%	-15%	-27%	-6%	-17%	-30%
	Specific Power	0%	0%	0%	0%	0%	1%	1%	0%	1%	4%	0%	1%	4%
CI Series HEV PHEV40	ICE Power	0%	0%	-6%	-12%	-2%	-10%	-21%	-6%	-19%	-32%	-8%	-22%	-36%
	Electric Machine	0%	0%	-5%	-9%	-2%	-7%	-16%	-4%	-14%	-25%	-5%	-16%	-28%
	MC2/GC	0%	0%	-6%	-12%	-2%	-10%	-21%	-6%	-19%	-32%	-8%	-22%	-36%
	Battery	0%	0%	-5%	-10%	-2%	-8%	-18%	-5%	-16%	-28%	-6%	-18%	-31%
	Specific Power	0%	0%	0%	0%	0%	1%	1%	1%	1%	4%	0%	1%	3%
H2 Split HEV	ICE Power	0%	0%	-7%	-12%	-2%	-11%	-21%	-4%	-19%	-32%	-6%	-21%	-34%
	Electric Machine	0%	0%	-6%	-11%	-2%	-9%	-17%	-3%	-15%	-27%	-5%	-17%	-29%
	MC2/GC	0%	0%	-7%	-12%	-2%	-11%	-21%	-4%	-19%	-32%	-6%	-21%	-34%
	Battery	0%	0%	-8%	-13%	-3%	-9%	-18%	-5%	-16%	-29%	-7%	-18%	-31%
	Specific Power	0%	0%	0%	-1%	0%	-1%	-3%	-1%	-3%	-3%	0%	-3%	-3%
H2 Split HEV PHEV10	ICE Power	0%	0%	-6%	-11%	-2%	-10%	-17%	-4%	-15%	-27%	-7%	-17%	-30%
	Electric Machine	0%	0%	-6%	-11%	-3%	-11%	-19%	-4%	-17%	-30%	-7%	-18%	-32%
	MC2/GC	0%	0%	-6%	-11%	-2%	-10%	-17%	-4%	-15%	-27%	-7%	-17%	-30%
	Battery	0%	0%	-7%	-12%	-3%	-12%	-21%	-6%	-19%	-31%	-8%	-18%	-32%
	Specific Power	0%	0%	0%	0%	0%	-1%	-1%	-1%	-1%	0%	0%	0%	0%
H2 Split HEV PHEV20	ICE Power	0%	0%	-6%	-12%	-2%	-10%	-18%	-4%	-15%	-27%	-7%	-18%	-31%
	Electric Machine	0%	0%	-6%	-11%	-2%	-10%	-19%	-3%	-18%	-31%	-7%	-20%	-33%
	MC2/GC	0%	0%	-6%	-12%	-2%	-10%	-18%	-4%	-15%	-27%	-7%	-18%	-31%
	Battery	0%	0%	-7%	-13%	-2%	-11%	-22%	-5%	-20%	-33%	-8%	-20%	-35%
	Specific Power	0%	0%	0%	0%	0%	0%	-2%	0%	-2%	-1%	0%	-1%	-1%
H2 Series HEV PHEV30	ICE Power	0%	0%	-8%	-15%	-2%	-12%	-24%	-7%	-21%	-35%	-10%	-24%	-38%
	Electric Machine	0%	0%	-7%	-12%	-3%	-10%	-18%	-5%	-16%	-28%	-8%	-19%	-31%
	MC2/GC	0%	0%	-8%	-15%	-2%	-12%	-24%	-7%	-21%	-35%	-10%	-24%	-38%
	Battery	0%	0%	-7%	-13%	-3%	-11%	-20%	-6%	-18%	-30%	-9%	-20%	-33%
	Specific Power	0%	0%	1%	2%	1%	2%	3%	1%	3%	7%	1%	3%	7%

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		compact												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
H2 Series HEV PHEV40	ICE Power	0%	0%	-8%	-15%	-2%	-13%	-24%	-7%	-22%	-36%	-11%	-25%	-39%
	Electric Machine	0%	0%	-7%	-12%	-3%	-10%	-19%	-5%	-17%	-29%	-8%	-20%	-32%
	MC2/GC	0%	0%	-8%	-15%	-2%	-13%	-24%	-7%	-22%	-36%	-11%	-25%	-39%
	Battery	0%	0%	-7%	-13%	-3%	-11%	-21%	-6%	-19%	-31%	-9%	-21%	-34%
	Specific Power	0%	0%	1%	2%	1%	2%	3%	1%	3%	7%	1%	3%	6%
E85 Split HEV	ICE Power	0%	0%	-4%	-8%	-1%	-6%	-17%	-3%	-15%	-27%	-5%	-17%	-32%
	Electric Machine	0%	0%	-4%	-7%	-1%	-4%	-13%	-1%	-11%	-22%	-2%	-13%	-26%
	MC2/GC	0%	0%	-4%	-8%	-1%	-6%	-17%	-3%	-15%	-27%	-5%	-17%	-32%
	Battery	0%	0%	-5%	-9%	-2%	-6%	-12%	-1%	-12%	-24%	-1%	-12%	-26%
	Specific Power	0%	0%	0%	0%	0%	0%	-4%	-1%	-3%	-3%	-2%	-4%	-5%
E85 Split HEV PHEV10	ICE Power	0%	0%	-4%	-9%	-1%	-7%	-14%	-2%	-12%	-23%	-4%	-14%	-27%
	Electric Machine	0%	0%	-5%	-9%	-2%	-7%	-15%	-3%	-13%	-26%	-3%	-15%	-28%
	MC2/GC	0%	0%	-5%	-9%	-1%	-7%	-14%	-2%	-12%	-23%	-4%	-14%	-27%
	Battery	0%	0%	-6%	-10%	-2%	-9%	-15%	-4%	-13%	-24%	-4%	-13%	-27%
	Specific Power	0%	0%	-1%	-1%	0%	-1%	-1%	-1%	-1%	1%	-1%	0%	1%
E85 Split HEV PHEV20	ICE Power	0%	0%	-4%	-9%	-1%	-7%	-14%	-2%	-12%	-24%	-4%	-14%	-28%
	Electric Machine	0%	0%	-4%	-9%	-2%	-7%	-15%	-3%	-14%	-26%	-3%	-16%	-29%
	MC2/GC	0%	0%	-4%	-9%	-1%	-7%	-14%	-3%	-12%	-24%	-4%	-14%	-28%
	Battery	0%	0%	-4%	-10%	-2%	-9%	-16%	-4%	-15%	-27%	-4%	-15%	-29%
	Specific Power	0%	0%	0%	-1%	0%	-1%	-2%	-1%	-1%	0%	-1%	-1%	0%
E85 Series HEV PHEV30	ICE Power	0%	0%	-6%	-12%	-2%	-10%	-21%	-6%	-19%	-32%	-8%	-21%	-36%
	Electric Machine	0%	0%	-5%	-9%	-2%	-7%	-16%	-4%	-14%	-25%	-5%	-16%	-28%
	MC2/GC	0%	0%	-6%	-12%	-2%	-10%	-21%	-6%	-19%	-32%	-8%	-21%	-36%
	Battery	0%	0%	-5%	-10%	-2%	-8%	-18%	-5%	-16%	-27%	-6%	-18%	-31%
	Specific Power	0%	0%	0%	1%	0%	1%	2%	1%	2%	5%	0%	1%	5%
E85 Series HEV PHEV40	ICE Power	0%	0%	-6%	-13%	-2%	-10%	-22%	-6%	-20%	-33%	-8%	-22%	-37%
	Electric Machine	0%	0%	-5%	-10%	-2%	-8%	-16%	-4%	-15%	-26%	-6%	-17%	-29%
	MC2/GC	0%	0%	-6%	-13%	-2%	-10%	-22%	-6%	-20%	-33%	-8%	-22%	-37%
	Battery	0%	0%	-6%	-11%	-2%	-9%	-18%	-5%	-16%	-28%	-7%	-19%	-32%
	Specific Power	0%	0%	0%	1%	0%	1%	1%	1%	1%	5%	0%	1%	5%

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		compact												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
FC HEV	FC Power	0%	0%	-15%	-25%	-10%	-27%	-38%	-21%	-37%	-49%	-26%	-39%	-51%
	Electric Machine	0%	0%	-14%	-22%	-9%	-21%	-30%	-16%	-29%	-40%	-20%	-31%	-43%
	MC2/GC													
	Battery	0%	0%	-12%	-18%	-9%	-8%	-15%	-3%	-13%	-23%	-6%	-17%	-27%
	Specific Power	0%	0%	1%	1%	1%	0%	-1%	-1%	0%	1%	0%	0%	1%
FC HEV PHEV10	FC Power	0%	0%	-13%	-22%	-8%	-20%	-30%	-13%	-29%	-39%	-18%	-28%	-41%
	Electric Machine	0%	0%	-13%	-21%	-9%	-20%	-28%	-13%	-27%	-39%	-18%	-27%	-40%
	MC2/GC													
	Battery	0%	0%	-13%	-21%	-8%	-20%	-30%	-14%	-28%	-41%	-18%	-30%	-44%
	Specific Power	0%	0%	-1%	-1%	-1%	0%	0%	0%	0%	1%	0%	2%	2%
FC HEV PHEV20	FC Power	0%	0%	-13%	-21%	-7%	-20%	-30%	-13%	-29%	-40%	-18%	-28%	-42%
	Electric Machine	0%	0%	-13%	-20%	-8%	-19%	-28%	-13%	-27%	-39%	-17%	-27%	-41%
	MC2/GC													
	Battery	0%	0%	-13%	-22%	-8%	-20%	-30%	-14%	-29%	-41%	-19%	-31%	-44%
	Specific Power	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	1%	3%	1%
FC HEV PHEV30	FC Power	0%	0%	-11%	-17%	-6%	-16%	-24%	-10%	-22%	-34%	-14%	-25%	-38%
	Electric Machine	0%	0%	-8%	-14%	-5%	-13%	-21%	-8%	-19%	-29%	-11%	-22%	-33%
	MC2/GC													
	Battery	0%	0%	-9%	-15%	-5%	-14%	-22%	-9%	-21%	-32%	-12%	-23%	-35%
	Specific Power	0%	0%	4%	7%	3%	7%	10%	5%	10%	16%	7%	10%	15%
FC HEV PHEV40	FC Power	0%	0%	-11%	-18%	-6%	-16%	-25%	-10%	-23%	-35%	-15%	-26%	-38%
	Electric Machine	0%	0%	-9%	-14%	-5%	-13%	-21%	-8%	-19%	-30%	-12%	-22%	-33%
	MC2/GC													
	Battery	0%	0%	-9%	-15%	-5%	-14%	-23%	-9%	-21%	-32%	-13%	-24%	-36%
	Specific Power	0%	0%	4%	7%	3%	7%	10%	5%	10%	16%	7%	10%	16%
EV	ICE Power													
	Electric Machine	0%	0%	-6%	-11%	-1%	-9%	-21%	-4%	-19%	-32%	-7%	-23%	-36%
	MC2/GC													
	Battery	0%	0%	-6%	-12%	-1%	-10%	-23%	-5%	-21%	-34%	-8%	-25%	-38%
	Specific Power	0%	0%	-1%	-1%	0%	-1%	-1%	-1%	-1%	1%	-2%	-2%	1%

Energy

		Compact												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Split HEV	Total Energy	991	991	944	905	975	907	842	950	842	734	950	842	691
	Usable Energy													
SI Split HEV PHEV10	Total Energy	3379	3379	3250	3032	3411	3132	2433	3326	2518	1810	3240	2268	1709
	Usable Energy	2028	2028	1950	1819	2047	1879	1703	1996	1762	1448	1944	1701	1367
SI Split HEV PHEV20	Total Energy	6839	6839	6422	5961	6822	6157	4798	6568	4962	3577	6401	4528	3384
	Usable Energy	4104	4104	3853	3577	4093	3694	3359	3941	3474	2861	3841	3396	2707
SI Series HEV PHEV30	Total Energy	12856	12856	12151	11285	12799	11675	8777	12306	9148	6733	11950	8194	6344
	Usable Energy	7713	7713	7291	6771	7680	7005	6144	7384	6404	5386	7170	6146	5076
SI Series HEV PHEV40	Total Energy	17195	17195	16249	15052	17252	15640	11854	16531	12328	8915	16087	11009	8489
	Usable Energy	10317	10317	9749	9031	10351	9384	8298	9918	8630	7132	9652	8257	6792
CI Split HEV	Total Energy	1061	1061	1014	975	1030	972	907	1015	907	799	1015	907	756
	Usable Energy													
CI Split HEV PHEV10	Total Energy	3633	3633	3419	3188	3621	3295	2542	3482	2678	1917	3392	2417	1822
	Usable Energy	2180	2180	2052	1913	2173	1977	1780	2089	1874	1534	2035	1813	1458
CI Split HEV PHEV20	Total Energy	7148	7148	6776	6386	7229	6602	5118	7116	5263	3777	6931	4766	3610
	Usable Energy	4289	4289	4066	3832	4337	3961	3582	4270	3684	3021	4158	3575	2888
CI Series HEV PHEV30	Total Energy	13398	13398	12662	11812	13350	12185	9264	12830	9579	7028	12461	8643	6762
	Usable Energy	8039	8039	7597	7087	8010	7311	6485	7698	6705	5623	7476	6482	5409
CI Series HEV PHEV40	Total Energy	17949	17949	17055	15788	17995	16372	12432	17234	12845	9372	16742	11518	8923
	Usable Energy	10769	10769	10233	9473	10797	9823	8702	10341	8991	7498	10045	8639	7138
H2 Split HEV	Total Energy	1030	1030	952	897	998	907	821	950	842	713	929	821	691
	Usable Energy													
H2 Split HEV PHEV10	Total Energy	3501	3501	3262	3014	3511	3115	2389	3358	2484	1765	3218	2240	1684
	Usable Energy	2101	2101	1957	1808	2106	1869	1672	2015	1739	1412	1931	1680	1347

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		Compact												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
H2 Split HEV PHEV20	Total Energy	6912	6912	6452	6041	7002	6248	4762	6712	4951	3477	6420	4478	3307
	Usable Energy	4147	4147	3871	3625	4201	3749	3333	4027	3465	2782	3852	3358	2646
H2 Series HEV PHEV30	Total Energy	13145	13145	12183	11229	13003	11619	8664	12434	9070	6531	11860	8092	6243
	Usable Energy	7887	7887	7310	6738	7802	6972	6065	7460	6349	5225	7116	6069	4994
H2 Series HEV PHEV40	Total Energy	17569	17569	16283	14949	17502	15504	11749	16635	12221	8737	15847	10875	8357
	Usable Energy	10541	10541	9770	8970	10501	9303	8224	9981	8555	6989	9508	8156	6685
E85 Split HEV	Total Energy	991	991	944	905	975	907	842	950	842	734	950	842	713
	Usable Energy													
E85 Split HEV PHEV10	Total Energy	3383	3383	3252	3034	3415	3135	2438	3328	2487	1811	3245	2270	1710
	Usable Energy	2030	2030	1951	1820	2049	1881	1706	1997	1741	1449	1947	1702	1368
E85 Split HEV PHEV20	Total Energy	6842	6842	6425	5964	6824	6165	4803	6571	4966	3571	6403	4533	3386
	Usable Energy	4105	4105	3855	3578	4094	3699	3362	3943	3476	2856	3842	3400	2709
E85 Series HEV PHEV30	Total Energy	12861	12861	12153	11291	13045	11686	8786	12312	9150	6737	11955	8202	6350
	Usable Energy	7716	7716	7292	6774	7827	7011	6150	7387	6405	5389	7173	6152	5080
E85 Series HEV PHEV40	Total Energy	17231	17231	16252	15060	17255	15597	11918	16489	12334	8920	16098	11017	8492
	Usable Energy	10338	10338	9751	9036	10353	9358	8343	9893	8634	7136	9659	8263	6794
FC HEV	Total Energy	1279	1279	1123	1053	1162	1145	1058	1210	1080	950	1166	1037	907
	Usable Energy													
FC HEV PHEV10	Total Energy	4119	4119	3623	3266	3885	3386	2597	3648	2686	1932	3456	2373	1821
	Usable Energy	2472	2472	2174	1960	2331	2031	1818	2189	1880	1546	2074	1780	1457
FC HEV PHEV20	Total Energy	8191	8191	7274	6482	7825	6715	5187	7300	5372	3722	6902	4834	3561
	Usable Energy	4914	4914	4364	3889	4695	4029	3631	4380	3760	2977	4141	3625	2849
FC HEV PHEV30	Total Energy	12672	12672	11275	10248	12116	10554	7792	11334	8092	5731	10725	7233	5416
	Usable Energy	7603	7603	6765	6149	7270	6333	5454	6800	5665	4585	6435	5424	4333
FC HEV PHEV40	Total Energy	16825	16825	14947	13544	16123	13927	10248	14988	10607	7729	14127	9408	7275
	Usable Energy	10095	10095	8968	8126	9674	8356	7174	8993	7425	6183	8476	7056	5820
BEV	Total Energy	61349	61349	57720	53052	61719	55181	39332	58470	40807	28635	56289	36461	26910
	Usable Energy	36810	36810	34632	31831	37031	33108	27533	35082	28565	22908	33773	27346	21528

Percentage of Energy reduction based on the respective 2010 reference case

		Compact												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Split HEV	Total Energy	0.0%	0.0%	-4.7%	-8.7%	-1.6%	-8.4%	-15.0%	-4.1%	-15.0%	-25.9%	-4.1%	-15.0%	-30.2%
	Usable Energy													
SI Split HEV PHEV10	Total Energy	0.0%	0.0%	-3.8%	-10.3%	0.9%	-7.3%	-28.0%	-1.6%	-25.5%	-46.4%	-4.1%	-32.9%	-49.4%
	Usable Energy	0.0%	0.0%	-3.8%	-10.3%	0.9%	-7.3%	-16.0%	-1.6%	-13.1%	-28.6%	-4.1%	-16.1%	-32.6%
SI Split HEV PHEV20	Total Energy	0.0%	0.0%	-6.1%	-12.8%	-0.3%	-10.0%	-29.8%	-4.0%	-27.4%	-47.7%	-6.4%	-33.8%	-50.5%
	Usable Energy	0.0%	0.0%	-6.1%	-12.8%	-0.3%	-10.0%	-18.2%	-4.0%	-15.4%	-30.3%	-6.4%	-17.2%	-34.0%
SI Series HEV PHEV30	Total Energy	0.0%	0.0%	-5.5%	-12.2%	-0.4%	-9.2%	-31.7%	-4.3%	-28.8%	-47.6%	-7.0%	-36.3%	-50.6%
	Usable Energy	0.0%	0.0%	-5.5%	-12.2%	-0.4%	-9.2%	-20.3%	-4.3%	-17.0%	-30.2%	-7.0%	-20.3%	-34.2%
SI Series HEV PHEV40	Total Energy	0.0%	0.0%	-5.5%	-12.5%	0.3%	-9.0%	-31.1%	-3.9%	-28.3%	-48.2%	-6.4%	-36.0%	-50.6%
	Usable Energy	0.0%	0.0%	-5.5%	-12.5%	0.3%	-9.0%	-19.6%	-3.9%	-16.4%	-30.9%	-6.4%	-20.0%	-34.2%
CI Split HEV	Total Energy	0.0%	0.0%	-4.4%	-8.1%	-2.9%	-8.4%	-14.5%	-4.3%	-14.5%	-24.7%	-4.3%	-14.5%	-28.7%
	Usable Energy													
CI Split HEV PHEV10	Total Energy	0.0%	0.0%	-5.9%	-12.3%	-0.3%	-9.3%	-30.0%	-4.2%	-26.3%	-47.2%	-6.6%	-33.5%	-49.8%
	Usable Energy	0.0%	0.0%	-5.9%	-12.3%	-0.3%	-9.3%	-18.4%	-4.2%	-14.0%	-29.6%	-6.6%	-16.9%	-33.1%
CI Split HEV PHEV20	Total Energy	0.0%	0.0%	-5.2%	-10.7%	1.1%	-7.6%	-28.4%	-0.4%	-26.4%	-47.2%	-3.0%	-33.3%	-49.5%
	Usable Energy	0.0%	0.0%	-5.2%	-10.7%	1.1%	-7.6%	-16.5%	-0.4%	-14.1%	-29.6%	-3.0%	-16.7%	-32.7%
CI Series HEV PHEV30	Total Energy	0.0%	0.0%	-5.5%	-11.8%	-0.4%	-9.1%	-30.9%	-4.2%	-28.5%	-47.5%	-7.0%	-35.5%	-49.5%
	Usable Energy	0.0%	0.0%	-5.5%	-11.8%	-0.4%	-9.1%	-19.3%	-4.2%	-16.6%	-30.1%	-7.0%	-19.4%	-32.7%
CI Series HEV PHEV40	Total Energy	0.0%	0.0%	-5.0%	-12.0%	0.3%	-8.8%	-30.7%	-4.0%	-28.4%	-47.8%	-6.7%	-35.8%	-50.3%
	Usable Energy	0.0%	0.0%	-5.0%	-12.0%	0.3%	-8.8%	-19.2%	-4.0%	-16.5%	-30.4%	-6.7%	-19.8%	-33.7%
H2 Split HEV	Total Energy	0.0%	0.0%	-7.6%	-12.9%	-3.0%	-11.9%	-20.3%	-7.7%	-18.2%	-30.8%	-9.8%	-20.3%	-32.9%
	Usable Energy													
H2 Split HEV PHEV10	Total Energy	0.0%	0.0%	-6.8%	-13.9%	0.3%	-11.0%	-31.8%	-4.1%	-29.1%	-49.6%	-8.1%	-36.0%	-51.9%
	Usable Energy	0.0%	0.0%	-6.8%	-13.9%	0.3%	-11.0%	-20.4%	-4.1%	-17.2%	-32.8%	-8.1%	-20.0%	-35.9%
H2 Split HEV PHEV20	Total Energy	0.0%	0.0%	-6.6%	-12.6%	1.3%	-9.6%	-31.1%	-2.9%	-28.4%	-49.7%	-7.1%	-35.2%	-52.2%
	Usable Energy	0.0%	0.0%	-6.6%	-12.6%	1.3%	-9.6%	-19.6%	-2.9%	-16.4%	-32.9%	-7.1%	-19.0%	-36.2%

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		Compact												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
H2 Series HEV PHEV30	Total Energy	0.0%	0.0%	-7.3%	-14.6%	-1.1%	-11.6%	-34.1%	-5.4%	-31.0%	-50.3%	-9.8%	-38.4%	-52.5%
	Usable Energy	0.0%	0.0%	-7.3%	-14.6%	-1.1%	-11.6%	-23.1%	-5.4%	-19.5%	-33.8%	-9.8%	-23.1%	-36.7%
H2 Series HEV PHEV40	Total Energy	0.0%	0.0%	-7.3%	-14.9%	-0.4%	-11.8%	-33.1%	-5.3%	-30.4%	-50.3%	-9.8%	-38.1%	-52.4%
	Usable Energy	0.0%	0.0%	-7.3%	-14.9%	-0.4%	-11.8%	-22.0%	-5.3%	-18.8%	-33.7%	-9.8%	-22.6%	-36.6%
E85 Split HEV	Total Energy	0.0%	0.0%	-4.7%	-8.7%	-1.6%	-8.4%	-15.0%	-4.1%	-15.0%	-25.9%	-4.1%	-15.0%	-28.0%
	Usable Energy													
E85 Split HEV PHEV10	Total Energy	0.0%	0.0%	-3.9%	-10.3%	1.0%	-7.3%	-27.9%	-1.6%	-26.5%	-46.5%	-4.1%	-32.9%	-49.5%
	Usable Energy	0.0%	0.0%	-3.9%	-10.3%	1.0%	-7.3%	-15.9%	-1.6%	-14.2%	-28.6%	-4.1%	-16.1%	-32.6%
E85 Split HEV PHEV20	Total Energy	0.0%	0.0%	-6.1%	-12.8%	-0.3%	-9.9%	-29.8%	-4.0%	-27.4%	-47.8%	-6.4%	-33.7%	-50.5%
	Usable Energy	0.0%	0.0%	-6.1%	-12.8%	-0.3%	-9.9%	-18.1%	-4.0%	-15.3%	-30.4%	-6.4%	-17.2%	-34.0%
E85 Series HEV PHEV30	Total Energy	0.0%	0.0%	-5.5%	-12.2%	1.4%	-9.1%	-31.7%	-4.3%	-28.9%	-47.6%	-7.0%	-36.2%	-50.6%
	Usable Energy	0.0%	0.0%	-5.5%	-12.2%	1.4%	-9.1%	-20.3%	-4.3%	-17.0%	-30.2%	-7.0%	-20.3%	-34.2%
E85 Series HEV PHEV40	Total Energy	0.0%	0.0%	-5.7%	-12.6%	0.1%	-9.5%	-30.8%	-4.3%	-28.4%	-48.2%	-6.6%	-36.1%	-50.7%
	Usable Energy	0.0%	0.0%	-5.7%	-12.6%	0.1%	-9.5%	-19.3%	-4.3%	-16.5%	-31.0%	-6.6%	-20.1%	-34.3%
FC HEV	Total Energy	0.0%	0.0%	-12.2%	-17.7%	-9.1%	-10.5%	-17.3%	-5.4%	-15.6%	-25.7%	-8.8%	-18.9%	-29.1%
	Usable Energy													
FC HEV PHEV10	Total Energy	0.0%	0.0%	-12.0%	-20.7%	-5.7%	-17.8%	-37.0%	-11.4%	-34.8%	-53.1%	-16.1%	-42.4%	-55.8%
	Usable Energy	0.0%	0.0%	-12.0%	-20.7%	-5.7%	-17.8%	-26.5%	-11.4%	-23.9%	-37.5%	-16.1%	-28.0%	-41.1%
FC HEV PHEV20	Total Energy	0.0%	0.0%	-11.2%	-20.9%	-4.5%	-18.0%	-36.7%	-10.9%	-34.4%	-54.6%	-15.7%	-41.0%	-56.5%
	Usable Energy	0.0%	0.0%	-11.2%	-20.9%	-4.5%	-18.0%	-26.1%	-10.9%	-23.5%	-39.4%	-15.7%	-26.2%	-42.0%
FC HEV PHEV30	Total Energy	0.0%	0.0%	-11.0%	-19.1%	-4.4%	-16.7%	-38.5%	-10.6%	-36.1%	-54.8%	-15.4%	-42.9%	-57.3%
	Usable Energy	0.0%	0.0%	-11.0%	-19.1%	-4.4%	-16.7%	-28.3%	-10.6%	-25.5%	-39.7%	-15.4%	-28.7%	-43.0%
FC HEV PHEV40	Total Energy	0.0%	0.0%	-11.2%	-19.5%	-4.2%	-17.2%	-39.1%	-10.9%	-37.0%	-54.1%	-16.0%	-44.1%	-56.8%
	Usable Energy	0.0%	0.0%	-11.2%	-19.5%	-4.2%	-17.2%	-28.9%	-10.9%	-26.4%	-38.7%	-16.0%	-30.1%	-42.3%
EV	Total Energy	0.0%	0.0%	-5.9%	-13.5%	0.6%	-10.1%	-35.9%	-4.7%	-33.5%	-53.3%	-8.2%	-40.6%	-56.1%
	Usable Energy	0.0%	0.0%	-5.9%	-13.5%	0.6%	-10.1%	-25.2%	-4.7%	-22.4%	-37.8%	-8.2%	-25.7%	-41.5%

Curb weight

		Compact												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Conv	Vehicle Mass	1238	1238	1198	1155	1237	1167	1093	1229	1104	959	1230	1094	919
	% of Glider mass	65.0	65.0	64.1	63.1	65.1	63.6	61.4	65.2	61.7	56.3	65.2	61.3	54.3
	% of Powertrain mass	35.0	35.0	35.9	36.9	34.9	36.4	38.6	34.8	38.3	43.7	34.8	38.7	45.7
CI Conv	Vehicle Mass	1301	1301	1262	1221	1301	1235	1159	1296	1170	1026	1296	1159	983
	% of Glider mass	61.9	61.9	60.8	59.7	61.9	60.1	57.9	61.9	58.2	52.6	61.9	57.8	50.7
	% of Powertrain mass	38.1	38.1	39.2	40.3	38.1	39.9	42.1	38.1	41.8	47.4	38.1	42.2	49.3
H2 Conv	Vehicle Mass	1268	1268	1189	1131	1253	1146	1057	1240	1076	908	1204	1057	875
	% of Glider mass	63.5	63.5	64.6	64.4	64.3	64.8	63.5	64.6	63.3	59.4	66.6	63.4	57.0
	% of Powertrain mass	36.5	36.5	35.4	35.6	35.7	35.2	36.5	35.4	36.7	40.6	33.4	36.6	43.0
E85 Conv	Vehicle Mass	1234	1234	1194	1151	1234	1166	1090	1228	1101	955	1228	1091	913
	% of Glider mass	65.2	65.2	64.3	63.3	65.3	63.7	61.6	65.3	61.8	56.5	65.3	61.4	54.6
	% of Powertrain mass	34.8	34.8	35.7	36.7	34.7	36.3	38.4	34.7	38.2	43.5	34.7	38.6	45.4
SI Split HEV	Vehicle Mass	1341	1341	1279	1221	1325	1252	1149	1316	1169	990	1308	1150	943
	% of Glider mass	60.0	60.0	60.0	59.7	60.8	59.3	58.4	60.9	58.2	54.5	61.3	58.3	52.9
	% of Powertrain mass	40.0	40.0	40.0	40.3	39.2	40.7	41.6	39.1	41.8	45.5	38.7	41.7	47.1
SI Split HEV PHEV10	Vehicle Mass	1351	1351	1288	1230	1330	1250	1147	1315	1168	988	1307	1147	941
	% of Glider mass	59.6	59.6	59.6	59.3	60.6	59.4	58.5	61.0	58.3	54.6	61.3	58.4	53.0
	% of Powertrain mass	40.4	40.4	40.4	40.7	39.4	40.6	41.5	39.0	41.7	45.4	38.7	41.6	47.0
SI Split HEV PHEV20	Vehicle Mass	1377	1377	1315	1253	1357	1273	1164	1340	1187	999	1331	1162	952
	% of Glider mass	58.4	58.4	58.4	58.2	59.4	58.3	57.7	59.8	57.4	54.0	60.2	57.7	52.4
	% of Powertrain mass	41.6	41.6	41.6	41.8	40.6	41.7	42.3	40.2	42.6	46.0	39.8	42.3	47.6
SI Series HEV PHEV30	Vehicle Mass	1581	1581	1493	1407	1542	1438	1286	1510	1320	1094	1487	1284	1040
	% of Glider mass	50.9	50.9	51.4	51.8	52.3	51.6	52.2	53.1	51.6	49.3	53.9	52.2	47.9
	% of Powertrain mass	49.1	49.1	48.6	48.2	47.7	48.4	47.8	46.9	48.4	50.7	46.1	47.8	52.1
SI Series HEV PHEV40	Vehicle Mass	1624	1624	1529	1442	1584	1476	1313	1547	1349	1113	1523	1308	1057
	% of Glider mass	49.6	49.6	50.2	50.5	50.9	50.3	51.1	51.8	50.5	48.5	52.6	51.3	47.2
	% of Powertrain mass	50.4	50.4	49.8	49.5	49.1	49.7	48.9	48.2	49.5	51.5	47.4	48.7	52.8
CI Split HEV	Vehicle Mass	1442	1442	1378	1319	1416	1348	1246	1414	1266	1083	1405	1244	1036
	% of Glider mass	55.8	55.8	55.7	55.3	56.9	55.1	53.9	56.7	53.8	49.8	57.1	53.9	48.1
	% of Powertrain mass	44.2	44.2	44.3	44.7	43.1	44.9	46.1	43.3	46.2	50.2	42.9	46.1	51.9

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		Compact												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
CI Split HEV PHEV10	Vehicle Mass	1457	1457	1394	1336	1437	1357	1248	1422	1270	1087	1411	1250	1039
	% of Glider mass	55.2	55.2	55.1	54.6	56.1	54.7	53.8	56.4	53.6	49.6	56.8	53.6	48.0
	% of Powertrain mass	44.8	44.8	44.9	45.4	43.9	45.3	46.2	43.6	46.4	50.4	43.2	46.4	52.0
CI Split HEV PHEV20	Vehicle Mass	1486	1486	1424	1360	1465	1384	1268	1449	1291	1100	1437	1267	1053
	% of Glider mass	54.2	54.2	53.9	53.6	55.0	53.6	52.9	55.3	52.7	49.1	55.8	52.9	47.3
	% of Powertrain mass	45.8	45.8	46.1	46.4	45.0	46.4	47.1	44.7	47.3	50.9	44.2	47.1	52.7
CI Series HEV PHEV30	Vehicle Mass	1677	1677	1587	1505	1638	1537	1382	1605	1417	1190	1582	1381	1137
	% of Glider mass	48.0	48.0	48.4	48.4	49.2	48.3	48.6	49.9	48.0	45.4	50.7	48.5	43.8
	% of Powertrain mass	52.0	52.0	51.6	51.6	50.8	51.7	51.4	50.1	52.0	54.6	49.3	51.5	56.2
CI Series HEV PHEV40	Vehicle Mass	1723	1723	1628	1542	1684	1574	1412	1645	1444	1210	1620	1405	1153
	% of Glider mass	46.7	46.7	47.2	47.3	47.8	47.2	47.5	48.7	47.1	44.6	49.5	47.7	43.2
	% of Powertrain mass	53.3	53.3	52.8	52.7	52.2	52.8	52.5	51.3	52.9	55.4	50.5	52.3	56.8
H2 Split HEV	Vehicle Mass	1394	1394	1291	1215	1360	1245	1127	1343	1156	956	1297	1129	919
	% of Glider mass	57.7	57.7	59.5	60.0	59.2	59.6	59.6	59.7	58.9	56.5	61.8	59.4	54.3
	% of Powertrain mass	42.3	42.3	40.5	40.0	40.8	40.4	40.4	40.3	41.1	43.5	38.2	40.6	45.7
H2 Split HEV PHEV10	Vehicle Mass	1407	1407	1304	1227	1374	1247	1127	1346	1158	955	1298	1131	918
	% of Glider mass	57.2	57.2	58.9	59.4	58.6	59.5	59.6	59.6	58.8	56.5	61.8	59.3	54.3
	% of Powertrain mass	42.8	42.8	41.1	40.6	41.4	40.5	40.4	40.4	41.2	43.5	38.2	40.7	45.7
H2 Split HEV PHEV20	Vehicle Mass	1435	1435	1329	1249	1402	1273	1144	1375	1176	967	1325	1146	928
	% of Glider mass	56.1	56.1	57.8	58.4	57.5	58.3	58.7	58.3	57.9	55.8	60.5	58.5	53.7
	% of Powertrain mass	43.9	43.9	42.2	41.6	42.5	41.7	41.3	41.7	42.1	44.2	39.5	41.5	46.3
H2 Series HEV PHEV30	Vehicle Mass	1632	1632	1498	1396	1576	1427	1261	1532	1303	1056	1470	1258	1012
	% of Glider mass	49.3	49.3	51.3	52.2	51.1	52.0	53.2	52.3	52.2	51.1	54.5	53.3	49.3
	% of Powertrain mass	50.7	50.7	48.7	47.8	48.9	48.0	46.8	47.7	47.8	48.9	45.5	46.7	50.7
H2 Series HEV PHEV40	Vehicle Mass	1675	1675	1536	1429	1618	1463	1288	1573	1331	1074	1505	1281	1029
	% of Glider mass	48.0	48.0	50.0	51.0	49.8	50.7	52.1	51.0	51.1	50.2	53.3	52.3	48.5
	% of Powertrain mass	52.0	52.0	50.0	49.0	50.2	49.3	47.9	49.0	48.9	49.8	46.7	47.7	51.5
E85 Split HEV	Vehicle Mass	1342	1342	1281	1226	1324	1257	1151	1318	1170	991	1309	1152	945
	% of Glider mass	60.0	60.0	59.9	59.4	60.9	59.1	58.3	60.8	58.2	54.5	61.2	58.2	52.8
	% of Powertrain mass	40.0	40.0	40.1	40.6	39.1	40.9	41.7	39.2	41.8	45.5	38.8	41.8	47.2

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		Compact												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
E85 Split HEV PHEV10	Vehicle Mass	1352	1352	1289	1231	1331	1252	1149	1316	1169	989	1308	1149	942
	% of Glider mass	59.5	59.5	59.6	59.2	60.5	59.3	58.4	60.9	58.2	54.6	61.3	58.3	52.9
	% of Powertrain mass	40.5	40.5	40.4	40.8	39.5	40.7	41.6	39.1	41.8	45.4	38.7	41.7	47.1
E85 Split HEV PHEV20	Vehicle Mass	1378	1378	1316	1254	1358	1275	1166	1341	1188	1000	1332	1164	953
	% of Glider mass	58.4	58.4	58.3	58.1	59.3	58.2	57.6	59.8	57.3	54.0	60.2	57.6	52.3
	% of Powertrain mass	41.6	41.6	41.7	41.9	40.7	41.8	42.4	40.2	42.7	46.0	39.8	42.4	47.7
E85 Series HEV PHEV30	Vehicle Mass	1582	1582	1494	1408	1543	1440	1288	1511	1321	1095	1488	1286	1042
	% of Glider mass	50.9	50.9	51.4	51.8	52.2	51.6	52.1	53.1	51.5	49.3	53.9	52.1	47.8
	% of Powertrain mass	49.1	49.1	48.6	48.2	47.8	48.4	47.9	46.9	48.5	50.7	46.1	47.9	52.2
E85 Series HEV PHEV40	Vehicle Mass	1626	1626	1530	1443	1585	1476	1316	1548	1350	1114	1525	1310	1058
	% of Glider mass	49.5	49.5	50.2	50.5	50.8	50.3	51.0	51.8	50.4	48.4	52.6	51.2	47.1
	% of Powertrain mass	50.5	50.5	49.8	49.5	49.2	49.7	49.0	48.2	49.6	51.6	47.4	48.8	52.9
FC HEV	Vehicle Mass	1674	1674	1412	1274	1490	1291	1132	1395	1158	940	1314	1116	890
	% of Glider mass	48.1	48.1	54.4	57.2	54.1	57.5	59.3	57.5	58.8	57.4	61.0	60.1	56.0
	% of Powertrain mass	51.9	51.9	45.6	42.8	45.9	42.5	40.7	42.5	41.2	42.6	39.0	39.9	44.0
FC HEV PHEV10	Vehicle Mass	1599	1599	1376	1249	1454	1264	1111	1370	1140	925	1295	1102	879
	% of Glider mass	50.3	50.3	55.8	58.4	55.4	58.7	60.4	58.5	59.7	58.3	61.9	60.8	56.7
	% of Powertrain mass	49.7	49.7	44.2	41.6	44.6	41.3	39.6	41.5	40.3	41.7	38.1	39.2	43.3
FC HEV PHEV20	Vehicle Mass	1637	1637	1409	1278	1491	1293	1134	1401	1160	937	1322	1120	890
	% of Glider mass	49.2	49.2	54.5	57.0	54.0	57.4	59.2	57.2	58.7	57.6	60.6	59.9	56.0
	% of Powertrain mass	50.8	50.8	45.5	43.0	46.0	42.6	40.8	42.8	41.3	42.4	39.4	40.1	44.0
FC HEV PHEV30	Vehicle Mass	1725	1725	1496	1364	1583	1383	1206	1496	1241	999	1408	1187	947
	% of Glider mass	46.7	46.7	51.3	53.4	50.9	53.7	55.7	53.6	54.9	54.0	56.9	56.5	52.6
	% of Powertrain mass	53.3	53.3	48.7	46.6	49.1	46.3	44.3	46.4	45.1	46.0	43.1	43.5	47.4
FC HEV PHEV40	Vehicle Mass	1770	1770	1533	1396	1627	1415	1230	1531	1265	1016	1439	1209	963
	% of Glider mass	45.5	45.5	50.1	52.2	49.5	52.5	54.6	52.4	53.8	53.1	55.7	55.5	51.8
	% of Powertrain mass	54.5	54.5	49.9	47.8	50.5	47.5	45.4	47.6	46.2	46.9	44.3	44.5	48.2
BEV	Vehicle Mass	1756	1756	1650	1539	1731	1587	1341	1677	1377	1090	1631	1309	1022
	% of Glider mass	45.8	45.8	46.5	47.4	46.5	46.8	50.1	47.8	49.4	49.5	49.1	51.2	48.8
	% of Powertrain mass	54.2	54.2	53.5	52.6	53.5	53.2	49.9	52.2	50.6	50.5	50.9	48.8	51.2

Percentage of vehicle curbs weight reduction based on the respective 2010 reference case

		Compact												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Conv	Vehicle Mass	0.00%	0.00%	-3.23%	-6.70%	-0.08%	-5.74%	-11.71%	-0.73%	-10.82%	-22.54%	-0.65%	-11.63%	-25.77%
CI Conv	Vehicle Mass	0.00%	0.00%	-3.00%	-6.15%	0.00%	-5.07%	-10.91%	-0.38%	-10.07%	-21.14%	-0.38%	-10.91%	-24.44%
H2 Conv	Vehicle Mass	0.00%	0.00%	-6.23%	-10.80%	-1.18%	-9.62%	-16.64%	-2.21%	-15.14%	-28.39%	-5.05%	-16.64%	-30.99%
E85 Conv	Vehicle Mass	0.00%	0.00%	-3.24%	-6.73%	0.00%	-5.51%	-11.67%	-0.49%	-10.78%	-22.61%	-0.49%	-11.59%	-26.01%
SI Split HEV	Vehicle Mass	0.00%	0.00%	-4.62%	-8.95%	-1.19%	-6.64%	-14.32%	-1.86%	-12.83%	-26.17%	-2.46%	-14.24%	-29.68%
SI Split HEV PHEV10	Vehicle Mass	0.00%	0.00%	-4.66%	-8.96%	-1.55%	-7.48%	-15.10%	-2.66%	-13.55%	-26.87%	-3.26%	-15.10%	-30.35%
SI Split HEV PHEV20	Vehicle Mass	0.00%	0.00%	-4.50%	-9.01%	-1.45%	-7.55%	-15.47%	-2.69%	-13.80%	-27.45%	-3.34%	-15.61%	-30.86%
SI Series HEV PHEV30	Vehicle Mass	0.00%	0.00%	-5.57%	-11.01%	-2.47%	-9.04%	-18.66%	-4.49%	-16.51%	-30.80%	-5.95%	-18.79%	-34.22%
SI Series HEV PHEV40	Vehicle Mass	0.00%	0.00%	-5.85%	-11.21%	-2.46%	-9.11%	-19.15%	-4.74%	-16.93%	-31.47%	-6.22%	-19.46%	-34.91%
CI Split HEV	Vehicle Mass	0.00%	0.00%	-4.44%	-8.53%	-1.80%	-6.52%	-13.59%	-1.94%	-12.21%	-24.90%	-2.57%	-13.73%	-28.16%
CI Split HEV PHEV10	Vehicle Mass	0.00%	0.00%	-4.32%	-8.30%	-1.37%	-6.86%	-14.34%	-2.40%	-12.83%	-25.39%	-3.16%	-14.21%	-28.69%
CI Split HEV PHEV20	Vehicle Mass	0.00%	0.00%	-4.17%	-8.48%	-1.41%	-6.86%	-14.67%	-2.49%	-13.12%	-25.98%	-3.30%	-14.74%	-29.14%
CI Series HEV PHEV30	Vehicle Mass	0.00%	0.00%	-5.37%	-10.26%	-2.33%	-8.35%	-17.59%	-4.29%	-15.50%	-29.04%	-5.66%	-17.65%	-32.20%
CI Series HEV PHEV40	Vehicle Mass	0.00%	0.00%	-5.51%	-10.50%	-2.26%	-8.65%	-18.05%	-4.53%	-16.19%	-29.77%	-5.98%	-18.46%	-33.08%
H2 Split HEV	Vehicle Mass	0.00%	0.00%	-7.39%	-12.84%	-2.44%	-10.69%	-19.15%	-3.66%	-17.07%	-31.42%	-6.96%	-19.01%	-34.07%
H2 Split HEV PHEV10	Vehicle Mass	0.00%	0.00%	-7.32%	-12.79%	-2.35%	-11.37%	-19.90%	-4.34%	-17.70%	-32.13%	-7.75%	-19.62%	-34.75%
H2 Split HEV PHEV20	Vehicle Mass	0.00%	0.00%	-7.39%	-12.96%	-2.30%	-11.29%	-20.28%	-4.18%	-18.05%	-32.61%	-7.67%	-20.14%	-35.33%
H2 Series HEV PHEV30	Vehicle Mass	0.00%	0.00%	-8.21%	-14.46%	-3.43%	-12.56%	-22.73%	-6.13%	-20.16%	-35.29%	-9.93%	-22.92%	-37.99%
H2 Series HEV PHEV40	Vehicle Mass	0.00%	0.00%	-8.30%	-14.69%	-3.40%	-12.66%	-23.10%	-6.09%	-20.54%	-35.88%	-10.15%	-23.52%	-38.57%
E85 Split HEV	Vehicle Mass	0.00%	0.00%	-4.55%	-8.64%	-1.34%	-6.33%	-14.23%	-1.79%	-12.82%	-26.15%	-2.46%	-14.16%	-29.58%
E85 Split HEV PHEV10	Vehicle Mass	0.00%	0.00%	-4.66%	-8.95%	-1.55%	-7.40%	-15.01%	-2.66%	-13.54%	-26.85%	-3.25%	-15.01%	-30.33%
E85 Split HEV PHEV20	Vehicle Mass	0.00%	0.00%	-4.50%	-9.00%	-1.45%	-7.47%	-15.38%	-2.69%	-13.79%	-27.43%	-3.34%	-15.53%	-30.84%
E85 Series HEV PHEV30	Vehicle Mass	0.00%	0.00%	-5.56%	-11.00%	-2.47%	-8.98%	-18.58%	-4.49%	-16.50%	-30.78%	-5.94%	-18.71%	-34.13%
E85 Series HEV PHEV40	Vehicle Mass	0.00%	0.00%	-5.90%	-11.25%	-2.52%	-9.23%	-19.07%	-4.80%	-16.97%	-31.49%	-6.21%	-19.43%	-34.93%
FC HEV	Vehicle Mass	0.00%	0.00%	-15.65%	-23.89%	-10.99%	-22.88%	-32.38%	-16.67%	-30.82%	-43.85%	-21.51%	-33.33%	-46.83%
FC HEV PHEV10	Vehicle Mass	0.00%	0.00%	-13.95%	-21.89%	-9.07%	-20.95%	-30.52%	-14.32%	-28.71%	-42.15%	-19.01%	-31.08%	-45.03%
FC HEV PHEV20	Vehicle Mass	0.00%	0.00%	-13.93%	-21.93%	-8.92%	-21.01%	-30.73%	-14.42%	-29.14%	-42.76%	-19.24%	-31.58%	-45.63%
FC HEV PHEV30	Vehicle Mass	0.00%	0.00%	-13.28%	-20.93%	-8.23%	-19.83%	-30.09%	-13.28%	-28.06%	-42.09%	-18.38%	-31.19%	-45.10%
FC HEV PHEV40	Vehicle Mass	0.00%	0.00%	-13.39%	-21.13%	-8.08%	-20.06%	-30.51%	-13.50%	-28.53%	-42.60%	-18.70%	-31.69%	-45.59%
EV	Vehicle Mass	0.00%	0.00%	-6.04%	-12.36%	-1.42%	-9.62%	-23.63%	-4.50%	-21.58%	-37.93%	-7.12%	-25.46%	-41.80%

Midsized Class

Power

		Midsize												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Conv	ICE Power	137815	137815	132111	128234	137815	128822	119229	134760	123340	111006	133431	120599	109636
	Electric Machine													
	MC2/GC													
	Battery													
	Specific Power	87	87	86	86	87	86	85	85	87	90	85	86	92
CI Conv	ICE Power	119778	119778	113667	110000	118556	110000	102667	116111	105111	92156	113667	103889	88760
	Electric Machine													
	MC2/GC													
	Battery													
	Specific Power	73	73	71	71	72	70	70	71	71	70	69	70	71
H2 Conv	ICE Power	138133	138133	126933	118533	134400	118533	108267	129733	112000	95200	124133	109200	91467
	Electric Machine													
	MC2/GC													
	Battery													
	Specific Power	86	86	84	82	84	81	80	82	81	81	81	80	81
E85 Conv	ICE Power	131693	131693	125926	121007	131693	122156	112677	129106	114943	102708	126781	113806	100347
	Electric Machine													
	MC2/GC													
	Battery													
	Specific Power	83	83	82	82	83	81	80	82	81	83	80	81	85
SI Split HEV	ICE Power	91008	91008	85882	81563	89218	82736	76020	88952	76768	64896	87946	74271	61174
	Electric Machine	65240	65240	62440	59956	64223	61150	57530	65434	57858	49646	64944	56684	47355
	MC2/GC	52667	52667	49700	47201	51631	47880	43993	51477	44426	37556	50895	42981	35402
	Battery	29127	29127	27930	26733	28928	27317	25610	29024	25610	21626	29024	25610	21057
	Specific Power	70	70	70	69	70	69	69	70	68	68	70	68	68
SI Split HEV PHEV10	ICE Power	64631	64631	61382	58653	63980	59698	54843	62874	55988	48413	62136	54798	46058
	Electric Machine	72314	72314	69920	66860	71860	68044	61964	70824	62427	53403	70807	61846	51002
	MC2/GC	38773	38773	36823	35202	38399	35829	32916	37718	33603	29056	37293	32889	27643
	Battery	67223	67223	64809	61564	66933	62677	57988	65072	58218	50851	65292	59605	48593
	Specific Power	77	77	77	77	77	77	77	77	77	78	77	78	78

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		Midsize												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Split HEV PHEV20	ICE Power	65572	65572	62178	59389	64836	60434	55374	63723	56520	48744	62952	55271	46389
	Electric Machine	74399	74399	71012	67898	73105	68972	62819	71980	63785	54081	71925	62576	51639
	MC2/GC	39304	39304	37301	35610	38896	36254	33234	38194	33922	29255	37749	33172	27842
	Battery	69134	69134	65612	62322	67895	63328	57775	65929	58654	50091	66108	58870	47893
	Specific Power	77	77	77	76	77	76	76	76	76	77	76	77	77
SI Series HEV PHEV30	ICE Power	80287	80287	74697	69998	78910	71574	62585	75297	64077	53237	73980	62105	50623
	Electric Machine	132818	132818	125621	119742	130552	122101	110604	127852	112939	97759	126041	110076	93564
	MC2/GC	77878	77878	72456	67898	76543	69427	60707	73038	62155	51640	71761	60242	49104
	Battery	163663	163663	153954	145968	160896	148893	133253	155944	136102	116266	153752	132689	111301
	Specific Power	68	68	68	68	68	68	68	68	68	71	68	68	71
SI Series HEV PHEV40	ICE Power	83068	83068	77079	72256	81507	73832	64159	77733	65793	54370	76282	63641	51673
	Electric Machine	137016	137016	129449	123298	134708	125744	113195	131763	115716	99672	129752	112524	95228
	MC2/GC	80576	80576	74767	70088	79062	71617	62234	75401	63819	52739	73994	61732	50123
	Battery	168763	168763	158595	150251	165949	153274	136266	160652	139337	118451	158219	135534	113194
	Specific Power	68	68	68	69	68	69	69	68	69	71	68	69	71
CI Split HEV	ICE Power	81462	81462	77040	71786	80127	74261	67570	77947	68086	57933	77146	67424	55937
	Electric Machine	71396	71396	68359	64608	70301	66815	62055	70314	62840	54383	69846	62406	52687
	MC2/GC	68175	68175	64474	60077	67058	62148	56549	65233	56981	48484	64563	56427	46813
	Battery	31122	31122	29726	28130	30723	29024	26748	30731	27317	23333	30731	27317	22764
	Specific Power	62	62	62	60	62	61	60	61	60	59	61	60	60
CI Split HEV PHEV10	ICE Power	67826	67826	64482	61712	67090	62785	57753	65904	58926	51116	65174	57691	48844
	Electric Machine	73559	73559	70948	67961	72828	69109	63099	71667	64065	54646	71808	62975	52302
	MC2/GC	56763	56763	53964	51646	56147	52544	48333	55155	49315	42779	54544	48281	40877
	Battery	76661	76661	73874	70364	76227	71578	66076	74200	67050	57860	74425	67422	55333
	Specific Power	79	79	79	79	80	79	79	79	79	80	79	80	79
CI Split HEV PHEV20	ICE Power	68738	68738	65336	62448	67974	110000	58284	66839	59514	51613	65961	58192	49257
	Electric Machine	74751	74751	72067	69034	74020	50000	63849	72904	64892	55620	72960	63684	53524
	MC2/GC	57526	57526	54679	52262	56887	30000	48777	55937	49807	43195	55202	48700	41223
	Battery	77671	77671	74820	71273	77256	62677	66027	75202	67113	57932	75417	67072	55804
	Specific Power	79	79	79	79	79	101	78	78	78	79	79	79	79

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		Midsize												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
CI Series HEV PHEV30	ICE Power	83373	83373	77592	72940	81874	74635	65389	78239	66995	55945	76842	64978	53331
	Electric Machine	137587	137587	130309	124496	135280	126987	115184	132572	117688	102417	130702	114686	98125
	MC2/GC	80872	80872	75264	70752	79418	72396	63427	75892	64985	54267	74537	63029	51731
	Battery	169522	169522	159684	151750	166714	154826	138744	161685	141803	121787	159416	138230	116708
	Specific Power	67	67	67	67	67	67	67	67	67	69	67	67	69
CI Series HEV PHEV40	ICE Power	86155	86155	80065	75258	84625	76953	67049	80735	68711	57188	79233	66457	54436
	Electric Machine	141916	141916	134217	128174	139472	130753	117970	136516	120560	104434	134493	117165	99979
	MC2/GC	83570	83570	77663	73000	82086	74644	65038	78313	66650	55472	76856	64463	52803
	Battery	174781	174781	164412	156181	171803	159360	141989	166428	145140	124085	163979	141095	118816
	Specific Power	67	67	67	68	68	68	68	68	68	70	67	67	70
H2 Split HEV	ICE Power	93359	93359	86527	80954	91180	82784	74302	88529	75144	63143	85987	73398	60485
	Electric Machine	67580	67580	63188	59817	65893	61585	56655	65673	57041	48686	63998	56233	46897
	MC2/GC	58846	58846	54540	51027	57473	52181	46834	55802	47365	39801	54200	46265	38125
	Battery	30125	30125	27930	26334	29327	27317	25040	29024	25040	21057	28455	25040	20488
	Specific Power	71	71	70	69	70	70	69	69	68	68	69	68	68
H2 Split HEV PHEV10	ICE Power	66086	66086	61553	58313	64922	59415	54031	63638	55401	47255	61743	54046	45175
	Electric Machine	76918	76918	72011	68209	74920	69273	61848	74419	63205	53165	72107	62443	50989
	MC2/GC	45610	45610	42481	40245	44767	41006	37290	43920	38236	32614	42613	37300	31178
	Battery	75851	75851	70559	66348	73669	67337	59937	72445	61197	52099	70184	62392	49934
	Specific Power	81	81	80	80	80	80	79	80	79	81	80	81	80
H2 Split HEV PHEV20	ICE Power	67027	67027	62349	59021	65863	60123	54563	64432	56044	47613	62474	54547	45506
	Electric Machine	78379	78379	73213	69193	77027	70307	62718	75577	64774	53818	73259	62908	51640
	MC2/GC	46220	46220	43031	40734	45436	41495	37657	44468	38660	32861	43117	37608	31406
	Battery	77153	77153	71580	67116	75832	68159	59904	73380	62043	51588	71131	61407	49486
	Specific Power	80	80	80	80	81	80	79	80	79	80	80	80	80
H2 Series HEV PHEV30	ICE Power	81601	81601	74456	69344	79612	70831	61470	75802	63333	51938	73124	61137	49546
	Electric Machine	134822	134822	125332	118680	131747	120947	108837	128664	111690	95562	124705	108498	91839
	MC2/GC	79153	79153	72222	67264	77224	68706	59626	73528	61433	50380	70930	59303	48060
	Battery	166124	166124	153601	144681	162369	147481	131129	156937	134604	113668	152129	130800	109257
	Specific Power	67	67	68	68	68	68	69	68	69	72	68	69	72

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		Midsize												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
H2 Series HEV PHEV40	ICE Power	84321	84321	76929	71484	82302	73119	63072	78239	65021	53044	75397	62617	50596
	Electric Machine	139062	139062	129210	122099	135948	124643	111438	132524	114417	97374	128374	110816	93473
	MC2/GC	81791	81791	74621	69339	79833	70925	61180	75892	63070	51453	73135	60738	49078
	Battery	171278	171278	158301	148789	167480	151935	134158	161577	137782	115724	156544	133484	111119
	Specific Power	68	68	68	69	68	69	69	68	69	72	69	69	72
E85 Split HEV	ICE Power	91090	91090	85963	81644	90239	84655	74444	87137	76979	65105	88066	75998	62086
	Electric Machine	65436	65436	62487	59983	64700	62019	56790	64623	57933	50232	64986	57458	47767
	MC2/GC	52714	52714	49747	47248	52222	48990	43081	50427	44548	37677	50964	43980	35929
	Battery	29327	29327	27930	26733	28928	27317	25610	29024	25610	22195	29024	25610	21057
	Specific Power	71	71	70	69	71	70	68	69	68	68	70	69	68
E85 Split HEV PHEV10	ICE Power	64688	64688	61439	58738	64037	59783	54899	62987	56044	48468	62221	54853	46140
	Electric Machine	72428	72428	70035	66972	71976	68157	62073	71020	62535	53508	70961	61955	51144
	MC2/GC	38807	38807	36874	35253	38434	35880	32949	37787	33636	29089	37344	32922	27692
	Battery	67297	67297	64885	61632	67010	62745	58080	65224	58304	50933	65404	59725	48737
	Specific Power	77	77	77	77	77	77	77	77	77	78	77	78	78
E85 Split HEV PHEV20	ICE Power	65629	65629	62235	59446	64893	60491	55430	63780	56632	48799	63036	55326	46472
	Electric Machine	74437	74437	71127	68011	73219	69085	62928	72713	63896	54224	72082	62567	51736
	MC2/GC	39338	39338	37335	35644	38931	36305	33268	38263	33956	29288	37799	33205	27891
	Battery	69124	69124	65688	62396	67968	63399	57848	66735	58713	50213	66223	58815	47895
	Specific Power	77	77	77	76	77	76	76	77	76	77	76	77	77
E85 Series HEV PHEV30	ICE Power	80409	80409	74757	70117	78910	71633	62671	75505	64220	53320	74069	62162	50706
	Electric Machine	132914	132914	125717	119838	130648	122197	110743	128044	113079	97855	126184	110168	93699
	MC2/GC	77997	77997	72514	68013	76543	69484	60791	73240	62293	51720	71847	60297	49185
	Battery	163771	163771	154070	146084	161012	149004	133415	156178	136272	116380	153925	132800	111462
	Specific Power	68	68	68	68	68	68	68	68	68	71	68	68	71
E85 Series HEV PHEV40	ICE Power	83129	83129	77140	72316	81568	73892	64216	77942	65879	54425	76370	63726	51756
	Electric Machine	137206	137206	129545	123394	134804	125839	113333	131954	115861	99815	129942	112616	95363
	MC2/GC	80635	80635	74826	70147	79121	71675	62290	75604	63903	52792	74079	61814	50203
	Battery	169000	169000	158707	150367	166066	153389	136435	160881	139506	118619	158452	135644	113353
	Specific Power	68	68	68	69	68	69	69	68	69	71	68	69	71

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		Midsize												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
FC HEV	FC Power	104050	104050	88019	78035	96505	76723	64474	82622	66935	52362	77746	63650	49443
	Electric Machine	124590	124590	107383	97235	113102	99769	86620	107109	89845	73258	100110	85292	69515
	MC2/GC													
	Battery	36908	36908	32519	30324	33516	34146	31301	36422	31870	27317	34715	31301	26179
	Specific Power	59	59	60	60	60	61	59	60	60	60	60	59	60
FC HEV PHEV10	FC Power	76391	76391	66089	59488	70247	60702	52736	65493	53965	45936	62805	54463	44162
	Electric Machine	121688	121688	105550	96445	111157	98186	86942	105476	88796	75059	101348	88020	70127
	MC2/GC													
	Battery	64879	64879	56091	50670	59493	51573	44891	55463	45917	37373	52881	44657	35527
	Specific Power	61	61	60	60	60	61	61	61	61	62	61	62	61
FC HEV PHEV20	FC Power	78252	78252	68330	60873	72745	61369	53926	66968	54586	45636	63478	54954	43201
	Electric Machine	124396	124396	107035	98435	112943	99533	88561	107580	89911	74403	102686	88963	70613
	MC2/GC													
	Battery	66428	66428	57445	51676	61043	52478	45621	56622	46601	37797	53833	45176	35985
	Specific Power	61	61	60	60	60	60	61	61	60	61	61	62	61
FC HEV PHEV30	FC Power	68439	68439	60582	56144	64345	56956	50962	61284	52296	43864	58431	50392	41576
	Electric Machine	134537	134537	122497	115240	128589	116695	105703	123686	108013	93347	119624	104476	88983
	MC2/GC													
	Battery	165695	165695	150070	140433	158409	142250	127410	150804	130239	111041	145890	126022	105872
	Specific Power	63	63	66	67	65	67	69	66	69	73	67	69	73
FC HEV PHEV40	FC Power	69736	69736	61673	57054	65566	57941	51564	62345	53023	44309	59309	50965	41971
	Electric Machine	137968	137968	125477	117907	131796	119501	107997	126658	110436	95022	122265	106588	90648
	MC2/GC													
	Battery	169858	169858	153652	143629	162297	145615	130067	154374	133045	112950	149046	128442	107765
	Specific Power	63	63	66	67	65	68	69	66	69	73	68	70	74
BEV	ICE Power													
	Electric Machine	160089	160089	148705	139383	157749	143474	122979	151888	125841	104899	147273	119932	98934
	MC2/GC	0	0	0	0	0	0	0	0	0	0	0	0	0
	Battery	194624	194624	180668	169594	192167	174251	148106	183881	151620	125107	178954	144527	118453
	Specific Power	90	90	89	89	90	89	88	89	89	91	89	88	91

Percentage of power reduction based on the respective 2010 reference case

		Midsize												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Conv	ICE Power	0%	0%	-4%	-7%	0%	-7%	-13%	-2%	-11%	-19%	-3%	-12%	-20%
	Electric Machine													
	MC2/GC													
	Battery													
	Specific Power	0%	0%	-1%	-1%	0%	-1%	-3%	-2%	0%	3%	-3%	-1%	6%
CI Conv	ICE Power	0%	0%	-5%	-8%	-1%	-8%	-14%	-3%	-12%	-23%	-5%	-13%	-26%
	Electric Machine													
	MC2/GC													
	Battery													
	Specific Power	0%	0%	-2%	-2%	-1%	-3%	-4%	-3%	-3%	-3%	-5%	-3%	-3%
H2 Conv	ICE Power	0%	0%	-8%	-14%	-3%	-14%	-22%	-6%	-19%	-31%	-10%	-21%	-34%
	Electric Machine													
	MC2/GC													
	Battery													
	Specific Power	0%	0%	-3%	-5%	-2%	-6%	-7%	-4%	-6%	-6%	-6%	-6%	-6%
E85 Conv	ICE Power	0%	0%	-4%	-8%	0%	-7%	-14%	-2%	-13%	-22%	-4%	-14%	-24%
	Electric Machine													
	MC2/GC													
	Battery													
	Specific Power	0%	0%	-1%	-2%	0%	-2%	-4%	-2%	-3%	0%	-3%	-3%	2%
SI Split HEV	ICE Power	0%	0%	-6%	-10%	-2%	-9%	-16%	-2%	-16%	-29%	-3%	-18%	-33%
	Electric Machine	0%	0%	-4%	-8%	-2%	-6%	-12%	0%	-11%	-24%	0%	-13%	-27%
	MC2/GC	0%	0%	-6%	-10%	-2%	-9%	-16%	-2%	-16%	-29%	-3%	-18%	-33%
	Battery	0%	0%	-4%	-8%	-1%	-6%	-12%	0%	-12%	-26%	0%	-12%	-28%
	Specific Power	0%	0%	-1%	-1%	0%	-2%	-2%	0%	-3%	-4%	0%	-4%	-4%
SI Split HEV PHEV10	ICE Power	0%	0%	-5%	-9%	-1%	-8%	-15%	-3%	-13%	-25%	-4%	-15%	-29%
	Electric Machine	0%	0%	-3%	-8%	-1%	-6%	-14%	-2%	-14%	-26%	-2%	-14%	-29%
	MC2/GC	0%	0%	-5%	-9%	-1%	-8%	-15%	-3%	-13%	-25%	-4%	-15%	-29%
	Battery	0%	0%	-4%	-8%	0%	-7%	-14%	-3%	-13%	-24%	-3%	-11%	-28%
	Specific Power	0%	0%	0%	-1%	0%	0%	0%	-1%	-1%	1%	-1%	1%	1%

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		Midsize												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Split HEV PHEV20	ICE Power	0%	0%	-5%	-9%	-1%	-8%	-16%	-3%	-14%	-26%	-4%	-16%	-29%
	Electric Machine	0%	0%	-5%	-9%	-2%	-7%	-16%	-3%	-14%	-27%	-3%	-16%	-31%
	MC2/GC	0%	0%	-5%	-9%	-1%	-8%	-15%	-3%	-14%	-26%	-4%	-16%	-29%
	Battery	0%	0%	-5%	-10%	-2%	-8%	-16%	-5%	-15%	-28%	-4%	-15%	-31%
	Specific Power	0%	0%	-1%	-1%	0%	-1%	-2%	-1%	-1%	0%	-1%	-1%	-1%
SI Series HEV PHEV30	ICE Power	0%	0%	-7%	-13%	-2%	-11%	-22%	-6%	-20%	-34%	-8%	-23%	-37%
	Electric Machine	0%	0%	-5%	-10%	-2%	-8%	-17%	-4%	-15%	-26%	-5%	-17%	-30%
	MC2/GC	0%	0%	-7%	-13%	-2%	-11%	-22%	-6%	-20%	-34%	-8%	-23%	-37%
	Battery	0%	0%	-6%	-11%	-2%	-9%	-19%	-5%	-17%	-29%	-6%	-19%	-32%
	Specific Power	0%	0%	0%	1%	1%	1%	1%	1%	1%	5%	0%	1%	5%
SI Series HEV PHEV40	ICE Power	0%	0%	-7%	-13%	-2%	-11%	-23%	-6%	-21%	-35%	-8%	-23%	-38%
	Electric Machine	0%	0%	-6%	-10%	-2%	-8%	-17%	-4%	-16%	-27%	-5%	-18%	-30%
	MC2/GC	0%	0%	-7%	-13%	-2%	-11%	-23%	-6%	-21%	-35%	-8%	-23%	-38%
	Battery	0%	0%	-6%	-11%	-2%	-9%	-19%	-5%	-17%	-30%	-6%	-20%	-33%
	Specific Power	0%	0%	0%	1%	1%	1%	1%	1%	1%	4%	0%	1%	5%
CI Split HEV	ICE Power	0%	0%	-5%	-12%	-2%	-9%	-17%	-4%	-16%	-29%	-5%	-17%	-31%
	Electric Machine	0%	0%	-4%	-10%	-2%	-6%	-13%	-2%	-12%	-24%	-2%	-13%	-26%
	MC2/GC	0%	0%	-5%	-12%	-2%	-9%	-17%	-4%	-16%	-29%	-5%	-17%	-31%
	Battery	0%	0%	-4%	-10%	-1%	-7%	-14%	-1%	-12%	-25%	-1%	-12%	-27%
	Specific Power	0%	0%	-1%	-3%	0%	-2%	-3%	-2%	-4%	-5%	-2%	-3%	-4%
CI Split HEV PHEV10	ICE Power	0%	0%	-5%	-9%	-1%	-7%	-15%	-3%	-13%	-25%	-4%	-15%	-28%
	Electric Machine	0%	0%	-4%	-8%	-1%	-6%	-14%	-3%	-13%	-26%	-2%	-14%	-29%
	MC2/GC	0%	0%	-5%	-9%	-1%	-7%	-15%	-3%	-13%	-25%	-4%	-15%	-28%
	Battery	0%	0%	-4%	-8%	-1%	-7%	-14%	-3%	-13%	-25%	-3%	-12%	-28%
	Specific Power	0%	0%	0%	-1%	0%	0%	-1%	-1%	0%	0%	0%	0%	0%
CI Split HEV PHEV20	ICE Power	0%	0%	-5%	-9%	-1%	60%	-15%	-3%	-13%	-25%	-4%	-15%	-28%
	Electric Machine	0%	0%	-4%	-8%	-1%	-33%	-15%	-2%	-13%	-26%	-2%	-15%	-28%
	MC2/GC	0%	0%	-5%	-9%	-1%	-48%	-15%	-3%	-13%	-25%	-4%	-15%	-28%
	Battery	0%	0%	-4%	-8%	-1%	-19%	-15%	-3%	-14%	-25%	-3%	-14%	-28%
	Specific Power	0%	0%	0%	0%	0%	28%	-1%	-1%	-1%	0%	0%	0%	0%

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		Midsize												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
CI Series HEV PHEV30	ICE Power	0%	0%	-7%	-13%	-2%	-10%	-22%	-6%	-20%	-33%	-8%	-22%	-36%
	Electric Machine	0%	0%	-5%	-10%	-2%	-8%	-16%	-4%	-14%	-26%	-5%	-17%	-29%
	MC2/GC	0%	0%	-7%	-13%	-2%	-10%	-22%	-6%	-20%	-33%	-8%	-22%	-36%
	Battery	0%	0%	-6%	-10%	-2%	-9%	-18%	-5%	-16%	-28%	-6%	-18%	-31%
	Specific Power	0%	0%	0%	1%	1%	0%	1%	0%	1%	4%	0%	1%	4%
CI Series HEV PHEV40	ICE Power	0%	0%	-7%	-13%	-2%	-11%	-22%	-6%	-20%	-34%	-8%	-23%	-37%
	Electric Machine	0%	0%	-5%	-10%	-2%	-8%	-17%	-4%	-15%	-26%	-5%	-17%	-30%
	MC2/GC	0%	0%	-7%	-13%	-2%	-11%	-22%	-6%	-20%	-34%	-8%	-23%	-37%
	Battery	0%	0%	-6%	-11%	-2%	-9%	-19%	-5%	-17%	-29%	-6%	-19%	-32%
	Specific Power	0%	0%	0%	1%	1%	0%	1%	0%	1%	3%	0%	0%	4%
H2 Split HEV	ICE Power	0%	0%	-7%	-13%	-2%	-11%	-20%	-5%	-20%	-32%	-8%	-21%	-35%
	Electric Machine	0%	0%	-6%	-11%	-2%	-9%	-16%	-3%	-16%	-28%	-5%	-17%	-31%
	MC2/GC	0%	0%	-7%	-13%	-2%	-11%	-20%	-5%	-20%	-32%	-8%	-21%	-35%
	Battery	0%	0%	-7%	-13%	-3%	-9%	-17%	-4%	-17%	-30%	-6%	-17%	-32%
	Specific Power	0%	0%	-1%	-2%	0%	-1%	-2%	-2%	-4%	-3%	-2%	-3%	-3%
H2 Split HEV PHEV10	ICE Power	0%	0%	-7%	-12%	-2%	-10%	-18%	-4%	-16%	-28%	-7%	-18%	-32%
	Electric Machine	0%	0%	-6%	-11%	-3%	-10%	-20%	-3%	-18%	-31%	-6%	-19%	-34%
	MC2/GC	0%	0%	-7%	-12%	-2%	-10%	-18%	-4%	-16%	-28%	-7%	-18%	-32%
	Battery	0%	0%	-7%	-13%	-3%	-11%	-21%	-4%	-19%	-31%	-7%	-18%	-34%
	Specific Power	0%	0%	0%	0%	0%	-1%	-2%	-1%	-2%	0%	-1%	0%	0%
H2 Split HEV PHEV20	ICE Power	0%	0%	-7%	-12%	-2%	-10%	-19%	-4%	-16%	-29%	-7%	-19%	-32%
	Electric Machine	0%	0%	-7%	-12%	-2%	-10%	-20%	-4%	-17%	-31%	-7%	-20%	-34%
	MC2/GC	0%	0%	-7%	-12%	-2%	-10%	-19%	-4%	-16%	-29%	-7%	-19%	-32%
	Battery	0%	0%	-7%	-13%	-2%	-12%	-22%	-5%	-20%	-33%	-8%	-20%	-36%
	Specific Power	0%	0%	0%	-1%	0%	-1%	-2%	-1%	-2%	-1%	-1%	-1%	-1%
H2 Series HEV PHEV30	ICE Power	0%	0%	-9%	-15%	-2%	-13%	-25%	-7%	-22%	-36%	-10%	-25%	-39%
	Electric Machine	0%	0%	-7%	-12%	-2%	-10%	-19%	-5%	-17%	-29%	-8%	-20%	-32%
	MC2/GC	0%	0%	-9%	-15%	-2%	-13%	-25%	-7%	-22%	-36%	-10%	-25%	-39%
	Battery	0%	0%	-8%	-13%	-2%	-11%	-21%	-6%	-19%	-32%	-8%	-21%	-34%
	Specific Power	0%	0%	1%	2%	1%	2%	3%	1%	2%	6%	1%	2%	7%

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		Midsize												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
H2 Series HEV PHEV40	ICE Power	0%	0%	-9%	-15%	-2%	-13%	-25%	-7%	-23%	-37%	-11%	-26%	-40%
	Electric Machine	0%	0%	-7%	-12%	-2%	-10%	-20%	-5%	-18%	-30%	-8%	-20%	-33%
	MC2/GC	0%	0%	-9%	-15%	-2%	-13%	-25%	-7%	-23%	-37%	-11%	-26%	-40%
	Battery	0%	0%	-8%	-13%	-2%	-11%	-22%	-6%	-20%	-32%	-9%	-22%	-35%
	Specific Power	0%	0%	1%	2%	1%	2%	2%	1%	2%	6%	1%	2%	6%
E85 Split HEV	ICE Power	0%	0%	-6%	-10%	-1%	-7%	-18%	-4%	-15%	-29%	-3%	-17%	-32%
	Electric Machine	0%	0%	-5%	-8%	-1%	-5%	-13%	-1%	-11%	-23%	-1%	-12%	-27%
	MC2/GC	0%	0%	-6%	-10%	-1%	-7%	-18%	-4%	-15%	-29%	-3%	-17%	-32%
	Battery	0%	0%	-5%	-9%	-1%	-7%	-13%	-1%	-13%	-24%	-1%	-13%	-28%
	Specific Power	0%	0%	-1%	-2%	0%	-1%	-4%	-2%	-3%	-3%	-1%	-2%	-3%
E85 Split HEV PHEV10	ICE Power	0%	0%	-5%	-9%	-1%	-8%	-15%	-3%	-13%	-25%	-4%	-15%	-29%
	Electric Machine	0%	0%	-3%	-8%	-1%	-6%	-14%	-2%	-14%	-26%	-2%	-14%	-29%
	MC2/GC	0%	0%	-5%	-9%	-1%	-8%	-15%	-3%	-13%	-25%	-4%	-15%	-29%
	Battery	0%	0%	-4%	-8%	0%	-7%	-14%	-3%	-13%	-24%	-3%	-11%	-28%
	Specific Power	0%	0%	0%	-1%	0%	0%	0%	-1%	-1%	1%	-1%	1%	1%
E85 Split HEV PHEV20	ICE Power	0%	0%	-5%	-9%	-1%	-8%	-16%	-3%	-14%	-26%	-4%	-16%	-29%
	Electric Machine	0%	0%	-4%	-9%	-2%	-7%	-15%	-2%	-14%	-27%	-3%	-16%	-30%
	MC2/GC	0%	0%	-5%	-9%	-1%	-8%	-15%	-3%	-14%	-26%	-4%	-16%	-29%
	Battery	0%	0%	-5%	-10%	-2%	-8%	-16%	-3%	-15%	-27%	-4%	-15%	-31%
	Specific Power	0%	0%	-1%	-1%	0%	-1%	-2%	-1%	-1%	0%	-1%	-1%	-1%
E85 Series HEV PHEV30	ICE Power	0%	0%	-7%	-13%	-2%	-11%	-22%	-6%	-20%	-34%	-8%	-23%	-37%
	Electric Machine	0%	0%	-5%	-10%	-2%	-8%	-17%	-4%	-15%	-26%	-5%	-17%	-30%
	MC2/GC	0%	0%	-7%	-13%	-2%	-11%	-22%	-6%	-20%	-34%	-8%	-23%	-37%
	Battery	0%	0%	-6%	-11%	-2%	-9%	-19%	-5%	-17%	-29%	-6%	-19%	-32%
	Specific Power	0%	0%	0%	1%	1%	1%	1%	1%	1%	5%	0%	1%	5%
E85 Series HEV PHEV40	ICE Power	0%	0%	-7%	-13%	-2%	-11%	-23%	-6%	-21%	-35%	-8%	-23%	-38%
	Electric Machine	0%	0%	-6%	-10%	-2%	-8%	-17%	-4%	-16%	-27%	-5%	-18%	-30%
	MC2/GC	0%	0%	-7%	-13%	-2%	-11%	-23%	-6%	-21%	-35%	-8%	-23%	-38%
	Battery	0%	0%	-6%	-11%	-2%	-9%	-19%	-5%	-17%	-30%	-6%	-20%	-33%
	Specific Power	0%	0%	0%	1%	0%	1%	1%	0%	1%	4%	0%	1%	4%

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		Midsize												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
FC HEV	FC Power	0%	0%	-15%	-25%	-7%	-26%	-38%	-21%	-36%	-50%	-25%	-39%	-52%
	Electric Machine	0%	0%	-14%	-22%	-9%	-20%	-30%	-14%	-28%	-41%	-20%	-32%	-44%
	MC2/GC													
	Battery	0%	0%	-12%	-18%	-9%	-7%	-15%	-1%	-14%	-26%	-6%	-15%	-29%
	Specific Power	0%	0%	1%	1%	1%	2%	0%	1%	1%	1%	0%	-1%	1%
FC HEV PHEV10	FC Power	0%	0%	-13%	-22%	-8%	-21%	-31%	-14%	-29%	-40%	-18%	-29%	-42%
	Electric Machine	0%	0%	-13%	-21%	-9%	-19%	-29%	-13%	-27%	-38%	-17%	-28%	-42%
	MC2/GC													
	Battery	0%	0%	-14%	-22%	-8%	-21%	-31%	-15%	-29%	-42%	-18%	-31%	-45%
	Specific Power	0%	0%	0%	-1%	0%	0%	0%	0%	0%	3%	1%	2%	1%
FC HEV PHEV20	FC Power	0%	0%	-13%	-22%	-7%	-22%	-31%	-14%	-30%	-42%	-19%	-30%	-45%
	Electric Machine	0%	0%	-14%	-21%	-9%	-20%	-29%	-14%	-28%	-40%	-17%	-28%	-43%
	MC2/GC													
	Battery	0%	0%	-14%	-22%	-8%	-21%	-31%	-15%	-30%	-43%	-19%	-32%	-46%
	Specific Power	0%	0%	-1%	0%	-1%	0%	0%	0%	0%	1%	1%	2%	1%
FC HEV PHEV30	FC Power	0%	0%	-11%	-18%	-6%	-17%	-26%	-10%	-24%	-36%	-15%	-26%	-39%
	Electric Machine	0%	0%	-9%	-14%	-4%	-13%	-21%	-8%	-20%	-31%	-11%	-22%	-34%
	MC2/GC													
	Battery	0%	0%	-9%	-15%	-4%	-14%	-23%	-9%	-21%	-33%	-12%	-24%	-36%
	Specific Power	0%	0%	4%	7%	3%	7%	9%	5%	9%	15%	7%	10%	16%
FC HEV PHEV40	FC Power	0%	0%	-12%	-18%	-6%	-17%	-26%	-11%	-24%	-36%	-15%	-27%	-40%
	Electric Machine	0%	0%	-9%	-15%	-4%	-13%	-22%	-8%	-20%	-31%	-11%	-23%	-34%
	MC2/GC													
	Battery	0%	0%	-10%	-15%	-4%	-14%	-23%	-9%	-22%	-34%	-12%	-24%	-37%
	Specific Power	0%	0%	4%	7%	3%	7%	10%	5%	10%	16%	7%	10%	17%
EV	ICE Power													
	Electric Machine	0%	0%	-7%	-13%	-1%	-10%	-23%	-5%	-21%	-34%	-8%	-25%	-38%
	MC2/GC													
	Battery	0%	0%	-7%	-13%	-1%	-10%	-24%	-6%	-22%	-36%	-8%	-26%	-39%
	Specific Power	0%	0%	-1%	-1%	0%	-1%	-1%	-1%	-1%	1%	-1%	-2%	2%

Energy

		Midsize												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Split HEV	Total Energy	1139	1139	1092	1045	1131	1037	972	1102	972	821	1102	972	799
	Usable Energy													
SI Split HEV PHEV10	Total Energy	3872	3872	3600	3334	3863	3447	2671	3694	2784	2033	3615	2489	1869
	Usable Energy	2323	2323	2160	2000	2318	2068	1870	2216	1949	1627	2169	1867	1495
SI Split HEV PHEV20	Total Energy	7593	7593	7097	6610	7716	6795	5238	7263	5425	3901	7106	4907	3700
	Usable Energy	4556	4556	4258	3966	4630	4077	3667	4358	3797	3121	4264	3680	2960
SI Series HEV PHEV30	Total Energy	14431	14431	13337	12456	14230	12799	9677	13561	9987	7214	13234	8980	6895
	Usable Energy	8659	8659	8002	7474	8538	7680	6774	8137	6991	5771	7940	6735	5516
SI Series HEV PHEV40	Total Energy	19472	19472	18044	16829	19196	17267	13041	18323	13476	9627	17834	12056	9223
	Usable Energy	11683	11683	10827	10097	11518	10360	9129	10994	9433	7702	10700	9042	7378
CI Split HEV	Total Energy	1217	1217	1162	1100	1201	1102	1015	1166	1037	886	1166	1037	864
	Usable Energy													
CI Split HEV PHEV10	Total Energy	4136	4136	3857	3548	4095	3689	2831	3928	2920	2178	3862	2645	2087
	Usable Energy	2482	2482	2314	2129	2457	2213	1982	2357	2044	1742	2317	1983	1670
CI Split HEV PHEV20	Total Energy	8151	8151	7461	6984	7955	7287	5629	7609	5810	4098	7439	5165	3927
	Usable Energy	4891	4891	4477	4191	4773	4372	3940	4566	4067	3278	4463	3873	3141
CI Series HEV PHEV30	Total Energy	14994	14994	13887	12973	14770	13342	10114	14077	10433	7616	13757	9400	7307
	Usable Energy	8997	8997	8332	7784	8862	8005	7080	8446	7303	6093	8254	7050	5846
CI Series HEV PHEV40	Total Energy	20292	20292	18797	17493	19896	18026	13638	19075	14068	10134	18603	12598	9680
	Usable Energy	12175	12175	11278	10496	11937	10815	9547	11445	9847	8107	11162	9449	7744
H2 Split HEV	Total Energy	1178	1178	1092	1030	1147	1037	950	1102	950	799	1080	950	778
	Usable Energy													
H2 Split HEV PHEV10	Total Energy	4013	4013	3604	3340	3969	3436	2636	3755	2759	1906	3579	2459	1829
	Usable Energy	2408	2408	2162	2004	2381	2061	1845	2253	1932	1525	2147	1844	1464
H2 Split HEV PHEV20	Total Energy	7779	7779	7082	6738	7601	6891	5156	7358	5345	3804	7019	4830	3608
	Usable Energy	4668	4668	4249	4043	4561	4134	3609	4415	3741	3043	4211	3622	2886

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		Midsize												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
H2 Series HEV PHEV30	Total Energy	14672	14672	13323	12342	14367	12683	9510	13653	9866	7039	13095	8852	6826
	Usable Energy	8803	8803	7994	7405	8620	7610	6657	8192	6906	5631	7857	6639	5461
H2 Series HEV PHEV40	Total Energy	19878	19878	17945	16610	19462	17109	12814	18481	13313	9390	17620	11860	9024
	Usable Energy	11927	11927	10767	9966	11677	10265	8970	11088	9319	7512	10572	8895	7219
E85 Split HEV	Total Energy	1147	1147	1092	1045	1131	1037	972	1102	972	842	1102	972	799
	Usable Energy													
E85 Split HEV PHEV10	Total Energy	3928	3928	3606	3337	3864	3452	2673	3697	2801	2036	3620	2491	1872
	Usable Energy	2357	2357	2164	2002	2319	2071	1871	2218	1960	1628	2172	1868	1497
E85 Split HEV PHEV20	Total Energy	7593	7593	7097	6615	7719	6939	5243	7225	5430	3909	7108	4913	3707
	Usable Energy	4556	4556	4258	3969	4632	4163	3670	4335	3801	3127	4265	3684	2965
E85 Series HEV PHEV30	Total Energy	14443	14443	13362	12467	14237	12810	9687	13578	9997	7222	13245	8989	6906
	Usable Energy	8666	8666	8017	7480	8542	7686	6781	8147	6998	5777	7947	6741	5525
E85 Series HEV PHEV40	Total Energy	19456	19456	18104	16828	19211	17282	13062	18348	13494	9632	17851	12067	9222
	Usable Energy	11674	11674	10862	10097	11527	10369	9143	11009	9445	7706	10711	9050	7378
FC HEV	Total Energy	1443	1443	1271	1186	1310	1296	1188	1382	1210	1037	1318	1188	994
	Usable Energy													
FC HEV PHEV10	Total Energy	5072	5072	4016	3585	4756	3696	2755	4000	2856	2068	3800	2566	1979
	Usable Energy	3043	3043	2410	2151	2853	2218	1928	2400	1999	1654	2280	1925	1583
FC HEV PHEV20	Total Energy	9405	9405	8065	7195	8738	7405	5679	8029	5880	4049	7613	5295	3865
	Usable Energy	5643	5643	4839	4317	5243	4443	3975	4818	4116	3239	4568	3971	3092
FC HEV PHEV30	Total Energy	14317	14317	12478	11318	13518	11590	8508	12539	8860	6313	11822	7875	6022
	Usable Energy	8590	8590	7487	6791	8111	6954	5956	7524	6202	5050	7093	5906	4817
FC HEV PHEV40	Total Energy	19052	19052	16494	14947	17925	15292	11216	16603	11635	8271	15770	10365	7858
	Usable Energy	11431	11431	9897	8968	10755	9175	7851	9962	8145	6617	9462	7773	6286
BEV	Total Energy	69036	69036	63218	58559	68344	60421	42981	64591	44481	30736	62186	39717	29242
	Usable Energy	41422	41422	37931	35136	41006	36253	30087	38755	31137	24589	37312	29788	23394

Percentage of Energy reduction based on the respective 2010 reference case

		Midsize												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Split HEV	Total Energy	0.0%	0.0%	-4.1%	-8.2%	-0.7%	-9.0%	-14.6%	-3.3%	-14.6%	-27.9%	-3.3%	-14.6%	-29.8%
	Usable Energy													
SI Split HEV PHEV10	Total Energy	0.0%	0.0%	-7.0%	-13.9%	-0.3%	-11.0%	-31.0%	-4.6%	-28.1%	-47.5%	-6.6%	-35.7%	-51.7%
	Usable Energy	0.0%	0.0%	-7.0%	-13.9%	-0.3%	-11.0%	-19.5%	-4.6%	-16.1%	-30.0%	-6.6%	-19.7%	-35.7%
SI Split HEV PHEV20	Total Energy	0.0%	0.0%	-6.5%	-12.9%	1.6%	-10.5%	-31.0%	-4.4%	-28.6%	-48.6%	-6.4%	-35.4%	-51.3%
	Usable Energy	0.0%	0.0%	-6.5%	-12.9%	1.6%	-10.5%	-19.5%	-4.4%	-16.6%	-31.5%	-6.4%	-19.2%	-35.0%
SI Series HEV PHEV30	Total Energy	0.0%	0.0%	-7.6%	-13.7%	-1.4%	-11.3%	-32.9%	-6.0%	-30.8%	-50.0%	-8.3%	-37.8%	-52.2%
	Usable Energy	0.0%	0.0%	-7.6%	-13.7%	-1.4%	-11.3%	-21.8%	-6.0%	-19.3%	-33.3%	-8.3%	-22.2%	-36.3%
SI Series HEV PHEV40	Total Energy	0.0%	0.0%	-7.3%	-13.6%	-1.4%	-11.3%	-33.0%	-5.9%	-30.8%	-50.6%	-8.4%	-38.1%	-52.6%
	Usable Energy	0.0%	0.0%	-7.3%	-13.6%	-1.4%	-11.3%	-21.9%	-5.9%	-19.3%	-34.1%	-8.4%	-22.6%	-36.8%
CI Split HEV	Total Energy	0.0%	0.0%	-4.5%	-9.6%	-1.3%	-9.5%	-16.6%	-4.1%	-14.8%	-27.2%	-4.1%	-14.8%	-29.0%
	Usable Energy													
CI Split HEV PHEV10	Total Energy	0.0%	0.0%	-6.7%	-14.2%	-1.0%	-10.8%	-31.6%	-5.0%	-29.4%	-47.3%	-6.6%	-36.1%	-49.5%
	Usable Energy	0.0%	0.0%	-6.7%	-14.2%	-1.0%	-10.8%	-20.1%	-5.0%	-17.6%	-29.8%	-6.6%	-20.1%	-32.7%
CI Split HEV PHEV20	Total Energy	0.0%	0.0%	-8.5%	-14.3%	-2.4%	-10.6%	-30.9%	-6.7%	-28.7%	-49.7%	-8.7%	-36.6%	-51.8%
	Usable Energy	0.0%	0.0%	-8.5%	-14.3%	-2.4%	-10.6%	-19.4%	-6.7%	-16.8%	-33.0%	-8.7%	-20.8%	-35.8%
CI Series HEV PHEV30	Total Energy	0.0%	0.0%	-7.4%	-13.5%	-1.5%	-11.0%	-32.5%	-6.1%	-30.4%	-49.2%	-8.3%	-37.3%	-51.3%
	Usable Energy	0.0%	0.0%	-7.4%	-13.5%	-1.5%	-11.0%	-21.3%	-6.1%	-18.8%	-32.3%	-8.3%	-21.6%	-35.0%
CI Series HEV PHEV40	Total Energy	0.0%	0.0%	-7.4%	-13.8%	-2.0%	-11.2%	-32.8%	-6.0%	-30.7%	-50.1%	-8.3%	-37.9%	-52.3%
	Usable Energy	0.0%	0.0%	-7.4%	-13.8%	-2.0%	-11.2%	-21.6%	-6.0%	-19.1%	-33.4%	-8.3%	-22.4%	-36.4%
H2 Split HEV	Total Energy	0.0%	0.0%	-7.3%	-12.6%	-2.6%	-12.0%	-19.3%	-6.5%	-19.3%	-32.1%	-8.3%	-19.3%	-34.0%
	Usable Energy													
H2 Split HEV PHEV10	Total Energy	0.0%	0.0%	-10.2%	-16.8%	-1.1%	-14.4%	-34.3%	-6.4%	-31.2%	-52.5%	-10.8%	-38.7%	-54.4%
	Usable Energy	0.0%	0.0%	-10.2%	-16.8%	-1.1%	-14.4%	-23.4%	-6.4%	-19.8%	-36.7%	-10.8%	-23.4%	-39.2%
H2 Split HEV PHEV20	Total Energy	0.0%	0.0%	-9.0%	-13.4%	-2.3%	-11.4%	-33.7%	-5.4%	-31.3%	-51.1%	-9.8%	-37.9%	-53.6%
	Usable Energy	0.0%	0.0%	-9.0%	-13.4%	-2.3%	-11.4%	-22.7%	-5.4%	-19.8%	-34.8%	-9.8%	-22.4%	-38.2%

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		Midsize													
		2010	2010				2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high	
H2 Series HEV PHEV30	Total Energy	0.0%	0.0%	-9.2%	-15.9%	-2.1%	-13.6%	-35.2%	-6.9%	-32.8%	-52.0%	-10.7%	-39.7%	-53.5%	
	Usable Energy	0.0%	0.0%	-9.2%	-15.9%	-2.1%	-13.6%	-24.4%	-6.9%	-21.5%	-36.0%	-10.7%	-24.6%	-38.0%	
H2 Series HEV PHEV40	Total Energy	0.0%	0.0%	-9.7%	-16.4%	-2.1%	-13.9%	-35.5%	-7.0%	-33.0%	-52.8%	-11.4%	-40.3%	-54.6%	
	Usable Energy	0.0%	0.0%	-9.7%	-16.4%	-2.1%	-13.9%	-24.8%	-7.0%	-21.9%	-37.0%	-11.4%	-25.4%	-39.5%	
E85 Split HEV	Total Energy	0.0%	0.0%	-4.8%	-8.8%	-1.4%	-9.6%	-15.2%	-3.9%	-15.2%	-26.5%	-3.9%	-15.2%	-30.3%	
	Usable Energy														
E85 Split HEV PHEV10	Total Energy	0.0%	0.0%	-8.2%	-15.0%	-1.6%	-12.1%	-31.9%	-5.9%	-28.7%	-48.2%	-7.8%	-36.6%	-52.3%	
	Usable Energy	0.0%	0.0%	-8.2%	-15.0%	-1.6%	-12.1%	-20.6%	-5.9%	-16.8%	-30.9%	-7.8%	-20.7%	-36.5%	
E85 Split HEV PHEV20	Total Energy	0.0%	0.0%	-6.5%	-12.9%	1.7%	-8.6%	-31.0%	-4.9%	-28.5%	-48.5%	-6.4%	-35.3%	-51.2%	
	Usable Energy	0.0%	0.0%	-6.5%	-12.9%	1.7%	-8.6%	-19.4%	-4.9%	-16.6%	-31.4%	-6.4%	-19.1%	-34.9%	
E85 Series HEV PHEV30	Total Energy	0.0%	0.0%	-7.5%	-13.7%	-1.4%	-11.3%	-32.9%	-6.0%	-30.8%	-50.0%	-8.3%	-37.8%	-52.2%	
	Usable Energy	0.0%	0.0%	-7.5%	-13.7%	-1.4%	-11.3%	-21.8%	-6.0%	-19.2%	-33.3%	-8.3%	-22.2%	-36.2%	
E85 Series HEV PHEV40	Total Energy	0.0%	0.0%	-7.0%	-13.5%	-1.3%	-11.2%	-32.9%	-5.7%	-30.6%	-50.5%	-8.2%	-38.0%	-52.6%	
	Usable Energy	0.0%	0.0%	-7.0%	-13.5%	-1.3%	-11.2%	-21.7%	-5.7%	-19.1%	-34.0%	-8.2%	-22.5%	-36.8%	
FC HEV	Total Energy	0.0%	0.0%	-11.9%	-17.8%	-9.2%	-10.2%	-17.7%	-4.2%	-16.2%	-28.1%	-8.7%	-17.7%	-31.1%	
	Usable Energy														
FC HEV PHEV10	Total Energy	0.0%	0.0%	-20.8%	-29.3%	-6.2%	-27.1%	-45.7%	-21.1%	-43.7%	-59.2%	-25.1%	-49.4%	-61.0%	
	Usable Energy	0.0%	0.0%	-20.8%	-29.3%	-6.2%	-27.1%	-36.6%	-21.1%	-34.3%	-45.6%	-25.1%	-36.8%	-48.0%	
FC HEV PHEV20	Total Energy	0.0%	0.0%	-14.2%	-23.5%	-7.1%	-21.3%	-39.6%	-14.6%	-37.5%	-57.0%	-19.0%	-43.7%	-58.9%	
	Usable Energy	0.0%	0.0%	-14.2%	-23.5%	-7.1%	-21.3%	-29.6%	-14.6%	-27.1%	-42.6%	-19.0%	-29.6%	-45.2%	
FC HEV PHEV30	Total Energy	0.0%	0.0%	-12.8%	-20.9%	-5.6%	-19.0%	-40.6%	-12.4%	-38.1%	-55.9%	-17.4%	-45.0%	-57.9%	
	Usable Energy	0.0%	0.0%	-12.8%	-20.9%	-5.6%	-19.0%	-30.7%	-12.4%	-27.8%	-41.2%	-17.4%	-31.2%	-43.9%	
FC HEV PHEV40	Total Energy	0.0%	0.0%	-13.4%	-21.5%	-5.9%	-19.7%	-41.1%	-12.9%	-38.9%	-56.6%	-17.2%	-45.6%	-58.8%	
	Usable Energy	0.0%	0.0%	-13.4%	-21.5%	-5.9%	-19.7%	-31.3%	-12.9%	-28.7%	-42.1%	-17.2%	-32.0%	-45.0%	
EV	Total Energy	0.0%	0.0%	-8.4%	-15.2%	-1.0%	-12.5%	-37.7%	-6.4%	-35.6%	-55.5%	-9.9%	-42.5%	-57.6%	
	Usable Energy	0.0%	0.0%	-8.4%	-15.2%	-1.0%	-12.5%	-27.4%	-6.4%	-24.8%	-40.6%	-9.9%	-28.1%	-43.5%	

Curb Weight

		Compact												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Conv	Vehicle Mass	1238	1238	1198	1155	1237	1167	1093	1229	1104	959	1230	1094	919
	% of Glider mass	65.0	65.0	64.1	63.1	65.1	63.6	61.4	65.2	61.7	56.3	65.2	61.3	54.3
	% of Powertrain mass	35.0	35.0	35.9	36.9	34.9	36.4	38.6	34.8	38.3	43.7	34.8	38.7	45.7
CI Conv	Vehicle Mass	1301	1301	1262	1221	1301	1235	1159	1296	1170	1026	1296	1159	983
	% of Glider mass	61.9	61.9	60.8	59.7	61.9	60.1	57.9	61.9	58.2	52.6	61.9	57.8	50.7
	% of Powertrain mass	38.1	38.1	39.2	40.3	38.1	39.9	42.1	38.1	41.8	47.4	38.1	42.2	49.3
H2 Conv	Vehicle Mass	1268	1268	1189	1131	1253	1146	1057	1240	1076	908	1204	1057	875
	% of Glider mass	63.5	63.5	64.6	64.4	64.3	64.8	63.5	64.6	63.3	59.4	66.6	63.4	57.0
	% of Powertrain mass	36.5	36.5	35.4	35.6	35.7	35.2	36.5	35.4	36.7	40.6	33.4	36.6	43.0
E85 Conv	Vehicle Mass	1234	1234	1194	1151	1234	1166	1090	1228	1101	955	1228	1091	913
	% of Glider mass	65.2	65.2	64.3	63.3	65.3	63.7	61.6	65.3	61.8	56.5	65.3	61.4	54.6
	% of Powertrain mass	34.8	34.8	35.7	36.7	34.7	36.3	38.4	34.7	38.2	43.5	34.7	38.6	45.4
SI Split HEV	Vehicle Mass	1341	1341	1279	1221	1325	1252	1149	1316	1169	990	1308	1150	943
	% of Glider mass	60.0	60.0	60.0	59.7	60.8	59.3	58.4	60.9	58.2	54.5	61.3	58.3	52.9
	% of Powertrain mass	40.0	40.0	40.0	40.3	39.2	40.7	41.6	39.1	41.8	45.5	38.7	41.7	47.1
SI Split HEV PHEV10	Vehicle Mass	1351	1351	1288	1230	1330	1250	1147	1315	1168	988	1307	1147	941
	% of Glider mass	59.6	59.6	59.6	59.3	60.6	59.4	58.5	61.0	58.3	54.6	61.3	58.4	53.0
	% of Powertrain mass	40.4	40.4	40.4	40.7	39.4	40.6	41.5	39.0	41.7	45.4	38.7	41.6	47.0
SI Split HEV PHEV20	Vehicle Mass	1377	1377	1315	1253	1357	1273	1164	1340	1187	999	1331	1162	952
	% of Glider mass	58.4	58.4	58.4	58.2	59.4	58.3	57.7	59.8	57.4	54.0	60.2	57.7	52.4
	% of Powertrain mass	41.6	41.6	41.6	41.8	40.6	41.7	42.3	40.2	42.6	46.0	39.8	42.3	47.6
SI Series HEV PHEV30	Vehicle Mass	1581	1581	1493	1407	1542	1438	1286	1510	1320	1094	1487	1284	1040
	% of Glider mass	50.9	50.9	51.4	51.8	52.3	51.6	52.2	53.1	51.6	49.3	53.9	52.2	47.9
	% of Powertrain mass	49.1	49.1	48.6	48.2	47.7	48.4	47.8	46.9	48.4	50.7	46.1	47.8	52.1
SI Series HEV PHEV40	Vehicle Mass	1624	1624	1529	1442	1584	1476	1313	1547	1349	1113	1523	1308	1057
	% of Glider mass	49.6	49.6	50.2	50.5	50.9	50.3	51.1	51.8	50.5	48.5	52.6	51.3	47.2
	% of Powertrain mass	50.4	50.4	49.8	49.5	49.1	49.7	48.9	48.2	49.5	51.5	47.4	48.7	52.8
CI Split HEV	Vehicle Mass	1442	1442	1378	1319	1416	1348	1246	1414	1266	1083	1405	1244	1036
	% of Glider mass	55.8	55.8	55.7	55.3	56.9	55.1	53.9	56.7	53.8	49.8	57.1	53.9	48.1
	% of Powertrain mass	44.2	44.2	44.3	44.7	43.1	44.9	46.1	43.3	46.2	50.2	42.9	46.1	51.9

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		Compact												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
CI Split HEV PHEV10	Vehicle Mass	1457	1457	1394	1336	1437	1357	1248	1422	1270	1087	1411	1250	1039
	% of Glider mass	55.2	55.2	55.1	54.6	56.1	54.7	53.8	56.4	53.6	49.6	56.8	53.6	48.0
	% of Powertrain mass	44.8	44.8	44.9	45.4	43.9	45.3	46.2	43.6	46.4	50.4	43.2	46.4	52.0
CI Split HEV PHEV20	Vehicle Mass	1486	1486	1424	1360	1465	1384	1268	1449	1291	1100	1437	1267	1053
	% of Glider mass	54.2	54.2	53.9	53.6	55.0	53.6	52.9	55.3	52.7	49.1	55.8	52.9	47.3
	% of Powertrain mass	45.8	45.8	46.1	46.4	45.0	46.4	47.1	44.7	47.3	50.9	44.2	47.1	52.7
CI Series HEV PHEV30	Vehicle Mass	1677	1677	1587	1505	1638	1537	1382	1605	1417	1190	1582	1381	1137
	% of Glider mass	48.0	48.0	48.4	48.4	49.2	48.3	48.6	49.9	48.0	45.4	50.7	48.5	43.8
	% of Powertrain mass	52.0	52.0	51.6	51.6	50.8	51.7	51.4	50.1	52.0	54.6	49.3	51.5	56.2
CI Series HEV PHEV40	Vehicle Mass	1723	1723	1628	1542	1684	1574	1412	1645	1444	1210	1620	1405	1153
	% of Glider mass	46.7	46.7	47.2	47.3	47.8	47.2	47.5	48.7	47.1	44.6	49.5	47.7	43.2
	% of Powertrain mass	53.3	53.3	52.8	52.7	52.2	52.8	52.5	51.3	52.9	55.4	50.5	52.3	56.8
H2 Split HEV	Vehicle Mass	1394	1394	1291	1215	1360	1245	1127	1343	1156	956	1297	1129	919
	% of Glider mass	57.7	57.7	59.5	60.0	59.2	59.6	59.6	59.7	58.9	56.5	61.8	59.4	54.3
	% of Powertrain mass	42.3	42.3	40.5	40.0	40.8	40.4	40.4	40.3	41.1	43.5	38.2	40.6	45.7
H2 Split HEV PHEV10	Vehicle Mass	1407	1407	1304	1227	1374	1247	1127	1346	1158	955	1298	1131	918
	% of Glider mass	57.2	57.2	58.9	59.4	58.6	59.5	59.6	59.6	58.8	56.5	61.8	59.3	54.3
	% of Powertrain mass	42.8	42.8	41.1	40.6	41.4	40.5	40.4	40.4	41.2	43.5	38.2	40.7	45.7
H2 Split HEV PHEV20	Vehicle Mass	1435	1435	1329	1249	1402	1273	1144	1375	1176	967	1325	1146	928
	% of Glider mass	56.1	56.1	57.8	58.4	57.5	58.3	58.7	58.3	57.9	55.8	60.5	58.5	53.7
	% of Powertrain mass	43.9	43.9	42.2	41.6	42.5	41.7	41.3	41.7	42.1	44.2	39.5	41.5	46.3
H2 Series HEV PHEV30	Vehicle Mass	1632	1632	1498	1396	1576	1427	1261	1532	1303	1056	1470	1258	1012
	% of Glider mass	49.3	49.3	51.3	52.2	51.1	52.0	53.2	52.3	52.2	51.1	54.5	53.3	49.3
	% of Powertrain mass	50.7	50.7	48.7	47.8	48.9	48.0	46.8	47.7	47.8	48.9	45.5	46.7	50.7
H2 Series HEV PHEV40	Vehicle Mass	1675	1675	1536	1429	1618	1463	1288	1573	1331	1074	1505	1281	1029
	% of Glider mass	48.0	48.0	50.0	51.0	49.8	50.7	52.1	51.0	51.1	50.2	53.3	52.3	48.5
	% of Powertrain mass	52.0	52.0	50.0	49.0	50.2	49.3	47.9	49.0	48.9	49.8	46.7	47.7	51.5
E85 Split HEV	Vehicle Mass	1342	1342	1281	1226	1324	1257	1151	1318	1170	991	1309	1152	945
	% of Glider mass	60.0	60.0	59.9	59.4	60.9	59.1	58.3	60.8	58.2	54.5	61.2	58.2	52.8
	% of Powertrain mass	40.0	40.0	40.1	40.6	39.1	40.9	41.7	39.2	41.8	45.5	38.8	41.8	47.2

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		Compact												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
E85 Split HEV PHEV10	Vehicle Mass	1352	1352	1289	1231	1331	1252	1149	1316	1169	989	1308	1149	942
	% of Glider mass	59.5	59.5	59.6	59.2	60.5	59.3	58.4	60.9	58.2	54.6	61.3	58.3	52.9
	% of Powertrain mass	40.5	40.5	40.4	40.8	39.5	40.7	41.6	39.1	41.8	45.4	38.7	41.7	47.1
E85 Split HEV PHEV20	Vehicle Mass	1378	1378	1316	1254	1358	1275	1166	1341	1188	1000	1332	1164	953
	% of Glider mass	58.4	58.4	58.3	58.1	59.3	58.2	57.6	59.8	57.3	54.0	60.2	57.6	52.3
	% of Powertrain mass	41.6	41.6	41.7	41.9	40.7	41.8	42.4	40.2	42.7	46.0	39.8	42.4	47.7
E85 Series HEV PHEV30	Vehicle Mass	1582	1582	1494	1408	1543	1440	1288	1511	1321	1095	1488	1286	1042
	% of Glider mass	50.9	50.9	51.4	51.8	52.2	51.6	52.1	53.1	51.5	49.3	53.9	52.1	47.8
	% of Powertrain mass	49.1	49.1	48.6	48.2	47.8	48.4	47.9	46.9	48.5	50.7	46.1	47.9	52.2
E85 Series HEV PHEV40	Vehicle Mass	1626	1626	1530	1443	1585	1476	1316	1548	1350	1114	1525	1310	1058
	% of Glider mass	49.5	49.5	50.2	50.5	50.8	50.3	51.0	51.8	50.4	48.4	52.6	51.2	47.1
	% of Powertrain mass	50.5	50.5	49.8	49.5	49.2	49.7	49.0	48.2	49.6	51.6	47.4	48.8	52.9
FC HEV	Vehicle Mass	1674	1674	1412	1274	1490	1291	1132	1395	1158	940	1314	1116	890
	% of Glider mass	48.1	48.1	54.4	57.2	54.1	57.5	59.3	57.5	58.8	57.4	61.0	60.1	56.0
	% of Powertrain mass	51.9	51.9	45.6	42.8	45.9	42.5	40.7	42.5	41.2	42.6	39.0	39.9	44.0
FC HEV PHEV10	Vehicle Mass	1599	1599	1376	1249	1454	1264	1111	1370	1140	925	1295	1102	879
	% of Glider mass	50.3	50.3	55.8	58.4	55.4	58.7	60.4	58.5	59.7	58.3	61.9	60.8	56.7
	% of Powertrain mass	49.7	49.7	44.2	41.6	44.6	41.3	39.6	41.5	40.3	41.7	38.1	39.2	43.3
FC HEV PHEV20	Vehicle Mass	1637	1637	1409	1278	1491	1293	1134	1401	1160	937	1322	1120	890
	% of Glider mass	49.2	49.2	54.5	57.0	54.0	57.4	59.2	57.2	58.7	57.6	60.6	59.9	56.0
	% of Powertrain mass	50.8	50.8	45.5	43.0	46.0	42.6	40.8	42.8	41.3	42.4	39.4	40.1	44.0
FC HEV PHEV30	Vehicle Mass	1725	1725	1496	1364	1583	1383	1206	1496	1241	999	1408	1187	947
	% of Glider mass	46.7	46.7	51.3	53.4	50.9	53.7	55.7	53.6	54.9	54.0	56.9	56.5	52.6
	% of Powertrain mass	53.3	53.3	48.7	46.6	49.1	46.3	44.3	46.4	45.1	46.0	43.1	43.5	47.4
FC HEV PHEV40	Vehicle Mass	1770	1770	1533	1396	1627	1415	1230	1531	1265	1016	1439	1209	963
	% of Glider mass	45.5	45.5	50.1	52.2	49.5	52.5	54.6	52.4	53.8	53.1	55.7	55.5	51.8
	% of Powertrain mass	54.5	54.5	49.9	47.8	50.5	47.5	45.4	47.6	46.2	46.9	44.3	44.5	48.2
BEV	Vehicle Mass	1756	1756	1650	1539	1731	1587	1341	1677	1377	1090	1631	1309	1022
	% of Glider mass	45.8	45.8	46.5	47.4	46.5	46.8	50.1	47.8	49.4	49.5	49.1	51.2	48.8
	% of Powertrain mass	54.2	54.2	53.5	52.6	53.5	53.2	49.9	52.2	50.6	50.5	50.9	48.8	51.2

Percentage of vehicle curbs weight reduction based on the respective 2010 reference case

		Midsize												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Conv	Vehicle Mass	0.00%	0.00%	-3.45%	-6.90%	0.07%	-5.80%	-12.22%	-0.41%	-11.32%	-23.81%	-0.55%	-12.35%	-27.40%
CI Conv	Vehicle Mass	0.00%	0.00%	-3.24%	-6.48%	0.00%	-5.42%	-11.44%	-0.40%	-10.65%	-22.49%	-0.53%	-11.51%	-25.93%
H2 Conv	Vehicle Mass	0.00%	0.00%	-6.12%	-10.81%	-0.95%	-9.65%	-17.00%	-2.04%	-15.50%	-29.30%	-4.83%	-16.93%	-32.29%
E85 Conv	Vehicle Mass	0.00%	0.00%	-3.32%	-6.91%	0.14%	-5.74%	-12.23%	-0.41%	-11.33%	-23.91%	-0.55%	-12.30%	-27.57%
SI Split HEV	Vehicle Mass	0.00%	0.00%	-4.72%	-9.24%	-1.40%	-7.01%	-14.79%	-1.66%	-13.26%	-27.41%	-2.36%	-14.72%	-31.10%
SI Split HEV PHEV10	Vehicle Mass	0.00%	0.00%	-4.57%	-9.08%	-1.21%	-7.49%	-15.43%	-2.54%	-13.90%	-27.87%	-3.11%	-15.37%	-31.56%
SI Split HEV PHEV20	Vehicle Mass	0.00%	0.00%	-4.67%	-9.34%	-1.31%	-7.72%	-15.88%	-2.68%	-14.38%	-28.52%	-3.30%	-15.94%	-32.13%
SI Series HEV PHEV30	Vehicle Mass	0.00%	0.00%	-5.96%	-11.21%	-2.41%	-9.30%	-18.93%	-4.54%	-17.12%	-31.78%	-5.91%	-19.31%	-35.34%
SI Series HEV PHEV40	Vehicle Mass	0.00%	0.00%	-5.97%	-11.41%	-2.40%	-9.43%	-19.51%	-4.64%	-17.48%	-32.52%	-6.02%	-19.88%	-36.03%
CI Split HEV	Vehicle Mass	0.00%	0.00%	-4.55%	-9.10%	-1.62%	-6.71%	-14.37%	-2.10%	-12.81%	-26.35%	-2.63%	-14.07%	-29.58%
CI Split HEV PHEV10	Vehicle Mass	0.00%	0.00%	-4.44%	-8.77%	-1.36%	-7.23%	-14.93%	-2.67%	-13.45%	-26.90%	-3.20%	-14.87%	-30.15%
CI Split HEV PHEV20	Vehicle Mass	0.00%	0.00%	-4.59%	-8.95%	-1.40%	-7.38%	-15.41%	-2.67%	-13.84%	-27.27%	-3.43%	-15.41%	-30.58%
CI Series HEV PHEV30	Vehicle Mass	0.00%	0.00%	-5.71%	-10.75%	-2.34%	-8.72%	-18.07%	-4.41%	-16.20%	-30.32%	-5.61%	-18.33%	-33.54%
CI Series HEV PHEV40	Vehicle Mass	0.00%	0.00%	-5.82%	-10.84%	-2.43%	-8.86%	-18.58%	-4.56%	-16.66%	-30.89%	-5.87%	-18.94%	-34.18%
H2 Split HEV	Vehicle Mass	0.00%	0.00%	-7.19%	-12.76%	-2.35%	-10.47%	-19.14%	-3.35%	-17.16%	-32.16%	-6.38%	-19.02%	-35.07%
H2 Split HEV PHEV10	Vehicle Mass	0.00%	0.00%	-7.19%	-12.72%	-2.46%	-11.06%	-19.91%	-3.93%	-17.95%	-32.76%	-7.07%	-19.73%	-35.71%
H2 Split HEV PHEV20	Vehicle Mass	0.00%	0.00%	-7.24%	-12.85%	-2.23%	-11.22%	-20.27%	-4.04%	-18.15%	-33.23%	-7.24%	-20.27%	-36.19%
H2 Series HEV PHEV30	Vehicle Mass	0.00%	0.00%	-8.24%	-14.34%	-3.21%	-12.52%	-22.79%	-5.72%	-20.39%	-35.85%	-9.36%	-22.90%	-38.68%
H2 Series HEV PHEV40	Vehicle Mass	0.00%	0.00%	-8.34%	-14.60%	-3.18%	-12.57%	-23.20%	-5.94%	-20.75%	-36.39%	-9.54%	-23.46%	-39.31%
E85 Split HEV	Vehicle Mass	0.00%	0.00%	-4.71%	-9.23%	-1.34%	-6.81%	-14.89%	-1.72%	-13.24%	-27.31%	-2.29%	-14.64%	-31.00%
E85 Split HEV PHEV10	Vehicle Mass	0.00%	0.00%	-4.50%	-9.00%	-1.20%	-7.42%	-15.41%	-2.41%	-13.89%	-27.84%	-3.04%	-15.35%	-31.45%
E85 Split HEV PHEV20	Vehicle Mass	0.00%	0.00%	-4.66%	-9.33%	-1.31%	-7.65%	-15.86%	-2.55%	-14.37%	-28.48%	-3.23%	-15.92%	-32.03%
E85 Series HEV PHEV30	Vehicle Mass	0.00%	0.00%	-5.85%	-11.20%	-2.40%	-9.29%	-18.91%	-4.48%	-17.05%	-31.75%	-5.85%	-19.29%	-35.25%
E85 Series HEV PHEV40	Vehicle Mass	0.00%	0.00%	-5.91%	-11.29%	-2.34%	-9.38%	-19.34%	-4.48%	-17.37%	-32.34%	-5.91%	-19.82%	-35.80%
FC HEV	Vehicle Mass	0.00%	0.00%	-15.68%	-23.90%	-10.52%	-22.73%	-32.48%	-16.29%	-30.80%	-44.59%	-21.04%	-33.35%	-47.75%
FC HEV PHEV10	Vehicle Mass	0.00%	0.00%	-13.90%	-21.82%	-8.88%	-20.80%	-30.64%	-14.17%	-28.93%	-42.78%	-18.66%	-31.18%	-45.99%
FC HEV PHEV20	Vehicle Mass	0.00%	0.00%	-14.11%	-22.14%	-9.11%	-21.30%	-31.20%	-14.53%	-29.53%	-43.65%	-19.17%	-31.98%	-46.77%
FC HEV PHEV30	Vehicle Mass	0.00%	0.00%	-13.33%	-20.95%	-8.02%	-19.95%	-30.08%	-13.13%	-28.22%	-42.61%	-17.94%	-31.18%	-45.91%
FC HEV PHEV40	Vehicle Mass	0.00%	0.00%	-13.58%	-21.25%	-8.11%	-20.18%	-30.68%	-13.34%	-28.72%	-43.23%	-18.32%	-31.80%	-46.51%
EV	Vehicle Mass	0.00%	0.00%	-6.93%	-12.98%	-1.82%	-10.47%	-24.29%	-4.97%	-22.47%	-38.99%	-7.42%	-26.06%	-42.77%

Small SUV Class

Power

		Small_SUV												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Conv	ICE Power	155898	155898	148851	141805	152875	143143	132111	150191	134760	119229	149872	133431	115117
	Electric Machine													
	MC2/GC													
	Battery													
	Specific Power	97	97	95	94	95	94	93	94	93	95	94	93	96
CI Conv	ICE Power	122222	122222	119778	113667	119778	114889	107556	121000	110000	96800	119778	110000	94410
	Electric Machine													
	MC2/GC													
	Battery													
	Specific Power	73	73	74	73	72	73	72	73	73	73	72	74	74
H2 Conv	ICE Power	141547	141547	132026	124426	137726	126282	114088	134950	116872	100970	130328	115832	97274
	Electric Machine													
	MC2/GC													
	Battery													
	Specific Power	87	87	86	85	86	85	83	85	84	85	84	84	85
E85 Conv	ICE Power	145972	145972	141243	134012	143648	136336	125375	143332	127943	113333	142164	126781	109792
	Electric Machine													
	MC2/GC													
	Battery													
	Specific Power	91	91	91	89	89	90	88	90	89	90	89	89	91
SI Split HEV	ICE Power	105888	105888	100215	94848	104471	97892	86370	101980	89644	73487	101364	86014	70349
	Electric Machine	71956	71956	68839	65946	70952	68461	62301	70830	63743	53577	70559	62077	51539
	MC2/GC	61278	61278	57995	54889	60458	56650	49983	59016	51877	42527	58660	49777	40711
	Battery	29327	29327	27930	26733	28928	27886	25610	28455	25610	21626	28455	25610	21057
	Specific Power	77	77	77	76	78	77	75	76	75	73	76	74	74

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		Small_SUV												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Split HEV PHEV10	ICE Power	72399	72399	68201	64874	71330	66295	60774	70958	61962	53994	69701	60758	51529
	Electric Machine	80378	80378	77168	73745	79449	74975	67484	78900	68670	58805	78130	67387	56199
	MC2/GC	51069	51069	48107	45761	50315	46763	42849	50052	43687	38086	49165	42838	36347
	Battery	76633	76633	73302	69646	75853	70776	64018	74322	65167	60019	73658	68578	57305
	Specific Power	85	85	84	84	85	84	83	84	83	88	84	86	88
SI Split HEV PHEV20	ICE Power	73460	73460	69168	65724	72357	67202	61418	71928	62634	54435	70640	61286	51887
	Electric Machine	82157	82157	78640	74991	81003	76398	69310	80410	70380	59149	80086	69035	56924
	MC2/GC	51797	51797	48770	46360	51039	47383	43303	50717	44181	38378	49807	43211	36581
	Battery	77565	77565	73906	70029	76536	71353	65266	74982	66264	56220	74829	66679	54282
	Specific Power	84	84	83	83	84	83	83	84	83	84	84	84	85
SI Series HEV PHEV30	ICE Power	90268	90268	83103	77565	88282	79685	69451	85369	71100	59518	83297	68938	56684
	Electric Machine	148822	148822	139609	132531	145821	135677	122457	144100	124974	108450	141020	121733	103596
	MC2/GC	87560	87560	80610	75238	85634	77294	67367	82808	68967	57732	80798	66870	54983
	Battery	180052	180052	167985	158611	176444	162427	144816	172585	147825	126594	168904	144035	120948
	Specific Power	73	73	73	73	73	73	74	74	74	76	73	74	77
SI Series HEV PHEV40	ICE Power	93557	93557	86028	80121	91430	82360	71368	88302	73132	60872	86013	70674	57927
	Electric Machine	154014	154014	144347	136683	150853	140069	125630	148842	128384	110783	145514	124611	105801
	MC2/GC	90750	90750	83447	77717	88687	79889	69227	85653	70938	59046	83433	68554	56189
	Battery	186251	186251	173614	163514	182448	167609	148445	178185	151732	129205	174214	147316	123417
	Specific Power	74	74	73	74	74	74	74	74	74	77	74	74	77
CI Split HEV	ICE Power	91855	91855	87213	82607	90792	83927	75527	88407	76688	65174	87876	75326	63091
	Electric Machine	77305	77305	74361	71203	76356	72594	66997	76080	68143	58948	75756	67331	56679
	MC2/GC	76873	76873	72988	69133	75983	70238	63208	73987	64180	54544	73543	63040	52800
	Battery	30923	30923	29726	28329	30524	29024	26748	30162	27317	23333	30162	27317	22195
	Specific Power	67	67	66	66	67	66	64	66	64	64	66	64	64
CI Split HEV PHEV10	ICE Power	75382	75382	71159	67763	74240	69156	63544	73782	64788	56753	72489	63457	54232
	Electric Machine	81180	81180	78193	74812	80070	76079	69379	78896	70446	60099	78758	69042	57518
	MC2/GC	63087	63087	59552	56710	62131	57876	53179	61748	54221	47496	60665	53107	45386
	Battery	85638	85638	82155	78198	84525	79533	73863	82325	75027	67489	82264	77532	64486
	Specific Power	86	86	86	85	86	86	86	86	86	89	86	88	89

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		Small_SUV												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
CI Split HEV PHEV20	ICE Power	76501	76501	72126	68556	75267	70063	64216	74809	65460	57139	73484	64041	54618
	Electric Machine	82757	82757	79606	75840	81599	77105	70152	80947	71537	60846	80159	69918	58296
	MC2/GC	64023	64023	60362	57374	62990	58635	53742	62607	54783	47819	61498	53595	45709
	Battery	86821	86821	83126	78763	85658	80089	73312	84048	74777	64529	83270	74891	61816
	Specific Power	86	86	85	85	86	85	85	86	85	86	85	86	86
CI Series HEV PHEV30	ICE Power	93249	93249	86119	80448	91094	82508	72226	88183	73904	62143	86102	71726	59336
	Electric Machine	153479	153479	144445	137213	150369	140311	127024	148696	129726	113052	145611	126384	108333
	MC2/GC	90452	90452	83535	78035	88361	80033	70059	85538	71687	60279	83519	69574	57556
	Battery	185663	185663	173780	164200	181923	167947	150188	178068	153428	131939	174377	149521	126454
	Specific Power	72	72	72	72	72	72	72	73	72	75	72	72	75
CI Series HEV PHEV40	ICE Power	96722	96722	89044	83093	94364	85272	74172	91235	75907	63607	88937	73433	60607
	Electric Machine	158913	158913	149180	141509	155592	144845	130333	153584	133034	115510	150201	129207	110466
	MC2/GC	93820	93820	86373	80600	91533	82714	71947	88498	73630	61699	86269	71230	58789
	Battery	192155	192155	179399	169264	188159	173297	153979	183837	157208	134691	179795	152726	128837
	Specific Power	73	73	72	72	73	73	73	73	73	75	73	73	75
H2 Split HEV	ICE Power	108272	108272	100207	93400	106540	95075	84301	103806	86225	71657	99642	84210	69466
	Electric Machine	74164	74164	69484	65620	72862	67165	61337	72582	62709	52750	70182	61247	51163
	MC2/GC	68246	68246	63163	58872	67155	59928	53137	65431	54350	45167	62807	53080	43786
	Battery	30125	30125	28130	26534	29526	27317	25040	29024	25610	21057	28455	25040	20488
	Specific Power	77	77	77	76	78	76	74	77	74	74	76	74	75
H2 Split HEV PHEV10	ICE Power	73862	73862	68400	64506	72272	65956	59935	71557	61403	52891	69189	60007	50646
	Electric Machine	85158	85158	78854	74498	82474	75891	67868	81370	69757	58312	78865	68214	55956
	MC2/GC	57970	57970	53683	50627	56699	51765	47039	56161	48191	41511	54280	47008	39727
	Battery	82723	82723	75953	71253	79806	72506	63897	77436	65756	58142	75133	68571	55617
	Specific Power	86	86	85	85	86	85	84	86	84	88	85	87	88
H2 Split HEV PHEV20	ICE Power	74952	74952	69310	65299	73327	66862	60606	72584	62102	53305	70128	60507	51032
	Electric Machine	86814	86814	80269	75770	84562	77254	69478	82824	70875	59141	80851	69147	56502
	MC2/GC	58802	58802	54375	51226	57528	52454	47544	56967	48696	41792	54994	47466	40031
	Battery	83927	83927	76914	72089	81581	73423	65627	78482	66793	55903	76924	66743	53320
	Specific Power	86	86	85	85	86	85	84	85	84	86	85	85	85

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		Small_SUV												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
H2 Series HEV PHEV30	ICE Power	91559	91559	83012	76882	88924	78942	68335	85728	70242	58164	82401	67943	55606
	Electric Machine	150812	150812	139464	131370	146981	134470	120530	144681	123578	106010	139617	120051	101672
	MC2/GC	88812	88812	80522	74576	86256	76574	66285	83156	68135	56419	79929	65905	53938
	Battery	182447	182447	167812	157227	177843	160981	142544	173274	146186	123754	167229	142053	118712
	Specific Power	73	73	73	73	73	73	74	74	74	77	74	74	77
H2 Series HEV PHEV40	ICE Power	94878	94878	85938	79437	92133	81617	70281	88781	72245	59490	85147	69621	56822
	Electric Machine	156099	156099	144202	135572	152014	138911	123757	149617	126943	108401	144016	122885	103842
	MC2/GC	92032	92032	83360	77054	89369	79168	68173	86118	70078	57705	82593	67532	55117
	Battery	188761	188761	173439	162191	183848	166230	146237	179109	150041	126444	172426	145284	121141
	Specific Power	73	73	73	74	74	74	75	74	74	78	74	74	78
E85 Split HEV	ICE Power	107091	107091	100343	94933	104556	98768	87270	104332	88541	73562	101449	88006	70425
	Electric Machine	72594	72594	69148	66060	71052	68896	62668	72396	63328	53635	70656	62973	51601
	MC2/GC	61974	61974	58069	54938	60507	57157	50503	60377	51239	42571	58709	50929	40755
	Battery	29327	29327	28130	26733	28928	27886	25610	29024	25610	21626	28455	25610	21057
	Specific Power	78	78	77	76	77	77	75	78	75	73	76	75	74
E85 Split HEV PHEV10	ICE Power	72456	72456	68343	64931	71387	66352	60830	71044	62018	54049	69758	60813	51584
	Electric Machine	80496	80496	77285	73858	79565	75090	67638	79062	68782	58913	78246	68231	56305
	MC2/GC	51109	51109	48208	45801	50355	46803	42888	50113	43726	38125	49206	42877	36386
	Battery	76712	76712	73406	69723	75946	70877	64131	74446	65247	60145	73759	69802	57449
	Specific Power	85	85	84	84	85	84	83	84	83	88	84	84	88
E85 Split HEV PHEV20	ICE Power	73518	73518	69225	65780	72414	67258	61474	71985	62690	54491	70697	61342	51970
	Electric Machine	82321	82321	78757	75106	81165	76515	69422	80528	70492	59900	80249	69146	57030
	MC2/GC	51837	51837	48810	46400	51079	47422	43343	50757	44220	38417	49848	43249	36658
	Battery	77711	77711	73993	70114	76681	71447	65361	75070	66360	57133	74965	66780	54393
	Specific Power	84	84	83	83	84	83	83	84	83	85	84	84	84
E85 Series HEV PHEV30	ICE Power	90299	90299	83163	77625	88251	79685	69508	85429	71158	59601	83356	68995	56767
	Electric Machine	148918	148918	139754	132626	145917	135773	122553	144197	125118	108548	141117	121829	103743
	MC2/GC	87590	87590	80668	75296	85603	77294	67423	82866	69023	57813	80855	66925	55064
	Battery	180173	180173	168159	158722	176556	162534	144929	172700	147997	126704	169019	144149	121119
	Specific Power	73	73	73	73	73	73	74	74	74	76	73	73	76

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		Midsize													
		2010	2010				2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high	
E85 Split HEV PHEV20	Electric Machine	74437	74437	71127	68011	73219	69085	62928	72713	63896	54224	72082	62567	51736	
	MC2/GC	39338	39338	37335	35644	38931	36305	33268	38263	33956	29288	37799	33205	27891	
	Battery	69124	69124	65688	62396	67968	63399	57848	66735	58713	50213	66223	58815	47895	
	Specific Power	77	77	77	76	77	76	76	77	76	77	76	77	77	
E85 Series HEV PHEV30	ICE Power	80409	80409	74757	70117	78910	71633	62671	75505	64220	53320	74069	62162	50706	
	Electric Machine	132914	132914	125717	119838	130648	122197	110743	128044	113079	97855	126184	110168	93699	
	MC2/GC	77997	77997	72514	68013	76543	69484	60791	73240	62293	51720	71847	60297	49185	
	Battery	163771	163771	154070	146084	161012	149004	133415	156178	136272	116380	153925	132800	111462	
	Specific Power	68	68	68	68	68	68	68	68	68	71	68	68	71	
E85 Series HEV PHEV40	ICE Power	83129	83129	77140	72316	81568	73892	64216	77942	65879	54425	76370	63726	51756	
	Electric Machine	137206	137206	129545	123394	134804	125839	113333	131954	115861	99815	129942	112616	95363	
	MC2/GC	80635	80635	74826	70147	79121	71675	62290	75604	63903	52792	74079	61814	50203	
	Battery	169000	169000	158707	150367	166066	153389	136435	160881	139506	118619	158452	135644	113353	
	Specific Power	68	68	68	69	68	69	69	68	69	71	68	69	71	
FC HEV	FC Power	104050	104050	88019	78035	96505	76723	64474	82622	66935	52362	77746	63650	49443	
	Electric Machine	124590	124590	107383	97235	113102	99769	86620	107109	89845	73258	100110	85292	69515	
	MC2/GC														
	Battery	36908	36908	32519	30324	33516	34146	31301	36422	31870	27317	34715	31301	26179	
	Specific Power	59	59	60	60	60	61	59	60	60	60	60	59	60	
FC HEV PHEV10	FC Power	76391	76391	66089	59488	70247	60702	52736	65493	53965	45936	62805	54463	44162	
	Electric Machine	121688	121688	105550	96445	111157	98186	86942	105476	88796	75059	101348	88020	70127	
	MC2/GC														
	Battery	64879	64879	56091	50670	59493	51573	44891	55463	45917	37373	52881	44657	35527	
	Specific Power	61	61	60	60	60	61	61	61	61	62	61	62	61	
FC HEV PHEV20	FC Power	78252	78252	68330	60873	72745	61369	53926	66968	54586	45636	63478	54954	43201	
	Electric Machine	124396	124396	107035	98435	112943	99533	88561	107580	89911	74403	102686	88963	70613	
	MC2/GC														
	Battery	66428	66428	57445	51676	61043	52478	45621	56622	46601	37797	53833	45176	35985	
	Specific Power	61	61	60	60	60	60	61	61	60	61	61	62	61	
FC HEV PHEV30	FC Power	68439	68439	60582	56144	64345	56956	50962	61284	52296	43864	58431	50392	41576	
	Electric Machine	134537	134537	122497	115240	128589	116695	105703	123686	108013	93347	119624	104476	88983	
	MC2/GC														
	Battery	165695	165695	150070	140433	158409	142250	127410	150804	130239	111041	145890	126022	105872	
	Specific Power	63	63	66	67	65	67	69	66	69	73	67	69	73	
FC HEV PHEV40	FC Power	69736	69736	61673	57054	65566	57941	51564	62345	53023	44309	59309	50965	41971	
	Electric Machine	137968	137968	125477	117907	131796	119501	107997	126658	110436	95022	122265	106588	90648	
	MC2/GC														
	Battery	169858	169858	153652	143629	162297	145615	130067	154374	133045	112950	149046	128442	107765	
	Specific Power	63	63	66	67	65	68	69	66	69	73	68	70	74	
BEV	ICE Power														
	Electric Machine	160089	160089	148705	139383	157749	143474	122979	151888	125841	104899	147273	119933	98934	
	MC2/GC	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Battery	194624	194624	180668	169594	192167	174251	148106	183881	151620	125107	178954	144527	118453	
	Specific Power	90	90	89	89	90	89	88	89	89	91	89	88	91	

Percentage of power reduction based on the respective 2010 reference case

		Small_SUV												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Conv	ICE Power	0%	0%	-5%	-9%	-2%	-8%	-15%	-4%	-14%	-24%	-4%	-14%	-26%
	Electric Machine													
	MC2/GC													
	Battery													
	Specific Power	0%	0%	-1%	-3%	-2%	-3%	-4%	-3%	-3%	-2%	-3%	-3%	-1%
CI Conv	ICE Power	0%	0%	-2%	-7%	-2%	-6%	-12%	-1%	-10%	-21%	-2%	-10%	-23%
	Electric Machine													
	MC2/GC													
	Battery													
	Specific Power	0%	0%	1%	-1%	-2%	-1%	-2%	-1%	0%	0%	-2%	1%	1%
H2 Conv	ICE Power	0%	0%	-7%	-12%	-3%	-11%	-19%	-5%	-17%	-29%	-8%	-18%	-31%
	Electric Machine													
	MC2/GC													
	Battery													
	Specific Power	0%	0%	-1%	-3%	-2%	-2%	-5%	-3%	-4%	-3%	-4%	-3%	-3%
E85 Conv	ICE Power	0%	0%	-3%	-8%	-2%	-7%	-14%	-2%	-12%	-22%	-3%	-13%	-25%
	Electric Machine													
	MC2/GC													
	Battery													
	Specific Power	0%	0%	0%	-2%	-2%	-1%	-3%	-1%	-2%	-1%	-2%	-2%	1%
SI Split HEV	ICE Power	0%	0%	-5%	-10%	-1%	-8%	-18%	-4%	-15%	-31%	-4%	-19%	-34%
	Electric Machine	0%	0%	-4%	-8%	-1%	-5%	-13%	-2%	-11%	-26%	-2%	-14%	-28%
	MC2/GC	0%	0%	-5%	-10%	-1%	-8%	-18%	-4%	-15%	-31%	-4%	-19%	-34%
	Battery	0%	0%	-5%	-9%	-1%	-5%	-13%	-3%	-13%	-26%	-3%	-13%	-28%
	Specific Power	0%	0%	-1%	-2%	0%	-1%	-4%	-2%	-3%	-5%	-2%	-4%	-5%
SI Split HEV PHEV10	ICE Power	0%	0%	-6%	-10%	-1%	-8%	-16%	-2%	-14%	-25%	-4%	-16%	-29%
	Electric Machine	0%	0%	-4%	-8%	-1%	-7%	-16%	-2%	-15%	-27%	-3%	-16%	-30%
	MC2/GC	0%	0%	-6%	-10%	-1%	-8%	-16%	-2%	-14%	-25%	-4%	-16%	-29%
	Battery	0%	0%	-4%	-9%	-1%	-8%	-16%	-3%	-15%	-22%	-4%	-11%	-25%
	Specific Power	0%	0%	-1%	-1%	0%	-1%	-2%	0%	-2%	4%	-1%	2%	4%

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		Small_SUV												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Split HEV PHEV20	ICE Power	0%	0%	-6%	-11%	-2%	-9%	-16%	-2%	-15%	-26%	-4%	-17%	-29%
	Electric Machine	0%	0%	-4%	-9%	-1%	-7%	-16%	-2%	-14%	-28%	-3%	-16%	-31%
	MC2/GC	0%	0%	-6%	-10%	-1%	-9%	-16%	-2%	-15%	-26%	-4%	-17%	-29%
	Battery	0%	0%	-5%	-10%	-1%	-8%	-16%	-3%	-15%	-28%	-4%	-14%	-30%
	Specific Power	0%	0%	-1%	-1%	0%	-1%	-1%	0%	-1%	0%	0%	0%	1%
SI Series HEV PHEV30	ICE Power	0%	0%	-8%	-14%	-2%	-12%	-23%	-5%	-21%	-34%	-8%	-24%	-37%
	Electric Machine	0%	0%	-6%	-11%	-2%	-9%	-18%	-3%	-16%	-27%	-5%	-18%	-30%
	MC2/GC	0%	0%	-8%	-14%	-2%	-12%	-23%	-5%	-21%	-34%	-8%	-24%	-37%
	Battery	0%	0%	-7%	-12%	-2%	-10%	-20%	-4%	-18%	-30%	-6%	-20%	-33%
	Specific Power	0%	0%	0%	0%	0%	0%	1%	1%	1%	5%	1%	1%	5%
SI Series HEV PHEV40	ICE Power	0%	0%	-8%	-14%	-2%	-12%	-24%	-6%	-22%	-35%	-8%	-24%	-38%
	Electric Machine	0%	0%	-6%	-11%	-2%	-9%	-18%	-3%	-17%	-28%	-6%	-19%	-31%
	MC2/GC	0%	0%	-8%	-14%	-2%	-12%	-24%	-6%	-22%	-35%	-8%	-24%	-38%
	Battery	0%	0%	-7%	-12%	-2%	-10%	-20%	-4%	-19%	-31%	-6%	-21%	-34%
	Specific Power	0%	0%	0%	0%	1%	0%	1%	1%	1%	4%	0%	0%	5%
CI Split HEV	ICE Power	0%	0%	-5%	-10%	-1%	-9%	-18%	-4%	-17%	-29%	-4%	-18%	-31%
	Electric Machine	0%	0%	-4%	-8%	-1%	-6%	-13%	-2%	-12%	-24%	-2%	-13%	-27%
	MC2/GC	0%	0%	-5%	-10%	-1%	-9%	-18%	-4%	-17%	-29%	-4%	-18%	-31%
	Battery	0%	0%	-4%	-8%	-1%	-6%	-14%	-2%	-12%	-25%	-2%	-12%	-28%
	Specific Power	0%	0%	0%	-1%	0%	-2%	-4%	-1%	-4%	-4%	-1%	-4%	-4%
CI Split HEV PHEV10	ICE Power	0%	0%	-6%	-10%	-2%	-8%	-16%	-2%	-14%	-25%	-4%	-16%	-28%
	Electric Machine	0%	0%	-4%	-8%	-1%	-6%	-15%	-3%	-13%	-26%	-3%	-15%	-29%
	MC2/GC	0%	0%	-6%	-10%	-2%	-8%	-16%	-2%	-14%	-25%	-4%	-16%	-28%
	Battery	0%	0%	-4%	-9%	-1%	-7%	-14%	-4%	-12%	-21%	-4%	-9%	-25%
	Specific Power	0%	0%	-1%	-1%	0%	-1%	0%	-1%	-1%	3%	-1%	2%	3%
CI Split HEV PHEV20	ICE Power	0%	0%	-6%	-10%	-2%	-8%	-16%	-2%	-14%	-25%	-4%	-16%	-29%
	Electric Machine	0%	0%	-4%	-8%	-1%	-7%	-15%	-2%	-14%	-26%	-3%	-16%	-30%
	MC2/GC	0%	0%	-6%	-10%	-2%	-8%	-16%	-2%	-14%	-25%	-4%	-16%	-29%
	Battery	0%	0%	-4%	-9%	-1%	-8%	-16%	-3%	-14%	-26%	-4%	-14%	-29%
	Specific Power	0%	0%	-1%	-1%	0%	-1%	-1%	0%	-1%	0%	-1%	0%	0%

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		Small_SUV												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
CI Series HEV PHEV30	ICE Power	0%	0%	-8%	-14%	-2%	-12%	-23%	-5%	-21%	-33%	-8%	-23%	-36%
	Electric Machine	0%	0%	-6%	-11%	-2%	-9%	-17%	-3%	-15%	-26%	-5%	-18%	-29%
	MC2/GC	0%	0%	-8%	-14%	-2%	-12%	-23%	-5%	-21%	-33%	-8%	-23%	-36%
	Battery	0%	0%	-6%	-12%	-2%	-10%	-19%	-4%	-17%	-29%	-6%	-19%	-32%
	Specific Power	0%	0%	0%	0%	1%	0%	1%	1%	0%	4%	1%	0%	4%
CI Series HEV PHEV40	ICE Power	0%	0%	-8%	-14%	-2%	-12%	-23%	-6%	-22%	-34%	-8%	-24%	-37%
	Electric Machine	0%	0%	-6%	-11%	-2%	-9%	-18%	-3%	-16%	-27%	-5%	-19%	-30%
	MC2/GC	0%	0%	-8%	-14%	-2%	-12%	-23%	-6%	-22%	-34%	-8%	-24%	-37%
	Battery	0%	0%	-7%	-12%	-2%	-10%	-20%	-4%	-18%	-30%	-6%	-21%	-33%
	Specific Power	0%	0%	0%	0%	1%	0%	0%	1%	0%	3%	0%	0%	4%
H2 Split HEV	ICE Power	0%	0%	-7%	-14%	-2%	-12%	-22%	-4%	-20%	-34%	-8%	-22%	-36%
	Electric Machine	0%	0%	-6%	-12%	-2%	-9%	-17%	-2%	-15%	-29%	-5%	-17%	-31%
	MC2/GC	0%	0%	-7%	-14%	-2%	-12%	-22%	-4%	-20%	-34%	-8%	-22%	-36%
	Battery	0%	0%	-7%	-12%	-2%	-9%	-17%	-4%	-15%	-30%	-6%	-17%	-32%
	Specific Power	0%	0%	-1%	-2%	1%	-2%	-4%	-1%	-4%	-4%	-1%	-4%	-4%
H2 Split HEV PHEV10	ICE Power	0%	0%	-7%	-13%	-2%	-11%	-19%	-3%	-17%	-28%	-6%	-19%	-31%
	Electric Machine	0%	0%	-7%	-13%	-3%	-11%	-20%	-4%	-18%	-32%	-7%	-20%	-34%
	MC2/GC	0%	0%	-7%	-13%	-2%	-11%	-19%	-3%	-17%	-28%	-6%	-19%	-31%
	Battery	0%	0%	-8%	-14%	-4%	-12%	-23%	-6%	-21%	-30%	-9%	-17%	-33%
	Specific Power	0%	0%	-1%	-1%	0%	-1%	-3%	-1%	-2%	2%	-1%	1%	2%
H2 Split HEV PHEV20	ICE Power	0%	0%	-8%	-13%	-2%	-11%	-19%	-3%	-17%	-29%	-6%	-19%	-32%
	Electric Machine	0%	0%	-8%	-13%	-3%	-11%	-20%	-5%	-18%	-32%	-7%	-20%	-35%
	MC2/GC	0%	0%	-8%	-13%	-2%	-11%	-19%	-3%	-17%	-29%	-6%	-19%	-32%
	Battery	0%	0%	-8%	-14%	-3%	-13%	-22%	-6%	-20%	-33%	-8%	-20%	-36%
	Specific Power	0%	0%	-1%	-1%	0%	-1%	-2%	-1%	-2%	0%	0%	-1%	-1%
H2 Series HEV PHEV30	ICE Power	0%	0%	-9%	-16%	-3%	-14%	-25%	-6%	-23%	-36%	-10%	-26%	-39%
	Electric Machine	0%	0%	-8%	-13%	-3%	-11%	-20%	-4%	-18%	-30%	-7%	-20%	-33%
	MC2/GC	0%	0%	-9%	-16%	-3%	-14%	-25%	-6%	-23%	-36%	-10%	-26%	-39%
	Battery	0%	0%	-8%	-14%	-3%	-12%	-22%	-5%	-20%	-32%	-8%	-22%	-35%
	Specific Power	0%	0%	0%	1%	1%	1%	2%	2%	2%	7%	2%	2%	6%

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		Small_SUV												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
H2 Series HEV PHEV40	ICE Power	0%	0%	-9%	-16%	-3%	-14%	-26%	-6%	-24%	-37%	-10%	-27%	-40%
	Electric Machine	0%	0%	-8%	-13%	-3%	-11%	-21%	-4%	-19%	-31%	-8%	-21%	-33%
	MC2/GC	0%	0%	-9%	-16%	-3%	-14%	-26%	-6%	-24%	-37%	-10%	-27%	-40%
	Battery	0%	0%	-8%	-14%	-3%	-12%	-23%	-5%	-21%	-33%	-9%	-23%	-36%
	Specific Power	0%	0%	1%	1%	1%	1%	2%	2%	2%	6%	2%	2%	6%
E85 Split HEV	ICE Power	0%	0%	-6%	-11%	-2%	-8%	-19%	-3%	-17%	-31%	-5%	-18%	-34%
	Electric Machine	0%	0%	-5%	-9%	-2%	-5%	-14%	0%	-13%	-26%	-3%	-13%	-29%
	MC2/GC	0%	0%	-6%	-11%	-2%	-8%	-19%	-3%	-17%	-31%	-5%	-18%	-34%
	Battery	0%	0%	-4%	-9%	-1%	-5%	-13%	-1%	-13%	-26%	-3%	-13%	-28%
	Specific Power	0%	0%	-1%	-2%	-1%	-1%	-4%	-1%	-4%	-6%	-2%	-3%	-5%
E85 Split HEV PHEV10	ICE Power	0%	0%	-6%	-10%	-1%	-8%	-16%	-2%	-14%	-25%	-4%	-16%	-29%
	Electric Machine	0%	0%	-4%	-8%	-1%	-7%	-16%	-2%	-15%	-27%	-3%	-15%	-30%
	MC2/GC	0%	0%	-6%	-10%	-1%	-8%	-16%	-2%	-14%	-25%	-4%	-16%	-29%
	Battery	0%	0%	-4%	-9%	-1%	-8%	-16%	-3%	-15%	-22%	-4%	-9%	-25%
	Specific Power	0%	0%	-1%	-1%	0%	-1%	-2%	0%	-2%	4%	-1%	3%	4%
E85 Split HEV PHEV20	ICE Power	0%	0%	-6%	-11%	-2%	-9%	-16%	-2%	-15%	-26%	-4%	-17%	-29%
	Electric Machine	0%	0%	-4%	-9%	-1%	-7%	-16%	-2%	-14%	-27%	-3%	-16%	-31%
	MC2/GC	0%	0%	-6%	-10%	-1%	-9%	-16%	-2%	-15%	-26%	-4%	-17%	-29%
	Battery	0%	0%	-5%	-10%	-1%	-8%	-16%	-3%	-15%	-26%	-4%	-14%	-30%
	Specific Power	0%	0%	-1%	-1%	0%	-1%	-1%	0%	-1%	1%	0%	0%	1%
E85 Series HEV PHEV30	ICE Power	0%	0%	-8%	-14%	-2%	-12%	-23%	-5%	-21%	-34%	-8%	-24%	-37%
	Electric Machine	0%	0%	-6%	-11%	-2%	-9%	-18%	-3%	-16%	-27%	-5%	-18%	-30%
	MC2/GC	0%	0%	-8%	-14%	-2%	-12%	-23%	-5%	-21%	-34%	-8%	-24%	-37%
	Battery	0%	0%	-7%	-12%	-2%	-10%	-20%	-4%	-18%	-30%	-6%	-20%	-33%
	Specific Power	0%	0%	0%	0%	0%	0%	1%	1%	1%	5%	1%	1%	5%
E85 Series HEV PHEV40	ICE Power	0%	0%	-8%	-14%	-2%	-12%	-24%	-6%	-22%	-35%	-8%	-24%	-38%
	Electric Machine	0%	0%	-6%	-11%	-2%	-9%	-18%	-3%	-17%	-28%	-6%	-19%	-31%
	MC2/GC	0%	0%	-8%	-14%	-2%	-12%	-24%	-6%	-22%	-35%	-8%	-24%	-38%
	Battery	0%	0%	-7%	-12%	-2%	-10%	-20%	-4%	-19%	-31%	-6%	-21%	-34%
	Specific Power	0%	0%	0%	0%	1%	0%	1%	1%	0%	4%	0%	0%	4%

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		Small_SUV												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
FC HEV	FC Power	0%	0%	-15%	-26%	-11%	-27%	-38%	-20%	-36%	-49%	-25%	-39%	-52%
	Electric Machine	0%	0%	-15%	-23%	-10%	-22%	-32%	-16%	-30%	-42%	-20%	-33%	-45%
	MC2/GC													
	Battery	0%	0%	-14%	-19%	-10%	-9%	-17%	-4%	-15%	-28%	-9%	-18%	-31%
	Specific Power	0%	0%	1%	1%	1%	2%	0%	0%	0%	2%	1%	1%	2%
FC HEV PHEV10	FC Power	0%	0%	-15%	-24%	-8%	-22%	-32%	-16%	-30%	-44%	-20%	-33%	-47%
	Electric Machine	0%	0%	-12%	-20%	-7%	-19%	-28%	-12%	-27%	-40%	-17%	-29%	-43%
	MC2/GC													
	Battery	0%	0%	-14%	-23%	-9%	-22%	-32%	-15%	-30%	-44%	-19%	-33%	-47%
	Specific Power	0%	0%	2%	2%	2%	2%	3%	2%	3%	4%	3%	3%	4%
FC HEV PHEV20	FC Power	0%	0%	-15%	-25%	-8%	-23%	-33%	-16%	-31%	-44%	-20%	-34%	-47%
	Electric Machine	0%	0%	-13%	-21%	-7%	-19%	-29%	-13%	-27%	-40%	-16%	-30%	-43%
	MC2/GC													
	Battery	0%	0%	-14%	-23%	-9%	-22%	-32%	-15%	-31%	-44%	-19%	-33%	-47%
	Specific Power	0%	0%	2%	2%	3%	3%	3%	2%	3%	4%	4%	3%	4%
FC HEV PHEV30	FC Power	0%	0%	-12%	-19%	-7%	-18%	-27%	-10%	-25%	-36%	-15%	-27%	-39%
	Electric Machine	0%	0%	-9%	-15%	-5%	-14%	-22%	-8%	-21%	-32%	-11%	-23%	-35%
	MC2/GC													
	Battery	0%	0%	-10%	-16%	-5%	-15%	-24%	-8%	-22%	-34%	-12%	-25%	-37%
	Specific Power	0%	0%	5%	7%	4%	8%	11%	6%	10%	17%	8%	11%	17%
FC HEV PHEV40	FC Power	0%	0%	-12%	-20%	-7%	-18%	-27%	-10%	-25%	-37%	-15%	-28%	-40%
	Electric Machine	0%	0%	-10%	-16%	-5%	-14%	-23%	-8%	-21%	-32%	-11%	-24%	-35%
	MC2/GC													
	Battery	0%	0%	-10%	-16%	-5%	-15%	-24%	-9%	-23%	-34%	-12%	-26%	-38%
	Specific Power	0%	0%	5%	8%	4%	8%	11%	6%	11%	17%	9%	11%	18%
EV	ICE Power													
	Electric Machine	0%	0%	-8%	-14%	-2%	-11%	-24%	-4%	-23%	-35%	-7%	-26%	-39%
	MC2/GC													
	Battery	0%	0%	-8%	-15%	-2%	-12%	-26%	-5%	-24%	-37%	-8%	-28%	-41%
	Specific Power	0%	0%	-1%	-1%	0%	-1%	-2%	0%	-2%	1%	-1%	-2%	1%

Energy

		Small_SUV												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Split HEV	Total Energy	1147	1147	1092	1045	1131	1058	972	1080	972	821	1080	972	799
	Usable Energy													
SI Split HEV PHEV10	Total Energy	4501	4501	4125	3837	4398	3955	3099	4252	3204	2349	4270	2851	2187
	Usable Energy	2700	2700	2475	2302	2639	2373	2169	2551	2243	1879	2562	2138	1749
SI Split HEV PHEV20	Total Energy	9013	9013	8388	7687	9035	7922	6006	8890	6221	4548	8588	5581	4334
	Usable Energy	5408	5408	5033	4612	5421	4753	4204	5334	4355	3639	5153	4186	3468
SI Series HEV PHEV30	Total Energy	16533	16533	15059	14000	16085	14439	10881	15730	11206	8374	15360	10102	7830
	Usable Energy	9920	9920	9035	8400	9651	8663	7617	9438	7844	6699	9216	7577	6264
SI Series HEV PHEV40	Total Energy	22157	22157	20273	18808	21533	19415	14561	21034	15031	10865	20643	13473	10457
	Usable Energy	13294	13294	12164	11285	12920	11649	10193	12620	10522	8692	12386	10105	8366
CI Split HEV	Total Energy	1209	1209	1162	1108	1193	1102	1015	1145	1037	886	1145	1037	842
	Usable Energy													
CI Split HEV PHEV10	Total Energy	4570	4570	4380	4021	4586	4207	3267	4506	3358	2465	4507	2978	2365
	Usable Energy	2742	2742	2628	2413	2751	2524	2287	2704	2350	1972	2704	2233	1892
CI Split HEV PHEV20	Total Energy	9378	9378	8779	8114	9418	8373	6286	9257	6459	4741	9044	5842	4546
	Usable Energy	5627	5627	5267	4868	5651	5024	4400	5554	4521	3793	5427	4381	3636
CI Series HEV PHEV30	Total Energy	17346	17346	15610	14533	17137	14961	11309	16495	11644	8584	15883	10499	8387
	Usable Energy	10408	10408	9366	8720	10282	8977	7917	9897	8151	6867	9530	7874	6709
CI Series HEV PHEV40	Total Energy	22995	22995	20997	19510	22331	20126	15182	21749	15665	11397	21351	13966	10918
	Usable Energy	13797	13797	12598	11706	13399	12076	10627	13049	10965	9117	12811	10474	8735
H2 Split HEV	Total Energy	1178	1178	1100	1037	1154	1037	950	1102	972	799	1080	950	778
	Usable Energy													
H2 Split HEV PHEV10	Total Energy	4577	4577	4131	3816	4510	3947	3060	4352	3171	2303	4233	2796	2125
	Usable Energy	2746	2746	2478	2289	2706	2368	2142	2611	2219	1842	2540	2097	1700
H2 Split HEV PHEV20	Total Energy	9122	9122	8256	7576	9134	7822	5958	8954	6165	4459	8572	5557	4190
	Usable Energy	5473	5473	4954	4545	5480	4693	4171	5372	4315	3567	5143	4168	3352

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		Small SUV												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
H2 Series HEV PHEV30	Total Energy	16771	16771	15042	13868	16210	14326	10704	15809	11085	8186	15203	9962	7683
	Usable Energy	10062	10062	9025	8321	9726	8595	7493	9486	7759	6548	9122	7472	6147
H2 Series HEV PHEV40	Total Energy	22499	22499	20149	18641	21720	19248	14367	21150	14857	10631	20433	13396	10261
	Usable Energy	13500	13500	12089	11184	13032	11549	10057	12690	10400	8505	12260	10047	8209
E85 Split HEV	Total Energy	1147	1147	1100	1045	1131	1058	972	1102	972	821	1080	972	799
	Usable Energy													
E85 Split HEV PHEV10	Total Energy	4506	4506	4134	3840	4537	3959	3127	4416	3209	2353	4273	2858	2224
	Usable Energy	2704	2704	2481	2304	2722	2375	2189	2650	2246	1882	2564	2143	1779
E85 Split HEV PHEV20	Total Energy	8978	8978	8267	7636	9047	7928	6011	8897	6222	4546	8592	5587	4341
	Usable Energy	5387	5387	4960	4582	5428	4757	4208	5338	4355	3637	5155	4190	3473
E85 Series HEV PHEV30	Total Energy	16544	16544	15080	14011	16096	14445	10890	15737	11212	8382	15371	10107	7838
	Usable Energy	9927	9927	9048	8406	9658	8667	7623	9442	7848	6705	9222	7580	6271
E85 Series HEV PHEV40	Total Energy	22151	22151	20300	18827	21543	19430	14580	21048	15036	10875	20662	13484	10464
	Usable Energy	13291	13291	12180	11296	12926	11658	10206	12629	10525	8700	12397	10113	8372
FC HEV	Total Energy	1443	1443	1248	1162	1303	1274	1166	1339	1188	1015	1274	1145	972
	Usable Energy													
FC HEV PHEV10	Total Energy	5474	5474	4670	4161	5063	4298	3230	4786	3331	2388	4549	2995	2284
	Usable Energy	3285	3285	2802	2496	3038	2579	2261	2872	2332	1910	2729	2246	1827
FC HEV PHEV20	Total Energy	10997	10997	9366	8306	10170	8596	6539	9555	6750	4737	9111	6061	4520
	Usable Energy	6598	6598	5619	4984	6102	5158	4577	5733	4725	3790	5466	4545	3616
FC HEV PHEV30	Total Energy	17800	17800	15186	13724	15810	14098	9974	15125	10300	7166	14307	9215	6848
	Usable Energy	10680	10680	9112	8235	9486	8459	6982	9075	7210	5732	8584	6911	5478
FC HEV PHEV40	Total Energy	22698	22698	18993	17152	20663	17618	12850	19719	13305	9608	18645	11892	9161
	Usable Energy	13619	13619	11396	10291	12398	10571	8995	11831	9314	7687	11187	8919	7329
BEV	Total Energy	81994	81994	73591	67488	79539	70008	49862	77268	51340	35971	74726	45950	34246
	Usable Energy	49196	49196	44155	40493	47723	42005	34904	46361	35938	28777	44835	34462	27397

Percentage of Energy reduction based on the respective 2010 reference case

		Small_SUV												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Split HEV	Total Energy	0.0%	0.0%	-4.8%	-8.8%	-1.4%	-7.7%	-15.2%	-5.8%	-15.2%	-28.4%	-5.8%	-15.2%	-30.3%
	Usable Energy													
SI Split HEV PHEV10	Total Energy	0.0%	0.0%	-8.3%	-14.8%	-2.3%	-12.1%	-31.1%	-5.5%	-28.8%	-47.8%	-5.1%	-36.6%	-51.4%
	Usable Energy	0.0%	0.0%	-8.3%	-14.8%	-2.3%	-12.1%	-19.7%	-5.5%	-16.9%	-30.4%	-5.1%	-20.8%	-35.2%
SI Split HEV PHEV20	Total Energy	0.0%	0.0%	-6.9%	-14.7%	0.2%	-12.1%	-33.4%	-1.4%	-31.0%	-49.5%	-4.7%	-38.1%	-51.9%
	Usable Energy	0.0%	0.0%	-6.9%	-14.7%	0.2%	-12.1%	-22.3%	-1.4%	-19.5%	-32.7%	-4.7%	-22.6%	-35.9%
SI Series HEV PHEV30	Total Energy	0.0%	0.0%	-8.9%	-15.3%	-2.7%	-12.7%	-34.2%	-4.9%	-32.2%	-49.3%	-7.1%	-38.9%	-52.6%
	Usable Energy	0.0%	0.0%	-8.9%	-15.3%	-2.7%	-12.7%	-23.2%	-4.9%	-20.9%	-32.5%	-7.1%	-23.6%	-36.9%
SI Series HEV PHEV40	Total Energy	0.0%	0.0%	-8.5%	-15.1%	-2.8%	-12.4%	-34.3%	-5.1%	-32.2%	-51.0%	-6.8%	-39.2%	-52.8%
	Usable Energy	0.0%	0.0%	-8.5%	-15.1%	-2.8%	-12.4%	-23.3%	-5.1%	-20.9%	-34.6%	-6.8%	-24.0%	-37.1%
CI Split HEV	Total Energy	0.0%	0.0%	-3.9%	-8.4%	-1.3%	-8.9%	-16.0%	-5.3%	-14.2%	-26.7%	-5.3%	-14.2%	-30.3%
	Usable Energy													
CI Split HEV PHEV10	Total Energy	0.0%	0.0%	-4.2%	-12.0%	0.4%	-7.9%	-28.5%	-1.4%	-26.5%	-46.1%	-1.4%	-34.8%	-48.2%
	Usable Energy	0.0%	0.0%	-4.2%	-12.0%	0.4%	-7.9%	-16.6%	-1.4%	-14.3%	-28.1%	-1.4%	-18.5%	-31.0%
CI Split HEV PHEV20	Total Energy	0.0%	0.0%	-6.4%	-13.5%	0.4%	-10.7%	-33.0%	-1.3%	-31.1%	-49.4%	-3.6%	-37.7%	-51.5%
	Usable Energy	0.0%	0.0%	-6.4%	-13.5%	0.4%	-10.7%	-21.8%	-1.3%	-19.7%	-32.6%	-3.6%	-22.1%	-35.4%
CI Series HEV PHEV30	Total Energy	0.0%	0.0%	-10.0%	-16.2%	-1.2%	-13.7%	-34.8%	-4.9%	-32.9%	-50.5%	-8.4%	-39.5%	-51.7%
	Usable Energy	0.0%	0.0%	-10.0%	-16.2%	-1.2%	-13.7%	-23.9%	-4.9%	-21.7%	-34.0%	-8.4%	-24.3%	-35.5%
CI Series HEV PHEV40	Total Energy	0.0%	0.0%	-8.7%	-15.2%	-2.9%	-12.5%	-34.0%	-5.4%	-31.9%	-50.4%	-7.1%	-39.3%	-52.5%
	Usable Energy	0.0%	0.0%	-8.7%	-15.2%	-2.9%	-12.5%	-23.0%	-5.4%	-20.5%	-33.9%	-7.1%	-24.1%	-36.7%
H2 Split HEV	Total Energy	0.0%	0.0%	-6.6%	-11.9%	-2.0%	-12.0%	-19.3%	-6.5%	-17.5%	-32.1%	-8.3%	-19.3%	-34.0%
	Usable Energy													
H2 Split HEV PHEV10	Total Energy	0.0%	0.0%	-9.8%	-16.6%	-1.5%	-13.8%	-33.1%	-4.9%	-30.7%	-49.7%	-7.5%	-38.9%	-53.6%
	Usable Energy	0.0%	0.0%	-9.8%	-16.6%	-1.5%	-13.8%	-22.0%	-4.9%	-19.2%	-32.9%	-7.5%	-23.6%	-38.1%
H2 Split HEV PHEV20	Total Energy	0.0%	0.0%	-9.5%	-17.0%	0.1%	-14.2%	-34.7%	-1.8%	-32.4%	-51.1%	-6.0%	-39.1%	-54.1%
	Usable Energy	0.0%	0.0%	-9.5%	-17.0%	0.1%	-14.2%	-23.8%	-1.8%	-21.2%	-34.8%	-6.0%	-23.9%	-38.8%

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		Small_SUV												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
H2 Series HEV PHEV30	Total Energy	0.0%	0.0%	-10.3%	-17.3%	-3.3%	-14.6%	-36.2%	-5.7%	-33.9%	-51.2%	-9.3%	-40.6%	-54.2%
	Usable Energy	0.0%	0.0%	-10.3%	-17.3%	-3.3%	-14.6%	-25.5%	-5.7%	-22.9%	-34.9%	-9.3%	-25.7%	-38.9%
H2 Series HEV PHEV40	Total Energy	0.0%	0.0%	-10.4%	-17.2%	-3.5%	-14.5%	-36.1%	-6.0%	-34.0%	-52.8%	-9.2%	-40.5%	-54.4%
	Usable Energy	0.0%	0.0%	-10.4%	-17.2%	-3.5%	-14.5%	-25.5%	-6.0%	-23.0%	-37.0%	-9.2%	-25.6%	-39.2%
E85 Split HEV	Total Energy	0.0%	0.0%	-4.1%	-8.8%	-1.4%	-7.7%	-15.2%	-3.9%	-15.2%	-28.4%	-5.8%	-15.2%	-30.3%
	Usable Energy													
E85 Split HEV PHEV10	Total Energy	0.0%	0.0%	-8.2%	-14.8%	0.7%	-12.1%	-30.6%	-2.0%	-28.8%	-47.8%	-5.2%	-36.6%	-50.6%
	Usable Energy	0.0%	0.0%	-8.2%	-14.8%	0.7%	-12.1%	-19.0%	-2.0%	-16.9%	-30.4%	-5.2%	-20.7%	-34.2%
E85 Split HEV PHEV20	Total Energy	0.0%	0.0%	-7.9%	-14.9%	0.8%	-11.7%	-33.1%	-0.9%	-30.7%	-49.4%	-4.3%	-37.8%	-51.6%
	Usable Energy	0.0%	0.0%	-7.9%	-14.9%	0.8%	-11.7%	-21.9%	-0.9%	-19.2%	-32.5%	-4.3%	-22.2%	-35.5%
E85 Series HEV PHEV30	Total Energy	0.0%	0.0%	-8.8%	-15.3%	-2.7%	-12.7%	-34.2%	-4.9%	-32.2%	-49.3%	-7.1%	-38.9%	-52.6%
	Usable Energy	0.0%	0.0%	-8.8%	-15.3%	-2.7%	-12.7%	-23.2%	-4.9%	-20.9%	-32.5%	-7.1%	-23.6%	-36.8%
E85 Series HEV PHEV40	Total Energy	0.0%	0.0%	-8.4%	-15.0%	-2.7%	-12.3%	-34.2%	-5.0%	-32.1%	-50.9%	-6.7%	-39.1%	-52.8%
	Usable Energy	0.0%	0.0%	-8.4%	-15.0%	-2.7%	-12.3%	-23.2%	-5.0%	-20.8%	-34.5%	-6.7%	-23.9%	-37.0%
FC HEV	Total Energy	0.0%	0.0%	-13.5%	-19.5%	-9.7%	-11.7%	-19.2%	-7.2%	-17.7%	-29.6%	-11.7%	-20.7%	-32.6%
	Usable Energy													
FC HEV PHEV10	Total Energy	0.0%	0.0%	-14.7%	-24.0%	-7.5%	-21.5%	-41.0%	-12.6%	-39.2%	-56.4%	-16.9%	-45.3%	-58.3%
	Usable Energy	0.0%	0.0%	-14.7%	-24.0%	-7.5%	-21.5%	-31.2%	-12.6%	-29.0%	-41.8%	-16.9%	-31.6%	-44.4%
FC HEV PHEV20	Total Energy	0.0%	0.0%	-14.8%	-24.5%	-7.5%	-21.8%	-40.5%	-13.1%	-38.6%	-56.9%	-17.2%	-44.9%	-58.9%
	Usable Energy	0.0%	0.0%	-14.8%	-24.5%	-7.5%	-21.8%	-30.6%	-13.1%	-28.4%	-42.6%	-17.2%	-31.1%	-45.2%
FC HEV PHEV30	Total Energy	0.0%	0.0%	-14.7%	-22.9%	-11.2%	-20.8%	-44.0%	-15.0%	-42.1%	-59.7%	-19.6%	-48.2%	-61.5%
	Usable Energy	0.0%	0.0%	-14.7%	-22.9%	-11.2%	-20.8%	-34.6%	-15.0%	-32.5%	-46.3%	-19.6%	-35.3%	-48.7%
FC HEV PHEV40	Total Energy	0.0%	0.0%	-16.3%	-24.4%	-9.0%	-22.4%	-43.4%	-13.1%	-41.4%	-57.7%	-17.9%	-47.6%	-59.6%
	Usable Energy	0.0%	0.0%	-16.3%	-24.4%	-9.0%	-22.4%	-34.0%	-13.1%	-31.6%	-43.6%	-17.9%	-34.5%	-46.2%
EV	Total Energy	0.0%	0.0%	-10.2%	-17.7%	-3.0%	-14.6%	-39.2%	-5.8%	-37.4%	-56.1%	-8.9%	-44.0%	-58.2%
	Usable Energy	0.0%	0.0%	-10.2%	-17.7%	-3.0%	-14.6%	-29.1%	-5.8%	-26.9%	-41.5%	-8.9%	-29.9%	-44.3%

curb weight

		Small SUV												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Conv	Vehicle Mass	1475	1475	1424	1371	1474	1389	1292	1467	1306	1120	1466	1292	1066
	% of Glider mass	68.2	68.2	67.4	66.4	68.3	66.8	65.0	68.3	65.2	60.2	68.3	64.9	58.5
	% of Powertrain mass	31.8	31.8	32.6	33.6	31.7	33.2	35.0	31.7	34.8	39.8	31.7	35.1	41.5
CI Conv	Vehicle Mass	1528	1528	1481	1429	1528	1447	1354	1523	1367	1185	1522	1354	1133
	% of Glider mass	65.8	65.8	64.8	63.8	65.9	64.1	62.0	65.8	62.3	56.9	65.8	61.9	55.0
	% of Powertrain mass	34.2	34.2	35.2	36.2	34.1	35.9	38.0	34.2	37.7	43.1	34.2	38.1	45.0
H2 Conv	Vehicle Mass	1488	1488	1399	1331	1474	1349	1238	1459	1260	1056	1419	1239	1010
	% of Glider mass	67.6	67.6	68.6	68.4	68.3	68.8	67.8	68.7	67.5	63.9	70.6	67.6	61.7
	% of Powertrain mass	32.4	32.4	31.4	31.6	31.7	31.2	32.2	31.3	32.5	36.1	29.4	32.4	38.3
E85 Conv	Vehicle Mass	1471	1471	1422	1368	1471	1387	1291	1465	1304	1119	1463	1290	1066
	% of Glider mass	68.4	68.4	67.5	66.6	68.5	66.9	65.0	68.4	65.3	60.3	68.5	65.0	58.5
	% of Powertrain mass	31.6	31.6	32.5	33.4	31.5	33.1	35.0	31.6	34.7	39.7	31.5	35.0	41.5
SI Split HEV	Vehicle Mass	1610	1610	1531	1459	1585	1498	1366	1574	1393	1161	1566	1368	1103
	% of Glider mass	62.5	62.5	62.7	62.4	63.5	61.9	61.4	63.7	61.1	58.1	64.0	61.3	56.5
	% of Powertrain mass	37.5	37.5	37.3	37.6	36.5	38.1	38.6	36.3	38.9	41.9	36.0	38.7	43.5
SI Split HEV PHEV10	Vehicle Mass	1627	1627	1547	1473	1602	1500	1365	1586	1392	1165	1572	1369	1107
	% of Glider mass	61.8	61.8	62.0	61.8	62.9	61.9	61.5	63.2	61.1	57.9	63.7	61.2	56.3
	% of Powertrain mass	38.2	38.2	38.0	38.2	37.1	38.1	38.5	36.8	38.9	42.1	36.3	38.8	43.7
SI Split HEV PHEV20	Vehicle Mass	1663	1663	1580	1503	1638	1531	1388	1618	1417	1180	1604	1388	1119
	% of Glider mass	60.5	60.5	60.7	60.6	61.5	60.6	60.5	61.9	60.1	57.2	62.5	60.4	55.7
	% of Powertrain mass	39.5	39.5	39.3	39.4	38.5	39.4	39.5	38.1	39.9	42.8	37.5	39.6	44.3
SI Series HEV PHEV30	Vehicle Mass	1903	1903	1780	1678	1852	1717	1527	1815	1564	1285	1786	1520	1218
	% of Glider mass	52.9	52.9	53.9	54.3	54.4	54.0	55.0	55.2	54.4	52.5	56.1	55.1	51.2
	% of Powertrain mass	47.1	47.1	46.1	45.7	45.6	46.0	45.0	44.8	45.6	47.5	43.9	44.9	48.8
SI Series HEV PHEV40	Vehicle Mass	1959	1959	1831	1721	1905	1763	1560	1865	1601	1308	1834	1552	1241
	% of Glider mass	51.4	51.4	52.4	52.9	52.9	52.6	53.8	53.7	53.2	51.6	54.6	54.0	50.2
	% of Powertrain mass	48.6	48.6	47.6	47.1	47.1	47.4	46.2	46.3	46.8	48.4	45.4	46.0	49.8
CI Split HEV	Vehicle Mass	1704	1704	1625	1550	1676	1588	1455	1667	1483	1251	1657	1459	1195
	% of Glider mass	59.0	59.0	59.1	58.8	60.1	58.4	57.7	60.1	57.4	53.9	60.5	57.4	52.2
	% of Powertrain mass	41.0	41.0	40.9	41.2	39.9	41.6	42.3	39.9	42.6	46.1	39.5	42.6	47.8

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		Small_SUV												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
CI Split HEV PHEV10	Vehicle Mass	1731	1731	1651	1575	1704	1601	1465	1684	1494	1265	1670	1467	1205
	% of Glider mass	58.1	58.1	58.1	57.8	59.1	58.0	57.3	59.5	57.0	53.3	60.0	57.1	51.7
	% of Powertrain mass	41.9	41.9	41.9	42.2	40.9	42.0	42.7	40.5	43.0	46.7	40.0	42.9	48.3
CI Split HEV PHEV20	Vehicle Mass	1769	1769	1684	1602	1738	1633	1489	1719	1517	1279	1704	1488	1219
	% of Glider mass	56.9	56.9	57.0	56.9	58.0	56.8	56.4	58.3	56.1	52.7	58.8	56.3	51.1
	% of Powertrain mass	43.1	43.1	43.0	43.1	42.0	43.2	43.6	41.7	43.9	47.3	41.2	43.7	48.9
CI Series HEV PHEV30	Vehicle Mass	1998	1998	1877	1773	1943	1811	1621	1909	1661	1380	1878	1616	1313
	% of Glider mass	50.4	50.4	51.1	51.4	51.8	51.2	51.8	52.5	51.2	48.9	53.4	51.9	47.5
	% of Powertrain mass	49.6	49.6	48.9	48.6	48.2	48.8	48.2	47.5	48.8	51.1	46.6	48.1	52.5
CI Series HEV PHEV40	Vehicle Mass	2055	2055	1927	1818	1998	1860	1656	1958	1696	1405	1928	1645	1334
	% of Glider mass	49.0	49.0	49.8	50.1	50.4	49.9	50.7	51.2	50.2	48.0	52.0	50.9	46.7
	% of Powertrain mass	51.0	51.0	50.2	49.9	49.6	50.1	49.3	48.8	49.8	52.0	48.0	49.1	53.3
H2 Split HEV	Vehicle Mass	1656	1656	1536	1441	1615	1478	1333	1598	1369	1118	1545	1337	1071
	% of Glider mass	60.7	60.7	62.5	63.2	62.4	62.8	63.0	62.7	62.2	60.3	64.9	62.7	58.2
	% of Powertrain mass	39.3	39.3	37.5	36.8	37.6	37.2	37.0	37.3	37.8	39.7	35.1	37.3	41.8
H2 Split HEV PHEV10	Vehicle Mass	1678	1678	1554	1460	1634	1488	1336	1606	1373	1125	1553	1339	1074
	% of Glider mass	60.0	60.0	61.8	62.4	61.6	62.4	62.8	62.4	62.0	60.0	64.5	62.6	58.0
	% of Powertrain mass	40.0	40.0	38.2	37.6	38.4	37.6	37.2	37.6	38.0	40.0	35.5	37.4	42.0
H2 Split HEV PHEV20	Vehicle Mass	1715	1715	1586	1487	1671	1519	1359	1642	1396	1138	1585	1360	1088
	% of Glider mass	58.7	58.7	60.5	61.3	60.3	61.1	61.8	61.0	61.0	59.3	63.2	61.6	57.3
	% of Powertrain mass	41.3	41.3	39.5	38.7	39.7	38.9	38.2	39.0	39.0	40.7	36.8	38.4	42.7
H2 Series HEV PHEV30	Vehicle Mass	1943	1943	1777	1654	1874	1694	1488	1829	1537	1236	1757	1486	1181
	% of Glider mass	51.8	51.8	54.0	55.1	53.7	54.8	56.4	54.8	55.4	54.6	57.0	56.4	52.8
	% of Powertrain mass	48.2	48.2	46.0	44.9	46.3	45.2	43.6	45.2	44.6	45.4	43.0	43.6	47.2
H2 Series HEV PHEV40	Vehicle Mass	2000	2000	1827	1698	1927	1740	1523	1880	1572	1261	1805	1515	1203
	% of Glider mass	50.3	50.3	52.5	53.7	52.3	53.3	55.1	53.3	54.1	53.5	55.5	55.3	51.8
	% of Powertrain mass	49.7	49.7	47.5	46.3	47.7	46.7	44.9	46.7	45.9	46.5	44.5	44.7	48.2
E85 Split HEV	Vehicle Mass	1614	1614	1534	1462	1587	1501	1369	1584	1393	1163	1568	1373	1105
	% of Glider mass	62.3	62.3	62.6	62.3	63.5	61.8	61.3	63.3	61.1	58.0	63.9	61.0	56.4
	% of Powertrain mass	37.7	37.7	37.4	37.7	36.5	38.2	38.7	36.7	38.9	42.0	36.1	39.0	43.6

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		Small_SUV												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
E85 Split HEV PHEV10	Vehicle Mass	1629	1629	1552	1475	1604	1502	1367	1588	1394	1167	1574	1371	1109
	% of Glider mass	61.8	61.8	61.8	61.8	62.8	61.8	61.4	63.1	61.0	57.8	63.7	61.1	56.2
	% of Powertrain mass	38.2	38.2	38.2	38.2	37.2	38.2	38.6	36.9	39.0	42.2	36.3	38.9	43.8
E85 Split HEV PHEV20	Vehicle Mass	1665	1665	1582	1505	1640	1533	1390	1620	1419	1182	1606	1390	1123
	% of Glider mass	60.4	60.4	60.7	60.5	61.4	60.5	60.4	61.9	60.0	57.1	62.4	60.3	55.5
	% of Powertrain mass	39.6	39.6	39.3	39.5	38.6	39.5	39.6	38.1	40.0	42.9	37.6	39.7	44.5
E85 Series HEV PHEV30	Vehicle Mass	1905	1905	1783	1680	1854	1719	1529	1817	1566	1287	1788	1522	1221
	% of Glider mass	52.8	52.8	53.8	54.2	54.3	54.0	54.9	55.1	54.3	52.4	56.0	55.1	51.0
	% of Powertrain mass	47.2	47.2	46.2	45.8	45.7	46.0	45.1	44.9	45.7	47.6	44.0	44.9	49.0
E85 Series HEV PHEV40	Vehicle Mass	1961	1961	1834	1723	1907	1765	1562	1869	1603	1310	1836	1554	1243
	% of Glider mass	51.3	51.3	52.3	52.9	52.8	52.6	53.7	53.6	53.1	51.5	54.6	53.9	50.1
	% of Powertrain mass	48.7	48.7	47.7	47.1	47.2	47.4	46.3	46.4	46.9	48.5	45.4	46.1	49.9
FC HEV	Vehicle Mass	2065	2065	1720	1539	1817	1562	1360	1702	1395	1111	1594	1338	1045
	% of Glider mass	48.7	48.7	55.8	59.2	55.4	59.4	61.7	58.9	61.0	60.7	62.9	62.6	59.6
	% of Powertrain mass	51.3	51.3	44.2	40.8	44.6	40.6	38.3	41.1	39.0	39.3	37.1	37.4	40.4
FC HEV PHEV10	Vehicle Mass	1976	1976	1679	1518	1783	1533	1339	1674	1373	1093	1575	1322	1031
	% of Glider mass	50.9	50.9	57.2	60.0	56.5	60.5	62.7	59.9	62.0	61.7	63.6	63.4	60.4
	% of Powertrain mass	49.1	49.1	42.8	40.0	43.5	39.5	37.3	40.1	38.0	38.3	36.4	36.6	39.6
FC HEV PHEV20	Vehicle Mass	2034	2034	1722	1550	1832	1570	1366	1717	1401	1112	1614	1344	1047
	% of Glider mass	49.5	49.5	55.7	58.8	55.0	59.1	61.4	58.4	60.7	60.7	62.1	62.4	59.5
	% of Powertrain mass	50.5	50.5	44.3	41.2	45.0	40.9	38.6	41.6	39.3	39.3	37.9	37.6	40.5
FC HEV PHEV30	Vehicle Mass	2120	2120	1814	1647	1930	1671	1448	1829	1489	1185	1714	1425	1119
	% of Glider mass	47.5	47.5	52.9	55.3	52.2	55.5	58.0	54.8	57.2	56.9	58.5	58.8	55.7
	% of Powertrain mass	52.5	52.5	47.1	44.7	47.8	44.5	42.0	45.2	42.8	43.1	41.5	41.2	44.3
FC HEV PHEV40	Vehicle Mass	2186	2186	1863	1688	1985	1713	1478	1878	1520	1208	1758	1450	1138
	% of Glider mass	46.0	46.0	51.5	54.0	50.7	54.2	56.8	53.4	56.0	55.8	57.0	57.8	54.8
	% of Powertrain mass	54.0	54.0	48.5	46.0	49.3	45.8	43.2	46.6	44.0	44.2	43.0	42.2	45.2
BEV	Vehicle Mass	2194	2194	2023	1881	2137	1941	1627	2084	1669	1310	2025	1585	1228
	% of Glider mass	45.9	45.9	47.4	48.4	47.1	47.8	51.6	48.1	51.0	51.5	49.5	52.9	50.7
	% of Powertrain mass	54.1	54.1	52.6	51.6	52.9	52.2	48.4	51.9	49.0	48.5	50.5	47.1	49.3

Percentage of vehicle curbs weight reduction based on the respective 2010 reference case

		Small_SUV												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Conv	Vehicle Mass	0.00%	0.00%	-3.46%	-7.05%	-0.07%	-5.83%	-12.41%	-0.54%	-11.46%	-24.07%	-0.61%	-12.41%	-27.73%
CI Conv	Vehicle Mass	0.00%	0.00%	-3.08%	-6.48%	0.00%	-5.30%	-11.39%	-0.33%	-10.54%	-22.45%	-0.39%	-11.39%	-25.85%
H2 Conv	Vehicle Mass	0.00%	0.00%	-5.98%	-10.55%	-0.94%	-9.34%	-16.80%	-1.95%	-15.32%	-29.03%	-4.64%	-16.73%	-32.12%
E85 Conv	Vehicle Mass	0.00%	0.00%	-3.33%	-7.00%	0.00%	-5.71%	-12.24%	-0.41%	-11.35%	-23.93%	-0.54%	-12.30%	-27.53%
SI Split HEV	Vehicle Mass	0.00%	0.00%	-4.91%	-9.38%	-1.55%	-6.96%	-15.16%	-2.24%	-13.48%	-27.89%	-2.73%	-15.03%	-31.49%
SI Split HEV PHEV10	Vehicle Mass	0.00%	0.00%	-4.92%	-9.47%	-1.54%	-7.81%	-16.10%	-2.52%	-14.44%	-28.40%	-3.38%	-15.86%	-31.96%
SI Split HEV PHEV20	Vehicle Mass	0.00%	0.00%	-4.99%	-9.62%	-1.50%	-7.94%	-16.54%	-2.71%	-14.79%	-29.04%	-3.55%	-16.54%	-32.71%
SI Series HEV PHEV30	Vehicle Mass	0.00%	0.00%	-6.46%	-11.82%	-2.68%	-9.77%	-19.76%	-4.62%	-17.81%	-32.48%	-6.15%	-20.13%	-36.00%
SI Series HEV PHEV40	Vehicle Mass	0.00%	0.00%	-6.53%	-12.15%	-2.76%	-10.01%	-20.37%	-4.80%	-18.27%	-33.23%	-6.38%	-20.78%	-36.65%
CI Split HEV	Vehicle Mass	0.00%	0.00%	-4.64%	-9.04%	-1.64%	-6.81%	-14.61%	-2.17%	-12.97%	-26.58%	-2.76%	-14.38%	-29.87%
CI Split HEV PHEV10	Vehicle Mass	0.00%	0.00%	-4.62%	-9.01%	-1.56%	-7.51%	-15.37%	-2.72%	-13.69%	-26.92%	-3.52%	-15.25%	-30.39%
CI Split HEV PHEV20	Vehicle Mass	0.00%	0.00%	-4.80%	-9.44%	-1.75%	-7.69%	-15.83%	-2.83%	-14.25%	-27.70%	-3.67%	-15.88%	-31.09%
CI Series HEV PHEV30	Vehicle Mass	0.00%	0.00%	-6.06%	-11.26%	-2.75%	-9.36%	-18.87%	-4.45%	-16.87%	-30.93%	-6.01%	-19.12%	-34.28%
CI Series HEV PHEV40	Vehicle Mass	0.00%	0.00%	-6.23%	-11.53%	-2.77%	-9.49%	-19.42%	-4.72%	-17.47%	-31.63%	-6.18%	-19.95%	-35.09%
H2 Split HEV	Vehicle Mass	0.00%	0.00%	-7.25%	-12.98%	-2.48%	-10.75%	-19.50%	-3.50%	-17.33%	-32.49%	-6.70%	-19.26%	-35.33%
H2 Split HEV PHEV10	Vehicle Mass	0.00%	0.00%	-7.39%	-12.99%	-2.62%	-11.32%	-20.38%	-4.29%	-18.18%	-32.96%	-7.45%	-20.20%	-36.00%
H2 Split HEV PHEV20	Vehicle Mass	0.00%	0.00%	-7.52%	-13.29%	-2.57%	-11.43%	-20.76%	-4.26%	-18.60%	-33.64%	-7.58%	-20.70%	-36.56%
H2 Series HEV PHEV30	Vehicle Mass	0.00%	0.00%	-8.54%	-14.87%	-3.55%	-12.82%	-23.42%	-5.87%	-20.90%	-36.39%	-9.57%	-23.52%	-39.22%
H2 Series HEV PHEV40	Vehicle Mass	0.00%	0.00%	-8.65%	-15.10%	-3.65%	-13.00%	-23.85%	-6.00%	-21.40%	-36.95%	-9.75%	-24.25%	-39.85%
E85 Split HEV	Vehicle Mass	0.00%	0.00%	-4.96%	-9.42%	-1.67%	-7.00%	-15.18%	-1.86%	-13.69%	-27.94%	-2.85%	-14.93%	-31.54%
E85 Split HEV PHEV10	Vehicle Mass	0.00%	0.00%	-4.73%	-9.45%	-1.53%	-7.80%	-16.08%	-2.52%	-14.43%	-28.36%	-3.38%	-15.84%	-31.92%
E85 Split HEV PHEV20	Vehicle Mass	0.00%	0.00%	-4.98%	-9.61%	-1.50%	-7.93%	-16.52%	-2.70%	-14.77%	-29.01%	-3.54%	-16.52%	-32.55%
E85 Series HEV PHEV30	Vehicle Mass	0.00%	0.00%	-6.40%	-11.81%	-2.68%	-9.76%	-19.74%	-4.62%	-17.80%	-32.44%	-6.14%	-20.10%	-35.91%
E85 Series HEV PHEV40	Vehicle Mass	0.00%	0.00%	-6.48%	-12.14%	-2.75%	-9.99%	-20.35%	-4.69%	-18.26%	-33.20%	-6.37%	-20.75%	-36.61%
FC HEV	Vehicle Mass	0.00%	0.00%	-16.71%	-25.47%	-12.01%	-24.36%	-34.14%	-17.58%	-32.45%	-46.20%	-22.81%	-35.21%	-49.39%
FC HEV PHEV10	Vehicle Mass	0.00%	0.00%	-15.03%	-23.18%	-9.77%	-22.42%	-32.24%	-15.28%	-30.52%	-44.69%	-20.29%	-33.10%	-47.82%
FC HEV PHEV20	Vehicle Mass	0.00%	0.00%	-15.34%	-23.80%	-9.93%	-22.81%	-32.84%	-15.59%	-31.12%	-45.33%	-20.65%	-33.92%	-48.53%
FC HEV PHEV30	Vehicle Mass	0.00%	0.00%	-14.43%	-22.31%	-8.96%	-21.18%	-31.70%	-13.73%	-29.76%	-44.10%	-19.15%	-32.78%	-47.22%
FC HEV PHEV40	Vehicle Mass	0.00%	0.00%	-14.78%	-22.78%	-9.19%	-21.64%	-32.39%	-14.09%	-30.47%	-44.74%	-19.58%	-33.67%	-47.94%
EV	Vehicle Mass	0.00%	0.00%	-7.79%	-14.27%	-2.60%	-11.53%	-25.84%	-5.01%	-23.93%	-40.29%	-7.70%	-27.76%	-44.03%

Midsized SUV Class

Power

		Midsize_SUV												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Conv	ICE Power	186156	186156	165030	156916	181884	158266	156916	167519	159616	138780	177566	158266	134304
	Electric Machine													
	MC2/GC													
	Battery													
	Specific Power	98	98	90	89	95	88	93	88	94	95	94	94	96
CI Conv	ICE Power	142122	142122	134868	127383	138742	129800	121000	136074	123444	106333	136074	122222	103889
	Electric Machine													
	MC2/GC													
	Battery													
	Specific Power	73	73	71	70	71	70	70	70	71	70	70	71	71
H2 Conv	ICE Power	170788	170788	153145	144323	166667	146322	136800	156078	139856	118865	157921	137848	115015
	Electric Machine													
	MC2/GC													
	Battery													
	Specific Power	90	90	85	84	88	84	85	83	85	86	86	86	87
E85 Conv	ICE Power	178069	178069	158803	152528	175573	153866	149179	161143	152694	131693	169525	150350	126544
	Electric Machine													
	MC2/GC													
	Battery													
	Specific Power	93	93	86	86	92	86	89	85	90	90	89	90	91
SI Split HEV	ICE Power	128655	128655	120914	115075	126047	115949	104367	121873	106694	90382	121977	103953	86177
	Electric Machine	86749	86749	82659	79285	85214	80730	74170	84844	75720	64615	84910	73929	61570
	MC2/GC	74453	74453	69973	66594	72944	67100	60398	70528	61744	52304	70589	60158	49871
	Battery	34713	34713	33117	31521	34314	32439	29593	34146	30162	25040	34146	29593	23902
	Specific Power	79	79	78	78	78	77	76	77	76	76	77	75	76
SI Split HEV PHEV10	ICE Power	84876	84876	80766	77264	83638	78195	72199	83064	73901	64191	82169	72029	61131
	Electric Machine	96980	96980	92698	88778	96035	89978	80938	94184	82599	69427	94375	80770	66052
	MC2/GC	61419	61419	58404	55911	60524	56585	52246	60108	53436	46451	59461	52061	44216
	Battery	93584	93584	88917	84670	92846	85862	76855	89589	78449	70921	90084	83931	67570
	Specific Power	85	85	85	85	85	85	84	85	85	89	85	88	89

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		Midsize_SUV												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Split HEV PHEV20	ICE Power	86081	86081	81910	78348	84837	79219	73017	84262	74778	64694	83307	72620	61607
	Electric Machine	98986	98986	94650	90457	97852	91611	82265	96980	84707	70132	96276	82007	66963
	MC2/GC	62291	62291	59253	56696	61370	57305	52797	60975	54112	46774	60263	52509	44520
	Battery	94086	94086	89409	84904	93088	86036	77776	91063	80252	67154	90470	79539	64122
	Specific Power	84	84	84	84	84	84	84	84	84	86	84	85	86
SI Series HEV PHEV30	ICE Power	105296	105296	98183	92276	102967	93674	82393	99567	84752	70731	97990	81630	67240
	Electric Machine	171089	171089	162058	154515	167798	156745	142282	165688	145793	125627	163303	141013	119898
	MC2/GC	102137	102137	95238	89508	99878	90864	79921	96580	82209	68609	95050	79181	65223
	Battery	207175	207175	195197	185134	203221	187834	168438	198614	172640	146805	195771	167025	140136
	Specific Power	71	71	72	72	72	72	73	72	73	76	72	72	76
SI Series HEV PHEV40	ICE Power	109138	109138	101670	95419	106604	96987	84698	103039	87096	72413	101213	83644	68726
	Electric Machine	177182	177182	167568	159583	173584	162095	146067	171330	149682	128504	168554	144365	122492
	MC2/GC	105864	105864	98620	92556	103406	94077	82157	99948	84483	70241	98177	81135	66664
	Battery	214459	214459	201748	191124	210132	194157	172779	205280	177096	150036	201975	170844	143042
	Specific Power	72	72	72	73	72	72	73	73	73	76	73	73	77
CI Split HEV	ICE Power	109565	109565	104080	99159	107420	100670	89618	105735	91361	78096	104782	90079	73840
	Electric Machine	91932	91932	88131	84744	90222	86543	79177	90847	80656	69606	89799	79387	66084
	MC2/GC	91694	91694	87104	82985	89899	84250	75001	88489	76459	65358	87691	75386	61796
	Battery	36509	36509	34713	33117	35910	34146	31301	35853	31870	26748	35284	31301	25610
	Specific Power	67	67	67	67	67	67	65	67	65	65	66	65	65
CI Split HEV PHEV10	ICE Power	87859	87859	83684	80173	86491	81011	74961	85917	76731	66905	84985	74758	63873
	Electric Machine	97586	97586	93299	89317	96280	90247	81781	94593	83260	70532	93878	82382	67329
	MC2/GC	73529	73529	70034	67096	72384	67797	62734	71903	64216	55992	71123	62564	53455
	Battery	103706	103706	98617	93910	102431	94930	86854	99463	88519	80353	98757	94261	76689
	Specific Power	87	87	87	87	87	86	87	87	87	91	86	90	91
CI Split HEV PHEV20	ICE Power	89122	89122	84828	81229	87689	82120	75806	87115	77580	67437	86151	75406	64405
	Electric Machine	99133	99133	94726	90624	97784	91895	83014	96320	84579	71536	96142	83347	68332
	MC2/GC	74586	74586	70992	67980	73386	68726	63441	72906	64926	56437	72099	63107	53900
	Battery	104287	104287	99103	94284	102928	95647	87050	100239	88670	76249	100118	89740	72828
	Specific Power	86	86	86	86	86	86	86	86	86	88	86	87	88

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		Midsize_SUV												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
CI Series HEV PHEV30	ICE Power	108247	108247	101064	95180	105809	96539	85188	102351	87616	73394	100706	84335	69931
	Electric Machine	175732	175732	166602	159150	172331	161514	146882	170221	150451	130275	167734	145562	124553
	MC2/GC	105000	105000	98032	92325	102635	93643	82632	99280	84988	71192	97685	81805	67833
	Battery	212779	212779	200649	190666	208678	193528	173868	204022	178139	152218	201057	172393	145548
	Specific Power	70	70	71	71	71	71	72	71	72	74	71	71	75
CI Series HEV PHEV40	ICE Power	112119	112119	104612	98382	109690	99822	87551	105912	89931	75132	104078	86464	71585
	Electric Machine	181919	181919	172302	164266	178358	166720	150809	175911	154385	133147	173176	149057	127332
	MC2/GC	108755	108755	101474	95431	106399	96827	84924	102735	87233	72878	100956	83870	69437
	Battery	220172	220172	207421	196711	215884	199675	178368	210750	182638	155433	207489	176375	148672
	Specific Power	71	71	71	72	71	71	72	72	72	75	72	72	75
H2 Split HEV	ICE Power	129757	129757	120179	112884	126099	114690	100983	123213	103629	85855	120403	101397	82162
	Electric Machine	88222	88222	82635	78315	86057	80087	72638	85928	74335	62051	84133	72774	59781
	MC2/GC	81789	81789	75752	71154	79483	72292	63652	77664	65320	54117	75893	63913	51789
	Battery	35312	35312	32918	30923	34713	31870	29024	34146	29593	23902	33577	29024	23333
	Specific Power	78	78	78	77	78	77	75	77	75	75	77	75	76
H2 Split HEV PHEV10	ICE Power	86024	86024	80566	76579	84209	77512	71016	83407	72995	62652	81401	70847	59872
	Electric Machine	100781	100781	94233	89222	98707	90587	80758	97446	83066	68720	94930	81446	65709
	MC2/GC	68929	68929	64555	61315	67474	62108	56903	66809	58489	50201	65224	56745	47951
	Battery	98345	98345	91195	85568	96348	86997	74679	93563	77056	69420	91127	83578	66258
	Specific Power	86	86	86	86	87	86	84	86	85	90	86	89	90
H2 Split HEV PHEV20	ICE Power	87314	87314	81710	77578	85436	78565	71833	84576	73844	63127	82510	71466	60292
	Electric Machine	103625	103625	96042	90797	100559	92251	82913	99299	84122	69937	96733	82631	66735
	MC2/GC	69940	69940	65450	62161	68434	62929	57535	67746	59124	50582	66067	57241	48288
	Battery	100618	100618	92187	86351	97332	87871	78388	94590	79141	66088	92116	79996	62921
	Specific Power	86	86	86	86	86	85	85	86	85	87	86	86	87
H2 Series HEV PHEV30	ICE Power	106187	106187	97637	91139	103242	92600	80924	99627	83537	68966	96736	80192	65783
	Electric Machine	172587	172587	161190	152680	168233	155057	139838	165783	143777	122701	161328	138618	117393
	MC2/GC	103001	103001	94708	88405	100145	89822	78496	96638	81031	66897	93834	77786	63810
	Battery	208990	208990	194156	182944	203739	185822	165553	198731	170261	143397	193414	164201	137224
	Specific Power	71	71	72	73	72	72	73	72	73	77	72	73	77

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		Midsize_SUV												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
H2 Series HEV PHEV40	ICE Power	110091	110091	101003	94252	106909	95763	83200	103069	86025	70647	99930	82206	67268
	Electric Machine	178681	178681	166601	157748	174067	160166	143623	171378	147810	125532	166530	142019	119993
	MC2/GC	106788	106788	97973	91424	103702	92890	80704	99977	83444	68528	96932	79740	65250
	Battery	216268	216268	200589	188940	210709	191856	169897	205337	174896	146579	199560	168075	140133
	Specific Power	72	72	72	73	72	73	74	73	74	77	73	73	77
E85 Split HEV	ICE Power	128835	128835	121978	115162	127099	116986	104491	123285	106558	91223	122108	106348	86106
	Electric Machine	86932	86932	83225	79422	85779	81300	74312	85605	75709	65071	85052	74999	61587
	MC2/GC	74557	74557	70589	66645	73553	67700	60469	71345	61666	52791	70664	61544	49830
	Battery	34713	34713	33117	31521	34314	32439	29593	34146	30162	25040	34146	29593	23902
	Specific Power	79	79	78	78	79	77	76	77	76	77	77	77	76
E85 Split HEV PHEV10	ICE Power	84962	84962	80852	77321	83696	78280	72284	83207	73986	64247	82311	72113	61215
	Electric Machine	97192	97192	92864	88898	96157	90144	81099	95375	82760	69539	94543	81764	66204
	MC2/GC	61482	61482	58487	55952	60566	56646	52307	60191	53539	46492	59563	52123	44277
	Battery	93818	93818	89083	84766	92961	86029	76928	90977	78598	71110	90231	85249	67676
	Specific Power	85	85	85	85	85	85	84	85	84	89	85	89	89
E85 Split HEV PHEV20	ICE Power	86224	86224	81996	78433	84894	79333	73129	84348	74920	64778	83392	72676	61719
	Electric Machine	99156	99156	94817	90577	97975	91778	82467	97237	84869	71007	96443	83014	67117
	MC2/GC	62354	62354	59315	56737	61412	57408	52878	61037	54174	46835	60325	52571	44601
	Battery	94225	94225	89558	84994	93202	86179	77967	91317	80392	68244	90621	80793	64291
	Specific Power	84	84	84	84	84	84	84	84	85	86	84	85	86
E85 Series HEV PHEV30	ICE Power	105388	105388	98273	92336	103028	93793	82537	99687	84839	70788	98079	81688	67296
	Electric Machine	171235	171235	162204	154611	167894	156985	142475	165880	145938	125723	163448	141109	120042
	MC2/GC	102226	102226	95325	89566	99937	90979	80061	96696	82294	68664	95137	79237	65277
	Battery	207348	207348	195367	185249	203336	188124	168670	198846	172809	146916	195943	167138	140306
	Specific Power	71	71	72	72	72	72	73	72	73	76	72	72	76
E85 Series HEV PHEV40	ICE Power	109261	109261	101761	95569	106695	97076	84785	103219	87269	72469	101333	83702	68810
	Electric Machine	177376	177376	167713	159730	173730	162239	146211	171572	149922	128648	168746	144461	122636
	MC2/GC	105983	105983	98708	92702	103494	94164	82241	100122	84651	70295	98293	81191	66746
	Battery	214692	214692	201919	191299	210302	194329	172947	205572	177383	150203	202205	170956	143208
	Specific Power	72	72	72	73	72	72	73	73	73	76	72	73	77

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		Midsize_SUV												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
FC HEV	FC Power	145073	145073	122437	106103	129971	102984	89099	113351	91353	71759	107556	88105	68484
	Electric Machine	166468	166468	139482	126241	146286	125613	111731	136409	114268	93264	130155	110240	88631
	MC2/GC													
	Battery	43292	43292	36908	34314	38304	38699	35284	40975	35853	30162	39268	34715	28455
	Specific Power	63	63	63	63	62	62	63	62	63	64	63	63	64
FC HEV PHEV10	FC Power	107021	107021	91069	81808	97539	81701	72340	89764	74052	59614	84751	71268	56621
	Electric Machine	158328	158328	138890	126821	146705	127352	113916	138355	116420	95167	132091	112298	90281
	MC2/GC													
	Battery	81500	81500	70267	63328	74459	63977	55667	69484	57142	45559	65994	54971	43165
	Specific Power	63	63	64	64	64	64	65	64	65	66	65	65	66
FC HEV PHEV20	FC Power	109488	109488	93197	83584	99829	83496	72256	91807	75570	60180	85768	72693	57188
	Electric Machine	161877	161877	141986	129442	150012	130023	114625	141359	118608	96439	134097	114265	91423
	MC2/GC													
	Battery	83572	83572	71945	64663	76205	65403	56511	71081	58187	46346	67343	55869	43894
	Specific Power	63	63	64	64	64	64	64	64	65	66	64	65	66
FC HEV PHEV30	FC Power	90438	90438	80397	74647	84594	75214	67715	81713	69766	58634	77947	66628	55687
	Electric Machine	173556	173556	158821	149590	165483	150815	136817	160671	139886	120394	155785	134304	114394
	MC2/GC													
	Battery	210067	210067	191233	179184	200341	180680	162054	192552	165731	140712	186733	159166	133727
	Specific Power	65	65	68	70	68	70	73	69	72	77	71	73	78
FC HEV PHEV40	FC Power	92382	92382	81927	75918	86197	76456	68625	83162	70704	59386	79266	67435	56289
	Electric Machine	178923	178923	163413	153744	170260	154962	140221	165158	143441	123277	159979	137420	117006
	MC2/GC													
	Battery	216467	216467	196679	184083	206035	185574	165921	197838	169776	143962	191665	162690	136665
	Specific Power	65	65	69	71	68	71	73	69	73	78	71	73	78
BEV	ICE Power													
	Electric Machine	216254	216254	202345	191209	211884	194626	167179	207959	171797	142700	202213	161398	134555
	MC2/GC	0	0	0	0	0	0	0	0	0	0	0	0	0
	Battery	261257	261257	243172	228580	256006	232699	197866	248683	203372	167262	241846	191093	157761
	Specific Power	95	95	94	95	95	94	94	94	94	98	94	93	98

Percentage of power reduction based on the respective 2010 reference case

		Midsize_SUV												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Conv	ICE Power	0%	0%	-11%	-16%	-2%	-15%	-16%	-10%	-14%	-25%	-5%	-15%	-28%
	Electric Machine													
	MC2/GC													
	Battery													
	Specific Power	0%	0%	-8%	-9%	-2%	-10%	-4%	-9%	-4%	-3%	-4%	-3%	-1%
CI Conv	ICE Power	0%	0%	-5%	-10%	-2%	-9%	-15%	-4%	-13%	-25%	-4%	-14%	-27%
	Electric Machine													
	MC2/GC													
	Battery													
	Specific Power	0%	0%	-2%	-4%	-2%	-4%	-4%	-4%	-3%	-4%	-4%	-3%	-2%
H2 Conv	ICE Power	0%	0%	-10%	-15%	-2%	-14%	-20%	-9%	-18%	-30%	-8%	-19%	-33%
	Electric Machine													
	MC2/GC													
	Battery													
	Specific Power	0%	0%	-5%	-6%	-2%	-6%	-5%	-7%	-4%	-4%	-4%	-4%	-3%
E85 Conv	ICE Power	0%	0%	-11%	-14%	-1%	-14%	-16%	-10%	-14%	-26%	-5%	-16%	-29%
	Electric Machine													
	MC2/GC													
	Battery													
	Specific Power	0%	0%	-7%	-8%	-1%	-8%	-5%	-9%	-4%	-3%	-4%	-4%	-3%
SI Split HEV	ICE Power	0%	0%	-6%	-11%	-2%	-10%	-19%	-5%	-17%	-30%	-5%	-19%	-33%
	Electric Machine	0%	0%	-5%	-9%	-2%	-7%	-15%	-2%	-13%	-26%	-2%	-15%	-29%
	MC2/GC	0%	0%	-6%	-11%	-2%	-10%	-19%	-5%	-17%	-30%	-5%	-19%	-33%
	Battery	0%	0%	-5%	-9%	-1%	-7%	-15%	-2%	-13%	-28%	-2%	-15%	-31%
	Specific Power	0%	0%	-1%	-1%	0%	-2%	-4%	-2%	-4%	-3%	-2%	-4%	-3%
SI Split HEV PHEV10	ICE Power	0%	0%	-5%	-9%	-1%	-8%	-15%	-2%	-13%	-24%	-3%	-15%	-28%
	Electric Machine	0%	0%	-4%	-8%	-1%	-7%	-17%	-3%	-15%	-28%	-3%	-17%	-32%
	MC2/GC	0%	0%	-5%	-9%	-1%	-8%	-15%	-2%	-13%	-24%	-3%	-15%	-28%
	Battery	0%	0%	-5%	-10%	-1%	-8%	-18%	-4%	-16%	-24%	-4%	-10%	-28%
	Specific Power	0%	0%	0%	0%	0%	-1%	-1%	-1%	-1%	4%	0%	3%	4%

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		Midsize_SUV												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Split HEV PHEV20	ICE Power	0%	0%	-5%	-9%	-1%	-8%	-15%	-2%	-13%	-25%	-3%	-16%	-28%
	Electric Machine	0%	0%	-4%	-9%	-1%	-7%	-17%	-2%	-14%	-29%	-3%	-17%	-32%
	MC2/GC	0%	0%	-5%	-9%	-1%	-8%	-15%	-2%	-13%	-25%	-3%	-16%	-29%
	Battery	0%	0%	-5%	-10%	-1%	-9%	-17%	-3%	-15%	-29%	-4%	-15%	-32%
	Specific Power	0%	0%	0%	0%	0%	-1%	-1%	0%	0%	2%	0%	0%	2%
SI Series HEV PHEV30	ICE Power	0%	0%	-7%	-12%	-2%	-11%	-22%	-5%	-20%	-33%	-7%	-22%	-36%
	Electric Machine	0%	0%	-5%	-10%	-2%	-8%	-17%	-3%	-15%	-27%	-5%	-18%	-30%
	MC2/GC	0%	0%	-7%	-12%	-2%	-11%	-22%	-5%	-20%	-33%	-7%	-22%	-36%
	Battery	0%	0%	-6%	-11%	-2%	-9%	-19%	-4%	-17%	-29%	-6%	-19%	-32%
	Specific Power	0%	0%	0%	1%	1%	1%	2%	1%	2%	6%	1%	1%	7%
SI Series HEV PHEV40	ICE Power	0%	0%	-7%	-13%	-2%	-11%	-22%	-6%	-20%	-34%	-7%	-23%	-37%
	Electric Machine	0%	0%	-5%	-10%	-2%	-9%	-18%	-3%	-16%	-27%	-5%	-19%	-31%
	MC2/GC	0%	0%	-7%	-13%	-2%	-11%	-22%	-6%	-20%	-34%	-7%	-23%	-37%
	Battery	0%	0%	-6%	-11%	-2%	-9%	-19%	-4%	-17%	-30%	-6%	-20%	-33%
	Specific Power	0%	0%	0%	1%	0%	1%	2%	1%	2%	6%	1%	1%	7%
CI Split HEV	ICE Power	0%	0%	-5%	-9%	-2%	-8%	-18%	-3%	-17%	-29%	-4%	-18%	-33%
	Electric Machine	0%	0%	-4%	-8%	-2%	-6%	-14%	-1%	-12%	-24%	-2%	-14%	-28%
	MC2/GC	0%	0%	-5%	-9%	-2%	-8%	-18%	-3%	-17%	-29%	-4%	-18%	-33%
	Battery	0%	0%	-5%	-9%	-2%	-6%	-14%	-2%	-13%	-27%	-3%	-14%	-30%
	Specific Power	0%	0%	-1%	-1%	0%	-1%	-3%	-1%	-3%	-3%	-1%	-3%	-4%
CI Split HEV PHEV10	ICE Power	0%	0%	-5%	-9%	-2%	-8%	-15%	-2%	-13%	-24%	-3%	-15%	-27%
	Electric Machine	0%	0%	-4%	-8%	-1%	-8%	-16%	-3%	-15%	-28%	-4%	-16%	-31%
	MC2/GC	0%	0%	-5%	-9%	-2%	-8%	-15%	-2%	-13%	-24%	-3%	-15%	-27%
	Battery	0%	0%	-5%	-9%	-1%	-8%	-16%	-4%	-15%	-23%	-5%	-9%	-26%
	Specific Power	0%	0%	0%	0%	0%	-1%	-1%	-1%	0%	4%	-1%	3%	4%
CI Split HEV PHEV20	ICE Power	0%	0%	-5%	-9%	-2%	-8%	-15%	-2%	-13%	-24%	-3%	-15%	-28%
	Electric Machine	0%	0%	-4%	-9%	-1%	-7%	-16%	-3%	-15%	-28%	-3%	-16%	-31%
	MC2/GC	0%	0%	-5%	-9%	-2%	-8%	-15%	-2%	-13%	-24%	-3%	-15%	-28%
	Battery	0%	0%	-5%	-10%	-1%	-8%	-17%	-4%	-15%	-27%	-4%	-14%	-30%
	Specific Power	0%	0%	0%	0%	0%	-1%	-1%	-1%	0%	2%	0%	1%	2%

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		Midsize_SUV												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
CI Series HEV PHEV30	ICE Power	0%	0%	-7%	-12%	-2%	-11%	-21%	-5%	-19%	-32%	-7%	-22%	-35%
	Electric Machine	0%	0%	-5%	-9%	-2%	-8%	-16%	-3%	-14%	-26%	-5%	-17%	-29%
	MC2/GC	0%	0%	-7%	-12%	-2%	-11%	-21%	-5%	-19%	-32%	-7%	-22%	-35%
	Battery	0%	0%	-6%	-10%	-2%	-9%	-18%	-4%	-16%	-28%	-6%	-19%	-32%
	Specific Power	0%	0%	0%	1%	1%	1%	2%	1%	2%	6%	1%	1%	6%
CI Series HEV PHEV40	ICE Power	0%	0%	-7%	-12%	-2%	-11%	-22%	-6%	-20%	-33%	-7%	-23%	-36%
	Electric Machine	0%	0%	-5%	-10%	-2%	-8%	-17%	-3%	-15%	-27%	-5%	-18%	-30%
	MC2/GC	0%	0%	-7%	-12%	-2%	-11%	-22%	-6%	-20%	-33%	-7%	-23%	-36%
	Battery	0%	0%	-6%	-11%	-2%	-9%	-19%	-4%	-17%	-29%	-6%	-20%	-32%
	Specific Power	0%	0%	0%	1%	0%	1%	2%	1%	2%	5%	1%	1%	6%
H2 Split HEV	ICE Power	0%	0%	-7%	-13%	-3%	-12%	-22%	-5%	-20%	-34%	-7%	-22%	-37%
	Electric Machine	0%	0%	-6%	-11%	-2%	-9%	-18%	-3%	-16%	-30%	-5%	-18%	-32%
	MC2/GC	0%	0%	-7%	-13%	-3%	-12%	-22%	-5%	-20%	-34%	-7%	-22%	-37%
	Battery	0%	0%	-7%	-12%	-2%	-10%	-18%	-3%	-16%	-32%	-5%	-18%	-34%
	Specific Power	0%	0%	-1%	-1%	0%	-2%	-4%	-1%	-4%	-4%	-1%	-4%	-3%
H2 Split HEV PHEV10	ICE Power	0%	0%	-6%	-11%	-2%	-10%	-17%	-3%	-15%	-27%	-5%	-18%	-30%
	Electric Machine	0%	0%	-6%	-11%	-2%	-10%	-20%	-3%	-18%	-32%	-6%	-19%	-35%
	MC2/GC	0%	0%	-6%	-11%	-2%	-10%	-17%	-3%	-15%	-27%	-5%	-18%	-30%
	Battery	0%	0%	-7%	-13%	-2%	-12%	-24%	-5%	-22%	-29%	-7%	-15%	-33%
	Specific Power	0%	0%	0%	0%	0%	0%	-2%	0%	-2%	4%	0%	3%	4%
H2 Split HEV PHEV20	ICE Power	0%	0%	-6%	-11%	-2%	-10%	-18%	-3%	-15%	-28%	-6%	-18%	-31%
	Electric Machine	0%	0%	-7%	-12%	-3%	-11%	-20%	-4%	-19%	-33%	-7%	-20%	-36%
	MC2/GC	0%	0%	-6%	-11%	-2%	-10%	-18%	-3%	-15%	-28%	-6%	-18%	-31%
	Battery	0%	0%	-8%	-14%	-3%	-13%	-22%	-6%	-21%	-34%	-8%	-20%	-37%
	Specific Power	0%	0%	-1%	-1%	0%	-1%	-1%	-1%	-2%	1%	-1%	0%	1%
H2 Series HEV PHEV30	ICE Power	0%	0%	-8%	-14%	-3%	-13%	-24%	-6%	-21%	-35%	-9%	-24%	-38%
	Electric Machine	0%	0%	-7%	-12%	-3%	-10%	-19%	-4%	-17%	-29%	-7%	-20%	-32%
	MC2/GC	0%	0%	-8%	-14%	-3%	-13%	-24%	-6%	-21%	-35%	-9%	-24%	-38%
	Battery	0%	0%	-7%	-12%	-3%	-11%	-21%	-5%	-19%	-31%	-7%	-21%	-34%
	Specific Power	0%	0%	1%	2%	1%	2%	3%	2%	3%	8%	2%	3%	9%

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		Midsize_SUV												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
H2 Series HEV PHEV40	ICE Power	0%	0%	-8%	-14%	-3%	-13%	-24%	-6%	-22%	-36%	-9%	-25%	-39%
	Electric Machine	0%	0%	-7%	-12%	-3%	-10%	-20%	-4%	-17%	-30%	-7%	-21%	-33%
	MC2/GC	0%	0%	-8%	-14%	-3%	-13%	-24%	-6%	-22%	-36%	-9%	-25%	-39%
	Battery	0%	0%	-7%	-13%	-3%	-11%	-21%	-5%	-19%	-32%	-8%	-22%	-35%
	Specific Power	0%	0%	1%	2%	1%	2%	3%	1%	3%	8%	2%	2%	8%
E85 Split HEV	ICE Power	0%	0%	-5%	-11%	-1%	-9%	-19%	-4%	-17%	-29%	-5%	-17%	-33%
	Electric Machine	0%	0%	-4%	-9%	-1%	-6%	-15%	-2%	-13%	-25%	-2%	-14%	-29%
	MC2/GC	0%	0%	-5%	-11%	-1%	-9%	-19%	-4%	-17%	-29%	-5%	-17%	-33%
	Battery	0%	0%	-5%	-9%	-1%	-7%	-15%	-2%	-13%	-28%	-2%	-15%	-31%
	Specific Power	0%	0%	-1%	-1%	0%	-2%	-4%	-2%	-4%	-3%	-2%	-3%	-3%
E85 Split HEV PHEV10	ICE Power	0%	0%	-5%	-9%	-1%	-8%	-15%	-2%	-13%	-24%	-3%	-15%	-28%
	Electric Machine	0%	0%	-4%	-9%	-1%	-7%	-17%	-2%	-15%	-28%	-3%	-16%	-32%
	MC2/GC	0%	0%	-5%	-9%	-1%	-8%	-15%	-2%	-13%	-24%	-3%	-15%	-28%
	Battery	0%	0%	-5%	-10%	-1%	-8%	-18%	-3%	-16%	-24%	-4%	-9%	-28%
	Specific Power	0%	0%	0%	0%	0%	-1%	-1%	0%	-1%	4%	0%	4%	4%
E85 Split HEV PHEV20	ICE Power	0%	0%	-5%	-9%	-2%	-8%	-15%	-2%	-13%	-25%	-3%	-16%	-28%
	Electric Machine	0%	0%	-4%	-9%	-1%	-7%	-17%	-2%	-14%	-28%	-3%	-16%	-32%
	MC2/GC	0%	0%	-5%	-9%	-2%	-8%	-15%	-2%	-13%	-25%	-3%	-16%	-28%
	Battery	0%	0%	-5%	-10%	-1%	-9%	-17%	-3%	-15%	-28%	-4%	-14%	-32%
	Specific Power	0%	0%	0%	0%	0%	-1%	-1%	0%	0%	2%	0%	1%	2%
E85 Series HEV PHEV30	ICE Power	0%	0%	-7%	-12%	-2%	-11%	-22%	-5%	-19%	-33%	-7%	-22%	-36%
	Electric Machine	0%	0%	-5%	-10%	-2%	-8%	-17%	-3%	-15%	-27%	-5%	-18%	-30%
	MC2/GC	0%	0%	-7%	-12%	-2%	-11%	-22%	-5%	-19%	-33%	-7%	-22%	-36%
	Battery	0%	0%	-6%	-11%	-2%	-9%	-19%	-4%	-17%	-29%	-6%	-19%	-32%
	Specific Power	0%	0%	0%	1%	1%	1%	2%	1%	2%	6%	1%	1%	7%
E85 Series HEV PHEV40	ICE Power	0%	0%	-7%	-13%	-2%	-11%	-22%	-6%	-20%	-34%	-7%	-23%	-37%
	Electric Machine	0%	0%	-5%	-10%	-2%	-9%	-18%	-3%	-15%	-27%	-5%	-19%	-31%
	MC2/GC	0%	0%	-7%	-13%	-2%	-11%	-22%	-6%	-20%	-34%	-7%	-23%	-37%
	Battery	0%	0%	-6%	-11%	-2%	-9%	-19%	-4%	-17%	-30%	-6%	-20%	-33%
	Specific Power	0%	0%	0%	1%	1%	1%	2%	1%	2%	6%	1%	1%	7%

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		Midsize_SUV												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
FC HEV	FC Power	0%	0%	-16%	-27%	-10%	-29%	-39%	-22%	-37%	-51%	-26%	-39%	-53%
	Electric Machine	0%	0%	-16%	-24%	-12%	-25%	-33%	-18%	-31%	-44%	-22%	-34%	-47%
	MC2/GC													
	Battery	0%	0%	-15%	-21%	-12%	-11%	-18%	-5%	-17%	-30%	-9%	-20%	-34%
	Specific Power	0%	0%	0%	0%	-1%	-1%	0%	-1%	0%	1%	0%	0%	2%
FC HEV PHEV10	FC Power	0%	0%	-15%	-24%	-9%	-24%	-32%	-16%	-31%	-44%	-21%	-33%	-47%
	Electric Machine	0%	0%	-12%	-20%	-7%	-20%	-28%	-13%	-26%	-40%	-17%	-29%	-43%
	MC2/GC													
	Battery	0%	0%	-14%	-22%	-9%	-22%	-32%	-15%	-30%	-44%	-19%	-33%	-47%
	Specific Power	0%	0%	2%	2%	2%	2%	4%	2%	3%	5%	3%	3%	5%
FC HEV PHEV20	FC Power	0%	0%	-15%	-24%	-9%	-24%	-34%	-16%	-31%	-45%	-22%	-34%	-48%
	Electric Machine	0%	0%	-12%	-20%	-7%	-20%	-29%	-13%	-27%	-40%	-17%	-29%	-44%
	MC2/GC													
	Battery	0%	0%	-14%	-23%	-9%	-22%	-32%	-15%	-30%	-45%	-19%	-33%	-47%
	Specific Power	0%	0%	2%	3%	2%	2%	3%	2%	3%	5%	3%	4%	5%
FC HEV PHEV30	FC Power	0%	0%	-11%	-17%	-6%	-17%	-25%	-10%	-23%	-35%	-14%	-26%	-38%
	Electric Machine	0%	0%	-8%	-14%	-5%	-13%	-21%	-7%	-19%	-31%	-10%	-23%	-34%
	MC2/GC													
	Battery	0%	0%	-9%	-15%	-5%	-14%	-23%	-8%	-21%	-33%	-11%	-24%	-36%
	Specific Power	0%	0%	5%	8%	4%	8%	12%	6%	11%	19%	9%	12%	20%
FC HEV PHEV40	FC Power	0%	0%	-11%	-18%	-7%	-17%	-26%	-10%	-23%	-36%	-14%	-27%	-39%
	Electric Machine	0%	0%	-9%	-14%	-5%	-13%	-22%	-8%	-20%	-31%	-11%	-23%	-35%
	MC2/GC													
	Battery	0%	0%	-9%	-15%	-5%	-14%	-23%	-9%	-22%	-33%	-11%	-25%	-37%
	Specific Power	0%	0%	5%	9%	4%	8%	12%	6%	12%	19%	9%	12%	20%
EV	ICE Power													
	Electric Machine	0%	0%	-6%	-12%	-2%	-10%	-23%	-4%	-21%	-34%	-6%	-25%	-38%
	MC2/GC													
	Battery	0%	0%	-7%	-13%	-2%	-11%	-24%	-5%	-22%	-36%	-7%	-27%	-40%
	Specific Power	0%	0%	0%	0%	0%	-1%	-1%	0%	-1%	3%	-1%	-2%	3%

Energy

		Midsize_SUV												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Split HEV	Total Energy	1357	1357	1295	1232	1342	1231	1123	1296	1145	950	1296	1123	907
	Usable Energy													
SI Split HEV PHEV10	Total Energy	4919	4919	4861	4578	5046	4637	3761	4809	3853	2928	4747	3517	2791
	Usable Energy	2951	2951	2917	2747	3027	2782	2633	2886	2697	2342	2848	2638	2232
SI Split HEV PHEV20	Total Energy	10770	10770	10145	9532	10720	9645	7338	10515	7693	5539	10366	6765	5294
	Usable Energy	6462	6462	6087	5719	6432	5787	5137	6309	5385	4431	6220	5074	4235
SI Series HEV PHEV30	Total Energy	19633	19633	18014	16882	19408	17129	13100	18384	13636	10275	18091	12173	9821
	Usable Energy	11780	11780	10808	10129	11645	10277	9170	11030	9545	8220	10855	9129	7857
SI Series HEV PHEV40	Total Energy	26016	26016	24118	22615	25190	23038	17620	24697	18332	13200	24191	16235	12601
	Usable Energy	15610	15610	14471	13569	15114	13823	12334	14818	12832	10560	14515	12176	10081
CI Split HEV	Total Energy	1427	1427	1357	1295	1404	1296	1188	1361	1210	1015	1339	1188	972
	Usable Energy													
CI Split HEV PHEV10	Total Energy	5098	5098	4906	4476	4982	4766	3861	4898	3799	2945	4836	3592	2915
	Usable Energy	3059	3059	2943	2686	2989	2860	2702	2939	2659	2356	2901	2694	2332
CI Split HEV PHEV20	Total Energy	11131	11131	10700	9891	10992	10022	7757	10846	7933	5874	10629	7071	5547
	Usable Energy	6678	6678	6420	5935	6595	6013	5430	6507	5553	4700	6378	5303	4437
CI Series HEV PHEV30	Total Energy	20203	20203	18819	17678	19642	17930	13551	19190	14075	10367	18877	12585	9930
	Usable Energy	12122	12122	11291	10607	11785	10758	9486	11514	9852	8294	11326	9438	7944
CI Series HEV PHEV40	Total Energy	26763	26763	24947	23392	26011	23731	18125	25395	18932	13759	24994	16781	13176
	Usable Energy	16058	16058	14968	14035	15607	14239	12687	15237	13252	11008	14996	12585	10541
H2 Split HEV	Total Energy	1381	1381	1287	1209	1357	1210	1102	1296	1123	907	1274	1102	886
	Usable Energy													
H2 Split HEV PHEV10	Total Energy	5181	5181	4850	4522	4925	4596	3676	4882	3794	2825	4785	3482	2712
	Usable Energy	3108	3108	2910	2713	2955	2758	2573	2929	2656	2260	2871	2612	2169
H2 Split HEV PHEV20	Total Energy	10982	10982	10122	9480	10811	9546	7231	10323	7594	5449	10249	6669	5231
	Usable Energy	6589	6589	6073	5688	6487	5727	5061	6194	5316	4359	6149	5002	4185

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		Midsize_SUV												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
H2 Series HEV PHEV30	Total Energy	19830	19830	18478	16685	19462	16945	12876	18978	13447	9743	17868	11969	9667
	Usable Energy	11898	11898	11087	10011	11677	10167	9013	11387	9413	7794	10721	8977	7734
H2 Series HEV PHEV40	Total Energy	26246	26246	24070	22333	25366	22668	17249	24718	17997	12879	23890	15968	12343
	Usable Energy	15748	15748	14442	13400	15220	13601	12074	14831	12598	10303	14334	11976	9874
E85 Split HEV	Total Energy	1357	1357	1295	1232	1342	1231	1123	1296	1145	950	1296	1123	907
	Usable Energy													
E85 Split HEV PHEV10	Total Energy	5166	5166	4870	4663	5068	4737	3851	4814	3855	2930	4757	3518	2795
	Usable Energy	3100	3100	2922	2798	3041	2842	2696	2889	2699	2344	2854	2639	2236
E85 Split HEV PHEV20	Total Energy	10719	10719	10170	9528	10724	9648	7316	10548	7682	5536	10315	6751	5301
	Usable Energy	6431	6431	6102	5717	6435	5789	5121	6329	5378	4429	6189	5063	4241
E85 Series HEV PHEV30	Total Energy	19820	19820	18031	16888	19250	17146	13119	18412	13645	10267	18518	12181	9820
	Usable Energy	11892	11892	10819	10133	11550	10288	9183	11047	9552	8214	11111	9136	7856
E85 Series HEV PHEV40	Total Energy	26047	26047	24135	22596	25186	22953	17638	24642	18270	13210	24232	16254	12617
	Usable Energy	15628	15628	14481	13557	15112	13772	12347	14785	12789	10568	14539	12190	10093
FC HEV	Total Energy	1693	1693	1443	1342	1498	1469	1339	1555	1361	1145	1490	1318	1080
	Usable Energy													
FC HEV PHEV10	Total Energy	7188	7188	6147	5079	6016	5141	3929	6154	4088	2930	5398	3651	2798
	Usable Energy	4313	4313	3688	3047	3610	3085	2750	3692	2862	2344	3239	2738	2238
FC HEV PHEV20	Total Energy	13011	13011	11321	10168	12002	10300	7956	11575	8302	5835	10797	7387	5567
	Usable Energy	7807	7807	6793	6101	7201	6180	5569	6945	5811	4668	6478	5540	4454
FC HEV PHEV30	Total Energy	20979	20979	17522	16053	19485	16907	12122	17761	12662	9157	16931	11207	8732
	Usable Energy	12588	12588	10513	9632	11691	10144	8485	10656	8863	7326	10158	8405	6986
FC HEV PHEV40	Total Energy	26665	26665	23018	20967	24410	21075	15684	23284	16387	11838	22104	14486	11244
	Usable Energy	15999	15999	13811	12580	14646	12645	10979	13970	11471	9471	13263	10865	8995
BEV	Total Energy	96339	96339	88868	82677	93491	83942	61018	90828	63572	44521	88658	56146	42243
	Usable Energy	57803	57803	53321	49606	56095	50365	42713	54497	44501	35617	53195	42110	33794

Percentage of Energy reduction based on the respective 2010 reference case

		Midsize_SUV													
		2010	2010				2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high	
SI Split HEV	Total Energy	0.0%	0.0%	-4.6%	-9.2%	-1.1%	-9.3%	-17.2%	-4.5%	-15.6%	-30.0%	-4.5%	-17.2%	-33.2%	
	Usable Energy														
SI Split HEV PHEV10	Total Energy	0.0%	0.0%	-1.2%	-6.9%	2.6%	-5.7%	-23.5%	-2.2%	-21.7%	-40.5%	-3.5%	-28.5%	-43.3%	
	Usable Energy	0.0%	0.0%	-1.2%	-6.9%	2.6%	-5.7%	-10.8%	-2.2%	-8.6%	-20.6%	-3.5%	-10.6%	-24.4%	
SI Split HEV PHEV20	Total Energy	0.0%	0.0%	-5.8%	-11.5%	-0.5%	-10.4%	-31.9%	-2.4%	-28.6%	-48.6%	-3.7%	-37.2%	-50.8%	
	Usable Energy	0.0%	0.0%	-5.8%	-11.5%	-0.5%	-10.4%	-20.5%	-2.4%	-16.7%	-31.4%	-3.7%	-21.5%	-34.5%	
SI Series HEV PHEV30	Total Energy	0.0%	0.0%	-8.2%	-14.0%	-1.1%	-12.8%	-33.3%	-6.4%	-30.5%	-47.7%	-7.9%	-38.0%	-50.0%	
	Usable Energy	0.0%	0.0%	-8.2%	-14.0%	-1.1%	-12.8%	-22.2%	-6.4%	-19.0%	-30.2%	-7.9%	-22.5%	-33.3%	
SI Series HEV PHEV40	Total Energy	0.0%	0.0%	-7.3%	-13.1%	-3.2%	-11.4%	-32.3%	-5.1%	-29.5%	-49.3%	-7.0%	-37.6%	-51.6%	
	Usable Energy	0.0%	0.0%	-7.3%	-13.1%	-3.2%	-11.4%	-21.0%	-5.1%	-17.8%	-32.4%	-7.0%	-22.0%	-35.4%	
CI Split HEV	Total Energy	0.0%	0.0%	-4.9%	-9.3%	-1.6%	-9.2%	-16.8%	-4.7%	-15.3%	-28.9%	-6.2%	-16.8%	-31.9%	
	Usable Energy														
CI Split HEV PHEV10	Total Energy	0.0%	0.0%	-3.8%	-12.2%	-2.3%	-6.5%	-24.3%	-3.9%	-25.5%	-42.2%	-5.2%	-29.6%	-42.8%	
	Usable Energy	0.0%	0.0%	-3.8%	-12.2%	-2.3%	-6.5%	-11.7%	-3.9%	-13.1%	-23.0%	-5.2%	-11.9%	-23.8%	
CI Split HEV PHEV20	Total Energy	0.0%	0.0%	-3.9%	-11.1%	-1.2%	-10.0%	-30.3%	-2.6%	-28.7%	-47.2%	-4.5%	-36.5%	-50.2%	
	Usable Energy	0.0%	0.0%	-3.9%	-11.1%	-1.2%	-10.0%	-18.7%	-2.6%	-16.8%	-29.6%	-4.5%	-20.6%	-33.6%	
CI Series HEV PHEV30	Total Energy	0.0%	0.0%	-6.9%	-12.5%	-2.8%	-11.3%	-32.9%	-5.0%	-30.3%	-48.7%	-6.6%	-37.7%	-50.8%	
	Usable Energy	0.0%	0.0%	-6.9%	-12.5%	-2.8%	-11.3%	-21.7%	-5.0%	-18.7%	-31.6%	-6.6%	-22.1%	-34.5%	
CI Series HEV PHEV40	Total Energy	0.0%	0.0%	-6.8%	-12.6%	-2.8%	-11.3%	-32.3%	-5.1%	-29.3%	-48.6%	-6.6%	-37.3%	-50.8%	
	Usable Energy	0.0%	0.0%	-6.8%	-12.6%	-2.8%	-11.3%	-21.0%	-5.1%	-17.5%	-31.4%	-6.6%	-21.6%	-34.4%	
H2 Split HEV	Total Energy	0.0%	0.0%	-6.8%	-12.4%	-1.7%	-12.4%	-20.2%	-6.1%	-18.6%	-34.3%	-7.7%	-20.2%	-35.9%	
	Usable Energy														
H2 Split HEV PHEV10	Total Energy	0.0%	0.0%	-6.4%	-12.7%	-4.9%	-11.3%	-29.0%	-5.8%	-26.8%	-45.5%	-7.6%	-32.8%	-47.7%	
	Usable Energy	0.0%	0.0%	-6.4%	-12.7%	-4.9%	-11.3%	-17.2%	-5.8%	-14.6%	-27.3%	-7.6%	-16.0%	-30.2%	
H2 Split HEV PHEV20	Total Energy	0.0%	0.0%	-7.8%	-13.7%	-1.6%	-13.1%	-34.2%	-6.0%	-30.8%	-50.4%	-6.7%	-39.3%	-52.4%	
	Usable Energy	0.0%	0.0%	-7.8%	-13.7%	-1.6%	-13.1%	-23.2%	-6.0%	-19.3%	-33.8%	-6.7%	-24.1%	-36.5%	

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		Midsize_SUV												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
H2 Series HEV PHEV30	Total Energy	0.0%	0.0%	-6.8%	-15.9%	-1.9%	-14.5%	-35.1%	-4.3%	-32.2%	-50.9%	-9.9%	-39.6%	-51.2%
	Usable Energy	0.0%	0.0%	-6.8%	-15.9%	-1.9%	-14.5%	-24.2%	-4.3%	-20.9%	-34.5%	-9.9%	-24.5%	-35.0%
H2 Series HEV PHEV40	Total Energy	0.0%	0.0%	-8.3%	-14.9%	-3.4%	-13.6%	-34.3%	-5.8%	-31.4%	-50.9%	-9.0%	-39.2%	-53.0%
	Usable Energy	0.0%	0.0%	-8.3%	-14.9%	-3.4%	-13.6%	-23.3%	-5.8%	-20.0%	-34.6%	-9.0%	-23.9%	-37.3%
E85 Split HEV	Total Energy	0.0%	0.0%	-4.6%	-9.2%	-1.1%	-9.3%	-17.2%	-4.5%	-15.6%	-30.0%	-4.5%	-17.2%	-33.2%
	Usable Energy													
E85 Split HEV PHEV10	Total Energy	0.0%	0.0%	-5.7%	-9.7%	-1.9%	-8.3%	-25.5%	-6.8%	-25.4%	-43.3%	-7.9%	-31.9%	-45.9%
	Usable Energy	0.0%	0.0%	-5.7%	-9.7%	-1.9%	-8.3%	-13.0%	-6.8%	-12.9%	-24.4%	-7.9%	-14.9%	-27.9%
E85 Split HEV PHEV20	Total Energy	0.0%	0.0%	-5.1%	-11.1%	0.1%	-10.0%	-31.8%	-1.6%	-28.3%	-48.4%	-3.8%	-37.0%	-50.5%
	Usable Energy	0.0%	0.0%	-5.1%	-11.1%	0.1%	-10.0%	-20.4%	-1.6%	-16.4%	-31.1%	-3.8%	-21.3%	-34.1%
E85 Series HEV PHEV30	Total Energy	0.0%	0.0%	-9.0%	-14.8%	-2.9%	-13.5%	-33.8%	-7.1%	-31.2%	-48.2%	-6.6%	-38.5%	-50.5%
	Usable Energy	0.0%	0.0%	-9.0%	-14.8%	-2.9%	-13.5%	-22.8%	-7.1%	-19.7%	-30.9%	-6.6%	-23.2%	-33.9%
E85 Series HEV PHEV40	Total Energy	0.0%	0.0%	-7.3%	-13.2%	-3.3%	-11.9%	-32.3%	-5.4%	-29.9%	-49.3%	-7.0%	-37.6%	-51.6%
	Usable Energy	0.0%	0.0%	-7.3%	-13.2%	-3.3%	-11.9%	-21.0%	-5.4%	-18.2%	-32.4%	-7.0%	-22.0%	-35.4%
FC HEV	Total Energy	0.0%	0.0%	-14.7%	-20.7%	-11.5%	-13.2%	-20.9%	-8.1%	-19.6%	-32.4%	-11.9%	-22.2%	-36.2%
	Usable Energy													
FC HEV PHEV10	Total Energy	0.0%	0.0%	-14.5%	-29.3%	-16.3%	-28.5%	-45.3%	-14.4%	-43.1%	-59.2%	-24.9%	-49.2%	-61.1%
	Usable Energy	0.0%	0.0%	-14.5%	-29.3%	-16.3%	-28.5%	-36.2%	-14.4%	-33.7%	-45.7%	-24.9%	-36.5%	-48.1%
FC HEV PHEV20	Total Energy	0.0%	0.0%	-13.0%	-21.9%	-7.8%	-20.8%	-38.9%	-11.0%	-36.2%	-55.2%	-17.0%	-43.2%	-57.2%
	Usable Energy	0.0%	0.0%	-13.0%	-21.9%	-7.8%	-20.8%	-28.7%	-11.0%	-25.6%	-40.2%	-17.0%	-29.0%	-42.9%
FC HEV PHEV30	Total Energy	0.0%	0.0%	-16.5%	-23.5%	-7.1%	-19.4%	-42.2%	-15.3%	-39.6%	-56.4%	-19.3%	-46.6%	-58.4%
	Usable Energy	0.0%	0.0%	-16.5%	-23.5%	-7.1%	-19.4%	-32.6%	-15.3%	-29.6%	-41.8%	-19.3%	-33.2%	-44.5%
FC HEV PHEV40	Total Energy	0.0%	0.0%	-13.7%	-21.4%	-8.5%	-21.0%	-41.2%	-12.7%	-38.5%	-55.6%	-17.1%	-45.7%	-57.8%
	Usable Energy	0.0%	0.0%	-13.7%	-21.4%	-8.5%	-21.0%	-31.4%	-12.7%	-28.3%	-40.8%	-17.1%	-32.1%	-43.8%
EV	Total Energy	0.0%	0.0%	-7.8%	-14.2%	-3.0%	-12.9%	-36.7%	-5.7%	-34.0%	-53.8%	-8.0%	-41.7%	-56.2%
	Usable Energy	0.0%	0.0%	-7.8%	-14.2%	-3.0%	-12.9%	-26.1%	-5.7%	-23.0%	-38.4%	-8.0%	-27.1%	-41.5%

Curb weight

		Midsize_SUV												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Conv	Vehicle Mass	1773	1773	1702	1636	1772	1658	1544	1757	1561	1326	1762	1544	1259
	% of Glider mass	71.5	71.5	71.1	70.2	71.6	70.5	68.5	71.9	68.7	64.1	71.7	68.4	62.4
	% of Powertrain mass	28.5	28.5	28.9	29.8	28.4	29.5	31.5	28.1	31.3	35.9	28.3	31.6	37.6
CI Conv	Vehicle Mass	1818	1818	1757	1692	1818	1715	1598	1810	1614	1386	1809	1597	1320
	% of Glider mass	69.7	69.7	68.8	67.8	69.8	68.2	66.2	69.8	66.4	61.3	69.8	66.1	59.5
	% of Powertrain mass	30.3	30.3	31.2	32.2	30.2	31.8	33.8	30.2	33.6	38.7	30.2	33.9	40.5
H2 Conv	Vehicle Mass	1772	1772	1666	1584	1758	1607	1475	1737	1500	1246	1702	1476	1188
	% of Glider mass	71.5	71.5	72.6	72.5	72.2	72.8	71.7	72.7	71.5	68.2	74.2	71.5	66.1
	% of Powertrain mass	28.5	28.5	27.4	27.5	27.8	27.2	28.3	27.3	28.5	31.8	25.8	28.5	33.9
E85 Conv	Vehicle Mass	1772	1772	1702	1637	1771	1659	1544	1757	1560	1325	1761	1542	1257
	% of Glider mass	71.5	71.5	71.1	70.1	71.7	70.5	68.5	71.9	68.7	64.2	71.7	68.5	62.5
	% of Powertrain mass	28.5	28.5	28.9	29.9	28.3	29.5	31.5	28.1	31.3	35.8	28.3	31.5	37.5
SI Split HEV	Vehicle Mass	1938	1938	1842	1752	1908	1795	1634	1894	1665	1379	1885	1634	1307
	% of Glider mass	65.4	65.4	65.7	65.5	66.5	65.1	64.7	66.7	64.4	61.6	67.0	64.6	60.1
	% of Powertrain mass	34.6	34.6	34.3	34.5	33.5	34.9	35.3	33.3	35.6	38.4	33.0	35.4	39.9
SI Split HEV PHEV10	Vehicle Mass	1958	1958	1860	1769	1929	1801	1635	1904	1666	1385	1890	1639	1310
	% of Glider mass	64.7	64.7	65.0	64.9	65.8	64.9	64.7	66.3	64.4	61.4	66.8	64.4	59.9
	% of Powertrain mass	35.3	35.3	35.0	35.1	34.2	35.1	35.3	33.7	35.6	38.6	33.2	35.6	40.1
SI Split HEV PHEV20	Vehicle Mass	2000	2000	1901	1807	1970	1836	1662	1946	1699	1401	1929	1661	1325
	% of Glider mass	63.4	63.4	63.6	63.5	64.4	63.7	63.6	64.9	63.1	60.7	65.4	63.6	59.3
	% of Powertrain mass	36.6	36.6	36.4	36.5	35.6	36.3	36.4	35.1	36.9	39.3	34.6	36.4	40.7
SI Series HEV PHEV30	Vehicle Mass	2265	2265	2129	2005	2207	2046	1819	2163	1869	1521	2135	1814	1439
	% of Glider mass	56.0	56.0	56.8	57.2	57.5	57.1	58.1	58.4	57.4	55.9	59.1	58.2	54.6
	% of Powertrain mass	44.0	44.0	43.2	42.8	42.5	42.9	41.9	41.6	42.6	44.1	40.9	41.8	45.4
SI Series HEV PHEV40	Vehicle Mass	2330	2330	2187	2059	2268	2103	1859	2223	1910	1550	2188	1849	1464
	% of Glider mass	54.4	54.4	55.3	55.7	56.0	55.6	56.9	56.8	56.1	54.8	57.7	57.1	53.6
	% of Powertrain mass	45.6	45.6	44.7	44.3	44.0	44.4	43.1	43.2	43.9	45.2	42.3	42.9	46.4
CI Split HEV	Vehicle Mass	2029	2029	1935	1841	1995	1885	1720	1986	1755	1469	1971	1725	1395
	% of Glider mass	62.5	62.5	62.5	62.3	63.6	62.0	61.5	63.6	61.1	57.9	64.1	61.2	56.3
	% of Powertrain mass	37.5	37.5	37.5	37.7	36.4	38.0	38.5	36.4	38.9	42.1	35.9	38.8	43.7

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		Midsize_SUV												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
CI Split HEV PHEV10	Vehicle Mass	2062	2062	1964	1871	2029	1900	1733	2004	1768	1481	1989	1739	1409
	% of Glider mass	61.5	61.5	61.6	61.4	62.5	61.5	61.0	63.0	60.6	57.4	63.5	60.7	55.7
	% of Powertrain mass	38.5	38.5	38.4	38.6	37.5	38.5	39.0	37.0	39.4	42.6	36.5	39.3	44.3
CI Split HEV PHEV20	Vehicle Mass	2104	2104	2003	1906	2070	1939	1762	2045	1796	1500	2029	1762	1426
	% of Glider mass	60.2	60.2	60.4	60.2	61.3	60.3	60.0	61.7	59.7	56.7	62.2	59.9	55.1
	% of Powertrain mass	39.8	39.8	39.6	39.8	38.7	39.7	40.0	38.3	40.3	43.3	37.8	40.1	44.9
CI Series HEV PHEV30	Vehicle Mass	2359	2359	2221	2099	2298	2143	1914	2254	1963	1616	2225	1907	1535
	% of Glider mass	53.7	53.7	54.5	54.7	55.2	54.6	55.2	56.0	54.6	52.6	56.7	55.4	51.2
	% of Powertrain mass	46.3	46.3	45.5	45.3	44.8	45.4	44.8	44.0	45.4	47.4	43.3	44.6	48.8
CI Series HEV PHEV40	Vehicle Mass	2426	2426	2283	2152	2364	2196	1955	2315	2005	1645	2283	1943	1563
	% of Glider mass	52.2	52.2	53.0	53.3	53.7	53.2	54.1	54.5	53.5	51.7	55.3	54.3	50.2
	% of Powertrain mass	47.8	47.8	47.0	46.7	46.3	46.8	45.9	45.5	46.5	48.3	44.7	45.7	49.8
H2 Split HEV	Vehicle Mass	1972	1972	1832	1723	1924	1766	1588	1904	1629	1322	1853	1594	1258
	% of Glider mass	64.3	64.3	66.0	66.6	66.0	66.2	66.6	66.3	65.8	64.3	68.1	66.2	62.4
	% of Powertrain mass	35.7	35.7	34.0	33.4	34.0	33.8	33.4	33.7	34.2	35.7	31.9	33.8	37.6
H2 Split HEV PHEV10	Vehicle Mass	1998	1998	1855	1743	1949	1777	1593	1915	1636	1330	1863	1599	1265
	% of Glider mass	63.4	63.4	65.2	65.9	65.1	65.8	66.4	65.9	65.5	63.9	67.8	66.0	62.1
	% of Powertrain mass	36.6	36.6	34.8	34.1	34.9	34.2	33.6	34.1	34.5	36.1	32.2	34.0	37.9
H2 Split HEV PHEV20	Vehicle Mass	2042	2042	1894	1780	1991	1813	1621	1956	1664	1347	1900	1621	1280
	% of Glider mass	62.1	62.1	63.9	64.5	63.7	64.5	65.2	64.5	64.4	63.1	66.4	65.1	61.3
	% of Powertrain mass	37.9	37.9	36.1	35.5	36.3	35.5	34.8	35.5	35.6	36.9	33.6	34.9	38.7
H2 Series HEV PHEV30	Vehicle Mass	2296	2296	2111	1968	2216	2012	1770	2165	1828	1460	2094	1764	1388
	% of Glider mass	55.2	55.2	57.3	58.3	57.3	58.1	59.7	58.3	58.7	58.2	60.3	59.9	56.6
	% of Powertrain mass	44.8	44.8	42.7	41.7	42.7	41.9	40.3	41.7	41.3	41.8	39.7	40.1	43.4
H2 Series HEV PHEV40	Vehicle Mass	2359	2359	2169	2021	2279	2065	1810	2225	1870	1488	2147	1800	1414
	% of Glider mass	53.7	53.7	55.8	56.8	55.7	56.6	58.4	56.7	57.3	57.1	58.8	58.7	55.5
	% of Powertrain mass	46.3	46.3	44.2	43.2	44.3	43.4	41.6	43.3	42.7	42.9	41.2	41.3	44.5
E85 Split HEV	Vehicle Mass	1941	1941	1846	1754	1910	1798	1637	1900	1668	1383	1888	1640	1310
	% of Glider mass	65.3	65.3	65.5	65.4	66.4	65.0	64.6	66.4	64.3	61.5	66.9	64.4	59.9
	% of Powertrain mass	34.7	34.7	34.5	34.6	33.6	35.0	35.4	33.6	35.7	38.5	33.1	35.6	40.1

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		Midsize_SUV												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
E85 Split HEV PHEV10	Vehicle Mass	1961	1961	1864	1771	1931	1804	1638	1908	1671	1387	1895	1642	1313
	% of Glider mass	64.6	64.6	64.9	64.8	65.7	64.8	64.6	66.2	64.2	61.3	66.6	64.3	59.8
	% of Powertrain mass	35.4	35.4	35.1	35.2	34.3	35.2	35.4	33.8	35.8	38.7	33.4	35.7	40.2
E85 Split HEV PHEV20	Vehicle Mass	2003	2003	1904	1809	1972	1841	1666	1949	1702	1404	1932	1664	1329
	% of Glider mass	63.3	63.3	63.5	63.5	64.4	63.5	63.5	64.8	63.0	60.5	65.3	63.5	59.1
	% of Powertrain mass	36.7	36.7	36.5	36.5	35.6	36.5	36.5	35.2	37.0	39.5	34.7	36.5	40.9
E85 Series HEV PHEV30	Vehicle Mass	2268	2268	2132	2007	2209	2050	1823	2168	1872	1523	2138	1816	1442
	% of Glider mass	55.9	55.9	56.7	57.2	57.5	57.0	58.0	58.2	57.3	55.8	59.1	58.1	54.5
	% of Powertrain mass	44.1	44.1	43.3	42.8	42.5	43.0	42.0	41.8	42.7	44.2	40.9	41.9	45.5
E85 Series HEV PHEV40	Vehicle Mass	2334	2334	2190	2061	2270	2106	1862	2227	1913	1552	2192	1851	1467
	% of Glider mass	54.3	54.3	55.2	55.7	55.9	55.5	56.8	56.7	56.1	54.8	57.6	57.0	53.5
	% of Powertrain mass	45.7	45.7	44.8	44.3	44.1	44.5	43.2	43.3	43.9	45.2	42.4	43.0	46.5
FC HEV	Vehicle Mass	2511	2511	2087	1866	2207	1882	1643	2055	1687	1332	1931	1616	1250
	% of Glider mass	50.5	50.5	57.9	61.5	57.5	62.1	64.4	61.4	63.6	63.8	65.4	65.3	62.8
	% of Powertrain mass	49.5	49.5	42.1	38.5	42.5	37.9	35.6	38.6	36.4	36.2	34.6	34.7	37.2
FC HEV PHEV10	Vehicle Mass	2389	2389	2033	1839	2155	1852	1619	2024	1662	1312	1907	1596	1235
	% of Glider mass	53.1	53.1	59.5	62.4	58.9	63.1	65.3	62.4	64.5	64.8	66.2	66.2	63.6
	% of Powertrain mass	46.9	46.9	40.5	37.6	41.1	36.9	34.7	37.6	35.5	35.2	33.8	33.8	36.4
FC HEV PHEV20	Vehicle Mass	2454	2454	2086	1883	2211	1896	1649	2074	1698	1335	1950	1625	1254
	% of Glider mass	51.7	51.7	58.0	61.0	57.4	61.7	64.1	60.9	63.1	63.7	64.7	65.0	62.6
	% of Powertrain mass	48.3	48.3	42.0	39.0	42.6	38.3	35.9	39.1	36.9	36.3	35.3	35.0	37.4
FC HEV PHEV30	Vehicle Mass	2533	2533	2183	1987	2313	2008	1745	2194	1797	1419	2063	1713	1336
	% of Glider mass	50.0	50.0	55.4	57.8	54.9	58.2	60.6	57.5	59.7	59.9	61.2	61.6	58.8
	% of Powertrain mass	50.0	50.0	44.6	42.2	45.1	41.8	39.4	42.5	40.3	40.1	38.8	38.4	41.2
FC HEV PHEV40	Vehicle Mass	2610	2610	2242	2038	2376	2057	1780	2251	1833	1448	2115	1745	1360
	% of Glider mass	48.6	48.6	53.9	56.3	53.4	56.8	59.4	56.1	58.5	58.7	59.7	60.5	57.7
	% of Powertrain mass	51.4	51.4	46.1	43.7	46.6	43.2	40.6	43.9	41.5	41.3	40.3	39.5	42.3
BEV	Vehicle Mass	2623	2623	2441	2281	2558	2337	1968	2496	2024	1579	2434	1914	1475
	% of Glider mass	48.3	48.3	49.5	50.3	49.6	50.0	53.7	50.6	53.0	53.8	51.9	55.2	53.2
	% of Powertrain mass	51.7	51.7	50.5	49.7	50.4	50.0	46.3	49.4	47.0	46.2	48.1	44.8	46.8

Percentage of vehicle curbs weight reduction based on the respective 2010 reference case

		Midsize_SUV												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Conv	Vehicle Mass	0.00%	0.00%	-4.00%	-7.73%	-0.06%	-6.49%	-12.92%	-0.90%	-11.96%	-25.21%	-0.62%	-12.92%	-28.99%
CI Conv	Vehicle Mass	0.00%	0.00%	-3.36%	-6.93%	0.00%	-5.67%	-12.10%	-0.44%	-11.22%	-23.76%	-0.50%	-12.16%	-27.39%
H2 Conv	Vehicle Mass	0.00%	0.00%	-5.98%	-10.61%	-0.79%	-9.31%	-16.76%	-1.98%	-15.35%	-29.68%	-3.95%	-16.70%	-32.96%
E85 Conv	Vehicle Mass	0.00%	0.00%	-3.95%	-7.62%	-0.06%	-6.38%	-12.87%	-0.85%	-11.96%	-25.23%	-0.62%	-12.98%	-29.06%
SI Split HEV	Vehicle Mass	0.00%	0.00%	-4.95%	-9.60%	-1.55%	-7.38%	-15.69%	-2.27%	-14.09%	-28.84%	-2.73%	-15.69%	-32.56%
SI Split HEV PHEV10	Vehicle Mass	0.00%	0.00%	-5.01%	-9.65%	-1.48%	-8.02%	-16.50%	-2.76%	-14.91%	-29.26%	-3.47%	-16.29%	-33.09%
SI Split HEV PHEV20	Vehicle Mass	0.00%	0.00%	-4.95%	-9.65%	-1.50%	-8.20%	-16.90%	-2.70%	-15.05%	-29.95%	-3.55%	-16.95%	-33.75%
SI Series HEV PHEV30	Vehicle Mass	0.00%	0.00%	-6.00%	-11.48%	-2.56%	-9.67%	-19.69%	-4.50%	-17.48%	-32.85%	-5.74%	-19.91%	-36.47%
SI Series HEV PHEV40	Vehicle Mass	0.00%	0.00%	-6.14%	-11.63%	-2.66%	-9.74%	-20.21%	-4.59%	-18.03%	-33.48%	-6.09%	-20.64%	-37.17%
CI Split HEV	Vehicle Mass	0.00%	0.00%	-4.63%	-9.27%	-1.68%	-7.10%	-15.23%	-2.12%	-13.50%	-27.60%	-2.86%	-14.98%	-31.25%
CI Split HEV PHEV10	Vehicle Mass	0.00%	0.00%	-4.75%	-9.26%	-1.60%	-7.86%	-15.96%	-2.81%	-14.26%	-28.18%	-3.54%	-15.66%	-31.67%
CI Split HEV PHEV20	Vehicle Mass	0.00%	0.00%	-4.80%	-9.41%	-1.62%	-7.84%	-16.25%	-2.80%	-14.64%	-28.71%	-3.56%	-16.25%	-32.22%
CI Series HEV PHEV30	Vehicle Mass	0.00%	0.00%	-5.85%	-11.02%	-2.59%	-9.16%	-18.86%	-4.45%	-16.79%	-31.50%	-5.68%	-19.16%	-34.93%
CI Series HEV PHEV40	Vehicle Mass	0.00%	0.00%	-5.89%	-11.29%	-2.56%	-9.48%	-19.41%	-4.58%	-17.35%	-32.19%	-5.89%	-19.91%	-35.57%
H2 Split HEV	Vehicle Mass	0.00%	0.00%	-7.10%	-12.63%	-2.43%	-10.45%	-19.47%	-3.45%	-17.39%	-32.96%	-6.03%	-19.17%	-36.21%
H2 Split HEV PHEV10	Vehicle Mass	0.00%	0.00%	-7.16%	-12.76%	-2.45%	-11.06%	-20.27%	-4.15%	-18.12%	-33.43%	-6.76%	-19.97%	-36.69%
H2 Split HEV PHEV20	Vehicle Mass	0.00%	0.00%	-7.25%	-12.83%	-2.50%	-11.21%	-20.62%	-4.21%	-18.51%	-34.04%	-6.95%	-20.62%	-37.32%
H2 Series HEV PHEV30	Vehicle Mass	0.00%	0.00%	-8.06%	-14.29%	-3.48%	-12.37%	-22.91%	-5.71%	-20.38%	-36.41%	-8.80%	-23.17%	-39.55%
H2 Series HEV PHEV40	Vehicle Mass	0.00%	0.00%	-8.05%	-14.33%	-3.39%	-12.46%	-23.27%	-5.68%	-20.73%	-36.92%	-8.99%	-23.70%	-40.06%
E85 Split HEV	Vehicle Mass	0.00%	0.00%	-4.89%	-9.63%	-1.60%	-7.37%	-15.66%	-2.11%	-14.06%	-28.75%	-2.73%	-15.51%	-32.51%
E85 Split HEV PHEV10	Vehicle Mass	0.00%	0.00%	-4.95%	-9.69%	-1.53%	-8.01%	-16.47%	-2.70%	-14.79%	-29.27%	-3.37%	-16.27%	-33.04%
E85 Split HEV PHEV20	Vehicle Mass	0.00%	0.00%	-4.94%	-9.69%	-1.55%	-8.09%	-16.82%	-2.70%	-15.03%	-29.91%	-3.54%	-16.92%	-33.65%
E85 Series HEV PHEV30	Vehicle Mass	0.00%	0.00%	-6.00%	-11.51%	-2.60%	-9.61%	-19.62%	-4.41%	-17.46%	-32.85%	-5.73%	-19.93%	-36.42%
E85 Series HEV PHEV40	Vehicle Mass	0.00%	0.00%	-6.17%	-11.70%	-2.74%	-9.77%	-20.22%	-4.58%	-18.04%	-33.50%	-6.08%	-20.69%	-37.15%
FC HEV	Vehicle Mass	0.00%	0.00%	-16.89%	-25.69%	-12.11%	-25.05%	-34.57%	-18.16%	-32.82%	-46.95%	-23.10%	-35.64%	-50.22%
FC HEV PHEV10	Vehicle Mass	0.00%	0.00%	-14.90%	-23.02%	-9.79%	-22.48%	-32.23%	-15.28%	-30.43%	-45.08%	-20.18%	-33.19%	-48.30%
FC HEV PHEV20	Vehicle Mass	0.00%	0.00%	-15.00%	-23.27%	-9.90%	-22.74%	-32.80%	-15.48%	-30.81%	-45.60%	-20.54%	-33.78%	-48.90%
FC HEV PHEV30	Vehicle Mass	0.00%	0.00%	-13.82%	-21.56%	-8.69%	-20.73%	-31.11%	-13.38%	-29.06%	-43.98%	-18.56%	-32.37%	-47.26%
FC HEV PHEV40	Vehicle Mass	0.00%	0.00%	-14.10%	-21.92%	-8.97%	-21.19%	-31.80%	-13.75%	-29.77%	-44.52%	-18.97%	-33.14%	-47.89%
EV	Vehicle Mass	0.00%	0.00%	-6.94%	-13.04%	-2.48%	-10.90%	-24.97%	-4.84%	-22.84%	-39.80%	-7.21%	-27.03%	-43.77%

Pickup Class

Power

		Pickup												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Conv	ICE Power	209224	209224	200211	192973	204889	190482	177831	201561	182107	158266	205614	180533	150191
	Electric Machine													
	MC2/GC													
	Battery													
	Specific Power	96	96	95	95	94	93	93	93	95	96	95	95	96
CI Conv	ICE Power	157606	157606	148992	145026	154011	144765	135143	150189	137541	121000	152875	136341	116111
	Electric Machine													
	MC2/GC													
	Battery													
	Specific Power	71	71	70	70	70	69	69	68	70	71	69	70	72
H2 Conv	ICE Power	191010	191010	177101	169870	185928	168035	156396	180846	161194	136168	180048	158395	129727
	Electric Machine													
	MC2/GC													
	Battery													
	Specific Power	88	88	87	87	87	85	86	85	87	88	86	87	87
E85 Conv	ICE Power	201330	201330	190432	183032	196480	181867	170856	192577	174568	149464	196254	173236	144500
	Electric Machine													
	MC2/GC													
	Battery													
	Specific Power	93	93	91	91	90	89	90	89	91	91	91	91	92
SI Split HEV	ICE Power	152084	152084	143808	136377	149923	138707	123260	145833	127497	105588	144462	122573	100410
	Electric Machine	101251	101251	96548	92496	99963	94584	86381	99753	88706	74372	99130	86000	70377
	MC2/GC	88012	88012	83222	78922	86761	80270	71331	84394	73783	61104	83601	70933	58108
	Battery	39501	39501	37307	35511	39102	36422	33577	38699	34146	27886	38699	33577	26179
	Specific Power	81	81	80	80	81	79	78	79	79	78	79	78	78
SI Split HEV PHEV10	ICE Power	98963	98963	94677	89992	96915	91151	83696	95820	85496	75067	94851	84131	71911
	Electric Machine	114142	114142	109059	103444	111939	104876	94535	110669	96149	80359	109843	94451	76431
	MC2/GC	74400	74400	71177	67632	72860	68525	62941	72037	64294	56430	71265	63225	54057
	Battery	112418	112418	106850	100431	110239	101967	86860	107641	88322	82024	106865	98785	78028
	Specific Power	88	88	88	87	88	87	85	87	85	91	87	90	92

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		Pickup												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Split HEV PHEV20	ICE Power	100438	100438	96090	91257	98349	92381	84802	97222	86602	75746	96078	84980	72532
	Electric Machine	117186	117186	111924	106537	115355	108073	96163	114019	98801	81651	112010	95941	77588
	MC2/GC	75487	75487	72218	68562	73939	69450	63730	73027	65062	56898	72230	63821	54524
	Battery	112330	112330	106615	100830	110712	102376	92199	108037	95021	78970	105975	94456	74930
	Specific Power	87	87	87	86	87	86	86	86	87	89	85	88	89
SI Series HEV PHEV30	ICE Power	122583	122583	115052	107353	119170	109132	95570	114516	97996	82830	112735	95378	79162
	Electric Machine	195797	195797	186307	176389	190995	179400	161888	187765	165690	143788	185092	161525	137806
	MC2/GC	118906	118906	111600	104132	115595	105858	92703	111081	95056	80345	109353	92517	76787
	Battery	237429	237429	224734	211640	231610	215282	191910	225354	196457	168262	222166	191584	161306
	Specific Power	71	71	72	72	71	72	73	72	73	77	71	73	77
SI Series HEV PHEV40	ICE Power	127293	127293	119273	111095	123535	112974	98385	118598	100868	84928	116596	97866	81112
	Electric Machine	203148	203148	192979	182429	197929	185659	166539	194309	170436	147288	191244	165643	141113
	MC2/GC	123474	123474	115695	107762	119829	109585	95433	115040	97842	82380	113098	94930	78679
	Battery	246223	246223	232668	218796	239913	222696	197256	233103	201909	172207	229443	196291	165019
	Specific Power	72	72	72	73	72	72	73	72	73	77	72	73	78
CI Split HEV	ICE Power	130224	130224	123091	115206	126744	118370	106058	124281	106865	90409	123172	105137	85943
	Electric Machine	107291	107291	102554	97310	105037	100028	91685	105299	92637	79472	104164	91130	75315
	MC2/GC	108983	108983	103014	96415	106071	99063	88759	104010	89434	75663	103082	87988	71925
	Battery	41097	41097	39102	37107	40698	38130	34715	40406	35284	29593	39837	34715	27886
	Specific Power	69	69	69	68	69	68	67	68	67	67	68	67	67
CI Split HEV PHEV10	ICE Power	101797	101797	97475	92753	99698	93925	86534	98509	88277	77840	97532	86876	74649
	Electric Machine	113511	113511	109146	104138	111801	105100	94887	110619	96443	81158	109774	94887	77294
	MC2/GC	85193	85193	81576	77624	83436	78605	72420	82441	73878	65144	81624	72706	62473
	Battery	122226	122226	117090	111162	120545	112099	99071	117994	101167	92098	117152	110247	88193
	Specific Power	90	90	90	90	89	89	88	89	88	94	89	93	94
CI Split HEV PHEV20	ICE Power	103243	103243	98830	94019	101103	95241	87555	99940	89327	78491	98845	87640	75270
	Electric Machine	115911	115911	110818	105560	114064	107050	96452	112700	98048	82574	111767	96279	78622
	MC2/GC	86403	86403	82710	78684	84612	79706	73274	83639	74757	65689	82723	73345	62993
	Battery	122378	122378	116352	110203	120502	111909	102030	117762	103750	89373	116817	104818	85211
	Specific Power	88	88	88	88	88	88	88	88	88	91	88	90	92

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		Pickup												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
CI Series HEV PHEV30	ICE Power	125496	125496	117927	110190	121998	111953	98385	117307	100723	85494	115429	98040	81904
	Electric Machine	200297	200297	190852	180884	195521	183927	166445	192241	170196	148246	189418	165930	142406
	MC2/GC	121731	121731	114389	106884	118338	108594	95433	113788	97701	82929	111966	95099	79447
	Battery	242857	242857	230194	217013	237074	220690	197295	230703	201775	173460	227329	196784	166662
	Specific Power	71	71	71	71	71	71	72	71	72	75	71	72	76
CI Series HEV PHEV40	ICE Power	130268	130268	122239	114083	126485	115795	101141	121539	103625	87592	119379	100528	83882
	Electric Machine	207691	207691	197617	187115	202455	190137	171094	198974	174988	151791	195806	170140	145805
	MC2/GC	126360	126360	118572	110661	122690	112321	98107	117893	100516	84964	115798	97512	81366
	Battery	251705	251705	238243	224391	245371	228039	202628	238673	207281	177447	234889	201598	170484
	Specific Power	71	71	72	72	71	72	72	71	72	76	71	72	76
H2 Split HEV	ICE Power	152647	152647	142587	133126	149386	135434	120354	145452	123161	101435	142350	120719	96803
	Electric Machine	102337	102337	96315	90974	100354	92981	84639	100015	86406	71984	97579	84751	68748
	MC2/GC	96217	96217	89876	83913	94162	85367	75862	91682	77631	63937	89727	76092	61017
	Battery	39900	39900	37107	34913	39302	35853	32439	38699	33008	26748	37561	32439	25610
	Specific Power	80	80	80	79	80	79	78	79	78	78	79	78	78
H2 Split HEV PHEV10	ICE Power	99859	99859	94186	88956	97374	90178	82277	95935	84360	73284	93710	82716	70387
	Electric Machine	118214	118214	110307	104147	115823	105355	94056	114038	96257	79222	110229	94201	75584
	MC2/GC	82541	82541	77850	73503	80463	74560	68028	79296	69750	60545	77458	68391	58151
	Battery	116044	116044	107089	100285	114079	101496	84596	110618	86313	77220	106471	96361	73485
	Specific Power	89	89	89	88	89	88	85	88	85	91	88	91	91
H2 Split HEV PHEV20	ICE Power	101392	101392	95629	90193	98780	91494	83327	97337	85496	73935	95051	83565	71008
	Electric Machine	120656	120656	113236	105689	117929	108590	95631	116141	98822	80727	113470	96465	76902
	MC2/GC	83760	83760	78971	74478	81578	75601	68826	80384	70595	61083	78495	68998	58641
	Battery	116728	116728	108595	100163	114170	103401	90109	110715	93314	76113	108288	93463	72484
	Specific Power	88	88	88	87	88	88	87	87	87	89	87	89	90
H2 Series HEV PHEV30	ICE Power	123110	123110	114196	105904	119201	107662	93800	114276	96545	80789	111269	93642	77466
	Electric Machine	196668	196668	184954	174116	191090	177133	158964	187380	163292	140336	182641	158699	134883
	MC2/GC	119417	119417	110770	102727	115625	104432	90986	110848	93649	78365	107931	90833	75142
	Battery	238472	238472	223110	208932	231728	212577	188457	224898	193631	164245	219236	188251	157897
	Specific Power	71	71	72	73	71	72	73	72	73	78	72	73	78

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		Pickup												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
H2 Series HEV PHEV40	ICE Power	127913	127913	118355	109767	123565	111653	96586	118388	99417	82858	114950	96159	79388
	Electric Machine	204115	204115	191528	180160	197977	183446	163567	193924	167944	143837	188744	162864	138190
	MC2/GC	124076	124076	114804	106474	119858	108303	93688	114836	96434	80372	111502	93274	77006
	Battery	247390	247390	230935	216081	239971	220047	193756	232641	198970	168189	226464	193016	161623
	Specific Power	72	72	73	73	72	73	74	72	74	78	72	74	79
E85 Split HEV	ICE Power	153966	153966	145458	137592	150062	138841	123389	147073	125835	105709	145692	123666	101361
	Electric Machine	102547	102547	97925	93283	100424	95354	86606	100494	88212	74501	99828	86677	71408
	MC2/GC	89101	89101	84177	79625	86841	80348	71406	85112	72821	61174	84313	71566	58658
	Battery	39501	39501	37506	35511	39102	36992	33577	38699	34146	27886	38699	33577	26748
	Specific Power	81	81	81	80	81	80	78	80	78	78	80	78	79
E85 Split HEV PHEV10	ICE Power	99107	99107	94763	90078	97059	91294	83781	95906	85581	75152	94965	84215	71996
	Electric Machine	115059	115059	108758	103614	113330	106188	94700	110839	96315	80563	110058	94661	76591
	MC2/GC	74530	74530	71241	67696	72968	68633	63005	72123	64358	56494	71351	63310	54142
	Battery	113375	113375	106259	100619	111910	103573	86874	107842	88473	82339	107102	98926	78235
	Specific Power	88	88	88	87	88	88	85	87	85	92	87	90	92
E85 Split HEV PHEV20	ICE Power	100525	100525	96177	91344	98435	92552	84888	97308	86688	75831	96249	85064	72617
	Electric Machine	117454	117454	112097	106709	115529	108245	96329	114240	98969	81810	113402	96106	77746
	MC2/GC	75596	75596	72283	68627	74004	69558	63794	73134	65148	56983	72338	63884	54588
	Battery	112595	112595	106773	100992	110880	102526	92369	108254	95190	79166	107526	94665	75122
	Specific Power	87	87	87	86	87	86	86	86	87	89	86	88	89
E85 Series HEV PHEV30	ICE Power	122676	122676	115144	107534	119263	109222	95657	114636	98112	82915	112825	95465	79247
	Electric Machine	195943	195943	186452	176583	191187	179593	162032	188005	165834	143932	185237	161668	137998
	MC2/GC	118996	118996	111690	104308	115685	105945	92787	111197	95169	80428	109440	92601	76870
	Battery	237601	237601	224904	211879	231844	215511	192080	225645	196624	168429	222336	191753	161528
	Specific Power	71	71	72	72	71	72	73	71	73	77	71	73	77
E85 Series HEV PHEV40	ICE Power	127386	127386	119487	111336	123627	113124	98472	118748	101042	85013	116686	97982	81197
	Electric Machine	203293	203293	193269	182624	198074	185852	166683	194549	170676	147431	191435	165834	141256
	MC2/GC	123564	123564	115902	107996	119918	109730	95518	115186	98011	82463	113185	95043	78761
	Battery	246393	246393	233023	219025	240086	222925	197426	233384	202195	172374	229676	196517	165186
	Specific Power	72	72	72	73	72	72	73	72	73	77	72	73	78

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		Pickup												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
FC HEV	FC Power	174206	174206	146897	126630	155644	124430	105596	135664	108754	86392	127799	105363	82056
	Electric Machine	196411	196411	164087	145284	172000	150359	129629	159824	132977	108607	151709	128855	103001
	MC2/GC													
	Battery	49077	49077	41297	37905	43092	43252	38699	46097	39268	33008	43821	38130	31301
	Specific Power	64	64	64	63	63	64	64	63	64	65	64	64	65
FC HEV PHEV10	FC Power	127808	127808	107943	96009	114747	97217	84055	106993	86629	69550	100403	85628	66176
	Electric Machine	185982	185982	162597	147471	170592	149203	131494	161936	134818	110159	154100	132292	104503
	MC2/GC													
	Battery	94917	94917	81650	73138	86062	74029	64062	80217	65693	52369	76089	63560	49585
	Specific Power	63	63	65	65	64	65	65	65	65	67	65	66	67
FC HEV PHEV20	FC Power	130827	130827	110482	98185	117459	99439	85818	109439	88478	70327	102665	86382	66867
	Electric Machine	190268	190268	166260	150626	174474	152513	133956	165461	137408	111693	157387	133794	105893
	MC2/GC													
	Battery	97376	97376	83656	74854	88132	75717	65254	81993	66882	53328	77718	64527	50405
	Specific Power	63	63	65	65	64	65	65	65	65	67	65	66	67
FC HEV PHEV30	FC Power	105904	105904	94669	87196	98226	87790	78801	94331	80955	69025	89980	78219	65910
	Electric Machine	198508	198508	182826	171120	188344	172799	155892	182085	159266	138175	176822	154198	131955
	MC2/GC													
	Battery	240604	240604	220466	205277	228320	207315	184892	218487	188932	161725	212202	182989	154488
	Specific Power	64	64	68	70	67	70	72	68	72	78	70	73	79
FC HEV PHEV40	FC Power	108251	108251	96546	88760	100247	89422	79946	96015	82099	69836	91608	79157	66669
	Electric Machine	204889	204889	188435	176196	194175	177858	160019	187381	163533	141536	181775	157885	135074
	MC2/GC													
	Battery	248228	248228	227132	211271	235289	213291	189602	224738	193806	165510	218050	187173	157993
	Specific Power	64	64	68	70	67	70	73	68	72	78	70	73	79
BEV	ICE Power													
	Electric Machine	252830	252830	238393	223095	245706	227574	194034	239034	198489	166874	232485	188747	158480
	MC2/GC	0	0	0	0	0	0	0	0	0	0	0	0	0
	Battery	305838	305838	286879	267061	297236	272427	229959	286567	235281	195890	278376	223770	186105
	Specific Power	95	95	95	95	95	95	94	94	94	99	94	94	100

Percentage of power reduction based on the respective 2010 reference case

		Pickup												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Conv	ICE Power	0%	0%	-4%	-8%	-2%	-9%	-15%	-4%	-13%	-24%	-2%	-14%	-28%
	Electric Machine													
	MC2/GC													
	Battery													
	Specific Power	0%	0%	-1%	-1%	-2%	-3%	-3%	-3%	-2%	0%	-1%	-1%	0%
CI Conv	ICE Power	0%	0%	-5%	-8%	-2%	-8%	-14%	-5%	-13%	-23%	-3%	-13%	-26%
	Electric Machine													
	MC2/GC													
	Battery													
	Specific Power	0%	0%	-2%	-1%	-2%	-3%	-3%	-4%	-2%	0%	-3%	-2%	1%
H2 Conv	ICE Power	0%	0%	-7%	-11%	-3%	-12%	-18%	-5%	-16%	-29%	-6%	-17%	-32%
	Electric Machine													
	MC2/GC													
	Battery													
	Specific Power	0%	0%	-2%	-2%	-2%	-4%	-3%	-4%	-2%	-1%	-3%	-2%	-1%
E85 Conv	ICE Power	0%	0%	-5%	-9%	-2%	-10%	-15%	-4%	-13%	-26%	-3%	-14%	-28%
	Electric Machine													
	MC2/GC													
	Battery													
	Specific Power	0%	0%	-2%	-2%	-2%	-4%	-3%	-4%	-2%	-2%	-2%	-2%	0%
SI Split HEV	ICE Power	0%	0%	-5%	-10%	-1%	-9%	-19%	-4%	-16%	-31%	-5%	-19%	-34%
	Electric Machine	0%	0%	-5%	-9%	-1%	-7%	-15%	-1%	-12%	-27%	-2%	-15%	-30%
	MC2/GC	0%	0%	-5%	-10%	-1%	-9%	-19%	-4%	-16%	-31%	-5%	-19%	-34%
	Battery	0%	0%	-6%	-10%	-1%	-8%	-15%	-2%	-14%	-29%	-2%	-15%	-34%
	Specific Power	0%	0%	-1%	-1%	0%	-2%	-3%	-2%	-2%	-3%	-2%	-4%	-3%
SI Split HEV PHEV10	ICE Power	0%	0%	-4%	-9%	-2%	-8%	-15%	-3%	-14%	-24%	-4%	-15%	-27%
	Electric Machine	0%	0%	-4%	-9%	-2%	-8%	-17%	-3%	-16%	-30%	-4%	-17%	-33%
	MC2/GC	0%	0%	-4%	-9%	-2%	-8%	-15%	-3%	-14%	-24%	-4%	-15%	-27%
	Battery	0%	0%	-5%	-11%	-2%	-9%	-23%	-4%	-21%	-27%	-5%	-12%	-31%
	Specific Power	0%	0%	0%	-1%	0%	-1%	-4%	-1%	-4%	4%	-1%	3%	5%

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		Pickup												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Split HEV PHEV20	ICE Power	0%	0%	-4%	-9%	-2%	-8%	-16%	-3%	-14%	-25%	-4%	-15%	-28%
	Electric Machine	0%	0%	-4%	-9%	-2%	-8%	-18%	-3%	-16%	-30%	-4%	-18%	-34%
	MC2/GC	0%	0%	-4%	-9%	-2%	-8%	-16%	-3%	-14%	-25%	-4%	-15%	-28%
	Battery	0%	0%	-5%	-10%	-1%	-9%	-18%	-4%	-15%	-30%	-6%	-16%	-33%
	Specific Power	0%	0%	0%	0%	0%	-1%	0%	-1%	0%	3%	-1%	1%	3%
SI Series HEV PHEV30	ICE Power	0%	0%	-6%	-12%	-3%	-11%	-22%	-7%	-20%	-32%	-8%	-22%	-35%
	Electric Machine	0%	0%	-5%	-10%	-2%	-8%	-17%	-4%	-15%	-27%	-5%	-18%	-30%
	MC2/GC	0%	0%	-6%	-12%	-3%	-11%	-22%	-7%	-20%	-32%	-8%	-22%	-35%
	Battery	0%	0%	-5%	-11%	-2%	-9%	-19%	-5%	-17%	-29%	-6%	-19%	-32%
	Specific Power	0%	0%	1%	1%	0%	1%	2%	1%	2%	8%	0%	2%	9%
SI Series HEV PHEV40	ICE Power	0%	0%	-6%	-13%	-3%	-11%	-23%	-7%	-21%	-33%	-8%	-23%	-36%
	Electric Machine	0%	0%	-5%	-10%	-3%	-9%	-18%	-4%	-16%	-27%	-6%	-18%	-31%
	MC2/GC	0%	0%	-6%	-13%	-3%	-11%	-23%	-7%	-21%	-33%	-8%	-23%	-36%
	Battery	0%	0%	-6%	-11%	-3%	-10%	-20%	-5%	-18%	-30%	-7%	-20%	-33%
	Specific Power	0%	0%	1%	1%	0%	1%	2%	1%	2%	7%	0%	2%	8%
CI Split HEV	ICE Power	0%	0%	-5%	-12%	-3%	-9%	-19%	-5%	-18%	-31%	-5%	-19%	-34%
	Electric Machine	0%	0%	-4%	-9%	-2%	-7%	-15%	-2%	-14%	-26%	-3%	-15%	-30%
	MC2/GC	0%	0%	-5%	-12%	-3%	-9%	-19%	-5%	-18%	-31%	-5%	-19%	-34%
	Battery	0%	0%	-5%	-10%	-1%	-7%	-16%	-2%	-14%	-28%	-3%	-16%	-32%
	Specific Power	0%	0%	-1%	-2%	-1%	-2%	-3%	-2%	-4%	-4%	-2%	-4%	-4%
CI Split HEV PHEV10	ICE Power	0%	0%	-4%	-9%	-2%	-8%	-15%	-3%	-13%	-24%	-4%	-15%	-27%
	Electric Machine	0%	0%	-4%	-8%	-2%	-7%	-16%	-3%	-15%	-29%	-3%	-16%	-32%
	MC2/GC	0%	0%	-4%	-9%	-2%	-8%	-15%	-3%	-13%	-24%	-4%	-15%	-27%
	Battery	0%	0%	-4%	-9%	-1%	-8%	-19%	-3%	-17%	-25%	-4%	-10%	-28%
	Specific Power	0%	0%	0%	0%	0%	-1%	-2%	-1%	-2%	5%	-1%	4%	5%
CI Split HEV PHEV20	ICE Power	0%	0%	-4%	-9%	-2%	-8%	-15%	-3%	-13%	-24%	-4%	-15%	-27%
	Electric Machine	0%	0%	-4%	-9%	-2%	-8%	-17%	-3%	-15%	-29%	-4%	-17%	-32%
	MC2/GC	0%	0%	-4%	-9%	-2%	-8%	-15%	-3%	-13%	-24%	-4%	-15%	-27%
	Battery	0%	0%	-5%	-10%	-2%	-9%	-17%	-4%	-15%	-27%	-5%	-14%	-30%
	Specific Power	0%	0%	0%	0%	0%	-1%	0%	-1%	0%	3%	-1%	1%	4%

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		Pickup												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
CI Series HEV PHEV30	ICE Power	0%	0%	-6%	-12%	-3%	-11%	-22%	-7%	-20%	-32%	-8%	-22%	-35%
	Electric Machine	0%	0%	-5%	-10%	-2%	-8%	-17%	-4%	-15%	-26%	-5%	-17%	-29%
	MC2/GC	0%	0%	-6%	-12%	-3%	-11%	-22%	-7%	-20%	-32%	-8%	-22%	-35%
	Battery	0%	0%	-5%	-11%	-2%	-9%	-19%	-5%	-17%	-29%	-6%	-19%	-31%
	Specific Power	0%	0%	1%	1%	0%	1%	2%	0%	2%	7%	0%	2%	8%
CI Series HEV PHEV40	ICE Power	0%	0%	-6%	-12%	-3%	-11%	-22%	-7%	-20%	-33%	-8%	-23%	-36%
	Electric Machine	0%	0%	-5%	-10%	-3%	-8%	-18%	-4%	-16%	-27%	-6%	-18%	-30%
	MC2/GC	0%	0%	-6%	-12%	-3%	-11%	-22%	-7%	-20%	-33%	-8%	-23%	-36%
	Battery	0%	0%	-5%	-11%	-3%	-9%	-19%	-5%	-18%	-30%	-7%	-20%	-32%
	Specific Power	0%	0%	1%	1%	0%	1%	2%	1%	2%	7%	0%	2%	8%
H2 Split HEV	ICE Power	0%	0%	-7%	-13%	-2%	-11%	-21%	-5%	-19%	-34%	-7%	-21%	-37%
	Electric Machine	0%	0%	-6%	-11%	-2%	-9%	-17%	-2%	-16%	-30%	-5%	-17%	-33%
	MC2/GC	0%	0%	-7%	-13%	-2%	-11%	-21%	-5%	-19%	-34%	-7%	-21%	-37%
	Battery	0%	0%	-7%	-13%	-2%	-10%	-19%	-3%	-17%	-33%	-6%	-19%	-36%
	Specific Power	0%	0%	0%	-1%	0%	-1%	-3%	-1%	-3%	-3%	-1%	-3%	-3%
H2 Split HEV PHEV10	ICE Power	0%	0%	-6%	-11%	-2%	-10%	-18%	-4%	-16%	-27%	-6%	-17%	-30%
	Electric Machine	0%	0%	-7%	-12%	-2%	-11%	-20%	-4%	-19%	-33%	-7%	-20%	-36%
	MC2/GC	0%	0%	-6%	-11%	-3%	-10%	-18%	-4%	-15%	-27%	-6%	-17%	-30%
	Battery	0%	0%	-8%	-14%	-2%	-13%	-27%	-5%	-26%	-33%	-8%	-17%	-37%
	Specific Power	0%	0%	0%	0%	0%	-1%	-4%	0%	-4%	3%	-1%	2%	3%
H2 Split HEV PHEV20	ICE Power	0%	0%	-6%	-11%	-3%	-10%	-18%	-4%	-16%	-27%	-6%	-18%	-30%
	Electric Machine	0%	0%	-6%	-12%	-2%	-10%	-21%	-4%	-18%	-33%	-6%	-20%	-36%
	MC2/GC	0%	0%	-6%	-11%	-3%	-10%	-18%	-4%	-16%	-27%	-6%	-18%	-30%
	Battery	0%	0%	-7%	-14%	-2%	-11%	-23%	-5%	-20%	-35%	-7%	-20%	-38%
	Specific Power	0%	0%	0%	-1%	0%	0%	-1%	-1%	-1%	2%	0%	1%	2%
H2 Series HEV PHEV30	ICE Power	0%	0%	-7%	-14%	-3%	-13%	-24%	-7%	-22%	-34%	-10%	-24%	-37%
	Electric Machine	0%	0%	-6%	-11%	-3%	-10%	-19%	-5%	-17%	-29%	-7%	-19%	-31%
	MC2/GC	0%	0%	-7%	-14%	-3%	-13%	-24%	-7%	-22%	-34%	-10%	-24%	-37%
	Battery	0%	0%	-6%	-12%	-3%	-11%	-21%	-6%	-19%	-31%	-8%	-21%	-34%
	Specific Power	0%	0%	1%	2%	0%	2%	3%	1%	3%	9%	1%	3%	10%

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		Pickup												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
H2 Series HEV PHEV40	ICE Power	0%	0%	-7%	-14%	-3%	-13%	-24%	-7%	-22%	-35%	-10%	-25%	-38%
	Electric Machine	0%	0%	-6%	-12%	-3%	-10%	-20%	-5%	-18%	-30%	-8%	-20%	-32%
	MC2/GC	0%	0%	-7%	-14%	-3%	-13%	-24%	-7%	-22%	-35%	-10%	-25%	-38%
	Battery	0%	0%	-7%	-13%	-3%	-11%	-22%	-6%	-20%	-32%	-8%	-22%	-35%
	Specific Power	0%	0%	1%	2%	0%	2%	3%	1%	3%	9%	1%	3%	10%
E85 Split HEV	ICE Power	0%	0%	-6%	-11%	-3%	-10%	-20%	-4%	-18%	-31%	-5%	-20%	-34%
	Electric Machine	0%	0%	-5%	-9%	-2%	-7%	-16%	-2%	-14%	-27%	-3%	-15%	-30%
	MC2/GC	0%	0%	-6%	-11%	-3%	-10%	-20%	-4%	-18%	-31%	-5%	-20%	-34%
	Battery	0%	0%	-5%	-10%	-1%	-6%	-15%	-2%	-14%	-29%	-2%	-15%	-32%
	Specific Power	0%	0%	-1%	-1%	-1%	-2%	-4%	-2%	-4%	-4%	-2%	-4%	-3%
E85 Split HEV PHEV10	ICE Power	0%	0%	-4%	-9%	-2%	-8%	-15%	-3%	-14%	-24%	-4%	-15%	-27%
	Electric Machine	0%	0%	-5%	-10%	-2%	-8%	-18%	-4%	-16%	-30%	-4%	-18%	-33%
	MC2/GC	0%	0%	-4%	-9%	-2%	-8%	-15%	-3%	-14%	-24%	-4%	-15%	-27%
	Battery	0%	0%	-6%	-11%	-1%	-9%	-23%	-5%	-22%	-27%	-6%	-13%	-31%
	Specific Power	0%	0%	-1%	-1%	0%	0%	-4%	-1%	-4%	4%	-1%	3%	4%
E85 Split HEV PHEV20	ICE Power	0%	0%	-4%	-9%	-2%	-8%	-16%	-3%	-14%	-25%	-4%	-15%	-28%
	Electric Machine	0%	0%	-5%	-9%	-2%	-8%	-18%	-3%	-16%	-30%	-3%	-18%	-34%
	MC2/GC	0%	0%	-4%	-9%	-2%	-8%	-16%	-3%	-14%	-25%	-4%	-15%	-28%
	Battery	0%	0%	-5%	-10%	-2%	-9%	-18%	-4%	-15%	-30%	-5%	-16%	-33%
	Specific Power	0%	0%	0%	0%	0%	-1%	0%	-1%	0%	3%	-1%	1%	3%
E85 Series HEV PHEV30	ICE Power	0%	0%	-6%	-12%	-3%	-11%	-22%	-7%	-20%	-32%	-8%	-22%	-35%
	Electric Machine	0%	0%	-5%	-10%	-2%	-8%	-17%	-4%	-15%	-27%	-5%	-17%	-30%
	MC2/GC	0%	0%	-6%	-12%	-3%	-11%	-22%	-7%	-20%	-32%	-8%	-22%	-35%
	Battery	0%	0%	-5%	-11%	-2%	-9%	-19%	-5%	-17%	-29%	-6%	-19%	-32%
	Specific Power	0%	0%	1%	1%	0%	1%	2%	0%	2%	8%	0%	2%	9%
E85 Series HEV PHEV40	ICE Power	0%	0%	-6%	-13%	-3%	-11%	-23%	-7%	-21%	-33%	-8%	-23%	-36%
	Electric Machine	0%	0%	-5%	-10%	-3%	-9%	-18%	-4%	-16%	-27%	-6%	-18%	-31%
	MC2/GC	0%	0%	-6%	-13%	-3%	-11%	-23%	-7%	-21%	-33%	-8%	-23%	-36%
	Battery	0%	0%	-5%	-11%	-3%	-10%	-20%	-5%	-18%	-30%	-7%	-20%	-33%
	Specific Power	0%	0%	1%	1%	0%	1%	2%	1%	2%	7%	0%	2%	8%

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		Pickup												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
FC HEV	FC Power	0%	0%	-16%	-27%	-11%	-29%	-39%	-22%	-38%	-50%	-27%	-40%	-53%
	Electric Machine	0%	0%	-16%	-26%	-12%	-23%	-34%	-19%	-32%	-45%	-23%	-34%	-48%
	MC2/GC													
	Battery	0%	0%	-16%	-23%	-12%	-12%	-21%	-6%	-20%	-33%	-11%	-22%	-36%
	Specific Power	0%	0%	0%	-1%	0%	1%	0%	-1%	0%	2%	0%	1%	3%
FC HEV PHEV10	FC Power	0%	0%	-16%	-25%	-10%	-24%	-34%	-16%	-32%	-46%	-21%	-33%	-48%
	Electric Machine	0%	0%	-13%	-21%	-8%	-20%	-29%	-13%	-28%	-41%	-17%	-29%	-44%
	MC2/GC													
	Battery	0%	0%	-14%	-23%	-9%	-22%	-33%	-15%	-31%	-45%	-20%	-33%	-48%
	Specific Power	0%	0%	2%	3%	2%	3%	3%	3%	3%	5%	3%	5%	6%
FC HEV PHEV20	FC Power	0%	0%	-16%	-25%	-10%	-24%	-34%	-16%	-32%	-46%	-22%	-34%	-49%
	Electric Machine	0%	0%	-13%	-21%	-8%	-20%	-30%	-13%	-28%	-41%	-17%	-30%	-44%
	MC2/GC													
	Battery	0%	0%	-14%	-23%	-9%	-22%	-33%	-16%	-31%	-45%	-20%	-34%	-48%
	Specific Power	0%	0%	2%	3%	2%	3%	4%	3%	4%	5%	4%	5%	6%
FC HEV PHEV30	FC Power	0%	0%	-11%	-18%	-7%	-17%	-26%	-11%	-24%	-35%	-15%	-26%	-38%
	Electric Machine	0%	0%	-8%	-14%	-5%	-13%	-21%	-8%	-20%	-30%	-11%	-22%	-34%
	MC2/GC													
	Battery	0%	0%	-8%	-15%	-5%	-14%	-23%	-9%	-21%	-33%	-12%	-24%	-36%
	Specific Power	0%	0%	6%	9%	4%	9%	13%	6%	12%	21%	9%	13%	22%
FC HEV PHEV40	FC Power	0%	0%	-11%	-18%	-7%	-17%	-26%	-11%	-24%	-35%	-15%	-27%	-38%
	Electric Machine	0%	0%	-8%	-14%	-5%	-13%	-22%	-9%	-20%	-31%	-11%	-23%	-34%
	MC2/GC													
	Battery	0%	0%	-8%	-15%	-5%	-14%	-24%	-9%	-22%	-33%	-12%	-25%	-36%
	Specific Power	0%	0%	6%	9%	4%	9%	13%	6%	12%	21%	9%	13%	23%
EV	ICE Power													
	Electric Machine	0%	0%	-6%	-12%	-3%	-10%	-23%	-5%	-21%	-34%	-8%	-25%	-37%
	MC2/GC													
	Battery	0%	0%	-6%	-13%	-3%	-11%	-25%	-6%	-23%	-36%	-9%	-27%	-39%
	Specific Power	0%	0%	0%	0%	0%	0%	-1%	-1%	-1%	4%	-1%	-1%	6%

Energy

		Pickup												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Split HEV	Total Energy	1544	1544	1459	1388	1529	1382	1274	1469	1296	1058	1469	1274	994
	Usable Energy													
SI Split HEV PHEV10	Total Energy	5791	5791	5474	5139	5627	5395	4113	5537	4426	3264	5570	4000	3131
	Usable Energy	3474	3474	3285	3083	3376	3237	2879	3322	3098	2612	3342	3000	2505
SI Split HEV PHEV20	Total Energy	13206	13206	12450	11569	12671	11669	8947	12452	9188	6710	12205	8317	6471
	Usable Energy	7924	7924	7470	6942	7602	7002	6263	7471	6432	5368	7323	6237	5177
SI Series HEV PHEV30	Total Energy	23645	23645	21802	20624	22381	20886	15421	21645	15880	12298	21306	14404	11762
	Usable Energy	14187	14187	13081	12375	13429	12531	10795	12987	11116	9838	12784	10803	9410
SI Series HEV PHEV40	Total Energy	30815	30815	28759	26752	29615	27174	20754	28618	21368	15846	28039	19293	15255
	Usable Energy	18489	18489	17256	16051	17769	16304	14528	17171	14958	12677	16824	14470	12204
CI Split HEV	Total Energy	1607	1607	1529	1451	1591	1447	1318	1534	1339	1123	1512	1318	1058
	Usable Energy													
CI Split HEV PHEV10	Total Energy	5985	5985	5654	5320	5807	5486	4295	5678	4396	3390	5727	3922	3249
	Usable Energy	3591	3591	3393	3192	3484	3292	3007	3407	3077	2712	3436	2941	2599
CI Split HEV PHEV20	Total Energy	13712	13712	12923	12076	13248	12160	9305	12868	9571	6853	12710	8644	6653
	Usable Energy	8227	8227	7754	7246	7949	7296	6514	7721	6700	5482	7626	6483	5323
CI Series HEV PHEV30	Total Energy	24190	24190	22690	20839	23286	21066	16394	22518	16863	12324	22145	14803	12233
	Usable Energy	14514	14514	13614	12504	13971	12640	11476	13511	11804	9859	13287	11102	9786
CI Series HEV PHEV40	Total Energy	31544	31544	29570	27563	30326	27852	21236	29326	21864	16339	28838	19891	15666
	Usable Energy	18927	18927	17742	16538	18195	16711	14865	17595	15305	13071	17303	14918	12533
H2 Split HEV	Total Energy	1560	1560	1451	1365	1537	1361	1231	1469	1253	1015	1426	1231	972
	Usable Energy													
H2 Split HEV PHEV10	Total Energy	5842	5842	5481	5074	5649	5133	4134	5619	4232	3193	5377	3865	3114
	Usable Energy	3505	3505	3289	3044	3389	3080	2894	3371	2963	2555	3226	2899	2491
H2 Split HEV PHEV20	Total Energy	13371	13371	12417	11507	12800	11613	8869	12452	9151	6611	12099	8082	6335
	Usable Energy	8023	8023	7450	6904	7680	6968	6208	7471	6406	5289	7259	6062	5068

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		Pickup												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
H2 Series HEV PHEV30	Total Energy	23580	23580	21828	20375	22722	20626	15556	21969	16077	12061	21020	14145	11583
	Usable Energy	14148	14148	13097	12225	13633	12376	10889	13181	11254	9648	12612	10609	9266
H2 Series HEV PHEV40	Total Energy	30966	30966	28619	26511	29630	26741	20367	28571	21050	15467	27762	18961	14789
	Usable Energy	18579	18579	17171	15907	17778	16045	14257	17143	14735	12373	16657	14221	11831
E85 Split HEV	Total Energy	1544	1544	1466	1388	1529	1404	1274	1469	1296	1058	1469	1274	1015
	Usable Energy													
E85 Split HEV PHEV10	Total Energy	5793	5793	5481	5157	5635	5395	4120	5547	4394	3270	5572	4007	3137
	Usable Energy	3476	3476	3288	3094	3381	3237	2884	3328	3075	2616	3343	3005	2510
E85 Split HEV PHEV20	Total Energy	13205	13205	12475	11586	12767	11695	8945	12439	9215	6769	12246	8323	6481
	Usable Energy	7923	7923	7485	6951	7660	7017	6262	7463	6450	5415	7347	6242	5185
E85 Series HEV PHEV30	Total Energy	23634	23634	22181	20526	22392	20882	15435	21686	15899	12280	21656	14412	11742
	Usable Energy	14181	14181	13309	12316	13435	12529	10805	13011	11129	9824	12994	10809	9394
E85 Series HEV PHEV40	Total Energy	30839	30839	28790	26768	29631	27197	20712	28571	21387	15859	28055	19316	15272
	Usable Energy	18504	18504	17274	16061	17779	16318	14498	17143	14971	12687	16833	14487	12217
FC HEV	Total Energy	1919	1919	1615	1482	1685	1642	1469	1750	1490	1253	1663	1447	1188
	Usable Energy													
FC HEV PHEV10	Total Energy	8746	8746	7555	6117	7888	6672	5098	7349	5256	3581	6953	4367	3428
	Usable Energy	5248	5248	4533	3670	4733	4003	3568	4409	3679	2865	4172	3275	2743
FC HEV PHEV20	Total Energy	15961	15961	13781	12466	14336	12600	9476	13576	9779	7192	12976	8834	6878
	Usable Energy	9577	9577	8268	7480	8602	7560	6634	8146	6845	5754	7785	6625	5503
FC HEV PHEV30	Total Energy	25131	25131	22163	19210	23062	20202	14417	21734	14885	11096	20746	13413	10602
	Usable Energy	15079	15079	13298	11526	13837	12121	10092	13041	10420	8876	12448	10060	8482
FC HEV PHEV40	Total Energy	32250	32250	27795	25217	28902	25271	18670	27200	19269	14366	25945	17328	13680
	Usable Energy	19350	19350	16677	15130	17341	15163	13069	16320	13488	11493	15567	12996	10944
BEV	Total Energy	116026	116026	107968	99700	111194	100831	73394	106600	75634	54374	103851	68012	51446
	Usable Energy	69615	69615	64781	59820	66716	60499	51376	63960	52944	43499	62311	51009	41157

Percentage of Energy reduction based on the respective 2010 reference case

		Pickup												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Split HEV	Total Energy	0.0%	0.0%	-5.6%	-10.1%	-1.0%	-10.5%	-17.5%	-4.9%	-16.1%	-31.5%	-4.9%	-17.5%	-35.7%
	Usable Energy													
SI Split HEV PHEV10	Total Energy	0.0%	0.0%	-5.5%	-11.3%	-2.8%	-6.8%	-29.0%	-4.4%	-23.6%	-43.6%	-3.8%	-30.9%	-45.9%
	Usable Energy	0.0%	0.0%	-5.5%	-11.3%	-2.8%	-6.8%	-17.1%	-4.4%	-10.8%	-24.8%	-3.8%	-13.6%	-27.9%
SI Split HEV PHEV20	Total Energy	0.0%	0.0%	-5.7%	-12.4%	-4.1%	-11.6%	-32.3%	-5.7%	-30.4%	-49.2%	-7.6%	-37.0%	-51.0%
	Usable Energy	0.0%	0.0%	-5.7%	-12.4%	-4.1%	-11.6%	-21.0%	-5.7%	-18.8%	-32.3%	-7.6%	-21.3%	-34.7%
SI Series HEV PHEV30	Total Energy	0.0%	0.0%	-7.8%	-12.8%	-5.3%	-11.7%	-34.8%	-8.5%	-32.8%	-48.0%	-9.9%	-39.1%	-50.3%
	Usable Energy	0.0%	0.0%	-7.8%	-12.8%	-5.3%	-11.7%	-23.9%	-8.5%	-21.6%	-30.7%	-9.9%	-23.9%	-33.7%
SI Series HEV PHEV40	Total Energy	0.0%	0.0%	-6.7%	-13.2%	-3.9%	-11.8%	-32.7%	-7.1%	-30.7%	-48.6%	-9.0%	-37.4%	-50.5%
	Usable Energy	0.0%	0.0%	-6.7%	-13.2%	-3.9%	-11.8%	-21.4%	-7.1%	-19.1%	-31.4%	-9.0%	-21.7%	-34.0%
CI Split HEV	Total Energy	0.0%	0.0%	-4.9%	-9.7%	-1.0%	-9.9%	-18.0%	-4.6%	-16.7%	-30.1%	-5.9%	-18.0%	-34.1%
	Usable Energy													
CI Split HEV PHEV10	Total Energy	0.0%	0.0%	-5.5%	-11.1%	-3.0%	-8.3%	-28.2%	-5.1%	-26.6%	-43.4%	-4.3%	-34.5%	-45.7%
	Usable Energy	0.0%	0.0%	-5.5%	-11.1%	-3.0%	-8.3%	-16.3%	-5.1%	-14.3%	-24.5%	-4.3%	-18.1%	-27.6%
CI Split HEV PHEV20	Total Energy	0.0%	0.0%	-5.8%	-11.9%	-3.4%	-11.3%	-32.1%	-6.2%	-30.2%	-50.0%	-7.3%	-37.0%	-51.5%
	Usable Energy	0.0%	0.0%	-5.8%	-11.9%	-3.4%	-11.3%	-20.8%	-6.2%	-18.6%	-33.4%	-7.3%	-21.2%	-35.3%
CI Series HEV PHEV30	Total Energy	0.0%	0.0%	-6.2%	-13.9%	-3.7%	-12.9%	-32.2%	-6.9%	-30.3%	-49.1%	-8.5%	-38.8%	-49.4%
	Usable Energy	0.0%	0.0%	-6.2%	-13.9%	-3.7%	-12.9%	-20.9%	-6.9%	-18.7%	-32.1%	-8.5%	-23.5%	-32.6%
CI Series HEV PHEV40	Total Energy	0.0%	0.0%	-6.3%	-12.6%	-3.9%	-11.7%	-32.7%	-7.0%	-30.7%	-48.2%	-8.6%	-36.9%	-50.3%
	Usable Energy	0.0%	0.0%	-6.3%	-12.6%	-3.9%	-11.7%	-21.5%	-7.0%	-19.1%	-30.9%	-8.6%	-21.2%	-33.8%
H2 Split HEV	Total Energy	0.0%	0.0%	-7.0%	-12.5%	-1.5%	-12.8%	-21.1%	-5.8%	-19.7%	-34.9%	-8.6%	-21.1%	-37.7%
	Usable Energy													
H2 Split HEV PHEV10	Total Energy	0.0%	0.0%	-6.2%	-13.1%	-3.3%	-12.1%	-29.2%	-3.8%	-27.6%	-45.3%	-8.0%	-33.8%	-46.7%
	Usable Energy	0.0%	0.0%	-6.2%	-13.1%	-3.3%	-12.1%	-17.4%	-3.8%	-15.5%	-27.1%	-8.0%	-17.3%	-28.9%
H2 Split HEV PHEV20	Total Energy	0.0%	0.0%	-7.1%	-13.9%	-4.3%	-13.1%	-33.7%	-6.9%	-31.6%	-50.6%	-9.5%	-39.6%	-52.6%
	Usable Energy	0.0%	0.0%	-7.1%	-13.9%	-4.3%	-13.1%	-22.6%	-6.9%	-20.2%	-34.1%	-9.5%	-24.4%	-36.8%

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		Pickup												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
H2 Series HEV PHEV30	Total Energy	0.0%	0.0%	-7.4%	-13.6%	-3.6%	-12.5%	-34.0%	-6.8%	-31.8%	-48.9%	-10.9%	-40.0%	-50.9%
	Usable Energy	0.0%	0.0%	-7.4%	-13.6%	-3.6%	-12.5%	-23.0%	-6.8%	-20.5%	-31.8%	-10.9%	-25.0%	-34.5%
H2 Series HEV PHEV40	Total Energy	0.0%	0.0%	-7.6%	-14.4%	-4.3%	-13.6%	-34.2%	-7.7%	-32.0%	-50.1%	-10.3%	-38.8%	-52.2%
	Usable Energy	0.0%	0.0%	-7.6%	-14.4%	-4.3%	-13.6%	-23.3%	-7.7%	-20.7%	-33.4%	-10.3%	-23.5%	-36.3%
E85 Split HEV	Total Energy	0.0%	0.0%	-5.1%	-10.1%	-1.0%	-9.1%	-17.5%	-4.9%	-16.1%	-31.5%	-4.9%	-17.5%	-34.3%
	Usable Energy													
E85 Split HEV PHEV10	Total Energy	0.0%	0.0%	-5.4%	-11.0%	-2.7%	-6.9%	-28.9%	-4.2%	-24.2%	-43.6%	-3.8%	-30.8%	-45.8%
	Usable Energy	0.0%	0.0%	-5.4%	-11.0%	-2.7%	-6.9%	-17.0%	-4.2%	-11.5%	-24.8%	-3.8%	-13.5%	-27.8%
E85 Split HEV PHEV20	Total Energy	0.0%	0.0%	-5.5%	-12.3%	-3.3%	-11.4%	-32.3%	-5.8%	-30.2%	-48.7%	-7.3%	-37.0%	-50.9%
	Usable Energy	0.0%	0.0%	-5.5%	-12.3%	-3.3%	-11.4%	-21.0%	-5.8%	-18.6%	-31.7%	-7.3%	-21.2%	-34.6%
E85 Series HEV PHEV30	Total Energy	0.0%	0.0%	-6.1%	-13.2%	-5.3%	-11.6%	-34.7%	-8.2%	-32.7%	-48.0%	-8.4%	-39.0%	-50.3%
	Usable Energy	0.0%	0.0%	-6.1%	-13.2%	-5.3%	-11.6%	-23.8%	-8.2%	-21.5%	-30.7%	-8.4%	-23.8%	-33.8%
E85 Series HEV PHEV40	Total Energy	0.0%	0.0%	-6.6%	-13.2%	-3.9%	-11.8%	-32.8%	-7.4%	-30.6%	-48.6%	-9.0%	-37.4%	-50.5%
	Usable Energy	0.0%	0.0%	-6.6%	-13.2%	-3.9%	-11.8%	-21.6%	-7.4%	-19.1%	-31.4%	-9.0%	-21.7%	-34.0%
FC HEV	Total Energy	0.0%	0.0%	-15.9%	-22.8%	-12.2%	-14.4%	-23.5%	-8.8%	-22.3%	-34.7%	-13.3%	-24.6%	-38.1%
	Usable Energy													
FC HEV PHEV10	Total Energy	0.0%	0.0%	-13.6%	-30.1%	-9.8%	-23.7%	-41.7%	-16.0%	-39.9%	-59.1%	-20.5%	-50.1%	-60.8%
	Usable Energy	0.0%	0.0%	-13.6%	-30.1%	-9.8%	-23.7%	-32.0%	-16.0%	-29.9%	-45.4%	-20.5%	-37.6%	-47.7%
FC HEV PHEV20	Total Energy	0.0%	0.0%	-13.7%	-21.9%	-10.2%	-21.1%	-40.6%	-14.9%	-38.7%	-54.9%	-18.7%	-44.7%	-56.9%
	Usable Energy	0.0%	0.0%	-13.7%	-21.9%	-10.2%	-21.1%	-30.7%	-14.9%	-28.5%	-39.9%	-18.7%	-30.8%	-42.5%
FC HEV PHEV30	Total Energy	0.0%	0.0%	-11.8%	-23.6%	-8.2%	-19.6%	-42.6%	-13.5%	-40.8%	-55.8%	-17.4%	-46.6%	-57.8%
	Usable Energy	0.0%	0.0%	-11.8%	-23.6%	-8.2%	-19.6%	-33.1%	-13.5%	-30.9%	-41.1%	-17.4%	-33.3%	-43.8%
FC HEV PHEV40	Total Energy	0.0%	0.0%	-13.8%	-21.8%	-10.4%	-21.6%	-42.1%	-15.7%	-40.3%	-55.5%	-19.6%	-46.3%	-57.6%
	Usable Energy	0.0%	0.0%	-13.8%	-21.8%	-10.4%	-21.6%	-32.5%	-15.7%	-30.3%	-40.6%	-19.6%	-32.8%	-43.4%
EV	Total Energy	0.0%	0.0%	-6.9%	-14.1%	-4.2%	-13.1%	-36.7%	-8.1%	-34.8%	-53.1%	-10.5%	-41.4%	-55.7%
	Usable Energy	0.0%	0.0%	-6.9%	-14.1%	-4.2%	-13.1%	-26.2%	-8.1%	-23.9%	-37.5%	-10.5%	-26.7%	-40.9%

Curb weight

		Pickup												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Conv	Vehicle Mass	2040	2040	1965	1888	2039	1911	1770	2029	1790	1511	2030	1769	1429
	% of Glider mass	74.0	74.0	73.3	72.4	74.1	72.8	71.1	74.1	71.3	67.0	74.0	71.1	65.4
	% of Powertrain mass	26.0	26.0	26.7	27.6	25.9	27.2	28.9	25.9	28.7	33.0	26.0	28.9	34.6
CI Conv	Vehicle Mass	2078	2078	2006	1931	2079	1956	1818	2069	1837	1565	2069	1817	1486
	% of Glider mass	72.6	72.6	71.8	70.8	72.7	71.2	69.2	72.6	69.5	64.7	72.6	69.2	62.9
	% of Powertrain mass	27.4	27.4	28.2	29.2	27.3	28.8	30.8	27.4	30.5	35.3	27.4	30.8	37.1
H2 Conv	Vehicle Mass	2026	2026	1910	1818	2012	1843	1688	1993	1718	1419	1955	1689	1347
	% of Glider mass	74.5	74.5	75.4	75.2	75.1	75.5	74.6	75.4	74.3	71.3	76.9	74.4	69.4
	% of Powertrain mass	25.5	25.5	24.6	24.8	24.9	24.5	25.4	24.6	25.7	28.7	23.1	25.6	30.6
E85 Conv	Vehicle Mass	2039	2039	1963	1886	2038	1910	1770	2028	1790	1510	2029	1769	1430
	% of Glider mass	74.0	74.0	73.3	72.5	74.1	72.9	71.1	74.1	71.3	67.0	74.1	71.1	65.4
	% of Powertrain mass	26.0	26.0	26.7	27.5	25.9	27.1	28.9	25.9	28.7	33.0	25.9	28.9	34.6
SI Split HEV	Vehicle Mass	2239	2239	2127	2019	2204	2069	1877	2191	1916	1575	2178	1877	1487
	% of Glider mass	67.4	67.4	67.7	67.7	68.5	67.3	67.1	68.6	66.6	64.2	69.0	67.0	62.9
	% of Powertrain mass	32.6	32.6	32.3	32.3	31.5	32.7	32.9	31.4	33.4	35.8	31.0	33.0	37.1
SI Split HEV PHEV10	Vehicle Mass	2268	2268	2154	2043	2229	2080	1878	2201	1918	1582	2184	1886	1495
	% of Glider mass	66.5	66.5	66.8	66.9	67.8	66.9	67.0	68.3	66.6	64.0	68.8	66.6	62.5
	% of Powertrain mass	33.5	33.5	33.2	33.1	32.2	33.1	33.0	31.7	33.4	36.0	31.2	33.4	37.5
SI Split HEV PHEV20	Vehicle Mass	2318	2318	2202	2086	2279	2123	1915	2247	1954	1604	2229	1914	1517
	% of Glider mass	65.1	65.1	65.4	65.5	66.3	65.6	65.7	66.9	65.3	63.1	67.4	65.7	61.6
	% of Powertrain mass	34.9	34.9	34.6	34.5	33.7	34.4	34.3	33.1	34.7	36.9	32.6	34.3	38.4
SI Series HEV PHEV30	Vehicle Mass	2616	2616	2459	2310	2543	2359	2089	2488	2144	1742	2456	2085	1643
	% of Glider mass	57.7	57.7	58.5	59.2	59.4	59.0	60.3	60.4	59.5	58.1	61.2	60.3	56.9
	% of Powertrain mass	42.3	42.3	41.5	40.8	40.6	41.0	39.7	39.6	40.5	41.9	38.8	39.7	43.1
SI Series HEV PHEV40	Vehicle Mass	2695	2695	2529	2373	2616	2426	2139	2557	2195	1776	2520	2127	1677
	% of Glider mass	56.0	56.0	56.9	57.6	57.8	57.4	58.8	58.8	58.2	57.0	59.6	59.1	55.7
	% of Powertrain mass	44.0	44.0	43.1	42.4	42.2	42.6	41.2	41.2	41.8	43.0	40.4	40.9	44.3
CI Split HEV	Vehicle Mass	2332	2332	2214	2102	2291	2157	1960	2276	1999	1660	2259	1965	1574
	% of Glider mass	64.7	64.7	65.0	65.0	65.9	64.5	64.2	66.0	63.9	61.0	66.5	64.0	59.4
	% of Powertrain mass	35.3	35.3	35.0	35.0	34.1	35.5	35.8	34.0	36.1	39.0	33.5	36.0	40.6

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		Pickup												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
CI Split HEV PHEV10	Vehicle Mass	2367	2367	2252	2141	2327	2178	1978	2296	2016	1680	2279	1983	1592
	% of Glider mass	63.8	63.8	63.9	63.8	64.9	63.9	63.6	65.5	63.3	60.2	65.9	63.4	58.7
	% of Powertrain mass	36.2	36.2	36.1	36.2	35.1	36.1	36.4	34.5	36.7	39.8	34.1	36.6	41.3
CI Split HEV PHEV20	Vehicle Mass	2417	2417	2299	2184	2375	2221	2011	2344	2052	1702	2326	2011	1612
	% of Glider mass	62.4	62.4	62.6	62.6	63.6	62.7	62.6	64.1	62.2	59.5	64.6	62.5	58.0
	% of Powertrain mass	37.6	37.6	37.4	37.4	36.4	37.3	37.4	35.9	37.8	40.5	35.4	37.5	42.0
CI Series HEV PHEV30	Vehicle Mass	2705	2705	2550	2400	2635	2451	2183	2580	2237	1833	2544	2176	1739
	% of Glider mass	55.8	55.8	56.5	56.9	57.3	56.8	57.7	58.3	57.1	55.2	59.1	57.8	53.8
	% of Powertrain mass	44.2	44.2	43.5	43.1	42.7	43.2	42.3	41.7	42.9	44.8	40.9	42.2	46.2
CI Series HEV PHEV40	Vehicle Mass	2786	2786	2621	2465	2707	2515	2230	2649	2287	1868	2611	2219	1772
	% of Glider mass	54.2	54.2	54.9	55.4	55.8	55.3	56.4	56.7	55.8	54.2	57.6	56.6	52.8
	% of Powertrain mass	45.8	45.8	45.1	44.6	44.2	44.7	43.6	43.3	44.2	45.8	42.4	43.4	47.2
H2 Split HEV	Vehicle Mass	2264	2264	2107	1981	2212	2031	1822	2190	1870	1509	2134	1829	1432
	% of Glider mass	66.7	66.7	68.3	69.0	68.3	68.5	69.1	68.6	68.3	67.1	70.4	68.7	65.3
	% of Powertrain mass	33.3	33.3	31.7	31.0	31.7	31.5	30.9	31.4	31.7	32.9	29.6	31.3	34.7
H2 Split HEV PHEV10	Vehicle Mass	2299	2299	2137	2007	2244	2047	1828	2205	1878	1518	2146	1838	1440
	% of Glider mass	65.6	65.6	67.4	68.1	67.3	68.0	68.9	68.2	68.0	66.7	70.0	68.4	64.9
	% of Powertrain mass	34.4	34.4	32.6	31.9	32.7	32.0	31.1	31.8	32.0	33.3	30.0	31.6	35.1
H2 Split HEV PHEV20	Vehicle Mass	2350	2350	2184	2048	2291	2091	1862	2251	1914	1541	2190	1864	1461
	% of Glider mass	64.2	64.2	65.9	66.7	65.9	66.6	67.6	66.8	66.7	65.7	68.6	67.4	64.0
	% of Powertrain mass	35.8	35.8	34.1	33.3	34.1	33.4	32.4	33.2	33.3	34.3	31.4	32.6	36.0
H2 Series HEV PHEV30	Vehicle Mass	2633	2633	2430	2264	2544	2314	2030	2481	2096	1670	2405	2027	1585
	% of Glider mass	57.3	57.3	59.2	60.4	59.4	60.2	62.0	60.6	60.9	60.6	62.5	62.0	59.0
	% of Powertrain mass	42.7	42.7	40.8	39.6	40.6	39.8	38.0	39.4	39.1	39.4	37.5	38.0	41.0
H2 Series HEV PHEV40	Vehicle Mass	2713	2713	2500	2327	2617	2379	2078	2549	2144	1705	2468	2070	1617
	% of Glider mass	55.6	55.6	57.6	58.7	57.7	58.5	60.6	59.0	59.5	59.3	60.9	60.7	57.8
	% of Powertrain mass	44.4	44.4	42.4	41.3	42.3	41.5	39.4	41.0	40.5	40.7	39.1	39.3	42.2
E85 Split HEV	Vehicle Mass	2246	2246	2132	2024	2208	2073	1880	2195	1918	1578	2181	1883	1492
	% of Glider mass	67.2	67.2	67.5	67.5	68.4	67.1	67.0	68.5	66.6	64.1	68.9	66.8	62.7
	% of Powertrain mass	32.8	32.8	32.5	32.5	31.6	32.9	33.0	31.5	33.4	35.9	31.1	33.2	37.3

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		Pickup												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
E85 Split HEV PHEV10	Vehicle Mass	2274	2274	2157	2046	2234	2085	1881	2205	1921	1585	2188	1890	1499
	% of Glider mass	66.4	66.4	66.7	66.8	67.6	66.8	66.9	68.2	66.4	63.8	68.7	66.5	62.4
	% of Powertrain mass	33.6	33.6	33.3	33.2	32.4	33.2	33.1	31.8	33.6	36.2	31.3	33.5	37.6
E85 Split HEV PHEV20	Vehicle Mass	2323	2323	2205	2089	2282	2128	1918	2252	1958	1608	2234	1917	1520
	% of Glider mass	65.0	65.0	65.3	65.4	66.2	65.4	65.6	66.7	65.2	62.9	67.3	65.6	61.5
	% of Powertrain mass	35.0	35.0	34.7	34.6	33.8	34.6	34.4	33.3	34.8	37.1	32.7	34.4	38.5
E85 Series HEV PHEV30	Vehicle Mass	2619	2619	2462	2314	2546	2364	2092	2495	2149	1745	2459	2088	1647
	% of Glider mass	57.6	57.6	58.5	59.1	59.3	58.9	60.2	60.2	59.4	58.0	61.1	60.2	56.8
	% of Powertrain mass	42.4	42.4	41.5	40.9	40.7	41.1	39.8	39.8	40.6	42.0	38.9	39.8	43.2
E85 Series HEV PHEV40	Vehicle Mass	2698	2698	2533	2376	2619	2429	2142	2562	2198	1779	2523	2131	1680
	% of Glider mass	55.9	55.9	56.8	57.5	57.7	57.3	58.8	58.7	58.1	56.9	59.6	59.0	55.6
	% of Powertrain mass	44.1	44.1	43.2	42.5	42.3	42.7	41.2	41.3	41.9	43.1	40.4	41.0	44.4
FC HEV	Vehicle Mass	2949	2949	2441	2168	2578	2198	1902	2397	1953	1534	2246	1875	1441
	% of Glider mass	51.2	51.2	59.0	63.0	58.6	63.3	66.2	62.7	65.4	66.0	66.9	67.0	64.9
	% of Powertrain mass	48.8	48.8	41.0	37.0	41.4	36.7	33.8	37.3	34.6	34.0	33.1	33.0	35.1
FC HEV PHEV10	Vehicle Mass	2800	2800	2374	2135	2510	2156	1874	2357	1925	1513	2219	1854	1423
	% of Glider mass	53.9	53.9	60.6	64.0	60.2	64.6	67.2	63.8	66.3	66.9	67.7	67.8	65.7
	% of Powertrain mass	46.1	46.1	39.4	36.0	39.8	35.4	32.8	36.2	33.7	33.1	32.3	32.2	34.3
FC HEV PHEV20	Vehicle Mass	2879	2879	2437	2190	2574	2211	1913	2414	1966	1542	2270	1886	1448
	% of Glider mass	52.4	52.4	59.1	62.4	58.7	63.0	65.8	62.3	64.9	65.6	66.2	66.6	64.6
	% of Powertrain mass	47.6	47.6	40.9	37.6	41.3	37.0	34.2	37.7	35.1	34.4	33.8	33.4	35.4
FC HEV PHEV30	Vehicle Mass	2953	2953	2545	2309	2688	2332	2018	2540	2078	1642	2391	1988	1543
	% of Glider mass	51.1	51.1	56.6	59.2	56.2	59.7	62.4	59.2	61.4	61.6	62.9	63.2	60.6
	% of Powertrain mass	48.9	48.9	43.4	40.8	43.8	40.3	37.6	40.8	38.6	38.4	37.1	36.8	39.4
FC HEV PHEV40	Vehicle Mass	3046	3046	2618	2369	2761	2391	2063	2606	2123	1674	2452	2025	1572
	% of Glider mass	49.5	49.5	55.0	57.7	54.7	58.2	61.0	57.7	60.1	60.4	61.3	62.1	59.5
	% of Powertrain mass	50.5	50.5	45.0	42.3	45.3	41.8	39.0	42.3	39.9	39.6	38.7	37.9	40.5
BEV	Vehicle Mass	3081	3081	2875	2674	2990	2738	2298	2903	2357	1840	2829	2237	1719
	% of Glider mass	49.0	49.0	50.1	51.1	50.5	50.8	54.8	51.8	54.2	55.0	53.1	56.2	54.4
	% of Powertrain mass	51.0	51.0	49.9	48.9	49.5	49.2	45.2	48.2	45.8	45.0	46.9	43.8	45.6

Percentage of vehicle curbs weight reduction based on the respective 2010 reference case

		Pickup												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Conv	Vehicle Mass	0.00%	0.00%	-3.68%	-7.45%	-0.05%	-6.32%	-13.24%	-0.54%	-12.25%	-25.93%	-0.49%	-13.28%	-29.95%
CI Conv	Vehicle Mass	0.00%	0.00%	-3.46%	-7.07%	0.05%	-5.87%	-12.51%	-0.43%	-11.60%	-24.69%	-0.43%	-12.56%	-28.49%
H2 Conv	Vehicle Mass	0.00%	0.00%	-5.73%	-10.27%	-0.69%	-9.03%	-16.68%	-1.63%	-15.20%	-29.96%	-3.50%	-16.63%	-33.51%
E85 Conv	Vehicle Mass	0.00%	0.00%	-3.73%	-7.50%	-0.05%	-6.33%	-13.19%	-0.54%	-12.21%	-25.94%	-0.49%	-13.24%	-29.87%
SI Split HEV	Vehicle Mass	0.00%	0.00%	-5.00%	-9.83%	-1.56%	-7.59%	-16.17%	-2.14%	-14.43%	-29.66%	-2.72%	-16.17%	-33.59%
SI Split HEV PHEV10	Vehicle Mass	0.00%	0.00%	-5.03%	-9.92%	-1.72%	-8.29%	-17.20%	-2.95%	-15.43%	-30.25%	-3.70%	-16.84%	-34.08%
SI Split HEV PHEV20	Vehicle Mass	0.00%	0.00%	-5.00%	-10.01%	-1.68%	-8.41%	-17.39%	-3.06%	-15.70%	-30.80%	-3.84%	-17.43%	-34.56%
SI Series HEV PHEV30	Vehicle Mass	0.00%	0.00%	-6.00%	-11.70%	-2.79%	-9.82%	-20.15%	-4.89%	-18.04%	-33.41%	-6.12%	-20.30%	-37.19%
SI Series HEV PHEV40	Vehicle Mass	0.00%	0.00%	-6.16%	-11.95%	-2.93%	-9.98%	-20.63%	-5.12%	-18.55%	-34.10%	-6.49%	-21.08%	-37.77%
CI Split HEV	Vehicle Mass	0.00%	0.00%	-5.06%	-9.86%	-1.76%	-7.50%	-15.95%	-2.40%	-14.28%	-28.82%	-3.13%	-15.74%	-32.50%
CI Split HEV PHEV10	Vehicle Mass	0.00%	0.00%	-4.86%	-9.55%	-1.69%	-7.98%	-16.43%	-3.00%	-14.83%	-29.02%	-3.72%	-16.22%	-32.74%
CI Split HEV PHEV20	Vehicle Mass	0.00%	0.00%	-4.88%	-9.64%	-1.74%	-8.11%	-16.80%	-3.02%	-15.10%	-29.58%	-3.76%	-16.80%	-33.31%
CI Series HEV PHEV30	Vehicle Mass	0.00%	0.00%	-5.73%	-11.28%	-2.59%	-9.39%	-19.30%	-4.62%	-17.30%	-32.24%	-5.95%	-19.56%	-35.71%
CI Series HEV PHEV40	Vehicle Mass	0.00%	0.00%	-5.92%	-11.52%	-2.84%	-9.73%	-19.96%	-4.92%	-17.91%	-32.95%	-6.28%	-20.35%	-36.40%
H2 Split HEV	Vehicle Mass	0.00%	0.00%	-6.93%	-12.50%	-2.30%	-10.29%	-19.52%	-3.27%	-17.40%	-33.35%	-5.74%	-19.21%	-36.75%
H2 Split HEV PHEV10	Vehicle Mass	0.00%	0.00%	-7.05%	-12.70%	-2.39%	-10.96%	-20.49%	-4.09%	-18.31%	-33.97%	-6.66%	-20.05%	-37.36%
H2 Split HEV PHEV20	Vehicle Mass	0.00%	0.00%	-7.06%	-12.85%	-2.51%	-11.02%	-20.77%	-4.21%	-18.55%	-34.43%	-6.81%	-20.68%	-37.83%
H2 Series HEV PHEV30	Vehicle Mass	0.00%	0.00%	-7.71%	-14.01%	-3.38%	-12.12%	-22.90%	-5.77%	-20.39%	-36.57%	-8.66%	-23.02%	-39.80%
H2 Series HEV PHEV40	Vehicle Mass	0.00%	0.00%	-7.85%	-14.23%	-3.54%	-12.31%	-23.41%	-6.04%	-20.97%	-37.15%	-9.03%	-23.70%	-40.40%
E85 Split HEV	Vehicle Mass	0.00%	0.00%	-5.08%	-9.88%	-1.69%	-7.70%	-16.30%	-2.27%	-14.60%	-29.74%	-2.89%	-16.16%	-33.57%
E85 Split HEV PHEV10	Vehicle Mass	0.00%	0.00%	-5.15%	-10.03%	-1.76%	-8.31%	-17.28%	-3.03%	-15.52%	-30.30%	-3.78%	-16.89%	-34.08%
E85 Split HEV PHEV20	Vehicle Mass	0.00%	0.00%	-5.08%	-10.07%	-1.76%	-8.39%	-17.43%	-3.06%	-15.71%	-30.78%	-3.83%	-17.48%	-34.57%
E85 Series HEV PHEV30	Vehicle Mass	0.00%	0.00%	-5.99%	-11.65%	-2.79%	-9.74%	-20.12%	-4.73%	-17.95%	-33.37%	-6.11%	-20.27%	-37.11%
E85 Series HEV PHEV40	Vehicle Mass	0.00%	0.00%	-6.12%	-11.93%	-2.93%	-9.97%	-20.61%	-5.04%	-18.53%	-34.06%	-6.49%	-21.02%	-37.73%
FC HEV	Vehicle Mass	0.00%	0.00%	-17.23%	-26.48%	-12.58%	-25.47%	-35.50%	-18.72%	-33.77%	-47.98%	-23.84%	-36.42%	-51.14%
FC HEV PHEV10	Vehicle Mass	0.00%	0.00%	-15.21%	-23.75%	-10.36%	-23.00%	-33.07%	-15.82%	-31.25%	-45.96%	-20.75%	-33.79%	-49.18%
FC HEV PHEV20	Vehicle Mass	0.00%	0.00%	-15.35%	-23.93%	-10.59%	-23.20%	-33.55%	-16.15%	-31.71%	-46.44%	-21.15%	-34.49%	-49.70%
FC HEV PHEV30	Vehicle Mass	0.00%	0.00%	-13.82%	-21.81%	-8.97%	-21.03%	-31.66%	-13.99%	-29.63%	-44.40%	-19.03%	-32.68%	-47.75%
FC HEV PHEV40	Vehicle Mass	0.00%	0.00%	-14.05%	-22.23%	-9.36%	-21.50%	-32.27%	-14.45%	-30.30%	-45.04%	-19.50%	-33.52%	-48.39%
EV	Vehicle Mass	0.00%	0.00%	-6.69%	-13.21%	-2.95%	-11.13%	-25.41%	-5.78%	23.50%	-40.28%	-8.18%	-27.39%	-44.21%

Appendix B

Vehicle Energy Consumption Tables

Compact Class

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Fuel economy

			Compact												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Conv	Unadjusted	UDDS	30.1	30.1	32.4	34.0	31.4	33.8	41.4	32.3	34.9	49.3	32.9	36.1	50.0
		HWFET	41.5	41.5	45.2	50.6	43.6	49.7	61.6	47.3	51.6	71.8	48.0	52.9	74.8
		Combined	34.3	34.3	37.2	39.9	35.9	39.5	48.6	37.7	40.8	57.4	38.4	42.1	58.8
	Adjusted	UDDS	23.1	23.1	24.8	25.9	24.1	25.7	31.1	24.7	26.5	36.4	25.2	27.4	36.9
		HWFET	29.3	29.3	31.9	35.6	30.8	35.1	43.3	33.4	36.3	50.4	33.9	37.2	52.4
		Combined	25.5	25.5	27.6	29.5	26.7	29.2	35.6	28.0	30.2	41.6	28.4	31.1	42.6
CI Conv	Unadjusted	UDDS	35.2	35.2	36.9	39.8	35.6	38.9	43.3	37.2	42.2	50.1	38.8	44.2	52.1
		HWFET	47.9	47.9	50.8	55.7	48.7	54.1	60.6	51.5	58.7	69.5	53.7	61.5	74.0
		Combined	39.9	39.9	42.1	45.7	40.5	44.5	49.6	42.5	48.3	57.3	44.3	50.6	60.1
	Adjusted	UDDS	26.7	26.7	27.9	30.0	27.1	29.3	32.4	28.2	31.6	37.0	29.3	33.0	38.3
		HWFET	33.8	33.8	35.8	39.2	34.4	38.1	42.6	36.3	41.3	48.8	37.8	43.3	51.9
		Combined	29.5	29.5	31.0	33.5	29.9	32.7	36.3	31.3	35.4	41.5	32.6	37.0	43.4
H2 Conv	Unadjusted	UDDS	25.6	25.6	30.3	34.2	28.9	33.5	37.8	31.3	36.6	45.2	33.8	39.7	48.3
		HWFET	37.7	37.7	44.8	54.6	42.6	53.1	60.2	49.6	58.2	70.5	53.3	62.6	77.2
		Combined	29.9	29.9	35.5	41.1	33.8	40.2	45.4	37.5	43.9	53.9	40.5	47.5	58.1
	Adjusted	UDDS	19.8	19.8	23.3	26.0	22.3	25.5	28.6	23.9	27.8	33.7	25.8	29.9	35.8
		HWFET	26.6	26.6	31.6	38.4	30.1	37.4	42.4	35.0	40.9	49.5	37.6	44.0	54.1
		Combined	22.4	22.4	26.4	30.5	25.2	29.8	33.5	27.9	32.5	39.3	30.0	35.0	42.2
E85 Conv	Unadjusted	UDDS	29.5	29.5	29.6	31.2	28.6	30.6	40.4	29.2	31.9	47.5	30.2	33.4	48.8
		HWFET	39.5	39.5	40.1	43.4	38.6	42.4	56.3	40.3	44.3	66.5	42.4	46.9	69.9
		Combined	33.3	33.3	33.5	35.7	32.4	35.0	46.3	33.3	36.5	54.5	34.7	38.3	56.5
	Adjusted	UDDS	22.7	22.7	22.8	23.9	22.0	23.5	30.4	22.4	24.4	35.3	23.2	25.4	36.2
		HWFET	27.9	27.9	28.3	30.7	27.3	29.9	39.7	28.5	31.2	46.7	29.9	33.1	49.1
		Combined	24.8	24.8	25.0	26.5	24.1	26.0	34.0	24.8	27.0	39.6	25.8	28.4	41.0
SI Split HEV	Unadjusted	UDDS	60.0	60.0	64.2	69.7	60.3	68.9	84.8	65.1	76.1	105.9	67.4	79.3	111.5
		HWFET	52.6	52.6	57.0	62.1	53.4	60.2	73.6	56.8	65.9	89.7	59.1	69.0	97.2
		Combined	56.4	56.4	60.8	66.1	57.0	64.6	79.4	61.1	71.1	98.0	63.4	74.3	104.6
	Adjusted	UDDS	43.5	43.5	46.2	49.7	43.7	49.1	58.8	46.8	53.6	70.8	48.2	55.6	73.9
		HWFET	37.0	37.0	40.1	43.7	37.6	42.3	51.6	40.0	46.3	62.7	41.6	48.4	67.8
		Combined	40.3	40.3	43.3	46.8	40.7	45.8	55.3	43.4	50.0	66.9	45.0	52.1	71.0
SI Split HEV PHEV10	Unadjusted	UDDS	75.1	75.1	80.3	86.8	75.8	84.4	102.9	79.4	92.2	127.8	82.4	95.7	134.8
		HWFET	72.2	72.2	77.9	84.5	73.9	81.4	99.1	76.8	88.8	119.1	80.4	92.5	130.5
		Combined	73.8	73.8	79.2	85.7	74.9	83.0	101.2	78.2	90.7	123.7	81.5	94.3	132.8
	Adjusted	UDDS	53.0	53.0	56.1	60.0	53.4	58.6	69.2	55.6	63.1	82.3	57.4	65.1	85.9
		HWFET	50.7	50.7	54.6	59.1	51.9	57.0	69.1	53.8	62.1	82.7	56.3	64.6	90.4
		Combined	51.9	51.9	55.4	59.6	52.7	57.8	69.1	54.8	62.7	82.5	56.9	64.9	87.9

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			Compact												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Split HEV PHEV20	Unadjusted	UDDS	108.2	108.2	115.5	104.8	108.9	101.6	149.1	114.5	134.1	156.0	119.0	115.7	164.2
		HWFET	71.8	71.8	80.4	87.3	73.4	84.3	102.4	76.6	91.8	123.7	82.7	96.0	134.2
		Combined	88.1	88.1	96.5	96.1	89.4	93.0	123.7	93.6	111.1	139.6	99.4	105.9	149.2
	Adjusted	UDDS	72.0	72.0	76.0	70.2	72.4	68.4	92.9	75.4	85.5	96.1	77.8	76.1	99.9
		HWFET	50.4	50.4	56.3	61.0	51.5	59.0	71.4	53.7	64.1	85.9	57.9	67.0	92.9
		Combined	60.4	60.4	65.7	65.8	61.2	63.8	81.8	63.8	74.4	91.2	67.4	71.7	96.6
SI Series HEV PHEV30	Unadjusted	UDDS	99.5	99.5	108.1	118.8	101.5	114.9	146.4	108.7	129.2	183.4	113.3	133.9	192.9
		HWFET	96.2	96.2	105.1	115.9	98.8	111.6	139.5	104.9	124.8	172.0	110.3	131.1	189.3
		Combined	98.0	98.0	106.7	117.4	100.3	113.4	143.2	106.9	127.2	178.1	111.9	132.6	191.3
	Adjusted	UDDS	67.2	67.2	72.0	77.7	68.4	75.7	91.6	72.3	83.1	108.3	74.8	85.4	112.3
		HWFET	67.1	67.1	73.2	80.5	68.9	77.7	96.5	73.1	86.6	118.2	76.8	90.8	129.6
		Combined	67.2	67.2	72.5	78.9	68.6	76.6	93.7	72.7	84.6	112.5	75.7	87.8	119.5
SI Series HEV PHEV40	Unadjusted	UDDS	113.7	113.7	123.8	136.8	115.9	132.1	167.5	124.5	150.1	217.9	130.5	156.8	230.0
		HWFET	94.8	94.8	128.8	142.1	120.7	136.9	171.7	128.8	153.5	171.3	135.4	161.6	231.9
		Combined	104.3	104.3	126.0	139.1	118.0	134.2	169.3	126.4	151.6	194.1	132.7	158.9	230.9
	Adjusted	UDDS	75.0	75.0	80.3	86.9	76.2	84.6	101.3	80.7	93.3	122.3	83.7	96.5	126.9
		HWFET	66.2	66.2	89.3	98.2	83.8	94.7	117.9	89.3	105.8	117.6	93.7	111.2	157.3
		Combined	70.8	70.8	84.1	91.6	79.5	88.9	108.2	84.3	98.5	120.2	87.9	102.6	139.0
CI Split HEV	Unadjusted	UDDS	64.2	64.2	67.6	74.4	63.9	73.3	84.5	69.5	82.1	102.4	72.7	86.4	107.3
		HWFET	55.1	55.1	59.2	65.1	56.1	63.1	72.3	59.9	70.2	86.2	63.0	74.4	92.9
		Combined	59.8	59.8	63.6	69.9	60.2	68.4	78.6	64.8	76.2	94.4	68.0	80.5	100.3
	Adjusted	UDDS	46.2	46.2	48.3	52.6	46.0	51.9	58.7	49.6	57.2	68.8	51.5	59.7	71.6
		HWFET	38.8	38.8	41.7	45.8	39.5	44.4	50.8	42.1	49.2	60.3	44.3	52.2	64.9
		Combined	42.6	42.6	45.1	49.3	42.9	48.2	54.8	45.9	53.3	64.7	48.0	56.1	68.4
CI Split HEV PHEV10	Unadjusted	UDDS	75.7	75.7	80.1	87.9	75.4	85.2	97.8	80.8	95.2	118.6	84.8	99.3	124.8
		HWFET	72.0	72.0	77.7	85.6	72.4	82.8	94.4	78.0	91.8	111.2	82.3	96.6	121.9
		Combined	74.0	74.0	79.0	86.8	74.0	84.1	96.2	79.5	93.6	115.2	83.7	98.1	123.5
	Adjusted	UDDS	53.3	53.3	56.0	60.6	53.2	59.0	66.3	56.4	64.8	77.6	58.8	67.1	80.8
		HWFET	50.5	50.5	54.5	59.9	50.8	58.0	65.9	54.7	64.1	77.4	57.6	67.4	84.6
		Combined	52.0	52.0	55.3	60.3	52.1	58.6	66.1	55.6	64.5	77.5	58.3	67.3	82.5
CI Split HEV PHEV20	Unadjusted	UDDS	107.9	107.9	115.1	126.7	107.4	122.8	142.3	116.3	137.7	143.6	122.2	144.7	152.1
		HWFET	87.3	87.3	94.6	87.0	87.7	101.1	97.5	93.8	94.1	114.8	101.1	99.5	124.2
		Combined	97.5	97.5	104.9	105.1	97.6	112.0	117.9	104.9	113.9	129.0	111.7	120.1	138.1
	Adjusted	UDDS	71.9	71.9	75.8	81.8	71.6	79.8	89.6	76.4	87.3	90.2	79.5	90.7	94.2
		HWFET	61.0	61.0	66.1	60.9	61.3	70.5	68.1	65.5	65.7	79.8	70.5	69.4	86.2
		Combined	66.6	66.6	71.1	70.8	66.6	75.3	78.4	71.1	76.0	85.2	75.2	79.7	90.4

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			Compact												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
CI Series HEV PHEV30	Unadjusted	UDDS	100.3	100.3	108.0	120.0	100.8	116.2	142.4	110.4	136.4	171.3	116.2	143.0	180.3
		HWFET	97.5	97.5	105.5	118.1	98.8	113.3	134.2	107.2	129.4	161.5	113.8	137.4	176.2
		Combined	99.0	99.0	106.8	119.1	99.9	114.9	138.6	108.9	133.2	166.8	115.1	140.4	178.5
	Adjusted	UDDS	67.7	67.7	71.9	78.3	68.0	76.4	89.6	73.2	86.7	103.0	76.4	89.9	107.0
		HWFET	68.1	68.1	73.5	82.1	68.9	78.8	92.9	74.6	89.7	111.2	79.1	95.0	120.9
		Combined	67.9	67.9	72.6	80.0	68.4	77.4	91.1	73.9	88.0	106.6	77.6	92.1	112.8
CI Series HEV PHEV40	Unadjusted	UDDS	114.7	114.7	123.5	138.2	115.1	133.8	159.2	126.7	158.0	202.6	134.0	165.9	214.2
		HWFET	119.5	119.5	129.3	144.3	120.5	139.0	165.1	131.5	159.2	200.3	139.6	169.2	217.8
		Combined	116.8	116.8	126.1	140.9	117.5	136.1	161.8	128.8	158.5	201.5	136.4	167.4	215.8
	Adjusted	UDDS	75.5	75.5	80.2	87.6	75.8	85.4	97.6	81.8	97.0	116.3	85.5	100.6	120.9
		HWFET	83.0	83.0	89.6	99.7	83.7	96.1	113.5	91.1	109.6	136.7	96.5	116.3	148.1
		Combined	78.7	78.7	84.2	92.6	79.2	89.9	104.2	85.7	102.3	124.7	90.1	107.1	131.8
H2 Split HEV	Unadjusted	UDDS	57.8	57.8	68.8	80.1	63.9	78.8	93.7	72.9	90.4	115.3	78.9	97.4	125.2
		HWFET	50.3	50.3	60.3	70.1	56.2	67.7	80.1	62.9	77.2	96.0	68.5	83.2	107.5
		Combined	54.1	54.1	64.7	75.3	60.2	73.4	87.1	68.1	83.9	105.7	73.8	90.5	116.5
	Adjusted	UDDS	42.1	42.1	49.1	56.0	46.0	55.2	64.0	51.6	62.1	75.8	55.3	66.0	81.0
		HWFET	35.4	35.4	42.4	49.2	39.6	47.6	56.1	44.3	54.1	67.0	48.1	58.3	74.8
		Combined	38.8	38.8	45.8	52.7	42.9	51.5	60.2	48.0	58.2	71.6	51.8	62.3	78.1
H2 Split HEV PHEV10	Unadjusted	UDDS	72.1	72.1	85.6	99.1	79.6	96.0	113.4	88.9	108.7	138.2	97.2	116.2	151.2
		HWFET	69.8	69.8	83.1	95.8	78.1	92.5	107.9	86.5	103.8	127.3	94.1	111.9	144.5
		Combined	71.0	71.0	84.5	97.6	78.9	94.4	110.9	87.8	106.4	133.1	95.8	114.2	148.1
	Adjusted	UDDS	51.2	51.2	59.3	67.0	55.7	65.3	74.9	61.2	72.3	87.6	65.9	76.3	93.8
		HWFET	49.0	49.0	58.2	66.8	54.7	64.6	75.1	60.5	72.3	88.3	65.7	77.8	99.8
		Combined	50.2	50.2	58.8	66.9	55.3	65.0	75.0	60.9	72.3	87.9	65.8	77.0	96.4
H2 Split HEV PHEV20	Unadjusted	UDDS	103.6	103.6	123.3	143.8	114.6	138.7	136.7	128.2	131.6	168.8	139.7	140.8	184.2
		HWFET	83.9	83.9	82.6	99.1	95.0	95.3	111.9	85.8	107.7	132.6	96.9	116.1	149.3
		Combined	93.7	93.7	100.9	119.5	104.9	115.1	124.3	104.9	119.6	150.4	116.5	128.5	166.7
	Adjusted	UDDS	69.6	69.6	80.1	90.3	75.5	87.8	86.8	82.6	84.3	101.9	88.3	88.8	108.7
		HWFET	58.7	58.7	57.8	69.1	66.4	66.6	77.8	60.0	75.0	91.9	67.6	80.7	103.1
		Combined	64.2	64.2	68.2	79.4	71.1	76.8	82.5	70.6	79.8	97.1	77.6	85.0	106.1
H2 Series HEV PHEV30	Unadjusted	UDDS	94.5	94.5	114.1	136.1	105.8	129.0	159.3	120.2	153.6	187.8	131.3	161.3	202.0
		HWFET	94.0	94.0	113.3	132.3	105.5	127.6	153.4	118.9	147.2	143.0	130.3	159.4	205.6
		Combined	94.2	94.2	113.7	134.3	105.7	128.4	156.6	119.6	150.7	164.6	130.9	160.4	203.6
	Adjusted	UDDS	64.4	64.4	75.2	86.5	70.8	83.0	97.6	78.5	95.0	110.2	84.1	98.5	116.0
		HWFET	65.6	65.6	78.8	91.6	73.5	88.5	105.7	82.6	101.7	98.8	90.3	109.7	140.2
		Combined	64.9	64.9	76.8	88.7	72.0	85.4	101.1	80.3	97.9	104.7	86.8	103.3	125.8

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			Compact												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
H2 Series HEV PHEV40	Unadjusted	UDDS	108.2	108.2	131.2	153.9	121.7	148.6	185.4	137.8	175.3	223.9	151.8	189.6	241.9
		HWFET	114.8	114.8	138.5	162.6	129.2	156.4	188.8	145.6	181.1	182.6	160.3	196.6	255.2
		Combined	111.1	111.1	134.3	157.7	124.9	152.0	186.9	141.2	177.8	203.2	155.5	192.7	247.7
	Adjusted	UDDS	72.1	72.1	84.1	95.1	79.2	92.6	109.1	87.3	104.8	124.6	94.1	110.9	131.3
		HWFET	79.8	79.8	95.8	111.9	89.5	107.8	129.2	100.5	124.1	125.2	110.4	134.3	172.2
		Combined	75.4	75.4	89.0	102.0	83.5	98.9	117.3	92.8	112.7	124.9	100.8	120.4	147.0
E85 Split HEV	Unadjusted	UDDS	55.9	55.9	59.8	64.7	56.3	63.8	83.4	60.6	71.0	99.6	63.0	74.2	105.3
		HWFET	48.6	48.6	52.8	57.3	49.7	55.6	72.2	52.6	61.4	84.3	54.9	64.3	91.4
		Combined	52.4	52.4	56.4	61.1	53.1	59.8	78.0	56.7	66.3	92.1	59.1	69.4	98.6
	Adjusted	UDDS	40.8	40.8	43.4	46.5	41.1	46.0	58.0	43.9	50.5	67.3	45.4	52.4	70.5
		HWFET	34.3	34.3	37.2	40.4	35.0	39.1	50.6	37.1	43.2	59.0	38.7	45.2	63.9
		Combined	37.6	37.6	40.4	43.5	38.1	42.6	54.4	40.5	46.9	63.3	42.1	48.9	67.3
E85 Split HEV PHEV10	Unadjusted	UDDS	70.3	70.3	75.2	81.4	71.0	79.0	101.6	74.6	86.5	120.6	77.3	89.7	127.3
		HWFET	67.2	67.2	72.5	78.7	68.8	76.0	97.4	71.6	82.6	112.0	74.9	86.5	122.8
		Combined	68.9	68.9	74.0	80.2	70.0	77.6	99.7	73.2	84.7	116.5	76.2	88.2	125.2
	Adjusted	UDDS	50.0	50.0	53.1	56.8	50.4	55.3	68.4	52.7	59.8	78.6	54.3	61.6	82.1
		HWFET	47.2	47.2	50.9	55.1	48.3	53.3	68.0	50.2	57.8	77.9	52.5	60.5	85.2
		Combined	48.7	48.7	52.1	56.0	49.5	54.4	68.2	51.5	58.9	78.3	53.5	61.1	83.5
E85 Split HEV PHEV20	Unadjusted	UDDS	101.3	101.3	108.3	98.4	102.1	95.2	147.7	107.3	125.8	147.4	111.7	108.6	155.2
		HWFET	66.9	66.9	74.8	81.4	68.4	78.4	100.5	71.4	85.7	116.5	77.3	89.5	126.6
		Combined	82.3	82.3	90.1	89.9	83.5	86.8	121.9	87.5	103.9	131.7	93.0	99.1	140.9
	Adjusted	UDDS	68.3	68.3	72.1	66.6	68.7	64.8	92.2	71.6	81.4	92.0	73.9	72.3	95.7
		HWFET	47.0	47.0	52.4	57.0	48.0	54.9	70.1	50.1	59.9	81.0	54.2	62.5	87.8
		Combined	56.7	56.7	61.7	61.9	57.5	60.0	80.7	60.0	70.1	86.7	63.5	67.5	92.0
E85 Series HEV PHEV30	Unadjusted	UDDS	93.6	93.6	101.8	111.9	95.5	108.3	143.6	101.9	123.6	174.5	106.8	126.5	183.5
		HWFET	90.3	90.3	98.8	109.0	92.6	105.0	138.4	98.7	117.4	163.1	103.8	123.4	177.8
		Combined	92.1	92.1	100.4	110.6	94.2	106.8	141.2	100.4	120.7	169.1	105.4	125.1	180.9
	Adjusted	UDDS	63.9	63.9	68.5	74.1	65.0	72.1	90.2	68.6	80.2	104.4	71.3	81.7	108.3
		HWFET	63.1	63.1	68.9	75.8	64.7	73.2	95.7	68.8	81.6	112.2	72.3	85.7	122.0
		Combined	63.6	63.6	68.7	74.9	64.8	72.6	92.6	68.7	80.8	107.8	71.8	83.4	114.1
E85 Series HEV PHEV40	Unadjusted	UDDS	106.9	106.9	116.8	128.9	109.1	124.5	166.4	117.5	141.8	207.0	122.4	147.1	218.5
		HWFET	89.0	89.0	121.0	133.7	113.7	128.4	170.2	121.0	144.4	162.4	127.4	152.1	220.0
		Combined	98.0	98.0	118.6	131.0	111.1	126.2	168.1	119.1	143.0	184.2	124.6	149.3	219.2
	Adjusted	UDDS	71.4	71.4	76.6	82.9	72.6	80.7	100.8	77.0	89.3	118.0	79.6	91.9	122.5
		HWFET	62.2	62.2	84.0	92.6	79.1	89.0	117.0	84.0	99.8	111.7	88.3	104.9	149.6
		Combined	66.9	66.9	79.8	87.0	75.3	84.2	107.5	80.0	93.7	115.1	83.3	97.3	133.4

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			Compact												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
FC HEV	Unadjusted	UDDS	64.5	64.5	76.8	91.1	75.4	89.5	104.7	83.2	101.2	124.7	88.2	105.0	131.8
		HWFET	67.8	67.8	79.5	93.0	78.3	89.9	102.7	83.8	99.0	118.3	88.5	103.1	129.0
		Combined	66.0	66.0	78.0	92.0	76.7	89.7	103.8	83.5	100.2	121.7	88.3	104.1	130.5
	Adjusted	UDDS	46.4	46.4	54.0	62.5	53.1	61.6	70.2	57.9	68.2	80.8	60.8	70.3	84.4
		HWFET	47.6	47.6	55.7	65.0	54.9	62.9	71.6	58.7	69.1	82.2	61.9	71.8	89.4
		Combined	46.9	46.9	54.7	63.6	53.9	62.1	70.8	58.2	68.6	81.4	61.3	71.0	86.6
FC PHEV10	Unadjusted	UDDS	81.2	81.2	94.8	111.8	93.2	108.0	125.1	100.3	120.7	147.6	105.8	124.6	155.6
		HWFET	90.8	90.8	104.1	121.6	102.5	116.7	133.1	108.7	127.7	151.6	114.4	132.6	166.6
		Combined	85.2	85.2	98.8	116.0	97.1	111.8	128.6	103.9	123.8	149.3	109.5	128.1	160.4
	Adjusted	UDDS	56.7	56.7	64.6	74.0	63.7	72.0	81.0	67.7	78.7	92.1	70.8	80.7	95.9
		HWFET	63.5	63.5	72.5	84.4	71.5	81.1	92.2	75.7	88.6	104.5	79.6	91.9	114.6
		Combined	59.5	59.5	68.0	78.3	66.9	75.8	85.7	71.1	82.9	97.3	74.5	85.4	103.5
FC PHEV20	Unadjusted	UDDS	97.9	97.9	114.4	134.6	111.8	130.0	150.9	120.8	145.9	179.0	127.6	150.7	188.9
		HWFET	91.6	91.6	105.7	123.4	104.0	118.5	135.1	110.4	130.0	155.4	116.4	135.5	169.7
		Combined	95.0	95.0	110.3	129.3	108.1	124.6	143.3	115.8	138.3	167.5	122.3	143.4	179.7
	Adjusted	UDDS	66.4	66.4	75.4	85.8	74.0	83.5	93.7	78.7	91.3	106.4	82.3	93.6	110.6
		HWFET	64.0	64.0	73.6	85.6	72.5	82.3	93.5	76.8	90.1	107.1	80.9	93.8	116.6
		Combined	65.3	65.3	74.6	85.7	73.3	83.0	93.6	77.9	90.7	106.7	81.6	93.7	113.2
FC PHEV30	Unadjusted	UDDS	138.4	138.4	160.9	186.6	157.8	181.6	212.3	168.8	204.6	250.7	178.8	213.2	264.9
		HWFET	115.1	115.1	132.5	152.9	130.3	147.6	169.4	137.5	162.7	194.3	145.4	170.1	212.1
		Combined	126.8	126.8	146.8	169.8	144.1	164.5	190.6	153.1	183.3	221.7	162.0	191.4	238.2
	Adjusted	UDDS	87.7	87.7	98.4	109.7	96.9	107.5	120.1	101.9	117.1	134.4	106.3	120.5	139.3
		HWFET	80.0	80.0	91.8	105.4	90.3	101.9	116.4	95.1	112.0	132.8	100.4	116.9	144.5
		Combined	84.0	84.0	95.3	107.7	93.8	104.9	118.4	98.7	114.7	133.7	103.6	118.8	141.6
FC PHEV40	Unadjusted	UDDS	159.7	159.7	185.9	215.9	181.9	210.1	246.4	195.3	237.5	291.7	207.1	247.8	308.2
		HWFET	145.8	145.8	168.1	194.0	165.0	187.5	215.4	174.5	207.0	247.7	184.7	216.6	270.4
		Combined	153.1	153.1	177.4	205.5	173.9	199.3	231.4	185.4	222.7	270.1	196.4	232.7	289.9
	Adjusted	UDDS	97.8	97.8	109.4	121.5	107.7	119.3	132.9	113.3	129.7	148.1	118.1	133.4	153.2
		HWFET	100.7	100.7	115.5	132.7	113.5	128.3	146.6	119.8	141.1	167.5	126.5	147.4	181.9
		Combined	99.1	99.1	112.1	126.3	110.2	123.2	138.8	116.1	134.6	156.2	121.7	139.3	164.9

PHEV details

				Compact												
				2010	2010			2015			2030			2045		
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Split HEV PHEV10	UDDS	CD	Wh/mile	178.0	178.0	172.0	160.3	179.4	165.7	149.2	172.5	154.3	142.0	171.3	150.0	134.4
			Distance	11.4	11.4	11.3	11.4	11.4	11.3	11.4	11.6	11.4	10.2	11.4	11.3	10.2
			MPGGE Unadjusted	1614.7	1614.7	2205.9	2373.8	1667.1	2321.3	2885.5	1730.2	2590.4	N/A	2247.8	2723.9	N/A
			MPGGE Adjusted	302.3	302.3	322.1	326.2	304.5	325.0	336.3	307.0	330.9	N/A	323.2	333.4	N/A
		CS	MPGGE Unadjusted	62.8	62.8	67.1	72.5	63.4	70.5	86.0	66.4	77.0	106.0	68.8	79.9	111.9
			MPGGE Adjusted	45.3	45.3	48.0	51.4	45.7	50.1	59.5	47.6	54.1	70.9	49.1	55.9	74.1
		CD+CS	Wh/mile	37.1	37.1	35.8	33.4	37.4	34.5	31.1	35.9	32.2	29.6	35.7	31.2	28.0
			MPGGE Unadjusted	75.1	75.1	80.3	86.8	75.8	84.4	102.9	79.4	92.2	127.8	82.4	95.7	134.8
			MPGGE Adjusted	53.0	53.0	56.1	60.0	53.4	58.6	69.2	55.6	63.1	82.3	57.4	65.1	85.9
	HWFET	CD	Wh/mile	198.7	198.7	188.9	176.4	199.5	182.1	165.0	193.4	170.7	143.5	188.6	164.3	135.7
			Distance	9.9	9.9	9.1	9.1	10.5	9.1	9.0	9.1	9.0	8.9	9.1	8.9	9.0
			MPGGE Unadjusted	456.3	456.3	505.3	559.3	505.9	519.5	678.3	489.2	588.4	724.9	536.6	601.7	1004.2
			MPGGE Adjusted	295.6	295.6	324.2	355.0	324.5	332.4	420.8	314.8	371.4	445.8	342.2	378.8	586.4
		CS	MPGGE Unadjusted	57.1	57.1	61.5	66.6	58.2	64.3	78.0	60.6	70.1	94.2	63.4	73.0	102.4
			MPGGE Adjusted	40.2	40.2	43.2	46.8	41.0	45.2	54.7	42.7	49.2	65.8	44.5	51.2	71.4
		CD+CS	Wh/mile	58.4	58.4	55.6	51.9	58.7	53.6	48.5	56.9	50.2	42.2	55.5	48.3	39.9
			MPGGE Unadjusted	72.2	72.2	77.9	84.5	73.9	81.4	99.1	76.8	88.8	119.1	80.4	92.5	130.5
			MPGGE Adjusted	50.7	50.7	54.6	59.1	51.9	57.0	69.1	53.8	62.1	82.7	56.3	64.6	90.4
	Combined	CD	MPGGE Unadjusted	753.7	753.7	877.2	964.9	820.0	906.5	1171.0	807.9	1023.4	1589.5	923.1	1052.8	2190.4
			MPGGE Adjusted	299.2	299.2	323.0	338.6	313.2	328.3	369.7	310.5	348.0	412.9	331.4	352.4	458.8
		CS	MPGGE Unadjusted	60.1	60.1	64.4	69.7	61.0	67.5	82.2	63.7	73.7	100.4	66.2	76.7	107.4
			MPGGE Adjusted	42.8	42.8	45.7	49.2	43.4	47.8	57.2	45.2	51.8	68.5	46.9	53.7	72.8
		CD+CS	Wh/mile	46.7	46.7	44.7	41.7	47.0	43.1	38.9	45.4	40.3	35.3	44.6	38.9	33.4
			MPGGE Unadjusted	73.8	73.8	79.2	85.7	74.9	83.0	101.2	78.2	90.7	123.7	81.5	94.3	132.8
			MPGGE Adjusted	51.9	51.9	55.4	59.6	52.7	57.8	69.1	54.8	62.7	82.5	56.9	64.9	87.9

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				Compact													
				2010	2010			2015			2030			2045			
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high	
SI Split HEV PHEV20	UDDS	CD	Wh/mile	180.2	180.2	170.7	162.1	181.3	167.6	150.3	174.7	155.4	139.5	170.2	152.6	132.1	
			Distance	22.8	22.8	22.6	22.1	22.6	22.0	22.4	22.6	22.4	20.5	22.6	22.3	20.5	
			MPGGE Unadjusted	1570.4	1570.4	1654.3	2329.6	1563.5	2277.2	2638.7	1684.4	2342.3	N/A	1740.3	2665.7	N/A	
			MPGGE Adjusted	300.3	300.3	303.9	325.2	300.0	323.9	331.8	305.2	325.5	N/A	307.4	332.3	N/A	
		CS	MPGGE Unadjusted	62.4	62.4	66.7	72.3	62.9	70.1	85.6	66.0	77.0	106.1	68.7	79.8	111.7	
			MPGGE Adjusted	45.1	45.1	47.8	51.3	45.3	49.9	59.3	47.4	54.1	70.9	49.0	55.8	73.9	
		CD+CS	Wh/mile	95.0	95.0	89.9	61.6	95.5	63.7	79.5	92.0	82.2	53.1	89.6	58.1	50.3	
			MPGGE Unadjusted	108.2	108.2	115.5	104.8	108.9	101.6	149.1	114.5	134.1	156.0	119.0	115.7	164.2	
		MPGGE Adjusted	72.0	72.0	76.0	70.2	72.4	68.4	92.9	75.4	85.5	96.1	77.8	76.1	99.9		
		HWFET	CD	Wh/mile	203.0	203.0	217.2	202.2	201.9	209.9	187.8	195.5	195.1	167.6	215.6	187.9	153.6
				Distance	20.2	20.2	17.4	17.4	20.2	17.4	17.5	20.1	17.5	16.9	17.5	17.5	17.4
				MPGGE Unadjusted	505.6	505.6	N/A	N/A	519.9	N/A	N/A	538.8	N/A	N/A	N/A	N/A	N/A
	MPGGE Adjusted			324.4	324.4	N/A	N/A	332.6	N/A	N/A	343.4	N/A	N/A	N/A	N/A	N/A	
	CS		MPGGE Unadjusted	56.5	56.5	61.1	66.3	57.8	64.1	77.9	60.3	69.8	94.0	62.9	72.9	102.0	
			MPGGE Adjusted	39.8	39.8	43.0	46.6	40.6	45.0	54.6	42.4	49.0	65.7	44.2	51.2	71.1	
	CD+CS		Wh/mile	59.7	59.7	63.9	59.5	59.4	61.7	55.2	57.5	57.4	49.3	63.4	55.3	45.2	
			MPGGE Unadjusted	71.8	71.8	80.4	87.3	73.4	84.3	102.4	76.6	91.8	123.7	82.7	96.0	134.2	
	MPGGE Adjusted		50.4	50.4	56.3	61.0	51.5	59.0	71.4	53.7	64.1	85.9	57.9	67.0	92.9		
	Combined		CD	MPGGE Unadjusted	806.3	806.3	2947.0	4115.8	821.4	4025.9	4644.7	860.8	4137.7	N/A	3096.8	4690.6	N/A
				MPGGE Adjusted	310.7	310.7	510.8	543.6	313.8	541.6	553.8	321.3	544.1	640.8	516.1	554.6	640.8
			CS	MPGGE Unadjusted	59.6	59.6	64.0	69.5	60.4	67.2	81.9	63.3	73.5	100.3	65.9	76.5	107.1
		MPGGE Adjusted		42.5	42.5	45.5	49.1	43.1	47.6	57.0	45.0	51.7	68.4	46.7	53.6	72.6	
		CD+CS	Wh/mile	79.1	79.1	78.2	60.6	79.3	62.8	68.6	76.5	71.0	51.4	77.8	56.8	48.0	
			MPGGE Unadjusted	88.1	88.1	96.5	96.1	89.4	93.0	123.7	93.6	111.1	139.6	99.4	105.9	149.2	
		MPGGE Adjusted	60.4	60.4	65.7	65.8	61.2	63.8	81.8	63.8	74.4	91.2	67.4	71.7	96.6		

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				Compact													
				2010	2010			2015			2030			2045			
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high	
SI Series HEV PHEV30	UDDS	CD	Wh/mile	249.4	249.4	235.6	218.6	248.5	226.3	200.0	238.7	207.0	174.4	231.6	200.3	165.5	
			Distance	30.9	30.9	30.9	31.0	30.9	31.0	30.7	30.9	30.9	30.9	31.0	30.7	30.7	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	46.8	46.8	50.8	55.8	47.7	54.0	68.8	51.1	60.7	86.2	53.2	62.9	90.7	
			MPGGE Adjusted	34.8	34.8	37.5	40.8	35.4	39.6	49.1	37.7	44.0	59.6	39.1	45.4	62.2	
		CD+CS	Wh/mile	160.7	160.7	151.8	140.8	160.0	145.9	129.4	153.8	133.9	113.2	149.1	129.5	107.4	
			MPGGE Unadjusted	99.5	99.5	108.1	118.8	101.5	114.9	146.4	108.7	129.2	183.4	113.3	133.9	192.9	
			MPGGE Adjusted	67.2	67.2	72.0	77.7	68.4	75.7	91.6	72.3	83.1	108.3	74.8	85.4	112.3	
	HWFET	CD	Wh/mile	249.4	249.4	233.3	216.2	247.0	224.6	198.1	238.1	205.9	173.8	229.5	198.2	159.7	
			Distance	30.9	30.9	31.2	31.3	31.1	31.2	31.2	31.0	31.1	31.2	31.2	31.2	31.8	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	44.3	44.3	48.4	53.3	45.5	51.4	64.2	48.3	57.4	79.1	50.8	60.3	87.1	
			MPGGE Adjusted	31.2	31.2	34.1	37.5	32.1	36.2	45.1	34.0	40.4	55.4	35.8	42.4	60.9	
		CD+CS	Wh/mile	168.5	168.5	157.6	146.1	166.8	151.7	133.8	160.8	139.1	117.4	155.1	133.9	107.9	
			MPGGE Unadjusted	96.2	96.2	105.1	115.9	98.8	111.6	139.5	104.9	124.8	172.0	110.3	131.1	189.3	
			MPGGE Adjusted	67.1	67.1	73.2	80.5	68.9	77.7	96.5	73.1	86.6	118.2	76.8	90.8	129.6	
	Combined	CD	MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	45.6	45.6	49.7	54.7	46.7	52.8	66.7	49.8	59.2	82.9	52.1	61.7	89.0	
			MPGGE Adjusted	33.1	33.1	35.9	39.3	33.8	38.0	47.2	35.9	42.3	57.7	37.5	44.0	61.6	
		CD+CS	Wh/mile	164.2	164.2	154.4	143.2	163.1	148.5	131.4	157.0	136.2	115.1	151.8	131.5	107.6	
			MPGGE Unadjusted	98.0	98.0	106.7	117.4	100.3	113.4	143.2	106.9	127.2	178.1	111.9	132.6	191.3	
			MPGGE Adjusted	67.2	67.2	72.5	78.9	68.6	76.6	93.7	72.7	84.6	112.5	75.7	87.8	119.5	

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				Compact													
				2010	2010			2015			2030			2045			
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high	
SI Series HEV PHEV40	UDDS	CD	Wh/mile	254.6	254.6	240.1	223.1	253.7	230.9	204.0	243.2	211.5	176.1	236.6	203.7	167.3	
			Distance	40.5	40.5	40.6	40.5	40.8	40.6	40.7	40.8	40.8	40.5	40.8	40.5	40.6	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	45.5	45.5	49.5	54.7	46.4	52.9	67.0	49.8	60.0	87.2	52.2	62.7	92.0	
			MPGGE Adjusted	33.9	33.9	36.6	40.1	34.5	38.8	48.0	36.8	43.5	60.2	38.4	45.3	63.0	
		CD+CS	Wh/mile	187.2	187.2	176.6	164.0	186.4	169.9	151.1	178.8	156.6	130.6	174.1	150.6	124.1	
			MPGGE Unadjusted	113.7	113.7	123.8	136.8	115.9	132.1	167.5	124.5	150.1	217.9	130.5	156.8	230.0	
			MPGGE Adjusted	75.0	75.0	80.3	86.9	76.2	84.6	101.3	80.7	93.3	122.3	83.7	96.5	126.9	
		HWFET	CD	Wh/mile	252.2	252.2	235.4	218.2	249.5	226.7	200.0	240.1	208.0	177.2	231.4	199.4	162.1
				Distance	40.5	40.5	41.3	41.5	41.3	41.3	41.5	41.1	41.4	40.3	41.5	41.5	41.8
	MPGGE Unadjusted			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	MPGGE Adjusted			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	CS		MPGGE Unadjusted	43.6	43.6	47.7	52.6	44.7	50.7	63.5	47.7	56.8	78.8	50.1	59.8	85.8	
			MPGGE Adjusted	30.8	30.8	33.6	37.1	31.5	35.7	44.7	33.6	40.0	55.2	35.3	42.1	60.0	
	CD+CS		Wh/mile	170.4	170.4	185.1	171.6	196.2	178.3	157.6	188.8	163.8	120.3	182.0	156.9	128.2	
			MPGGE Unadjusted	94.8	94.8	128.8	142.1	120.7	136.9	171.7	128.8	153.5	171.3	135.4	161.6	231.9	
			MPGGE Adjusted	66.2	66.2	89.3	98.2	83.8	94.7	117.9	89.3	105.8	117.6	93.7	111.2	157.3	
	Combined		CD	MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	44.6	44.6	48.7	53.7	45.6	51.8	65.4	48.8	58.5	83.2	51.2	61.4	89.1	
			MPGGE Adjusted	32.4	32.4	35.2	38.7	33.1	37.4	46.4	35.3	41.9	57.8	37.0	43.8	61.6	
		CD+CS	Wh/mile	179.7	179.7	180.4	167.5	190.8	173.7	154.0	183.3	159.8	125.9	177.6	153.4	126.0	
MPGGE Unadjusted			104.3	104.3	126.0	139.1	118.0	134.2	169.3	126.4	151.6	194.1	132.7	158.9	230.9		
MPGGE Adjusted			70.8	70.8	84.1	91.6	79.5	88.9	108.2	84.3	98.5	120.2	87.9	102.6	139.0		

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				Compact													
				2010	2010			2015			2030			2045			
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high	
CI Split HEV PHEV10	UDDS	CD	Wh/mile	179.3	179.3	177.0	165.3	187.5	170.9	156.7	180.4	162.0	150.4	175.6	157.5	142.9	
			Distance	12.2	12.2	11.6	11.6	11.6	11.6	11.4	11.6	11.6	10.2	11.6	11.5	10.2	
			MPGGE Unadjusted	1111.5	1111.5	1675.1	1849.9	1560.6	1801.4	2642.8	1670.8	2578.1	65207.3	1754.1	2707.5	65207.3	
			MPGGE Adjusted	273.8	273.8	304.8	311.4	299.9	309.6	331.9	304.6	330.6	389.4	307.9	333.1	389.4	
		CS	MPGGE Unadjusted	63.6	63.6	67.1	73.5	63.1	71.3	81.6	67.6	79.5	98.4	71.0	82.9	103.6	
			MPGGE Adjusted	45.8	45.8	48.0	52.0	45.5	50.7	56.9	48.4	55.7	66.6	50.5	57.7	69.5	
		CD+CS	Wh/mile	37.4	37.4	36.9	34.4	39.1	35.6	32.6	37.6	33.8	31.3	36.6	32.8	29.8	
			MPGGE Unadjusted	75.7	75.7	80.1	87.9	75.4	85.2	97.8	80.8	95.2	118.6	84.8	99.3	124.8	
			MPGGE Adjusted	53.3	53.3	56.0	60.6	53.2	59.0	66.3	56.4	64.8	77.6	58.8	67.1	80.8	
		HWFET	CD	Wh/mile	198.0	198.0	195.2	185.9	197.2	192.3	171.3	198.8	180.0	151.9	193.5	173.5	144.1
				Distance	11.0	11.0	10.6	9.6	11.1	9.6	9.1	10.6	9.1	9.1	10.7	9.1	9.4
				MPGGE Unadjusted	393.7	393.7	570.2	712.4	399.5	663.5	690.5	537.7	752.7	829.7	602.3	776.5	1277.5
	MPGGE Adjusted			258.3	258.3	361.2	439.1	261.8	412.8	427.4	342.8	460.4	500.3	379.1	472.9	711.1	
	CS		MPGGE Unadjusted	57.2	57.2	61.1	67.0	57.5	64.9	74.1	61.4	71.8	87.4	64.7	75.7	94.8	
			MPGGE Adjusted	40.3	40.3	43.0	47.1	40.5	45.6	52.0	43.2	50.4	61.1	45.5	53.0	66.2	
	CD+CS		Wh/mile	58.2	58.2	57.4	54.7	58.0	56.6	50.4	58.5	53.0	44.7	56.9	51.0	42.4	
			MPGGE Unadjusted	72.0	72.0	77.7	85.6	72.4	82.8	94.4	78.0	91.8	111.2	82.3	96.6	121.9	
			MPGGE Adjusted	50.5	50.5	54.5	59.9	50.8	58.0	65.9	54.7	64.1	77.4	57.6	67.4	84.6	
	Combined		CD	MPGGE Unadjusted	610.6	610.6	894.8	1076.5	676.2	1016.8	1163.0	857.6	1232.8	1815.5	942.7	1277.7	2772.5
				MPGGE Adjusted	266.6	266.6	327.8	358.3	281.5	348.9	369.0	320.7	378.7	432.6	336.3	384.2	489.0
			CS	MPGGE Unadjusted	60.5	60.5	64.2	70.4	60.4	68.3	78.1	64.7	75.9	93.1	68.0	79.5	99.4
		MPGGE Adjusted		43.1	43.1	45.6	49.7	43.1	48.2	54.6	45.9	53.2	64.0	48.1	55.5	68.0	
		CD+CS	Wh/mile	46.7	46.7	46.1	43.6	47.6	45.0	40.6	47.0	42.4	37.3	45.7	41.0	35.4	
			MPGGE Unadjusted	74.0	74.0	79.0	86.8	74.0	84.1	96.2	79.5	93.6	115.2	83.7	98.1	123.5	
			MPGGE Adjusted	52.0	52.0	55.3	60.3	52.1	58.6	66.1	55.6	64.5	77.5	58.3	67.3	82.5	

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				Compact													
				2010	2010			2015			2030			2045			
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high	
CI Split HEV PHEV20	UDDS	CD	Wh/mile	181.2	181.2	179.4	167.4	183.2	173.1	158.7	182.2	164.2	143.5	177.6	159.3	140.3	
			Distance	23.7	23.7	22.7	22.9	23.7	22.9	22.6	23.4	22.4	21.1	23.4	22.4	20.6	
			MPGGE Unadjusted	1071.5	1071.5	1619.2	1806.1	1097.8	1753.5	2599.3	1606.4	2530.9	7801.3	1695.8	2668.4	65207.3	
			MPGGE Adjusted	270.8	270.8	302.5	309.8	272.8	307.9	331.1	301.9	329.7	369.5	305.6	332.4	389.4	
		CS	MPGGE Unadjusted	63.2	63.2	66.5	73.2	62.8	70.9	81.6	67.2	79.0	98.1	70.6	82.9	103.4	
			MPGGE Adjusted	45.6	45.6	47.7	51.8	45.3	50.4	56.9	48.1	55.3	66.5	50.2	57.7	69.4	
		CD+CS	Wh/mile	95.5	95.5	94.5	88.2	96.5	91.2	83.9	96.0	86.8	54.8	93.6	84.2	53.4	
			MPGGE Unadjusted	107.9	107.9	115.1	126.7	107.4	122.8	142.3	116.3	137.7	143.6	122.2	144.7	152.1	
		MPGGE Adjusted	71.9	71.9	75.8	81.8	71.6	79.8	89.6	76.4	87.3	90.2	79.5	90.7	94.2		
		HWFET	CD	Wh/mile	199.8	199.8	194.0	201.3	199.0	189.1	193.2	194.0	200.4	172.5	194.2	193.1	158.6
				Distance	21.3	21.3	21.1	19.3	21.4	21.1	17.9	21.4	17.8	17.4	21.1	18.0	17.8
				MPGGE Unadjusted	386.6	386.6	498.6	2292.2	392.6	558.7	65207.3	435.7	65207.3	65207.3	570.9	65207.3	65207.3
	MPGGE Adjusted			254.0	254.0	320.3	1086.9	257.6	354.7	3034.8	283.4	3034.8	3034.8	361.6	3034.8	3034.8	
	CS		MPGGE Unadjusted	56.9	56.9	60.6	66.7	57.1	64.5	74.1	60.8	71.5	87.3	64.4	75.6	94.4	
			MPGGE Adjusted	40.0	40.0	42.6	46.9	40.2	45.3	52.0	42.8	50.2	61.0	45.3	53.0	65.9	
	CD+CS		Wh/mile	102.8	102.8	100.0	59.2	102.4	97.4	56.8	99.8	59.0	50.7	100.0	56.8	46.7	
			MPGGE Unadjusted	87.3	87.3	94.6	87.0	87.7	101.1	97.5	93.8	94.1	114.8	101.1	99.5	124.2	
	MPGGE Adjusted		61.0	61.0	66.1	60.9	61.3	70.5	68.1	65.5	65.7	79.8	70.5	69.4	86.2		
	Combined		CD	MPGGE Unadjusted	596.3	596.3	805.0	1996.6	607.0	893.6	4576.7	727.1	4460.0	12919.5	898.8	4694.5	65207.3
				MPGGE Adjusted	263.0	263.0	310.2	456.8	265.7	327.3	552.6	293.3	550.5	611.0	328.5	554.7	640.8
			CS	MPGGE Unadjusted	60.2	60.2	63.7	70.1	60.1	67.9	78.1	64.2	75.4	92.9	67.7	79.5	99.1
		MPGGE Adjusted		42.9	42.9	45.3	49.5	42.9	48.0	54.6	45.6	52.9	63.9	47.9	55.5	67.8	
		CD+CS	Wh/mile	98.7	98.7	97.0	75.1	99.1	94.0	71.7	97.7	74.2	53.0	96.5	71.9	50.4	
			MPGGE Unadjusted	97.5	97.5	104.9	105.1	97.6	112.0	117.9	104.9	113.9	129.0	111.7	120.1	138.1	
		MPGGE Adjusted	66.6	66.6	71.1	70.8	66.6	75.3	78.4	71.1	76.0	85.2	75.2	79.7	90.4		

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				Compact													
				2010	2010			2015			2030			2045			
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high	
CI Series HEV PHEV30	UDDS	CD	Wh/mile	259.7	259.7	245.5	228.9	259.0	236.1	209.7	248.7	216.9	183.3	241.3	209.9	175.1	
			Distance	31.0	31.0	31.0	31.0	30.9	31.0	30.9	31.0	30.9	30.7	31.0	30.9	30.9	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	47.1	47.1	50.7	56.4	47.4	54.6	66.9	51.9	64.1	80.5	54.6	67.2	84.8	
			MPGGE Adjusted	35.0	35.0	37.4	41.2	35.2	40.0	47.9	38.2	46.1	56.3	40.0	48.1	58.8	
		CD+CS	Wh/mile	167.3	167.3	158.1	147.5	166.8	152.1	135.7	160.3	140.3	119.1	155.5	135.7	113.8	
			MPGGE Unadjusted	100.3	100.3	108.0	120.0	100.8	116.2	142.4	110.4	136.4	171.3	116.2	143.0	180.3	
			MPGGE Adjusted	67.7	67.7	71.9	78.3	68.0	76.4	89.6	73.2	86.7	103.0	76.4	89.9	107.0	
	HWFET	CD	Wh/mile	256.2	256.2	240.0	223.0	254.0	231.4	204.3	244.7	212.2	179.4	235.9	204.3	165.3	
			Distance	31.3	31.3	31.5	31.7	31.3	31.5	31.6	31.3	31.4	31.4	31.6	31.5	33.0	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	44.9	44.9	48.5	54.3	45.5	52.1	61.7	49.3	59.5	74.3	52.3	63.2	81.1	
			MPGGE Adjusted	31.7	31.7	34.2	38.3	32.1	36.7	43.4	34.8	41.9	52.1	36.9	44.4	56.8	
		CD+CS	Wh/mile	173.1	173.1	162.2	150.7	171.6	156.4	138.1	165.3	143.4	121.2	159.4	138.0	111.8	
			MPGGE Unadjusted	97.5	97.5	105.5	118.1	98.8	113.3	134.2	107.2	129.4	161.5	113.8	137.4	176.2	
			MPGGE Adjusted	68.1	68.1	73.5	82.1	68.9	78.8	92.9	74.6	89.7	111.2	79.1	95.0	120.9	
	Combined	CD	MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	46.1	46.1	49.7	55.4	46.5	53.5	64.5	50.7	62.0	77.6	53.6	65.3	83.1	
			MPGGE Adjusted	33.4	33.4	35.9	39.8	33.7	38.5	45.8	36.6	44.1	54.3	38.5	46.4	57.9	
		CD+CS	Wh/mile	169.9	169.9	160.0	148.9	169.0	154.0	136.8	162.5	141.7	120.0	157.2	136.8	112.9	
			MPGGE Unadjusted	99.0	99.0	106.8	119.1	99.9	114.9	138.6	108.9	133.2	166.8	115.1	140.4	178.5	
			MPGGE Adjusted	67.9	67.9	72.6	80.0	68.4	77.4	91.1	73.9	88.0	106.6	77.6	92.1	112.8	

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				Compact													
				2010	2010			2015			2030			2045			
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high	
CI Series HEV PHEV40	UDDS	CD	Wh/mile	265.3	265.3	250.8	233.7	264.6	240.8	214.1	253.5	221.0	185.5	246.1	213.4	176.6	
			Distance	40.6	40.6	40.8	40.5	40.8	40.8	40.6	40.8	40.7	40.4	40.8	40.5	40.4	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	45.9	45.9	49.4	55.3	46.1	53.5	63.7	50.7	63.2	81.0	53.6	66.4	85.7	
			MPGGE Adjusted	34.2	34.2	36.6	40.4	34.3	39.3	45.9	37.4	45.6	56.6	39.3	47.6	59.3	
		CD+CS	Wh/mile	195.1	195.1	184.5	171.9	194.6	177.1	158.7	186.5	163.7	137.6	181.0	157.8	131.1	
			MPGGE Unadjusted	114.7	114.7	123.5	138.2	115.1	133.8	159.2	126.7	158.0	202.6	134.0	165.9	214.2	
			MPGGE Adjusted	75.5	75.5	80.2	87.6	75.8	85.4	97.6	81.8	97.0	116.3	85.5	100.6	120.9	
		HWFET	CD	Wh/mile	258.8	258.8	242.4	225.1	256.8	233.4	206.4	246.9	214.2	182.3	237.8	205.4	167.9
				Distance	41.4	41.4	41.8	42.0	41.9	41.7	42.0	41.5	41.8	41.3	41.9	42.0	42.7
				MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	MPGGE Adjusted			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	CS		MPGGE Unadjusted	44.2	44.2	47.8	53.4	44.6	51.4	61.1	48.7	58.9	74.1	51.6	62.6	80.6	
			MPGGE Adjusted	31.2	31.2	33.7	37.6	31.5	36.2	42.9	34.3	41.4	52.0	36.4	44.0	56.4	
	CD+CS		Wh/mile	203.6	203.6	190.7	177.1	201.9	183.7	162.7	194.2	168.7	144.2	187.1	161.7	132.9	
			MPGGE Unadjusted	119.5	119.5	129.3	144.3	120.5	139.0	165.1	131.5	159.2	200.3	139.6	169.2	217.8	
			MPGGE Adjusted	83.0	83.0	89.6	99.7	83.7	96.1	113.5	91.1	109.6	136.7	96.5	116.3	148.1	
	Combined		CD	MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			CS	MPGGE Unadjusted	45.1	45.1	48.7	54.4	45.4	52.6	62.5	49.7	61.2	77.8	52.7	64.6	83.3
		MPGGE Adjusted		32.8	32.8	35.2	39.1	33.0	37.9	44.5	35.9	43.6	54.4	38.0	45.9	58.0	
		CD+CS	Wh/mile	198.9	198.9	187.3	174.2	197.9	180.0	160.5	190.0	165.9	140.6	183.8	159.6	131.9	
			MPGGE Unadjusted	116.8	116.8	126.1	140.9	117.5	136.1	161.8	128.8	158.5	201.5	136.4	167.4	215.8	
			MPGGE Adjusted	78.7	78.7	84.2	92.6	79.2	89.9	104.2	85.7	102.3	124.7	90.1	107.1	131.8	

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				Compact												
				2010	2010			2015			2030			2045		
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
H2 Split HEV PHEV10	UDDS	CD	Wh/mile	181.4	181.4	169.2	159.0	182.1	164.7	147.1	174.0	152.9	138.8	169.7	148.0	132.1
			Distance	11.6	11.6	11.6	11.4	11.6	11.4	11.4	11.6	11.4	10.2	11.4	11.4	10.2
			MPGGE Unadjusted	1514.3	1514.3	1874.4	2716.3	1722.7	2655.7	3253.9	1915.6	3087.9	N/A	2662.4	3381.3	N/A
			MPGGE Adjusted	297.7	297.7	312.2	333.3	306.7	332.2	341.8	313.6	339.4	N/A	332.3	343.5	N/A
		CS	MPGGE Unadjusted	60.3	60.3	71.6	82.8	66.6	80.2	94.7	74.4	90.7	114.7	81.2	97.0	125.5
			MPGGE Adjusted	43.7	43.7	50.9	57.6	47.7	56.1	64.5	52.6	62.3	75.5	56.7	65.9	81.2
		CD+CS	Wh/mile	37.8	37.8	35.3	33.1	37.9	34.3	30.6	36.3	31.9	28.9	35.4	30.8	27.5
			MPGGE Unadjusted	72.1	72.1	85.6	99.1	79.6	96.0	113.4	88.9	108.7	138.2	97.2	116.2	151.2
			MPGGE Adjusted	51.2	51.2	59.3	67.0	55.7	65.3	74.9	61.2	72.3	87.6	65.9	76.3	93.8
	HWFET	CD	Wh/mile	202.8	202.8	189.9	175.4	202.1	181.6	162.0	194.5	168.5	140.8	187.7	162.7	133.7
			Distance	10.5	10.5	9.1	9.0	10.5	9.0	8.9	10.5	8.9	8.9	9.1	8.9	9.0
			MPGGE Unadjusted	471.2	471.2	555.2	630.1	548.0	593.2	691.3	592.4	657.7	749.6	635.4	720.0	1079.6
			MPGGE Adjusted	304.4	304.4	352.7	394.5	348.7	374.1	427.8	373.6	409.6	458.8	397.4	443.1	622.0
		CS	MPGGE Unadjusted	55.0	55.0	65.5	75.5	61.5	73.0	85.2	68.1	82.0	100.9	74.1	88.3	113.4
			MPGGE Adjusted	38.7	38.7	46.0	52.9	43.2	51.2	59.6	47.8	57.4	70.4	52.0	61.8	78.9
		CD+CS	Wh/mile	59.7	59.7	55.9	51.6	59.4	53.4	47.6	57.2	49.6	41.4	55.2	47.8	39.3
			MPGGE Unadjusted	69.8	69.8	83.1	95.8	78.1	92.5	107.9	86.5	103.8	127.3	94.1	111.9	144.5
			MPGGE Adjusted	49.0	49.0	58.2	66.8	54.7	64.6	75.1	60.5	72.3	88.3	65.7	77.8	99.8
	Combined	CD	MPGGE Unadjusted	758.6	758.6	905.8	1090.9	876.9	1035.6	1219.6	955.3	1159.6	1642.9	1093.1	1269.5	2351.7
			MPGGE Adjusted	300.7	300.7	329.2	358.3	324.3	349.8	375.8	338.0	367.8	417.9	358.7	382.1	468.2
		CS	MPGGE Unadjusted	57.8	57.8	68.7	79.3	64.2	76.8	90.2	71.4	86.6	108.0	77.8	92.9	119.8
			MPGGE Adjusted	41.3	41.3	48.6	55.4	45.6	53.8	62.2	50.3	60.0	73.1	54.5	63.9	80.1
		CD+CS	Wh/mile	47.6	47.6	44.5	41.4	47.6	42.9	38.3	45.7	39.8	34.5	44.3	38.5	32.8
			MPGGE Unadjusted	71.0	71.0	84.5	97.6	78.9	94.4	110.9	87.8	106.4	133.1	95.8	114.2	148.1
			MPGGE Adjusted	50.2	50.2	58.8	66.9	55.3	65.0	75.0	60.9	72.3	87.9	65.8	77.0	96.4

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				Compact													
				2010	2010			2015			2030			2045			
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high	
H2 Split HEV PHEV20	UDDS	CD	Wh/mile	182.5	182.5	171.4	160.5	183.6	166.1	149.7	176.2	155.8	136.4	168.9	150.9	129.8	
			Distance	22.7	22.7	22.6	22.6	22.9	22.6	22.3	22.9	22.3	20.4	22.8	22.3	20.4	
			MPGGE Unadjusted	1370.5	1370.5	1820.8	2529.9	1608.1	2404.9	3170.3	1858.2	3022.2	N/A	2068.7	3310.7	N/A	
			MPGGE Adjusted	290.4	290.4	310.3	329.6	302.0	326.9	340.6	311.7	338.5	N/A	318.3	342.6	N/A	
		CS	MPGGE Unadjusted	60.0	60.0	71.1	82.6	66.2	79.6	94.3	74.0	90.7	114.8	80.6	97.0	125.3	
			MPGGE Adjusted	43.5	43.5	50.6	57.5	47.5	55.7	64.3	52.3	62.2	75.6	56.3	65.9	81.1	
		CD+CS	Wh/mile	96.1	96.1	90.3	84.6	96.7	87.6	57.0	92.9	59.3	52.0	89.0	57.5	49.4	
			MPGGE Unadjusted	103.6	103.6	123.3	143.8	114.6	138.7	136.7	128.2	131.6	168.8	139.7	140.8	184.2	
			MPGGE Adjusted	69.6	69.6	80.1	90.3	75.5	87.8	86.8	82.6	84.3	101.9	88.3	88.8	108.7	
		HWFET	CD	Wh/mile	198.3	198.3	190.6	201.0	201.2	208.9	186.0	196.5	193.9	165.4	214.4	186.4	151.9
				Distance	21.1	21.1	20.2	17.6	21.1	17.6	17.5	20.3	17.5	16.7	17.7	17.5	17.3
				MPGGE Unadjusted	382.7	382.7	586.5	N/A	492.8	N/A	N/A	601.6	N/A	N/A	N/A	N/A	N/A
	MPGGE Adjusted			251.6	251.6	370.3	N/A	317.0	N/A	N/A	378.8	N/A	N/A	N/A	N/A	N/A	
	CS		MPGGE Unadjusted	54.5	54.5	65.0	75.3	60.9	72.5	85.0	67.5	81.9	100.8	73.6	88.2	113.5	
			MPGGE Adjusted	38.4	38.4	45.6	52.8	42.9	50.8	59.5	47.4	57.3	70.3	51.7	61.7	78.9	
	CD+CS		Wh/mile	102.0	102.0	56.1	59.1	103.7	61.5	54.7	57.8	57.0	48.6	63.1	54.8	44.7	
			MPGGE Unadjusted	83.9	83.9	82.6	99.1	95.0	95.3	111.9	85.8	107.7	132.6	96.9	116.1	149.3	
			MPGGE Adjusted	58.7	58.7	57.8	69.1	66.4	66.6	77.8	60.0	75.0	91.9	67.6	80.7	103.1	
	Combined		CD	MPGGE Unadjusted	634.1	634.1	935.1	4459.0	796.7	4245.1	5544.7	957.9	5295.1	N/A	3666.6	5780.6	N/A
				MPGGE Adjusted	271.6	271.6	334.7	550.5	308.6	546.3	567.3	338.7	563.9	640.8	533.0	570.2	640.8
			CS	MPGGE Unadjusted	57.4	57.4	68.2	79.1	63.7	76.2	89.9	70.9	86.5	108.1	77.3	92.9	119.7
		MPGGE Adjusted		41.1	41.1	48.2	55.3	45.3	53.4	62.0	50.0	59.9	73.1	54.1	63.9	80.1	
		CD+CS	Wh/mile	98.8	98.8	74.9	73.1	99.9	75.8	56.0	77.1	58.3	50.5	77.3	56.3	47.3	
			MPGGE Unadjusted	93.7	93.7	100.9	119.5	104.9	115.1	124.3	104.9	119.6	150.4	116.5	128.5	166.7	
			MPGGE Adjusted	64.2	64.2	68.2	79.4	71.1	76.8	82.5	70.6	79.8	97.1	77.6	85.0	106.1	

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				Compact													
				2010	2010			2015			2030			2045			
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high	
H2 Series HEV PHEV30	UDDS	CD	Wh/mile	254.8	254.8	236.2	217.5	252.2	225.2	197.5	241.0	205.3	170.4	229.8	197.7	162.8	
			Distance	31.0	31.0	31.0	31.0	30.9	31.0	30.7	31.0	30.9	30.7	31.0	30.7	30.7	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	44.4	44.4	53.6	64.0	49.7	60.6	74.9	56.5	72.2	88.3	61.7	75.8	94.9	
			MPGGE Adjusted	33.2	33.2	39.3	46.0	36.8	43.9	52.9	41.2	51.2	60.8	44.6	53.4	64.7	
		CD+CS	Wh/mile	164.2	164.2	152.2	140.1	162.4	145.1	127.7	155.3	132.8	110.6	148.0	127.8	105.7	
			MPGGE Unadjusted	94.5	94.5	114.1	136.1	105.8	129.0	159.3	120.2	153.6	187.8	131.3	161.3	202.0	
			MPGGE Adjusted	64.4	64.4	75.2	86.5	70.8	83.0	97.6	78.5	95.0	110.2	84.1	98.5	116.0	
	HWFET	CD	Wh/mile	253.0	253.0	233.7	215.5	249.4	223.8	196.5	239.6	204.8	172.0	228.4	196.6	158.0	
			Distance	31.2	31.2	31.2	31.2	31.2	31.2	31.1	31.2	31.0	30.2	31.2	31.1	31.6	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
		CS	MPGGE Unadjusted	43.2	43.2	52.1	60.9	48.5	58.7	70.5	54.7	67.7	84.3	60.0	73.3	94.6	
			MPGGE Adjusted	30.5	30.5	36.7	42.8	34.2	41.3	49.5	38.5	47.6	59.0	42.2	51.4	66.0	
		CD+CS	Wh/mile	170.9	170.9	157.9	145.6	168.5	151.2	132.7	161.9	138.4	88.7	154.3	132.8	106.7	
			MPGGE Unadjusted	94.0	94.0	113.3	132.3	105.5	127.6	153.4	118.9	147.2	143.0	130.3	159.4	205.6	
			MPGGE Adjusted	65.6	65.6	78.8	91.6	73.5	88.5	105.7	82.6	101.7	98.8	90.3	109.7	140.2	
		Combined	CD	MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			CS	MPGGE Unadjusted	43.9	43.9	52.9	62.5	49.2	59.7	72.9	55.7	70.1	86.5	60.9	74.7	94.8
	MPGGE Adjusted			31.9	31.9	38.1	44.5	35.6	42.7	51.3	40.0	49.5	60.0	43.5	52.5	65.3	
	CD+CS		Wh/mile	167.2	167.2	154.8	142.6	165.2	147.9	130.0	158.2	135.3	100.7	150.9	130.0	106.1	
			MPGGE Unadjusted	94.2	94.2	113.7	134.3	105.7	128.4	156.6	119.6	150.7	164.6	130.9	160.4	203.6	
			MPGGE Adjusted	64.9	64.9	76.8	88.7	72.0	85.4	101.1	80.3	97.9	104.7	86.8	103.3	125.8	

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				Compact													
				2010	2010			2015			2030			2045			
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high	
H2 Series HEV PHEV40	UDDS	CD	Wh/mile	260.1	260.1	240.9	221.9	257.4	229.1	201.5	245.9	209.6	172.3	234.7	201.0	164.6	
			Distance	40.5	40.5	40.6	40.4	40.8	40.6	40.8	40.6	40.8	40.6	40.5	40.6	40.6	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	43.3	43.3	52.5	61.5	48.7	59.4	74.1	55.1	70.1	89.6	60.7	75.9	96.8	
			MPGGE Adjusted	32.4	32.4	38.6	44.5	36.0	43.1	52.4	40.3	49.9	61.6	44.0	53.4	65.7	
		CD+CS	Wh/mile	191.3	191.3	177.2	163.2	189.2	168.4	149.2	180.9	155.2	127.7	172.7	148.6	122.1	
			MPGGE Unadjusted	108.2	108.2	131.2	153.9	121.7	148.6	185.4	137.8	175.3	223.9	151.8	189.6	241.9	
			MPGGE Adjusted	72.1	72.1	84.1	95.1	79.2	92.6	109.1	87.3	104.8	124.6	94.1	110.9	131.3	
		HWFET	CD	Wh/mile	255.5	255.5	235.9	217.3	252.0	225.8	198.4	241.9	206.8	173.1	230.2	197.7	160.4
				Distance	41.1	41.1	41.3	41.4	41.4	41.1	41.4	41.1	41.3	40.3	41.4	41.4	41.6
				MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	MPGGE Adjusted			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	CS		MPGGE Unadjusted	42.5	42.5	51.2	60.2	47.8	57.9	69.9	53.9	67.0	84.0	59.3	72.7	94.4	
			MPGGE Adjusted	30.0	30.0	36.1	42.3	33.7	40.7	49.0	37.9	47.1	58.8	41.7	51.0	65.9	
	CD+CS		Wh/mile	200.9	200.9	185.5	170.9	198.2	177.6	156.3	190.3	162.9	117.1	181.1	155.5	126.9	
			MPGGE Unadjusted	114.8	114.8	138.5	162.6	129.2	156.4	188.8	145.6	181.1	182.6	160.3	196.6	255.2	
			MPGGE Adjusted	79.8	79.8	95.8	111.9	89.5	107.8	129.2	100.5	124.1	125.2	110.4	134.3	172.2	
	Combined		CD	MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			CS	MPGGE Unadjusted	42.9	42.9	51.9	60.9	48.3	58.7	72.2	54.5	68.7	87.0	60.1	74.4	95.7
		MPGGE Adjusted		31.3	31.3	37.4	43.5	35.0	42.0	50.8	39.2	48.6	60.3	42.9	52.3	65.8	
		CD+CS	Wh/mile	195.6	195.6	180.9	166.7	193.2	172.5	152.4	185.1	158.7	123.0	176.5	151.7	124.2	
			MPGGE Unadjusted	111.1	111.1	134.3	157.7	124.9	152.0	186.9	141.2	177.8	203.2	155.5	192.7	247.7	
			MPGGE Adjusted	75.4	75.4	89.0	102.0	83.5	98.9	117.3	92.8	112.7	124.9	100.8	120.4	147.0	

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				Compact													
				2010	2010			2015			2030			2045			
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high	
E85 Split HEV PHEV10	UDDS	CD	Wh/mile	178.1	178.1	172.1	160.4	179.4	165.9	149.3	172.6	154.4	142.0	168.3	150.1	134.5	
			Distance	11.4	11.4	11.3	11.4	11.4	11.3	11.4	11.6	11.3	10.2	11.6	11.3	10.2	
			MPGGE Unadjusted	1519.7	1519.7	2079.5	2239.9	1571.1	2188.5	2864.6	1633.1	2439.7	N/A	1688.3	2571.2	N/A	
			MPGGE Adjusted	298.0	298.0	318.6	323.0	300.4	321.6	335.9	303.1	327.7	N/A	305.3	330.5	N/A	
		CS	MPGGE Unadjusted	58.8	58.8	62.8	68.0	59.4	65.9	84.8	62.4	72.2	100.1	64.6	74.9	105.7	
			MPGGE Adjusted	42.7	42.7	45.3	48.6	43.1	47.3	58.8	45.0	51.2	67.6	46.5	52.8	70.7	
		CD+CS	Wh/mile	37.1	37.1	35.9	33.4	37.4	34.6	31.1	36.0	32.2	29.6	35.1	31.3	28.0	
			MPGGE Unadjusted	70.3	70.3	75.2	81.4	71.0	79.0	101.6	74.6	86.5	120.6	77.3	89.7	127.3	
			MPGGE Adjusted	50.0	50.0	53.1	56.8	50.4	55.3	68.4	52.7	59.8	78.6	54.3	61.6	82.1	
		HWFET	CD	Wh/mile	198.9	198.9	189.0	176.3	199.7	182.4	165.3	193.6	168.7	143.6	188.7	164.5	135.8
				Distance	9.9	9.9	9.1	9.1	10.5	9.1	9.0	9.1	9.0	8.9	9.1	8.9	9.0
				MPGGE Unadjusted	426.0	426.0	472.2	514.7	473.6	486.4	669.5	457.3	507.1	683.7	501.4	564.9	947.8
	MPGGE Adjusted			277.6	277.6	304.9	329.6	305.7	313.2	416.0	296.2	325.2	423.7	321.9	358.2	559.2	
	CS		MPGGE Unadjusted	53.1	53.1	57.2	62.1	54.2	60.0	76.7	56.5	65.3	88.6	59.0	68.2	96.3	
			MPGGE Adjusted	37.4	37.4	40.3	43.7	38.2	42.2	53.8	39.8	45.9	61.9	41.5	47.9	67.2	
	CD+CS		Wh/mile	58.5	58.5	55.6	51.9	58.7	53.6	48.6	56.9	49.6	42.2	55.5	48.4	39.9	
			MPGGE Unadjusted	67.2	67.2	72.5	78.7	68.8	76.0	97.4	71.6	82.6	112.0	74.9	86.5	122.8	
			MPGGE Adjusted	47.2	47.2	50.9	55.1	48.3	53.3	68.0	50.2	57.8	77.9	52.5	60.5	85.2	
	Combined		CD	MPGGE Unadjusted	705.0	705.0	821.3	892.9	769.0	850.0	1157.2	757.1	898.5	1500.2	817.5	989.7	2069.7
				MPGGE Adjusted	288.5	288.5	312.3	325.9	302.8	317.8	367.8	299.9	326.6	404.2	312.6	342.4	451.1
			CS	MPGGE Unadjusted	56.1	56.1	60.2	65.2	56.9	63.1	81.0	59.6	68.9	94.5	62.0	71.7	101.3
		MPGGE Adjusted		40.2	40.2	42.9	46.2	40.7	44.9	56.4	42.5	48.7	64.9	44.1	50.5	69.1	
		CD+CS	Wh/mile	46.7	46.7	44.7	41.7	47.0	43.1	39.0	45.4	40.0	35.3	44.3	39.0	33.4	
			MPGGE Unadjusted	68.9	68.9	74.0	80.2	70.0	77.6	99.7	73.2	84.7	116.5	76.2	88.2	125.2	
			MPGGE Adjusted	48.7	48.7	52.1	56.0	49.5	54.4	68.2	51.5	58.9	78.3	53.5	61.1	83.5	

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				Compact												
				2010	2010			2015			2030			2045		
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
E85 Split HEV PHEV20	UDDS	CD	Wh/mile	180.3	180.3	170.7	162.2	181.3	167.8	150.4	174.8	155.5	139.6	170.2	152.7	132.1
			Distance	22.8	22.8	22.6	22.1	22.6	22.1	22.4	22.6	22.4	20.5	22.6	22.3	20.5
			MPGGE Unadjusted	1480.6	1480.6	1558.7	2194.4	1471.8	2141.2	2621.0	1587.0	2209.2	N/A	1643.3	2519.5	N/A
			MPGGE Adjusted	296.1	296.1	299.8	321.8	295.7	320.4	331.5	301.1	322.2	N/A	303.5	329.4	N/A
		CS	MPGGE Unadjusted	58.4	58.4	62.5	67.8	58.9	65.6	84.7	61.9	72.2	100.2	64.4	74.8	105.5
			MPGGE Adjusted	42.5	42.5	45.1	48.5	42.8	47.1	58.8	44.7	51.2	67.7	46.3	52.8	70.6
		CD+CS	Wh/mile	95.0	95.0	90.0	61.6	95.6	63.7	79.5	92.1	82.2	53.2	89.7	58.2	50.3
			MPGGE Unadjusted	101.3	101.3	108.3	98.4	102.1	95.2	147.7	107.3	125.8	147.4	111.7	108.6	155.2
			MPGGE Adjusted	68.3	68.3	72.1	66.6	68.7	64.8	92.2	71.6	81.4	92.0	73.9	72.3	95.7
	HWFET	CD	Wh/mile	203.3	203.3	217.2	202.3	202.2	210.0	188.0	195.8	195.2	167.7	215.7	188.0	153.6
			Distance	20.2	20.2	17.4	17.4	20.2	17.3	17.5	20.0	17.5	16.9	17.5	17.5	17.4
			MPGGE Unadjusted	474.7	474.7	N/A	N/A	488.2	N/A	N/A	506.5	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	306.4	306.4	N/A	N/A	314.3	N/A	N/A	324.9	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	52.7	52.7	56.8	61.8	53.8	59.6	76.4	56.2	65.1	88.6	58.8	68.0	96.2
			MPGGE Adjusted	37.1	37.1	40.0	43.5	37.9	41.9	53.5	39.6	45.8	61.9	41.3	47.8	67.1
		CD+CS	Wh/mile	59.8	59.8	63.9	59.5	59.5	61.8	55.3	57.6	57.4	49.3	63.4	55.3	45.2
			MPGGE Unadjusted	66.9	66.9	74.8	81.4	68.4	78.4	100.5	71.4	85.7	116.5	77.3	89.5	126.6
			MPGGE Adjusted	47.0	47.0	52.4	57.0	48.0	54.9	70.1	50.1	59.9	81.0	54.2	62.5	87.8
	Combined	CD	MPGGE Unadjusted	757.9	757.9	2780.0	3883.4	772.0	3791.8	4614.5	809.7	3908.9	N/A	2927.7	4441.3	N/A
			MPGGE Adjusted	300.7	300.7	504.4	538.4	303.8	536.2	553.3	311.3	539.0	640.8	510.1	550.1	640.8
		CS	MPGGE Unadjusted	55.7	55.7	59.8	65.0	56.5	62.8	80.8	59.2	68.8	94.6	61.7	71.6	101.1
			MPGGE Adjusted	39.9	39.9	42.7	46.1	40.4	44.6	56.3	42.2	48.6	65.0	43.9	50.4	69.0
		CD+CS	Wh/mile	79.1	79.1	78.2	60.7	79.3	62.8	68.6	76.6	71.1	51.4	77.9	56.9	48.0
			MPGGE Unadjusted	82.3	82.3	90.1	89.9	83.5	86.8	121.9	87.5	103.9	131.7	93.0	99.1	140.9
			MPGGE Adjusted	56.7	56.7	61.7	61.9	57.5	60.0	80.7	60.0	70.1	86.7	63.5	67.5	92.0

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				Compact													
				2010	2010			2015			2030			2045			
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high	
E85 Series HEV PHEV30	UDDS	CD	Wh/mile	249.5	249.5	235.8	218.7	248.6	226.5	200.2	238.8	207.1	174.5	231.7	200.5	165.7	
			Distance	30.9	30.9	30.9	31.0	31.5	31.0	30.7	30.9	30.9	30.9	31.0	30.7	30.7	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	44.0	44.0	47.8	52.6	44.9	50.9	67.5	47.9	58.1	82.0	50.2	59.5	86.2	
			MPGGE Adjusted	32.9	32.9	35.5	38.7	33.5	37.5	48.3	35.5	42.3	57.1	37.1	43.2	59.6	
		CD+CS	Wh/mile	160.7	160.7	151.9	140.9	160.1	146.0	129.5	153.9	133.9	113.3	149.2	129.6	107.6	
			MPGGE Unadjusted	93.6	93.6	101.8	111.9	95.5	108.3	143.6	101.9	123.6	174.5	106.8	126.5	183.5	
			MPGGE Adjusted	63.9	63.9	68.5	74.1	65.0	72.1	90.2	68.6	80.2	104.4	71.3	81.7	108.3	
	HWFET	CD	Wh/mile	249.5	249.5	233.4	216.3	247.0	224.7	198.2	238.2	206.0	173.9	229.6	198.3	159.8	
			Distance	30.9	30.9	31.2	31.3	31.1	31.2	31.2	31.0	31.1	31.2	31.2	31.2	31.8	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	41.6	41.6	45.5	50.1	42.6	48.3	63.7	45.4	54.0	75.0	47.8	56.8	81.8	
			MPGGE Adjusted	29.3	29.3	32.1	35.3	30.1	34.1	44.8	32.0	38.0	52.6	33.7	40.0	57.3	
		CD+CS	Wh/mile	168.6	168.6	157.7	146.2	166.9	151.8	133.9	160.9	139.2	117.4	155.1	134.0	108.0	
			MPGGE Unadjusted	90.3	90.3	98.8	109.0	92.6	105.0	138.4	98.7	117.4	163.1	103.8	123.4	177.8	
			MPGGE Adjusted	63.1	63.1	68.9	75.8	64.7	73.2	95.7	68.8	81.6	112.2	72.3	85.7	122.0	
	Combined	CD	MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	42.9	42.9	46.7	51.5	43.8	49.7	65.7	46.7	56.2	78.7	49.1	58.2	84.2	
			MPGGE Adjusted	31.2	31.2	33.9	37.1	31.9	35.9	46.6	33.9	40.3	55.0	35.5	41.7	58.5	
		CD+CS	Wh/mile	164.3	164.3	154.5	143.3	163.2	148.6	131.5	157.0	136.3	115.2	151.9	131.6	107.8	
			MPGGE Unadjusted	92.1	92.1	100.4	110.6	94.2	106.8	141.2	100.4	120.7	169.1	105.4	125.1	180.9	
			MPGGE Adjusted	63.6	63.6	68.7	74.9	64.8	72.6	92.6	68.7	80.8	107.8	71.8	83.4	114.1	

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				Compact													
				2010	2010			2015			2030			2045			
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high	
E85 Series HEV PHEV40	UDDS	CD	Wh/mile	254.8	254.8	240.2	223.2	253.8	230.5	204.3	243.3	211.6	176.2	236.8	203.9	167.4	
			Distance	40.6	40.6	40.6	40.5	40.8	40.6	40.8	40.7	40.8	40.5	40.8	40.5	40.6	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	42.8	42.8	46.7	51.6	43.7	49.8	66.6	47.0	56.7	82.8	48.9	58.8	87.4	
			MPGGE Adjusted	32.0	32.0	34.7	38.0	32.6	36.8	47.7	34.9	41.4	57.6	36.2	42.8	60.3	
		CD+CS	Wh/mile	187.4	187.4	176.7	164.1	186.5	169.4	151.3	178.9	156.6	130.7	174.2	150.7	124.2	
			MPGGE Unadjusted	106.9	106.9	116.8	128.9	109.1	124.5	166.4	117.5	141.8	207.0	122.4	147.1	218.5	
			MPGGE Adjusted	71.4	71.4	76.6	82.9	72.6	80.7	100.8	77.0	89.3	118.0	79.6	91.9	122.5	
		HWFET	CD	Wh/mile	252.4	252.4	235.4	218.2	249.6	226.7	200.2	240.2	208.0	177.3	231.5	199.5	162.2
				Distance	40.5	40.5	41.3	41.5	41.3	41.2	41.5	41.1	41.4	40.3	41.5	41.5	41.8
				MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	MPGGE Adjusted			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	CS		MPGGE Unadjusted	40.9	40.9	44.8	49.5	42.1	47.5	63.0	44.8	53.4	74.7	47.1	56.3	81.4	
			MPGGE Adjusted	28.9	28.9	31.6	34.9	29.7	33.5	44.3	31.6	37.6	52.4	33.3	39.6	57.0	
	CD+CS		Wh/mile	170.5	170.5	185.2	171.7	196.3	178.3	157.7	188.9	163.9	120.3	182.1	157.0	128.3	
			MPGGE Unadjusted	89.0	89.0	121.0	133.7	113.7	128.4	170.2	121.0	144.4	162.4	127.4	152.1	220.0	
			MPGGE Adjusted	62.2	62.2	84.0	92.6	79.1	89.0	117.0	84.0	99.8	111.7	88.3	104.9	149.6	
	Combined		CD	MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			CS	MPGGE Unadjusted	41.9	41.9	45.8	50.6	42.9	48.7	64.9	46.0	55.2	78.9	48.1	57.7	84.6
		MPGGE Adjusted		30.6	30.6	33.2	36.5	31.3	35.3	46.1	33.4	39.6	55.1	34.8	41.3	58.8	
		CD+CS	Wh/mile	179.8	179.8	180.5	167.5	190.9	173.4	154.2	183.4	159.9	126.0	177.8	153.5	126.0	
			MPGGE Unadjusted	98.0	98.0	118.6	131.0	111.1	126.2	168.1	119.1	143.0	184.2	124.6	149.3	219.2	
			MPGGE Adjusted	66.9	66.9	79.8	87.0	75.3	84.2	107.5	80.0	93.7	115.1	83.3	97.3	133.4	

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				Compact												
				2010	2010			2015			2030			2045		
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
FC HEV PHEV10	UDDS	CD	Wh/mile	241.8	241.8	214.8	191.6	230.6	198.6	176.3	214.0	182.9	150.5	202.7	173.8	142.8
			Distance	10.2	10.2	10.1	10.2	10.1	10.2	10.3	10.2	10.3	10.3	10.2	10.2	10.2
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	67.4	67.4	78.7	92.8	77.3	89.7	103.8	83.3	100.2	122.5	87.8	103.4	129.1
			MPGGE Adjusted	48.2	48.2	55.2	63.5	54.3	61.7	69.7	57.9	67.6	79.6	60.6	69.4	83.0
		CD+CS	Wh/mile	50.4	50.4	44.8	39.9	48.0	41.4	36.7	44.6	38.1	31.4	42.2	36.2	29.8
			MPGGE Unadjusted	81.2	81.2	94.8	111.8	93.2	108.0	125.1	100.3	120.7	147.6	105.8	124.6	155.6
			MPGGE Adjusted	56.7	56.7	64.6	74.0	63.7	72.0	81.0	67.7	78.7	92.1	70.8	80.7	95.9
	HWFET	CD	Wh/mile	246.2	246.2	215.2	195.6	230.8	202.9	180.5	218.6	186.9	154.0	207.1	177.8	144.4
			Distance	9.5	9.5	9.3	9.4	9.3	9.3	9.4	9.3	9.4	9.1	9.3	9.3	9.4
			MPGGE Unadjusted	1229.2	1229.2	979.5	1240.2	989.9	1124.2	1459.0	1074.0	1304.1	1247.6	1109.5	1201.9	1814.8
			MPGGE Adjusted	690.0	690.0	574.6	694.8	579.6	642.7	787.6	619.4	722.6	698.0	635.9	677.8	925.0
		CS	MPGGE Unadjusted	70.3	70.3	81.2	94.6	79.9	90.9	103.4	84.7	99.4	118.6	89.2	103.6	129.5
			MPGGE Adjusted	49.3	49.3	56.8	66.1	56.0	63.5	72.1	59.2	69.3	82.4	62.3	72.2	89.7
		CD+CS	Wh/mile	72.4	72.4	63.3	57.5	67.9	59.7	53.1	64.3	55.0	45.3	60.9	52.3	42.5
			MPGGE Unadjusted	90.8	90.8	104.1	121.6	102.5	116.7	133.1	108.7	127.7	151.6	114.4	132.6	166.6
			MPGGE Adjusted	63.5	63.5	72.5	84.4	71.5	81.1	92.2	75.7	88.6	104.5	79.6	91.9	114.6
	Combined	CD	MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	68.6	68.6	79.8	93.6	78.5	90.2	103.6	83.9	99.8	120.7	88.4	103.5	129.3
			MPGGE Adjusted	48.7	48.7	55.9	64.6	55.1	62.5	70.7	58.5	68.4	80.9	61.4	70.6	85.9
		CD+CS	Wh/mile	60.3	60.3	53.1	47.8	57.0	49.6	44.1	53.4	45.7	37.6	50.6	43.5	35.5
			MPGGE Unadjusted	85.2	85.2	98.8	116.0	97.1	111.8	128.6	103.9	123.8	149.3	109.5	128.1	160.4
			MPGGE Adjusted	59.5	59.5	68.0	78.3	66.9	75.8	85.7	71.1	82.9	97.3	74.5	85.4	103.5

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				Compact													
				2010	2010			2015			2030			2045			
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high	
FC HEV PHEV20	UDDS	CD	Wh/mile	245.5	245.5	218.0	194.3	234.3	201.3	176.5	216.8	182.7	148.5	205.1	176.3	140.8	
			Distance	20.0	20.0	20.0	20.0	20.0	20.0	20.6	20.2	20.6	20.1	20.2	20.6	20.2	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	66.6	66.6	77.8	91.5	76.0	88.4	102.6	82.1	99.2	121.7	86.8	102.5	128.4	
			MPGGE Adjusted	47.7	47.7	54.6	62.7	53.5	60.9	69.0	57.2	67.1	79.2	60.0	68.9	82.7	
		CD+CS	Wh/mile	93.3	93.3	82.8	73.8	89.0	76.5	67.2	82.4	69.5	56.5	77.9	67.1	53.6	
			MPGGE Unadjusted	97.9	97.9	114.4	134.6	111.8	130.0	150.9	120.8	145.9	179.0	127.6	150.7	188.9	
			MPGGE Adjusted	66.4	66.4	75.4	85.8	74.0	83.5	93.7	78.7	91.3	106.4	82.3	93.6	110.6	
	HWFET	CD	Wh/mile	263.0	263.0	236.4	213.2	253.1	222.1	194.9	238.7	202.7	171.3	226.3	194.6	156.7	
			Distance	19.5	19.5	18.5	18.2	19.0	18.0	18.3	18.3	18.2	17.2	18.2	18.3	18.0	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
		CS	MPGGE Unadjusted	69.6	69.6	80.4	93.8	79.0	90.1	102.7	83.9	98.8	118.1	88.4	102.9	129.0	
			MPGGE Adjusted	48.9	48.9	56.3	65.5	55.4	63.0	71.6	58.7	68.9	82.0	61.8	71.7	89.4	
		CD+CS	Wh/mile	77.4	77.4	69.5	62.7	74.4	65.3	57.3	70.2	59.6	50.4	66.6	57.2	46.1	
			MPGGE Unadjusted	91.6	91.6	105.7	123.4	104.0	118.5	135.1	110.4	130.0	155.4	116.4	135.5	169.7	
			MPGGE Adjusted	64.0	64.0	73.6	85.6	72.5	82.3	93.5	76.8	90.1	107.1	80.9	93.8	116.6	
		Combined	CD	MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			CS	MPGGE Unadjusted	67.9	67.9	78.9	92.5	77.3	89.2	102.6	82.9	99.0	120.1	87.5	102.7	128.7
	MPGGE Adjusted			48.2	48.2	55.4	63.9	54.3	61.8	70.1	57.9	67.9	80.5	60.8	70.2	85.6	
	CD+CS		Wh/mile	86.1	86.1	76.8	68.8	82.4	71.4	62.7	76.9	65.1	53.8	72.8	62.7	50.2	
			MPGGE Unadjusted	95.0	95.0	110.3	129.3	108.1	124.6	143.3	115.8	138.3	167.5	122.3	143.4	179.7	
			MPGGE Adjusted	65.3	65.3	74.6	85.7	73.3	83.0	93.6	77.9	90.7	106.7	81.6	93.7	113.2	

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				Compact													
				2010	2010			2015			2030			2045			
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high	
FC HEV PHEV30	UDDS	CD	Wh/mile	240.7	240.7	214.7	194.8	230.9	200.4	173.1	215.7	179.8	149.2	203.4	172.4	141.3	
			Distance	31.6	31.6	31.5	31.6	31.5	31.6	31.5	31.5	31.5	30.7	31.6	31.5	30.7	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	65.1	65.1	75.6	87.7	74.2	85.3	99.8	79.3	96.1	117.8	84.1	100.2	124.5	
			MPGGE Adjusted	46.7	46.7	53.3	60.5	52.4	59.1	67.4	55.5	65.4	77.2	58.4	67.6	80.7	
		CD+CS	Wh/mile	153.4	153.4	136.8	124.1	147.1	127.7	110.7	137.4	115.0	95.9	129.6	110.2	90.9	
			MPGGE Unadjusted	138.4	138.4	160.9	186.6	157.8	181.6	212.3	168.8	204.6	250.7	178.8	213.2	264.9	
			MPGGE Adjusted	87.7	87.7	98.4	109.7	96.9	107.5	120.1	101.9	117.1	134.4	106.3	120.5	139.3	
	HWFET	CD	Wh/mile	255.5	255.5	229.9	209.9	246.2	217.4	190.6	233.5	198.5	167.7	220.8	189.7	153.7	
			Distance	29.5	29.5	28.6	28.5	28.7	28.2	27.8	28.2	27.7	27.4	28.3	27.8	28.1	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
		CS	MPGGE Unadjusted	67.9	67.9	78.2	90.2	76.9	87.1	99.9	81.1	96.0	114.6	85.8	100.4	125.2	
			MPGGE Adjusted	47.7	47.7	54.8	63.0	53.9	60.9	69.7	56.8	67.0	79.7	60.0	70.0	86.8	
		CD+CS	Wh/mile	131.5	131.5	118.3	108.0	126.7	111.9	98.1	120.2	102.2	86.5	113.6	97.7	79.3	
			MPGGE Unadjusted	115.1	115.1	132.5	152.9	130.3	147.6	169.4	137.5	162.7	194.3	145.4	170.1	212.1	
			MPGGE Adjusted	80.0	80.0	91.8	105.4	90.3	101.9	116.4	95.1	112.0	132.8	100.4	116.9	144.5	
	Combined	CD	MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
		CS	MPGGE Unadjusted	66.3	66.3	76.8	88.8	75.3	86.1	99.8	80.1	96.1	116.4	84.8	100.3	124.8	
			MPGGE Adjusted	47.2	47.2	54.0	61.6	53.1	59.9	68.4	56.1	66.1	78.3	59.1	68.7	83.3	
		CD+CS	Wh/mile	143.5	143.5	128.5	116.9	137.9	120.6	105.0	129.7	109.2	91.7	122.4	104.6	85.6	
			MPGGE Unadjusted	126.8	126.8	146.8	169.8	144.1	164.5	190.6	153.1	183.3	221.7	162.0	191.4	238.2	
			MPGGE Adjusted	84.0	84.0	95.3	107.7	93.8	104.9	118.4	98.7	114.7	133.7	103.6	118.8	141.6	

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				Compact													
				2010	2010			2015			2030			2045			
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high	
FC HEV PHEV40	UDDS	CD	Wh/mile	245.0	245.0	218.2	197.7	235.1	203.4	174.8	218.9	181.5	151.4	206.2	173.8	143.4	
			Distance	41.2	41.2	41.1	41.1	41.1	41.1	41.0	41.1	40.9	40.8	41.1	40.6	40.6	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	63.9	63.9	74.4	86.4	72.8	84.1	98.6	78.1	95.0	116.7	82.9	99.1	123.3	
			MPGGE Adjusted	46.0	46.0	52.5	59.7	51.6	58.4	66.7	54.8	64.7	76.6	57.7	67.0	80.0	
		CD+CS	Wh/mile	177.1	177.1	157.7	142.9	170.0	147.0	126.9	158.2	131.8	111.2	149.1	126.2	105.3	
			MPGGE Unadjusted	159.7	159.7	185.9	215.9	181.9	210.1	246.4	195.3	237.5	291.7	207.1	247.8	308.2	
		MPGGE Adjusted	97.8	97.8	109.4	121.5	107.7	119.3	132.9	113.3	129.7	148.1	118.1	133.4	153.2		
		HWFET	CD	Wh/mile	258.7	258.7	232.6	212.1	249.5	219.6	192.3	236.0	200.2	168.0	222.9	191.3	153.9
				Distance	38.3	38.3	37.9	37.7	38.1	37.5	36.7	37.5	36.5	36.6	37.5	36.8	37.7
				MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	MPGGE Adjusted			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	CS		MPGGE Unadjusted	67.1	67.1	77.3	89.3	75.9	86.2	99.1	80.3	95.2	114.0	85.0	99.6	124.4	
			MPGGE Adjusted	47.1	47.1	54.2	62.4	53.2	60.3	69.1	56.2	66.5	79.2	59.5	69.5	86.3	
	CD+CS		Wh/mile	174.3	174.3	156.7	142.9	168.1	148.0	129.8	159.0	135.1	113.5	150.2	129.1	104.0	
			MPGGE Unadjusted	145.8	145.8	168.1	194.0	165.0	187.5	215.4	174.5	207.0	247.7	184.7	216.6	270.4	
	MPGGE Adjusted		100.7	100.7	115.5	132.7	113.5	128.3	146.6	119.8	141.1	167.5	126.5	147.4	181.9		
	Combined		CD	MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			CS	MPGGE Unadjusted	65.3	65.3	75.7	87.6	74.1	85.0	98.8	79.1	95.1	115.4	83.8	99.3	123.8
		MPGGE Adjusted		46.5	46.5	53.3	60.9	52.3	59.2	67.8	55.4	65.5	77.8	58.4	68.1	82.7	
		CD+CS	Wh/mile	175.8	175.8	157.3	142.9	169.1	147.4	128.2	158.6	133.3	112.2	149.6	127.5	104.7	
			MPGGE Unadjusted	153.1	153.1	177.4	205.5	173.9	199.3	231.4	185.4	222.7	270.1	196.4	232.7	289.9	
		MPGGE Adjusted	99.1	99.1	112.1	126.3	110.2	123.2	138.8	116.1	134.6	156.2	121.7	139.3	164.9		
EV		UDDS	EV Only	Wh/mile	240.4	240.4	226.3	208.1	242.0	216.3	180.2	229.4	186.9	149.9	220.5	178.1	140.9
HWFET	EV Only	Wh/mile	251.2	251.2	234.7	216.1	250.7	224.9	193.7	239.5	201.4	166.6	229.1	191.8	152.1		

Fuel consumption

			Compact												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Conv	Unadjusted	UDDS	7.8	7.8	7.2	6.9	7.5	7.0	5.7	7.3	6.7	4.8	7.1	6.5	4.7
		HWFET	5.7	5.7	5.2	4.7	5.4	4.7	3.8	5.0	4.6	3.3	4.9	4.4	3.1
		Combined	6.8	6.8	6.3	5.9	6.5	6.0	4.8	6.2	5.8	4.1	6.1	5.6	4.0
	Adjusted	UDDS	10.2	10.2	9.5	9.1	9.8	9.1	7.6	9.5	8.9	6.5	9.4	8.6	6.4
		HWFET	8.0	8.0	7.4	6.6	7.6	6.7	5.4	7.0	6.5	4.7	6.9	6.3	4.5
		Combined	9.2	9.2	8.5	8.0	8.8	8.0	6.6	8.4	7.8	5.6	8.3	7.6	5.5
CI Conv	Unadjusted	UDDS	6.7	6.7	6.4	5.9	6.6	6.0	5.4	6.3	5.6	4.7	6.1	5.3	4.5
		HWFET	4.9	4.9	4.6	4.2	4.8	4.3	3.9	4.6	4.0	3.4	4.4	3.8	3.2
		Combined	5.9	5.9	5.6	5.2	5.8	5.3	4.7	5.5	4.9	4.1	5.3	4.6	3.9
	Adjusted	UDDS	8.8	8.8	8.4	7.8	8.7	8.0	7.3	8.4	7.4	6.4	8.0	7.1	6.1
		HWFET	7.0	7.0	6.6	6.0	6.8	6.2	5.5	6.5	5.7	4.8	6.2	5.4	4.5
		Combined	8.0	8.0	7.6	7.0	7.9	7.2	6.5	7.5	6.7	5.7	7.2	6.4	5.4
H2 Conv	Unadjusted	UDDS	9.2	9.2	7.8	6.9	8.1	7.0	6.2	7.5	6.4	5.2	7.0	5.9	4.9
		HWFET	6.2	6.2	5.2	4.3	5.5	4.4	3.9	4.7	4.0	3.3	4.4	3.8	3.0
		Combined	7.9	7.9	6.6	5.7	7.0	5.9	5.2	6.3	5.4	4.4	5.8	4.9	4.0
	Adjusted	UDDS	11.9	11.9	10.1	9.0	10.6	9.2	8.2	9.8	8.5	7.0	9.1	7.9	6.6
		HWFET	8.8	8.8	7.4	6.1	7.8	6.3	5.6	6.7	5.7	4.8	6.3	5.3	4.3
		Combined	10.5	10.5	8.9	7.7	9.3	7.9	7.0	8.4	7.2	6.0	7.8	6.7	5.6
E85 Conv	Unadjusted	UDDS	8.0	8.0	7.9	7.5	8.2	7.7	5.8	8.1	7.4	5.0	7.8	7.1	4.8
		HWFET	6.0	6.0	5.9	5.4	6.1	5.5	4.2	5.8	5.3	3.5	5.6	5.0	3.4
		Combined	7.1	7.1	7.0	6.6	7.3	6.7	5.1	7.1	6.5	4.3	6.8	6.1	4.2
	Adjusted	UDDS	10.4	10.4	10.3	9.8	10.7	10.0	7.7	10.5	9.6	6.7	10.1	9.2	6.5
		HWFET	8.4	8.4	8.3	7.7	8.6	7.9	5.9	8.3	7.5	5.0	7.9	7.1	4.8
		Combined	9.5	9.5	9.4	8.9	9.8	9.0	6.9	9.5	8.7	5.9	9.1	8.3	5.7
SI Split HEV	Unadjusted	UDDS	3.9	3.9	3.7	3.4	3.9	3.4	2.8	3.6	3.1	2.2	3.5	3.0	2.1
		HWFET	4.5	4.5	4.1	3.8	4.4	3.9	3.2	4.1	3.6	2.6	4.0	3.4	2.4
		Combined	4.2	4.2	3.9	3.6	4.1	3.6	3.0	3.9	3.3	2.4	3.7	3.2	2.2
	Adjusted	UDDS	5.4	5.4	5.1	4.7	5.4	4.8	4.0	5.0	4.4	3.3	4.9	4.2	3.2
		HWFET	6.4	6.4	5.9	5.4	6.3	5.6	4.6	5.9	5.1	3.8	5.7	4.9	3.5
		Combined	5.8	5.8	5.4	5.0	5.8	5.1	4.3	5.4	4.7	3.5	5.2	4.5	3.3
SI Split HEV PHEV10	Unadjusted	UDDS	3.1	3.1	2.9	2.7	3.1	2.8	2.3	3.0	2.6	1.8	2.9	2.5	1.7
		HWFET	3.3	3.3	3.0	2.8	3.2	2.9	2.4	3.1	2.6	2.0	2.9	2.5	1.8
		Combined	3.2	3.2	3.0	2.7	3.1	2.8	2.3	3.0	2.6	1.9	2.9	2.5	1.8
	Adjusted	UDDS	4.4	4.4	4.2	3.9	4.4	4.0	3.4	4.2	3.7	2.9	4.1	3.6	2.7
		HWFET	4.6	4.6	4.3	4.0	4.5	4.1	3.4	4.4	3.8	2.8	4.2	3.6	2.6
		Combined	4.5	4.5	4.2	3.9	4.5	4.1	3.4	4.3	3.8	2.9	4.1	3.6	2.7

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			Compact												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Split HEV PHEV20	Unadjusted	UDDS	2.2	2.2	2.0	2.2	2.2	2.3	1.6	2.1	1.8	1.5	2.0	2.0	1.4
		HWFET	3.3	3.3	2.9	2.7	3.2	2.8	2.3	3.1	2.6	1.9	2.8	2.5	1.8
		Combined	2.7	2.7	2.4	2.4	2.6	2.5	1.9	2.5	2.1	1.7	2.4	2.2	1.6
	Adjusted	UDDS	3.3	3.3	3.1	3.4	3.2	3.4	2.5	3.1	2.7	2.4	3.0	3.1	2.4
		HWFET	4.7	4.7	4.2	3.9	4.6	4.0	3.3	4.4	3.7	2.7	4.1	3.5	2.5
		Combined	3.9	3.9	3.6	3.6	3.8	3.7	2.9	3.7	3.2	2.6	3.5	3.3	2.4
SI Series HEV PHEV30	Unadjusted	UDDS	2.4	2.4	2.2	2.0	2.3	2.0	1.6	2.2	1.8	1.3	2.1	1.8	1.2
		HWFET	2.4	2.4	2.2	2.0	2.4	2.1	1.7	2.2	1.9	1.4	2.1	1.8	1.2
		Combined	2.4	2.4	2.2	2.0	2.3	2.1	1.6	2.2	1.8	1.3	2.1	1.8	1.2
	Adjusted	UDDS	3.5	3.5	3.3	3.0	3.4	3.1	2.6	3.3	2.8	2.2	3.1	2.8	2.1
		HWFET	3.5	3.5	3.2	2.9	3.4	3.0	2.4	3.2	2.7	2.0	3.1	2.6	1.8
		Combined	3.5	3.5	3.2	3.0	3.4	3.1	2.5	3.2	2.8	2.1	3.1	2.7	2.0
SI Series HEV PHEV40	Unadjusted	UDDS	2.1	2.1	1.9	1.7	2.0	1.8	1.4	1.9	1.6	1.1	1.8	1.5	1.0
		HWFET	2.5	2.5	1.8	1.7	1.9	1.7	1.4	1.8	1.5	1.4	1.7	1.5	1.0
		Combined	2.3	2.3	1.9	1.7	2.0	1.8	1.4	1.9	1.6	1.2	1.8	1.5	1.0
	Adjusted	UDDS	3.1	3.1	2.9	2.7	3.1	2.8	2.3	2.9	2.5	1.9	2.8	2.4	1.9
		HWFET	3.6	3.6	2.6	2.4	2.8	2.5	2.0	2.6	2.2	2.0	2.5	2.1	1.5
		Combined	3.3	3.3	2.8	2.6	3.0	2.6	2.2	2.8	2.4	2.0	2.7	2.3	1.7
CI Split HEV	Unadjusted	UDDS	3.7	3.7	3.5	3.2	3.7	3.2	2.8	3.4	2.9	2.3	3.2	2.7	2.2
		HWFET	4.3	4.3	4.0	3.6	4.2	3.7	3.3	3.9	3.4	2.7	3.7	3.2	2.5
		Combined	3.9	3.9	3.7	3.4	3.9	3.4	3.0	3.6	3.1	2.5	3.5	2.9	2.3
	Adjusted	UDDS	5.1	5.1	4.9	4.5	5.1	4.5	4.0	4.7	4.1	3.4	4.6	3.9	3.3
		HWFET	6.1	6.1	5.6	5.1	6.0	5.3	4.6	5.6	4.8	3.9	5.3	4.5	3.6
		Combined	5.5	5.5	5.2	4.8	5.5	4.9	4.3	5.1	4.4	3.6	4.9	4.2	3.4
CI Split HEV PHEV10	Unadjusted	UDDS	3.1	3.1	2.9	2.7	3.1	2.8	2.4	2.9	2.5	2.0	2.8	2.4	1.9
		HWFET	3.3	3.3	3.0	2.7	3.3	2.8	2.5	3.0	2.6	2.1	2.9	2.4	1.9
		Combined	3.2	3.2	3.0	2.7	3.2	2.8	2.4	3.0	2.5	2.0	2.8	2.4	1.9
	Adjusted	UDDS	4.4	4.4	4.2	3.9	4.4	4.0	3.5	4.2	3.6	3.0	4.0	3.5	2.9
		HWFET	4.7	4.7	4.3	3.9	4.6	4.1	3.6	4.3	3.7	3.0	4.1	3.5	2.8
		Combined	4.5	4.5	4.3	3.9	4.5	4.0	3.6	4.2	3.6	3.0	4.0	3.5	2.9
CI Split HEV PHEV20	Unadjusted	UDDS	2.2	2.2	2.0	1.9	2.2	1.9	1.7	2.0	1.7	1.6	1.9	1.6	1.5
		HWFET	2.7	2.7	2.5	2.7	2.7	2.3	2.4	2.5	2.5	2.0	2.3	2.4	1.9
		Combined	2.4	2.4	2.2	2.2	2.4	2.1	2.0	2.2	2.1	1.8	2.1	2.0	1.7
	Adjusted	UDDS	3.3	3.3	3.1	2.9	3.3	2.9	2.6	3.1	2.7	2.6	3.0	2.6	2.5
		HWFET	3.9	3.9	3.6	3.9	3.8	3.3	3.5	3.6	3.6	2.9	3.3	3.4	2.7
		Combined	3.5	3.5	3.3	3.3	3.5	3.1	3.0	3.3	3.1	2.8	3.1	3.0	2.6

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			Compact												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
CI Series HEV PHEV30	Unadjusted	UDDS	2.3	2.3	2.2	2.0	2.3	2.0	1.7	2.1	1.7	1.4	2.0	1.6	1.3
		HWFET	2.4	2.4	2.2	2.0	2.4	2.1	1.8	2.2	1.8	1.5	2.1	1.7	1.3
		Combined	2.4	2.4	2.2	2.0	2.4	2.0	1.7	2.2	1.8	1.4	2.0	1.7	1.3
	Adjusted	UDDS	3.5	3.5	3.3	3.0	3.5	3.1	2.6	3.2	2.7	2.3	3.1	2.6	2.2
		HWFET	3.5	3.5	3.2	2.9	3.4	3.0	2.5	3.2	2.6	2.1	3.0	2.5	1.9
		Combined	3.5	3.5	3.2	2.9	3.4	3.0	2.6	3.2	2.7	2.2	3.0	2.6	2.1
CI Series HEV PHEV40	Unadjusted	UDDS	2.1	2.1	1.9	1.7	2.0	1.8	1.5	1.9	1.5	1.2	1.8	1.4	1.1
		HWFET	2.0	2.0	1.8	1.6	2.0	1.7	1.4	1.8	1.5	1.2	1.7	1.4	1.1
		Combined	2.0	2.0	1.9	1.7	2.0	1.7	1.5	1.8	1.5	1.2	1.7	1.4	1.1
	Adjusted	UDDS	3.1	3.1	2.9	2.7	3.1	2.8	2.4	2.9	2.4	2.0	2.8	2.3	1.9
		HWFET	2.8	2.8	2.6	2.4	2.8	2.4	2.1	2.6	2.1	1.7	2.4	2.0	1.6
		Combined	3.0	3.0	2.8	2.5	3.0	2.6	2.3	2.7	2.3	1.9	2.6	2.2	1.8
H2 Split HEV	Unadjusted	UDDS	4.1	4.1	3.4	2.9	3.7	3.0	2.5	3.2	2.6	2.0	3.0	2.4	1.9
		HWFET	4.7	4.7	3.9	3.4	4.2	3.5	2.9	3.7	3.0	2.5	3.4	2.8	2.2
		Combined	4.3	4.3	3.6	3.1	3.9	3.2	2.7	3.5	2.8	2.2	3.2	2.6	2.0
	Adjusted	UDDS	5.6	5.6	4.8	4.2	5.1	4.3	3.7	4.6	3.8	3.1	4.3	3.6	2.9
		HWFET	6.6	6.6	5.5	4.8	5.9	4.9	4.2	5.3	4.3	3.5	4.9	4.0	3.1
		Combined	6.1	6.1	5.1	4.5	5.5	4.6	3.9	4.9	4.0	3.3	4.5	3.8	3.0
H2 Split HEV PHEV10	Unadjusted	UDDS	3.3	3.3	2.7	2.4	3.0	2.5	2.1	2.6	2.2	1.7	2.4	2.0	1.6
		HWFET	3.4	3.4	2.8	2.5	3.0	2.5	2.2	2.7	2.3	1.8	2.5	2.1	1.6
		Combined	3.3	3.3	2.8	2.4	3.0	2.5	2.1	2.7	2.2	1.8	2.5	2.1	1.6
	Adjusted	UDDS	4.6	4.6	4.0	3.5	4.2	3.6	3.1	3.8	3.3	2.7	3.6	3.1	2.5
		HWFET	4.8	4.8	4.0	3.5	4.3	3.6	3.1	3.9	3.3	2.7	3.6	3.0	2.4
		Combined	4.7	4.7	4.0	3.5	4.3	3.6	3.1	3.9	3.3	2.7	3.6	3.1	2.4
H2 Split HEV PHEV20	Unadjusted	UDDS	2.3	2.3	1.9	1.6	2.1	1.7	1.7	1.8	1.8	1.4	1.7	1.7	1.3
		HWFET	2.8	2.8	2.8	2.4	2.5	2.5	2.1	2.7	2.2	1.8	2.4	2.0	1.6
		Combined	2.5	2.5	2.3	2.0	2.2	2.0	1.9	2.2	2.0	1.6	2.0	1.8	1.4
	Adjusted	UDDS	3.4	3.4	2.9	2.6	3.1	2.7	2.7	2.8	2.8	2.3	2.7	2.6	2.2
		HWFET	4.0	4.0	4.1	3.4	3.5	3.5	3.0	3.9	3.1	2.6	3.5	2.9	2.3
		Combined	3.7	3.7	3.4	3.0	3.3	3.1	2.8	3.3	2.9	2.4	3.0	2.8	2.2
H2 Series HEV PHEV30	Unadjusted	UDDS	2.5	2.5	2.1	1.7	2.2	1.8	1.5	2.0	1.5	1.3	1.8	1.5	1.2
		HWFET	2.5	2.5	2.1	1.8	2.2	1.8	1.5	2.0	1.6	1.6	1.8	1.5	1.1
		Combined	2.5	2.5	2.1	1.8	2.2	1.8	1.5	2.0	1.6	1.4	1.8	1.5	1.2
	Adjusted	UDDS	3.7	3.7	3.1	2.7	3.3	2.8	2.4	3.0	2.5	2.1	2.8	2.4	2.0
		HWFET	3.6	3.6	3.0	2.6	3.2	2.7	2.2	2.8	2.3	2.4	2.6	2.1	1.7
		Combined	3.6	3.6	3.1	2.7	3.3	2.8	2.3	2.9	2.4	2.2	2.7	2.3	1.9

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			Compact												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
H2 Series HEV PHEV40	Unadjusted	UDDS	2.2	2.2	1.8	1.5	1.9	1.6	1.3	1.7	1.3	1.1	1.6	1.2	1.0
		HWFET	2.0	2.0	1.7	1.4	1.8	1.5	1.2	1.6	1.3	1.3	1.5	1.2	0.9
		Combined	2.1	2.1	1.8	1.5	1.9	1.5	1.3	1.7	1.3	1.2	1.5	1.2	0.9
	Adjusted	UDDS	3.3	3.3	2.8	2.5	3.0	2.5	2.2	2.7	2.2	1.9	2.5	2.1	1.8
		HWFET	2.9	2.9	2.5	2.1	2.6	2.2	1.8	2.3	1.9	1.9	2.1	1.8	1.4
		Combined	3.1	3.1	2.6	2.3	2.8	2.4	2.0	2.5	2.1	1.9	2.3	2.0	1.6
E85 Split HEV	Unadjusted	UDDS	4.2	4.2	3.9	3.6	4.2	3.7	2.8	3.9	3.3	2.4	3.7	3.2	2.2
		HWFET	4.8	4.8	4.5	4.1	4.7	4.2	3.3	4.5	3.8	2.8	4.3	3.7	2.6
		Combined	4.5	4.5	4.2	3.8	4.4	3.9	3.0	4.1	3.5	2.6	4.0	3.4	2.4
	Adjusted	UDDS	5.8	5.8	5.4	5.1	5.7	5.1	4.1	5.4	4.7	3.5	5.2	4.5	3.3
		HWFET	6.9	6.9	6.3	5.8	6.7	6.0	4.6	6.3	5.4	4.0	6.1	5.2	3.7
		Combined	6.3	6.3	5.8	5.4	6.2	5.5	4.3	5.8	5.0	3.7	5.6	4.8	3.5
E85 Split HEV PHEV10	Unadjusted	UDDS	3.3	3.3	3.1	2.9	3.3	3.0	2.3	3.2	2.7	2.0	3.0	2.6	1.8
		HWFET	3.5	3.5	3.2	3.0	3.4	3.1	2.4	3.3	2.8	2.1	3.1	2.7	1.9
		Combined	3.4	3.4	3.2	2.9	3.4	3.0	2.4	3.2	2.8	2.0	3.1	2.7	1.9
	Adjusted	UDDS	4.7	4.7	4.4	4.1	4.7	4.3	3.4	4.5	3.9	3.0	4.3	3.8	2.9
		HWFET	5.0	5.0	4.6	4.3	4.9	4.4	3.5	4.7	4.1	3.0	4.5	3.9	2.8
		Combined	4.8	4.8	4.5	4.2	4.8	4.3	3.4	4.6	4.0	3.0	4.4	3.8	2.8
E85 Split HEV PHEV20	Unadjusted	UDDS	2.3	2.3	2.2	2.4	2.3	2.5	1.6	2.2	1.9	1.6	2.1	2.2	1.5
		HWFET	3.5	3.5	3.1	2.9	3.4	3.0	2.3	3.3	2.7	2.0	3.0	2.6	1.9
		Combined	2.9	2.9	2.6	2.6	2.8	2.7	1.9	2.7	2.3	1.8	2.5	2.4	1.7
	Adjusted	UDDS	3.4	3.4	3.3	3.5	3.4	3.6	2.6	3.3	2.9	2.6	3.2	3.3	2.5
		HWFET	5.0	5.0	4.5	4.1	4.9	4.3	3.4	4.7	3.9	2.9	4.3	3.8	2.7
		Combined	4.1	4.1	3.8	3.8	4.1	3.9	2.9	3.9	3.4	2.7	3.7	3.5	2.6
E85 Series HEV PHEV30	Unadjusted	UDDS	2.5	2.5	2.3	2.1	2.5	2.2	1.6	2.3	1.9	1.3	2.2	1.9	1.3
		HWFET	2.6	2.6	2.4	2.2	2.5	2.2	1.7	2.4	2.0	1.4	2.3	1.9	1.3
		Combined	2.6	2.6	2.3	2.1	2.5	2.2	1.7	2.3	1.9	1.4	2.2	1.9	1.3
	Adjusted	UDDS	3.7	3.7	3.4	3.2	3.6	3.3	2.6	3.4	2.9	2.3	3.3	2.9	2.2
		HWFET	3.7	3.7	3.4	3.1	3.6	3.2	2.5	3.4	2.9	2.1	3.3	2.7	1.9
		Combined	3.7	3.7	3.4	3.1	3.6	3.2	2.5	3.4	2.9	2.2	3.3	2.8	2.1
E85 Series HEV PHEV40	Unadjusted	UDDS	2.2	2.2	2.0	1.8	2.2	1.9	1.4	2.0	1.7	1.1	1.9	1.6	1.1
		HWFET	2.6	2.6	1.9	1.8	2.1	1.8	1.4	1.9	1.6	1.4	1.8	1.5	1.1
		Combined	2.4	2.4	2.0	1.8	2.1	1.9	1.4	2.0	1.6	1.3	1.9	1.6	1.1
	Adjusted	UDDS	3.3	3.3	3.1	2.8	3.2	2.9	2.3	3.1	2.6	2.0	3.0	2.6	1.9
		HWFET	3.8	3.8	2.8	2.5	3.0	2.6	2.0	2.8	2.4	2.1	2.7	2.2	1.6
		Combined	3.5	3.5	2.9	2.7	3.1	2.8	2.2	2.9	2.5	2.0	2.8	2.4	1.8

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			Compact												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
FC HEV	Unadjusted	UDDS	3.6	3.6	3.1	2.6	3.1	2.6	2.2	2.8	2.3	1.9	2.7	2.2	1.8
		HWFET	3.5	3.5	3.0	2.5	3.0	2.6	2.3	2.8	2.4	2.0	2.7	2.3	1.8
		Combined	3.6	3.6	3.0	2.6	3.1	2.6	2.3	2.8	2.3	1.9	2.7	2.3	1.8
	Adjusted	UDDS	5.1	5.1	4.4	3.8	4.4	3.8	3.4	4.1	3.4	2.9	3.9	3.3	2.8
		HWFET	4.9	4.9	4.2	3.6	4.3	3.7	3.3	4.0	3.4	2.9	3.8	3.3	2.6
		Combined	5.0	5.0	4.3	3.7	4.4	3.8	3.3	4.0	3.4	2.9	3.8	3.3	2.7
FC PHEV10	Unadjusted	UDDS	2.9	2.9	2.5	2.1	2.5	2.2	1.9	2.3	1.9	1.6	2.2	1.9	1.5
		HWFET	2.6	2.6	2.3	1.9	2.3	2.0	1.8	2.2	1.8	1.6	2.1	1.8	1.4
		Combined	2.8	2.8	2.4	2.0	2.4	2.1	1.8	2.3	1.9	1.6	2.1	1.8	1.5
	Adjusted	UDDS	4.2	4.2	3.6	3.2	3.7	3.3	2.9	3.5	3.0	2.6	3.3	2.9	2.5
		HWFET	3.7	3.7	3.2	2.8	3.3	2.9	2.6	3.1	2.7	2.2	3.0	2.6	2.1
		Combined	4.0	4.0	3.5	3.0	3.5	3.1	2.7	3.3	2.8	2.4	3.2	2.8	2.3
FC PHEV20	Unadjusted	UDDS	2.4	2.4	2.1	1.7	2.1	1.8	1.6	1.9	1.6	1.3	1.8	1.6	1.2
		HWFET	2.6	2.6	2.2	1.9	2.3	2.0	1.7	2.1	1.8	1.5	2.0	1.7	1.4
		Combined	2.5	2.5	2.1	1.8	2.2	1.9	1.6	2.0	1.7	1.4	1.9	1.6	1.3
	Adjusted	UDDS	3.5	3.5	3.1	2.7	3.2	2.8	2.5	3.0	2.6	2.2	2.9	2.5	2.1
		HWFET	3.7	3.7	3.2	2.7	3.2	2.9	2.5	3.1	2.6	2.2	2.9	2.5	2.0
		Combined	3.6	3.6	3.2	2.7	3.2	2.8	2.5	3.0	2.6	2.2	2.9	2.5	2.1
FC PHEV30	Unadjusted	UDDS	1.7	1.7	1.5	1.3	1.5	1.3	1.1	1.4	1.1	0.9	1.3	1.1	0.9
		HWFET	2.0	2.0	1.8	1.5	1.8	1.6	1.4	1.7	1.4	1.2	1.6	1.4	1.1
		Combined	1.9	1.9	1.6	1.4	1.6	1.4	1.2	1.5	1.3	1.1	1.5	1.2	1.0
	Adjusted	UDDS	2.7	2.7	2.4	2.1	2.4	2.2	2.0	2.3	2.0	1.7	2.2	2.0	1.7
		HWFET	2.9	2.9	2.6	2.2	2.6	2.3	2.0	2.5	2.1	1.8	2.3	2.0	1.6
		Combined	2.8	2.8	2.5	2.2	2.5	2.2	2.0	2.4	2.1	1.8	2.3	2.0	1.7
FC PHEV40	Unadjusted	UDDS	1.5	1.5	1.3	1.1	1.3	1.1	1.0	1.2	1.0	0.8	1.1	0.9	0.8
		HWFET	1.6	1.6	1.4	1.2	1.4	1.3	1.1	1.3	1.1	0.9	1.3	1.1	0.9
		Combined	1.5	1.5	1.3	1.1	1.4	1.2	1.0	1.3	1.1	0.9	1.2	1.0	0.8
	Adjusted	UDDS	2.4	2.4	2.2	1.9	2.2	2.0	1.8	2.1	1.8	1.6	2.0	1.8	1.5
		HWFET	2.3	2.3	2.0	1.8	2.1	1.8	1.6	2.0	1.7	1.4	1.9	1.6	1.3
		Combined	2.4	2.4	2.1	1.9	2.1	1.9	1.7	2.0	1.7	1.5	1.9	1.7	1.4

Fuel Consumption Improvement versus the Conventional 2010 Reference

			Compact												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Conv	Unadjusted	UDDS	0.0%	0.0%	-7.3%	-11.4%	-4.2%	-10.9%	-27.3%	-6.8%	-13.8%	-38.9%	-8.7%	-16.7%	-39.8%
		HWFET	0.0%	0.0%	-8.2%	-17.8%	-4.6%	-16.5%	-32.6%	-12.3%	-19.5%	-42.2%	-13.5%	-21.4%	-44.5%
		Combined	0.0%	0.0%	-7.6%	-13.8%	-4.4%	-13.0%	-29.3%	-8.9%	-15.9%	-40.1%	-10.5%	-18.5%	-41.5%
	Adjusted	UDDS	0.0%	0.0%	-6.8%	-10.8%	-4.0%	-10.3%	-25.7%	-6.4%	-12.9%	-36.6%	-8.2%	-15.8%	-37.5%
		HWFET	0.0%	0.0%	-8.1%	-17.7%	-4.6%	-16.3%	-32.3%	-12.1%	-19.3%	-41.8%	-13.4%	-21.2%	-44.1%
		Combined	0.0%	0.0%	-7.4%	-13.5%	-4.2%	-12.7%	-28.3%	-8.7%	-15.4%	-38.7%	-10.2%	-17.9%	-40.1%
CI Conv	Unadjusted	UDDS	-14.4%	-14.4%	-18.4%	-24.4%	-15.5%	-22.6%	-30.4%	-19.1%	-28.7%	-40.0%	-22.4%	-32.0%	-42.2%
		HWFET	-13.3%	-13.3%	-18.3%	-25.5%	-14.7%	-23.3%	-31.4%	-19.3%	-29.2%	-40.2%	-22.7%	-32.5%	-43.8%
		Combined	-14.0%	-14.0%	-18.4%	-24.8%	-15.2%	-22.9%	-30.8%	-19.2%	-28.9%	-40.1%	-22.5%	-32.2%	-42.8%
	Adjusted	UDDS	-13.6%	-13.6%	-17.3%	-22.9%	-14.6%	-21.3%	-28.6%	-18.0%	-27.0%	-37.6%	-21.1%	-30.1%	-39.7%
		HWFET	-13.1%	-13.1%	-18.1%	-25.3%	-14.6%	-23.1%	-31.2%	-19.2%	-29.0%	-39.9%	-22.5%	-32.2%	-43.4%
		Combined	-13.4%	-13.4%	-17.6%	-23.8%	-14.6%	-22.0%	-29.6%	-18.5%	-27.7%	-38.5%	-21.7%	-30.9%	-41.2%
H2 Conv	Unadjusted	UDDS	17.5%	17.5%	-0.7%	-12.0%	4.0%	-10.1%	-20.3%	-3.8%	-17.8%	-33.4%	-11.1%	-24.2%	-37.7%
		HWFET	10.2%	10.2%	-7.3%	-23.9%	-2.6%	-21.8%	-31.0%	-16.3%	-28.6%	-41.1%	-22.1%	-33.6%	-46.2%
		Combined	14.8%	14.8%	-3.2%	-16.4%	1.6%	-14.5%	-24.3%	-8.4%	-21.8%	-36.3%	-15.2%	-27.7%	-40.9%
	Adjusted	UDDS	16.4%	16.4%	-0.7%	-11.3%	3.8%	-9.5%	-19.1%	-3.5%	-16.8%	-31.4%	-10.4%	-22.8%	-35.5%
		HWFET	10.2%	10.2%	-7.2%	-23.7%	-2.6%	-21.6%	-30.8%	-16.1%	-28.3%	-40.7%	-21.9%	-33.3%	-45.8%
		Combined	14.0%	14.0%	-3.3%	-16.2%	1.3%	-14.2%	-23.7%	-8.5%	-21.3%	-35.1%	-14.9%	-26.9%	-39.5%
E85 Conv	Unadjusted	UDDS	2.1%	2.1%	1.6%	-3.5%	5.1%	-1.7%	-25.6%	3.2%	-5.6%	-36.7%	-0.5%	-9.8%	-38.4%
		HWFET	5.2%	5.2%	3.7%	-4.4%	7.7%	-2.0%	-26.3%	3.1%	-6.1%	-37.5%	-2.0%	-11.4%	-40.6%
		Combined	3.2%	3.2%	2.4%	-3.8%	6.1%	-1.8%	-25.8%	3.1%	-5.8%	-37.0%	-1.0%	-10.4%	-39.2%
	Adjusted	UDDS	1.9%	1.9%	1.5%	-3.3%	4.8%	-1.6%	-24.1%	3.0%	-5.2%	-34.5%	-0.5%	-9.2%	-36.1%
		HWFET	5.1%	5.1%	3.6%	-4.3%	7.6%	-2.0%	-26.0%	3.1%	-6.1%	-37.2%	-1.9%	-11.3%	-40.2%
		Combined	3.2%	3.2%	2.3%	-3.7%	5.9%	-1.7%	-24.8%	3.0%	-5.6%	-35.6%	-1.0%	-10.0%	-37.7%
SI Split HEV	Unadjusted	UDDS	-49.9%	-49.9%	-53.1%	-56.9%	-50.1%	-56.3%	-64.5%	-53.8%	-60.5%	-71.6%	-55.4%	-62.1%	-73.0%
		HWFET	-21.0%	-21.0%	-27.1%	-33.1%	-22.2%	-31.0%	-43.6%	-26.9%	-37.0%	-53.7%	-29.7%	-39.8%	-57.3%
		Combined	-39.1%	-39.1%	-43.5%	-48.0%	-39.7%	-46.9%	-56.7%	-43.8%	-51.7%	-64.9%	-45.8%	-53.8%	-67.2%
	Adjusted	UDDS	-46.9%	-46.9%	-50.0%	-53.5%	-47.2%	-53.0%	-60.7%	-50.6%	-56.9%	-67.4%	-52.1%	-58.4%	-68.7%
		HWFET	-20.8%	-20.8%	-26.9%	-32.8%	-22.0%	-30.7%	-43.2%	-26.6%	-36.6%	-53.2%	-29.4%	-39.4%	-56.8%
		Combined	-36.7%	-36.7%	-41.0%	-45.4%	-37.3%	-44.2%	-53.8%	-41.2%	-49.0%	-61.8%	-43.2%	-51.0%	-64.0%
SI Split HEV PHEV10	Unadjusted	UDDS	-59.9%	-59.9%	-62.5%	-65.3%	-60.3%	-64.3%	-70.8%	-62.1%	-67.4%	-76.4%	-63.5%	-68.6%	-77.7%
		HWFET	-42.5%	-42.5%	-46.7%	-50.8%	-43.8%	-49.0%	-58.1%	-45.9%	-53.2%	-65.1%	-48.3%	-55.1%	-68.2%
		Combined	-53.4%	-53.4%	-56.6%	-59.9%	-54.2%	-58.6%	-66.0%	-56.1%	-62.1%	-72.2%	-57.8%	-63.6%	-74.1%
	Adjusted	UDDS	-56.4%	-56.4%	-58.8%	-61.5%	-56.8%	-60.6%	-66.6%	-58.4%	-63.4%	-71.9%	-59.7%	-64.5%	-73.1%
		HWFET	-42.1%	-42.1%	-46.3%	-50.4%	-43.4%	-48.5%	-57.6%	-45.5%	-52.8%	-64.5%	-47.9%	-54.6%	-67.6%
		Combined	-50.8%	-50.8%	-53.9%	-57.1%	-51.5%	-55.8%	-63.1%	-53.4%	-59.2%	-69.0%	-55.1%	-60.6%	-70.9%

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			Compact												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Split HEV PHEV20	Unadjusted	UDDS	-72.2%	-72.2%	-74.0%	-71.3%	-72.4%	-70.4%	-79.8%	-73.7%	-77.6%	-80.7%	-74.7%	-74.0%	-81.7%
		HWFET	-42.1%	-42.1%	-48.3%	-52.4%	-43.4%	-50.7%	-59.5%	-45.8%	-54.8%	-66.4%	-49.8%	-56.7%	-69.0%
		Combined	-61.0%	-61.0%	-64.4%	-64.3%	-61.6%	-63.1%	-72.2%	-63.3%	-69.1%	-75.4%	-65.4%	-67.6%	-77.0%
	Adjusted	UDDS	-67.9%	-67.9%	-69.6%	-67.1%	-68.1%	-66.2%	-75.1%	-69.4%	-73.0%	-76.0%	-70.3%	-69.6%	-76.9%
		HWFET	-41.8%	-41.8%	-47.9%	-51.9%	-43.0%	-50.3%	-58.9%	-45.3%	-54.3%	-65.8%	-49.3%	-56.2%	-68.4%
		Combined	-57.7%	-57.7%	-61.1%	-61.2%	-58.3%	-60.0%	-68.8%	-60.0%	-65.7%	-72.0%	-62.1%	-64.4%	-73.6%
SI Series HEV PHEV30	Unadjusted	UDDS	-69.7%	-69.7%	-72.2%	-74.7%	-70.4%	-73.8%	-79.5%	-72.3%	-76.7%	-83.6%	-73.4%	-77.5%	-84.4%
		HWFET	-56.8%	-56.8%	-60.5%	-64.1%	-58.0%	-62.8%	-70.2%	-60.4%	-66.7%	-75.9%	-62.4%	-68.3%	-78.1%
		Combined	-64.9%	-64.9%	-67.8%	-70.8%	-65.7%	-69.7%	-76.0%	-67.9%	-73.0%	-80.7%	-69.3%	-74.1%	-82.0%
	Adjusted	UDDS	-65.6%	-65.6%	-67.9%	-70.3%	-66.2%	-69.5%	-74.8%	-68.1%	-72.2%	-78.7%	-69.1%	-73.0%	-79.4%
		HWFET	-56.3%	-56.3%	-59.9%	-63.6%	-57.4%	-62.2%	-69.6%	-59.9%	-66.1%	-75.2%	-61.8%	-67.7%	-77.4%
		Combined	-62.0%	-62.0%	-64.8%	-67.6%	-62.8%	-66.6%	-72.7%	-64.8%	-69.8%	-77.3%	-66.2%	-70.9%	-78.6%
SI Series HEV PHEV40	Unadjusted	UDDS	-73.5%	-73.5%	-75.7%	-78.0%	-74.0%	-77.2%	-82.0%	-75.8%	-79.9%	-86.2%	-76.9%	-80.8%	-86.9%
		HWFET	-56.2%	-56.2%	-67.8%	-70.8%	-65.6%	-69.7%	-75.8%	-67.7%	-72.9%	-75.7%	-69.3%	-74.3%	-82.1%
		Combined	-67.1%	-67.1%	-72.7%	-75.3%	-70.9%	-74.4%	-79.7%	-72.8%	-77.3%	-82.3%	-74.1%	-78.4%	-85.1%
	Adjusted	UDDS	-69.2%	-69.2%	-71.2%	-73.4%	-69.7%	-72.7%	-77.2%	-71.4%	-75.2%	-81.1%	-72.4%	-76.1%	-81.8%
		HWFET	-55.7%	-55.7%	-67.2%	-70.1%	-65.0%	-69.0%	-75.1%	-67.1%	-72.3%	-75.1%	-68.7%	-73.6%	-81.3%
		Combined	-63.9%	-63.9%	-69.6%	-72.1%	-67.9%	-71.3%	-76.4%	-69.7%	-74.1%	-78.7%	-71.0%	-75.1%	-81.6%
CI Split HEV	Unadjusted	UDDS	-53.2%	-53.2%	-55.5%	-59.6%	-52.9%	-59.0%	-64.4%	-56.7%	-63.3%	-70.6%	-58.6%	-65.2%	-72.0%
		HWFET	-24.7%	-24.7%	-29.9%	-36.2%	-26.0%	-34.2%	-42.6%	-30.6%	-40.8%	-51.8%	-34.0%	-44.2%	-55.3%
		Combined	-42.6%	-42.6%	-46.0%	-50.9%	-42.9%	-49.8%	-56.3%	-47.0%	-54.9%	-63.6%	-49.5%	-57.4%	-65.8%
	Adjusted	UDDS	-50.0%	-50.0%	-52.2%	-56.0%	-49.8%	-55.5%	-60.6%	-53.4%	-59.6%	-66.4%	-55.2%	-61.3%	-67.7%
		HWFET	-24.5%	-24.5%	-29.6%	-35.9%	-25.8%	-33.9%	-42.2%	-30.4%	-40.4%	-51.3%	-33.7%	-43.8%	-54.8%
		Combined	-40.0%	-40.0%	-43.4%	-48.1%	-40.4%	-47.0%	-53.4%	-44.4%	-52.1%	-60.5%	-46.8%	-54.5%	-62.7%
CI Split HEV PHEV10	Unadjusted	UDDS	-60.2%	-60.2%	-62.5%	-65.8%	-60.1%	-64.7%	-69.2%	-62.8%	-68.4%	-74.6%	-64.5%	-69.7%	-75.9%
		HWFET	-42.3%	-42.3%	-46.6%	-51.5%	-42.6%	-49.8%	-56.0%	-46.7%	-54.7%	-62.7%	-49.6%	-57.0%	-65.9%
		Combined	-53.6%	-53.6%	-56.5%	-60.5%	-53.6%	-59.2%	-64.3%	-56.8%	-63.3%	-70.2%	-59.0%	-65.0%	-72.2%
	Adjusted	UDDS	-56.7%	-56.7%	-58.8%	-61.9%	-56.6%	-60.9%	-65.1%	-59.1%	-64.4%	-70.2%	-60.7%	-65.6%	-71.4%
		HWFET	-41.9%	-41.9%	-46.1%	-51.0%	-42.2%	-49.4%	-55.5%	-46.3%	-54.2%	-62.1%	-49.1%	-56.5%	-65.3%
		Combined	-50.9%	-50.9%	-53.8%	-57.6%	-50.9%	-56.4%	-61.4%	-54.1%	-60.4%	-67.0%	-56.2%	-62.0%	-69.0%
CI Split HEV PHEV20	Unadjusted	UDDS	-72.1%	-72.1%	-73.9%	-76.3%	-72.0%	-75.5%	-78.9%	-74.1%	-78.1%	-79.0%	-75.4%	-79.2%	-80.2%
		HWFET	-52.4%	-52.4%	-56.1%	-52.3%	-52.7%	-58.9%	-57.4%	-55.7%	-55.8%	-63.8%	-58.9%	-58.2%	-66.6%
		Combined	-64.8%	-64.8%	-67.3%	-67.3%	-64.8%	-69.3%	-70.9%	-67.3%	-69.8%	-73.4%	-69.3%	-71.4%	-75.1%
	Adjusted	UDDS	-67.9%	-67.9%	-69.5%	-71.8%	-67.8%	-71.1%	-74.2%	-69.8%	-73.5%	-74.4%	-70.9%	-74.5%	-75.5%
		HWFET	-51.9%	-51.9%	-55.6%	-51.8%	-52.2%	-58.4%	-56.9%	-55.2%	-55.3%	-63.2%	-58.4%	-57.7%	-66.0%
		Combined	-61.6%	-61.6%	-64.1%	-63.9%	-61.7%	-66.1%	-67.4%	-64.1%	-66.4%	-70.0%	-66.0%	-67.9%	-71.8%

Argonne National Laboratory Report – Light-Duty Vehicle Fuel Consumption Displacement Potential Up to 2045

			Compact												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
CI Series HEV PHEV30	Unadjusted	UDDS	-70.0%	-70.0%	-72.1%	-74.9%	-70.1%	-74.1%	-78.9%	-72.7%	-77.9%	-82.4%	-74.1%	-79.0%	-83.3%
		HWFET	-57.4%	-57.4%	-60.6%	-64.8%	-58.0%	-63.3%	-69.1%	-61.3%	-67.9%	-74.3%	-63.5%	-69.8%	-76.4%
		Combined	-65.3%	-65.3%	-67.8%	-71.2%	-65.6%	-70.1%	-75.2%	-68.5%	-74.2%	-79.4%	-70.2%	-75.5%	-80.8%
	Adjusted	UDDS	-65.9%	-65.9%	-67.9%	-70.5%	-66.0%	-69.8%	-74.2%	-68.5%	-73.4%	-77.6%	-69.8%	-74.3%	-78.4%
		HWFET	-56.9%	-56.9%	-60.1%	-64.2%	-57.4%	-62.8%	-68.4%	-60.7%	-67.3%	-73.6%	-62.9%	-69.1%	-75.7%
		Combined	-62.4%	-62.4%	-64.8%	-68.1%	-62.7%	-67.0%	-72.0%	-65.4%	-71.0%	-76.0%	-67.1%	-72.3%	-77.4%
CI Series HEV PHEV40	Unadjusted	UDDS	-73.8%	-73.8%	-75.6%	-78.2%	-73.9%	-77.5%	-81.1%	-76.2%	-81.0%	-85.2%	-77.5%	-81.9%	-86.0%
		HWFET	-65.2%	-65.2%	-67.9%	-71.2%	-65.5%	-70.1%	-74.8%	-68.4%	-73.9%	-79.3%	-70.2%	-75.5%	-80.9%
		Combined	-70.6%	-70.6%	-72.8%	-75.6%	-70.8%	-74.8%	-78.8%	-73.3%	-78.3%	-83.0%	-74.8%	-79.5%	-84.1%
	Adjusted	UDDS	-69.4%	-69.4%	-71.2%	-73.6%	-69.5%	-73.0%	-76.3%	-71.8%	-76.2%	-80.1%	-73.0%	-77.0%	-80.9%
		HWFET	-64.7%	-64.7%	-67.3%	-70.6%	-65.0%	-69.5%	-74.2%	-67.8%	-73.2%	-78.5%	-69.6%	-74.8%	-80.2%
		Combined	-67.6%	-67.6%	-69.7%	-72.4%	-67.7%	-71.6%	-75.5%	-70.2%	-75.0%	-79.5%	-71.7%	-76.2%	-80.6%
H2 Split HEV	Unadjusted	UDDS	-48.0%	-48.0%	-56.3%	-62.4%	-52.9%	-61.8%	-67.9%	-58.7%	-66.7%	-73.9%	-61.9%	-69.1%	-76.0%
		HWFET	-17.4%	-17.4%	-31.1%	-40.7%	-26.1%	-38.7%	-48.2%	-34.0%	-46.2%	-56.7%	-39.3%	-50.1%	-61.4%
		Combined	-36.6%	-36.6%	-46.9%	-54.4%	-42.9%	-53.2%	-60.5%	-49.5%	-59.1%	-67.5%	-53.5%	-62.0%	-70.5%
	Adjusted	UDDS	-45.1%	-45.1%	-52.9%	-58.8%	-49.8%	-58.2%	-63.9%	-55.3%	-62.8%	-69.5%	-58.2%	-65.0%	-71.5%
		HWFET	-17.2%	-17.2%	-30.8%	-40.4%	-25.8%	-38.3%	-47.7%	-33.7%	-45.8%	-56.2%	-39.0%	-49.7%	-60.8%
		Combined	-34.2%	-34.2%	-44.3%	-51.5%	-40.4%	-50.4%	-57.6%	-46.8%	-56.1%	-64.3%	-50.7%	-59.0%	-67.3%
H2 Split HEV PHEV10	Unadjusted	UDDS	-58.3%	-58.3%	-64.9%	-69.6%	-62.2%	-68.7%	-73.5%	-66.2%	-72.3%	-78.2%	-69.0%	-74.1%	-80.1%
		HWFET	-40.5%	-40.5%	-50.0%	-56.6%	-46.8%	-55.1%	-61.5%	-52.0%	-60.0%	-67.4%	-55.8%	-62.9%	-71.2%
		Combined	-51.6%	-51.6%	-59.3%	-64.8%	-56.5%	-63.6%	-69.0%	-60.9%	-67.7%	-74.2%	-64.1%	-69.9%	-76.8%
	Adjusted	UDDS	-54.8%	-54.8%	-61.0%	-65.5%	-58.6%	-64.6%	-69.1%	-62.3%	-68.1%	-73.6%	-65.0%	-69.7%	-75.4%
		HWFET	-40.1%	-40.1%	-49.6%	-56.1%	-46.4%	-54.6%	-60.9%	-51.5%	-59.4%	-66.8%	-55.3%	-62.3%	-70.6%
		Combined	-49.1%	-49.1%	-56.5%	-61.8%	-53.8%	-60.7%	-65.9%	-58.1%	-64.7%	-70.9%	-61.2%	-66.8%	-73.5%
H2 Split HEV PHEV20	Unadjusted	UDDS	-71.0%	-71.0%	-75.6%	-79.1%	-73.8%	-78.3%	-78.0%	-76.5%	-77.1%	-82.2%	-78.5%	-78.6%	-83.7%
		HWFET	-50.5%	-50.5%	-49.7%	-58.1%	-56.3%	-56.4%	-62.9%	-51.6%	-61.4%	-68.7%	-57.1%	-64.2%	-72.2%
		Combined	-63.4%	-63.4%	-66.0%	-71.3%	-67.3%	-70.2%	-72.4%	-67.2%	-71.3%	-77.2%	-70.5%	-73.3%	-79.4%
	Adjusted	UDDS	-66.8%	-66.8%	-71.2%	-74.4%	-69.4%	-73.7%	-73.4%	-72.0%	-72.6%	-77.3%	-73.8%	-74.0%	-78.7%
		HWFET	-50.1%	-50.1%	-49.2%	-57.5%	-55.8%	-55.9%	-62.3%	-51.1%	-60.9%	-68.1%	-56.6%	-63.6%	-71.5%
		Combined	-60.2%	-60.2%	-62.6%	-67.8%	-64.1%	-66.7%	-69.1%	-63.8%	-68.0%	-73.7%	-67.1%	-69.9%	-75.9%
H2 Series HEV PHEV30	Unadjusted	UDDS	-68.1%	-68.1%	-73.6%	-77.9%	-71.6%	-76.7%	-81.1%	-75.0%	-80.4%	-84.0%	-77.1%	-81.4%	-85.1%
		HWFET	-55.8%	-55.8%	-63.3%	-68.6%	-60.6%	-67.5%	-72.9%	-65.1%	-71.8%	-70.9%	-68.1%	-73.9%	-79.8%
		Combined	-63.5%	-63.5%	-69.8%	-74.4%	-67.5%	-73.2%	-78.1%	-71.3%	-77.2%	-79.1%	-73.8%	-78.6%	-83.1%
	Adjusted	UDDS	-64.1%	-64.1%	-69.3%	-73.3%	-67.4%	-72.2%	-76.3%	-70.6%	-75.7%	-79.0%	-72.5%	-76.6%	-80.1%
		HWFET	-55.3%	-55.3%	-62.8%	-68.0%	-60.1%	-66.8%	-72.3%	-64.5%	-71.1%	-70.3%	-67.5%	-73.3%	-79.1%
		Combined	-60.7%	-60.7%	-66.7%	-71.2%	-64.5%	-70.1%	-74.7%	-68.2%	-73.9%	-75.6%	-70.6%	-75.3%	-79.7%

Argonne National Laboratory Report – Light-Duty Vehicle Fuel Consumption Displacement Potential Up to 2045

			Compact												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
H2 Series HEV PHEV40	Unadjusted	UDDS	-72.2%	-72.2%	-77.1%	-80.4%	-75.3%	-79.7%	-83.8%	-78.2%	-82.8%	-86.6%	-80.2%	-84.1%	-87.6%
		HWFET	-63.8%	-63.8%	-70.0%	-74.5%	-67.8%	-73.4%	-78.0%	-71.5%	-77.1%	-77.3%	-74.1%	-78.9%	-83.7%
		Combined	-69.1%	-69.1%	-74.4%	-78.2%	-72.5%	-77.4%	-81.6%	-75.7%	-80.7%	-83.1%	-77.9%	-82.2%	-86.1%
	Adjusted	UDDS	-67.9%	-67.9%	-72.5%	-75.7%	-70.8%	-75.1%	-78.8%	-73.6%	-78.0%	-81.5%	-75.5%	-79.2%	-82.4%
		HWFET	-63.3%	-63.3%	-69.4%	-73.8%	-67.2%	-72.8%	-77.3%	-70.8%	-76.4%	-76.6%	-73.4%	-78.2%	-83.0%
		Combined	-66.1%	-66.1%	-71.3%	-75.0%	-69.4%	-74.2%	-78.2%	-72.5%	-77.3%	-79.5%	-74.7%	-78.8%	-82.6%
E85 Split HEV	Unadjusted	UDDS	-46.1%	-46.1%	-49.7%	-53.5%	-46.5%	-52.9%	-63.9%	-50.3%	-57.6%	-69.8%	-52.2%	-59.4%	-71.4%
		HWFET	-14.6%	-14.6%	-21.4%	-27.6%	-16.4%	-25.2%	-42.5%	-21.0%	-32.4%	-50.7%	-24.4%	-35.4%	-54.6%
		Combined	-34.4%	-34.4%	-39.1%	-43.8%	-35.3%	-42.6%	-55.9%	-39.4%	-48.2%	-62.7%	-41.9%	-50.5%	-65.1%
	Adjusted	UDDS	-43.4%	-43.4%	-46.7%	-50.3%	-43.8%	-49.8%	-60.2%	-47.4%	-54.2%	-65.7%	-49.2%	-55.9%	-67.2%
		HWFET	-14.5%	-14.5%	-21.2%	-27.3%	-16.2%	-25.0%	-42.1%	-20.8%	-32.1%	-50.2%	-24.2%	-35.1%	-54.1%
		Combined	-32.1%	-32.1%	-36.7%	-41.3%	-33.0%	-40.1%	-53.1%	-37.0%	-45.6%	-59.6%	-39.4%	-47.8%	-62.1%
E85 Split HEV PHEV10	Unadjusted	UDDS	-57.2%	-57.2%	-60.0%	-63.1%	-57.6%	-61.9%	-70.4%	-59.7%	-65.2%	-75.0%	-61.1%	-66.4%	-76.4%
		HWFET	-38.2%	-38.2%	-42.7%	-47.2%	-39.6%	-45.3%	-57.4%	-42.0%	-49.7%	-62.9%	-44.5%	-52.0%	-66.2%
		Combined	-50.1%	-50.1%	-53.6%	-57.2%	-50.9%	-55.7%	-65.5%	-53.1%	-59.4%	-70.5%	-54.9%	-61.1%	-72.6%
	Adjusted	UDDS	-53.8%	-53.8%	-56.5%	-59.3%	-54.2%	-58.2%	-66.2%	-56.1%	-61.4%	-70.6%	-57.5%	-62.5%	-71.9%
		HWFET	-37.8%	-37.8%	-42.4%	-46.8%	-39.3%	-44.9%	-56.9%	-41.6%	-49.3%	-62.3%	-44.1%	-51.5%	-65.6%
		Combined	-47.6%	-47.6%	-50.9%	-54.4%	-48.4%	-53.0%	-62.6%	-50.4%	-56.6%	-67.4%	-52.2%	-58.2%	-69.4%
E85 Split HEV PHEV20	Unadjusted	UDDS	-70.3%	-70.3%	-72.2%	-69.4%	-70.5%	-68.4%	-79.6%	-72.0%	-76.1%	-79.6%	-73.1%	-72.3%	-80.6%
		HWFET	-37.9%	-37.9%	-44.5%	-48.9%	-39.3%	-47.0%	-58.7%	-41.8%	-51.5%	-64.4%	-46.3%	-53.6%	-67.2%
		Combined	-58.3%	-58.3%	-61.9%	-61.8%	-58.9%	-60.4%	-71.8%	-60.7%	-66.9%	-73.9%	-63.1%	-65.3%	-75.6%
	Adjusted	UDDS	-66.2%	-66.2%	-68.0%	-65.3%	-66.4%	-64.4%	-74.9%	-67.7%	-71.6%	-74.9%	-68.8%	-68.0%	-75.9%
		HWFET	-37.6%	-37.6%	-44.1%	-48.5%	-38.9%	-46.6%	-58.2%	-41.5%	-51.1%	-63.8%	-45.9%	-53.1%	-66.6%
		Combined	-55.0%	-55.0%	-58.6%	-58.7%	-55.6%	-57.4%	-68.4%	-57.4%	-63.6%	-70.5%	-59.8%	-62.2%	-72.2%
E85 Series HEV PHEV30	Unadjusted	UDDS	-67.8%	-67.8%	-70.4%	-73.1%	-68.5%	-72.2%	-79.0%	-70.5%	-75.6%	-82.8%	-71.8%	-76.2%	-83.6%
		HWFET	-54.0%	-54.0%	-58.0%	-61.9%	-55.1%	-60.4%	-70.0%	-57.9%	-64.6%	-74.5%	-60.0%	-66.4%	-76.6%
		Combined	-62.7%	-62.7%	-65.8%	-68.9%	-63.5%	-67.8%	-75.7%	-65.8%	-71.5%	-79.7%	-67.4%	-72.5%	-81.0%
	Adjusted	UDDS	-63.9%	-63.9%	-66.3%	-68.8%	-64.5%	-68.0%	-74.4%	-66.3%	-71.2%	-77.9%	-67.6%	-71.7%	-78.7%
		HWFET	-53.5%	-53.5%	-57.4%	-61.3%	-54.6%	-59.9%	-69.4%	-57.4%	-64.0%	-73.9%	-59.4%	-65.8%	-75.9%
		Combined	-59.8%	-59.8%	-62.8%	-65.9%	-60.6%	-64.8%	-72.4%	-62.8%	-68.4%	-76.3%	-64.4%	-69.4%	-77.6%
E85 Series HEV PHEV40	Unadjusted	UDDS	-71.9%	-71.9%	-74.2%	-76.7%	-72.4%	-75.8%	-81.9%	-74.4%	-78.8%	-85.5%	-75.4%	-79.5%	-86.2%
		HWFET	-53.3%	-53.3%	-65.7%	-68.9%	-63.5%	-67.6%	-75.6%	-65.7%	-71.2%	-74.4%	-67.4%	-72.7%	-81.1%
		Combined	-65.0%	-65.0%	-71.0%	-73.8%	-69.1%	-72.8%	-79.6%	-71.2%	-76.0%	-81.4%	-72.4%	-77.0%	-84.3%
	Adjusted	UDDS	-67.6%	-67.6%	-69.9%	-72.1%	-68.2%	-71.4%	-77.1%	-70.0%	-74.1%	-80.4%	-71.0%	-74.9%	-81.2%
		HWFET	-52.8%	-52.8%	-65.1%	-68.3%	-62.9%	-67.0%	-74.9%	-65.1%	-70.6%	-73.7%	-66.8%	-72.0%	-80.4%
		Combined	-61.8%	-61.8%	-68.0%	-70.6%	-66.1%	-69.7%	-76.2%	-68.1%	-72.8%	-77.8%	-69.3%	-73.8%	-80.9%

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			Compact												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
FC HEV	Unadjusted	UDDS	-53.4%	-53.4%	-60.8%	-67.0%	-60.1%	-66.4%	-71.3%	-63.9%	-70.3%	-75.9%	-65.9%	-71.3%	-77.2%
		HWFET	-38.8%	-38.8%	-47.7%	-55.4%	-46.9%	-53.8%	-59.6%	-50.4%	-58.0%	-64.9%	-53.1%	-59.7%	-67.8%
		Combined	-47.9%	-47.9%	-55.9%	-62.7%	-55.2%	-61.7%	-66.9%	-58.9%	-65.7%	-71.8%	-61.1%	-67.0%	-73.7%
	Adjusted	UDDS	-50.2%	-50.2%	-57.2%	-63.0%	-56.5%	-62.5%	-67.1%	-60.1%	-66.1%	-71.4%	-62.0%	-67.1%	-72.6%
		HWFET	-38.4%	-38.4%	-47.3%	-54.9%	-46.5%	-53.3%	-59.0%	-50.0%	-57.5%	-64.3%	-52.6%	-59.2%	-67.2%
		Combined	-45.6%	-45.6%	-53.3%	-59.8%	-52.6%	-58.9%	-63.9%	-56.1%	-62.8%	-68.6%	-58.3%	-64.0%	-70.5%
FC PHEV10	Unadjusted	UDDS	-62.9%	-62.9%	-68.3%	-73.1%	-67.7%	-72.2%	-75.9%	-70.0%	-75.1%	-79.6%	-71.6%	-75.8%	-80.7%
		HWFET	-54.3%	-54.3%	-60.1%	-65.8%	-59.5%	-64.4%	-68.8%	-61.8%	-67.5%	-72.6%	-63.7%	-68.7%	-75.1%
		Combined	-59.7%	-59.7%	-65.2%	-70.4%	-64.6%	-69.3%	-73.3%	-67.0%	-72.2%	-77.0%	-68.6%	-73.2%	-78.6%
	Adjusted	UDDS	-59.2%	-59.2%	-64.3%	-68.8%	-63.7%	-67.9%	-71.5%	-65.9%	-70.7%	-74.9%	-67.4%	-71.4%	-75.9%
		HWFET	-53.8%	-53.8%	-59.5%	-65.2%	-58.9%	-63.8%	-68.2%	-61.2%	-66.9%	-71.9%	-63.1%	-68.1%	-74.4%
		Combined	-57.1%	-57.1%	-62.4%	-67.4%	-61.8%	-66.3%	-70.2%	-64.1%	-69.2%	-73.8%	-65.7%	-70.1%	-75.3%
FC PHEV20	Unadjusted	UDDS	-69.3%	-69.3%	-73.7%	-77.6%	-73.1%	-76.9%	-80.1%	-75.1%	-79.4%	-83.2%	-76.4%	-80.0%	-84.1%
		HWFET	-54.7%	-54.7%	-60.7%	-66.3%	-60.1%	-65.0%	-69.2%	-62.4%	-68.0%	-73.3%	-64.3%	-69.3%	-75.5%
		Combined	-63.8%	-63.8%	-68.9%	-73.4%	-68.2%	-72.4%	-76.0%	-70.3%	-75.2%	-79.5%	-71.9%	-76.1%	-80.9%
	Adjusted	UDDS	-65.2%	-65.2%	-69.4%	-73.1%	-68.8%	-72.3%	-75.3%	-70.7%	-74.7%	-78.3%	-71.9%	-75.3%	-79.1%
		HWFET	-54.2%	-54.2%	-60.2%	-65.7%	-59.5%	-64.4%	-68.6%	-61.8%	-67.4%	-72.6%	-63.7%	-68.7%	-74.8%
		Combined	-60.9%	-60.9%	-65.8%	-70.2%	-65.2%	-69.2%	-72.7%	-67.2%	-71.9%	-76.1%	-68.7%	-72.7%	-77.4%
FC PHEV30	Unadjusted	UDDS	-78.3%	-78.3%	-81.3%	-83.9%	-80.9%	-83.4%	-85.8%	-82.2%	-85.3%	-88.0%	-83.2%	-85.9%	-88.6%
		HWFET	-63.9%	-63.9%	-68.7%	-72.8%	-68.1%	-71.9%	-75.5%	-69.8%	-74.5%	-78.6%	-71.4%	-75.6%	-80.4%
		Combined	-72.9%	-72.9%	-76.6%	-79.8%	-76.2%	-79.1%	-82.0%	-77.6%	-81.3%	-84.5%	-78.8%	-82.1%	-85.6%
	Adjusted	UDDS	-73.7%	-73.7%	-76.5%	-78.9%	-76.2%	-78.5%	-80.8%	-77.3%	-80.3%	-82.8%	-78.3%	-80.8%	-83.4%
		HWFET	-63.3%	-63.3%	-68.0%	-72.2%	-67.5%	-71.2%	-74.8%	-69.2%	-73.8%	-77.9%	-70.8%	-74.9%	-79.7%
		Combined	-69.6%	-69.6%	-73.2%	-76.3%	-72.8%	-75.7%	-78.4%	-74.1%	-77.7%	-80.9%	-75.3%	-78.5%	-82.0%
FC PHEV40	Unadjusted	UDDS	-81.2%	-81.2%	-83.8%	-86.1%	-83.5%	-85.7%	-87.8%	-84.6%	-87.3%	-89.7%	-85.5%	-87.9%	-90.2%
		HWFET	-71.5%	-71.5%	-75.3%	-78.6%	-74.8%	-77.8%	-80.7%	-76.2%	-79.9%	-83.2%	-77.5%	-80.8%	-84.6%
		Combined	-77.6%	-77.6%	-80.6%	-83.3%	-80.2%	-82.8%	-85.2%	-81.5%	-84.6%	-87.3%	-82.5%	-85.2%	-88.2%
	Adjusted	UDDS	-76.4%	-76.4%	-78.9%	-81.0%	-78.5%	-80.6%	-82.6%	-79.6%	-82.2%	-84.4%	-80.4%	-82.7%	-84.9%
		HWFET	-70.9%	-70.9%	-74.6%	-77.9%	-74.1%	-77.1%	-80.0%	-75.5%	-79.2%	-82.5%	-76.8%	-80.1%	-83.9%
		Combined	-74.2%	-74.2%	-77.2%	-79.8%	-76.8%	-79.3%	-81.6%	-78.0%	-81.0%	-83.7%	-79.0%	-81.7%	-84.5%

Midsized Class

Fuel economy

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			Midsize												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Conv	Unadjusted	UDDS	27.3	27.3	29.7	31.3	28.6	30.3	39.8	29.3	31.9	47.0	29.1	33.8	48.2
		HWFET	40.5	40.5	44.5	46.8	42.2	40.7	58.9	43.4	42.8	69.5	39.0	50.2	72.3
		Combined	32.0	32.0	34.9	36.8	33.5	34.2	46.6	34.3	36.0	55.0	32.8	39.7	56.8
	Adjusted	UDDS	21.1	21.1	22.8	24.0	22.0	23.2	30.0	22.5	24.4	34.9	22.3	25.8	35.8
		HWFET	28.6	28.6	31.4	33.0	29.8	28.8	41.4	30.7	30.2	48.8	27.6	35.4	50.8
		Combined	23.9	23.9	26.0	27.3	25.0	25.4	34.2	25.6	26.7	40.0	24.4	29.4	41.2
CI Conv	Unadjusted	UDDS	31.6	31.6	33.5	36.4	32.2	34.7	39.8	34.0	37.6	46.4	34.2	40.3	48.1
		HWFET	44.5	44.5	47.9	53.0	45.9	47.2	56.1	48.9	51.1	65.4	46.4	57.0	68.8
		Combined	36.3	36.3	38.7	42.4	37.2	39.4	45.8	39.4	42.7	53.4	38.8	46.4	55.7
	Adjusted	UDDS	24.2	24.2	25.5	27.6	24.6	26.4	30.0	25.9	28.4	34.5	26.0	30.3	35.7
		HWFET	31.4	31.4	33.8	37.3	32.4	33.3	39.5	34.5	36.0	46.0	32.7	40.1	48.3
		Combined	27.0	27.0	28.7	31.3	27.6	29.1	33.6	29.2	31.4	38.9	28.7	34.1	40.4
H2 Conv	Unadjusted	UDDS	22.3	22.3	26.8	30.6	25.2	29.6	35.3	27.9	32.7	41.9	29.5	36.4	45.1
		HWFET	36.1	36.1	43.5	51.5	42.1	40.9	57.1	46.7	45.2	67.2	40.8	59.1	73.5
		Combined	26.9	26.9	32.4	37.4	30.7	33.8	42.7	34.0	37.4	50.4	33.7	44.0	54.6
	Adjusted	UDDS	17.4	17.4	20.7	23.5	19.5	22.7	26.8	21.5	25.0	31.4	22.6	27.6	33.7
		HWFET	25.5	25.5	30.7	36.3	29.7	28.9	40.2	33.0	31.9	47.2	28.8	41.6	51.5
		Combined	20.3	20.3	24.2	27.9	23.1	25.1	31.6	25.5	27.7	37.0	25.1	32.5	39.9
E85 Conv	Unadjusted	UDDS	26.5	26.5	26.8	29.1	26.4	27.7	38.2	27.0	29.3	44.5	26.5	30.7	45.8
		HWFET	37.0	37.0	37.9	40.9	36.7	37.0	53.0	37.8	39.1	61.6	35.4	42.8	64.3
		Combined	30.4	30.4	30.9	33.4	30.2	31.2	43.7	31.0	33.0	50.8	29.9	35.2	52.6
	Adjusted	UDDS	20.5	20.5	20.7	22.4	20.4	21.3	28.9	20.9	22.5	33.2	20.5	23.6	34.1
		HWFET	26.2	26.2	26.8	28.9	26.0	26.1	37.4	26.7	27.7	43.3	25.1	30.2	45.2
		Combined	22.7	22.7	23.1	24.9	22.6	23.3	32.2	23.1	24.6	37.1	22.3	26.2	38.4
SI Split HEV	Unadjusted	UDDS	53.2	53.2	58.1	63.1	54.2	62.6	77.4	58.4	69.6	97.6	60.5	72.7	102.4
		HWFET	47.8	47.8	52.8	57.3	49.2	55.9	68.4	52.1	61.5	84.8	53.9	64.7	90.4
		Combined	50.6	50.6	55.6	60.3	51.8	59.4	73.1	55.4	65.7	91.4	57.3	68.9	96.6
	Adjusted	UDDS	39.0	39.0	42.3	45.5	39.8	45.2	54.4	42.5	49.6	66.2	43.8	51.5	68.9
		HWFET	33.7	33.7	37.2	40.3	34.7	39.4	48.0	36.7	43.3	59.4	38.0	45.5	63.2
		Combined	36.5	36.5	39.8	43.0	37.3	42.4	51.3	39.7	46.5	62.9	41.0	48.6	66.2
SI Split HEV PHEV10	Unadjusted	UDDS	66.5	66.5	72.2	78.5	67.7	76.3	93.8	71.4	84.1	117.7	73.8	87.2	124.0
		HWFET	65.9	65.9	72.1	78.7	67.2	76.6	94.0	70.8	84.5	114.8	73.3	88.3	123.0
		Combined	66.2	66.2	72.2	78.6	67.5	76.4	93.9	71.1	84.3	116.4	73.6	87.7	123.5
	Adjusted	UDDS	47.6	47.6	51.2	55.0	48.4	53.7	64.0	50.7	58.4	77.1	52.2	60.2	80.4
		HWFET	46.3	46.3	50.6	55.1	47.2	53.7	65.6	49.7	59.1	79.8	51.4	61.7	85.3
		Combined	47.0	47.0	50.9	55.1	47.9	53.7	64.7	50.3	58.7	78.3	51.8	60.9	82.6

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			Midsize												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Split HEV PHEV20	Unadjusted	UDDS	94.1	94.1	103.0	113.1	96.7	109.9	135.5	101.8	122.2	142.4	105.4	126.7	151.0
		HWFET	79.6	79.6	87.2	96.3	82.2	92.1	96.3	85.7	85.6	118.2	88.7	90.5	125.9
		Combined	87.0	87.0	95.2	104.9	89.6	101.1	114.5	93.9	102.5	130.4	97.2	107.4	138.6
	Adjusted	UDDS	64.2	64.2	69.2	74.7	65.7	73.0	86.2	68.6	79.5	89.6	70.5	81.8	93.7
		HWFET	55.8	55.8	61.0	67.2	57.5	64.4	67.2	60.0	59.9	82.1	62.0	63.2	87.3
		Combined	60.1	60.1	65.3	71.1	61.7	68.8	76.5	64.4	69.3	86.1	66.4	72.2	90.7
SI Series HEV PHEV30	Unadjusted	UDDS	86.6	86.6	97.0	106.8	90.3	103.2	131.8	97.0	118.4	170.1	100.9	122.8	177.9
		HWFET	88.3	88.3	98.1	107.3	90.7	104.0	133.3	97.3	118.0	164.7	101.4	124.2	175.3
		Combined	87.3	87.3	97.5	107.0	90.5	103.5	132.4	97.1	118.2	167.6	101.1	123.4	176.7
	Adjusted	UDDS	59.9	59.9	65.8	71.3	62.0	69.3	84.4	65.8	77.5	102.5	68.0	79.8	105.9
		HWFET	61.7	61.7	68.5	74.7	63.4	72.5	92.3	67.9	82.0	113.3	70.7	86.1	120.3
		Combined	60.7	60.7	67.0	72.8	62.6	70.7	87.8	66.8	79.4	107.1	69.2	82.5	112.0
SI Series HEV PHEV40	Unadjusted	UDDS	100.4	100.4	111.3	122.8	102.5	118.8	152.5	111.6	136.8	201.1	116.2	142.3	210.8
		HWFET	108.1	108.1	120.1	132.6	111.1	127.5	164.1	119.3	145.6	203.2	124.4	152.9	217.0
		Combined	103.7	103.7	115.1	127.0	106.2	122.5	157.5	114.9	140.7	202.1	119.7	146.9	213.5
	Adjusted	UDDS	67.8	67.8	73.7	79.8	68.9	77.7	94.4	73.9	86.9	115.7	76.3	89.6	119.6
		HWFET	75.3	75.3	83.4	91.9	77.3	88.4	112.9	82.9	100.6	138.7	86.3	105.4	147.6
		Combined	70.9	70.9	77.8	84.8	72.5	82.2	101.9	77.7	92.6	125.0	80.5	96.1	130.7
CI Split HEV	Unadjusted	UDDS	57.3	57.3	61.5	67.8	57.8	66.8	77.6	63.0	75.3	95.3	65.9	79.1	99.1
		HWFET	50.6	50.6	55.2	60.8	51.2	59.3	68.2	55.5	66.1	82.3	58.1	69.8	87.0
		Combined	54.1	54.1	58.5	64.4	54.6	63.2	73.1	59.4	70.9	89.0	62.1	74.6	93.3
	Adjusted	UDDS	41.8	41.8	44.5	48.5	42.1	47.9	54.5	45.4	53.1	64.9	47.3	55.4	67.0
		HWFET	35.7	35.7	38.9	42.7	36.1	41.7	47.9	39.1	46.5	57.6	40.9	49.0	60.9
		Combined	38.8	38.8	41.8	45.7	39.2	44.9	51.3	42.3	49.9	61.4	44.2	52.3	64.1
CI Split HEV PHEV10	Unadjusted	UDDS	67.4	67.4	72.5	79.7	67.8	77.6	89.9	73.1	87.1	109.6	76.4	91.2	114.4
		HWFET	66.0	66.0	71.9	78.7	66.6	76.6	90.1	71.7	87.1	107.6	75.1	92.2	114.7
		Combined	66.7	66.7	72.3	79.3	67.2	77.2	90.0	72.4	87.1	108.7	75.8	91.7	114.5
	Adjusted	UDDS	48.2	48.2	51.4	55.8	48.5	54.5	61.8	51.7	60.2	72.8	53.8	62.6	75.4
		HWFET	46.4	46.4	50.5	55.2	46.8	53.7	63.0	50.3	60.9	74.9	52.6	64.4	79.7
		Combined	47.4	47.4	51.0	55.5	47.7	54.2	62.3	51.1	60.5	73.8	53.3	63.4	77.3
CI Split HEV PHEV20	Unadjusted	UDDS	96.0	96.0	103.2	113.6	96.2	111.3	129.9	103.7	125.8	159.2	108.9	132.0	166.2
		HWFET	81.0	81.0	87.1	95.8	80.6	93.8	91.0	87.0	106.1	109.8	91.3	93.2	116.4
		Combined	88.6	88.6	95.3	104.8	88.5	102.7	109.0	95.5	116.1	132.4	100.2	111.1	139.4
	Adjusted	UDDS	65.3	65.3	69.3	75.0	65.4	73.7	83.4	69.6	81.3	97.6	72.4	84.5	100.7
		HWFET	56.7	56.7	60.9	66.8	56.4	65.5	63.6	60.8	73.9	76.4	63.8	65.1	80.9
		Combined	61.1	61.1	65.3	71.1	61.0	69.8	73.2	65.4	77.8	86.8	68.3	74.5	90.7

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			Midsize												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
CI Series HEV PHEV30	Unadjusted	UDDS	88.7	88.7	97.2	108.3	90.3	104.7	126.1	99.0	122.1	159.2	103.9	128.5	166.5
		HWFET	89.7	89.7	98.7	110.8	91.0	107.6	128.5	99.7	123.5	154.9	105.0	130.0	164.5
		Combined	89.2	89.2	97.9	109.4	90.6	106.0	127.2	99.3	122.7	157.2	104.4	129.2	165.6
	Adjusted	UDDS	61.1	61.1	65.9	72.1	62.0	70.1	81.5	67.0	79.4	97.6	69.7	82.7	100.9
		HWFET	62.7	62.7	68.9	77.1	63.6	74.9	89.1	69.5	85.7	106.7	73.1	90.1	113.2
		Combined	61.8	61.8	67.2	74.3	62.7	72.2	84.8	68.1	82.1	101.5	71.2	85.9	106.1
CI Series HEV PHEV40	Unadjusted	UDDS	102.1	102.1	111.9	124.1	103.7	120.6	145.9	114.1	141.2	186.5	119.8	148.8	197.3
		HWFET	109.9	109.9	121.9	135.7	111.4	131.3	158.1	122.2	151.9	190.9	128.8	159.9	205.2
		Combined	105.4	105.4	116.2	129.1	107.1	125.2	151.2	117.6	145.8	188.5	123.7	153.6	200.8
	Adjusted	UDDS	68.7	68.7	74.0	80.5	69.6	78.7	91.3	75.2	89.0	109.6	78.2	92.7	114.1
		HWFET	76.5	76.5	84.6	93.9	77.5	91.0	108.9	84.8	104.8	130.6	89.3	110.1	140.0
		Combined	72.0	72.0	78.4	86.0	73.0	83.8	98.5	79.3	95.5	118.2	82.9	99.8	124.5
H2 Split HEV	Unadjusted	UDDS	51.7	51.7	62.8	72.5	57.8	71.6	85.6	66.0	82.6	106.3	71.7	89.0	115.3
		HWFET	45.8	45.8	55.8	64.7	51.4	63.1	74.8	58.1	72.4	90.9	63.1	78.1	100.2
		Combined	48.9	48.9	59.4	68.8	54.8	67.5	80.4	62.2	77.6	98.8	67.5	83.8	108.0
	Adjusted	UDDS	38.1	38.1	45.3	51.4	42.1	50.8	59.3	47.4	57.5	71.0	50.9	61.3	75.9
		HWFET	32.3	32.3	39.3	45.5	36.2	44.4	52.4	40.9	50.8	63.5	44.3	54.7	69.9
		Combined	35.2	35.2	42.4	48.6	39.3	47.7	56.0	44.2	54.3	67.5	47.7	58.1	73.1
H2 Split HEV PHEV10	Unadjusted	UDDS	63.9	63.9	77.4	89.8	71.6	87.1	103.1	80.2	99.5	128.6	87.0	106.6	139.4
		HWFET	63.6	63.6	77.2	89.4	71.3	87.1	102.8	79.5	99.0	123.0	85.9	106.8	136.4
		Combined	63.8	63.8	77.3	89.6	71.5	87.1	102.9	79.9	99.3	126.0	86.5	106.7	138.0
	Adjusted	UDDS	46.0	46.0	54.4	61.7	50.8	60.1	69.2	56.1	67.2	82.7	60.1	71.2	88.1
		HWFET	44.7	44.7	54.1	62.5	50.0	60.9	71.6	55.7	69.1	85.4	60.1	74.4	94.4
		Combined	45.4	45.4	54.2	62.1	50.5	60.5	70.3	55.9	68.0	83.9	60.1	72.6	90.8
H2 Split HEV PHEV20	Unadjusted	UDDS	91.0	91.0	110.4	129.4	101.6	125.6	149.5	114.9	144.1	154.3	124.3	154.6	169.0
		HWFET	76.9	76.9	93.5	109.7	86.0	104.7	105.5	97.4	100.7	126.7	104.2	109.7	140.0
		Combined	84.0	84.0	102.1	119.7	93.9	115.2	125.9	106.3	120.7	140.5	114.4	130.5	154.6
	Adjusted	UDDS	62.4	62.4	73.2	83.2	68.4	81.2	93.0	75.7	90.4	95.3	80.6	95.4	102.0
		HWFET	53.9	53.9	65.3	76.3	60.2	72.9	73.5	68.0	70.2	87.9	72.6	76.3	96.8
		Combined	58.3	58.3	69.4	79.9	64.5	77.3	83.1	72.0	80.1	91.8	76.8	85.8	99.6
H2 Series HEV PHEV30	Unadjusted	UDDS	84.0	84.0	102.9	120.9	95.0	117.0	143.6	108.1	137.7	176.3	118.3	146.9	190.7
		HWFET	86.3	86.3	106.0	123.2	97.2	119.7	146.2	110.5	139.6	177.1	120.6	151.4	194.9
		Combined	85.1	85.1	104.3	121.9	96.0	118.2	144.7	109.2	138.6	176.7	119.3	148.9	192.6
	Adjusted	UDDS	58.4	58.4	69.1	78.8	64.7	76.8	90.2	72.0	87.3	105.2	77.4	91.8	111.4
		HWFET	60.4	60.4	73.8	85.5	67.8	83.1	101.0	76.9	96.6	121.5	83.7	104.5	133.2
		Combined	59.3	59.3	71.2	81.7	66.1	79.5	94.7	74.1	91.3	112.0	80.2	97.1	120.3

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			Midsize												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
H2 Series HEV PHEV40	Unadjusted	UDDS	95.5	95.5	118.5	138.8	109.2	134.9	165.4	124.7	159.2	208.9	135.9	170.6	226.2
		HWFET	105.8	105.8	129.9	152.1	119.0	146.5	179.9	135.6	171.6	218.5	147.4	186.6	241.1
		Combined	99.9	99.9	123.4	144.4	113.4	139.9	171.6	129.4	164.5	213.1	140.8	177.4	232.7
	Adjusted	UDDS	65.0	65.0	77.6	87.8	72.6	86.0	100.4	80.8	97.5	118.8	86.4	102.7	125.5
		HWFET	73.7	73.7	90.0	104.9	82.7	101.2	123.4	93.9	117.9	148.6	101.8	127.7	163.2
		Combined	68.6	68.6	82.7	94.8	76.8	92.2	109.6	86.2	105.8	130.6	92.7	112.7	140.1
E85 Split HEV	Unadjusted	UDDS	49.3	49.3	53.9	58.7	50.3	58.1	76.5	54.7	64.9	92.0	56.4	67.6	96.1
		HWFET	44.3	44.3	49.0	53.2	45.3	51.5	67.4	48.6	57.3	79.6	50.0	59.8	84.6
		Combined	46.9	46.9	51.6	56.1	47.9	54.9	72.2	51.8	61.3	86.0	53.3	63.9	90.6
	Adjusted	UDDS	36.5	36.5	39.6	42.7	37.1	42.3	53.9	40.1	46.7	63.0	41.1	48.3	65.3
		HWFET	31.3	31.3	34.6	37.5	31.9	36.3	47.4	34.3	40.3	55.7	35.3	42.1	59.2
		Combined	33.9	33.9	37.1	40.2	34.6	39.4	50.7	37.2	43.6	59.5	38.3	45.3	62.4
E85 Split HEV PHEV10	Unadjusted	UDDS	62.1	62.1	67.6	73.6	63.4	71.5	92.5	66.9	78.8	111.3	69.2	81.9	117.0
		HWFET	61.3	61.3	67.2	73.3	62.7	71.3	92.4	65.9	78.8	108.0	68.3	82.3	115.5
		Combined	61.7	61.7	67.4	73.5	63.0	71.4	92.4	66.4	78.8	109.8	68.8	82.1	116.3
	Adjusted	UDDS	44.8	44.8	48.3	52.1	45.7	50.8	63.3	47.9	55.2	73.7	49.3	57.1	76.8
		HWFET	43.1	43.1	47.2	51.4	44.0	50.1	64.5	46.3	55.2	75.2	47.9	57.6	80.3
		Combined	44.0	44.0	47.8	51.8	44.9	50.4	63.8	47.2	55.2	74.4	48.7	57.3	78.3
E85 Split HEV PHEV20	Unadjusted	UDDS	88.2	88.2	96.6	106.0	90.6	103.0	134.0	95.4	114.6	134.6	98.9	119.0	142.4
		HWFET	73.9	73.9	81.5	89.9	76.5	85.8	94.7	79.9	79.9	111.3	82.7	84.4	118.3
		Combined	81.1	81.1	89.1	98.1	83.7	94.5	112.9	87.8	95.9	123.0	90.9	100.5	130.5
	Adjusted	UDDS	60.8	60.8	65.6	70.9	62.2	69.2	85.5	64.9	75.5	85.8	66.9	77.8	89.6
		HWFET	51.8	51.8	57.1	62.8	53.7	60.0	66.1	56.0	56.0	77.4	57.9	59.1	82.2
		Combined	56.4	56.4	61.5	67.0	58.0	64.8	75.5	60.6	65.2	81.8	62.5	68.1	86.1
E85 Series HEV PHEV30	Unadjusted	UDDS	82.2	82.2	91.1	100.4	83.9	97.1	130.8	91.2	111.5	161.5	95.0	115.7	168.9
		HWFET	82.9	82.9	92.1	100.8	85.2	97.8	132.3	91.5	111.0	156.1	95.4	117.0	166.0
		Combined	82.5	82.5	91.5	100.6	84.5	97.4	131.5	91.3	111.3	159.0	95.2	116.3	167.5
	Adjusted	UDDS	57.2	57.2	62.4	67.8	58.3	65.9	83.9	62.5	73.8	98.6	64.7	76.1	101.9
		HWFET	58.0	58.0	64.3	70.3	59.6	68.2	91.6	63.9	77.2	107.6	66.6	81.3	114.1
		Combined	57.6	57.6	63.3	68.9	58.9	66.9	87.2	63.2	75.3	102.5	65.5	78.3	107.1
E85 Series HEV PHEV40	Unadjusted	UDDS	93.3	93.3	104.7	115.0	97.3	111.8	151.3	105.0	128.6	190.5	109.4	133.9	201.2
		HWFET	101.5	101.5	112.8	123.2	104.4	119.8	162.7	112.1	136.2	192.5	117.0	143.9	204.8
		Combined	96.8	96.8	108.2	118.5	100.4	115.3	156.2	108.1	131.9	191.4	112.7	138.3	202.8
	Adjusted	UDDS	63.8	63.8	70.2	75.7	66.0	74.0	93.9	70.3	82.8	111.3	72.7	85.4	115.7
		HWFET	70.7	70.7	78.5	85.5	72.7	83.2	112.0	78.0	94.3	131.6	81.3	99.5	139.7
		Combined	66.7	66.7	73.7	79.8	68.9	77.9	101.2	73.5	87.6	119.6	76.3	91.2	125.4

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			Midsize												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
FC HEV	Unadjusted	UDDS	56.7	56.7	68.9	81.8	66.7	80.7	95.0	74.6	91.6	115.1	78.9	95.6	120.9
		HWFET	61.5	61.5	73.8	86.1	71.3	83.9	96.6	77.4	93.0	113.1	81.3	97.2	120.7
		Combined	58.8	58.8	71.0	83.7	68.7	82.1	95.7	75.8	92.2	114.2	80.0	96.3	120.8
	Adjusted	UDDS	41.4	41.4	49.1	57.0	47.8	56.4	64.7	52.7	62.8	75.8	55.3	65.1	78.8
		HWFET	43.3	43.3	51.8	60.2	50.0	58.7	67.4	54.2	65.0	78.6	56.9	67.9	83.8
		Combined	42.2	42.2	50.3	58.4	48.8	57.4	65.9	53.4	63.7	77.0	56.0	66.3	81.0
FC PHEV10	Unadjusted	UDDS	71.8	71.8	85.5	100.7	83.3	97.6	113.8	90.3	110.1	136.4	95.0	113.8	143.1
		HWFET	83.6	83.6	98.4	113.7	95.1	110.3	126.2	101.6	121.4	146.4	106.1	126.5	157.5
		Combined	76.6	76.6	90.9	106.1	88.2	103.0	119.1	95.1	114.9	140.7	99.7	119.2	149.2
	Adjusted	UDDS	50.9	50.9	59.2	67.9	57.9	66.2	75.1	62.0	73.1	86.7	64.7	75.0	89.9
		HWFET	58.5	58.5	68.7	79.1	66.4	76.8	87.5	70.8	84.3	101.1	73.9	87.7	108.5
		Combined	54.1	54.1	63.1	72.5	61.4	70.6	80.2	65.7	77.7	92.6	68.5	80.3	97.5
FC PHEV20	Unadjusted	UDDS	86.0	86.0	102.8	121.1	100.1	117.6	137.4	108.7	132.9	165.6	114.5	137.7	173.6
		HWFET	83.4	83.4	98.8	114.8	95.7	111.4	127.9	102.6	123.2	149.3	107.5	128.6	159.3
		Combined	84.8	84.8	100.9	118.1	98.1	114.8	132.9	105.9	128.3	157.8	111.2	133.4	166.9
	Adjusted	UDDS	59.5	59.5	69.1	78.9	67.6	77.1	87.2	72.3	84.9	100.5	75.4	87.3	104.1
		HWFET	58.4	58.4	68.9	79.8	66.8	77.5	88.7	71.5	85.5	103.0	74.9	89.1	109.7
		Combined	59.0	59.0	69.0	79.3	67.2	77.3	87.8	72.0	85.2	101.6	75.2	88.1	106.5
FC PHEV30	Unadjusted	UDDS	122.9	122.9	146.0	169.0	141.8	165.4	194.1	152.8	187.4	232.9	161.3	195.7	244.6
		HWFET	132.4	132.4	124.4	142.7	120.2	139.3	160.5	128.3	154.4	186.8	134.7	161.8	199.6
		Combined	127.0	127.0	135.4	156.0	131.2	152.5	177.4	140.7	170.9	209.6	148.1	178.8	222.1
	Adjusted	UDDS	79.8	79.8	91.3	102.0	89.3	100.4	112.8	94.6	110.0	128.0	98.5	113.5	132.3
		HWFET	91.7	91.7	86.3	98.6	83.4	96.3	110.5	88.9	106.5	127.9	93.2	111.3	136.3
		Combined	84.8	84.8	89.0	100.4	86.6	98.5	111.8	91.9	108.4	128.0	96.1	112.5	134.0
FC PHEV40	Unadjusted	UDDS	141.6	141.6	168.7	195.6	163.7	191.3	225.5	176.5	217.4	271.2	186.9	227.5	284.8
		HWFET	133.4	133.4	157.8	181.1	152.2	176.6	204.3	162.7	196.4	238.2	171.0	206.0	254.5
		Combined	137.8	137.8	163.6	188.8	158.3	184.4	215.4	170.0	207.4	255.3	179.4	217.3	270.3
	Adjusted	UDDS	89.2	89.2	101.9	113.4	99.6	111.6	125.2	105.3	122.1	141.5	109.8	126.0	145.9
		HWFET	92.4	92.4	108.7	124.1	105.0	121.2	139.3	112.0	134.2	161.4	117.5	140.5	171.8
		Combined	90.6	90.6	104.8	118.0	102.0	115.7	131.2	108.2	127.3	149.8	113.1	132.1	156.5

Pev details

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				Midsize												
				2010	2010			2015			2030			2045		
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Split HEV PHEV10	UDDS	CD	Wh/mile	189.2	189.2	176.3	172.6	188.6	176.2	159.3	180.0	164.8	143.3	176.2	159.5	146.6
			Distance	12.3	12.3	12.3	11.6	12.3	11.7	11.7	12.3	11.8	11.4	12.3	11.7	10.2
			MPGGE Unadjusted	874.1	874.1	974.6	1547.0	901.6	1400.1	1921.7	944.5	1731.6	3224.9	979.3	1812.0	N/A
			MPGGE Adjusted	253.1	253.1	262.7	299.3	255.8	292.0	313.8	259.9	307.0	341.4	263.1	310.0	N/A
		CS	MPGGE Unadjusted	55.9	55.9	60.7	65.7	56.9	64.0	78.5	60.0	70.4	98.3	62.0	73.0	102.9
			MPGGE Adjusted	40.8	40.8	44.0	47.2	41.5	46.0	55.0	43.5	50.1	66.6	44.8	51.7	69.1
		CD+CS	Wh/mile	39.4	39.4	36.7	36.0	39.3	36.7	33.2	37.5	34.3	29.9	36.7	33.2	30.5
			MPGGE Unadjusted	66.5	66.5	72.2	78.5	67.7	76.3	93.8	71.4	84.1	117.7	73.8	87.2	124.0
			MPGGE Adjusted	47.6	47.6	51.2	55.0	48.4	53.7	64.0	50.7	58.4	77.1	52.2	60.2	80.4
	HWFET	CD	Wh/mile	207.6	207.6	190.6	188.1	206.2	193.4	178.5	197.3	185.0	154.7	192.3	178.5	147.6
			Distance	11.1	11.1	11.1	10.6	11.1	10.6	9.2	11.1	9.6	9.1	11.1	9.2	9.4
			MPGGE Unadjusted	353.5	353.5	384.8	564.1	362.2	550.3	822.3	377.3	744.8	926.9	389.7	777.9	1200.4
			MPGGE Adjusted	233.8	233.8	252.9	357.8	239.2	350.0	496.5	248.3	456.3	548.9	255.9	473.6	677.2
		CS	MPGGE Unadjusted	52.4	52.4	57.4	61.8	53.5	60.2	73.4	56.4	66.0	89.9	58.4	69.0	95.8
			MPGGE Adjusted	37.0	37.0	40.4	43.5	37.7	42.4	51.5	39.7	46.4	62.8	41.1	48.4	66.9
		CD+CS	Wh/mile	61.1	61.1	56.1	55.3	60.7	56.9	52.5	58.0	54.4	45.5	56.6	52.5	43.4
			MPGGE Unadjusted	65.9	65.9	72.1	78.7	67.2	76.6	94.0	70.8	84.5	114.8	73.3	88.3	123.0
			MPGGE Adjusted	46.3	46.3	50.6	55.1	47.2	53.7	65.6	49.7	59.1	79.8	51.4	61.7	85.3
	Combined	CD	MPGGE Unadjusted	525.7	525.7	576.7	867.1	539.9	826.1	1199.8	563.3	1084.8	1524.3	582.6	1133.7	2609.2
			MPGGE Adjusted	244.0	244.0	258.2	323.0	248.1	315.5	376.0	254.6	360.0	411.4	259.8	367.1	481.5
		CS	MPGGE Unadjusted	54.3	54.3	59.2	63.9	55.3	62.2	76.1	58.3	68.3	94.3	60.3	71.1	99.6
			MPGGE Adjusted	39.0	39.0	42.3	45.4	39.7	44.3	53.4	41.7	48.3	64.8	43.1	50.2	68.1
		CD+CS	Wh/mile	49.2	49.2	45.4	44.7	48.9	45.8	41.9	46.7	43.4	36.9	45.6	41.9	36.3
			MPGGE Unadjusted	66.2	66.2	72.2	78.6	67.5	76.4	93.9	71.1	84.3	116.4	73.6	87.7	123.5
			MPGGE Adjusted	47.0	47.0	50.9	55.1	47.9	53.7	64.7	50.3	58.7	78.3	51.8	60.9	82.6

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				Midsize												
				2010	2010			2015			2030			2045		
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Split HEV PHEV20	UDDS	CD	Wh/mile	190.3	190.3	178.3	173.4	194.5	178.2	161.1	182.0	166.4	140.4	178.0	161.6	143.9
			Distance	23.9	23.9	23.9	22.9	23.8	22.9	22.8	23.9	22.8	22.2	24.0	22.8	20.6
			MPGGE Unadjusted	817.3	817.3	945.9	1408.5	1001.0	1361.4	1879.9	921.4	1693.7	3143.9	953.4	1777.8	N/A
			MPGGE Adjusted	247.0	247.0	260.1	292.5	265.0	289.9	312.4	257.8	305.5	340.3	260.8	308.8	N/A
		CS	MPGGE Unadjusted	55.5	55.5	60.5	65.6	56.5	63.7	78.3	59.9	70.6	98.2	62.0	73.2	102.7
			MPGGE Adjusted	40.6	40.6	43.8	47.1	41.3	45.9	54.9	43.4	50.2	66.5	44.8	51.8	69.0
		CD+CS	Wh/mile	100.3	100.3	94.0	91.3	102.2	93.9	85.2	95.9	88.0	53.5	93.8	85.4	54.8
			MPGGE Unadjusted	94.1	94.1	103.0	113.1	96.7	109.9	135.5	101.8	122.2	142.4	105.4	126.7	151.0
			MPGGE Adjusted	64.2	64.2	69.2	74.7	65.7	73.0	86.2	68.6	79.5	89.6	70.5	81.8	93.7
	HWFET	CD	Wh/mile	209.4	209.4	192.5	188.5	213.3	187.0	197.6	199.2	198.3	174.3	194.1	197.2	163.5
			Distance	21.6	21.6	21.8	20.8	21.5	21.4	18.3	21.7	19.3	17.5	21.8	18.3	17.6
			MPGGE Unadjusted	346.1	346.1	379.3	527.6	405.4	418.6	N/A	372.0	2210.9	N/A	384.5	N/A	N/A
			MPGGE Adjusted	229.3	229.3	249.6	337.0	265.3	273.2	N/A	245.1	1060.9	N/A	252.7	N/A	N/A
		CS	MPGGE Unadjusted	52.0	52.0	57.0	61.5	53.1	59.9	73.2	56.0	65.7	89.8	58.0	68.7	95.7
			MPGGE Adjusted	36.6	36.6	40.1	43.3	37.4	42.1	51.3	39.4	46.1	62.8	40.8	48.3	66.8
		CD+CS	Wh/mile	107.7	107.7	99.0	97.1	109.4	96.2	58.1	102.5	58.3	51.3	99.8	58.0	48.1
			MPGGE Unadjusted	79.6	79.6	87.2	96.3	82.2	92.1	96.3	85.7	85.6	118.2	88.7	90.5	125.9
			MPGGE Adjusted	55.8	55.8	61.0	67.2	57.5	64.4	67.2	60.0	59.9	82.1	62.0	63.2	87.3
	Combined	CD	MPGGE Unadjusted	506.8	506.8	565.7	804.3	602.6	676.1	3339.6	553.5	1892.9	5500.2	572.4	3162.1	N/A
			MPGGE Adjusted	238.7	238.7	255.2	311.0	265.1	282.1	523.9	251.9	449.6	566.7	257.1	518.3	640.8
		CS	MPGGE Unadjusted	53.8	53.8	58.9	63.7	54.9	62.0	75.9	58.1	68.3	94.3	60.1	71.1	99.4
			MPGGE Adjusted	38.7	38.7	42.1	45.3	39.4	44.1	53.3	41.5	48.3	64.8	42.9	50.2	68.0
		CD+CS	Wh/mile	103.6	103.6	96.2	93.9	105.5	94.9	73.0	98.9	74.6	52.5	96.5	73.1	51.8
			MPGGE Unadjusted	87.0	87.0	95.2	104.9	89.6	101.1	114.5	93.9	102.5	130.4	97.2	107.4	138.6
			MPGGE Adjusted	60.1	60.1	65.3	71.1	61.7	68.8	76.5	64.4	69.3	86.1	66.4	72.2	90.7

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				Midsize													
				2010	2010			2015			2030			2045			
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high	
SI Series HEV PHEV30	UDDS	CD	Wh/mile	280.1	280.1	258.7	241.5	276.1	248.2	219.2	262.9	226.2	188.2	256.6	218.1	180.0	
			Distance	30.9	30.9	30.9	31.0	30.9	30.9	30.9	31.0	30.9	30.7	31.0	30.9	30.7	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	40.7	40.7	45.6	50.2	42.4	48.5	61.9	45.6	55.6	80.0	47.4	57.7	83.6	
			MPGGE Adjusted	30.6	30.6	34.0	37.1	31.8	35.9	44.8	34.0	40.7	55.9	35.2	42.0	58.1	
		CD+CS	Wh/mile	180.5	180.5	166.7	155.6	177.9	159.9	141.9	169.4	146.4	122.3	165.3	141.0	116.9	
			MPGGE Unadjusted	86.6	86.6	97.0	106.8	90.3	103.2	131.8	97.0	118.4	170.1	100.9	122.8	177.9	
			MPGGE Adjusted	59.9	59.9	65.8	71.3	62.0	69.3	84.4	65.8	77.5	102.5	68.0	79.8	105.9	
	HWFET	CD	Wh/mile	271.0	271.0	248.1	231.7	267.4	238.4	209.2	255.0	217.0	181.1	247.7	208.5	170.0	
			Distance	31.8	31.8	32.1	32.2	31.8	32.1	32.2	31.8	32.0	31.9	31.9	32.2	32.5	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	40.6	40.6	45.1	49.4	41.7	47.8	61.3	44.8	54.3	75.8	46.7	57.1	80.6	
			MPGGE Adjusted	28.7	28.7	31.9	34.8	29.5	33.7	43.1	31.6	38.2	53.1	32.9	40.2	56.5	
		CD+CS	Wh/mile	183.1	183.1	167.7	156.6	180.7	161.1	141.4	172.3	146.7	122.4	167.4	140.9	114.9	
			MPGGE Unadjusted	88.3	88.3	98.1	107.3	90.7	104.0	133.3	97.3	118.0	164.7	101.4	124.2	175.3	
			MPGGE Adjusted	61.7	61.7	68.5	74.7	63.4	72.5	92.3	67.9	82.0	113.3	70.7	86.1	120.3	
	Combined	CD	MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	40.7	40.7	45.4	49.8	42.1	48.2	61.6	45.2	55.0	78.0	47.1	57.4	82.3	
			MPGGE Adjusted	29.7	29.7	33.0	36.0	30.7	34.9	44.0	32.9	39.5	54.6	34.1	41.2	57.4	
		CD+CS	Wh/mile	181.7	181.7	167.1	156.0	179.1	160.4	141.7	170.7	146.5	122.3	166.3	141.0	116.0	
			MPGGE Unadjusted	87.3	87.3	97.5	107.0	90.5	103.5	132.4	97.1	118.2	167.6	101.1	123.4	176.7	
			MPGGE Adjusted	60.7	60.7	67.0	72.8	62.6	70.7	87.8	66.8	79.4	107.1	69.2	82.5	112.0	

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				Midsize													
				2010	2010			2015			2030			2045			
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high	
SI Series HEV PHEV40	UDDS	CD	Wh/mile	286.1	286.1	265.0	246.5	281.9	253.9	223.5	269.0	231.0	190.2	261.9	222.4	181.9	
			Distance	40.8	40.8	40.9	41.0	40.9	40.8	40.8	40.9	40.8	40.5	40.9	40.7	40.6	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	40.2	40.2	44.5	49.1	41.0	47.5	61.0	44.6	54.7	80.4	46.5	56.9	84.3	
			MPGGE Adjusted	30.2	30.2	33.2	36.4	30.8	35.3	44.1	33.3	40.1	56.2	34.6	41.5	58.5	
		CD+CS	Wh/mile	210.4	210.4	195.0	181.4	207.3	186.9	165.7	198.0	171.2	141.2	192.7	164.6	135.0	
			MPGGE Unadjusted	100.4	100.4	111.3	122.8	102.5	118.8	152.5	111.6	136.8	201.1	116.2	142.3	210.8	
			MPGGE Adjusted	67.8	67.8	73.7	79.8	68.9	77.7	94.4	73.9	86.9	115.7	76.3	89.6	119.6	
	HWFET	CD	Wh/mile	273.9	273.9	250.7	233.8	270.2	240.6	211.3	257.4	219.4	184.0	250.0	209.9	172.7	
			Distance	42.4	42.4	42.9	43.0	42.3	42.9	43.1	42.4	42.8	41.8	42.5	43.1	42.7	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
		CS	MPGGE Unadjusted	40.0	40.0	44.5	49.1	41.1	47.2	60.7	44.2	53.9	75.2	46.0	56.6	80.3	
			MPGGE Adjusted	28.3	28.3	31.4	34.6	29.0	33.3	42.7	31.2	38.0	52.7	32.5	39.8	56.2	
		CD+CS	Wh/mile	215.4	215.4	197.2	184.0	212.5	189.3	166.6	202.6	173.0	145.6	196.7	165.3	136.7	
			MPGGE Unadjusted	108.1	108.1	120.1	132.6	111.1	127.5	164.1	119.3	145.6	203.2	124.4	152.9	217.0	
			MPGGE Adjusted	75.3	75.3	83.4	91.9	77.3	88.4	112.9	82.9	100.6	138.7	86.3	105.4	147.6	
	Combined	CD	MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
		CS	MPGGE Unadjusted	40.1	40.1	44.5	49.1	41.0	47.4	60.9	44.4	54.3	78.0	46.3	56.8	82.5	
			MPGGE Adjusted	29.3	29.3	32.4	35.5	30.0	34.3	43.5	32.3	39.1	54.6	33.6	40.7	57.5	
		CD+CS	Wh/mile	212.7	212.7	196.0	182.6	209.7	188.0	166.1	200.0	172.0	143.2	194.5	164.9	135.8	
			MPGGE Unadjusted	103.7	103.7	115.1	127.0	106.2	122.5	157.5	114.9	140.7	202.1	119.7	146.9	213.5	
			MPGGE Adjusted	70.9	70.9	77.8	84.8	72.5	82.2	101.9	77.7	92.6	125.0	80.5	96.1	130.7	

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				Midsize												
				2010	2010			2015			2030			2045		
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
CI Split HEV PHEV10	UDDS	CD	Wh/mile	195.7	195.7	182.5	173.6	194.8	178.1	166.7	185.9	171.8	150.6	181.8	166.8	144.7
			Distance	12.7	12.7	12.7	12.3	12.6	12.4	11.9	12.7	11.9	11.6	12.8	11.9	11.5
			MPGGE Unadjusted	816.7	816.7	896.4	1096.0	832.5	1058.2	1759.0	890.6	1683.5	2854.6	929.6	1806.3	3051.2
			MPGGE Adjusted	246.9	246.9	255.3	272.7	248.7	269.7	308.1	254.7	305.1	335.7	258.5	309.8	338.9
		CS	MPGGE Unadjusted	56.7	56.7	61.0	67.0	57.0	65.3	75.3	61.5	72.9	91.6	64.3	76.4	95.6
			MPGGE Adjusted	41.4	41.4	44.2	48.0	41.6	46.9	53.1	44.5	51.7	62.8	46.3	53.8	65.0
		CD+CS	Wh/mile	40.8	40.8	38.0	36.2	40.6	37.1	34.7	38.7	35.8	31.4	37.9	34.8	30.2
			MPGGE Unadjusted	67.4	67.4	72.5	79.7	67.8	77.6	89.9	73.1	87.1	109.6	76.4	91.2	114.4
			MPGGE Adjusted	48.2	48.2	51.4	55.8	48.5	54.5	61.8	51.7	60.2	72.8	53.8	62.6	75.4
	HWFET	CD	Wh/mile	211.3	211.3	196.4	184.6	210.2	189.8	187.0	200.8	193.7	163.3	195.8	187.7	156.2
			Distance	11.3	11.3	11.3	11.2	11.1	11.2	9.8	11.3	9.8	9.5	11.3	9.7	9.6
			MPGGE Unadjusted	341.1	341.1	391.6	430.3	347.7	419.8	992.0	370.8	957.0	1168.0	388.5	1080.3	1566.2
			MPGGE Adjusted	226.2	226.2	257.0	280.3	230.3	273.9	580.6	244.4	563.7	662.6	255.1	622.4	830.7
		CS	MPGGE Unadjusted	52.6	52.6	57.2	62.6	53.0	60.9	70.0	57.1	67.6	83.6	59.8	71.6	88.7
			MPGGE Adjusted	37.1	37.1	40.2	44.0	37.4	42.8	49.1	40.2	47.5	58.5	42.1	50.2	62.0
		CD+CS	Wh/mile	62.2	62.2	57.8	54.3	61.8	55.8	55.0	59.1	57.0	48.0	57.6	55.2	46.0
			MPGGE Unadjusted	66.0	66.0	71.9	78.7	66.6	76.6	90.1	71.7	87.1	107.6	75.1	92.2	114.7
			MPGGE Adjusted	46.4	46.4	50.5	55.2	46.8	53.7	63.0	50.3	60.9	74.9	52.6	64.4	79.7
	Combined	CD	MPGGE Unadjusted	501.9	501.9	567.3	646.2	511.5	628.2	1305.0	546.1	1254.8	1730.2	571.4	1386.9	2138.7
			MPGGE Adjusted	237.1	237.1	256.1	276.0	240.0	271.6	390.6	250.0	384.5	431.5	257.0	400.3	462.0
		CS	MPGGE Unadjusted	54.8	54.8	59.2	65.0	55.2	63.2	72.8	59.4	70.4	87.8	62.2	74.1	92.4
			MPGGE Adjusted	39.3	39.3	42.3	46.1	39.6	45.0	51.2	42.4	49.7	60.8	44.3	52.1	63.6
		CD+CS	Wh/mile	50.4	50.4	46.9	44.3	50.1	45.5	43.8	47.9	45.3	38.9	46.7	44.0	37.3
			MPGGE Unadjusted	66.7	66.7	72.3	79.3	67.2	77.2	90.0	72.4	87.1	108.7	75.8	91.7	114.5
			MPGGE Adjusted	47.4	47.4	51.0	55.5	47.7	54.2	62.3	51.1	60.5	73.8	53.3	63.4	77.3

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				Midsize												
				2010	2010			2015			2030			2045		
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
CI Split HEV PHEV20	UDDS	CD	Wh/mile	204.6	204.6	187.2	175.4	199.0	184.5	168.4	189.4	173.7	146.5	186.6	168.9	140.6
			Distance	23.9	23.9	23.9	23.9	24.0	23.7	23.4	24.1	23.4	22.4	23.9	22.9	22.4
			MPGGE Unadjusted	974.9	974.9	952.5	1067.2	855.4	1228.4	1708.8	901.9	1640.2	2812.4	1002.9	1759.4	2998.3
			MPGGE Adjusted	262.7	262.7	260.7	270.4	251.1	281.9	306.1	255.9	303.4	335.0	265.2	308.1	338.1
		CS	MPGGE Unadjusted	56.2	56.2	60.7	66.7	56.6	64.9	75.2	61.1	72.8	91.4	64.0	76.4	95.3
			MPGGE Adjusted	41.1	41.1	43.9	47.8	41.3	46.6	53.0	44.2	51.6	62.6	46.1	53.8	64.9
		CD+CS	Wh/mile	107.4	107.4	98.3	92.4	104.8	97.0	89.0	99.7	91.8	77.5	98.2	89.3	74.3
			MPGGE Unadjusted	96.0	96.0	103.2	113.6	96.2	111.3	129.9	103.7	125.8	159.2	108.9	132.0	166.2
			MPGGE Adjusted	65.3	65.3	69.3	75.0	65.4	73.7	83.4	69.6	81.3	97.6	72.4	84.5	100.7
	HWFET	CD	Wh/mile	220.8	220.8	199.0	186.2	213.1	196.2	196.0	205.3	185.1	179.5	199.9	195.5	168.8
			Distance	21.7	21.7	22.5	22.5	22.5	21.8	19.5	22.5	21.4	17.9	22.4	19.4	18.3
			MPGGE Unadjusted	401.6	401.6	392.4	424.1	349.3	472.3	2198.0	389.4	600.7	65207.3	409.7	2271.8	65207.3
			MPGGE Adjusted	263.1	263.1	257.5	276.5	231.2	305.0	1056.7	255.7	378.2	3034.8	267.9	1080.4	3034.8
		CS	MPGGE Unadjusted	52.3	52.3	56.7	62.4	52.7	60.5	69.9	56.6	67.6	83.4	59.4	71.5	88.5
			MPGGE Adjusted	36.8	36.8	39.9	43.9	37.1	42.5	49.0	39.9	47.5	58.4	41.8	50.2	61.8
		CD+CS	Wh/mile	113.2	113.2	102.4	95.8	109.6	100.6	57.6	105.6	95.2	52.8	102.9	57.5	49.6
			MPGGE Unadjusted	81.0	81.0	87.1	95.8	80.6	93.8	91.0	87.0	106.1	109.8	91.3	93.2	116.4
			MPGGE Adjusted	56.7	56.7	60.9	66.8	56.4	65.5	63.6	60.8	73.9	76.4	63.8	65.1	80.9
	Combined	CD	MPGGE Unadjusted	593.6	593.6	580.0	634.3	517.8	714.0	1899.0	566.5	922.1	4939.1	607.3	1958.1	5253.7
			MPGGE Adjusted	262.9	262.9	259.2	273.1	241.8	291.9	450.0	255.8	333.0	558.7	266.4	454.2	563.3
		CS	MPGGE Unadjusted	54.4	54.4	58.8	64.7	54.8	62.8	72.7	59.0	70.4	87.6	61.9	74.1	92.1
			MPGGE Adjusted	39.1	39.1	42.0	45.9	39.3	44.7	51.2	42.2	49.7	60.7	44.1	52.1	63.5
		CD+CS	Wh/mile	110.0	110.0	100.1	94.0	106.9	98.6	74.9	102.4	93.4	66.4	100.3	75.0	63.2
			MPGGE Unadjusted	88.6	88.6	95.3	104.8	88.5	102.7	109.0	95.5	116.1	132.4	100.2	111.1	139.4
			MPGGE Adjusted	61.1	61.1	65.3	71.1	61.0	69.8	73.2	65.4	77.8	86.8	68.3	74.5	90.7

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				Midsize													
				2010	2010			2015			2030			2045			
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high	
CI Series HEV PHEV30	UDDS	CD	Wh/mile	290.9	290.9	269.1	251.6	286.7	258.7	229.0	273.0	236.2	197.4	266.6	228.3	189.4	
			Distance	30.9	30.9	31.0	30.9	30.9	30.9	30.9	30.9	30.9	30.9	31.0	30.9	30.9	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	41.7	41.7	45.7	50.9	42.4	49.2	59.3	46.5	57.4	74.8	48.8	60.4	78.2	
			MPGGE Adjusted	31.3	31.3	34.0	37.5	31.8	36.4	43.0	34.6	41.8	52.8	36.2	43.8	54.9	
		CD+CS	Wh/mile	187.5	187.5	173.4	162.1	184.8	166.7	148.2	175.9	152.9	128.3	171.8	147.7	123.1	
			MPGGE Unadjusted	88.7	88.7	97.2	108.3	90.3	104.7	126.1	99.0	122.1	159.2	103.9	128.5	166.5	
			MPGGE Adjusted	61.1	61.1	65.9	72.1	62.0	70.1	81.5	67.0	79.4	97.6	69.7	82.7	100.9	
	HWFET	CD	Wh/mile	278.2	278.2	255.0	238.4	274.5	245.3	215.5	261.7	223.4	186.7	254.3	214.7	175.9	
			Distance	32.2	32.2	32.6	32.5	32.1	32.5	32.9	32.1	32.6	32.5	32.4	33.3	33.5	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	41.3	41.3	45.4	51.0	41.8	49.5	59.1	45.9	56.8	71.2	48.3	59.8	75.7	
			MPGGE Adjusted	29.1	29.1	32.1	35.9	29.6	34.9	41.6	32.4	40.0	50.0	34.1	42.1	53.1	
		CD+CS	Wh/mile	188.0	188.0	172.4	161.1	185.5	165.8	145.7	176.9	151.0	126.3	171.9	145.1	119.0	
			MPGGE Unadjusted	89.7	89.7	98.7	110.8	91.0	107.6	128.5	99.7	123.5	154.9	105.0	130.0	164.5	
			MPGGE Adjusted	62.7	62.7	68.9	77.1	63.6	74.9	89.1	69.5	85.7	106.7	73.1	90.1	113.2	
	Combined	CD	MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	41.5	41.5	45.6	50.9	42.2	49.3	59.2	46.2	57.1	73.2	48.6	60.1	77.1	
			MPGGE Adjusted	30.3	30.3	33.1	36.8	30.8	35.7	42.4	33.6	41.0	51.5	35.2	43.0	54.1	
		CD+CS	Wh/mile	187.7	187.7	172.9	161.7	185.1	166.3	147.1	176.3	152.1	127.4	171.8	146.5	121.3	
			MPGGE Unadjusted	89.2	89.2	97.9	109.4	90.6	106.0	127.2	99.3	122.7	157.2	104.4	129.2	165.6	
			MPGGE Adjusted	61.8	61.8	67.2	74.3	62.7	72.2	84.8	68.1	82.1	101.5	71.2	85.9	106.1	

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				Midsize													
				2010	2010			2015			2030			2045			
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high	
CI Series HEV PHEV40	UDDS	CD	Wh/mile	297.0	297.0	275.4	256.9	292.4	264.1	233.5	279.2	241.0	199.8	271.8	232.2	191.6	
			Distance	41.0	41.0	41.0	40.9	40.8	41.0	40.9	41.0	40.9	40.6	41.1	40.7	40.4	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	40.8	40.8	44.7	49.6	41.5	48.3	58.4	45.6	56.5	74.6	47.9	59.5	78.9	
			MPGGE Adjusted	30.7	30.7	33.4	36.7	31.2	35.8	42.5	34.0	41.2	52.7	35.6	43.2	55.3	
		CD+CS	Wh/mile	218.5	218.5	202.7	189.1	215.1	194.3	173.2	205.5	178.7	148.5	200.1	172.0	142.3	
			MPGGE Unadjusted	102.1	102.1	111.9	124.1	103.7	120.6	145.9	114.1	141.2	186.5	119.8	148.8	197.3	
			MPGGE Adjusted	68.7	68.7	74.0	80.5	69.6	78.7	91.3	75.2	89.0	109.6	78.2	92.7	114.1	
	HWFET	CD	Wh/mile	281.0	281.0	257.5	240.6	277.2	247.6	217.7	264.1	225.8	189.9	256.3	216.0	178.7	
			Distance	43.0	43.0	43.6	43.6	42.8	43.6	43.7	43.1	43.6	42.7	43.4	43.7	43.5	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
		CS	MPGGE Unadjusted	40.7	40.7	45.1	50.2	41.2	48.6	58.5	45.2	56.2	70.6	47.7	59.2	75.9	
			MPGGE Adjusted	28.7	28.7	31.8	35.4	29.1	34.3	41.2	31.9	39.6	49.6	33.6	41.6	53.2	
		CD+CS	Wh/mile	221.1	221.1	202.7	189.4	218.1	194.9	171.7	207.8	178.0	150.4	201.8	170.1	141.6	
			MPGGE Unadjusted	109.9	109.9	121.9	135.7	111.4	131.3	158.1	122.2	151.9	190.9	128.8	159.9	205.2	
			MPGGE Adjusted	76.5	76.5	84.6	93.9	77.5	91.0	108.9	84.8	104.8	130.6	89.3	110.1	140.0	
	Combined	CD	MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
		CS	MPGGE Unadjusted	40.7	40.7	44.9	49.9	41.4	48.4	58.4	45.4	56.4	72.8	47.8	59.4	77.5	
			MPGGE Adjusted	29.8	29.8	32.7	36.1	30.2	35.1	41.9	33.0	40.5	51.2	34.7	42.5	54.4	
		CD+CS	Wh/mile	219.7	219.7	202.7	189.2	216.5	194.6	172.5	206.6	178.4	149.3	200.8	171.1	142.0	
			MPGGE Unadjusted	105.4	105.4	116.2	129.1	107.1	125.2	151.2	117.6	145.8	188.5	123.7	153.6	200.8	
			MPGGE Adjusted	72.0	72.0	78.4	86.0	73.0	83.8	98.5	79.3	95.5	118.2	82.9	99.8	124.5	

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				Midsize												
				2010	2010			2015			2030			2045		
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
H2 Split HEV PHEV10	UDDS	CD	Wh/mile	190.8	190.8	176.1	170.8	186.6	175.7	159.5	181.0	162.5	149.5	174.7	159.8	143.5
			Distance	12.6	12.6	12.3	11.7	12.8	11.7	11.6	12.5	11.9	10.2	12.3	11.5	10.2
			MPGGE Unadjusted	805.6	805.6	1056.5	1796.6	857.2	1721.8	2704.5	1064.8	2078.4	N/A	1183.2	2821.7	N/A
			MPGGE Adjusted	245.7	245.7	269.6	309.5	251.3	306.7	333.1	270.2	318.6	N/A	278.9	335.2	N/A
		CS	MPGGE Unadjusted	53.8	53.8	65.0	75.1	60.3	72.9	86.1	67.4	83.2	106.7	73.1	89.1	115.7
			MPGGE Adjusted	39.5	39.5	46.7	53.0	43.7	51.6	59.6	48.2	57.9	71.2	51.8	61.3	76.1
		CD+CS	Wh/mile	39.8	39.8	36.7	35.6	38.9	36.6	33.2	37.7	33.9	31.1	36.4	33.3	29.9
			MPGGE Unadjusted	63.9	63.9	77.4	89.8	71.6	87.1	103.1	80.2	99.5	128.6	87.0	106.6	139.4
			MPGGE Adjusted	46.0	46.0	54.4	61.7	50.8	60.1	69.2	56.1	67.2	82.7	60.1	71.2	88.1
	HWFET	CD	Wh/mile	208.8	208.8	191.7	186.8	207.2	192.3	175.7	198.0	183.2	151.2	191.1	175.9	144.8
			Distance	11.1	11.1	11.1	10.6	11.1	10.6	9.1	11.1	9.1	9.0	11.1	9.1	9.2
			MPGGE Unadjusted	337.2	337.2	434.0	647.6	386.4	631.0	855.9	426.0	843.3	936.2	463.1	895.3	1257.5
			MPGGE Adjusted	223.8	223.8	282.4	404.1	253.8	395.1	513.5	277.7	507.2	553.5	299.6	533.3	702.4
		CS	MPGGE Unadjusted	50.6	50.6	61.3	70.3	56.7	68.4	80.4	63.2	77.4	96.5	68.3	83.5	106.4
			MPGGE Adjusted	35.7	35.7	43.1	49.3	39.9	48.1	56.3	44.5	54.3	67.4	48.0	58.5	74.1
		CD+CS	Wh/mile	61.4	61.4	56.4	55.0	60.9	56.6	51.7	58.2	53.9	44.5	56.2	51.7	42.6
			MPGGE Unadjusted	63.6	63.6	77.2	89.4	71.3	87.1	102.8	79.5	99.0	123.0	85.9	106.8	136.4
			MPGGE Adjusted	44.7	44.7	54.1	62.5	50.0	60.9	71.6	55.7	69.1	85.4	60.1	74.4	94.4
	Combined	CD	MPGGE Unadjusted	495.7	495.7	642.1	999.0	553.6	968.5	1371.4	635.8	1252.8	2044.8	696.1	1433.6	2730.4
			MPGGE Adjusted	235.3	235.3	275.2	345.9	252.4	341.0	395.6	273.5	382.6	449.4	287.9	402.5	487.1
		CS	MPGGE Unadjusted	52.3	52.3	63.3	72.9	58.6	70.8	83.4	65.5	80.5	101.9	70.9	86.5	111.3
			MPGGE Adjusted	37.7	37.7	45.0	51.3	41.9	50.0	58.1	46.5	56.2	69.4	50.0	60.0	75.2
		CD+CS	Wh/mile	49.5	49.5	45.5	44.3	48.8	45.6	41.5	46.9	42.9	37.1	45.3	41.6	35.6
			MPGGE Unadjusted	63.8	63.8	77.3	89.6	71.5	87.1	102.9	79.9	99.3	126.0	86.5	106.7	138.0
			MPGGE Adjusted	45.4	45.4	54.2	62.1	50.5	60.5	70.3	55.9	68.0	83.9	60.1	72.6	90.8

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				Midsize													
				2010	2010			2015			2030			2045			
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high	
H2 Split HEV PHEV20	UDDS	CD	Wh/mile	195.0	195.0	178.1	172.8	191.4	176.5	158.5	186.5	164.5	138.5	176.4	159.1	140.8	
			Distance	23.9	23.9	23.9	23.4	23.8	23.4	22.8	23.7	22.8	22.0	23.9	22.8	20.5	
			MPGGE Unadjusted	833.0	833.0	1026.9	1733.3	896.7	1569.9	2121.2	1177.8	2035.4	4174.0	1152.5	2222.2	N/A	
			MPGGE Adjusted	248.7	248.7	267.2	307.1	255.4	300.3	319.8	278.6	317.3	351.8	276.8	322.5	N/A	
		CS	MPGGE Unadjusted	53.5	53.5	64.8	74.8	59.8	72.8	86.3	67.2	83.2	106.1	73.0	89.3	114.9	
			MPGGE Adjusted	39.3	39.3	46.6	52.8	43.4	51.6	59.7	48.1	57.9	70.9	51.7	61.4	75.7	
		CD+CS	Wh/mile	102.6	102.6	93.8	91.0	100.8	93.0	83.8	98.0	86.9	52.7	93.0	84.1	53.6	
			MPGGE Unadjusted	91.0	91.0	110.4	129.4	101.6	125.6	149.5	114.9	144.1	154.3	124.3	154.6	169.0	
			MPGGE Adjusted	62.4	62.4	73.2	83.2	68.4	81.2	93.0	75.7	90.4	95.3	80.6	95.4	102.0	
		HWFET	CD	Wh/mile	211.8	211.8	193.5	188.1	208.8	186.1	195.3	205.3	196.8	171.5	192.8	195.0	161.2
				Distance	21.8	21.8	21.8	20.8	21.6	21.4	18.0	21.4	19.3	17.3	21.7	18.3	17.6
				MPGGE Unadjusted	338.8	338.8	427.6	625.6	375.3	481.9	N/A	488.5	2709.3	N/A	457.1	N/A	N/A
	MPGGE Adjusted			224.8	224.8	278.6	392.1	247.1	310.6	N/A	314.5	1210.9	N/A	296.1	N/A	N/A	
	CS		MPGGE Unadjusted	50.1	50.1	60.8	69.8	56.2	68.0	80.2	62.8	77.2	96.3	68.0	83.4	106.4	
			MPGGE Adjusted	35.3	35.3	42.7	49.0	39.5	47.7	56.2	44.2	54.1	67.2	47.7	58.3	74.1	
	CD+CS		Wh/mile	108.9	108.9	99.6	96.8	107.4	95.7	57.5	105.3	57.9	50.4	99.2	57.4	47.4	
			MPGGE Unadjusted	76.9	76.9	93.5	109.7	86.0	104.7	105.5	97.4	100.7	126.7	104.2	109.7	140.0	
			MPGGE Adjusted	53.9	53.9	65.3	76.3	60.2	72.9	73.5	68.0	70.2	87.9	72.6	76.3	96.8	
	Combined		CD	MPGGE Unadjusted	502.9	502.9	629.7	964.7	551.7	778.8	3757.1	720.4	2292.0	7213.1	684.2	3931.2	N/A
				MPGGE Adjusted	237.3	237.3	272.2	340.3	251.6	304.9	535.3	293.6	475.1	584.2	285.2	539.5	640.8
			CS	MPGGE Unadjusted	51.9	51.9	62.9	72.5	58.1	70.6	83.5	65.2	80.4	101.5	70.6	86.5	110.9
		MPGGE Adjusted		37.4	37.4	44.8	51.0	41.6	49.8	58.1	46.3	56.1	69.2	49.8	60.0	75.0	
		CD+CS	Wh/mile	105.5	105.5	96.4	93.6	103.8	94.2	71.9	101.3	73.8	51.7	95.7	72.1	50.8	
			MPGGE Unadjusted	84.0	84.0	102.1	119.7	93.9	115.2	125.9	106.3	120.7	140.5	114.4	130.5	154.6	
			MPGGE Adjusted	58.3	58.3	69.4	79.9	64.5	77.3	83.1	72.0	80.1	91.8	76.8	85.8	99.6	

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				Midsize												
				2010	2010			2015			2030			2045		
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
H2 Series HEV PHEV30	UDDS	CD	Wh/mile	284.6	284.6	258.3	239.2	278.8	245.8	215.3	264.7	223.4	183.5	253.9	215.0	176.8
			Distance	30.9	30.9	31.0	31.0	30.9	31.0	30.9	31.0	30.9	30.7	31.0	30.9	30.9
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	39.5	39.5	48.4	56.8	44.6	55.0	67.5	50.8	64.7	82.9	55.6	69.1	89.6
			MPGGE Adjusted	29.8	29.8	35.9	41.5	33.3	40.3	48.3	37.5	46.5	57.7	40.7	49.3	61.6
		CD+CS	Wh/mile	183.4	183.4	166.4	154.1	179.7	158.4	139.3	170.5	144.6	119.2	163.6	139.0	114.9
			MPGGE Unadjusted	84.0	84.0	102.9	120.9	95.0	117.0	143.6	108.1	137.7	176.3	118.3	146.9	190.7
			MPGGE Adjusted	58.4	58.4	69.1	78.8	64.7	76.8	90.2	72.0	87.3	105.2	77.4	91.8	111.4
	HWFET	CD	Wh/mile	274.0	274.0	247.8	230.2	269.2	236.8	206.7	256.2	215.3	178.3	246.0	206.4	167.8
			Distance	31.9	31.9	32.2	32.1	31.8	32.0	32.0	31.8	31.9	31.7	31.8	31.9	32.9
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	39.7	39.7	48.8	56.7	44.7	55.1	67.3	50.8	64.2	81.5	55.5	69.7	89.7
			MPGGE Adjusted	28.1	28.1	34.4	39.9	31.6	38.8	47.2	35.8	45.2	57.0	39.1	48.9	62.7
		CD+CS	Wh/mile	185.2	185.2	167.5	155.6	181.9	160.0	139.7	173.1	145.5	120.5	166.3	139.5	113.4
			MPGGE Unadjusted	86.3	86.3	106.0	123.2	97.2	119.7	146.2	110.5	139.6	177.1	120.6	151.4	194.9
			MPGGE Adjusted	60.4	60.4	73.8	85.5	67.8	83.1	101.0	76.9	96.6	121.5	83.7	104.5	133.2
	Combined	CD	MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	39.6	39.6	48.5	56.8	44.7	55.0	67.4	50.8	64.5	82.2	55.5	69.3	89.7
			MPGGE Adjusted	29.0	29.0	35.2	40.7	32.5	39.6	47.8	36.7	45.9	57.4	39.9	49.1	62.1
		CD+CS	Wh/mile	184.2	184.2	166.9	154.8	180.7	159.1	139.5	171.7	145.0	119.8	164.8	139.2	114.2
			MPGGE Unadjusted	85.1	85.1	104.3	121.9	96.0	118.2	144.7	109.2	138.6	176.7	119.3	148.9	192.6
			MPGGE Adjusted	59.3	59.3	71.2	81.7	66.1	79.5	94.7	74.1	91.3	112.0	80.2	97.1	120.3

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				Midsize													
				2010	2010			2015			2030			2045			
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high	
H2 Series HEV PHEV40	UDDS	CD	Wh/mile	290.7	290.7	263.8	244.0	284.7	251.6	219.7	270.6	228.1	185.8	259.1	219.0	178.4	
			Distance	41.0	41.0	40.8	40.9	41.0	40.8	40.8	41.0	40.9	40.4	40.8	40.6	40.5	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	38.2	38.2	47.4	55.5	43.7	54.0	66.2	49.9	63.7	83.6	54.4	68.3	90.5	
			MPGGE Adjusted	28.9	28.9	35.2	40.6	32.7	39.6	47.4	36.9	45.9	58.1	39.8	48.8	62.1	
		CD+CS	Wh/mile	213.8	213.8	194.0	179.5	209.4	185.2	162.9	199.2	169.0	137.9	190.6	162.1	132.4	
			MPGGE Unadjusted	95.5	95.5	118.5	138.8	109.2	134.9	165.4	124.7	159.2	208.9	135.9	170.6	226.2	
			MPGGE Adjusted	65.0	65.0	77.6	87.8	72.6	86.0	100.4	80.8	97.5	118.8	86.4	102.7	125.5	
	HWFET	CD	Wh/mile	276.9	276.9	250.2	232.1	272.1	239.1	208.9	258.5	217.6	181.2	248.1	207.7	170.5	
			Distance	42.8	42.8	42.7	42.7	42.7	42.8	42.8	42.7	42.7	41.5	42.2	42.8	42.3	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
		CS	MPGGE Unadjusted	39.1	39.1	48.1	56.3	44.0	54.2	66.6	50.2	63.5	80.9	54.5	69.0	89.2	
			MPGGE Adjusted	27.7	27.7	33.9	39.6	31.1	38.2	46.8	35.4	44.6	56.6	38.4	48.5	62.4	
		CD+CS	Wh/mile	217.9	217.9	196.9	182.7	214.0	188.1	164.7	203.4	171.5	143.4	195.2	163.5	135.0	
			MPGGE Unadjusted	105.8	105.8	129.9	152.1	119.0	146.5	179.9	135.6	171.6	218.5	147.4	186.6	241.1	
			MPGGE Adjusted	73.7	73.7	90.0	104.9	82.7	101.2	123.4	93.9	117.9	148.6	101.8	127.7	163.2	
	Combined	CD	MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
		CS	MPGGE Unadjusted	38.6	38.6	47.7	55.8	43.8	54.1	66.3	50.0	63.6	82.3	54.4	68.6	89.9	
			MPGGE Adjusted	28.3	28.3	34.6	40.1	31.9	38.9	47.1	36.2	45.3	57.4	39.2	48.6	62.2	
		CD+CS	Wh/mile	215.6	215.6	195.3	180.9	211.5	186.5	163.7	201.1	170.1	140.4	192.7	162.7	133.6	
			MPGGE Unadjusted	99.9	99.9	123.4	144.4	113.4	139.9	171.6	129.4	164.5	213.1	140.8	177.4	232.7	
			MPGGE Adjusted	68.6	68.6	82.7	94.8	76.8	92.2	109.6	86.2	105.8	130.6	92.7	112.7	140.1	

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				Midsize													
				2010	2010			2015			2030			2045			
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high	
E85 Split HEV PHEV10	UDDS	CD	Wh/mile	186.0	186.0	176.6	172.8	188.8	176.4	159.4	180.3	164.9	143.5	176.4	159.7	146.8	
			Distance	12.7	12.7	12.3	11.6	12.3	11.7	11.7	12.3	11.9	11.4	12.3	11.7	10.2	
			MPGGE Unadjusted	735.8	735.8	918.8	1452.8	850.2	1319.5	1909.2	889.5	1628.7	3063.1	922.3	1710.8	N/A	
			MPGGE Adjusted	237.2	237.2	257.5	294.7	250.6	287.5	313.4	254.6	302.9	339.1	257.9	306.2	N/A	
		CS	MPGGE Unadjusted	52.3	52.3	56.8	61.6	53.3	59.9	77.4	56.2	66.0	93.0	58.1	68.5	97.1	
			MPGGE Adjusted	38.5	38.5	41.5	44.6	39.1	43.4	54.4	41.1	47.3	63.6	42.3	48.9	65.9	
		CD+CS	Wh/mile	38.8	38.8	36.8	36.0	39.3	36.8	33.2	37.6	34.4	29.9	36.8	33.3	30.6	
			MPGGE Unadjusted	62.1	62.1	67.6	73.6	63.4	71.5	92.5	66.9	78.8	111.3	69.2	81.9	117.0	
			MPGGE Adjusted	44.8	44.8	48.3	52.1	45.7	50.8	63.3	47.9	55.2	73.7	49.3	57.1	76.8	
		HWFET	CD	Wh/mile	208.0	208.0	192.4	188.5	206.7	193.8	178.7	197.8	185.1	154.9	192.7	178.7	147.9
				Distance	11.0	11.0	11.0	10.6	11.0	10.6	9.2	11.1	9.6	9.1	11.1	9.2	9.4
	MPGGE Unadjusted			332.1	332.1	378.3	530.0	340.5	516.9	810.7	354.3	698.4	875.6	366.5	729.1	1141.4	
	MPGGE Adjusted			220.6	220.6	248.9	338.4	225.8	330.9	490.5	234.3	431.6	523.5	241.8	448.0	650.6	
	CS		MPGGE Unadjusted	48.7	48.7	53.3	57.6	49.8	56.1	72.2	52.5	61.5	84.6	54.3	64.3	90.0	
			MPGGE Adjusted	34.4	34.4	37.6	40.5	35.1	39.5	50.6	37.0	43.3	59.2	38.3	45.2	62.9	
	CD+CS		Wh/mile	61.2	61.2	56.6	55.4	60.8	57.0	52.6	58.2	54.5	45.5	56.7	52.6	43.5	
			MPGGE Unadjusted	61.3	61.3	67.2	73.3	62.7	71.3	92.4	65.9	78.8	108.0	68.3	82.3	115.5	
			MPGGE Adjusted	43.1	43.1	47.2	51.4	44.0	50.1	64.5	46.3	55.2	75.2	47.9	57.6	80.3	
	Combined		CD	MPGGE Unadjusted	475.6	475.6	559.2	814.6	508.0	776.8	1186.0	529.6	1018.3	1441.9	548.2	1065.4	2483.6
				MPGGE Adjusted	229.4	229.4	253.6	312.9	238.8	305.5	374.2	245.1	349.8	402.9	250.4	357.1	475.3
		CS	MPGGE Unadjusted	50.6	50.6	55.2	59.8	51.7	58.1	75.0	54.5	63.9	89.0	56.4	66.5	93.8	
			MPGGE Adjusted	36.5	36.5	39.6	42.7	37.2	41.6	52.6	39.1	45.4	61.5	40.4	47.2	64.5	
		CD+CS	Wh/mile	48.8	48.8	45.7	44.7	49.0	45.9	41.9	46.8	43.4	36.9	45.7	42.0	36.4	
			MPGGE Unadjusted	61.7	61.7	67.4	73.5	63.0	71.4	92.4	66.4	78.8	109.8	68.8	82.1	116.3	
			MPGGE Adjusted	44.0	44.0	47.8	51.8	44.9	50.4	63.8	47.2	55.2	74.4	48.7	57.3	78.3	

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				Midsize												
				2010	2010			2015			2030			2045		
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
E85 Split HEV PHEV20	UDDS	CD	Wh/mile	190.5	190.5	178.5	173.5	194.7	178.4	161.2	182.2	166.6	140.6	178.3	161.8	144.2
			Distance	23.9	23.9	23.9	22.9	23.8	23.3	22.8	23.8	22.8	22.3	23.9	22.8	20.6
			MPGGE Unadjusted	770.5	770.5	892.0	1327.0	943.2	1280.8	1869.8	867.3	1595.8	2992.7	900.0	1679.6	N/A
			MPGGE Adjusted	241.5	241.5	254.9	288.0	259.8	285.2	312.0	252.4	301.5	338.0	255.7	305.0	N/A
		CS	MPGGE Unadjusted	51.9	51.9	56.7	61.5	53.0	59.8	77.4	56.1	66.2	92.9	58.2	68.7	96.8
			MPGGE Adjusted	38.2	38.2	41.4	44.5	38.9	43.4	54.4	41.0	47.5	63.5	42.3	49.0	65.8
		CD+CS	Wh/mile	100.4	100.4	94.1	91.4	102.3	94.0	85.2	96.0	88.0	53.5	93.9	85.5	54.9
			MPGGE Unadjusted	88.2	88.2	96.6	106.0	90.6	103.0	134.0	95.4	114.6	134.6	98.9	119.0	142.4
			MPGGE Adjusted	60.8	60.8	65.6	70.9	62.2	69.2	85.5	64.9	75.5	85.8	66.9	77.8	89.6
	HWFET	CD	Wh/mile	209.9	209.9	194.2	188.8	213.7	187.4	197.8	199.6	198.4	174.4	194.5	197.3	163.7
			Distance	21.5	21.5	21.8	20.8	21.5	21.7	18.3	21.4	19.3	17.4	21.8	18.3	17.7
			MPGGE Unadjusted	324.6	324.6	372.4	494.9	380.8	393.3	N/A	349.6	2076.8	N/A	361.7	N/A	N/A
			MPGGE Adjusted	216.0	216.0	245.4	318.2	250.4	258.0	N/A	231.4	1016.7	N/A	238.8	N/A	N/A
		CS	MPGGE Unadjusted	48.2	48.2	53.0	57.4	49.4	55.7	71.9	52.2	61.3	84.6	54.0	64.2	89.9
			MPGGE Adjusted	34.0	34.0	37.3	40.4	34.8	39.2	50.5	36.7	43.1	59.2	38.0	45.1	62.8
		CD+CS	Wh/mile	108.0	108.0	99.9	97.2	109.6	96.4	58.2	102.7	58.4	51.3	100.1	58.0	48.1
			MPGGE Unadjusted	73.9	73.9	81.5	89.9	76.5	85.8	94.7	79.9	79.9	111.3	82.7	84.4	118.3
			MPGGE Adjusted	51.8	51.8	57.1	62.8	53.7	60.0	66.1	56.0	56.0	77.4	57.9	59.1	82.2
	Combined	CD	MPGGE Unadjusted	476.1	476.1	548.0	755.4	566.6	635.5	3322.0	520.5	1781.4	5245.3	539.0	2991.1	N/A
			MPGGE Adjusted	229.3	229.3	250.5	300.8	255.5	272.3	523.3	242.5	441.1	563.2	247.8	512.4	640.8
		CS	MPGGE Unadjusted	50.2	50.2	55.0	59.6	51.3	57.9	74.8	54.2	63.9	88.9	56.2	66.6	93.6
			MPGGE Adjusted	36.2	36.2	39.4	42.5	37.0	41.4	52.6	39.0	45.4	61.5	40.3	47.2	64.4
		CD+CS	Wh/mile	103.8	103.8	96.7	94.0	105.6	95.1	73.0	99.0	74.7	52.5	96.7	73.2	51.9
			MPGGE Unadjusted	81.1	81.1	89.1	98.1	83.7	94.5	112.9	87.8	95.9	123.0	90.9	100.5	130.5
			MPGGE Adjusted	56.4	56.4	61.5	67.0	58.0	64.8	75.5	60.6	65.2	81.8	62.5	68.1	86.1

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				Midsize													
				2010	2010			2015			2030			2045			
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high	
E85 Series HEV PHEV30	UDDS	CD	Wh/mile	280.4	280.4	259.1	241.7	276.3	248.4	219.4	263.2	226.5	188.4	256.9	218.3	180.3	
			Distance	30.9	30.9	30.9	31.0	30.9	30.9	30.9	31.0	30.9	30.7	30.9	30.9	30.7	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	38.6	38.6	42.8	47.2	39.4	45.7	61.5	42.9	52.4	75.9	44.7	54.4	79.4	
			MPGGE Adjusted	29.2	29.2	32.1	35.1	29.7	34.0	44.5	32.1	38.6	53.5	33.3	39.9	55.6	
		CD+CS	Wh/mile	180.7	180.7	166.9	155.7	178.0	160.1	142.0	169.6	146.6	122.4	165.5	141.1	117.1	
			MPGGE Unadjusted	82.2	82.2	91.1	100.4	83.9	97.1	130.8	91.2	111.5	161.5	95.0	115.7	168.9	
			MPGGE Adjusted	57.2	57.2	62.4	67.8	58.3	65.9	83.9	62.5	73.8	98.6	64.7	76.1	101.9	
	HWFET	CD	Wh/mile	271.1	271.1	248.3	231.8	267.5	238.5	209.4	255.2	217.2	181.3	247.9	208.6	170.1	
			Distance	31.8	31.8	32.2	32.2	31.8	32.1	32.3	31.8	32.1	31.9	31.9	32.2	32.5	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
		CS	MPGGE Unadjusted	38.1	38.1	42.4	46.4	39.2	45.0	60.9	42.1	51.1	71.8	43.9	53.8	76.4	
			MPGGE Adjusted	26.9	26.9	29.9	32.7	27.7	31.7	42.8	29.7	36.0	50.4	31.0	37.9	53.5	
		CD+CS	Wh/mile	183.2	183.2	167.8	156.7	180.8	161.2	141.5	172.5	146.8	122.5	167.6	141.0	115.0	
			MPGGE Unadjusted	82.9	82.9	92.1	100.8	85.2	97.8	132.3	91.5	111.0	156.1	95.4	117.0	166.0	
			MPGGE Adjusted	58.0	58.0	64.3	70.3	59.6	68.2	91.6	63.9	77.2	107.6	66.6	81.3	114.1	
	Combined	CD	MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
		CS	MPGGE Unadjusted	38.4	38.4	42.6	46.8	39.3	45.3	61.2	42.5	51.8	74.0	44.3	54.1	78.0	
			MPGGE Adjusted	28.1	28.1	31.1	34.0	28.8	33.0	43.7	31.0	37.4	52.0	32.2	39.0	54.6	
		CD+CS	Wh/mile	181.8	181.8	167.3	156.2	179.3	160.6	141.8	170.9	146.7	122.4	166.4	141.1	116.2	
			MPGGE Unadjusted	82.5	82.5	91.5	100.6	84.5	97.4	131.5	91.3	111.3	159.0	95.2	116.3	167.5	
			MPGGE Adjusted	57.6	57.6	63.3	68.9	58.9	66.9	87.2	63.2	75.3	102.5	65.5	78.3	107.1	

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				Midsize													
				2010	2010			2015			2030			2045			
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high	
E85 Series HEV PHEV40	UDDS	CD	Wh/mile	286.2	286.2	265.2	246.8	282.1	254.1	223.9	269.4	231.3	190.6	262.3	222.6	182.4	
			Distance	40.8	40.8	41.0	40.9	40.9	40.8	40.8	40.9	40.8	40.4	40.8	40.7	40.5	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	37.3	37.3	41.9	46.0	38.9	44.7	60.5	42.0	51.4	76.2	43.8	53.6	80.5	
			MPGGE Adjusted	28.3	28.3	31.4	34.2	29.4	33.4	43.8	31.5	37.9	53.7	32.7	39.3	56.2	
		CD+CS	Wh/mile	210.5	210.5	195.2	181.6	207.5	187.1	166.0	198.3	171.4	141.5	192.9	164.8	135.4	
			MPGGE Unadjusted	93.3	93.3	104.7	115.0	97.3	111.8	151.3	105.0	128.6	190.5	109.4	133.9	201.2	
			MPGGE Adjusted	63.8	63.8	70.2	75.7	66.0	74.0	93.9	70.3	82.8	111.3	72.7	85.4	115.7	
	HWFET	CD	Wh/mile	273.9	273.9	250.8	234.0	270.3	240.7	211.5	257.7	219.6	184.2	250.2	210.0	173.0	
			Distance	42.2	42.2	43.1	43.0	42.3	42.9	43.2	42.4	42.8	41.8	42.6	43.1	42.7	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
		CS	MPGGE Unadjusted	37.5	37.5	41.8	45.6	38.6	44.3	60.2	41.5	50.4	71.2	43.3	53.3	75.8	
			MPGGE Adjusted	26.5	26.5	29.5	32.2	27.3	31.3	42.4	29.3	35.5	50.0	30.6	37.5	53.1	
		CD+CS	Wh/mile	215.5	215.5	197.4	184.2	212.7	189.5	166.8	202.8	173.1	145.8	196.9	165.4	137.0	
			MPGGE Unadjusted	101.5	101.5	112.8	123.2	104.4	119.8	162.7	112.1	136.2	192.5	117.0	143.9	204.8	
			MPGGE Adjusted	70.7	70.7	78.5	85.5	72.7	83.2	112.0	78.0	94.3	131.6	81.3	99.5	139.7	
	Combined	CD	MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
		CS	MPGGE Unadjusted	37.4	37.4	41.8	45.8	38.8	44.6	60.4	41.7	51.0	73.9	43.5	53.4	78.3	
			MPGGE Adjusted	27.5	27.5	30.5	33.3	28.4	32.4	43.2	30.5	36.8	51.9	31.7	38.5	54.8	
		CD+CS	Wh/mile	212.8	212.8	196.2	182.7	209.8	188.2	166.4	200.3	172.2	143.5	194.7	165.0	136.1	
			MPGGE Unadjusted	96.8	96.8	108.2	118.5	100.4	115.3	156.2	108.1	131.9	191.4	112.7	138.3	202.8	
			MPGGE Adjusted	66.7	66.7	73.7	79.8	68.9	77.9	101.2	73.5	87.6	119.6	76.3	91.2	125.4	

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				Midsize													
				2010	2010			2015			2030			2045			
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high	
FC HEV PHEV10	UDDS	CD	Wh/mile	273.9	273.9	237.9	212.3	257.5	219.1	190.2	237.1	197.0	162.8	225.3	190.0	155.2	
			Distance	11.1	11.1	10.1	10.1	11.1	10.1	10.1	10.1	10.2	10.2	10.1	10.1	10.2	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	59.6	59.6	71.0	83.6	69.1	81.0	94.5	75.0	91.4	113.2	78.9	94.4	118.8	
			MPGGE Adjusted	43.2	43.2	50.4	58.1	49.3	56.6	64.4	52.9	62.6	74.7	55.3	64.4	77.7	
		CD+CS	Wh/mile	57.1	57.1	49.6	44.2	53.7	45.7	39.6	49.4	41.0	33.9	46.9	39.6	32.3	
			MPGGE Unadjusted	71.8	71.8	85.5	100.7	83.3	97.6	113.8	90.3	110.1	136.4	95.0	113.8	143.1	
			MPGGE Adjusted	50.9	50.9	59.2	67.9	57.9	66.2	75.1	62.0	73.1	86.7	64.7	75.0	89.9	
	HWFET	CD	Wh/mile	274.9	274.9	237.8	212.4	257.8	219.4	190.7	237.2	197.9	163.4	225.1	190.1	156.4	
			Distance	9.6	9.6	9.5	9.4	9.5	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.5	
			MPGGE Unadjusted	1851.9	1851.9	1589.5	1405.7	1388.2	1381.1	1475.5	1203.2	1377.5	1553.5	1142.0	1441.5	2350.3	
			MPGGE Adjusted	938.5	938.5	839.9	765.6	758.3	755.4	794.4	678.4	753.9	825.7	650.8	780.5	1105.0	
		CS	MPGGE Unadjusted	64.2	64.2	76.0	88.1	73.5	85.5	97.9	78.8	94.3	113.9	82.5	98.2	121.7	
			MPGGE Adjusted	45.1	45.1	53.2	61.6	51.5	59.8	68.3	55.2	65.8	79.2	57.7	68.5	84.5	
		CD+CS	Wh/mile	80.9	80.9	69.9	62.5	75.8	64.5	56.1	69.8	58.2	48.1	66.2	55.9	46.0	
			MPGGE Unadjusted	83.6	83.6	98.4	113.7	95.1	110.3	126.2	101.6	121.4	146.4	106.1	126.5	157.5	
			MPGGE Adjusted	58.5	58.5	68.7	79.1	66.4	76.8	87.5	70.8	84.3	101.1	73.9	87.7	108.5	
	Combined	CD	MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
		CS	MPGGE Unadjusted	61.6	61.6	73.1	85.5	71.0	83.0	96.0	76.7	92.6	113.5	80.4	96.1	120.0	
			MPGGE Adjusted	44.1	44.1	51.7	59.6	50.3	58.0	66.1	53.9	64.0	76.7	56.3	66.2	80.6	
		CD+CS	Wh/mile	67.8	67.8	58.7	52.4	63.6	54.1	47.0	58.6	48.8	40.3	55.6	46.9	38.5	
			MPGGE Unadjusted	76.6	76.6	90.9	106.1	88.2	103.0	119.1	95.1	114.9	140.7	99.7	119.2	149.2	
			MPGGE Adjusted	54.1	54.1	63.1	72.5	61.4	70.6	80.2	65.7	77.7	92.6	68.5	80.3	97.5	

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				Midsize													
				2010	2010			2015			2030			2045			
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high	
FC HEV PHEV20	UDDS	CD	Wh/mile	278.9	278.9	241.6	215.4	261.5	221.9	193.4	240.5	200.2	160.3	228.1	192.8	153.0	
			Distance	20.2	20.2	20.0	20.0	20.1	20.0	20.6	20.0	20.6	20.2	20.0	20.6	20.2	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	58.5	58.5	69.9	82.3	68.1	80.0	93.4	73.9	90.4	112.6	77.9	93.6	118.1	
			MPGGE Adjusted	42.5	42.5	49.8	57.3	48.6	56.0	63.8	52.3	62.0	74.4	54.7	63.9	77.3	
		CD+CS	Wh/mile	106.0	106.0	91.8	81.9	99.3	84.3	73.6	91.4	76.2	61.1	86.6	73.4	58.3	
			MPGGE Unadjusted	86.0	86.0	102.8	121.1	100.1	117.6	137.4	108.7	132.9	165.6	114.5	137.7	173.6	
			MPGGE Adjusted	59.5	59.5	69.1	78.9	67.6	77.1	87.2	72.3	84.9	100.5	75.4	87.3	104.1	
		HWFET	CD	Wh/mile	287.5	287.5	251.7	228.3	274.2	235.2	205.0	255.6	213.1	177.8	244.0	204.1	166.4
				Distance	19.4	19.4	19.2	19.0	19.3	19.1	19.0	19.2	18.8	18.0	19.0	19.0	18.5
				MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	MPGGE Adjusted			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	CS		MPGGE Unadjusted	63.4	63.4	75.1	87.2	72.7	84.7	97.2	78.0	93.6	113.4	81.7	97.7	121.1	
			MPGGE Adjusted	44.6	44.6	52.7	61.0	51.0	59.3	67.9	54.7	65.4	78.9	57.2	68.2	84.1	
	CD+CS		Wh/mile	84.6	84.6	74.0	67.1	80.7	69.2	60.3	75.2	62.7	52.3	71.8	60.0	48.9	
			MPGGE Unadjusted	83.4	83.4	98.8	114.8	95.7	111.4	127.9	102.6	123.2	149.3	107.5	128.6	159.3	
			MPGGE Adjusted	58.4	58.4	68.9	79.8	66.8	77.5	88.7	71.5	85.5	103.0	74.9	89.1	109.7	
	Combined		CD	MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			CS	MPGGE Unadjusted	60.6	60.6	72.1	84.5	70.1	82.0	95.1	75.7	91.8	113.0	79.5	95.4	119.4
		MPGGE Adjusted		43.4	43.4	51.0	58.9	49.7	57.4	65.6	53.3	63.5	76.4	55.8	65.8	80.2	
		CD+CS	Wh/mile	96.3	96.3	83.8	75.2	90.9	77.5	67.6	84.1	70.1	57.1	79.9	67.4	54.1	
			MPGGE Unadjusted	84.8	84.8	100.9	118.1	98.1	114.8	132.9	105.9	128.3	157.8	111.2	133.4	166.9	
			MPGGE Adjusted	59.0	59.0	69.0	79.3	67.2	77.3	87.8	72.0	85.2	101.6	75.2	88.1	106.5	

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				Midsize													
				2010	2010			2015			2030			2045			
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high	
FC HEV PHEV30	UDDS	CD	Wh/mile	271.3	271.3	236.3	214.7	256.5	219.7	189.1	237.9	196.0	160.7	225.2	187.7	153.1	
			Distance	31.7	31.7	31.7	31.6	31.6	31.7	31.5	31.6	31.7	31.4	31.5	31.5	31.5	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	57.7	57.7	68.6	79.4	66.7	77.8	91.3	71.8	88.1	109.5	75.8	92.0	115.0	
			MPGGE Adjusted	42.1	42.1	49.0	55.6	47.8	54.6	62.6	51.0	60.7	72.7	53.4	63.0	75.7	
		CD+CS	Wh/mile	172.9	172.9	150.6	136.8	163.4	139.9	120.9	151.6	125.3	103.4	143.5	120.0	98.5	
			MPGGE Unadjusted	122.9	122.9	146.0	169.0	141.8	165.4	194.1	152.8	187.4	232.9	161.3	195.7	244.6	
			MPGGE Adjusted	79.8	79.8	91.3	102.0	89.3	100.4	112.8	94.6	110.0	128.0	98.5	113.5	132.3	
	HWFET	CD	Wh/mile	272.0	272.0	244.6	224.6	266.8	230.2	200.9	250.0	208.9	174.6	238.2	199.4	163.4	
			Distance	31.1	31.1	29.7	29.5	29.6	29.5	29.2	29.5	29.0	28.3	29.4	29.2	28.8	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
		CS	MPGGE Unadjusted	62.2	62.2	73.4	84.2	70.9	82.2	94.7	75.7	91.1	110.2	79.5	95.4	117.8	
			MPGGE Adjusted	43.8	43.8	51.5	58.9	49.8	57.5	66.1	53.1	63.7	76.7	55.7	66.6	81.8	
		CD+CS	Wh/mile	184.6	184.6	125.9	115.6	137.3	118.5	103.5	128.7	107.6	90.0	122.6	102.7	84.3	
			MPGGE Unadjusted	132.4	132.4	124.4	142.7	120.2	139.3	160.5	128.3	154.4	186.8	134.7	161.8	199.6	
			MPGGE Adjusted	91.7	91.7	86.3	98.6	83.4	96.3	110.5	88.9	106.5	127.9	93.2	111.3	136.3	
	Combined	CD	MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
		CS	MPGGE Unadjusted	59.7	59.7	70.7	81.5	68.5	79.7	92.8	73.5	89.4	109.8	77.4	93.5	116.2	
			MPGGE Adjusted	42.8	42.8	50.1	57.0	48.6	55.9	64.1	51.9	62.0	74.5	54.4	64.6	78.3	
		CD+CS	Wh/mile	178.1	178.1	139.5	127.2	151.7	130.3	113.1	141.3	117.3	97.4	134.1	112.2	92.1	
			MPGGE Unadjusted	127.0	127.0	135.4	156.0	131.2	152.5	177.4	140.7	170.9	209.6	148.1	178.8	222.1	
			MPGGE Adjusted	84.8	84.8	89.0	100.4	86.6	98.5	111.8	91.9	108.4	128.0	96.1	112.5	134.0	

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				Midsize													
				2010	2010			2015			2030			2045			
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high	
FC HEV PHEV40	UDDS	CD	Wh/mile	276.4	276.4	240.2	217.9	261.0	223.1	190.7	241.7	197.9	163.0	228.3	189.2	155.3	
			Distance	41.4	41.4	41.2	41.2	41.2	41.1	41.2	41.2	41.2	40.6	41.4	41.1	40.5	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	56.6	56.6	67.5	78.2	65.5	76.5	90.2	70.6	87.0	108.5	74.7	91.0	113.9	
			MPGGE Adjusted	41.3	41.3	48.3	54.9	47.0	53.8	62.0	50.2	60.1	72.2	52.8	62.4	75.1	
		CD+CS	Wh/mile	199.8	199.8	173.6	157.6	188.7	161.3	138.5	174.7	143.7	119.8	165.1	137.3	114.2	
			MPGGE Unadjusted	141.6	141.6	168.7	195.6	163.7	191.3	225.5	176.5	217.4	271.2	186.9	227.5	284.8	
			MPGGE Adjusted	89.2	89.2	101.9	113.4	99.6	111.6	125.2	105.3	122.1	141.5	109.8	126.0	145.9	
	HWFET	CD	Wh/mile	282.4	282.4	247.5	227.1	270.2	232.8	202.7	252.9	210.9	174.7	240.5	201.1	163.5	
			Distance	40.0	40.0	39.8	39.0	39.7	38.9	38.1	38.9	38.0	37.8	39.7	38.0	38.4	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
		CS	MPGGE Unadjusted	61.4	61.4	72.6	83.3	70.0	81.3	94.0	74.9	90.3	109.6	78.7	94.7	117.1	
			MPGGE Adjusted	43.2	43.2	50.9	58.3	49.1	56.9	65.6	52.5	63.1	76.3	55.1	66.2	81.4	
		CD+CS	Wh/mile	190.3	190.3	166.8	153.0	182.1	156.9	136.8	170.4	142.4	118.1	162.1	135.7	110.5	
			MPGGE Unadjusted	133.4	133.4	157.8	181.1	152.2	176.6	204.3	162.7	196.4	238.2	171.0	206.0	254.5	
			MPGGE Adjusted	92.4	92.4	108.7	124.1	105.0	121.2	139.3	112.0	134.2	161.4	117.5	140.5	171.8	
	Combined	CD	MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
		CS	MPGGE Unadjusted	58.7	58.7	69.7	80.4	67.5	78.6	91.8	72.5	88.5	109.0	76.5	92.6	115.3	
			MPGGE Adjusted	42.1	42.1	49.4	56.4	48.0	55.2	63.5	51.2	61.4	74.0	53.8	64.0	77.8	
		CD+CS	Wh/mile	195.5	195.5	170.5	155.5	185.7	159.3	137.7	172.8	143.1	119.0	163.7	136.6	112.5	
			MPGGE Unadjusted	137.8	137.8	163.6	188.8	158.3	184.4	215.4	170.0	207.4	255.3	179.4	217.3	270.3	
			MPGGE Adjusted	90.6	90.6	104.8	118.0	102.0	115.7	131.2	108.2	127.3	149.8	113.1	132.1	156.5	
EV	UDDS	EV Only	Wh/mile	271.1	271.1	248.2	229.1	268.3	236.9	196.3	252.8	203.1	160.8	243.8	193.4	152.7	
HWFET	EV Only	Wh/mile	275.0	275.0	250.1	232.3	272.1	239.9	204.0	257.5	211.4	173.4	248.4	201.1	161.8		

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				Midsize													
				2010	2010			2015			2030			2045			
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high	
H2 Series HEV PHEV30	UDDS	CD	Wh/mile	284.6	284.6	258.3	239.2	278.8	245.8	215.3	264.7	223.4	183.5	253.9	215.0	176.8	
			Distance	30.9	30.9	31.0	31.0	30.9	31.0	30.9	31.0	30.9	30.7	31.0	30.9	30.9	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	39.5	39.5	48.4	56.8	44.6	55.0	67.5	50.8	64.7	82.9	55.6	69.1	89.6	
			MPGGE Adjusted	29.8	29.8	35.9	41.5	33.3	40.3	48.3	37.5	46.5	57.7	40.7	49.3	61.6	
		CD+CS	Wh/mile	183.4	183.4	166.4	154.1	179.7	158.4	139.3	170.5	144.6	119.2	163.6	139.0	114.9	
			MPGGE Unadjusted	84.0	84.0	102.9	120.9	95.0	117.0	143.6	108.1	137.7	176.3	118.3	146.9	190.7	
			MPGGE Adjusted	58.4	58.4	69.1	78.8	64.7	76.8	90.2	72.0	87.3	105.2	77.4	91.8	111.4	
	HWFET	CD	Wh/mile	274.0	274.0	247.8	230.2	269.2	236.8	206.7	256.2	215.3	178.3	246.0	206.4	167.8	
			Distance	31.9	31.9	32.2	32.1	31.8	32.0	32.0	31.8	31.9	31.7	31.8	31.9	32.9	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	39.7	39.7	48.8	56.7	44.7	55.1	67.3	50.8	64.2	81.5	55.5	69.7	89.7	
			MPGGE Adjusted	28.1	28.1	34.4	39.9	31.6	38.8	47.2	35.8	45.2	57.0	39.1	48.9	62.7	
		CD+CS	Wh/mile	185.2	185.2	167.5	155.6	181.9	160.0	139.7	173.1	145.5	120.5	166.3	139.5	113.4	
			MPGGE Unadjusted	86.3	86.3	106.0	123.2	97.2	119.7	146.2	110.5	139.6	177.1	120.6	151.4	194.9	
			MPGGE Adjusted	60.4	60.4	73.8	85.5	67.8	83.1	101.0	76.9	96.6	121.5	83.7	104.5	133.2	
	Combined	CD	MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	39.6	39.6	48.5	56.8	44.7	55.0	67.4	50.8	64.5	82.2	55.5	69.3	89.7	
			MPGGE Adjusted	29.0	29.0	35.2	40.7	32.5	39.6	47.8	36.7	45.9	57.4	39.9	49.1	62.1	
		CD+CS	Wh/mile	184.2	184.2	166.9	154.8	180.7	159.1	139.5	171.7	145.0	119.8	164.8	139.2	114.2	
			MPGGE Unadjusted	85.1	85.1	104.3	121.9	96.0	118.2	144.7	109.2	138.6	176.7	119.3	148.9	192.6	
			MPGGE Adjusted	59.3	59.3	71.2	81.7	66.1	79.5	94.7	74.1	91.3	112.0	80.2	97.1	120.3	

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			Midsize												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Conv	Unadjusted	UDDS	8.6	8.6	7.9	7.5	8.2	7.8	5.9	8.0	7.4	5.0	8.1	7.0	4.9
		HWFET	5.8	5.8	5.3	5.0	5.6	5.8	4.0	5.4	5.5	3.4	6.0	4.7	3.3
		Combined	7.3	7.3	6.7	6.4	7.0	6.9	5.0	6.9	6.5	4.3	7.2	5.9	4.1
	Adjusted	UDDS	11.2	11.2	10.3	9.8	10.7	10.1	7.8	10.4	9.7	6.7	10.5	9.1	6.6
		HWFET	8.2	8.2	7.5	7.1	7.9	8.2	5.7	7.7	7.8	4.8	8.5	6.6	4.6
		Combined	9.8	9.8	9.0	8.6	9.4	9.2	6.9	9.2	8.8	5.9	9.6	8.0	5.7
CI Conv	Unadjusted	UDDS	7.4	7.4	7.0	6.5	7.3	6.8	5.9	6.9	6.3	5.1	6.9	5.8	4.9
		HWFET	5.3	5.3	4.9	4.4	5.1	5.0	4.2	4.8	4.6	3.6	5.1	4.1	3.4
		Combined	6.5	6.5	6.1	5.6	6.3	6.0	5.1	6.0	5.5	4.4	6.1	5.1	4.2
	Adjusted	UDDS	9.7	9.7	9.2	8.5	9.6	8.9	7.9	9.1	8.3	6.8	9.0	7.8	6.6
		HWFET	7.5	7.5	7.0	6.3	7.3	7.1	6.0	6.8	6.5	5.1	7.2	5.9	4.9
		Combined	8.7	8.7	8.2	7.5	8.5	8.1	7.0	8.1	7.5	6.1	8.2	6.9	5.8
H2 Conv	Unadjusted	UDDS	10.5	10.5	8.8	7.7	9.3	8.0	6.7	8.4	7.2	5.6	8.0	6.5	5.2
		HWFET	6.5	6.5	5.4	4.6	5.6	5.7	4.1	5.0	5.2	3.5	5.8	4.0	3.2
		Combined	8.7	8.7	7.3	6.3	7.7	7.0	5.5	6.9	6.3	4.7	7.0	5.3	4.3
	Adjusted	UDDS	13.5	13.5	11.4	10.0	12.0	10.4	8.8	10.9	9.4	7.5	10.4	8.5	7.0
		HWFET	9.2	9.2	7.7	6.5	7.9	8.1	5.8	7.1	7.4	5.0	8.2	5.7	4.6
		Combined	11.6	11.6	9.7	8.4	10.2	9.4	7.5	9.2	8.5	6.4	9.4	7.2	5.9
E85 Conv	Unadjusted	UDDS	8.9	8.9	8.8	8.1	8.9	8.5	6.2	8.7	8.0	5.3	8.9	7.7	5.1
		HWFET	6.4	6.4	6.2	5.7	6.4	6.4	4.4	6.2	6.0	3.8	6.6	5.5	3.7
		Combined	7.7	7.7	7.6	7.0	7.8	7.5	5.4	7.6	7.1	4.6	7.9	6.7	4.5
	Adjusted	UDDS	11.5	11.5	11.3	10.5	11.5	11.0	8.1	11.3	10.4	7.1	11.5	10.0	6.9
		HWFET	9.0	9.0	8.8	8.1	9.1	9.0	6.3	8.8	8.5	5.4	9.4	7.8	5.2
		Combined	10.4	10.4	10.2	9.4	10.4	10.1	7.3	10.2	9.6	6.3	10.5	9.0	6.1
SI Split HEV	Unadjusted	UDDS	4.4	4.4	4.0	3.7	4.3	3.8	3.0	4.0	3.4	2.4	3.9	3.2	2.3
		HWFET	4.9	4.9	4.5	4.1	4.8	4.2	3.4	4.5	3.8	2.8	4.4	3.6	2.6
		Combined	4.6	4.6	4.2	3.9	4.5	4.0	3.2	4.2	3.6	2.6	4.1	3.4	2.4
	Adjusted	UDDS	6.0	6.0	5.6	5.2	5.9	5.2	4.3	5.5	4.7	3.6	5.4	4.6	3.4
		HWFET	7.0	7.0	6.3	5.8	6.8	6.0	4.9	6.4	5.4	4.0	6.2	5.2	3.7
		Combined	6.5	6.5	5.9	5.5	6.3	5.5	4.6	5.9	5.1	3.7	5.7	4.8	3.6
SI Split HEV PHEV10	Unadjusted	UDDS	3.5	3.5	3.3	3.0	3.5	3.1	2.5	3.3	2.8	2.0	3.2	2.7	1.9
		HWFET	3.6	3.6	3.3	3.0	3.5	3.1	2.5	3.3	2.8	2.0	3.2	2.7	1.9
		Combined	3.6	3.6	3.3	3.0	3.5	3.1	2.5	3.3	2.8	2.0	3.2	2.7	1.9
	Adjusted	UDDS	4.9	4.9	4.6	4.3	4.9	4.4	3.7	4.6	4.0	3.0	4.5	3.9	2.9
		HWFET	5.1	5.1	4.7	4.3	5.0	4.4	3.6	4.7	4.0	2.9	4.6	3.8	2.8
		Combined	5.0	5.0	4.6	4.3	4.9	4.4	3.6	4.7	4.0	3.0	4.5	3.9	2.8

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			Midsize												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Split HEV PHEV20	Unadjusted	UDDS	2.5	2.5	2.3	2.1	2.4	2.1	1.7	2.3	1.9	1.7	2.2	1.9	1.6
		HWFET	3.0	3.0	2.7	2.4	2.9	2.6	2.4	2.7	2.7	2.0	2.7	2.6	1.9
		Combined	2.7	2.7	2.5	2.2	2.6	2.3	2.1	2.5	2.3	1.8	2.4	2.2	1.7
	Adjusted	UDDS	3.7	3.7	3.4	3.1	3.6	3.2	2.7	3.4	3.0	2.6	3.3	2.9	2.5
		HWFET	4.2	4.2	3.9	3.5	4.1	3.7	3.5	3.9	3.9	2.9	3.8	3.7	2.7
		Combined	3.9	3.9	3.6	3.3	3.8	3.4	3.1	3.7	3.4	2.7	3.5	3.3	2.6
SI Series HEV PHEV30	Unadjusted	UDDS	2.7	2.7	2.4	2.2	2.6	2.3	1.8	2.4	2.0	1.4	2.3	1.9	1.3
		HWFET	2.7	2.7	2.4	2.2	2.6	2.3	1.8	2.4	2.0	1.4	2.3	1.9	1.3
		Combined	2.7	2.7	2.4	2.2	2.6	2.3	1.8	2.4	2.0	1.4	2.3	1.9	1.3
	Adjusted	UDDS	3.9	3.9	3.6	3.3	3.8	3.4	2.8	3.6	3.0	2.3	3.5	2.9	2.2
		HWFET	3.8	3.8	3.4	3.1	3.7	3.2	2.5	3.5	2.9	2.1	3.3	2.7	2.0
		Combined	3.9	3.9	3.5	3.2	3.8	3.3	2.7	3.5	3.0	2.2	3.4	2.9	2.1
SI Series HEV PHEV40	Unadjusted	UDDS	2.3	2.3	2.1	1.9	2.3	2.0	1.5	2.1	1.7	1.2	2.0	1.7	1.1
		HWFET	2.2	2.2	2.0	1.8	2.1	1.8	1.4	2.0	1.6	1.2	1.9	1.5	1.1
		Combined	2.3	2.3	2.0	1.9	2.2	1.9	1.5	2.0	1.7	1.2	2.0	1.6	1.1
	Adjusted	UDDS	3.5	3.5	3.2	2.9	3.4	3.0	2.5	3.2	2.7	2.0	3.1	2.6	2.0
		HWFET	3.1	3.1	2.8	2.6	3.0	2.7	2.1	2.8	2.3	1.7	2.7	2.2	1.6
		Combined	3.3	3.3	3.0	2.8	3.2	2.9	2.3	3.0	2.5	1.9	2.9	2.4	1.8
CI Split HEV	Unadjusted	UDDS	4.1	4.1	3.8	3.5	4.1	3.5	3.0	3.7	3.1	2.5	3.6	3.0	2.4
		HWFET	4.7	4.7	4.3	3.9	4.6	4.0	3.4	4.2	3.6	2.9	4.1	3.4	2.7
		Combined	4.3	4.3	4.0	3.6	4.3	3.7	3.2	4.0	3.3	2.6	3.8	3.2	2.5
	Adjusted	UDDS	5.6	5.6	5.3	4.9	5.6	4.9	4.3	5.2	4.4	3.6	5.0	4.2	3.5
		HWFET	6.6	6.6	6.0	5.5	6.5	5.6	4.9	6.0	5.1	4.1	5.8	4.8	3.9
		Combined	6.1	6.1	5.6	5.1	6.0	5.2	4.6	5.6	4.7	3.8	5.3	4.5	3.7
CI Split HEV PHEV10	Unadjusted	UDDS	3.5	3.5	3.2	2.9	3.5	3.0	2.6	3.2	2.7	2.1	3.1	2.6	2.1
		HWFET	3.6	3.6	3.3	3.0	3.5	3.1	2.6	3.3	2.7	2.2	3.1	2.6	2.1
		Combined	3.5	3.5	3.3	3.0	3.5	3.0	2.6	3.2	2.7	2.2	3.1	2.6	2.1
	Adjusted	UDDS	4.9	4.9	4.6	4.2	4.9	4.3	3.8	4.5	3.9	3.2	4.4	3.8	3.1
		HWFET	5.1	5.1	4.7	4.3	5.0	4.4	3.7	4.7	3.9	3.1	4.5	3.7	3.0
		Combined	5.0	5.0	4.6	4.2	4.9	4.3	3.8	4.6	3.9	3.2	4.4	3.7	3.0
CI Split HEV PHEV20	Unadjusted	UDDS	2.4	2.4	2.3	2.1	2.4	2.1	1.8	2.3	1.9	1.5	2.2	1.8	1.4
		HWFET	2.9	2.9	2.7	2.5	2.9	2.5	2.6	2.7	2.2	2.1	2.6	2.5	2.0
		Combined	2.7	2.7	2.5	2.2	2.7	2.3	2.2	2.5	2.0	1.8	2.3	2.1	1.7
	Adjusted	UDDS	3.6	3.6	3.4	3.1	3.6	3.2	2.8	3.4	2.9	2.4	3.2	2.8	2.3
		HWFET	4.1	4.1	3.9	3.5	4.2	3.6	3.7	3.9	3.2	3.1	3.7	3.6	2.9
		Combined	3.8	3.8	3.6	3.3	3.9	3.4	3.2	3.6	3.0	2.7	3.4	3.2	2.6

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			Midsize												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
CI Series HEV PHEV30	Unadjusted	UDDS	2.7	2.7	2.4	2.2	2.6	2.2	1.9	2.4	1.9	1.5	2.3	1.8	1.4
		HWFET	2.6	2.6	2.4	2.1	2.6	2.2	1.8	2.4	1.9	1.5	2.2	1.8	1.4
		Combined	2.6	2.6	2.4	2.1	2.6	2.2	1.8	2.4	1.9	1.5	2.3	1.8	1.4
	Adjusted	UDDS	3.8	3.8	3.6	3.3	3.8	3.4	2.9	3.5	3.0	2.4	3.4	2.8	2.3
		HWFET	3.8	3.8	3.4	3.1	3.7	3.1	2.6	3.4	2.7	2.2	3.2	2.6	2.1
		Combined	3.8	3.8	3.5	3.2	3.8	3.3	2.8	3.5	2.9	2.3	3.3	2.7	2.2
CI Series HEV PHEV40	Unadjusted	UDDS	2.3	2.3	2.1	1.9	2.3	1.9	1.6	2.1	1.7	1.3	2.0	1.6	1.2
		HWFET	2.1	2.1	1.9	1.7	2.1	1.8	1.5	1.9	1.5	1.2	1.8	1.5	1.1
		Combined	2.2	2.2	2.0	1.8	2.2	1.9	1.6	2.0	1.6	1.2	1.9	1.5	1.2
	Adjusted	UDDS	3.4	3.4	3.2	2.9	3.4	3.0	2.6	3.1	2.6	2.1	3.0	2.5	2.1
		HWFET	3.1	3.1	2.8	2.5	3.0	2.6	2.2	2.8	2.2	1.8	2.6	2.1	1.7
		Combined	3.3	3.3	3.0	2.7	3.2	2.8	2.4	3.0	2.5	2.0	2.8	2.4	1.9
H2 Split HEV	Unadjusted	UDDS	4.5	4.5	3.7	3.2	4.1	3.3	2.7	3.6	2.8	2.2	3.3	2.6	2.0
		HWFET	5.1	5.1	4.2	3.6	4.6	3.7	3.1	4.0	3.3	2.6	3.7	3.0	2.3
		Combined	4.8	4.8	4.0	3.4	4.3	3.5	2.9	3.8	3.0	2.4	3.5	2.8	2.2
	Adjusted	UDDS	6.2	6.2	5.2	4.6	5.6	4.6	4.0	5.0	4.1	3.3	4.6	3.8	3.1
		HWFET	7.3	7.3	6.0	5.2	6.5	5.3	4.5	5.7	4.6	3.7	5.3	4.3	3.4
		Combined	6.7	6.7	5.5	4.8	6.0	4.9	4.2	5.3	4.3	3.5	4.9	4.0	3.2
H2 Split HEV PHEV10	Unadjusted	UDDS	3.7	3.7	3.0	2.6	3.3	2.7	2.3	2.9	2.4	1.8	2.7	2.2	1.7
		HWFET	3.7	3.7	3.0	2.6	3.3	2.7	2.3	3.0	2.4	1.9	2.7	2.2	1.7
		Combined	3.7	3.7	3.0	2.6	3.3	2.7	2.3	2.9	2.4	1.9	2.7	2.2	1.7
	Adjusted	UDDS	5.1	5.1	4.3	3.8	4.6	3.9	3.4	4.2	3.5	2.8	3.9	3.3	2.7
		HWFET	5.3	5.3	4.3	3.8	4.7	3.9	3.3	4.2	3.4	2.8	3.9	3.2	2.5
		Combined	5.2	5.2	4.3	3.8	4.7	3.9	3.3	4.2	3.5	2.8	3.9	3.2	2.6
H2 Split HEV PHEV20	Unadjusted	UDDS	2.6	2.6	2.1	1.8	2.3	1.9	1.6	2.0	1.6	1.5	1.9	1.5	1.4
		HWFET	3.1	3.1	2.5	2.1	2.7	2.2	2.2	2.4	2.3	1.9	2.3	2.1	1.7
		Combined	2.8	2.8	2.3	2.0	2.5	2.0	1.9	2.2	1.9	1.7	2.1	1.8	1.5
	Adjusted	UDDS	3.8	3.8	3.2	2.8	3.4	2.9	2.5	3.1	2.6	2.5	2.9	2.5	2.3
		HWFET	4.4	4.4	3.6	3.1	3.9	3.2	3.2	3.5	3.3	2.7	3.2	3.1	2.4
		Combined	4.0	4.0	3.4	2.9	3.6	3.0	2.8	3.3	2.9	2.6	3.1	2.7	2.4
H2 Series HEV PHEV30	Unadjusted	UDDS	2.8	2.8	2.3	1.9	2.5	2.0	1.6	2.2	1.7	1.3	2.0	1.6	1.2
		HWFET	2.7	2.7	2.2	1.9	2.4	2.0	1.6	2.1	1.7	1.3	2.0	1.6	1.2
		Combined	2.8	2.8	2.3	1.9	2.5	2.0	1.6	2.2	1.7	1.3	2.0	1.6	1.2
	Adjusted	UDDS	4.0	4.0	3.4	3.0	3.6	3.1	2.6	3.3	2.7	2.2	3.0	2.6	2.1
		HWFET	3.9	3.9	3.2	2.8	3.5	2.8	2.3	3.1	2.4	1.9	2.8	2.3	1.8
		Combined	4.0	4.0	3.3	2.9	3.6	3.0	2.5	3.2	2.6	2.1	2.9	2.4	2.0

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			Midsize												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
H2 Series HEV PHEV40	Unadjusted	UDDS	2.5	2.5	2.0	1.7	2.2	1.7	1.4	1.9	1.5	1.1	1.7	1.4	1.0
		HWFET	2.2	2.2	1.8	1.5	2.0	1.6	1.3	1.7	1.4	1.1	1.6	1.3	1.0
		Combined	2.4	2.4	1.9	1.6	2.1	1.7	1.4	1.8	1.4	1.1	1.7	1.3	1.0
	Adjusted	UDDS	3.6	3.6	3.0	2.7	3.2	2.7	2.3	2.9	2.4	2.0	2.7	2.3	1.9
		HWFET	3.2	3.2	2.6	2.2	2.8	2.3	1.9	2.5	2.0	1.6	2.3	1.8	1.4
		Combined	3.4	3.4	2.8	2.5	3.1	2.6	2.1	2.7	2.2	1.8	2.5	2.1	1.7
E85 Split HEV	Unadjusted	UDDS	4.8	4.8	4.4	4.0	4.7	4.0	3.1	4.3	3.6	2.6	4.2	3.5	2.4
		HWFET	5.3	5.3	4.8	4.4	5.2	4.6	3.5	4.8	4.1	3.0	4.7	3.9	2.8
		Combined	5.0	5.0	4.6	4.2	4.9	4.3	3.3	4.5	3.8	2.7	4.4	3.7	2.6
	Adjusted	UDDS	6.4	6.4	5.9	5.5	6.3	5.6	4.4	5.9	5.0	3.7	5.7	4.9	3.6
		HWFET	7.5	7.5	6.8	6.3	7.4	6.5	5.0	6.9	5.8	4.2	6.7	5.6	4.0
		Combined	6.9	6.9	6.3	5.9	6.8	6.0	4.6	6.3	5.4	4.0	6.1	5.2	3.8
E85 Split HEV PHEV10	Unadjusted	UDDS	3.8	3.8	3.5	3.2	3.7	3.3	2.5	3.5	3.0	2.1	3.4	2.9	2.0
		HWFET	3.8	3.8	3.5	3.2	3.8	3.3	2.5	3.6	3.0	2.2	3.4	2.9	2.0
		Combined	3.8	3.8	3.5	3.2	3.7	3.3	2.5	3.5	3.0	2.1	3.4	2.9	2.0
	Adjusted	UDDS	5.2	5.2	4.9	4.5	5.2	4.6	3.7	4.9	4.3	3.2	4.8	4.1	3.1
		HWFET	5.5	5.5	5.0	4.6	5.3	4.7	3.6	5.1	4.3	3.1	4.9	4.1	2.9
		Combined	5.3	5.3	4.9	4.5	5.2	4.7	3.7	5.0	4.3	3.2	4.8	4.1	3.0
E85 Split HEV PHEV20	Unadjusted	UDDS	2.7	2.7	2.4	2.2	2.6	2.3	1.8	2.5	2.1	1.7	2.4	2.0	1.7
		HWFET	3.2	3.2	2.9	2.6	3.1	2.7	2.5	2.9	2.9	2.1	2.8	2.8	2.0
		Combined	2.9	2.9	2.6	2.4	2.8	2.5	2.1	2.7	2.5	1.9	2.6	2.3	1.8
	Adjusted	UDDS	3.9	3.9	3.6	3.3	3.8	3.4	2.8	3.6	3.1	2.7	3.5	3.0	2.6
		HWFET	4.5	4.5	4.1	3.7	4.4	3.9	3.6	4.2	4.2	3.0	4.1	4.0	2.9
		Combined	4.2	4.2	3.8	3.5	4.1	3.6	3.1	3.9	3.6	2.9	3.8	3.5	2.7
E85 Series HEV PHEV30	Unadjusted	UDDS	2.9	2.9	2.6	2.3	2.8	2.4	1.8	2.6	2.1	1.5	2.5	2.0	1.4
		HWFET	2.8	2.8	2.6	2.3	2.8	2.4	1.8	2.6	2.1	1.5	2.5	2.0	1.4
		Combined	2.9	2.9	2.6	2.3	2.8	2.4	1.8	2.6	2.1	1.5	2.5	2.0	1.4
	Adjusted	UDDS	4.1	4.1	3.8	3.5	4.0	3.6	2.8	3.8	3.2	2.4	3.6	3.1	2.3
		HWFET	4.1	4.1	3.7	3.3	3.9	3.4	2.6	3.7	3.0	2.2	3.5	2.9	2.1
		Combined	4.1	4.1	3.7	3.4	4.0	3.5	2.7	3.7	3.1	2.3	3.6	3.0	2.2
E85 Series HEV PHEV40	Unadjusted	UDDS	2.5	2.5	2.2	2.0	2.4	2.1	1.6	2.2	1.8	1.2	2.2	1.8	1.2
		HWFET	2.3	2.3	2.1	1.9	2.3	2.0	1.4	2.1	1.7	1.2	2.0	1.6	1.1
		Combined	2.4	2.4	2.2	2.0	2.3	2.0	1.5	2.2	1.8	1.2	2.1	1.7	1.2
	Adjusted	UDDS	3.7	3.7	3.4	3.1	3.6	3.2	2.5	3.3	2.8	2.1	3.2	2.8	2.0
		HWFET	3.3	3.3	3.0	2.8	3.2	2.8	2.1	3.0	2.5	1.8	2.9	2.4	1.7
		Combined	3.5	3.5	3.2	2.9	3.4	3.0	2.3	3.2	2.7	2.0	3.1	2.6	1.9

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			Midsize												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
FC HEV	Unadjusted	UDDS	4.1	4.1	3.4	2.9	3.5	2.9	2.5	3.2	2.6	2.0	3.0	2.5	1.9
		HWFET	3.8	3.8	3.2	2.7	3.3	2.8	2.4	3.0	2.5	2.1	2.9	2.4	1.9
		Combined	4.0	4.0	3.3	2.8	3.4	2.9	2.5	3.1	2.6	2.1	2.9	2.4	1.9
	Adjusted	UDDS	5.7	5.7	4.8	4.1	4.9	4.2	3.6	4.5	3.7	3.1	4.3	3.6	3.0
		HWFET	5.4	5.4	4.5	3.9	4.7	4.0	3.5	4.3	3.6	3.0	4.1	3.5	2.8
		Combined	5.6	5.6	4.7	4.0	4.8	4.1	3.6	4.4	3.7	3.1	4.2	3.5	2.9
FC PHEV10	Unadjusted	UDDS	3.3	3.3	2.8	2.3	2.8	2.4	2.1	2.6	2.1	1.7	2.5	2.1	1.6
		HWFET	2.8	2.8	2.4	2.1	2.5	2.1	1.9	2.3	1.9	1.6	2.2	1.9	1.5
		Combined	3.1	3.1	2.6	2.2	2.7	2.3	2.0	2.5	2.0	1.7	2.4	2.0	1.6
	Adjusted	UDDS	4.6	4.6	4.0	3.5	4.1	3.6	3.1	3.8	3.2	2.7	3.6	3.1	2.6
		HWFET	4.0	4.0	3.4	3.0	3.5	3.1	2.7	3.3	2.8	2.3	3.2	2.7	2.2
		Combined	4.3	4.3	3.7	3.2	3.8	3.3	2.9	3.6	3.0	2.5	3.4	2.9	2.4
FC PHEV20	Unadjusted	UDDS	2.7	2.7	2.3	1.9	2.3	2.0	1.7	2.2	1.8	1.4	2.1	1.7	1.4
		HWFET	2.8	2.8	2.4	2.0	2.5	2.1	1.8	2.3	1.9	1.6	2.2	1.8	1.5
		Combined	2.8	2.8	2.3	2.0	2.4	2.0	1.8	2.2	1.8	1.5	2.1	1.8	1.4
	Adjusted	UDDS	4.0	4.0	3.4	3.0	3.5	3.1	2.7	3.3	2.8	2.3	3.1	2.7	2.3
		HWFET	4.0	4.0	3.4	2.9	3.5	3.0	2.7	3.3	2.8	2.3	3.1	2.6	2.1
		Combined	4.0	4.0	3.4	3.0	3.5	3.0	2.7	3.3	2.8	2.3	3.1	2.7	2.2
FC PHEV30	Unadjusted	UDDS	1.9	1.9	1.6	1.4	1.7	1.4	1.2	1.5	1.3	1.0	1.5	1.2	1.0
		HWFET	1.8	1.8	1.9	1.6	2.0	1.7	1.5	1.8	1.5	1.3	1.7	1.5	1.2
		Combined	1.9	1.9	1.7	1.5	1.8	1.5	1.3	1.7	1.4	1.1	1.6	1.3	1.1
	Adjusted	UDDS	2.9	2.9	2.6	2.3	2.6	2.3	2.1	2.5	2.1	1.8	2.4	2.1	1.8
		HWFET	2.6	2.6	2.7	2.4	2.8	2.4	2.1	2.6	2.2	1.8	2.5	2.1	1.7
		Combined	2.8	2.8	2.6	2.3	2.7	2.4	2.1	2.6	2.2	1.8	2.4	2.1	1.8
FC PHEV40	Unadjusted	UDDS	1.7	1.7	1.4	1.2	1.4	1.2	1.0	1.3	1.1	0.9	1.3	1.0	0.8
		HWFET	1.8	1.8	1.5	1.3	1.5	1.3	1.2	1.4	1.2	1.0	1.4	1.1	0.9
		Combined	1.7	1.7	1.4	1.2	1.5	1.3	1.1	1.4	1.1	0.9	1.3	1.1	0.9
	Adjusted	UDDS	2.6	2.6	2.3	2.1	2.4	2.1	1.9	2.2	1.9	1.7	2.1	1.9	1.6
		HWFET	2.5	2.5	2.2	1.9	2.2	1.9	1.7	2.1	1.8	1.5	2.0	1.7	1.4
		Combined	2.6	2.6	2.2	2.0	2.3	2.0	1.8	2.2	1.8	1.6	2.1	1.8	1.5

Fuel Consumption Improvement versus the Conventional 2010 Reference

			Midsize												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Conv	Unadjusted	UDDS	0.0%	0.0%	-7.9%	-12.7%	-4.5%	-9.8%	-31.4%	-6.8%	-14.3%	-41.9%	-6.0%	-19.3%	-43.4%
		HWFET	0.0%	0.0%	-9.1%	-13.5%	-4.0%	-0.5%	-31.2%	-6.7%	-5.3%	-41.7%	3.8%	-19.3%	-44.0%
		Combined	0.0%	0.0%	-8.3%	-13.0%	-4.3%	-6.5%	-31.3%	-6.8%	-11.1%	-41.8%	-2.5%	-19.3%	-43.6%
	Adjusted	UDDS	0.0%	0.0%	-7.5%	-12.0%	-4.3%	-9.3%	-29.7%	-6.4%	-13.5%	-39.6%	-5.7%	-18.3%	-41.1%
		HWFET	0.0%	0.0%	-9.0%	-13.4%	-4.0%	-0.5%	-31.0%	-6.7%	-5.2%	-41.3%	3.8%	-19.2%	-43.6%
		Combined	0.0%	0.0%	-8.1%	-12.5%	-4.2%	-6.0%	-30.2%	-6.5%	-10.4%	-40.3%	-2.1%	-18.6%	-42.0%
CI Conv	Unadjusted	UDDS	-13.6%	-13.6%	-18.5%	-25.0%	-15.1%	-21.4%	-31.3%	-19.7%	-27.3%	-41.1%	-20.0%	-32.2%	-43.2%
		HWFET	-8.9%	-8.9%	-15.4%	-23.5%	-11.8%	-14.2%	-27.8%	-17.2%	-20.7%	-38.1%	-12.7%	-28.9%	-41.1%
		Combined	-11.9%	-11.9%	-17.4%	-24.5%	-13.9%	-18.8%	-30.1%	-18.8%	-25.0%	-40.1%	-17.4%	-31.0%	-42.5%
	Adjusted	UDDS	-12.9%	-12.9%	-17.5%	-23.6%	-14.3%	-20.2%	-29.6%	-18.7%	-25.9%	-38.9%	-19.0%	-30.4%	-40.9%
		HWFET	-8.8%	-8.8%	-15.2%	-23.3%	-11.7%	-14.1%	-27.6%	-17.1%	-20.6%	-37.8%	-12.6%	-28.7%	-40.8%
		Combined	-11.3%	-11.3%	-16.6%	-23.5%	-13.3%	-17.9%	-28.9%	-18.1%	-23.9%	-38.5%	-16.6%	-29.8%	-40.9%
H2 Conv	Unadjusted	UDDS	22.4%	22.4%	2.1%	-10.7%	8.5%	-7.6%	-22.7%	-2.0%	-16.5%	-34.8%	-7.3%	-25.0%	-39.5%
		HWFET	12.3%	12.3%	-6.9%	-21.4%	-3.7%	-1.0%	-29.1%	-13.3%	-10.4%	-39.7%	-0.7%	-31.4%	-44.9%
		Combined	18.8%	18.8%	-1.1%	-14.5%	4.1%	-5.3%	-25.0%	-6.0%	-14.3%	-36.5%	-4.9%	-27.3%	-41.4%
	Adjusted	UDDS	21.2%	21.2%	2.0%	-10.1%	8.0%	-7.2%	-21.5%	-1.9%	-15.6%	-32.9%	-6.9%	-23.7%	-37.4%
		HWFET	12.2%	12.2%	-6.8%	-21.2%	-3.7%	-1.0%	-28.9%	-13.2%	-10.3%	-39.4%	-0.7%	-31.2%	-44.5%
		Combined	17.8%	17.8%	-1.3%	-14.3%	3.6%	-4.9%	-24.2%	-6.1%	-13.6%	-35.3%	-4.6%	-26.5%	-40.0%
E85 Conv	Unadjusted	UDDS	3.0%	3.0%	1.7%	-6.1%	3.3%	-1.2%	-28.5%	1.1%	-6.8%	-38.6%	3.1%	-11.1%	-40.4%
		HWFET	9.4%	9.4%	6.8%	-1.0%	10.3%	9.5%	-23.6%	7.3%	3.5%	-34.2%	14.4%	-5.3%	-37.0%
		Combined	5.3%	5.3%	3.5%	-4.3%	5.8%	2.6%	-26.8%	3.3%	-3.1%	-37.0%	7.1%	-9.1%	-39.2%
	Adjusted	UDDS	2.9%	2.9%	1.6%	-5.7%	3.1%	-1.2%	-27.0%	1.0%	-6.4%	-36.5%	2.9%	-10.5%	-38.2%
		HWFET	9.3%	9.3%	6.8%	-1.0%	10.2%	9.5%	-23.4%	7.2%	3.5%	-33.9%	14.2%	-5.3%	-36.7%
		Combined	5.3%	5.3%	3.6%	-4.0%	5.8%	2.8%	-25.6%	3.3%	-2.7%	-35.5%	7.2%	-8.6%	-37.7%
SI Split HEV	Unadjusted	UDDS	-48.6%	-48.6%	-53.0%	-56.7%	-49.6%	-56.4%	-64.7%	-53.2%	-60.8%	-72.0%	-54.8%	-62.4%	-73.3%
		HWFET	-15.3%	-15.3%	-23.3%	-29.3%	-17.7%	-27.6%	-40.8%	-22.2%	-34.2%	-52.3%	-24.8%	-37.4%	-55.2%
		Combined	-36.8%	-36.8%	-42.4%	-47.0%	-38.3%	-46.2%	-56.2%	-42.2%	-51.3%	-65.0%	-44.2%	-53.5%	-66.9%
	Adjusted	UDDS	-46.0%	-46.0%	-50.1%	-53.7%	-47.0%	-53.4%	-61.3%	-50.4%	-57.5%	-68.1%	-51.9%	-59.1%	-69.4%
		HWFET	-15.1%	-15.1%	-23.1%	-29.0%	-17.5%	-27.4%	-40.4%	-22.0%	-33.9%	-51.8%	-24.6%	-37.1%	-54.7%
		Combined	-34.4%	-34.4%	-40.0%	-44.4%	-35.9%	-43.6%	-53.4%	-39.7%	-48.6%	-62.0%	-41.6%	-50.8%	-63.9%
SI Split HEV PHEV10	Unadjusted	UDDS	-58.9%	-58.9%	-62.2%	-65.2%	-59.7%	-64.2%	-70.9%	-61.8%	-67.5%	-76.8%	-63.0%	-68.7%	-78.0%
		HWFET	-38.5%	-38.5%	-43.8%	-48.5%	-39.7%	-47.1%	-56.9%	-42.8%	-52.1%	-64.7%	-44.8%	-54.1%	-67.1%
		Combined	-51.7%	-51.7%	-55.7%	-59.3%	-52.6%	-58.1%	-65.9%	-55.0%	-62.0%	-72.5%	-56.5%	-63.5%	-74.1%
	Adjusted	UDDS	-55.7%	-55.7%	-58.8%	-61.7%	-56.4%	-60.8%	-67.1%	-58.4%	-63.9%	-72.7%	-59.6%	-65.0%	-73.8%
		HWFET	-38.2%	-38.2%	-43.4%	-48.1%	-39.4%	-46.7%	-56.4%	-42.4%	-51.6%	-64.1%	-44.4%	-53.6%	-66.5%
		Combined	-49.1%	-49.1%	-53.0%	-56.6%	-50.0%	-55.5%	-63.1%	-52.4%	-59.3%	-69.5%	-53.9%	-60.7%	-71.0%

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			Midsize												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Split HEV PHEV20	Unadjusted	UDDS	-71.0%	-71.0%	-73.5%	-75.8%	-71.8%	-75.1%	-79.8%	-73.2%	-77.6%	-80.8%	-74.1%	-78.4%	-81.9%
		HWFET	-49.1%	-49.1%	-53.6%	-58.0%	-50.7%	-56.0%	-57.9%	-52.8%	-52.7%	-65.7%	-54.3%	-55.2%	-67.8%
		Combined	-63.2%	-63.2%	-66.4%	-69.5%	-64.3%	-68.3%	-72.1%	-65.9%	-68.8%	-75.5%	-67.1%	-70.2%	-76.9%
	Adjusted	UDDS	-67.2%	-67.2%	-69.5%	-71.8%	-67.9%	-71.1%	-75.6%	-69.2%	-73.5%	-76.5%	-70.1%	-74.2%	-77.5%
		HWFET	-48.7%	-48.7%	-53.1%	-57.4%	-50.3%	-55.5%	-57.4%	-52.3%	-52.2%	-65.2%	-53.9%	-54.7%	-67.2%
		Combined	-60.2%	-60.2%	-63.3%	-66.4%	-61.3%	-65.3%	-68.7%	-62.9%	-65.5%	-72.2%	-64.0%	-66.9%	-73.6%
SI Series HEV PHEV30	Unadjusted	UDDS	-68.5%	-68.5%	-71.8%	-74.4%	-69.7%	-73.5%	-79.3%	-71.8%	-76.9%	-83.9%	-72.9%	-77.8%	-84.6%
		HWFET	-54.1%	-54.1%	-58.7%	-62.2%	-55.4%	-61.1%	-69.6%	-58.4%	-65.7%	-75.4%	-60.1%	-67.4%	-76.9%
		Combined	-63.4%	-63.4%	-67.2%	-70.1%	-64.6%	-69.1%	-75.8%	-67.1%	-72.9%	-80.9%	-68.4%	-74.1%	-81.9%
	Adjusted	UDDS	-64.8%	-64.8%	-68.0%	-70.4%	-66.0%	-69.6%	-75.0%	-68.0%	-72.8%	-79.4%	-69.0%	-73.6%	-80.1%
		HWFET	-53.6%	-53.6%	-58.2%	-61.7%	-54.9%	-60.5%	-69.0%	-57.9%	-65.1%	-74.7%	-59.5%	-66.8%	-76.2%
		Combined	-60.6%	-60.6%	-64.3%	-67.1%	-61.8%	-66.2%	-72.7%	-64.2%	-69.9%	-77.7%	-65.5%	-71.0%	-78.6%
SI Series HEV PHEV40	Unadjusted	UDDS	-72.8%	-72.8%	-75.5%	-77.8%	-73.3%	-77.0%	-82.1%	-75.5%	-80.0%	-86.4%	-76.5%	-80.8%	-87.0%
		HWFET	-62.5%	-62.5%	-66.3%	-69.5%	-63.5%	-68.2%	-75.3%	-66.1%	-72.2%	-80.1%	-67.4%	-73.5%	-81.3%
		Combined	-69.2%	-69.2%	-72.2%	-74.8%	-69.9%	-73.9%	-79.7%	-72.2%	-77.2%	-84.2%	-73.3%	-78.2%	-85.0%
	Adjusted	UDDS	-68.9%	-68.9%	-71.4%	-73.6%	-69.4%	-72.9%	-77.7%	-71.5%	-75.7%	-81.8%	-72.4%	-76.5%	-82.4%
		HWFET	-62.0%	-62.0%	-65.7%	-68.8%	-63.0%	-67.6%	-74.6%	-65.5%	-71.5%	-79.4%	-66.8%	-72.9%	-80.6%
		Combined	-66.3%	-66.3%	-69.3%	-71.8%	-67.0%	-70.9%	-76.5%	-69.2%	-74.2%	-80.9%	-70.3%	-75.1%	-81.7%
CI Split HEV	Unadjusted	UDDS	-52.4%	-52.4%	-55.6%	-59.7%	-52.7%	-59.1%	-64.8%	-56.6%	-63.7%	-71.3%	-58.5%	-65.5%	-72.4%
		HWFET	-19.9%	-19.9%	-26.7%	-33.3%	-20.9%	-31.6%	-40.6%	-27.0%	-38.8%	-50.8%	-30.3%	-42.0%	-53.5%
		Combined	-40.8%	-40.8%	-45.3%	-50.3%	-41.4%	-49.4%	-56.2%	-46.1%	-54.9%	-64.0%	-48.5%	-57.1%	-65.7%
	Adjusted	UDDS	-49.5%	-49.5%	-52.6%	-56.5%	-49.9%	-55.9%	-61.3%	-53.6%	-60.3%	-67.5%	-55.4%	-61.9%	-68.5%
		HWFET	-19.7%	-19.7%	-26.4%	-33.0%	-20.7%	-31.4%	-40.3%	-26.8%	-38.4%	-50.3%	-30.0%	-41.6%	-53.0%
		Combined	-38.3%	-38.3%	-42.8%	-47.7%	-38.9%	-46.7%	-53.4%	-43.5%	-52.1%	-61.0%	-45.8%	-54.3%	-62.7%
CI Split HEV PHEV10	Unadjusted	UDDS	-59.4%	-59.4%	-62.3%	-65.7%	-59.7%	-64.8%	-69.6%	-62.6%	-68.6%	-75.1%	-64.3%	-70.1%	-76.1%
		HWFET	-38.6%	-38.6%	-43.7%	-48.6%	-39.2%	-47.1%	-55.0%	-43.5%	-53.5%	-62.4%	-46.0%	-56.1%	-64.7%
		Combined	-52.0%	-52.0%	-55.7%	-59.6%	-52.4%	-58.5%	-64.4%	-55.8%	-63.2%	-70.6%	-57.8%	-65.1%	-72.1%
	Adjusted	UDDS	-56.3%	-56.3%	-59.0%	-62.2%	-56.5%	-61.3%	-65.9%	-59.2%	-64.9%	-71.0%	-60.8%	-66.3%	-72.0%
		HWFET	-38.3%	-38.3%	-43.3%	-48.1%	-38.8%	-46.7%	-54.5%	-43.1%	-53.0%	-61.8%	-45.6%	-55.6%	-64.1%
		Combined	-49.5%	-49.5%	-53.1%	-56.9%	-49.8%	-55.8%	-61.6%	-53.2%	-60.5%	-67.6%	-55.1%	-62.3%	-69.1%
CI Split HEV PHEV20	Unadjusted	UDDS	-71.6%	-71.6%	-73.5%	-76.0%	-71.6%	-75.4%	-79.0%	-73.7%	-78.3%	-82.8%	-74.9%	-79.3%	-83.6%
		HWFET	-50.0%	-50.0%	-53.5%	-57.7%	-49.7%	-56.8%	-55.5%	-53.4%	-61.8%	-63.1%	-55.7%	-56.5%	-65.2%
		Combined	-63.9%	-63.9%	-66.4%	-69.5%	-63.8%	-68.8%	-70.6%	-66.5%	-72.4%	-75.8%	-68.1%	-71.2%	-77.0%
	Adjusted	UDDS	-67.7%	-67.7%	-69.6%	-71.9%	-67.8%	-71.4%	-74.7%	-69.7%	-74.1%	-78.4%	-70.9%	-75.0%	-79.1%
		HWFET	-49.5%	-49.5%	-53.0%	-57.2%	-49.3%	-56.3%	-55.0%	-53.0%	-61.3%	-62.5%	-55.2%	-56.0%	-64.6%
		Combined	-60.9%	-60.9%	-63.4%	-66.4%	-60.8%	-65.7%	-67.3%	-63.4%	-69.3%	-72.4%	-65.0%	-67.9%	-73.6%

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			Midsize												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
CI Series HEV PHEV30	Unadjusted	UDDS	-69.2%	-69.2%	-71.9%	-74.8%	-69.8%	-73.9%	-78.3%	-72.4%	-77.6%	-82.8%	-73.7%	-78.7%	-83.6%
		HWFET	-54.9%	-54.9%	-59.0%	-63.5%	-55.5%	-62.4%	-68.5%	-59.4%	-67.2%	-73.8%	-61.4%	-68.9%	-75.4%
		Combined	-64.1%	-64.1%	-67.3%	-70.7%	-64.7%	-69.8%	-74.8%	-67.8%	-73.9%	-79.6%	-69.3%	-75.2%	-80.7%
	Adjusted	UDDS	-65.5%	-65.5%	-68.0%	-70.8%	-66.0%	-69.9%	-74.1%	-68.5%	-73.5%	-78.4%	-69.7%	-74.5%	-79.1%
		HWFET	-54.4%	-54.4%	-58.5%	-62.9%	-55.0%	-61.8%	-67.9%	-58.8%	-66.6%	-73.2%	-60.9%	-68.2%	-74.7%
		Combined	-61.3%	-61.3%	-64.4%	-67.8%	-61.9%	-66.9%	-71.8%	-64.9%	-70.9%	-76.4%	-66.4%	-72.2%	-77.5%
CI Series HEV PHEV40	Unadjusted	UDDS	-73.2%	-73.2%	-75.6%	-78.0%	-73.7%	-77.4%	-81.3%	-76.1%	-80.7%	-85.4%	-77.2%	-81.6%	-86.2%
		HWFET	-63.1%	-63.1%	-66.8%	-70.2%	-63.7%	-69.2%	-74.4%	-66.9%	-73.3%	-78.8%	-68.6%	-74.7%	-80.3%
		Combined	-69.6%	-69.6%	-72.5%	-75.2%	-70.1%	-74.4%	-78.8%	-72.8%	-78.1%	-83.0%	-74.1%	-79.2%	-84.1%
	Adjusted	UDDS	-69.3%	-69.3%	-71.5%	-73.8%	-69.7%	-73.2%	-76.9%	-72.0%	-76.3%	-80.8%	-73.1%	-77.3%	-81.5%
		HWFET	-62.6%	-62.6%	-66.2%	-69.5%	-63.1%	-68.5%	-73.7%	-66.3%	-72.7%	-78.1%	-68.0%	-74.0%	-79.6%
		Combined	-66.8%	-66.8%	-69.5%	-72.2%	-67.2%	-71.4%	-75.7%	-69.8%	-75.0%	-79.8%	-71.1%	-76.0%	-80.8%
H2 Split HEV	Unadjusted	UDDS	-47.2%	-47.2%	-56.5%	-62.3%	-52.8%	-61.8%	-68.1%	-58.6%	-66.9%	-74.3%	-61.9%	-69.3%	-76.3%
		HWFET	-11.6%	-11.6%	-27.5%	-37.4%	-21.2%	-35.8%	-45.8%	-30.3%	-44.0%	-55.5%	-35.8%	-48.1%	-59.6%
		Combined	-34.5%	-34.5%	-46.2%	-53.5%	-41.6%	-52.6%	-60.2%	-48.6%	-58.8%	-67.6%	-52.6%	-61.8%	-70.4%
	Adjusted	UDDS	-44.6%	-44.6%	-53.4%	-59.0%	-49.9%	-58.5%	-64.4%	-55.5%	-63.3%	-70.3%	-58.6%	-65.6%	-72.2%
		HWFET	-11.5%	-11.5%	-27.2%	-37.1%	-21.1%	-35.5%	-45.4%	-30.1%	-43.6%	-55.0%	-35.5%	-47.7%	-59.1%
		Combined	-32.2%	-32.2%	-43.6%	-50.8%	-39.1%	-49.9%	-57.3%	-45.9%	-55.9%	-64.5%	-49.9%	-58.9%	-67.3%
H2 Split HEV PHEV10	Unadjusted	UDDS	-57.3%	-57.3%	-64.7%	-69.6%	-61.8%	-68.6%	-73.5%	-65.9%	-72.5%	-78.8%	-68.6%	-74.4%	-80.4%
		HWFET	-36.3%	-36.3%	-47.5%	-54.7%	-43.2%	-53.5%	-60.6%	-49.0%	-59.1%	-67.1%	-52.9%	-62.1%	-70.3%
		Combined	-49.8%	-49.8%	-58.6%	-64.3%	-55.2%	-63.2%	-68.9%	-59.9%	-67.8%	-74.6%	-63.0%	-70.0%	-76.8%
	Adjusted	UDDS	-54.2%	-54.2%	-61.2%	-65.8%	-58.5%	-64.9%	-69.5%	-62.4%	-68.6%	-74.5%	-64.9%	-70.4%	-76.1%
		HWFET	-36.0%	-36.0%	-47.1%	-54.2%	-42.8%	-53.0%	-60.1%	-48.6%	-58.6%	-66.5%	-52.4%	-61.5%	-69.7%
		Combined	-47.4%	-47.4%	-55.9%	-61.5%	-52.6%	-60.5%	-66.0%	-57.2%	-64.9%	-71.5%	-60.2%	-67.0%	-73.7%
H2 Split HEV PHEV20	Unadjusted	UDDS	-70.0%	-70.0%	-75.3%	-78.9%	-73.1%	-78.2%	-81.7%	-76.2%	-81.0%	-82.3%	-78.0%	-82.3%	-83.8%
		HWFET	-47.3%	-47.3%	-56.7%	-63.1%	-52.9%	-61.3%	-61.6%	-58.4%	-59.8%	-68.0%	-61.1%	-63.1%	-71.1%
		Combined	-61.9%	-61.9%	-68.7%	-73.3%	-65.9%	-72.2%	-74.6%	-69.9%	-73.5%	-77.2%	-72.0%	-75.5%	-79.3%
	Adjusted	UDDS	-66.2%	-66.2%	-71.2%	-74.6%	-69.2%	-74.0%	-77.3%	-72.1%	-76.7%	-77.9%	-73.8%	-77.9%	-79.3%
		HWFET	-46.9%	-46.9%	-56.2%	-62.5%	-52.5%	-60.8%	-61.1%	-57.9%	-59.3%	-67.4%	-60.6%	-62.5%	-70.4%
		Combined	-58.9%	-58.9%	-65.6%	-70.1%	-62.9%	-69.1%	-71.2%	-66.8%	-70.1%	-73.9%	-68.9%	-72.1%	-76.0%
H2 Series HEV PHEV30	Unadjusted	UDDS	-67.5%	-67.5%	-73.5%	-77.4%	-71.2%	-76.7%	-81.0%	-74.7%	-80.2%	-84.5%	-76.9%	-81.4%	-85.7%
		HWFET	-53.1%	-53.1%	-61.8%	-67.1%	-58.3%	-66.2%	-72.3%	-63.4%	-71.0%	-77.1%	-66.4%	-73.3%	-79.2%
		Combined	-62.4%	-62.4%	-69.3%	-73.8%	-66.6%	-72.9%	-77.9%	-70.7%	-76.9%	-81.9%	-73.2%	-78.5%	-83.4%
	Adjusted	UDDS	-63.9%	-63.9%	-69.5%	-73.2%	-67.4%	-72.5%	-76.6%	-70.7%	-75.9%	-80.0%	-72.8%	-77.0%	-81.1%
		HWFET	-52.6%	-52.6%	-61.2%	-66.5%	-57.8%	-65.6%	-71.7%	-62.8%	-70.4%	-76.5%	-65.8%	-72.6%	-78.5%
		Combined	-59.6%	-59.6%	-66.4%	-70.7%	-63.8%	-69.9%	-74.8%	-67.7%	-73.8%	-78.6%	-70.2%	-75.4%	-80.1%

Argonne National Laboratory Report – Light-Duty Vehicle Fuel Consumption Displacement Potential Up to 2045

			Midsize												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
H2 Series HEV PHEV40	Unadjusted	UDDS	-71.4%	-71.4%	-77.0%	-80.3%	-75.0%	-79.8%	-83.5%	-78.1%	-82.8%	-86.9%	-79.9%	-84.0%	-87.9%
		HWFET	-61.7%	-61.7%	-68.8%	-73.4%	-66.0%	-72.4%	-77.5%	-70.1%	-76.4%	-81.5%	-72.5%	-78.3%	-83.2%
		Combined	-68.0%	-68.0%	-74.1%	-77.8%	-71.8%	-77.1%	-81.4%	-75.3%	-80.5%	-85.0%	-77.3%	-82.0%	-86.2%
	Adjusted	UDDS	-67.6%	-67.6%	-72.8%	-76.0%	-71.0%	-75.5%	-79.0%	-73.9%	-78.4%	-82.3%	-75.6%	-79.5%	-83.2%
		HWFET	-61.2%	-61.2%	-68.2%	-72.7%	-65.4%	-71.7%	-76.8%	-69.5%	-75.7%	-80.7%	-71.9%	-77.6%	-82.5%
		Combined	-65.2%	-65.2%	-71.1%	-74.8%	-68.9%	-74.1%	-78.2%	-72.3%	-77.4%	-81.7%	-74.2%	-78.8%	-82.9%
E85 Split HEV	Unadjusted	UDDS	-44.6%	-44.6%	-49.3%	-53.5%	-45.7%	-53.0%	-64.3%	-50.1%	-57.9%	-70.3%	-51.5%	-59.6%	-71.6%
		HWFET	-8.7%	-8.7%	-17.4%	-23.9%	-10.5%	-21.4%	-39.9%	-16.6%	-29.3%	-49.1%	-19.1%	-32.3%	-52.1%
		Combined	-31.8%	-31.8%	-38.0%	-43.0%	-33.2%	-41.7%	-55.6%	-38.2%	-47.8%	-62.8%	-40.0%	-49.9%	-64.7%
	Adjusted	UDDS	-42.2%	-42.2%	-46.7%	-50.6%	-43.2%	-50.1%	-60.9%	-47.4%	-54.8%	-66.5%	-48.8%	-56.4%	-67.7%
		HWFET	-8.6%	-8.6%	-17.2%	-23.7%	-10.4%	-21.2%	-39.6%	-16.5%	-29.0%	-48.7%	-18.9%	-32.0%	-51.7%
		Combined	-29.6%	-29.6%	-35.6%	-40.5%	-30.9%	-39.2%	-52.9%	-35.8%	-45.1%	-59.8%	-37.5%	-47.2%	-61.7%
E85 Split HEV PHEV10	Unadjusted	UDDS	-56.0%	-56.0%	-59.6%	-62.9%	-56.9%	-61.8%	-70.5%	-59.2%	-65.4%	-75.5%	-60.5%	-66.6%	-76.7%
		HWFET	-33.9%	-33.9%	-39.7%	-44.7%	-35.3%	-43.2%	-56.2%	-38.6%	-48.6%	-62.5%	-40.7%	-50.8%	-64.9%
		Combined	-48.1%	-48.1%	-52.5%	-56.4%	-49.2%	-55.2%	-65.4%	-51.8%	-59.4%	-70.9%	-53.5%	-61.0%	-72.5%
	Adjusted	UDDS	-53.0%	-53.0%	-56.4%	-59.5%	-53.8%	-58.5%	-66.7%	-56.0%	-61.8%	-71.4%	-57.2%	-63.1%	-72.5%
		HWFET	-33.6%	-33.6%	-39.3%	-44.3%	-35.0%	-42.8%	-55.7%	-38.2%	-48.2%	-62.0%	-40.3%	-50.3%	-64.4%
		Combined	-45.7%	-45.7%	-50.0%	-53.8%	-46.8%	-52.6%	-62.5%	-49.3%	-56.7%	-67.9%	-50.9%	-58.3%	-69.5%
E85 Split HEV PHEV20	Unadjusted	UDDS	-69.0%	-69.0%	-71.7%	-74.2%	-69.9%	-73.5%	-79.6%	-71.4%	-76.2%	-79.7%	-72.4%	-77.0%	-80.8%
		HWFET	-45.2%	-45.2%	-50.3%	-54.9%	-47.1%	-52.8%	-57.2%	-49.3%	-49.3%	-63.6%	-51.0%	-52.0%	-65.8%
		Combined	-60.5%	-60.5%	-64.1%	-67.4%	-61.8%	-66.1%	-71.6%	-63.5%	-66.6%	-74.0%	-64.8%	-68.1%	-75.5%
	Adjusted	UDDS	-65.3%	-65.3%	-67.9%	-70.3%	-66.1%	-69.5%	-75.3%	-67.5%	-72.1%	-75.4%	-68.5%	-72.9%	-76.5%
		HWFET	-44.8%	-44.8%	-49.9%	-54.4%	-46.7%	-52.3%	-56.7%	-48.9%	-48.9%	-63.0%	-50.6%	-51.6%	-65.2%
		Combined	-57.6%	-57.6%	-61.1%	-64.3%	-58.8%	-63.1%	-68.3%	-60.5%	-63.3%	-70.8%	-61.8%	-64.9%	-72.2%
E85 Series HEV PHEV30	Unadjusted	UDDS	-66.8%	-66.8%	-70.0%	-72.8%	-67.4%	-71.9%	-79.1%	-70.1%	-75.5%	-83.1%	-71.3%	-76.4%	-83.8%
		HWFET	-51.1%	-51.1%	-56.0%	-59.8%	-52.5%	-58.6%	-69.4%	-55.7%	-63.5%	-74.0%	-57.5%	-65.4%	-75.6%
		Combined	-61.2%	-61.2%	-65.0%	-68.2%	-62.1%	-67.1%	-75.7%	-65.0%	-71.2%	-79.9%	-66.4%	-72.5%	-80.9%
	Adjusted	UDDS	-63.2%	-63.2%	-66.2%	-68.9%	-63.8%	-68.0%	-74.9%	-66.3%	-71.4%	-78.6%	-67.4%	-72.3%	-79.3%
		HWFET	-50.7%	-50.7%	-55.5%	-59.3%	-52.0%	-58.1%	-68.8%	-55.2%	-62.9%	-73.4%	-57.0%	-64.8%	-74.9%
		Combined	-58.5%	-58.5%	-62.2%	-65.3%	-59.4%	-64.3%	-72.6%	-62.1%	-68.2%	-76.7%	-63.5%	-69.5%	-77.7%
E85 Series HEV PHEV40	Unadjusted	UDDS	-70.7%	-70.7%	-73.9%	-76.2%	-71.9%	-75.6%	-81.9%	-74.0%	-78.8%	-85.7%	-75.0%	-79.6%	-86.4%
		HWFET	-60.1%	-60.1%	-64.1%	-67.1%	-61.2%	-66.2%	-75.1%	-63.9%	-70.3%	-79.0%	-65.4%	-71.9%	-80.2%
		Combined	-66.9%	-66.9%	-70.4%	-73.0%	-68.1%	-72.2%	-79.5%	-70.4%	-75.7%	-83.3%	-71.6%	-76.9%	-84.2%
	Adjusted	UDDS	-66.9%	-66.9%	-69.9%	-72.1%	-68.1%	-71.5%	-77.5%	-70.0%	-74.5%	-81.1%	-71.0%	-75.3%	-81.8%
		HWFET	-59.6%	-59.6%	-63.5%	-66.5%	-60.7%	-65.6%	-74.4%	-63.3%	-69.6%	-78.3%	-64.8%	-71.2%	-79.5%
		Combined	-64.2%	-64.2%	-67.5%	-70.0%	-65.3%	-69.3%	-76.4%	-67.5%	-72.7%	-80.0%	-68.7%	-73.8%	-80.9%

Argonne National Laboratory Report – Light-Duty Vehicle Fuel Consumption Displacement Potential Up to 2045

			Midsize												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
FC HEV	Unadjusted	UDDS	-51.8%	-51.8%	-60.3%	-66.6%	-59.0%	-66.2%	-71.3%	-63.4%	-70.2%	-76.3%	-65.4%	-71.4%	-77.4%
		HWFET	-34.2%	-34.2%	-45.1%	-52.9%	-43.2%	-51.7%	-58.1%	-47.7%	-56.5%	-64.2%	-50.2%	-58.4%	-66.5%
		Combined	-45.6%	-45.6%	-54.9%	-61.8%	-53.4%	-61.0%	-66.6%	-57.8%	-65.3%	-72.0%	-60.0%	-66.8%	-73.5%
	Adjusted	UDDS	-49.0%	-49.0%	-57.1%	-63.0%	-55.9%	-62.6%	-67.4%	-60.0%	-66.4%	-72.2%	-61.9%	-67.6%	-73.3%
		HWFET	-33.9%	-33.9%	-44.7%	-52.5%	-42.8%	-51.3%	-57.6%	-47.2%	-56.0%	-63.6%	-49.7%	-57.8%	-65.9%
		Combined	-43.3%	-43.3%	-52.4%	-59.1%	-50.9%	-58.3%	-63.7%	-55.2%	-62.5%	-69.0%	-57.3%	-63.9%	-70.5%
FC PHEV10	Unadjusted	UDDS	-61.9%	-61.9%	-68.1%	-72.9%	-67.2%	-72.0%	-76.0%	-69.8%	-75.2%	-80.0%	-71.3%	-76.0%	-80.9%
		HWFET	-51.6%	-51.6%	-58.9%	-64.4%	-57.4%	-63.3%	-67.9%	-60.1%	-66.6%	-72.3%	-61.8%	-68.0%	-74.3%
		Combined	-58.2%	-58.2%	-64.8%	-69.8%	-63.7%	-68.9%	-73.1%	-66.3%	-72.1%	-77.3%	-67.9%	-73.1%	-78.6%
	Adjusted	UDDS	-58.6%	-58.6%	-64.4%	-69.0%	-63.6%	-68.2%	-71.9%	-66.0%	-71.1%	-75.7%	-67.4%	-71.9%	-76.6%
		HWFET	-51.1%	-51.1%	-58.3%	-63.8%	-56.9%	-62.7%	-67.3%	-59.6%	-66.1%	-71.7%	-61.3%	-67.4%	-73.6%
		Combined	-55.8%	-55.8%	-62.1%	-67.0%	-61.1%	-66.1%	-70.2%	-63.6%	-69.2%	-74.2%	-65.1%	-70.2%	-75.5%
FC PHEV20	Unadjusted	UDDS	-68.2%	-68.2%	-73.4%	-77.4%	-72.7%	-76.8%	-80.1%	-74.9%	-79.4%	-83.5%	-76.1%	-80.2%	-84.3%
		HWFET	-51.4%	-51.4%	-59.0%	-64.7%	-57.7%	-63.6%	-68.3%	-60.5%	-67.1%	-72.9%	-62.3%	-68.5%	-74.6%
		Combined	-62.3%	-62.3%	-68.3%	-72.9%	-67.4%	-72.1%	-75.9%	-69.8%	-75.1%	-79.7%	-71.2%	-76.0%	-80.8%
	Adjusted	UDDS	-64.6%	-64.6%	-69.5%	-73.3%	-68.8%	-72.7%	-75.8%	-70.9%	-75.2%	-79.0%	-72.1%	-75.9%	-79.7%
		HWFET	-51.0%	-51.0%	-58.5%	-64.1%	-57.2%	-63.1%	-67.7%	-60.0%	-66.5%	-72.2%	-61.8%	-67.9%	-73.9%
		Combined	-59.5%	-59.5%	-65.3%	-69.8%	-64.4%	-69.1%	-72.8%	-66.8%	-71.9%	-76.5%	-68.2%	-72.9%	-77.6%
FC PHEV30	Unadjusted	UDDS	-77.8%	-77.8%	-81.3%	-83.8%	-80.7%	-83.5%	-85.9%	-82.1%	-85.4%	-88.3%	-83.1%	-86.0%	-88.8%
		HWFET	-69.4%	-69.4%	-67.5%	-71.6%	-66.3%	-70.9%	-74.8%	-68.4%	-73.8%	-78.3%	-69.9%	-75.0%	-79.7%
		Combined	-74.8%	-74.8%	-76.4%	-79.5%	-75.6%	-79.0%	-82.0%	-77.3%	-81.3%	-84.7%	-78.4%	-82.1%	-85.6%
	Adjusted	UDDS	-73.6%	-73.6%	-76.9%	-79.3%	-76.4%	-79.0%	-81.3%	-77.7%	-80.8%	-83.5%	-78.6%	-81.4%	-84.1%
		HWFET	-68.8%	-68.8%	-66.9%	-71.0%	-65.7%	-70.3%	-74.1%	-67.8%	-73.1%	-77.6%	-69.3%	-74.3%	-79.0%
		Combined	-71.8%	-71.8%	-73.1%	-76.2%	-72.4%	-75.7%	-78.6%	-74.0%	-77.9%	-81.3%	-75.1%	-78.7%	-82.2%
FC PHEV40	Unadjusted	UDDS	-80.7%	-80.7%	-83.8%	-86.0%	-83.3%	-85.7%	-87.9%	-84.5%	-87.4%	-89.9%	-85.4%	-88.0%	-90.4%
		HWFET	-69.6%	-69.6%	-74.3%	-77.6%	-73.4%	-77.1%	-80.2%	-75.1%	-79.4%	-83.0%	-76.3%	-80.3%	-84.1%
		Combined	-76.8%	-76.8%	-80.4%	-83.0%	-79.8%	-82.6%	-85.1%	-81.2%	-84.6%	-87.5%	-82.2%	-85.3%	-88.2%
	Adjusted	UDDS	-76.4%	-76.4%	-79.3%	-81.4%	-78.8%	-81.1%	-83.2%	-80.0%	-82.7%	-85.1%	-80.8%	-83.3%	-85.6%
		HWFET	-69.0%	-69.0%	-73.7%	-76.9%	-72.7%	-76.4%	-79.5%	-74.4%	-78.7%	-82.3%	-75.6%	-79.6%	-83.3%
		Combined	-73.6%	-73.6%	-77.2%	-79.7%	-76.5%	-79.3%	-81.8%	-77.9%	-81.2%	-84.0%	-78.9%	-81.9%	-84.7%

Small SUV Class

Fuel economy

			Small_SUV												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Conv	Unadjusted	UDDS	25.2	25.2	27.8	29.4	26.6	28.9	36.7	27.1	30.8	44.0	27.3	31.3	45.7
		HWFET	33.7	33.7	36.7	39.0	35.5	38.1	49.6	35.1	41.6	58.7	36.6	42.4	61.5
		Combined	28.4	28.4	31.2	33.1	29.9	32.4	41.6	30.2	34.9	49.6	30.9	35.5	51.6
	Adjusted	UDDS	19.5	19.5	21.5	22.6	20.5	22.3	27.8	20.9	23.6	32.9	21.1	23.9	34.0
		HWFET	23.8	23.8	25.9	27.6	25.1	26.9	35.0	24.8	29.3	41.3	25.9	29.9	43.2
		Combined	21.3	21.3	23.3	24.6	22.4	24.1	30.6	22.5	25.9	36.2	23.0	26.3	37.6
CI Conv	Unadjusted	UDDS	29.9	29.9	31.5	34.3	30.5	33.6	37.4	31.5	36.5	43.6	32.5	37.7	45.0
		HWFET	38.2	38.2	40.8	44.8	39.0	43.6	49.7	40.0	48.4	57.3	42.5	50.4	59.9
		Combined	33.2	33.2	35.1	38.3	33.8	37.5	42.1	34.8	41.0	48.9	36.4	42.5	50.7
	Adjusted	UDDS	23.0	23.0	24.1	26.1	23.4	25.6	28.3	24.1	27.7	32.6	24.9	28.5	33.6
		HWFET	27.0	27.0	28.8	31.6	27.6	30.8	35.0	28.2	34.1	40.4	30.0	35.5	42.2
		Combined	24.6	24.6	26.0	28.3	25.1	27.7	31.0	25.8	30.2	35.7	27.0	31.3	37.0
H2 Conv	Unadjusted	UDDS	21.6	21.6	25.9	29.6	24.5	29.0	33.2	26.8	32.3	39.1	28.6	34.1	42.1
		HWFET	31.3	31.3	38.1	43.7	35.5	42.6	48.7	38.9	47.3	56.6	41.7	50.3	61.6
		Combined	25.1	25.1	30.3	34.6	28.5	33.9	38.7	31.1	37.7	45.4	33.3	39.9	49.1
	Adjusted	UDDS	16.9	16.9	20.1	22.8	19.0	22.3	25.3	20.7	24.7	29.5	22.0	26.0	31.6
		HWFET	22.2	22.2	26.9	30.8	25.1	30.1	34.3	27.5	33.4	39.9	29.5	35.4	43.3
		Combined	18.9	18.9	22.7	25.8	21.3	25.2	28.7	23.3	28.0	33.4	24.9	29.5	36.0
E85 Conv	Unadjusted	UDDS	24.2	24.2	25.0	26.5	23.7	25.9	35.2	24.3	28.0	41.0	24.9	28.3	42.5
		HWFET	30.9	30.9	32.0	34.1	30.3	33.2	44.0	30.6	34.9	50.9	30.8	35.6	53.2
		Combined	26.8	26.8	27.8	29.4	26.3	28.7	38.7	26.8	30.7	45.0	27.2	31.2	46.7
	Adjusted	UDDS	18.8	18.8	19.4	20.5	18.4	20.1	26.8	18.8	21.6	30.8	19.3	21.8	31.8
		HWFET	21.8	21.8	22.7	24.1	21.4	23.5	31.1	21.7	24.7	35.9	21.8	25.1	37.5
		Combined	20.1	20.1	20.7	22.0	19.7	21.5	28.5	20.0	22.9	32.9	20.3	23.2	34.1
SI Split HEV	Unadjusted	UDDS	45.4	45.4	50.0	54.5	46.8	53.6	66.6	49.2	59.9	83.2	50.6	62.5	86.9
		HWFET	39.3	39.3	43.5	47.3	40.4	45.6	56.2	41.7	50.6	68.6	43.4	52.9	72.2
		Combined	42.4	42.4	46.9	51.0	43.7	49.7	61.5	45.5	55.3	75.9	47.1	57.8	79.6
	Adjusted	UDDS	33.8	33.8	37.0	39.9	34.8	39.3	47.7	36.4	43.4	57.9	37.4	45.1	60.1
		HWFET	27.8	27.8	30.7	33.4	28.5	32.2	39.5	29.5	35.6	48.2	30.7	37.3	50.7
		Combined	30.8	30.8	33.9	36.7	31.7	35.8	43.7	32.9	39.5	53.1	34.0	41.2	55.4
SI Split HEV PHEV10	Unadjusted	UDDS	57.1	57.1	63.2	68.5	59.1	66.4	81.6	60.7	73.4	101.4	62.7	76.2	106.0
		HWFET	50.9	50.9	56.3	64.2	52.5	61.7	75.4	53.5	68.2	89.9	55.8	70.9	95.1
		Combined	54.2	54.2	59.9	66.5	55.9	64.2	78.7	57.2	70.9	95.9	59.4	73.7	100.8
	Adjusted	UDDS	41.6	41.6	45.6	48.9	42.9	47.6	56.9	44.0	51.9	68.3	45.2	53.7	70.8
		HWFET	35.9	35.9	39.7	45.1	37.0	43.4	52.9	37.7	47.9	62.8	39.3	49.7	66.4
		Combined	38.8	38.8	42.7	47.2	40.0	45.6	55.0	40.9	50.0	65.7	42.3	51.8	68.8

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			Small_SUV												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Split HEV PHEV20	Unadjusted	UDDS	81.0	81.0	90.2	97.7	84.7	94.4	116.6	87.1	105.1	122.8	89.5	109.2	128.1
		HWFET	58.1	58.1	58.5	64.1	64.5	61.3	75.8	64.2	67.9	94.5	66.9	71.3	99.7
		Combined	68.8	68.8	72.5	79.0	74.3	76.0	93.8	75.0	84.3	108.2	77.7	88.1	113.5
	Adjusted	UDDS	56.5	56.5	62.0	66.2	58.8	64.4	76.5	60.1	70.4	79.8	61.6	72.6	82.5
		HWFET	40.9	40.9	41.2	45.1	45.3	43.1	53.1	45.1	47.7	66.0	47.0	50.1	69.5
		Combined	48.2	48.2	50.5	54.7	51.9	52.7	63.9	52.3	58.0	72.9	54.0	60.4	76.1
SI Series HEV PHEV30	Unadjusted	UDDS	73.7	73.7	83.4	92.9	77.1	89.8	115.4	81.0	104.0	147.4	84.4	108.6	154.7
		HWFET	54.0	54.0	61.0	67.2	56.1	64.9	81.3	58.3	73.3	100.3	61.3	76.9	106.2
		Combined	63.3	63.3	71.5	79.3	66.0	76.6	97.1	68.9	87.5	121.7	72.2	91.6	128.3
	Adjusted	UDDS	52.1	52.1	58.0	63.5	54.2	61.7	75.9	56.5	69.8	92.0	58.6	72.3	95.5
		HWFET	38.0	38.0	42.9	47.2	39.5	45.6	56.9	41.0	51.4	69.9	43.1	53.9	73.9
		Combined	44.7	44.7	50.0	55.0	46.4	53.3	66.0	48.3	60.1	80.6	50.4	62.6	84.4
SI Series HEV PHEV40	Unadjusted	UDDS	84.4	84.4	95.5	106.9	88.3	102.0	133.4	93.0	119.6	169.5	96.9	123.4	179.5
		HWFET	68.2	68.2	77.1	85.1	70.9	82.2	103.1	73.8	93.0	127.7	77.4	97.6	135.2
		Combined	76.3	76.3	86.2	95.8	79.5	92.0	117.8	83.2	105.9	147.7	87.0	110.3	156.4
	Adjusted	UDDS	58.6	58.6	65.0	71.3	60.9	68.7	85.2	63.6	78.1	102.2	65.8	80.1	106.6
		HWFET	47.9	47.9	54.0	59.5	49.7	57.5	71.9	51.7	64.9	88.6	54.3	68.1	93.6
		Combined	53.2	53.2	59.6	65.5	55.3	63.2	78.6	57.6	71.6	95.6	60.0	74.2	100.3
CI Split HEV	Unadjusted	UDDS	49.8	49.8	54.3	59.9	50.8	58.9	68.2	54.0	66.3	82.5	56.3	69.6	85.7
		HWFET	41.7	41.7	45.6	50.5	42.4	49.0	56.2	44.5	54.7	66.4	46.8	57.6	69.7
		Combined	45.8	45.8	50.0	55.2	46.6	54.0	62.2	49.3	60.5	74.4	51.6	63.6	77.7
	Adjusted	UDDS	36.8	36.8	39.8	43.4	37.5	42.8	48.7	39.6	47.5	57.5	41.1	49.6	59.3
		HWFET	29.4	29.4	32.2	35.6	29.9	34.6	39.6	31.4	38.6	46.6	33.0	40.5	48.9
		Combined	33.1	33.1	36.0	39.5	33.7	38.7	44.1	35.4	43.0	52.0	37.0	45.1	54.2
CI Split HEV PHEV10	Unadjusted	UDDS	58.2	58.2	64.1	70.6	59.8	68.5	78.9	62.7	76.9	95.5	65.5	80.4	99.6
		HWFET	51.6	51.6	59.1	65.7	54.7	63.2	72.5	54.8	70.8	84.7	57.5	74.3	89.6
		Combined	55.0	55.0	61.7	68.3	57.4	66.0	75.9	58.9	74.0	90.3	61.6	77.6	94.8
	Adjusted	UDDS	42.3	42.3	46.1	50.2	43.4	48.9	55.3	45.2	54.1	65.0	47.0	56.2	67.3
		HWFET	36.4	36.4	41.6	46.2	38.5	44.4	50.9	38.6	49.7	59.3	40.5	52.1	62.6
		Combined	39.4	39.4	44.0	48.3	41.0	46.8	53.2	42.0	52.0	62.3	43.8	54.3	65.1
CI Split HEV PHEV20	Unadjusted	UDDS	83.1	83.1	91.7	101.0	85.7	98.0	112.7	89.9	109.5	139.1	93.9	115.1	145.0
		HWFET	61.2	61.2	59.2	79.4	54.7	63.4	87.7	56.6	85.4	88.7	73.1	74.1	93.6
		Combined	71.6	71.6	73.6	90.0	68.3	78.7	99.9	71.1	97.2	110.8	83.2	92.2	116.2
	Adjusted	UDDS	57.8	57.8	62.8	68.1	59.3	66.4	74.5	61.8	72.8	88.0	64.1	75.8	90.9
		HWFET	43.1	43.1	41.7	55.6	38.5	44.6	61.3	39.8	59.7	62.0	51.2	52.0	65.4
		Combined	50.1	50.1	51.2	61.9	47.7	54.4	67.9	49.5	66.3	74.1	57.6	62.8	77.3

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			Small_SUV												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
CI Series HEV PHEV30	Unadjusted	UDDS	75.3	75.3	84.9	94.9	77.7	92.0	110.9	83.3	107.3	138.4	87.4	112.1	144.4
		HWFET	55.1	55.1	61.6	68.9	56.5	66.6	78.5	60.0	76.4	94.7	63.6	80.8	100.3
		Combined	64.6	64.6	72.5	81.1	66.5	78.5	93.5	70.9	90.8	114.6	74.8	95.4	120.6
	Adjusted	UDDS	53.1	53.1	58.9	64.6	54.6	63.0	73.5	57.9	71.6	87.7	60.3	74.2	90.6
		HWFET	38.8	38.8	43.3	48.4	39.8	46.8	55.0	42.2	53.5	66.1	44.7	56.6	70.0
		Combined	45.6	45.6	50.7	56.2	46.8	54.5	63.8	49.6	62.1	76.4	52.1	65.1	80.0
CI Series HEV PHEV40	Unadjusted	UDDS	86.2	86.2	96.5	109.3	89.1	105.9	128.2	95.6	123.6	162.0	100.6	130.9	168.2
		HWFET	69.6	69.6	77.7	87.2	71.4	84.1	99.7	75.9	96.9	120.4	80.5	102.8	127.7
		Combined	77.9	77.9	87.0	98.1	80.2	94.8	113.6	85.6	110.0	140.2	90.4	116.5	147.2
	Adjusted	UDDS	59.6	59.6	65.5	72.6	61.3	70.8	82.6	65.1	80.2	98.9	67.9	83.9	101.7
		HWFET	48.9	48.9	54.5	61.0	50.1	58.8	69.5	53.2	67.6	83.6	56.4	71.6	88.6
		Combined	54.3	54.3	60.0	66.9	55.7	64.9	76.1	59.1	74.0	91.3	62.2	77.9	95.3
H2 Split HEV	Unadjusted	UDDS	44.2	44.2	54.1	62.8	50.1	61.7	73.6	55.3	71.2	90.0	60.0	76.4	97.3
		HWFET	37.8	37.8	46.2	53.6	42.6	52.0	61.5	46.6	59.5	73.2	50.8	64.1	79.9
		Combined	41.1	41.1	50.2	58.3	46.4	56.9	67.6	51.0	65.4	81.6	55.5	70.3	88.6
	Adjusted	UDDS	33.0	33.0	39.7	45.3	37.0	44.6	52.0	40.5	50.6	61.9	43.5	53.8	66.0
		HWFET	26.7	26.7	32.6	37.7	30.1	36.6	43.2	32.9	41.9	51.3	35.8	45.1	56.0
		Combined	29.9	29.9	36.1	41.6	33.5	40.6	47.7	36.7	46.2	56.6	39.7	49.5	61.1
H2 Split HEV PHEV10	Unadjusted	UDDS	55.2	55.2	67.8	78.4	62.7	75.8	89.8	68.3	86.7	109.4	74.0	93.1	119.6
		HWFET	49.5	49.5	62.7	72.8	55.7	70.5	82.5	60.5	80.1	96.3	65.6	85.9	105.6
		Combined	52.5	52.5	65.4	75.8	59.3	73.3	86.3	64.6	83.6	103.1	70.0	89.7	112.9
	Adjusted	UDDS	40.4	40.4	48.5	55.0	45.2	53.4	61.7	48.8	59.9	72.7	52.3	63.6	78.1
		HWFET	34.9	34.9	44.1	51.1	39.2	49.5	57.7	42.6	56.1	67.2	46.1	60.1	73.6
		Combined	37.7	37.7	46.4	53.2	42.3	51.5	59.9	45.8	58.1	70.1	49.3	62.0	76.0
H2 Split HEV PHEV20	Unadjusted	UDDS	78.5	78.5	96.2	111.7	90.2	108.1	130.2	98.2	124.4	132.5	105.8	135.0	145.5
		HWFET	56.4	56.4	75.6	87.2	67.1	84.2	83.3	72.6	80.0	101.4	78.9	86.8	111.0
		Combined	66.7	66.7	85.7	99.2	78.1	95.9	103.8	84.7	99.5	116.5	91.8	108.0	127.7
	Adjusted	UDDS	55.1	55.1	65.4	73.9	61.9	72.0	83.6	66.5	80.6	84.7	70.8	86.0	91.1
		HWFET	39.7	39.7	53.0	61.0	47.1	58.9	58.3	50.9	56.0	70.7	55.3	60.7	77.2
		Combined	46.9	46.9	59.2	67.5	54.3	65.5	69.9	58.4	67.3	77.8	62.9	72.4	84.3
H2 Series HEV PHEV30	Unadjusted	UDDS	71.6	71.6	90.1	106.1	81.9	102.2	125.7	91.2	121.4	156.5	100.4	129.9	169.5
		HWFET	52.9	52.9	66.0	77.1	60.2	74.4	89.8	66.3	86.7	107.7	72.8	93.9	117.9
		Combined	61.8	61.8	77.4	90.8	70.5	87.5	106.5	78.0	102.9	130.0	85.8	110.8	141.6
	Adjusted	UDDS	50.8	50.8	61.9	70.9	57.1	68.8	81.3	62.5	79.1	96.3	67.8	83.4	102.2
		HWFET	37.3	37.3	46.3	54.1	42.4	52.2	62.7	46.6	60.6	75.0	51.0	65.6	81.9
		Combined	43.7	43.7	53.8	62.2	49.4	60.2	71.7	54.2	69.6	85.4	59.1	74.3	92.0

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			Small_SUV												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
H2 Series HEV PHEV40	Unadjusted	UDDS	82.1	82.1	103.6	121.6	94.2	117.7	145.1	104.8	140.6	182.1	114.3	150.6	198.6
		HWFET	66.9	66.9	83.2	97.6	76.1	94.3	113.7	83.9	110.3	137.1	91.9	119.3	150.4
		Combined	74.5	74.5	93.3	109.5	85.1	105.9	129.1	94.2	125.1	158.7	103.0	134.7	173.6
	Adjusted	UDDS	57.2	57.2	69.5	79.2	64.3	77.1	90.9	70.2	88.8	107.8	75.3	93.5	114.7
		HWFET	47.0	47.0	58.3	68.1	53.3	65.8	79.1	58.7	76.7	94.9	64.2	82.8	103.8
		Combined	52.1	52.1	64.0	73.8	58.8	71.6	85.2	64.5	82.9	101.5	69.9	88.4	109.5
E85 Split HEV	Unadjusted	UDDS	41.9	41.9	46.5	50.6	43.5	49.6	65.3	45.3	55.9	78.2	47.1	57.9	81.7
		HWFET	36.3	36.3	40.3	43.9	37.5	42.4	55.2	38.5	47.4	64.5	40.4	49.2	68.0
		Combined	39.2	39.2	43.5	47.4	40.6	46.1	60.3	42.0	51.7	71.4	43.8	53.6	74.9
	Adjusted	UDDS	31.5	31.5	34.6	37.4	32.5	36.7	46.9	33.8	40.9	54.9	35.0	42.2	57.0
		HWFET	25.6	25.6	28.5	31.0	26.5	29.9	38.9	27.2	33.4	45.3	28.5	34.7	47.7
		Combined	28.5	28.5	31.5	34.2	29.5	33.3	42.9	30.5	37.1	50.1	31.7	38.4	52.4
E85 Split HEV PHEV10	Unadjusted	UDDS	53.5	53.5	59.1	64.2	55.3	62.3	80.6	56.8	68.8	95.9	58.8	71.6	100.1
		HWFET	47.6	47.6	55.0	60.1	48.7	57.7	74.4	49.7	63.7	84.9	52.0	66.4	89.7
		Combined	50.7	50.7	57.2	62.3	52.2	60.2	77.7	53.4	66.4	90.6	55.6	69.2	95.2
	Adjusted	UDDS	39.3	39.3	42.9	46.2	40.5	45.0	56.3	41.4	49.1	65.2	42.8	50.9	67.6
		HWFET	33.6	33.6	38.7	42.2	34.4	40.6	52.2	35.0	44.8	59.4	36.7	46.6	62.7
		Combined	36.5	36.5	40.9	44.3	37.5	42.9	54.4	38.3	47.1	62.5	39.8	48.9	65.3
E85 Split HEV PHEV20	Unadjusted	UDDS	75.8	75.8	84.1	91.4	79.4	88.7	115.3	81.7	98.7	116.0	84.0	102.5	121.1
		HWFET	54.2	54.2	54.6	59.7	60.3	57.3	74.0	61.4	63.5	89.2	54.3	66.8	94.1
		Combined	64.3	64.3	67.6	73.7	69.5	71.1	92.2	71.1	79.0	102.2	67.4	82.6	107.3
	Adjusted	UDDS	53.4	53.4	58.4	62.6	55.6	61.1	75.9	56.9	66.8	76.2	58.4	68.9	78.9
		HWFET	38.2	38.2	38.4	42.0	42.4	40.3	51.9	43.2	44.6	62.3	38.2	46.9	65.7
		Combined	45.3	45.3	47.3	51.3	48.8	49.6	62.8	49.8	54.6	69.3	47.2	56.9	72.4
E85 Series HEV PHEV30	Unadjusted	UDDS	68.8	68.8	78.2	87.3	72.3	83.5	114.6	76.1	97.6	137.7	79.3	100.5	145.9
		HWFET	50.7	50.7	57.3	63.2	52.7	61.0	80.6	54.8	69.0	95.1	57.7	72.4	100.7
		Combined	59.3	59.3	67.1	74.5	61.9	71.6	96.3	64.8	82.2	114.6	67.8	85.5	121.3
	Adjusted	UDDS	49.1	49.1	54.8	60.3	51.3	58.0	75.5	53.6	66.2	87.3	55.5	67.8	91.3
		HWFET	35.7	35.7	40.3	44.4	37.1	42.9	56.4	38.6	48.4	66.4	40.6	50.8	70.2
		Combined	42.0	42.0	47.2	51.9	43.8	50.1	65.5	45.6	56.8	76.5	47.6	58.9	80.4
E85 Series HEV PHEV40	Unadjusted	UDDS	78.7	78.7	89.6	100.6	83.0	96.0	132.5	87.1	112.8	160.9	91.1	116.1	170.9
		HWFET	64.1	64.1	72.2	80.0	66.6	77.3	102.3	69.3	87.5	121.0	72.8	91.9	128.2
		Combined	71.3	71.3	80.8	90.1	74.7	86.6	116.9	78.1	99.8	140.1	81.9	103.8	148.6
	Adjusted	UDDS	55.1	55.1	61.6	67.8	57.8	65.3	84.8	60.2	74.5	98.3	62.5	76.3	102.9
		HWFET	45.0	45.0	50.6	56.0	46.8	54.2	71.3	48.7	61.2	84.0	51.1	64.2	88.9
		Combined	50.1	50.1	56.1	62.0	52.2	59.8	78.1	54.4	67.9	91.3	56.8	70.3	96.1

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			Small SUV												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
FC HEV	Unadjusted	UDDS	48.7	48.7	59.9	71.6	58.6	70.4	82.3	63.2	79.8	98.8	66.8	83.0	103.6
		HWFET	48.8	48.8	58.8	69.0	57.1	66.8	76.2	59.6	74.1	87.5	62.9	76.9	92.6
		Combined	48.7	48.7	59.4	70.4	57.9	68.7	79.5	61.5	77.1	93.4	65.0	80.1	98.3
	Adjusted	UDDS	36.1	36.1	43.5	50.8	42.6	50.1	57.4	45.6	55.8	66.9	47.9	57.8	69.5
		HWFET	34.4	34.4	41.4	48.5	40.2	46.9	53.4	41.9	51.9	61.2	44.2	53.9	64.7
		Combined	35.3	35.3	42.5	49.7	41.5	48.6	55.5	43.9	54.0	64.2	46.2	55.9	67.3
FC PHEV10	Unadjusted	UDDS	61.6	61.6	74.7	88.2	72.6	85.5	99.2	76.9	96.3	118.2	80.9	99.6	123.8
		HWFET	63.9	63.9	75.7	88.1	73.2	84.8	96.2	75.4	93.6	108.9	79.4	97.0	115.6
		Combined	62.6	62.6	75.1	88.1	72.9	85.2	97.9	76.2	95.0	113.8	80.2	98.4	119.9
	Adjusted	UDDS	44.6	44.6	52.7	60.8	51.5	59.2	67.1	54.1	65.4	77.4	56.5	67.3	80.3
		HWFET	44.9	44.9	53.1	61.6	51.3	59.4	67.2	52.8	65.4	75.8	55.6	67.7	80.3
		Combined	44.7	44.7	52.9	61.1	51.4	59.3	67.1	53.5	65.4	76.7	56.1	67.5	80.3
FC PHEV20	Unadjusted	UDDS	73.8	73.8	89.7	106.3	87.1	102.9	119.7	92.4	116.2	143.0	97.4	120.6	150.0
		HWFET	65.3	65.3	77.9	91.1	75.3	87.8	100.0	78.1	97.1	114.4	82.3	100.8	121.1
		Combined	69.7	69.7	84.0	98.8	81.4	95.5	110.0	85.4	106.8	128.6	89.9	110.8	135.4
	Adjusted	UDDS	52.2	52.2	61.7	71.0	60.2	69.1	78.2	63.2	76.3	89.9	66.0	78.6	93.2
		HWFET	45.9	45.9	54.6	63.6	52.8	61.4	69.8	54.7	67.8	79.6	57.6	70.3	84.1
		Combined	49.1	49.1	58.3	67.5	56.6	65.4	74.2	59.1	72.2	84.9	62.0	74.6	88.9
FC PHEV30	Unadjusted	UDDS	105.2	105.2	127.3	148.0	123.5	144.1	168.9	129.3	163.7	200.7	136.6	170.5	210.1
		HWFET	82.1	82.1	97.8	112.9	94.4	109.3	125.2	97.2	121.5	143.0	102.6	126.3	151.3
		Combined	93.4	93.4	112.1	129.8	108.5	126.1	146.0	112.5	141.6	169.8	118.8	147.3	178.8
	Adjusted	UDDS	70.4	70.4	82.1	92.3	80.2	90.5	102.0	83.1	99.6	115.5	86.8	102.7	119.3
		HWFET	57.5	57.5	68.3	78.5	65.9	76.1	86.9	67.8	84.4	98.8	71.5	87.6	104.4
		Combined	63.9	63.9	75.2	85.5	73.1	83.4	94.6	75.4	92.1	107.3	79.2	95.3	112.1
FC PHEV40	Unadjusted	UDDS	121.0	121.0	147.0	171.1	142.5	166.7	196.0	149.4	189.9	233.2	157.9	198.2	244.5
		HWFET	103.8	103.8	124.1	143.4	119.7	138.8	159.4	123.3	154.7	182.3	130.2	161.0	193.1
		Combined	112.6	112.6	135.7	157.4	131.2	152.8	177.7	136.4	172.3	207.2	144.1	179.6	218.3
	Adjusted	UDDS	78.9	78.9	91.8	103.0	89.6	101.0	113.6	93.0	111.1	128.1	96.9	114.5	132.2
		HWFET	72.4	72.4	86.1	99.1	83.1	96.0	109.8	85.6	106.6	125.0	90.2	110.9	132.0
		Combined	75.8	75.8	89.2	101.2	86.6	98.7	111.8	89.5	109.0	126.7	93.8	112.8	132.1

Pev details

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				Small_SUV												
				2010	2010			2015			2030			2045		
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Split HEV PHEV10	UDDS	CD	Wh/mile	222.3	222.3	202.1	188.5	218.1	194.4	187.0	214.4	184.6	165.7	208.8	182.9	160.5
			Distance	12.2	12.2	12.3	12.2	12.1	12.2	11.6	11.9	12.2	11.3	12.3	11.7	10.9
			MPGGE Unadjusted	771.0	771.0	831.9	923.0	807.1	887.5	1660.3	826.5	1039.2	2918.4	824.9	1563.7	3642.9
			MPGGE Adjusted	241.6	241.6	248.6	257.9	245.8	254.4	304.2	248.0	268.2	336.8	247.8	300.0	346.6
		CS	MPGGE Unadjusted	48.0	48.0	53.1	57.6	49.7	55.9	68.3	51.0	61.6	84.7	52.7	63.8	88.4
			MPGGE Adjusted	35.6	35.6	39.0	42.0	36.7	40.8	48.8	37.6	44.6	58.7	38.7	45.9	60.9
		CD+CS	Wh/mile	46.3	46.3	42.1	39.3	45.4	40.5	39.0	44.7	38.5	34.5	43.5	38.1	33.4
			MPGGE Unadjusted	57.1	57.1	63.2	68.5	59.1	66.4	81.6	60.7	73.4	101.4	62.7	76.2	106.0
			MPGGE Adjusted	41.6	41.6	45.6	48.9	42.9	47.6	56.9	44.0	51.9	68.3	45.2	53.7	70.8
		HWFET	CD	Wh/mile	209.5	209.5	189.4	223.5	206.0	226.8	209.6	203.8	215.2	182.4	192.8	207.8
	Distance			12.4	12.4	12.4	10.0	12.4	10.6	9.8	12.3	10.0	8.5	12.6	9.7	8.6
	MPGGE Unadjusted			130.4	130.4	143.1	320.8	134.9	280.3	389.7	136.9	353.5	417.9	137.5	359.6	456.3
	MPGGE Adjusted			90.4	90.4	98.9	213.6	93.4	188.2	255.8	94.8	233.8	272.8	95.1	237.5	295.6
	CS		MPGGE Unadjusted	42.7	42.7	47.3	51.3	44.0	49.5	60.1	44.9	54.3	72.1	47.0	56.5	76.1
			MPGGE Adjusted	30.2	30.2	33.3	36.1	31.1	34.9	42.3	31.7	38.3	50.6	33.1	39.8	53.3
	CD+CS		Wh/mile	61.6	61.6	55.7	65.7	60.6	66.7	61.6	59.9	63.3	53.6	56.7	61.1	51.2
			MPGGE Unadjusted	50.9	50.9	56.3	64.2	52.5	61.7	75.4	53.5	68.2	89.9	55.8	70.9	95.1
			MPGGE Adjusted	35.9	35.9	39.7	45.1	37.0	43.4	52.9	37.7	47.9	62.8	39.3	49.7	66.4
	Combined		CD	MPGGE Unadjusted	240.1	240.1	262.8	500.4	248.9	449.4	672.9	253.1	554.8	790.3	253.8	623.7
		MPGGE Adjusted		137.8	137.8	147.9	235.9	141.7	219.6	280.4	143.5	251.5	304.6	143.9	268.3	321.6
		CS	MPGGE Unadjusted	45.5	45.5	50.3	54.6	47.0	52.8	64.3	48.1	58.1	78.5	49.9	60.3	82.4
			MPGGE Adjusted	32.9	32.9	36.3	39.1	33.9	37.9	45.6	34.7	41.5	54.8	36.0	43.0	57.3
		CD+CS	Wh/mile	53.2	53.2	48.2	51.2	52.3	52.3	49.2	51.5	49.6	43.1	49.4	48.5	41.4
			MPGGE Unadjusted	54.2	54.2	59.9	66.5	55.9	64.2	78.7	57.2	70.9	95.9	59.4	73.7	100.8
			MPGGE Adjusted	38.8	38.8	42.7	47.2	40.0	45.6	55.0	40.9	50.0	65.7	42.3	51.8	68.8

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				Small_SUV												
				2010	2010			2015			2030			2045		
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Split HEV PHEV20	UDDS	CD	Wh/mile	224.5	224.5	210.2	192.3	228.1	198.1	177.5	223.6	182.6	163.5	215.2	177.8	156.8
			Distance	24.1	24.1	23.9	24.0	23.8	24.0	23.7	23.9	23.9	22.3	24.0	23.5	22.1
			MPGGE Unadjusted	733.8	733.8	973.1	943.5	992.8	902.5	1139.6	1008.3	1015.3	2860.3	912.8	1079.5	3147.1
			MPGGE Adjusted	237.0	237.0	262.5	259.9	264.3	255.9	275.9	265.6	266.2	335.8	256.9	271.4	340.3
		CS	MPGGE Unadjusted	47.7	47.7	52.7	57.3	49.3	55.4	68.3	50.7	61.6	84.6	52.4	63.9	88.2
			MPGGE Adjusted	35.4	35.4	38.7	41.7	36.5	40.5	48.8	37.4	44.6	58.7	38.5	46.0	60.8
		CD+CS	Wh/mile	118.1	118.1	110.4	101.3	119.6	104.3	93.8	117.3	96.5	62.3	113.1	94.0	59.7
			MPGGE Unadjusted	81.0	81.0	90.2	97.7	84.7	94.4	116.6	87.1	105.1	122.8	89.5	109.2	128.1
			MPGGE Adjusted	56.5	56.5	62.0	66.2	58.8	64.4	76.5	60.1	70.4	79.8	61.6	72.6	82.5
		HWFET	CD	Wh/mile	209.8	209.8	237.7	228.6	255.2	228.5	220.5	236.5	217.7	224.9	228.3	219.6
	Distance			24.8	24.8	20.2	20.1	21.2	20.2	19.4	22.0	19.7	16.0	22.4	19.3	16.1
	MPGGE Unadjusted			127.0	127.0	268.2	347.5	232.9	279.9	525.1	189.6	370.1	N/A	197.5	496.6	N/A
	MPGGE Adjusted			88.1	88.1	180.5	230.1	157.9	187.9	335.6	129.7	244.0	N/A	134.9	319.2	N/A
	CS		MPGGE Unadjusted	42.4	42.4	46.9	51.0	43.7	49.2	59.6	44.5	54.0	71.8	46.5	56.2	75.7
			MPGGE Adjusted	30.0	30.0	33.1	35.9	30.8	34.7	42.0	31.4	38.0	50.4	32.8	39.5	53.1
	CD+CS		Wh/mile	107.8	107.8	69.9	67.2	127.9	67.2	64.8	119.4	64.0	66.1	115.3	64.6	62.5
			MPGGE Unadjusted	58.1	58.1	58.5	64.1	64.5	61.3	75.8	64.2	67.9	94.5	66.9	71.3	99.7
			MPGGE Adjusted	40.9	40.9	41.2	45.1	45.3	43.1	53.1	45.1	47.7	66.0	47.0	50.1	69.5
	Combined	CD	MPGGE Unadjusted	232.9	232.9	445.8	532.5	402.3	451.0	746.5	342.5	569.0	5021.3	347.1	706.4	5505.6
			MPGGE Adjusted	134.6	134.6	218.0	245.6	202.8	220.1	299.9	180.5	255.7	559.9	182.6	291.0	566.8
		CS	MPGGE Unadjusted	45.1	45.1	49.9	54.2	46.6	52.4	64.1	47.7	57.9	78.3	49.5	60.2	82.1
			MPGGE Adjusted	32.7	32.7	36.0	38.9	33.7	37.7	45.5	34.5	41.4	54.6	35.7	42.9	57.1
		CD+CS	Wh/mile	113.5	113.5	92.2	85.9	123.3	87.6	80.8	118.2	81.9	64.0	114.1	80.8	61.0
			MPGGE Unadjusted	68.8	68.8	72.5	79.0	74.3	76.0	93.8	75.0	84.3	108.2	77.7	88.1	113.5
			MPGGE Adjusted	48.2	48.2	50.5	54.7	51.9	52.7	63.9	52.3	58.0	72.9	54.0	60.4	76.1

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				Small_SUV												
				2010	2010			2015			2030			2045		
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Series HEV PHEV30	UDDS	CD	Wh/mile	320.7	320.7	292.2	271.6	311.9	280.2	246.3	305.1	253.6	213.2	298.0	245.4	204.1
			Distance	30.9	30.9	30.9	30.9	30.9	30.9	30.9	30.9	31.4	30.9	30.9	30.7	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	34.6	34.6	39.2	43.7	36.3	42.2	54.2	38.1	48.9	69.3	39.7	51.0	72.7
			MPGGE Adjusted	26.4	26.4	29.6	32.7	27.5	31.7	39.7	28.8	36.2	49.4	29.9	37.6	51.5
		CD+CS	Wh/mile	206.4	206.4	188.1	174.9	200.7	180.4	159.1	196.3	163.8	138.2	191.8	158.4	132.3
			MPGGE Unadjusted	73.7	73.7	83.4	92.9	77.1	89.8	115.4	81.0	104.0	147.4	84.4	108.6	154.7
			MPGGE Adjusted	52.1	52.1	58.0	63.5	54.2	61.7	75.9	56.5	69.8	92.0	58.6	72.3	95.5
	HWFET	CD	Wh/mile	347.8	347.8	314.3	291.3	339.4	301.7	266.1	334.6	273.8	234.4	323.0	264.7	221.9
			Distance	28.5	28.5	28.8	28.8	28.5	28.7	28.6	28.1	28.7	27.7	28.5	28.5	28.2
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	31.9	31.9	36.0	39.7	33.1	38.3	48.0	34.4	43.2	59.2	36.2	45.4	62.6
			MPGGE Adjusted	22.6	22.6	25.4	28.0	23.4	27.1	33.8	24.3	30.5	41.6	25.6	32.0	44.0
		CD+CS	Wh/mile	179.2	179.2	162.0	150.1	174.9	155.5	137.2	172.5	141.1	120.8	166.5	136.5	114.4
			MPGGE Unadjusted	54.0	54.0	61.0	67.2	56.1	64.9	81.3	58.3	73.3	100.3	61.3	76.9	106.2
			MPGGE Adjusted	38.0	38.0	42.9	47.2	39.5	45.6	56.9	41.0	51.4	69.9	43.1	53.9	73.9
	Combined	CD	MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	33.3	33.3	37.7	41.8	34.8	40.4	51.2	36.3	46.2	64.3	38.0	48.3	67.8
			MPGGE Adjusted	24.5	24.5	27.5	30.4	25.5	29.4	36.9	26.6	33.4	45.6	27.8	34.9	47.9
		CD+CS	Wh/mile	194.1	194.1	176.4	163.7	189.1	169.2	149.2	185.6	153.6	130.4	180.4	148.5	124.2
			MPGGE Unadjusted	63.3	63.3	71.5	79.3	66.0	76.6	97.1	68.9	87.5	121.7	72.2	91.6	128.3
			MPGGE Adjusted	44.7	44.7	50.0	55.0	46.4	53.3	66.0	48.3	60.1	80.6	50.4	62.6	84.4

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				Small SUV													
				2010	2010			2015			2030			2045			
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high	
SI Series HEV PHEV40	UDDS	CD	Wh/mile	327.7	327.7	298.4	276.8	318.5	285.7	251.4	311.2	259.3	215.3	303.8	249.7	206.3	
			Distance	40.6	40.6	40.8	40.8	40.6	40.8	40.5	40.6	40.6	40.4	40.8	40.5	40.6	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	33.8	33.8	38.2	42.8	35.3	40.8	53.4	37.2	47.8	67.8	38.8	49.4	71.8	
			MPGGE Adjusted	25.7	25.7	28.9	32.0	26.8	30.7	39.2	28.2	35.5	48.5	29.3	36.5	51.0	
		CD+CS	Wh/mile	240.4	240.4	219.1	203.3	233.7	209.9	185.8	228.4	191.6	159.3	223.0	184.3	152.6	
			MPGGE Unadjusted	84.4	84.4	95.5	106.9	88.3	102.0	133.4	93.0	119.6	169.5	96.9	123.4	179.5	
			MPGGE Adjusted	58.6	58.6	65.0	71.3	60.9	68.7	85.2	63.6	78.1	102.2	65.8	80.1	106.6	
	HWFET	CD	Wh/mile	351.0	351.0	317.0	293.3	342.3	303.9	267.4	337.3	275.4	235.8	325.5	265.9	223.3	
			Distance	37.7	37.7	38.0	38.1	37.6	38.0	37.8	37.2	37.9	36.8	37.7	37.9	37.5	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
		CS	MPGGE Unadjusted	31.4	31.4	35.5	39.1	32.6	37.8	47.4	33.9	42.8	58.8	35.6	44.9	62.2	
			MPGGE Adjusted	22.2	22.2	25.1	27.7	23.1	26.7	33.5	24.0	30.2	41.3	25.2	31.7	43.7	
		CD+CS	Wh/mile	237.0	237.0	214.1	198.1	231.1	205.3	180.6	227.7	186.0	159.4	219.8	179.6	150.9	
			MPGGE Unadjusted	68.2	68.2	77.1	85.1	70.9	82.2	103.1	73.8	93.0	127.7	77.4	97.6	135.2	
			MPGGE Adjusted	47.9	47.9	54.0	59.5	49.7	57.5	71.9	51.7	64.9	88.6	54.3	68.1	93.6	
	Combined	CD	MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
		CS	MPGGE Unadjusted	32.7	32.7	36.9	41.0	34.0	39.4	50.5	35.7	45.4	63.4	37.3	47.2	67.1	
			MPGGE Adjusted	24.0	24.0	27.0	29.9	25.0	28.8	36.4	26.1	32.9	45.0	27.3	34.2	47.4	
		CD+CS	Wh/mile	238.9	238.9	216.8	201.0	232.5	207.8	183.5	228.1	189.1	159.3	221.6	182.1	151.8	
			MPGGE Unadjusted	76.3	76.3	86.2	95.8	79.5	92.0	117.8	83.2	105.9	147.7	87.0	110.3	156.4	
			MPGGE Adjusted	53.2	53.2	59.6	65.5	55.3	63.2	78.6	57.6	71.6	95.6	60.0	74.2	100.3	

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				Small SUV													
				2010	2010			2015			2030			2045			
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high	
CI Split HEV PHEV10	UDDS	CD	Wh/mile	211.6	211.6	208.2	195.5	225.5	197.8	186.0	221.6	191.1	173.6	214.3	181.6	166.7	
			Distance	13.0	13.0	12.6	12.3	12.2	12.8	12.3	12.2	12.3	11.4	12.6	12.3	11.4	
			MPGGE Unadjusted	500.4	500.4	785.4	913.3	791.6	792.0	1064.6	828.5	1025.2	2644.4	803.9	1093.6	2822.4	
			MPGGE Adjusted	200.1	200.1	243.3	257.0	244.0	244.1	270.2	248.2	267.0	331.9	245.5	272.5	335.2	
		CS	MPGGE Unadjusted	49.2	49.2	53.9	59.4	50.2	57.7	66.4	52.7	64.6	79.7	55.1	67.6	83.2	
			MPGGE Adjusted	36.4	36.4	39.5	43.1	37.1	42.0	47.6	38.8	46.5	55.8	40.4	48.4	57.8	
		CD+CS	Wh/mile	44.1	44.1	43.4	40.7	47.0	41.2	38.7	46.2	39.8	36.2	44.7	37.8	34.7	
			MPGGE Unadjusted	58.2	58.2	64.1	70.6	59.8	68.5	78.9	62.7	76.9	95.5	65.5	80.4	99.6	
			MPGGE Adjusted	42.3	42.3	46.1	50.2	43.4	48.9	55.3	45.2	54.1	65.0	47.0	56.2	67.3	
		HWFET	CD	Wh/mile	212.5	212.5	238.4	230.1	251.1	229.6	213.9	205.8	219.8	190.7	194.7	212.9	182.4
				Distance	12.6	12.6	11.0	10.7	11.1	11.0	10.6	12.6	10.7	8.6	13.0	10.5	8.9
	MPGGE Unadjusted			130.9	130.9	263.2	347.7	221.1	282.1	391.1	138.6	381.4	438.7	140.0	401.9	487.6	
	MPGGE Adjusted			90.7	90.7	177.3	230.3	150.3	189.3	256.7	95.9	250.8	285.2	96.8	263.2	313.9	
	CS		MPGGE Unadjusted	43.3	43.3	47.5	52.3	44.2	50.7	57.7	46.0	56.3	67.5	48.5	59.1	71.2	
			MPGGE Adjusted	30.6	30.6	33.5	36.8	31.2	35.8	40.6	32.5	39.7	47.4	34.2	41.6	50.0	
	CD+CS		Wh/mile	62.5	62.5	70.1	67.7	73.9	67.5	62.9	60.5	64.7	56.1	57.3	62.6	53.7	
			MPGGE Unadjusted	51.6	51.6	59.1	65.7	54.7	63.2	72.5	54.8	70.8	84.7	57.5	74.3	89.6	
			MPGGE Adjusted	36.4	36.4	41.6	46.2	38.5	44.4	50.9	38.6	49.7	59.3	40.5	52.1	62.6	
	Combined		CD	MPGGE Unadjusted	220.5	220.5	414.9	527.3	366.2	436.8	599.8	255.7	582.6	810.5	256.6	616.3	894.7
				MPGGE Adjusted	129.7	129.7	208.4	244.2	190.5	216.0	264.0	144.7	259.5	309.1	145.2	268.2	325.3
		CS	MPGGE Unadjusted	46.4	46.4	50.8	56.0	47.3	54.4	62.2	49.5	60.6	73.7	51.9	63.5	77.3	
			MPGGE Adjusted	33.5	33.5	36.6	40.1	34.2	39.0	44.2	35.6	43.1	51.7	37.3	45.1	54.0	
		CD+CS	Wh/mile	52.4	52.4	55.4	52.9	59.1	53.1	49.6	52.6	51.0	45.1	50.3	49.0	43.2	
			MPGGE Unadjusted	55.0	55.0	61.7	68.3	57.4	66.0	75.9	58.9	74.0	90.3	61.6	77.6	94.8	
			MPGGE Adjusted	39.4	39.4	44.0	48.3	41.0	46.8	53.2	42.0	52.0	62.3	43.8	54.3	65.1	

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				Small SUV												
				2010	2010			2015			2030			2045		
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
CI Split HEV PHEV20	UDDS	CD	Wh/mile	234.7	234.7	220.6	203.5	236.7	209.8	183.9	232.4	188.8	169.8	227.0	184.0	162.9
			Distance	24.0	24.0	23.9	23.9	23.9	24.0	23.9	23.9	24.0	22.3	23.9	23.8	22.3
			MPGGE Unadjusted	778.3	778.3	1048.8	1088.1	1005.9	1044.2	1040.7	1049.4	1003.5	2613.2	1072.3	1073.2	2705.0
			MPGGE Adjusted	242.5	242.5	269.0	272.1	265.4	268.6	268.3	269.0	265.2	331.3	270.8	270.9	333.1
		CS	MPGGE Unadjusted	48.8	48.8	53.5	59.0	49.9	57.2	66.2	52.4	64.3	79.7	54.7	67.6	83.1
			MPGGE Adjusted	36.1	36.1	39.2	42.9	36.9	41.7	47.4	38.5	46.3	55.8	40.1	48.3	57.8
		CD+CS	Wh/mile	123.5	123.5	115.7	106.9	124.2	110.1	97.2	121.9	99.8	89.7	119.0	97.3	86.1
			MPGGE Unadjusted	83.1	83.1	91.7	101.0	85.7	98.0	112.7	89.9	109.5	139.1	93.9	115.1	145.0
			MPGGE Adjusted	57.8	57.8	62.8	68.1	59.3	66.4	74.5	61.8	72.8	88.0	64.1	75.8	90.9
		HWFET	CD	Wh/mile	240.9	240.9	250.4	230.7	261.6	240.4	213.2	250.4	219.0	229.2	254.0	213.8
	Distance			23.2	23.2	19.4	21.2	19.6	20.3	21.0	19.9	21.0	16.4	21.3	20.3	16.5
	MPGGE Unadjusted			169.5	169.5	322.8	332.0	252.5	341.9	363.1	228.3	354.0	65207.3	291.2	398.2	65207.3
	MPGGE Adjusted			116.5	116.5	214.9	220.6	170.5	226.7	239.7	155.0	234.1	3034.8	195.1	261.0	3034.8
	CS		MPGGE Unadjusted	42.9	42.9	47.1	52.0	43.9	50.5	57.5	45.7	56.0	67.4	48.2	58.9	71.1
			MPGGE Adjusted	30.3	30.3	33.2	36.7	31.0	35.6	40.5	32.3	39.4	47.4	34.0	41.5	49.9
	CD+CS		Wh/mile	122.0	122.0	73.6	118.8	76.9	70.7	109.8	73.6	112.9	67.4	130.4	62.9	63.9
			MPGGE Unadjusted	61.2	61.2	59.2	79.4	54.7	63.4	87.7	56.6	85.4	88.7	73.1	74.1	93.6
			MPGGE Adjusted	43.1	43.1	41.7	55.6	38.5	44.6	61.3	39.8	59.7	62.0	51.2	52.0	65.4
	Combined		CD	MPGGE Unadjusted	297.5	297.5	521.3	537.4	429.3	542.7	565.7	400.8	549.7	4600.5	485.9	608.9
		MPGGE Adjusted		163.1	163.1	241.6	246.2	212.2	248.0	254.6	202.1	250.3	553.0	230.6	266.4	555.7
		CS	MPGGE Unadjusted	46.0	46.0	50.4	55.7	47.0	54.0	62.0	49.2	60.3	73.7	51.6	63.4	77.2
			MPGGE Adjusted	33.3	33.3	36.3	39.8	34.0	38.7	44.0	35.4	42.9	51.7	37.1	45.0	54.0
		CD+CS	Wh/mile	122.8	122.8	96.8	112.3	102.9	92.4	102.9	100.2	105.7	79.7	124.2	81.8	76.1
			MPGGE Unadjusted	71.6	71.6	73.6	90.0	68.3	78.7	99.9	71.1	97.2	110.8	83.2	92.2	116.2
			MPGGE Adjusted	50.1	50.1	51.2	61.9	47.7	54.4	67.9	49.5	66.3	74.1	57.6	62.8	77.3

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				Small SUV													
				2010	2010			2015			2030			2045			
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high	
CI Series HEV PHEV30	UDDS	CD	Wh/mile	331.5	331.5	302.8	281.7	322.0	290.2	256.0	315.3	263.5	222.5	307.9	255.0	213.4	
			Distance	31.4	31.4	30.9	31.0	31.9	30.9	30.9	31.4	30.9	30.9	31.0	30.9	31.4	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	35.4	35.4	39.9	44.6	36.5	43.2	52.1	39.1	50.4	65.1	41.1	52.7	67.8	
			MPGGE Adjusted	26.9	26.9	30.1	33.3	27.7	32.4	38.4	29.5	37.2	46.7	30.9	38.7	48.5	
		CD+CS	Wh/mile	213.3	213.3	195.0	181.4	207.2	186.9	165.4	202.9	170.2	144.3	198.2	164.7	138.4	
			MPGGE Unadjusted	75.3	75.3	84.9	94.9	77.7	92.0	110.9	83.3	107.3	138.4	87.4	112.1	144.4	
			MPGGE Adjusted	53.1	53.1	58.9	64.6	54.6	63.0	73.5	57.9	71.6	87.7	60.3	74.2	90.6	
		HWFET	CD	Wh/mile	355.0	355.0	321.3	297.9	346.1	308.3	272.3	341.5	280.2	240.1	329.6	270.8	227.5
	Distance			29.4	29.4	29.3	29.2	29.2	29.3	28.9	28.6	28.9	28.5	29.2	28.9	28.8	
	MPGGE Unadjusted			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	MPGGE Adjusted			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	CS		MPGGE Unadjusted	32.5	32.5	36.3	40.7	33.3	39.3	46.3	35.4	45.1	55.8	37.5	47.7	59.2	
			MPGGE Adjusted	23.0	23.0	25.7	28.7	23.6	27.8	32.7	25.0	31.8	39.3	26.5	33.6	41.7	
	CD+CS		Wh/mile	182.9	182.9	165.6	153.6	178.4	158.9	140.4	176.0	144.4	123.7	169.9	139.6	117.3	
			MPGGE Unadjusted	55.1	55.1	61.6	68.9	56.5	66.6	78.5	60.0	76.4	94.7	63.6	80.8	100.3	
			MPGGE Adjusted	38.8	38.8	43.3	48.4	39.8	46.8	55.0	42.2	53.5	66.1	44.7	56.6	70.0	
	Combined		CD	MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		MPGGE Adjusted		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
		CS	MPGGE Unadjusted	34.0	34.0	38.2	42.7	35.0	41.4	49.3	37.4	47.9	60.6	39.4	50.3	63.7	
			MPGGE Adjusted	25.0	25.0	27.9	31.1	25.7	30.1	35.6	27.3	34.6	43.1	28.8	36.3	45.2	
		CD+CS	Wh/mile	199.6	199.6	181.8	168.9	194.3	174.3	154.1	190.8	158.6	135.0	185.5	153.4	128.9	
			MPGGE Unadjusted	64.6	64.6	72.5	81.1	66.5	78.5	93.5	70.9	90.8	114.6	74.8	95.4	120.6	
			MPGGE Adjusted	45.6	45.6	50.7	56.2	46.8	54.5	63.8	49.6	62.1	76.4	52.1	65.1	80.0	

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				Small SUV													
				2010	2010			2015			2030			2045			
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high	
CI Series HEV PHEV40	UDDS	CD	Wh/mile	338.6	338.6	308.9	287.2	328.8	296.1	261.3	321.3	268.9	224.8	314.0	259.1	215.4	
			Distance	40.8	40.8	40.8	40.8	40.8	40.8	40.7	40.6	40.8	40.6	40.8	40.4	40.6	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	34.5	34.5	38.6	43.7	35.6	42.4	51.3	38.2	49.5	64.8	40.3	52.3	67.3	
			MPGGE Adjusted	26.2	26.2	29.1	32.7	27.1	31.8	37.8	28.9	36.6	46.6	30.3	38.5	48.2	
		CD+CS	Wh/mile	248.5	248.5	226.9	211.1	241.3	217.6	193.2	235.9	198.8	166.4	230.6	191.3	159.4	
			MPGGE Unadjusted	86.2	86.2	96.5	109.3	89.1	105.9	128.2	95.6	123.6	162.0	100.6	130.9	168.2	
			MPGGE Adjusted	59.6	59.6	65.5	72.6	61.3	70.8	82.6	65.1	80.2	98.9	67.9	83.9	101.7	
	HWFET	CD	Wh/mile	358.2	358.2	323.9	300.0	349.1	310.7	273.8	344.0	281.7	241.6	332.1	271.7	228.8	
			Distance	38.1	38.1	38.7	38.8	38.0	38.7	38.7	37.7	38.7	37.7	38.3	38.7	38.1	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	32.0	32.0	35.7	40.1	32.9	38.7	45.8	34.9	44.6	55.4	37.0	47.3	58.8	
			MPGGE Adjusted	22.7	22.7	25.3	28.4	23.3	27.3	32.4	24.7	31.5	39.0	26.2	33.3	41.4	
		CD+CS	Wh/mile	241.9	241.9	218.7	202.7	235.7	209.8	185.0	232.3	190.3	163.3	224.3	183.5	154.7	
			MPGGE Unadjusted	69.6	69.6	77.7	87.2	71.4	84.1	99.7	75.9	96.9	120.4	80.5	102.8	127.7	
			MPGGE Adjusted	48.9	48.9	54.5	61.0	50.1	58.8	69.5	53.2	67.6	83.6	56.4	71.6	88.6	
	Combined	CD	MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	33.3	33.3	37.3	42.0	34.3	40.6	48.7	36.7	47.1	60.2	38.7	49.9	63.2	
			MPGGE Adjusted	24.5	24.5	27.3	30.6	25.2	29.6	35.1	26.8	34.1	42.8	28.3	36.0	44.8	
		CD+CS	Wh/mile	245.5	245.5	223.2	207.3	238.8	214.1	189.5	234.3	195.0	165.0	227.7	187.8	157.3	
			MPGGE Unadjusted	77.9	77.9	87.0	98.1	80.2	94.8	113.6	85.6	110.0	140.2	90.4	116.5	147.2	
			MPGGE Adjusted	54.3	54.3	60.0	66.9	55.7	64.9	76.1	59.1	74.0	91.3	62.2	77.9	95.3	

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				Small_SUV												
				2010	2010			2015			2030			2045		
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
H2 Split HEV PHEV10	UDDS	CD	Wh/mile	225.3	225.3	202.3	187.5	217.2	193.3	184.5	215.6	183.3	162.9	207.2	181.4	166.5
			Distance	12.2	12.2	12.3	12.2	12.5	12.3	11.6	12.1	12.1	11.3	12.3	11.6	10.2
			MPGGE Unadjusted	748.1	748.1	910.1	1087.7	797.5	1042.9	1875.6	949.1	1271.6	3302.1	1002.3	2090.2	N/A
			MPGGE Adjusted	238.8	238.8	256.7	272.0	244.7	268.5	312.2	260.4	284.7	342.4	265.1	318.9	N/A
		CS	MPGGE Unadjusted	46.4	46.4	57.0	65.9	52.7	63.7	75.2	57.4	72.8	91.4	62.2	77.9	99.2
			MPGGE Adjusted	34.5	34.5	41.6	47.3	38.8	45.9	53.0	41.8	51.6	62.6	44.9	54.7	67.1
		CD+CS	Wh/mile	46.9	46.9	42.2	39.1	45.3	40.3	38.4	44.9	38.2	33.9	43.2	37.8	34.7
			MPGGE Unadjusted	55.2	55.2	67.8	78.4	62.7	75.8	89.8	68.3	86.7	109.4	74.0	93.1	119.6
			MPGGE Adjusted	40.4	40.4	48.5	55.0	45.2	53.4	61.7	48.8	59.9	72.7	52.3	63.6	78.1
	HWFET	CD	Wh/mile	211.2	211.2	228.1	218.2	202.3	225.9	207.1	203.9	213.5	179.3	192.4	205.3	171.8
			Distance	12.4	12.4	11.0	10.6	12.5	10.6	9.8	12.3	10.0	8.5	12.5	9.7	8.5
			MPGGE Unadjusted	127.2	127.2	253.8	335.3	138.1	322.7	419.3	155.1	404.5	431.1	163.5	428.0	494.8
			MPGGE Adjusted	88.2	88.2	171.3	222.6	95.5	214.8	273.6	106.9	264.8	280.7	112.5	278.8	318.1
		CS	MPGGE Unadjusted	41.5	41.5	50.6	58.4	46.9	56.5	65.8	50.7	63.9	77.3	55.2	68.6	84.6
			MPGGE Adjusted	29.3	29.3	35.7	41.1	33.1	39.8	46.2	35.8	44.9	54.2	38.9	48.2	59.2
		CD+CS	Wh/mile	62.1	62.1	67.1	64.2	59.5	66.5	60.9	60.0	62.8	52.7	56.6	60.4	50.5
			MPGGE Unadjusted	49.5	49.5	62.7	72.8	55.7	70.5	82.5	60.5	80.1	96.3	65.6	85.9	105.6
			MPGGE Adjusted	34.9	34.9	44.1	51.1	39.2	49.5	57.7	42.6	56.1	67.2	46.1	60.1	73.6
	Combined	CD	MPGGE Unadjusted	234.1	234.1	420.6	541.2	253.3	520.3	731.7	287.2	647.3	826.2	302.9	760.7	1089.4
			MPGGE Adjusted	135.1	135.1	209.7	247.3	143.7	241.3	293.6	158.2	275.4	311.6	164.6	299.6	353.7
		CS	MPGGE Unadjusted	44.1	44.1	54.0	62.3	49.9	60.2	70.6	54.2	68.5	84.4	58.8	73.4	92.1
			MPGGE Adjusted	32.0	32.0	38.7	44.3	36.0	42.9	49.7	38.9	48.3	58.5	42.0	51.5	63.3
		CD+CS	Wh/mile	53.8	53.8	53.4	50.4	51.7	52.1	48.6	51.7	49.3	42.4	49.2	48.0	41.8
			MPGGE Unadjusted	52.5	52.5	65.4	75.8	59.3	73.3	86.3	64.6	83.6	103.1	70.0	89.7	112.9
			MPGGE Adjusted	37.7	37.7	46.4	53.2	42.3	51.5	59.9	45.8	58.1	70.1	49.3	62.0	76.0

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				Small_SUV												
				2010	2010			2015			2030			2045		
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
H2 Split HEV PHEV20	UDDS	CD	Wh/mile	228.3	228.3	206.1	189.5	229.8	195.6	182.6	225.0	181.2	160.3	214.9	183.1	164.5
			Distance	24.0	24.0	24.0	24.0	23.9	24.0	22.8	23.9	23.8	22.3	23.9	22.8	20.4
			MPGGE Unadjusted	729.0	729.0	921.5	1060.7	1057.1	1015.2	1834.5	1145.0	1243.1	3238.0	1165.4	1920.3	N/A
			MPGGE Adjusted	236.4	236.4	257.8	269.9	269.6	266.2	310.8	276.3	282.9	341.6	277.7	313.7	N/A
		CS	MPGGE Unadjusted	46.1	46.1	56.4	65.5	52.5	63.5	75.2	57.2	72.8	91.3	61.7	77.9	99.0
			MPGGE Adjusted	34.3	34.3	41.2	47.0	38.6	45.7	53.1	41.7	51.6	62.6	44.6	54.7	67.0
		CD+CS	Wh/mile	120.2	120.2	108.5	99.8	120.5	103.1	96.5	118.0	95.8	61.0	112.9	96.7	62.6
			MPGGE Unadjusted	78.5	78.5	96.2	111.7	90.2	108.1	130.2	98.2	124.4	132.5	105.8	135.0	145.5
			MPGGE Adjusted	55.1	55.1	65.4	73.9	61.9	72.0	83.6	66.5	80.6	84.7	70.8	86.0	91.1
	HWFET	CD	Wh/mile	211.2	211.2	237.3	219.1	240.1	226.7	218.9	237.1	216.7	222.4	226.8	218.2	211.0
			Distance	24.9	24.9	21.2	21.2	22.0	21.2	19.4	21.9	19.5	15.9	22.0	19.2	16.0
			MPGGE Unadjusted	123.5	123.5	281.1	322.7	199.9	309.4	584.6	215.0	442.8	N/A	233.7	612.4	N/A
			MPGGE Adjusted	85.7	85.7	188.7	214.8	136.5	206.5	369.3	146.4	287.7	N/A	158.5	384.7	N/A
		CS	MPGGE Unadjusted	41.2	41.2	50.3	58.0	46.5	56.1	65.5	50.4	63.5	77.1	54.8	68.3	84.4
			MPGGE Adjusted	29.1	29.1	35.4	40.8	32.8	39.5	46.0	35.5	44.7	54.0	38.6	48.0	59.0
		CD+CS	Wh/mile	108.5	108.5	122.1	112.8	121.3	116.7	64.4	119.7	63.7	65.4	114.5	64.2	62.1
			MPGGE Unadjusted	56.4	56.4	75.6	87.2	67.1	84.2	83.3	72.6	80.0	101.4	78.9	86.8	111.0
			MPGGE Adjusted	39.7	39.7	53.0	61.0	47.1	58.9	58.3	50.9	56.0	70.7	55.3	60.7	77.2
	Combined	CD	MPGGE Unadjusted	227.4	227.4	455.1	522.8	360.8	501.0	935.0	388.7	685.6	5658.4	417.2	979.2	N/A
			MPGGE Adjusted	132.0	132.0	221.3	242.0	187.4	235.6	334.7	197.4	285.0	568.7	207.5	342.1	640.8
		CS	MPGGE Unadjusted	43.8	43.8	53.5	61.9	49.6	59.9	70.5	53.9	68.3	84.3	58.4	73.3	91.8
			MPGGE Adjusted	31.8	31.8	38.4	44.0	35.8	42.7	49.6	38.7	48.2	58.4	41.7	51.5	63.1
		CD+CS	Wh/mile	115.0	115.0	114.6	105.6	120.9	109.2	82.0	118.8	81.4	63.0	113.6	82.1	62.4
			MPGGE Unadjusted	66.7	66.7	85.7	99.2	78.1	95.9	103.8	84.7	99.5	116.5	91.8	108.0	127.7
			MPGGE Adjusted	46.9	46.9	59.2	67.5	54.3	65.5	69.9	58.4	67.3	77.8	62.9	72.4	84.3

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				Small SUV													
				2010	2010			2015			2030			2045			
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high	
H2 Series HEV PHEV30	UDDS	CD	Wh/mile	325.2	325.2	291.9	269.0	314.4	277.7	242.3	306.6	250.9	208.4	294.8	242.0	200.5	
			Distance	30.9	30.9	30.9	30.9	30.9	31.0	30.9	30.9	30.9	31.4	30.9	30.9	30.7	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	33.6	33.6	42.3	49.9	38.5	48.0	59.1	42.9	57.1	73.6	47.2	61.0	79.7	
			MPGGE Adjusted	25.6	25.6	31.7	36.9	29.1	35.6	42.9	32.1	41.6	52.0	35.1	44.2	55.8	
		CD+CS	Wh/mile	209.3	209.3	187.9	173.2	202.3	178.8	156.5	197.3	162.0	135.0	189.7	156.2	129.9	
			MPGGE Unadjusted	71.6	71.6	90.1	106.1	81.9	102.2	125.7	91.2	121.4	156.5	100.4	129.9	169.5	
			MPGGE Adjusted	50.8	50.8	61.9	70.9	57.1	68.8	81.3	62.5	79.1	96.3	67.8	83.4	102.2	
	HWFET	CD	Wh/mile	350.8	350.8	314.1	289.6	341.0	300.1	263.6	335.7	272.0	231.5	320.9	262.6	219.7	
			Distance	28.7	28.7	28.7	28.7	28.5	28.7	28.3	28.1	28.5	27.5	28.4	28.3	27.8	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
		CS	MPGGE Unadjusted	31.2	31.2	38.9	45.5	35.5	43.9	53.0	39.1	51.2	63.5	42.9	55.4	69.6	
			MPGGE Adjusted	22.1	22.1	27.5	32.1	25.1	31.0	37.3	27.6	36.1	44.6	30.3	39.0	48.8	
		CD+CS	Wh/mile	180.8	180.8	161.9	149.3	175.8	154.7	135.8	173.0	140.2	119.3	165.4	135.3	113.2	
			MPGGE Unadjusted	52.9	52.9	66.0	77.1	60.2	74.4	89.8	66.3	86.7	107.7	72.8	93.9	117.9	
			MPGGE Adjusted	37.3	37.3	46.3	54.1	42.4	52.2	62.7	46.6	60.6	75.0	51.0	65.6	81.9	
	Combined	CD	MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
		CS	MPGGE Unadjusted	32.5	32.5	40.7	47.8	37.1	46.1	56.2	41.1	54.2	68.7	45.2	58.4	74.8	
			MPGGE Adjusted	23.9	23.9	29.7	34.6	27.2	33.4	40.2	29.9	38.9	48.4	32.8	41.7	52.4	
		CD+CS	Wh/mile	196.4	196.4	176.2	162.4	190.3	167.9	147.2	186.3	152.2	127.9	178.8	146.8	122.4	
			MPGGE Unadjusted	61.8	61.8	77.4	90.8	70.5	87.5	106.5	78.0	102.9	130.0	85.8	110.8	141.6	
	MPGGE Adjusted	43.7	43.7	53.8	62.2	49.4	60.2	71.7	54.2	69.6	85.4	59.1	74.3	92.0			

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				Small SUV												
				2010	2010			2015			2030			2045		
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
H2 Series HEV PHEV40	UDDS	CD	Wh/mile	332.3	332.3	298.0	274.3	320.9	283.3	247.8	312.8	256.3	210.7	300.6	246.0	202.5
			Distance	40.6	40.6	40.6	40.8	40.6	40.8	40.6	40.6	40.4	40.8	40.9	40.5	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	32.9	32.9	41.4	48.7	37.7	47.1	58.0	41.9	56.3	72.8	45.7	60.2	79.5
			MPGGE Adjusted	25.1	25.1	31.1	36.0	28.5	35.0	42.2	31.4	41.1	51.6	34.1	43.7	55.6
		CD+CS	Wh/mile	243.9	243.9	218.8	201.5	235.5	208.0	183.1	229.6	189.4	155.8	220.7	181.5	149.8
			MPGGE Unadjusted	82.1	82.1	103.6	121.6	94.2	117.7	145.1	104.8	140.6	182.1	114.3	150.6	198.6
			MPGGE Adjusted	57.2	57.2	69.5	79.2	64.3	77.1	90.9	70.2	88.8	107.8	75.3	93.5	114.7
		HWFET	CD	Wh/mile	354.1	354.1	316.7	291.7	343.9	302.3	265.0	338.4	273.5	233.1	323.4	263.6
	Distance			37.8	37.8	37.9	38.0	37.7	37.9	37.7	37.3	37.8	36.5	37.6	37.9	37.2
	MPGGE Unadjusted			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	MPGGE Adjusted			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	CS		MPGGE Unadjusted	30.8	30.8	38.3	44.9	35.0	43.4	52.3	38.6	50.7	63.1	42.3	54.9	69.2
			MPGGE Adjusted	21.8	21.8	27.1	31.7	24.8	30.6	36.9	27.3	35.8	44.3	29.9	38.6	48.6
	CD+CS		Wh/mile	239.1	239.1	213.9	197.0	232.2	204.2	179.0	228.5	184.7	157.5	218.4	178.0	149.4
			MPGGE Unadjusted	66.9	66.9	83.2	97.6	76.1	94.3	113.7	83.9	110.3	137.1	91.9	119.3	150.4
			MPGGE Adjusted	47.0	47.0	58.3	68.1	53.3	65.8	79.1	58.7	76.7	94.9	64.2	82.8	103.8
	Combined		CD	MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		MPGGE Adjusted		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	31.9	31.9	40.0	46.9	36.4	45.3	55.3	40.4	53.6	68.1	44.1	57.7	74.5
			MPGGE Adjusted	23.5	23.5	29.2	33.9	26.7	32.9	39.6	29.4	38.5	48.1	32.0	41.2	52.2
		CD+CS	Wh/mile	241.7	241.7	216.6	199.5	234.0	206.3	181.3	229.1	187.3	156.6	219.6	179.9	149.6
			MPGGE Unadjusted	74.5	74.5	93.3	109.5	85.1	105.9	129.1	94.2	125.1	158.7	103.0	134.7	173.6
			MPGGE Adjusted	52.1	52.1	64.0	73.8	58.8	71.6	85.2	64.5	82.9	101.5	69.9	88.4	109.5

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				Small SUV												
				2010	2010			2015			2030			2045		
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
E85 Split HEV PHEV10	UDDS	CD	Wh/mile	222.3	222.3	202.5	188.7	215.7	194.5	183.8	209.6	184.9	165.9	208.9	182.7	159.4
			Distance	12.2	12.2	12.3	12.2	12.6	12.2	11.9	12.6	12.2	11.4	12.3	11.7	11.2
			MPGGE Unadjusted	725.3	725.3	783.5	870.7	704.0	837.4	1383.9	672.9	982.6	2775.3	779.7	1475.4	3069.4
			MPGGE Adjusted	235.9	235.9	243.1	252.7	233.1	249.2	291.1	228.8	263.4	334.4	242.6	295.9	339.2
		CS	MPGGE Unadjusted	45.0	45.0	49.7	54.0	46.6	52.4	67.5	47.8	57.8	80.1	49.5	60.0	83.6
			MPGGE Adjusted	33.6	33.6	36.7	39.6	34.6	38.5	48.3	35.5	42.1	56.0	36.6	43.5	58.1
		CD+CS	Wh/mile	46.3	46.3	42.2	39.3	44.9	40.5	38.3	43.7	38.5	34.6	43.5	38.1	33.2
			MPGGE Unadjusted	53.5	53.5	59.1	64.2	55.3	62.3	80.6	56.8	68.8	95.9	58.8	71.6	100.1
			MPGGE Adjusted	39.3	39.3	42.9	46.2	40.5	45.0	56.3	41.4	49.1	65.2	42.8	50.9	67.6
	HWFET	CD	Wh/mile	210.2	210.2	236.0	223.7	200.4	227.1	209.8	198.0	215.5	182.7	194.0	207.8	174.3
			Distance	12.3	12.3	10.7	10.0	12.5	10.6	9.8	12.5	10.0	8.5	12.5	9.7	8.6
			MPGGE Unadjusted	122.6	122.6	251.3	302.6	119.0	264.2	387.5	120.8	333.8	396.8	129.4	338.1	433.4
			MPGGE Adjusted	85.1	85.1	169.8	202.2	82.7	178.0	254.5	83.9	221.7	260.1	89.7	224.3	282.1
		CS	MPGGE Unadjusted	39.9	39.9	44.1	47.9	41.1	46.3	59.3	41.9	50.8	68.0	43.8	52.9	71.8
			MPGGE Adjusted	28.2	28.2	31.2	33.8	29.0	32.6	41.7	29.6	35.8	47.8	30.9	37.3	50.3
		CD+CS	Wh/mile	61.8	61.8	69.4	65.8	58.9	66.8	61.7	58.2	63.4	53.7	57.1	61.1	51.3
			MPGGE Unadjusted	47.6	47.6	55.0	60.1	48.7	57.7	74.4	49.7	63.7	84.9	52.0	66.4	89.7
			MPGGE Adjusted	33.6	33.6	38.7	42.2	34.4	40.6	52.2	35.0	44.8	59.4	36.7	46.6	62.7
	Combined	CD	MPGGE Unadjusted	225.8	225.8	401.2	472.0	219.2	423.7	641.5	220.2	524.1	750.6	239.1	586.9	821.3
			MPGGE Adjusted	131.2	131.2	203.5	227.2	128.2	211.2	273.4	128.7	242.8	296.3	137.3	258.7	310.8
		CS	MPGGE Unadjusted	42.5	42.5	47.0	51.1	43.9	49.5	63.5	45.0	54.4	74.2	46.7	56.6	77.8
			MPGGE Adjusted	30.9	30.9	34.0	36.7	31.9	35.6	45.1	32.6	39.0	52.0	33.8	40.5	54.3
		CD+CS	Wh/mile	53.3	53.3	54.4	51.2	51.2	52.4	48.8	50.2	49.7	43.2	49.6	48.4	41.3
			MPGGE Unadjusted	50.7	50.7	57.2	62.3	52.2	60.2	77.7	53.4	66.4	90.6	55.6	69.2	95.2
			MPGGE Adjusted	36.5	36.5	40.9	44.3	37.5	42.9	54.4	38.3	47.1	62.5	39.8	48.9	65.3

Argonne National Laboratory Report – Light-Duty Vehicle Fuel Consumption Displacement Potential Up to 2045

				Small SUV												
				2010	2010			2015			2030			2045		
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
E85 Split HEV PHEV20	UDDS	CD	Wh/mile	224.7	224.7	206.1	191.0	228.2	198.3	177.6	224.1	182.8	163.4	215.3	178.0	157.1
			Distance	24.0	24.0	24.1	24.0	23.8	24.0	23.7	23.8	23.8	22.3	24.0	23.5	22.1
			MPGGE Unadjusted	694.1	694.1	792.7	847.2	937.2	852.0	1132.9	963.5	958.8	2719.9	861.6	1018.7	2976.3
			MPGGE Adjusted	231.7	231.7	244.2	250.3	259.3	250.8	275.4	261.7	261.3	333.4	251.8	266.5	337.7
		CS	MPGGE Unadjusted	44.6	44.6	49.4	53.6	46.2	52.0	67.5	47.5	57.8	79.9	49.2	60.0	83.4
			MPGGE Adjusted	33.3	33.3	36.5	39.4	34.4	38.3	48.3	35.3	42.1	55.9	36.4	43.5	58.0
		CD+CS	Wh/mile	118.2	118.2	108.5	100.6	119.7	104.4	93.9	117.6	96.6	62.2	113.2	94.1	59.8
			MPGGE Unadjusted	75.8	75.8	84.1	91.4	79.4	88.7	115.3	81.7	98.7	116.0	84.0	102.5	121.1
			MPGGE Adjusted	53.4	53.4	58.4	62.6	55.6	61.1	75.9	56.9	66.8	76.2	58.4	68.9	78.9
	HWFET	CD	Wh/mile	210.7	210.7	237.7	228.4	255.5	228.8	212.1	251.2	217.8	224.8	246.4	219.7	212.9
			Distance	24.7	24.7	20.2	20.1	21.2	20.2	19.5	21.2	19.7	16.0	20.2	19.3	16.1
			MPGGE Unadjusted	119.5	119.5	250.8	324.8	218.5	263.8	409.4	216.7	349.0	N/A	251.0	468.5	N/A
			MPGGE Adjusted	83.0	83.0	169.4	216.1	148.6	177.7	267.7	147.4	231.1	N/A	169.5	302.8	N/A
		CS	MPGGE Unadjusted	39.6	39.6	43.8	47.4	40.8	45.9	58.8	41.7	50.4	67.8	43.5	52.5	71.6
			MPGGE Adjusted	28.0	28.0	30.9	33.5	28.8	32.4	41.4	29.4	35.6	47.6	30.7	37.0	50.2
		CD+CS	Wh/mile	108.3	108.3	69.9	67.2	128.0	67.3	62.4	125.9	64.1	66.1	72.5	64.6	62.6
			MPGGE Unadjusted	54.2	54.2	54.6	59.7	60.3	57.3	74.0	61.4	63.5	89.2	54.3	66.8	94.1
			MPGGE Adjusted	38.2	38.2	38.4	42.0	42.4	40.3	51.9	43.2	44.6	62.3	38.2	46.9	65.7
	Combined	CD	MPGGE Unadjusted	219.4	219.4	401.9	491.5	377.9	425.3	631.0	377.7	536.8	4782.9	411.3	666.5	5217.6
			MPGGE Adjusted	128.3	128.3	203.7	233.6	194.2	211.6	271.9	194.0	246.8	556.2	206.7	281.7	562.8
		CS	MPGGE Unadjusted	42.2	42.2	46.7	50.7	43.6	49.1	63.3	44.7	54.2	74.0	46.4	56.4	77.6
			MPGGE Adjusted	30.7	30.7	33.7	36.5	31.6	35.4	44.9	32.4	38.9	51.8	33.6	40.3	54.2
		CD+CS	Wh/mile	113.7	113.7	91.2	85.6	123.4	87.7	79.7	121.3	81.9	64.0	94.9	80.8	61.1
			MPGGE Unadjusted	64.3	64.3	67.6	73.7	69.5	71.1	92.2	71.1	79.0	102.2	67.4	82.6	107.3
			MPGGE Adjusted	45.3	45.3	47.3	51.3	48.8	49.6	62.8	49.8	54.6	69.3	47.2	56.9	72.4

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				Small SUV													
				2010	2010			2015			2030			2045			
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high	
E85 Series HEV PHEV30	UDDS	CD	Wh/mile	320.9	320.9	292.5	271.8	312.1	280.4	246.5	305.3	253.8	213.3	298.2	245.6	204.4	
			Distance	30.9	30.9	30.9	30.9	30.9	30.9	30.9	30.9	30.9	31.4	30.9	30.9	30.7	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	32.3	32.3	36.7	41.0	34.0	39.3	53.9	35.8	45.9	64.7	37.3	47.2	68.6	
			MPGGE Adjusted	24.7	24.7	27.8	30.8	25.9	29.6	39.5	27.2	34.2	46.5	28.2	35.1	48.9	
		CD+CS	Wh/mile	206.5	206.5	188.3	175.0	200.9	180.5	159.2	196.4	163.9	138.3	191.9	158.5	132.5	
			MPGGE Unadjusted	68.8	68.8	78.2	87.3	72.3	83.5	114.6	76.1	97.6	137.7	79.3	100.5	145.9	
			MPGGE Adjusted	49.1	49.1	54.8	60.3	51.3	58.0	75.5	53.6	66.2	87.3	55.5	67.8	91.3	
	HWFET	CD	Wh/mile	347.9	347.9	314.5	291.4	339.6	301.8	266.3	334.8	273.9	234.5	323.2	264.9	222.1	
			Distance	28.5	28.5	28.8	29.2	28.4	28.7	28.6	28.1	28.7	27.7	28.5	28.5	28.2	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
		CS	MPGGE Unadjusted	29.9	29.9	33.8	37.3	31.1	36.0	47.5	32.3	40.7	56.1	34.0	42.7	59.4	
			MPGGE Adjusted	21.2	21.2	23.9	26.4	22.0	25.5	33.5	22.9	28.8	39.5	24.1	30.2	41.8	
		CD+CS	Wh/mile	179.3	179.3	162.1	150.2	175.0	155.6	137.2	172.5	141.2	120.9	166.5	136.5	114.5	
			MPGGE Unadjusted	50.7	50.7	57.3	63.2	52.7	61.0	80.6	54.8	69.0	95.1	57.7	72.4	100.7	
			MPGGE Adjusted	35.7	35.7	40.3	44.4	37.1	42.9	56.4	38.6	48.4	66.4	40.6	50.8	70.2	
	Combined	CD	MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
		CS	MPGGE Unadjusted	31.2	31.2	35.3	39.3	32.6	37.7	50.8	34.1	43.4	60.6	35.7	45.1	64.1	
			MPGGE Adjusted	23.0	23.0	25.9	28.6	24.0	27.6	36.6	25.1	31.5	43.1	26.2	32.7	45.4	
		CD+CS	Wh/mile	194.3	194.3	176.5	163.8	189.2	169.3	149.3	185.7	153.7	130.4	180.5	148.6	124.4	
			MPGGE Unadjusted	59.3	59.3	67.1	74.5	61.9	71.6	96.3	64.8	82.2	114.6	67.8	85.5	121.3	
			MPGGE Adjusted	42.0	42.0	47.2	51.9	43.8	50.1	65.5	45.6	56.8	76.5	47.6	58.9	80.4	

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				Small SUV													
				2010	2010			2015			2030			2045			
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high	
E85 Series HEV PHEV40	UDDS	CD	Wh/mile	327.9	327.9	298.8	277.0	318.7	285.9	251.8	311.6	259.5	215.5	304.0	249.9	206.5	
			Distance	40.5	40.5	40.8	40.8	40.6	40.8	40.5	40.5	40.6	40.4	40.8	40.5	40.6	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	31.5	31.5	35.8	40.2	33.2	38.4	53.0	34.9	45.1	64.4	36.4	46.5	68.4	
			MPGGE Adjusted	24.1	24.1	27.2	30.3	25.3	29.0	38.9	26.5	33.6	46.3	27.6	34.6	48.8	
		CD+CS	Wh/mile	240.6	240.6	219.4	203.5	233.9	210.0	186.1	228.7	191.8	159.4	223.2	184.4	152.7	
			MPGGE Unadjusted	78.7	78.7	89.6	100.6	83.0	96.0	132.5	87.1	112.8	160.9	91.1	116.1	170.9	
			MPGGE Adjusted	55.1	55.1	61.6	67.8	57.8	65.3	84.8	60.2	74.5	98.3	62.5	76.3	102.9	
	HWFET	CD	Wh/mile	351.2	351.2	317.2	293.5	342.5	304.1	267.6	337.6	275.5	235.9	325.6	266.0	223.4	
			Distance	37.7	37.7	38.0	38.2	37.6	38.0	37.9	37.2	37.9	36.8	37.8	38.0	37.5	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
		CS	MPGGE Unadjusted	29.5	29.5	33.2	36.8	30.6	35.5	47.0	31.9	40.3	55.7	33.5	42.3	59.0	
			MPGGE Adjusted	20.9	20.9	23.5	26.0	21.7	25.1	33.2	22.6	28.4	39.2	23.7	29.9	41.5	
		CD+CS	Wh/mile	237.1	237.1	214.2	198.2	231.2	205.3	180.7	227.9	186.0	159.5	219.9	179.7	151.0	
			MPGGE Unadjusted	64.1	64.1	72.2	80.0	66.6	77.3	102.3	69.3	87.5	121.0	72.8	91.9	128.2	
			MPGGE Adjusted	45.0	45.0	50.6	56.0	46.8	54.2	71.3	48.7	61.2	84.0	51.1	64.2	88.9	
	Combined	CD	MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
		CS	MPGGE Unadjusted	30.5	30.5	34.6	38.6	32.0	37.1	50.1	33.4	42.8	60.1	35.1	44.5	63.8	
			MPGGE Adjusted	22.5	22.5	25.4	28.2	23.6	27.1	36.1	24.6	31.1	42.8	25.7	32.3	45.2	
		CD+CS	Wh/mile	239.0	239.0	217.0	201.1	232.7	207.9	183.7	228.3	189.2	159.4	221.7	182.3	151.9	
			MPGGE Unadjusted	71.3	71.3	80.8	90.1	74.7	86.6	116.9	78.1	99.8	140.1	81.9	103.8	148.6	
			MPGGE Adjusted	50.1	50.1	56.1	62.0	52.2	59.8	78.1	54.4	67.9	91.3	56.8	70.3	96.1	

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				Small SUV													
				2010	2010			2015			2030			2045			
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high	
FC HEV PHEV10	UDDS	CD	Wh/mile	321.4	321.4	274.2	244.0	297.6	252.1	222.6	281.3	229.5	188.2	267.1	219.4	179.9	
			Distance	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	51.2	51.2	62.0	73.2	60.3	71.0	82.4	63.8	79.9	98.1	67.1	82.7	102.7	
			MPGGE Adjusted	37.7	37.7	44.8	51.8	43.7	50.4	57.4	46.0	55.9	66.5	48.1	57.6	69.1	
		CD+CS	Wh/mile	67.0	67.0	57.1	50.8	62.0	52.5	46.4	58.6	47.8	39.2	55.6	45.7	37.5	
			MPGGE Unadjusted	61.6	61.6	74.7	88.2	72.6	85.5	99.2	76.9	96.3	118.2	80.9	99.6	123.8	
			MPGGE Adjusted	44.6	44.6	52.7	60.8	51.5	59.2	67.1	54.1	65.4	77.4	56.5	67.3	80.3	
	HWFET	CD	Wh/mile	330.1	330.1	282.4	252.1	306.7	260.6	227.2	290.7	234.4	192.9	276.5	227.2	184.4	
			Distance	9.0	9.0	9.2	9.2	9.3	9.2	8.7	10.0	8.7	8.4	10.0	8.7	8.4	
			MPGGE Unadjusted	462.0	462.0	484.5	524.9	456.4	492.0	524.4	413.7	515.0	497.3	441.0	541.9	557.3	
			MPGGE Adjusted	299.0	299.0	312.2	335.5	295.6	316.5	335.2	270.3	329.8	319.6	286.6	345.2	353.9	
		CS	MPGGE Unadjusted	50.2	50.2	59.8	69.8	57.8	67.3	76.5	59.9	74.4	87.3	63.1	77.0	92.4	
			MPGGE Adjusted	35.4	35.4	42.1	49.0	40.7	47.2	53.6	42.1	52.1	61.1	44.3	54.0	64.6	
		CD+CS	Wh/mile	97.1	97.1	83.0	74.1	90.2	76.7	66.8	85.5	68.9	56.7	81.3	66.8	54.2	
			MPGGE Unadjusted	63.9	63.9	75.7	88.1	73.2	84.8	96.2	75.4	93.6	108.9	79.4	97.0	115.6	
			MPGGE Adjusted	44.9	44.9	53.1	61.6	51.3	59.4	67.2	52.8	65.4	75.8	55.6	67.7	80.3	
	Combined	CD	MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	50.7	50.7	61.0	71.6	59.2	69.2	79.6	62.0	77.3	93.0	65.2	80.0	97.8	
			MPGGE Adjusted	36.6	36.6	43.5	50.5	42.3	48.9	55.6	44.2	54.1	63.9	46.3	55.9	67.0	
		CD+CS	Wh/mile	80.5	80.5	68.8	61.3	74.7	63.4	55.6	70.7	57.3	47.1	67.2	55.2	45.0	
			MPGGE Unadjusted	62.6	62.6	75.1	88.1	72.9	85.2	97.9	76.2	95.0	113.8	80.2	98.4	119.9	
			MPGGE Adjusted	44.7	44.7	52.9	61.1	51.4	59.3	67.1	53.5	65.4	76.7	56.1	67.5	80.3	

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				Small SUV													
				2010	2010			2015			2030			2045			
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high	
FC HEV PHEV20	UDDS	CD	Wh/mile	327.5	327.5	278.5	247.0	302.5	255.6	222.8	285.5	229.8	186.3	270.9	221.1	177.9	
			Distance	20.2	20.2	20.2	20.2	20.2	20.2	20.5	20.1	20.6	20.3	20.2	20.6	20.3	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	50.2	50.2	61.0	72.3	59.2	70.0	81.4	62.8	79.0	97.3	66.2	82.0	102.0	
			MPGGE Adjusted	37.1	37.1	44.2	51.3	43.0	49.8	56.8	45.3	55.4	66.0	47.5	57.1	68.6	
		CD+CS	Wh/mile	124.4	124.4	105.8	93.8	114.9	97.1	84.8	108.5	87.5	70.9	102.9	84.1	67.7	
			MPGGE Unadjusted	73.8	73.8	89.7	106.3	87.1	102.9	119.7	92.4	116.2	143.0	97.4	120.6	150.0	
			MPGGE Adjusted	52.2	52.2	61.7	71.0	60.2	69.1	78.2	63.2	76.3	89.9	66.0	78.6	93.2	
		HWFET	CD	Wh/mile	373.6	373.6	324.3	292.1	354.0	303.6	266.5	342.0	274.5	235.1	324.5	264.5	221.9
	Distance			17.4	17.4	18.2	16.9	17.1	16.9	16.8	16.7	16.9	16.0	16.7	16.8	16.1	
	MPGGE Unadjusted			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	MPGGE Adjusted			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	CS		MPGGE Unadjusted	49.6	49.6	59.2	69.2	57.3	66.7	76.0	59.3	73.8	87.0	62.5	76.6	92.1	
			MPGGE Adjusted	35.0	35.0	41.7	48.6	40.3	46.8	53.3	41.8	51.8	60.8	44.0	53.7	64.3	
	CD+CS		Wh/mile	109.9	109.9	95.4	85.9	104.1	89.3	78.4	100.6	80.7	69.1	95.5	77.8	65.3	
			MPGGE Unadjusted	65.3	65.3	77.9	91.1	75.3	87.8	100.0	78.1	97.1	114.4	82.3	100.8	121.1	
			MPGGE Adjusted	45.9	45.9	54.6	63.6	52.8	61.4	69.8	54.7	67.8	79.6	57.6	70.3	84.1	
	Combined	CD	MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
		CS	MPGGE Unadjusted	49.9	49.9	60.2	70.9	58.3	68.4	78.9	61.2	76.6	92.3	64.5	79.5	97.3	
			MPGGE Adjusted	36.1	36.1	43.0	50.0	41.8	48.4	55.2	43.6	53.7	63.6	45.8	55.5	66.6	
		CD+CS	Wh/mile	117.9	117.9	101.1	90.3	110.1	93.6	81.9	104.9	84.4	70.1	99.6	81.3	66.6	
			MPGGE Unadjusted	69.7	69.7	84.0	98.8	81.4	95.5	110.0	85.4	106.8	128.6	89.9	110.8	135.4	
			MPGGE Adjusted	49.1	49.1	58.3	67.5	56.6	65.4	74.2	59.1	72.2	84.9	62.0	74.6	88.9	

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				Small SUV													
				2010	2010			2015			2030			2045			
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high	
FC HEV PHEV30	UDDS	CD	Wh/mile	318.7	318.7	272.4	246.4	296.1	253.2	217.9	283.1	225.0	186.2	267.8	216.0	178.0	
			Distance	33.5	33.5	33.5	33.4	32.0	33.4	32.1	32.1	32.0	30.8	32.1	32.0	30.8	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	49.4	49.4	59.8	69.6	58.1	67.8	79.4	60.8	76.9	94.3	64.2	80.1	98.7	
			MPGGE Adjusted	36.6	36.6	43.4	49.6	42.3	48.4	55.6	44.0	54.1	64.3	46.2	56.0	66.8	
		CD+CS	Wh/mile	203.1	203.1	173.6	157.0	188.6	161.3	139.2	180.3	143.8	119.6	170.7	138.0	114.3	
			MPGGE Unadjusted	105.2	105.2	127.3	148.0	123.5	144.1	168.9	129.3	163.7	200.7	136.6	170.5	210.1	
			MPGGE Adjusted	70.4	70.4	82.1	92.3	80.2	90.5	102.0	83.1	99.6	115.5	86.8	102.7	119.3	
		HWFET	CD	Wh/mile	359.1	359.1	312.2	284.8	340.5	294.2	258.1	331.2	265.9	227.6	313.6	255.8	215.2
	Distance			27.2	27.2	26.7	26.5	26.5	26.4	26.0	26.2	26.0	25.4	26.2	25.9	25.6	
	MPGGE Unadjusted			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	MPGGE Adjusted			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	CS		MPGGE Unadjusted	48.4	48.4	57.7	66.6	55.7	64.5	73.9	57.3	71.7	84.4	60.5	74.5	89.3	
			MPGGE Adjusted	34.1	34.1	40.6	46.8	39.2	45.3	51.8	40.3	50.3	59.0	42.6	52.3	62.4	
	CD+CS		Wh/mile	184.8	184.8	160.7	146.6	175.2	151.4	132.9	170.4	136.9	117.3	161.4	131.7	110.9	
			MPGGE Unadjusted	82.1	82.1	97.8	112.9	94.4	109.3	125.2	97.2	121.5	143.0	102.6	126.3	151.3	
			MPGGE Adjusted	57.5	57.5	68.3	78.5	65.9	76.1	86.9	67.8	84.4	98.8	71.5	87.6	104.4	
	Combined		CD	MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		MPGGE Adjusted		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	49.0	49.0	58.9	68.2	57.0	66.2	76.8	59.2	74.5	89.6	62.5	77.5	94.2	
			MPGGE Adjusted	35.4	35.4	42.1	48.3	40.8	47.0	53.8	42.3	52.3	61.8	44.5	54.3	64.8	
		CD+CS	Wh/mile	194.8	194.8	167.7	152.3	182.6	156.8	136.4	175.9	140.7	118.6	166.5	135.2	112.8	
			MPGGE Unadjusted	93.4	93.4	112.1	129.8	108.5	126.1	146.0	112.5	141.6	169.8	118.8	147.3	178.8	
			MPGGE Adjusted	63.9	63.9	75.2	85.5	73.1	83.4	94.6	75.4	92.1	107.3	79.2	95.3	112.1	

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				Small_SUV													
				2010	2010			2015			2030			2045			
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high	
FC HEV PHEV40	UDDS	CD	Wh/mile	325.3	325.3	277.1	250.3	301.5	257.1	220.1	287.8	227.3	189.1	272.1	217.7	180.6	
			Distance	41.9	41.9	41.1	41.1	41.1	41.1	40.9	41.1	41.0	40.6	41.1	41.0	40.6	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
		CS	MPGGE Unadjusted	48.4	48.4	58.8	68.5	57.0	66.7	78.4	59.8	76.0	93.3	63.1	79.3	97.8	
			MPGGE Adjusted	35.9	35.9	42.7	48.9	41.6	47.8	55.0	43.4	53.5	63.7	45.5	55.5	66.3	
		CD+CS	Wh/mile	235.2	235.2	200.3	180.9	217.9	185.9	159.7	208.1	164.9	138.6	196.7	157.9	132.3	
			MPGGE Unadjusted	121.0	121.0	147.0	171.1	142.5	166.7	196.0	149.4	189.9	233.2	157.9	198.2	244.5	
			MPGGE Adjusted	78.9	78.9	91.8	103.0	89.6	101.0	113.6	93.0	111.1	128.1	96.9	114.5	132.2	
			HWFET	CD	Wh/mile	364.1	364.1	315.8	287.7	344.6	297.2	260.2	334.8	268.1	228.4	316.8	257.5
	Distance	36.7			36.7	38.7	35.5	38.7	35.3	35.5	39.0	37.6	34.4	35.2	36.0	34.6	
	MPGGE Unadjusted	N/A			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	MPGGE Adjusted	N/A			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	CS	MPGGE Unadjusted		47.8	47.8	57.1	65.9	55.0	63.9	73.3	56.7	71.2	83.9	59.9	74.1	88.8	
		MPGGE Adjusted		33.7	33.7	40.2	46.3	38.8	44.9	51.4	39.9	49.9	58.7	42.1	52.0	62.1	
	CD+CS	Wh/mile		245.3	245.3	212.7	193.9	232.2	200.2	175.5	225.6	180.9	154.2	213.5	173.6	145.6	
		MPGGE Unadjusted		103.8	103.8	124.1	143.4	119.7	138.8	159.4	123.3	154.7	182.3	130.2	161.0	193.1	
		MPGGE Adjusted		72.4	72.4	86.1	99.1	83.1	96.0	109.8	85.6	106.6	125.0	90.2	110.9	132.0	
		MPGGE Adjusted		72.4	72.4	86.1	99.1	83.1	96.0	109.8	85.6	106.6	125.0	90.2	110.9	132.0	
	Combined	CD	MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
		CS	MPGGE Unadjusted	48.1	48.1	58.0	67.3	56.1	65.4	76.0	58.4	73.7	88.8	61.6	76.9	93.5	
			MPGGE Adjusted	34.9	34.9	41.5	47.7	40.3	46.4	53.3	41.7	51.8	61.4	43.9	53.9	64.3	
		CD+CS	Wh/mile	239.7	239.7	205.9	186.7	224.3	192.3	166.8	215.9	172.1	145.6	204.2	165.0	138.3	
			MPGGE Unadjusted	112.6	112.6	135.7	157.4	131.2	152.8	177.7	136.4	172.3	207.2	144.1	179.6	218.3	
			MPGGE Adjusted	75.8	75.8	89.2	101.2	86.6	98.7	111.8	89.5	109.0	126.7	93.8	112.8	132.1	
			MPGGE Adjusted	75.8	75.8	89.2	101.2	86.6	98.7	111.8	89.5	109.0	126.7	93.8	112.8	132.1	
	EV	UDDS	EV Only	Wh/mile	321.9	321.9	288.7	264.9	312.3	274.9	228.3	303.8	235.4	189.1	293.7	224.4	179.9
		HWFET	EV Only	Wh/mile	355.4	355.4	318.7	293.2	346.3	304.7	262.3	339.7	269.9	226.2	326.1	258.2	213.6

Fuel consumption

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			Small_SUV												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Conv	Unadjusted	UDDS	9.3	9.3	8.4	8.0	8.9	8.1	6.4	8.7	7.6	5.3	8.6	7.5	5.2
		HWFET	7.0	7.0	6.4	6.0	6.6	6.2	4.7	6.7	5.7	4.0	6.4	5.5	3.8
		Combined	8.3	8.3	7.5	7.1	7.9	7.3	5.7	7.8	6.7	4.7	7.6	6.6	4.6
	Adjusted	UDDS	12.0	12.0	11.0	10.4	11.5	10.6	8.5	11.2	9.9	7.2	11.1	9.8	6.9
		HWFET	9.9	9.9	9.1	8.5	9.4	8.7	6.7	9.5	8.0	5.7	9.1	7.9	5.4
		Combined	11.1	11.1	10.1	9.6	10.5	9.7	7.7	10.4	9.1	6.5	10.2	8.9	6.3
CI Conv	Unadjusted	UDDS	7.9	7.9	7.5	6.9	7.7	7.0	6.3	7.5	6.4	5.4	7.2	6.2	5.2
		HWFET	6.2	6.2	5.8	5.3	6.0	5.4	4.7	5.9	4.9	4.1	5.5	4.7	3.9
		Combined	7.1	7.1	6.7	6.1	7.0	6.3	5.6	6.8	5.7	4.8	6.5	5.5	4.6
	Adjusted	UDDS	10.2	10.2	9.7	9.0	10.1	9.2	8.3	9.8	8.5	7.2	9.5	8.2	7.0
		HWFET	8.7	8.7	8.2	7.4	8.5	7.6	6.7	8.3	6.9	5.8	7.8	6.6	5.6
		Combined	9.5	9.5	9.0	8.3	9.4	8.5	7.6	9.1	7.8	6.6	8.7	7.5	6.4
H2 Conv	Unadjusted	UDDS	10.9	10.9	9.1	7.9	9.6	8.1	7.1	8.8	7.3	6.0	8.2	6.9	5.6
		HWFET	7.5	7.5	6.2	5.4	6.6	5.5	4.8	6.1	5.0	4.2	5.6	4.7	3.8
		Combined	9.4	9.4	7.8	6.8	8.3	6.9	6.1	7.6	6.2	5.2	7.1	5.9	4.8
	Adjusted	UDDS	13.9	13.9	11.7	10.3	12.4	10.5	9.3	11.4	9.5	8.0	10.7	9.1	7.4
		HWFET	10.6	10.6	8.7	7.6	9.4	7.8	6.9	8.6	7.0	5.9	8.0	6.6	5.4
		Combined	12.4	12.4	10.4	9.1	11.0	9.3	8.2	10.1	8.4	7.0	9.5	8.0	6.5
E85 Conv	Unadjusted	UDDS	9.7	9.7	9.4	8.9	9.9	9.1	6.7	9.7	8.4	5.7	9.5	8.3	5.5
		HWFET	7.6	7.6	7.3	6.9	7.8	7.1	5.3	7.7	6.7	4.6	7.6	6.6	4.4
		Combined	8.8	8.8	8.5	8.0	9.0	8.2	6.1	8.8	7.7	5.2	8.6	7.5	5.0
	Adjusted	UDDS	12.5	12.5	12.1	11.5	12.8	11.7	8.8	12.5	10.9	7.6	12.2	10.8	7.4
		HWFET	10.8	10.8	10.4	9.8	11.0	10.0	7.6	10.8	9.5	6.6	10.8	9.4	6.3
		Combined	11.7	11.7	11.3	10.7	12.0	11.0	8.2	11.7	10.3	7.1	11.6	10.1	6.9
SI Split HEV	Unadjusted	UDDS	5.2	5.2	4.7	4.3	5.0	4.4	3.5	4.8	3.9	2.8	4.6	3.8	2.7
		HWFET	6.0	6.0	5.4	5.0	5.8	5.2	4.2	5.6	4.7	3.4	5.4	4.4	3.3
		Combined	5.5	5.5	5.0	4.6	5.4	4.7	3.8	5.2	4.3	3.1	5.0	4.1	3.0
	Adjusted	UDDS	7.0	7.0	6.4	5.9	6.8	6.0	4.9	6.5	5.4	4.1	6.3	5.2	3.9
		HWFET	8.5	8.5	7.7	7.0	8.2	7.3	5.9	8.0	6.6	4.9	7.7	6.3	4.6
		Combined	7.6	7.6	6.9	6.4	7.4	6.6	5.4	7.1	5.9	4.4	6.9	5.7	4.2
SI Split HEV PHEV10	Unadjusted	UDDS	4.1	4.1	3.7	3.4	4.0	3.5	2.9	3.9	3.2	2.3	3.8	3.1	2.2
		HWFET	4.6	4.6	4.2	3.7	4.5	3.8	3.1	4.4	3.5	2.6	4.2	3.3	2.5
		Combined	4.3	4.3	3.9	3.5	4.2	3.7	3.0	4.1	3.3	2.5	4.0	3.2	2.3
	Adjusted	UDDS	5.6	5.6	5.2	4.8	5.5	4.9	4.1	5.4	4.5	3.4	5.2	4.4	3.3
		HWFET	6.6	6.6	5.9	5.2	6.4	5.4	4.4	6.2	4.9	3.7	6.0	4.7	3.5
		Combined	6.1	6.1	5.5	5.0	5.9	5.2	4.3	5.8	4.7	3.6	5.6	4.5	3.4

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			Small_SUV												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Split HEV PHEV20	Unadjusted	UDDS	2.9	2.9	2.6	2.4	2.8	2.5	2.0	2.7	2.2	1.9	2.6	2.2	1.8
		HWFET	4.1	4.1	4.0	3.7	3.6	3.8	3.1	3.7	3.5	2.5	3.5	3.3	2.4
		Combined	3.4	3.4	3.2	3.0	3.2	3.1	2.5	3.1	2.8	2.2	3.0	2.7	2.1
	Adjusted	UDDS	4.2	4.2	3.8	3.6	4.0	3.7	3.1	3.9	3.3	2.9	3.8	3.2	2.9
		HWFET	5.8	5.8	5.7	5.2	5.2	5.5	4.4	5.2	4.9	3.6	5.0	4.7	3.4
		Combined	4.9	4.9	4.7	4.3	4.5	4.5	3.7	4.5	4.1	3.2	4.4	3.9	3.1
SI Series HEV PHEV30	Unadjusted	UDDS	3.2	3.2	2.8	2.5	3.0	2.6	2.0	2.9	2.3	1.6	2.8	2.2	1.5
		HWFET	4.4	4.4	3.9	3.5	4.2	3.6	2.9	4.0	3.2	2.3	3.8	3.1	2.2
		Combined	3.7	3.7	3.3	3.0	3.6	3.1	2.4	3.4	2.7	1.9	3.3	2.6	1.8
	Adjusted	UDDS	4.5	4.5	4.1	3.7	4.3	3.8	3.1	4.2	3.4	2.6	4.0	3.3	2.5
		HWFET	6.2	6.2	5.5	5.0	6.0	5.2	4.1	5.7	4.6	3.4	5.5	4.4	3.2
		Combined	5.3	5.3	4.7	4.3	5.1	4.4	3.6	4.9	3.9	2.9	4.7	3.8	2.8
SI Series HEV PHEV40	Unadjusted	UDDS	2.8	2.8	2.5	2.2	2.7	2.3	1.8	2.5	2.0	1.4	2.4	1.9	1.3
		HWFET	3.4	3.4	3.1	2.8	3.3	2.9	2.3	3.2	2.5	1.8	3.0	2.4	1.7
		Combined	3.1	3.1	2.7	2.5	3.0	2.6	2.0	2.8	2.2	1.6	2.7	2.1	1.5
	Adjusted	UDDS	4.0	4.0	3.6	3.3	3.9	3.4	2.8	3.7	3.0	2.3	3.6	2.9	2.2
		HWFET	4.9	4.9	4.4	4.0	4.7	4.1	3.3	4.5	3.6	2.7	4.3	3.5	2.5
		Combined	4.4	4.4	3.9	3.6	4.3	3.7	3.0	4.1	3.3	2.5	3.9	3.2	2.3
CI Split HEV	Unadjusted	UDDS	4.7	4.7	4.3	3.9	4.6	4.0	3.5	4.4	3.5	2.8	4.2	3.4	2.7
		HWFET	5.6	5.6	5.2	4.7	5.5	4.8	4.2	5.3	4.3	3.5	5.0	4.1	3.4
		Combined	5.1	5.1	4.7	4.3	5.0	4.4	3.8	4.8	3.9	3.2	4.6	3.7	3.0
	Adjusted	UDDS	6.4	6.4	5.9	5.4	6.3	5.5	4.8	5.9	5.0	4.1	5.7	4.7	4.0
		HWFET	8.0	8.0	7.3	6.6	7.9	6.8	5.9	7.5	6.1	5.0	7.1	5.8	4.8
		Combined	7.1	7.1	6.5	6.0	7.0	6.1	5.3	6.6	5.5	4.5	6.4	5.2	4.3
CI Split HEV PHEV10	Unadjusted	UDDS	4.0	4.0	3.7	3.3	3.9	3.4	3.0	3.8	3.1	2.5	3.6	2.9	2.4
		HWFET	4.6	4.6	4.0	3.6	4.3	3.7	3.2	4.3	3.3	2.8	4.1	3.2	2.6
		Combined	4.3	4.3	3.8	3.4	4.1	3.6	3.1	4.0	3.2	2.6	3.8	3.0	2.5
	Adjusted	UDDS	5.6	5.6	5.1	4.7	5.4	4.8	4.3	5.2	4.4	3.6	5.0	4.2	3.5
		HWFET	6.5	6.5	5.7	5.1	6.1	5.3	4.6	6.1	4.7	4.0	5.8	4.5	3.8
		Combined	6.0	6.0	5.3	4.9	5.7	5.0	4.4	5.6	4.5	3.8	5.4	4.3	3.6
CI Split HEV PHEV20	Unadjusted	UDDS	2.8	2.8	2.6	2.3	2.7	2.4	2.1	2.6	2.1	1.7	2.5	2.0	1.6
		HWFET	3.8	3.8	4.0	3.0	4.3	3.7	2.7	4.2	2.8	2.7	3.2	3.2	2.5
		Combined	3.3	3.3	3.2	2.6	3.4	3.0	2.4	3.3	2.4	2.1	2.8	2.6	2.0
	Adjusted	UDDS	4.1	4.1	3.7	3.5	4.0	3.5	3.2	3.8	3.2	2.7	3.7	3.1	2.6
		HWFET	5.5	5.5	5.6	4.2	6.1	5.3	3.8	5.9	3.9	3.8	4.6	4.5	3.6
		Combined	4.7	4.7	4.6	3.8	4.9	4.3	3.5	4.8	3.5	3.2	4.1	3.7	3.0

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			Small_SUV												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
CI Series HEV PHEV30	Unadjusted	UDDS	3.1	3.1	2.8	2.5	3.0	2.6	2.1	2.8	2.2	1.7	2.7	2.1	1.6
		HWFET	4.3	4.3	3.8	3.4	4.2	3.5	3.0	3.9	3.1	2.5	3.7	2.9	2.3
		Combined	3.6	3.6	3.2	2.9	3.5	3.0	2.5	3.3	2.6	2.1	3.1	2.5	2.0
	Adjusted	UDDS	4.4	4.4	4.0	3.6	4.3	3.7	3.2	4.1	3.3	2.7	3.9	3.2	2.6
		HWFET	6.1	6.1	5.4	4.9	5.9	5.0	4.3	5.6	4.4	3.6	5.3	4.2	3.4
		Combined	5.2	5.2	4.6	4.2	5.0	4.3	3.7	4.7	3.8	3.1	4.5	3.6	2.9
CI Series HEV PHEV40	Unadjusted	UDDS	2.7	2.7	2.4	2.2	2.6	2.2	1.8	2.5	1.9	1.5	2.3	1.8	1.4
		HWFET	3.4	3.4	3.0	2.7	3.3	2.8	2.4	3.1	2.4	2.0	2.9	2.3	1.8
		Combined	3.0	3.0	2.7	2.4	2.9	2.5	2.1	2.7	2.1	1.7	2.6	2.0	1.6
	Adjusted	UDDS	3.9	3.9	3.6	3.2	3.8	3.3	2.8	3.6	2.9	2.4	3.5	2.8	2.3
		HWFET	4.8	4.8	4.3	3.9	4.7	4.0	3.4	4.4	3.5	2.8	4.2	3.3	2.7
		Combined	4.3	4.3	3.9	3.5	4.2	3.6	3.1	4.0	3.2	2.6	3.8	3.0	2.5
H2 Split HEV	Unadjusted	UDDS	5.3	5.3	4.3	3.7	4.7	3.8	3.2	4.3	3.3	2.6	3.9	3.1	2.4
		HWFET	6.2	6.2	5.1	4.4	5.5	4.5	3.8	5.0	4.0	3.2	4.6	3.7	2.9
		Combined	5.7	5.7	4.7	4.0	5.1	4.1	3.5	4.6	3.6	2.9	4.2	3.3	2.7
	Adjusted	UDDS	7.1	7.1	5.9	5.2	6.4	5.3	4.5	5.8	4.7	3.8	5.4	4.4	3.6
		HWFET	8.8	8.8	7.2	6.2	7.8	6.4	5.4	7.2	5.6	4.6	6.6	5.2	4.2
		Combined	7.9	7.9	6.5	5.7	7.0	5.8	4.9	6.4	5.1	4.2	5.9	4.8	3.9
H2 Split HEV PHEV10	Unadjusted	UDDS	4.3	4.3	3.5	3.0	3.8	3.1	2.6	3.4	2.7	2.1	3.2	2.5	2.0
		HWFET	4.8	4.8	3.8	3.2	4.2	3.3	2.9	3.9	2.9	2.4	3.6	2.7	2.2
		Combined	4.5	4.5	3.6	3.1	4.0	3.2	2.7	3.6	2.8	2.3	3.4	2.6	2.1
	Adjusted	UDDS	5.8	5.8	4.9	4.3	5.2	4.4	3.8	4.8	3.9	3.2	4.5	3.7	3.0
		HWFET	6.7	6.7	5.3	4.6	6.0	4.8	4.1	5.5	4.2	3.5	5.1	3.9	3.2
		Combined	6.2	6.2	5.1	4.4	5.6	4.6	3.9	5.1	4.0	3.4	4.8	3.8	3.1
H2 Split HEV PHEV20	Unadjusted	UDDS	3.0	3.0	2.4	2.1	2.6	2.2	1.8	2.4	1.9	1.8	2.2	1.7	1.6
		HWFET	4.2	4.2	3.1	2.7	3.5	2.8	2.8	3.2	2.9	2.3	3.0	2.7	2.1
		Combined	3.5	3.5	2.7	2.4	3.0	2.5	2.3	2.8	2.4	2.0	2.6	2.2	1.8
	Adjusted	UDDS	4.3	4.3	3.6	3.2	3.8	3.3	2.8	3.5	2.9	2.8	3.3	2.7	2.6
		HWFET	5.9	5.9	4.4	3.9	5.0	4.0	4.0	4.6	4.2	3.3	4.3	3.9	3.0
		Combined	5.0	5.0	4.0	3.5	4.3	3.6	3.4	4.0	3.5	3.0	3.7	3.2	2.8
H2 Series HEV PHEV30	Unadjusted	UDDS	3.3	3.3	2.6	2.2	2.9	2.3	1.9	2.6	1.9	1.5	2.3	1.8	1.4
		HWFET	4.4	4.4	3.6	3.0	3.9	3.2	2.6	3.5	2.7	2.2	3.2	2.5	2.0
		Combined	3.8	3.8	3.0	2.6	3.3	2.7	2.2	3.0	2.3	1.8	2.7	2.1	1.7
	Adjusted	UDDS	4.6	4.6	3.8	3.3	4.1	3.4	2.9	3.8	3.0	2.4	3.5	2.8	2.3
		HWFET	6.3	6.3	5.1	4.4	5.6	4.5	3.7	5.0	3.9	3.1	4.6	3.6	2.9
		Combined	5.4	5.4	4.4	3.8	4.8	3.9	3.3	4.3	3.4	2.8	4.0	3.2	2.6

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			Small_SUV												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
H2 Series HEV PHEV40	Unadjusted	UDDS	2.9	2.9	2.3	1.9	2.5	2.0	1.6	2.2	1.7	1.3	2.1	1.6	1.2
		HWFET	3.5	3.5	2.8	2.4	3.1	2.5	2.1	2.8	2.1	1.7	2.6	2.0	1.6
		Combined	3.2	3.2	2.5	2.1	2.8	2.2	1.8	2.5	1.9	1.5	2.3	1.7	1.4
	Adjusted	UDDS	4.1	4.1	3.4	3.0	3.7	3.0	2.6	3.4	2.6	2.2	3.1	2.5	2.1
		HWFET	5.0	5.0	4.0	3.5	4.4	3.6	3.0	4.0	3.1	2.5	3.7	2.8	2.3
		Combined	4.5	4.5	3.7	3.2	4.0	3.3	2.8	3.6	2.8	2.3	3.4	2.7	2.1
E85 Split HEV	Unadjusted	UDDS	5.6	5.6	5.1	4.6	5.4	4.7	3.6	5.2	4.2	3.0	5.0	4.1	2.9
		HWFET	6.5	6.5	5.8	5.4	6.3	5.6	4.3	6.1	5.0	3.6	5.8	4.8	3.5
		Combined	6.0	6.0	5.4	5.0	5.8	5.1	3.9	5.6	4.5	3.3	5.4	4.4	3.1
	Adjusted	UDDS	7.5	7.5	6.8	6.3	7.2	6.4	5.0	7.0	5.8	4.3	6.7	5.6	4.1
		HWFET	9.2	9.2	8.3	7.6	8.9	7.9	6.1	8.6	7.0	5.2	8.2	6.8	4.9
		Combined	8.2	8.2	7.5	6.9	8.0	7.1	5.5	7.7	6.3	4.7	7.4	6.1	4.5
E85 Split HEV PHEV10	Unadjusted	UDDS	4.4	4.4	4.0	3.7	4.3	3.8	2.9	4.1	3.4	2.5	4.0	3.3	2.3
		HWFET	4.9	4.9	4.3	3.9	4.8	4.1	3.2	4.7	3.7	2.8	4.5	3.5	2.6
		Combined	4.6	4.6	4.1	3.8	4.5	3.9	3.0	4.4	3.5	2.6	4.2	3.4	2.5
	Adjusted	UDDS	6.0	6.0	5.5	5.1	5.8	5.2	4.2	5.7	4.8	3.6	5.5	4.6	3.5
		HWFET	7.0	7.0	6.1	5.6	6.8	5.8	4.5	6.7	5.2	4.0	6.4	5.0	3.8
		Combined	6.4	6.4	5.7	5.3	6.3	5.5	4.3	6.1	5.0	3.8	5.9	4.8	3.6
E85 Split HEV PHEV20	Unadjusted	UDDS	3.1	3.1	2.8	2.6	3.0	2.7	2.0	2.9	2.4	2.0	2.8	2.3	1.9
		HWFET	4.3	4.3	4.3	3.9	3.9	4.1	3.2	3.8	3.7	2.6	4.3	3.5	2.5
		Combined	3.7	3.7	3.5	3.2	3.4	3.3	2.6	3.3	3.0	2.3	3.5	2.8	2.2
	Adjusted	UDDS	4.4	4.4	4.0	3.8	4.2	3.9	3.1	4.1	3.5	3.1	4.0	3.4	3.0
		HWFET	6.2	6.2	6.1	5.6	5.5	5.8	4.5	5.4	5.3	3.8	6.2	5.0	3.6
		Combined	5.2	5.2	5.0	4.6	4.8	4.7	3.7	4.7	4.3	3.4	5.0	4.1	3.2
E85 Series HEV PHEV30	Unadjusted	UDDS	3.4	3.4	3.0	2.7	3.3	2.8	2.1	3.1	2.4	1.7	3.0	2.3	1.6
		HWFET	4.6	4.6	4.1	3.7	4.5	3.9	2.9	4.3	3.4	2.5	4.1	3.2	2.3
		Combined	4.0	4.0	3.5	3.2	3.8	3.3	2.4	3.6	2.9	2.1	3.5	2.7	1.9
	Adjusted	UDDS	4.8	4.8	4.3	3.9	4.6	4.1	3.1	4.4	3.6	2.7	4.2	3.5	2.6
		HWFET	6.6	6.6	5.8	5.3	6.3	5.5	4.2	6.1	4.9	3.5	5.8	4.6	3.4
		Combined	5.6	5.6	5.0	4.5	5.4	4.7	3.6	5.2	4.1	3.1	4.9	4.0	2.9
E85 Series HEV PHEV40	Unadjusted	UDDS	3.0	3.0	2.6	2.3	2.8	2.4	1.8	2.7	2.1	1.5	2.6	2.0	1.4
		HWFET	3.7	3.7	3.3	2.9	3.5	3.0	2.3	3.4	2.7	1.9	3.2	2.6	1.8
		Combined	3.3	3.3	2.9	2.6	3.1	2.7	2.0	3.0	2.4	1.7	2.9	2.3	1.6
	Adjusted	UDDS	4.3	4.3	3.8	3.5	4.1	3.6	2.8	3.9	3.2	2.4	3.8	3.1	2.3
		HWFET	5.2	5.2	4.6	4.2	5.0	4.3	3.3	4.8	3.8	2.8	4.6	3.7	2.6
		Combined	4.7	4.7	4.2	3.8	4.5	3.9	3.0	4.3	3.5	2.6	4.1	3.3	2.4

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			Small_SUV												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
FC HEV	Unadjusted	UDDS	4.8	4.8	3.9	3.3	4.0	3.3	2.9	3.7	2.9	2.4	3.5	2.8	2.3
		HWFET	4.8	4.8	4.0	3.4	4.1	3.5	3.1	3.9	3.2	2.7	3.7	3.1	2.5
		Combined	4.8	4.8	4.0	3.3	4.1	3.4	3.0	3.8	3.0	2.5	3.6	2.9	2.4
	Adjusted	UDDS	6.5	6.5	5.4	4.6	5.5	4.7	4.1	5.2	4.2	3.5	4.9	4.1	3.4
		HWFET	6.8	6.8	5.7	4.9	5.9	5.0	4.4	5.6	4.5	3.8	5.3	4.4	3.6
		Combined	6.7	6.7	5.5	4.7	5.7	4.8	4.2	5.4	4.4	3.7	5.1	4.2	3.5
FC PHEV10	Unadjusted	UDDS	3.8	3.8	3.1	2.7	3.2	2.8	2.4	3.1	2.4	2.0	2.9	2.4	1.9
		HWFET	3.7	3.7	3.1	2.7	3.2	2.8	2.4	3.1	2.5	2.2	3.0	2.4	2.0
		Combined	3.8	3.8	3.1	2.7	3.2	2.8	2.4	3.1	2.5	2.1	2.9	2.4	2.0
	Adjusted	UDDS	5.3	5.3	4.5	3.9	4.6	4.0	3.5	4.4	3.6	3.0	4.2	3.5	2.9
		HWFET	5.2	5.2	4.4	3.8	4.6	4.0	3.5	4.5	3.6	3.1	4.2	3.5	2.9
		Combined	5.3	5.3	4.4	3.8	4.6	4.0	3.5	4.4	3.6	3.1	4.2	3.5	2.9
FC PHEV20	Unadjusted	UDDS	3.2	3.2	2.6	2.2	2.7	2.3	2.0	2.5	2.0	1.6	2.4	2.0	1.6
		HWFET	3.6	3.6	3.0	2.6	3.1	2.7	2.4	3.0	2.4	2.1	2.9	2.3	1.9
		Combined	3.4	3.4	2.8	2.4	2.9	2.5	2.1	2.8	2.2	1.8	2.6	2.1	1.7
	Adjusted	UDDS	4.5	4.5	3.8	3.3	3.9	3.4	3.0	3.7	3.1	2.6	3.6	3.0	2.5
		HWFET	5.1	5.1	4.3	3.7	4.5	3.8	3.4	4.3	3.5	3.0	4.1	3.3	2.8
		Combined	4.8	4.8	4.0	3.5	4.2	3.6	3.2	4.0	3.3	2.8	3.8	3.2	2.6
FC PHEV30	Unadjusted	UDDS	2.2	2.2	1.8	1.6	1.9	1.6	1.4	1.8	1.4	1.2	1.7	1.4	1.1
		HWFET	2.9	2.9	2.4	2.1	2.5	2.2	1.9	2.4	1.9	1.6	2.3	1.9	1.6
		Combined	2.5	2.5	2.1	1.8	2.2	1.9	1.6	2.1	1.7	1.4	2.0	1.6	1.3
	Adjusted	UDDS	3.3	3.3	2.9	2.5	2.9	2.6	2.3	2.8	2.4	2.0	2.7	2.3	2.0
		HWFET	4.1	4.1	3.4	3.0	3.6	3.1	2.7	3.5	2.8	2.4	3.3	2.7	2.3
		Combined	3.7	3.7	3.1	2.7	3.2	2.8	2.5	3.1	2.6	2.2	3.0	2.5	2.1
FC PHEV40	Unadjusted	UDDS	1.9	1.9	1.6	1.4	1.7	1.4	1.2	1.6	1.2	1.0	1.5	1.2	1.0
		HWFET	2.3	2.3	1.9	1.6	2.0	1.7	1.5	1.9	1.5	1.3	1.8	1.5	1.2
		Combined	2.1	2.1	1.7	1.5	1.8	1.5	1.3	1.7	1.4	1.1	1.6	1.3	1.1
	Adjusted	UDDS	3.0	3.0	2.6	2.3	2.6	2.3	2.1	2.5	2.1	1.8	2.4	2.1	1.8
		HWFET	3.3	3.3	2.7	2.4	2.8	2.5	2.1	2.7	2.2	1.9	2.6	2.1	1.8
		Combined	3.1	3.1	2.6	2.3	2.7	2.4	2.1	2.6	2.2	1.9	2.5	2.1	1.8

Fuel Consumption Improvement versus the Conventional 2010 Reference

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			Small_SUV												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Conv	Unadjusted	UDDS	0.0%	0.0%	-9.5%	-14.4%	-5.1%	-12.9%	-31.4%	-7.0%	-18.3%	-42.7%	-7.8%	-19.4%	-44.8%
		HWFET	0.0%	0.0%	-8.1%	-13.6%	-5.1%	-11.6%	-32.1%	-4.1%	-19.0%	-42.7%	-8.1%	-20.6%	-45.2%
		Combined	0.0%	0.0%	-9.0%	-14.1%	-5.1%	-12.4%	-31.7%	-5.9%	-18.6%	-42.7%	-7.9%	-19.8%	-45.0%
	Adjusted	UDDS	0.0%	0.0%	-9.0%	-13.7%	-4.8%	-12.2%	-29.8%	-6.6%	-17.4%	-40.6%	-7.4%	-18.4%	-42.6%
		HWFET	0.0%	0.0%	-8.1%	-13.5%	-5.0%	-11.5%	-31.9%	-4.1%	-18.8%	-42.4%	-8.0%	-20.4%	-44.9%
		Combined	0.0%	0.0%	-8.6%	-13.6%	-4.9%	-11.9%	-30.6%	-5.6%	-18.0%	-41.3%	-7.7%	-19.2%	-43.5%
CI Conv	Unadjusted	UDDS	-15.8%	-15.8%	-20.1%	-26.5%	-17.3%	-25.1%	-32.6%	-19.9%	-31.0%	-42.2%	-22.6%	-33.2%	-44.0%
		HWFET	-11.9%	-11.9%	-17.4%	-24.8%	-13.7%	-22.8%	-32.2%	-15.8%	-30.4%	-41.3%	-20.9%	-33.2%	-43.8%
		Combined	-14.3%	-14.3%	-19.1%	-25.9%	-15.9%	-24.2%	-32.5%	-18.4%	-30.7%	-41.9%	-21.9%	-33.2%	-43.9%
	Adjusted	UDDS	-15.0%	-15.0%	-19.1%	-25.2%	-16.4%	-23.8%	-31.0%	-18.9%	-29.4%	-40.1%	-21.5%	-31.5%	-41.8%
		HWFET	-11.8%	-11.8%	-17.3%	-24.6%	-13.6%	-22.6%	-32.0%	-15.7%	-30.1%	-41.0%	-20.7%	-33.0%	-43.5%
		Combined	-13.7%	-13.7%	-18.3%	-25.0%	-15.3%	-23.3%	-31.4%	-17.6%	-29.7%	-40.5%	-21.2%	-32.1%	-42.5%
H2 Conv	Unadjusted	UDDS	16.6%	16.6%	-2.8%	-14.9%	2.9%	-13.1%	-24.1%	-5.8%	-21.9%	-35.5%	-12.0%	-26.1%	-40.2%
		HWFET	7.5%	7.5%	-11.6%	-22.9%	-5.1%	-20.9%	-30.8%	-13.4%	-28.8%	-40.5%	-19.3%	-33.0%	-45.3%
		Combined	13.2%	13.2%	-6.1%	-17.9%	-0.1%	-16.1%	-26.6%	-8.7%	-24.5%	-37.4%	-14.7%	-28.7%	-42.1%
	Adjusted	UDDS	15.8%	15.8%	-2.7%	-14.2%	2.8%	-12.5%	-22.9%	-5.5%	-20.8%	-33.7%	-11.4%	-24.8%	-38.2%
		HWFET	7.5%	7.5%	-11.5%	-22.7%	-5.1%	-20.8%	-30.6%	-13.3%	-28.6%	-40.2%	-19.1%	-32.8%	-45.0%
		Combined	12.5%	12.5%	-6.2%	-17.6%	-0.4%	-15.8%	-26.0%	-8.6%	-24.0%	-36.4%	-14.5%	-28.0%	-40.9%
E85 Conv	Unadjusted	UDDS	4.0%	4.0%	0.7%	-4.9%	6.4%	-2.7%	-28.4%	3.9%	-9.9%	-38.6%	1.4%	-11.1%	-40.7%
		HWFET	9.1%	9.1%	5.2%	-1.2%	11.3%	1.4%	-23.5%	9.9%	-3.5%	-33.8%	9.4%	-5.3%	-36.7%
		Combined	5.9%	5.9%	2.4%	-3.5%	8.2%	-1.1%	-26.5%	6.2%	-7.5%	-36.8%	4.4%	-8.9%	-39.2%
	Adjusted	UDDS	3.8%	3.8%	0.6%	-4.6%	6.0%	-2.6%	-27.0%	3.7%	-9.4%	-36.7%	1.3%	-10.5%	-38.7%
		HWFET	9.0%	9.0%	5.2%	-1.2%	11.2%	1.4%	-23.3%	9.9%	-3.5%	-33.6%	9.3%	-5.3%	-36.4%
		Combined	5.9%	5.9%	2.5%	-3.2%	8.1%	-1.0%	-25.5%	6.2%	-7.0%	-35.4%	4.5%	-8.4%	-37.7%
SI Split HEV	Unadjusted	UDDS	-44.4%	-44.4%	-49.6%	-53.8%	-46.2%	-53.0%	-62.2%	-48.8%	-57.9%	-69.7%	-50.2%	-59.7%	-71.0%
		HWFET	-14.3%	-14.3%	-22.5%	-28.9%	-16.7%	-26.2%	-40.1%	-19.3%	-33.4%	-50.9%	-22.5%	-36.4%	-53.4%
		Combined	-33.0%	-33.0%	-39.4%	-44.3%	-35.0%	-42.8%	-53.8%	-37.6%	-48.6%	-62.6%	-39.7%	-50.8%	-64.3%
	Adjusted	UDDS	-42.2%	-42.2%	-47.2%	-51.1%	-43.9%	-50.3%	-59.1%	-46.3%	-55.0%	-66.3%	-47.7%	-56.7%	-67.5%
		HWFET	-14.2%	-14.2%	-22.4%	-28.7%	-16.6%	-26.0%	-39.8%	-19.2%	-33.2%	-50.5%	-22.3%	-36.1%	-53.0%
		Combined	-31.0%	-31.0%	-37.2%	-42.1%	-32.9%	-40.6%	-51.3%	-35.4%	-46.2%	-59.9%	-37.5%	-48.4%	-61.7%
SI Split HEV PHEV10	Unadjusted	UDDS	-55.9%	-55.9%	-60.1%	-63.2%	-57.4%	-62.1%	-69.1%	-58.5%	-65.7%	-75.2%	-59.8%	-66.9%	-76.2%
		HWFET	-33.9%	-33.9%	-40.2%	-47.6%	-35.9%	-45.5%	-55.3%	-37.1%	-50.6%	-62.6%	-39.6%	-52.5%	-64.6%
		Combined	-47.5%	-47.5%	-52.6%	-57.3%	-49.2%	-55.8%	-63.9%	-50.4%	-59.9%	-70.4%	-52.1%	-61.4%	-71.8%
	Adjusted	UDDS	-53.1%	-53.1%	-57.1%	-60.1%	-54.5%	-59.0%	-65.7%	-55.6%	-62.4%	-71.4%	-56.8%	-63.6%	-72.4%
		HWFET	-33.6%	-33.6%	-39.9%	-47.2%	-35.6%	-45.1%	-54.9%	-36.8%	-50.2%	-62.1%	-39.3%	-52.1%	-64.1%
		Combined	-45.3%	-45.3%	-50.2%	-54.9%	-46.9%	-53.4%	-61.4%	-48.0%	-57.5%	-67.7%	-49.8%	-59.0%	-69.1%

Argonne National Laboratory Report – Light-Duty Vehicle Fuel Consumption Displacement Potential Up to 2045

			Small_SUV												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Split HEV PHEV20	Unadjusted	UDDS	-68.9%	-68.9%	-72.1%	-74.2%	-70.3%	-73.3%	-78.4%	-71.0%	-76.0%	-79.5%	-71.8%	-76.9%	-80.3%
		HWFET	-42.0%	-42.0%	-42.4%	-47.5%	-47.8%	-45.1%	-55.6%	-47.5%	-50.4%	-64.4%	-49.7%	-52.8%	-66.2%
		Combined	-58.7%	-58.7%	-60.8%	-64.0%	-61.7%	-62.6%	-69.7%	-62.1%	-66.3%	-73.7%	-63.4%	-67.8%	-75.0%
	Adjusted	UDDS	-65.5%	-65.5%	-68.5%	-70.5%	-66.8%	-69.7%	-74.5%	-67.5%	-72.2%	-75.5%	-68.3%	-73.1%	-76.3%
		HWFET	-41.7%	-41.7%	-42.1%	-47.1%	-47.5%	-44.8%	-55.1%	-47.2%	-50.1%	-63.9%	-49.3%	-52.4%	-65.7%
		Combined	-55.9%	-55.9%	-57.9%	-61.1%	-59.0%	-59.7%	-66.7%	-59.3%	-63.3%	-70.8%	-60.7%	-64.8%	-72.1%
SI Series HEV PHEV30	Unadjusted	UDDS	-65.8%	-65.8%	-69.8%	-72.9%	-67.3%	-71.9%	-78.2%	-68.9%	-75.8%	-82.9%	-70.1%	-76.8%	-83.7%
		HWFET	-37.6%	-37.6%	-44.8%	-49.9%	-39.9%	-48.1%	-58.6%	-42.2%	-54.1%	-66.4%	-45.1%	-56.2%	-68.3%
		Combined	-55.1%	-55.1%	-60.3%	-64.2%	-56.9%	-62.9%	-70.7%	-58.8%	-67.5%	-76.6%	-60.6%	-69.0%	-77.9%
	Adjusted	UDDS	-62.5%	-62.5%	-66.3%	-69.3%	-64.0%	-68.4%	-74.3%	-65.5%	-72.0%	-78.8%	-66.7%	-73.0%	-79.5%
		HWFET	-37.4%	-37.4%	-44.4%	-49.5%	-39.6%	-47.8%	-58.2%	-41.9%	-53.7%	-65.9%	-44.7%	-55.8%	-67.8%
		Combined	-52.4%	-52.4%	-57.5%	-61.3%	-54.2%	-60.1%	-67.8%	-56.0%	-64.6%	-73.6%	-57.9%	-66.1%	-74.8%
SI Series HEV PHEV40	Unadjusted	UDDS	-70.1%	-70.1%	-73.6%	-76.4%	-71.5%	-75.3%	-81.1%	-72.9%	-78.9%	-85.1%	-74.0%	-79.6%	-86.0%
		HWFET	-50.7%	-50.7%	-56.3%	-60.4%	-52.5%	-59.0%	-67.3%	-54.4%	-63.8%	-73.6%	-56.5%	-65.5%	-75.1%
		Combined	-62.7%	-62.7%	-67.0%	-70.3%	-64.3%	-69.1%	-75.9%	-65.9%	-73.2%	-80.8%	-67.4%	-74.2%	-81.8%
	Adjusted	UDDS	-66.6%	-66.6%	-69.9%	-72.6%	-67.9%	-71.6%	-77.1%	-69.3%	-75.0%	-80.9%	-70.3%	-75.6%	-81.7%
		HWFET	-50.3%	-50.3%	-55.9%	-60.0%	-52.1%	-58.6%	-66.8%	-54.0%	-63.3%	-73.1%	-56.1%	-65.0%	-74.6%
		Combined	-60.1%	-60.1%	-64.3%	-67.5%	-61.6%	-66.3%	-73.0%	-63.1%	-70.3%	-77.8%	-64.6%	-71.4%	-78.8%
CI Split HEV	Unadjusted	UDDS	-49.4%	-49.4%	-53.6%	-57.9%	-50.4%	-57.2%	-63.0%	-53.4%	-62.0%	-69.5%	-55.2%	-63.8%	-70.6%
		HWFET	-19.2%	-19.2%	-26.2%	-33.3%	-20.6%	-31.3%	-40.1%	-24.3%	-38.5%	-49.3%	-28.0%	-41.5%	-51.7%
		Combined	-37.9%	-37.9%	-43.2%	-48.6%	-39.1%	-47.4%	-54.3%	-42.3%	-53.1%	-61.8%	-44.9%	-55.4%	-63.4%
	Adjusted	UDDS	-46.9%	-46.9%	-50.9%	-55.0%	-47.9%	-54.4%	-59.9%	-50.7%	-58.9%	-66.0%	-52.5%	-60.6%	-67.1%
		HWFET	-19.1%	-19.1%	-26.0%	-33.0%	-20.4%	-31.1%	-39.8%	-24.1%	-38.2%	-48.9%	-27.8%	-41.2%	-51.3%
		Combined	-35.7%	-35.7%	-40.9%	-46.2%	-36.9%	-45.0%	-51.8%	-40.0%	-50.6%	-59.1%	-42.6%	-52.8%	-60.8%
CI Split HEV PHEV10	Unadjusted	UDDS	-56.7%	-56.7%	-60.7%	-64.3%	-57.8%	-63.2%	-68.1%	-59.8%	-67.2%	-73.6%	-61.5%	-68.7%	-74.7%
		HWFET	-34.7%	-34.7%	-43.1%	-48.7%	-38.5%	-46.7%	-53.6%	-38.6%	-52.4%	-60.3%	-41.4%	-54.7%	-62.4%
		Combined	-48.3%	-48.3%	-54.0%	-58.4%	-50.5%	-56.9%	-62.6%	-51.7%	-61.6%	-68.5%	-53.9%	-63.4%	-70.0%
	Adjusted	UDDS	-53.8%	-53.8%	-57.6%	-61.1%	-55.0%	-60.1%	-64.7%	-56.8%	-63.9%	-69.9%	-58.5%	-65.3%	-71.0%
		HWFET	-34.5%	-34.5%	-42.7%	-48.4%	-38.2%	-46.4%	-53.2%	-38.3%	-52.1%	-59.8%	-41.1%	-54.3%	-62.0%
		Combined	-46.1%	-46.1%	-51.7%	-56.0%	-48.2%	-54.6%	-60.1%	-49.4%	-59.1%	-65.9%	-51.5%	-60.9%	-67.4%
CI Split HEV PHEV20	Unadjusted	UDDS	-69.7%	-69.7%	-72.5%	-75.1%	-70.6%	-74.3%	-77.6%	-72.0%	-77.0%	-81.9%	-73.2%	-78.1%	-82.6%
		HWFET	-45.0%	-45.0%	-43.2%	-57.6%	-38.4%	-46.9%	-61.6%	-40.5%	-60.6%	-62.1%	-53.9%	-54.6%	-64.0%
		Combined	-60.3%	-60.3%	-61.4%	-68.4%	-58.4%	-63.9%	-71.5%	-60.0%	-70.8%	-74.4%	-65.9%	-69.2%	-75.6%
	Adjusted	UDDS	-66.2%	-66.2%	-68.9%	-71.3%	-67.1%	-70.6%	-73.8%	-68.4%	-73.2%	-77.8%	-69.5%	-74.2%	-78.5%
		HWFET	-44.7%	-44.7%	-42.8%	-57.2%	-38.2%	-46.6%	-61.2%	-40.2%	-60.1%	-61.6%	-53.5%	-54.2%	-63.5%
		Combined	-57.6%	-57.6%	-58.4%	-65.6%	-55.5%	-60.9%	-68.7%	-57.1%	-67.9%	-71.3%	-63.1%	-66.2%	-72.5%

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			Small_SUV												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
CI Series HEV PHEV30	Unadjusted	UDDS	-66.5%	-66.5%	-70.3%	-73.4%	-67.6%	-72.6%	-77.3%	-69.7%	-76.5%	-81.8%	-71.2%	-77.5%	-82.5%
		HWFET	-38.9%	-38.9%	-45.3%	-51.2%	-40.4%	-49.5%	-57.1%	-43.9%	-55.9%	-64.4%	-47.0%	-58.3%	-66.4%
		Combined	-56.0%	-56.0%	-60.8%	-65.0%	-57.3%	-63.8%	-69.6%	-59.9%	-68.7%	-75.2%	-62.0%	-70.2%	-76.4%
	Adjusted	UDDS	-63.2%	-63.2%	-66.8%	-69.8%	-64.2%	-69.0%	-73.4%	-66.3%	-72.7%	-77.7%	-67.6%	-73.7%	-78.4%
		HWFET	-38.6%	-38.6%	-45.0%	-50.8%	-40.1%	-49.1%	-56.7%	-43.6%	-55.5%	-64.0%	-46.7%	-57.9%	-66.0%
		Combined	-53.3%	-53.3%	-58.1%	-62.2%	-54.5%	-61.0%	-66.7%	-57.1%	-65.8%	-72.2%	-59.2%	-67.3%	-73.4%
CI Series HEV PHEV40	Unadjusted	UDDS	-70.8%	-70.8%	-73.9%	-76.9%	-71.7%	-76.2%	-80.3%	-73.6%	-79.6%	-84.4%	-75.0%	-80.7%	-85.0%
		HWFET	-51.6%	-51.6%	-56.7%	-61.4%	-52.9%	-59.9%	-66.2%	-55.6%	-65.3%	-72.0%	-58.2%	-67.2%	-73.6%
		Combined	-63.5%	-63.5%	-67.3%	-71.0%	-64.6%	-70.0%	-75.0%	-66.8%	-74.2%	-79.7%	-68.6%	-75.6%	-80.7%
	Adjusted	UDDS	-67.2%	-67.2%	-70.2%	-73.1%	-68.1%	-72.4%	-76.3%	-70.0%	-75.7%	-80.2%	-71.2%	-76.7%	-80.8%
		HWFET	-51.3%	-51.3%	-56.3%	-61.0%	-52.5%	-59.5%	-65.7%	-55.2%	-64.8%	-71.5%	-57.7%	-66.7%	-73.1%
		Combined	-60.8%	-60.8%	-64.6%	-68.2%	-61.9%	-67.2%	-72.1%	-64.1%	-71.3%	-76.7%	-65.8%	-72.7%	-77.7%
H2 Split HEV	Unadjusted	UDDS	-43.0%	-43.0%	-53.4%	-59.9%	-49.7%	-59.1%	-65.7%	-54.4%	-64.6%	-72.0%	-58.0%	-67.0%	-74.1%
		HWFET	-10.9%	-10.9%	-27.1%	-37.2%	-20.9%	-35.2%	-45.2%	-27.7%	-43.4%	-54.0%	-33.7%	-47.5%	-57.9%
		Combined	-30.8%	-30.8%	-43.4%	-51.2%	-38.8%	-50.1%	-57.9%	-44.3%	-56.6%	-65.2%	-48.8%	-59.6%	-67.9%
	Adjusted	UDDS	-40.9%	-40.9%	-50.8%	-56.9%	-47.2%	-56.2%	-62.5%	-51.7%	-61.4%	-68.4%	-55.1%	-63.7%	-70.4%
		HWFET	-10.8%	-10.8%	-26.9%	-36.9%	-20.8%	-35.0%	-44.9%	-27.5%	-43.1%	-53.6%	-33.4%	-47.1%	-57.4%
		Combined	-28.8%	-28.8%	-41.2%	-48.9%	-36.6%	-47.7%	-55.4%	-42.0%	-54.0%	-62.5%	-46.4%	-57.0%	-65.2%
H2 Split HEV PHEV10	Unadjusted	UDDS	-54.4%	-54.4%	-62.8%	-67.9%	-59.8%	-66.7%	-71.9%	-63.1%	-70.9%	-77.0%	-66.0%	-72.9%	-78.9%
		HWFET	-32.0%	-32.0%	-46.3%	-53.8%	-39.6%	-52.2%	-59.2%	-44.3%	-58.0%	-65.0%	-48.7%	-60.8%	-68.1%
		Combined	-45.9%	-45.9%	-56.6%	-62.5%	-52.1%	-61.2%	-67.1%	-56.0%	-66.0%	-72.4%	-59.4%	-68.3%	-74.8%
	Adjusted	UDDS	-51.7%	-51.7%	-59.7%	-64.5%	-56.8%	-63.4%	-68.4%	-60.0%	-67.4%	-73.1%	-62.7%	-69.3%	-75.0%
		HWFET	-31.7%	-31.7%	-46.0%	-53.4%	-39.3%	-51.8%	-58.7%	-44.0%	-57.5%	-64.5%	-48.3%	-60.4%	-67.6%
		Combined	-43.7%	-43.7%	-54.2%	-60.0%	-49.8%	-58.8%	-64.5%	-53.6%	-63.4%	-69.7%	-56.9%	-65.7%	-72.0%
H2 Split HEV PHEV20	Unadjusted	UDDS	-67.9%	-67.9%	-73.8%	-77.4%	-72.0%	-76.7%	-80.6%	-74.3%	-79.7%	-81.0%	-76.2%	-81.3%	-82.7%
		HWFET	-40.3%	-40.3%	-55.5%	-61.4%	-49.8%	-60.0%	-59.6%	-53.6%	-57.9%	-66.8%	-57.3%	-61.2%	-69.7%
		Combined	-57.4%	-57.4%	-66.8%	-71.3%	-63.6%	-70.4%	-72.6%	-66.5%	-71.4%	-75.6%	-69.0%	-73.7%	-77.7%
	Adjusted	UDDS	-64.5%	-64.5%	-70.1%	-73.6%	-68.5%	-72.9%	-76.6%	-70.6%	-75.8%	-77.0%	-72.4%	-77.3%	-78.6%
		HWFET	-40.0%	-40.0%	-55.1%	-61.0%	-49.5%	-59.6%	-59.1%	-53.2%	-57.5%	-66.3%	-56.9%	-60.8%	-69.2%
		Combined	-54.7%	-54.7%	-64.1%	-68.5%	-60.8%	-67.5%	-69.6%	-63.6%	-68.4%	-72.7%	-66.2%	-70.7%	-74.8%
H2 Series HEV PHEV30	Unadjusted	UDDS	-64.8%	-64.8%	-72.0%	-76.2%	-69.2%	-75.3%	-80.0%	-72.4%	-79.2%	-83.9%	-74.9%	-80.6%	-85.1%
		HWFET	-36.4%	-36.4%	-49.0%	-56.3%	-44.1%	-54.8%	-62.5%	-49.2%	-61.2%	-68.7%	-53.7%	-64.2%	-71.4%
		Combined	-54.0%	-54.0%	-63.3%	-68.7%	-59.7%	-67.5%	-73.3%	-63.6%	-72.4%	-78.1%	-66.9%	-74.3%	-79.9%
	Adjusted	UDDS	-61.6%	-61.6%	-68.4%	-72.4%	-65.8%	-71.6%	-76.0%	-68.8%	-75.3%	-79.7%	-71.2%	-76.6%	-80.9%
		HWFET	-36.1%	-36.1%	-48.6%	-55.9%	-43.8%	-54.4%	-62.0%	-48.9%	-60.7%	-68.2%	-53.3%	-63.7%	-70.9%
		Combined	-51.3%	-51.3%	-60.5%	-65.8%	-56.9%	-64.7%	-70.4%	-60.8%	-69.4%	-75.1%	-64.0%	-71.4%	-76.9%

Argonne National Laboratory Report – Light-Duty Vehicle Fuel Consumption Displacement Potential Up to 2045

			Small_SUV												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
H2 Series HEV PHEV40	Unadjusted	UDDS	-69.3%	-69.3%	-75.7%	-79.3%	-73.2%	-78.6%	-82.6%	-75.9%	-82.1%	-86.2%	-77.9%	-83.3%	-87.3%
		HWFET	-49.6%	-49.6%	-59.5%	-65.5%	-55.8%	-64.3%	-70.4%	-59.9%	-69.5%	-75.4%	-63.4%	-71.8%	-77.6%
		Combined	-61.8%	-61.8%	-69.5%	-74.1%	-66.6%	-73.2%	-78.0%	-69.8%	-77.3%	-82.1%	-72.4%	-78.9%	-83.6%
	Adjusted	UDDS	-65.9%	-65.9%	-71.9%	-75.3%	-69.6%	-74.7%	-78.5%	-72.2%	-78.0%	-81.9%	-74.1%	-79.1%	-83.0%
		HWFET	-49.3%	-49.3%	-59.1%	-65.0%	-55.3%	-63.8%	-69.9%	-59.4%	-69.0%	-74.9%	-62.9%	-71.2%	-77.0%
		Combined	-59.2%	-59.2%	-66.8%	-71.2%	-63.9%	-70.3%	-75.0%	-67.1%	-74.4%	-79.1%	-69.6%	-76.0%	-80.6%
E85 Split HEV	Unadjusted	UDDS	-39.9%	-39.9%	-45.8%	-50.2%	-42.0%	-49.2%	-61.4%	-44.4%	-54.9%	-67.8%	-46.5%	-56.5%	-69.2%
		HWFET	-7.2%	-7.2%	-16.5%	-23.4%	-10.2%	-20.5%	-39.0%	-12.7%	-29.0%	-47.8%	-16.6%	-31.6%	-50.5%
		Combined	-27.5%	-27.5%	-34.7%	-40.0%	-30.0%	-38.3%	-52.9%	-32.4%	-45.1%	-60.2%	-35.1%	-47.0%	-62.1%
	Adjusted	UDDS	-37.9%	-37.9%	-43.5%	-47.7%	-39.9%	-46.7%	-58.3%	-42.2%	-52.2%	-64.4%	-44.2%	-53.7%	-65.7%
		HWFET	-7.1%	-7.1%	-16.4%	-23.2%	-10.2%	-20.4%	-38.7%	-12.6%	-28.8%	-47.5%	-16.5%	-31.3%	-50.1%
		Combined	-25.5%	-25.5%	-32.6%	-37.9%	-28.0%	-36.2%	-50.4%	-30.3%	-42.8%	-57.6%	-33.1%	-44.7%	-59.5%
E85 Split HEV PHEV10	Unadjusted	UDDS	-52.9%	-52.9%	-57.3%	-60.7%	-54.5%	-59.6%	-68.7%	-55.6%	-63.4%	-73.7%	-57.2%	-64.8%	-74.8%
		HWFET	-29.2%	-29.2%	-38.8%	-43.9%	-30.9%	-41.6%	-54.7%	-32.2%	-47.2%	-60.3%	-35.3%	-49.3%	-62.5%
		Combined	-43.9%	-43.9%	-50.3%	-54.4%	-45.5%	-52.8%	-63.4%	-46.7%	-57.2%	-68.6%	-48.9%	-58.9%	-70.1%
	Adjusted	UDDS	-50.3%	-50.3%	-54.5%	-57.7%	-51.7%	-56.6%	-65.3%	-52.9%	-60.2%	-70.1%	-54.3%	-61.6%	-71.1%
		HWFET	-29.0%	-29.0%	-38.5%	-43.6%	-30.7%	-41.3%	-54.3%	-32.0%	-46.8%	-59.9%	-35.0%	-48.9%	-62.0%
		Combined	-41.7%	-41.7%	-48.1%	-52.1%	-43.3%	-50.5%	-60.9%	-44.5%	-54.8%	-66.0%	-46.6%	-56.5%	-67.5%
E85 Split HEV PHEV20	Unadjusted	UDDS	-66.8%	-66.8%	-70.0%	-72.4%	-68.2%	-71.6%	-78.1%	-69.1%	-74.5%	-78.3%	-70.0%	-75.4%	-79.2%
		HWFET	-37.9%	-37.9%	-38.3%	-43.6%	-44.2%	-41.2%	-54.5%	-45.2%	-47.0%	-62.2%	-37.9%	-49.6%	-64.2%
		Combined	-55.8%	-55.8%	-58.0%	-61.5%	-59.1%	-60.1%	-69.2%	-60.0%	-64.0%	-72.2%	-57.8%	-65.6%	-73.5%
	Adjusted	UDDS	-63.4%	-63.4%	-66.6%	-68.8%	-64.8%	-68.0%	-74.3%	-65.7%	-70.8%	-74.4%	-66.5%	-71.6%	-75.3%
		HWFET	-37.6%	-37.6%	-38.0%	-43.2%	-43.8%	-40.9%	-54.1%	-44.8%	-46.6%	-61.8%	-37.7%	-49.2%	-63.8%
		Combined	-53.1%	-53.1%	-55.1%	-58.5%	-56.4%	-57.1%	-66.2%	-57.3%	-61.1%	-69.3%	-54.9%	-62.6%	-70.6%
E85 Series HEV PHEV30	Unadjusted	UDDS	-63.4%	-63.4%	-67.8%	-71.1%	-65.1%	-69.8%	-78.0%	-66.9%	-74.2%	-81.7%	-68.2%	-74.9%	-82.7%
		HWFET	-33.6%	-33.6%	-41.2%	-46.7%	-36.1%	-44.8%	-58.2%	-38.6%	-51.2%	-64.6%	-41.6%	-53.5%	-66.6%
		Combined	-52.1%	-52.1%	-57.7%	-61.9%	-54.1%	-60.3%	-70.5%	-56.1%	-65.4%	-75.2%	-58.1%	-66.8%	-76.6%
	Adjusted	UDDS	-60.2%	-60.2%	-64.4%	-67.6%	-61.9%	-66.3%	-74.1%	-63.5%	-70.5%	-77.6%	-64.8%	-71.2%	-78.6%
		HWFET	-33.4%	-33.4%	-40.9%	-46.4%	-35.8%	-44.5%	-57.8%	-38.3%	-50.8%	-64.1%	-41.3%	-53.1%	-66.1%
		Combined	-49.4%	-49.4%	-55.0%	-59.1%	-51.4%	-57.6%	-67.6%	-53.4%	-62.6%	-72.2%	-55.4%	-63.9%	-73.6%
E85 Series HEV PHEV40	Unadjusted	UDDS	-68.0%	-68.0%	-71.9%	-74.9%	-69.6%	-73.8%	-81.0%	-71.1%	-77.7%	-84.3%	-72.3%	-78.3%	-85.3%
		HWFET	-47.4%	-47.4%	-53.4%	-57.9%	-49.4%	-56.4%	-67.1%	-51.4%	-61.5%	-72.2%	-53.8%	-63.4%	-73.7%
		Combined	-60.2%	-60.2%	-64.8%	-68.5%	-62.0%	-67.2%	-75.7%	-63.6%	-71.5%	-79.7%	-65.3%	-72.6%	-80.9%
	Adjusted	UDDS	-64.6%	-64.6%	-68.3%	-71.2%	-66.2%	-70.1%	-77.0%	-67.5%	-73.8%	-80.1%	-68.7%	-74.4%	-81.0%
		HWFET	-47.1%	-47.1%	-53.0%	-57.5%	-49.1%	-56.0%	-66.6%	-51.0%	-61.1%	-71.7%	-53.4%	-62.9%	-73.2%
		Combined	-57.6%	-57.6%	-62.1%	-65.7%	-59.3%	-64.4%	-72.8%	-60.9%	-68.7%	-76.7%	-62.6%	-69.8%	-77.9%

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			Small_SUV												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
FC HEV	Unadjusted	UDDS	-48.3%	-48.3%	-57.9%	-64.8%	-57.0%	-64.2%	-69.4%	-60.1%	-68.4%	-74.5%	-62.3%	-69.7%	-75.7%
		HWFET	-31.0%	-31.0%	-42.7%	-51.2%	-41.0%	-49.6%	-55.8%	-43.5%	-54.5%	-61.5%	-46.5%	-56.2%	-63.6%
		Combined	-41.7%	-41.7%	-52.2%	-59.6%	-50.9%	-58.6%	-64.2%	-53.8%	-63.2%	-69.6%	-56.3%	-64.5%	-71.1%
	Adjusted	UDDS	-45.9%	-45.9%	-55.1%	-61.6%	-54.2%	-61.0%	-65.9%	-57.2%	-65.0%	-70.8%	-59.2%	-66.2%	-71.9%
		HWFET	-30.7%	-30.7%	-42.4%	-50.9%	-40.7%	-49.2%	-55.4%	-43.2%	-54.1%	-61.1%	-46.1%	-55.8%	-63.2%
		Combined	-39.8%	-39.8%	-50.0%	-57.3%	-48.8%	-56.3%	-61.7%	-51.5%	-60.7%	-66.9%	-54.0%	-62.0%	-68.4%
FC PHEV10	Unadjusted	UDDS	-59.1%	-59.1%	-66.3%	-71.4%	-65.3%	-70.5%	-74.6%	-67.2%	-73.8%	-78.7%	-68.8%	-74.7%	-79.6%
		HWFET	-47.3%	-47.3%	-55.5%	-61.8%	-54.0%	-60.3%	-65.0%	-55.3%	-64.0%	-69.1%	-57.6%	-65.3%	-70.9%
		Combined	-54.6%	-54.6%	-62.2%	-67.8%	-61.0%	-66.6%	-71.0%	-62.7%	-70.1%	-75.0%	-64.6%	-71.1%	-76.3%
	Adjusted	UDDS	-56.2%	-56.2%	-63.0%	-67.9%	-62.0%	-67.0%	-70.9%	-63.9%	-70.1%	-74.8%	-65.4%	-71.0%	-75.7%
		HWFET	-46.9%	-46.9%	-55.1%	-61.3%	-53.6%	-59.9%	-64.5%	-54.9%	-63.5%	-68.6%	-57.2%	-64.8%	-70.3%
		Combined	-52.5%	-52.5%	-59.8%	-65.2%	-58.7%	-64.1%	-68.3%	-60.3%	-67.5%	-72.3%	-62.1%	-68.5%	-73.5%
FC PHEV20	Unadjusted	UDDS	-65.8%	-65.8%	-71.9%	-76.3%	-71.1%	-75.5%	-78.9%	-72.7%	-78.3%	-82.4%	-74.1%	-79.1%	-83.2%
		HWFET	-48.4%	-48.4%	-56.8%	-63.0%	-55.3%	-61.6%	-66.3%	-56.9%	-65.3%	-70.6%	-59.1%	-66.6%	-72.2%
		Combined	-59.2%	-59.2%	-66.2%	-71.3%	-65.1%	-70.2%	-74.2%	-66.7%	-73.4%	-77.9%	-68.4%	-74.3%	-79.0%
	Adjusted	UDDS	-62.6%	-62.6%	-68.3%	-72.5%	-67.5%	-71.7%	-75.0%	-69.1%	-74.4%	-78.3%	-70.4%	-75.2%	-79.1%
		HWFET	-48.0%	-48.0%	-56.4%	-62.6%	-54.9%	-61.2%	-65.9%	-56.5%	-64.9%	-70.1%	-58.7%	-66.1%	-71.7%
		Combined	-56.7%	-56.7%	-63.5%	-68.5%	-62.5%	-67.5%	-71.3%	-64.0%	-70.6%	-75.0%	-65.7%	-71.5%	-76.1%
FC PHEV30	Unadjusted	UDDS	-76.0%	-76.0%	-80.2%	-83.0%	-79.6%	-82.5%	-85.1%	-80.5%	-84.6%	-87.4%	-81.5%	-85.2%	-88.0%
		HWFET	-59.0%	-59.0%	-65.6%	-70.2%	-64.3%	-69.2%	-73.1%	-65.3%	-72.3%	-76.5%	-67.2%	-73.3%	-77.7%
		Combined	-69.6%	-69.6%	-74.6%	-78.1%	-73.8%	-77.5%	-80.5%	-74.7%	-79.9%	-83.3%	-76.1%	-80.7%	-84.1%
	Adjusted	UDDS	-72.3%	-72.3%	-76.2%	-78.8%	-75.6%	-78.4%	-80.8%	-76.5%	-80.4%	-83.1%	-77.5%	-81.0%	-83.6%
		HWFET	-58.5%	-58.5%	-65.1%	-69.7%	-63.9%	-68.7%	-72.6%	-64.9%	-71.8%	-75.9%	-66.7%	-72.8%	-77.2%
		Combined	-66.8%	-66.8%	-71.7%	-75.2%	-70.9%	-74.5%	-77.5%	-71.8%	-76.9%	-80.2%	-73.1%	-77.7%	-81.0%
FC PHEV40	Unadjusted	UDDS	-79.2%	-79.2%	-82.9%	-85.3%	-82.3%	-84.9%	-87.1%	-83.1%	-86.7%	-89.2%	-84.0%	-87.3%	-89.7%
		HWFET	-67.6%	-67.6%	-72.9%	-76.5%	-71.9%	-75.7%	-78.9%	-72.7%	-78.2%	-81.5%	-74.1%	-79.1%	-82.6%
		Combined	-74.8%	-74.8%	-79.1%	-81.9%	-78.3%	-81.4%	-84.0%	-79.2%	-83.5%	-86.3%	-80.3%	-84.2%	-87.0%
	Adjusted	UDDS	-75.2%	-75.2%	-78.7%	-81.0%	-78.2%	-80.7%	-82.8%	-79.0%	-82.4%	-84.8%	-79.9%	-82.9%	-85.2%
		HWFET	-67.1%	-67.1%	-72.3%	-76.0%	-71.3%	-75.2%	-78.3%	-72.2%	-77.7%	-80.9%	-73.6%	-78.5%	-82.0%
		Combined	-72.0%	-72.0%	-76.2%	-79.0%	-75.4%	-78.5%	-81.0%	-76.2%	-80.5%	-83.2%	-77.3%	-81.2%	-83.9%

Midsized SUV Class

Fuel economy

			Midsize_SUV												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Conv	Unadjusted	UDDS	21.3	21.3	23.8	25.0	22.4	24.8	30.5	23.2	25.5	36.9	22.9	26.0	38.3
		HWFET	28.5	28.5	32.1	33.8	30.1	33.5	41.8	31.2	34.9	49.4	31.5	35.9	51.8
		Combined	24.0	24.0	26.9	28.3	25.3	28.1	34.8	26.3	29.0	41.6	26.1	29.7	43.4
	Adjusted	UDDS	16.6	16.6	18.5	19.4	17.5	19.2	23.4	18.1	19.8	27.9	17.8	20.1	28.9
		HWFET	20.2	20.2	22.7	23.9	21.3	23.7	29.6	22.1	24.7	34.9	22.3	25.4	36.5
		Combined	18.0	18.0	20.2	21.2	19.0	21.0	25.8	19.7	21.7	30.7	19.6	22.2	31.9
CI Conv	Unadjusted	UDDS	25.7	25.7	27.5	29.9	26.2	29.5	32.0	27.8	31.1	37.6	28.0	32.4	38.9
		HWFET	32.9	32.9	35.4	38.3	33.7	38.0	39.2	35.3	38.0	45.1	34.2	40.1	47.2
		Combined	28.5	28.5	30.6	33.2	29.1	32.8	34.9	30.7	33.9	40.6	30.5	35.5	42.2
	Adjusted	UDDS	19.9	19.9	21.2	23.0	20.2	22.6	24.5	21.4	23.9	28.4	21.6	24.8	29.4
		HWFET	23.3	23.3	25.0	27.1	23.8	26.8	27.7	25.0	26.8	31.9	24.2	28.4	33.3
		Combined	21.3	21.3	22.8	24.7	21.7	24.4	25.8	22.9	25.1	29.9	22.7	26.3	31.0
H2 Conv	Unadjusted	UDDS	18.1	18.1	22.2	25.3	20.5	24.9	28.0	23.2	27.2	33.3	24.1	28.9	35.9
		HWFET	27.3	27.3	31.9	36.2	30.9	35.8	41.0	33.1	39.7	47.7	35.6	42.7	51.8
		Combined	21.3	21.3	25.7	29.3	24.2	28.9	32.7	26.8	31.7	38.5	28.2	33.8	41.6
	Adjusted	UDDS	14.2	14.2	17.3	19.6	16.0	19.3	21.6	18.0	21.0	25.4	18.7	22.2	27.2
		HWFET	19.4	19.4	22.5	25.6	21.9	25.4	29.0	23.4	28.0	33.7	25.2	30.1	36.5
		Combined	16.2	16.2	19.3	21.9	18.2	21.6	24.4	20.1	23.7	28.5	21.2	25.2	30.8
E85 Conv	Unadjusted	UDDS	20.5	20.5	21.6	22.7	20.0	22.4	29.5	21.1	23.3	34.8	21.0	23.8	36.2
		HWFET	25.4	25.4	27.1	28.4	24.9	28.2	37.0	26.4	29.1	42.9	26.3	30.1	45.0
		Combined	22.5	22.5	23.8	24.9	22.0	24.7	32.5	23.2	25.6	38.0	23.1	26.3	39.7
	Adjusted	UDDS	16.0	16.0	16.9	17.7	15.7	17.5	22.7	16.5	18.2	26.4	16.4	18.5	27.5
		HWFET	18.0	18.0	19.2	20.1	17.7	20.0	26.2	18.7	20.6	30.3	18.6	21.3	31.7
		Combined	16.9	16.9	17.9	18.7	16.5	18.5	24.1	17.4	19.2	28.0	17.3	19.7	29.2
SI Split HEV	Unadjusted	UDDS	38.2	38.2	41.5	44.5	39.6	44.7	54.4	41.7	48.6	67.4	42.6	50.9	70.4
		HWFET	33.3	33.3	36.1	38.6	34.4	38.3	45.8	35.5	41.0	54.8	36.4	43.4	57.7
		Combined	35.8	35.8	38.9	41.6	37.1	41.6	50.2	38.7	44.9	61.1	39.6	47.2	64.0
	Adjusted	UDDS	28.9	28.9	31.2	33.3	29.9	33.4	39.9	31.3	36.0	48.2	31.9	37.6	50.1
		HWFET	23.5	23.5	25.5	27.2	24.3	27.1	32.3	25.1	29.0	38.6	25.8	30.6	40.6
		Combined	26.2	26.2	28.3	30.3	27.1	30.2	36.1	28.2	32.5	43.4	28.8	34.1	45.3
SI Split HEV PHEV10	Unadjusted	UDDS	48.2	48.2	52.1	56.0	49.8	55.3	67.1	51.2	59.6	81.7	52.6	62.6	85.6
		HWFET	43.5	43.5	46.8	49.9	44.9	49.5	58.4	45.8	52.5	69.1	47.1	54.9	73.5
		Combined	46.0	46.0	49.6	53.1	47.5	52.5	62.8	48.6	56.2	75.5	50.0	58.9	79.7
	Adjusted	UDDS	35.7	35.7	38.3	40.9	36.8	40.4	48.0	37.7	43.3	57.0	38.7	45.2	59.2
		HWFET	30.7	30.7	33.0	35.2	31.7	34.9	41.1	32.3	37.0	48.5	33.2	38.7	51.6
		Combined	33.3	33.3	35.8	38.1	34.3	37.7	44.6	35.1	40.2	52.8	36.0	42.0	55.5

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			Midsize_SUV												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Split HEV PHEV20	Unadjusted	UDDS	69.0	69.0	74.9	80.4	72.4	79.4	95.4	73.8	85.3	117.0	76.4	89.1	122.9
		HWFET	53.2	53.2	57.7	60.3	55.1	60.9	66.8	56.2	64.5	79.3	57.9	62.6	85.2
		Combined	60.9	60.9	66.0	69.9	63.4	69.9	80.0	64.7	74.5	96.4	66.8	74.8	102.5
	Adjusted	UDDS	49.2	49.2	52.9	56.2	51.3	55.6	64.9	52.2	59.1	76.8	53.8	61.3	79.9
		HWFET	37.5	37.5	40.6	42.4	38.8	42.8	46.9	39.5	45.3	55.5	40.7	44.0	59.6
		Combined	43.2	43.2	46.5	49.0	44.8	49.0	55.4	45.6	52.0	65.5	47.0	52.1	69.3
SI Series HEV PHEV30	Unadjusted	UDDS	61.9	61.9	67.8	74.5	64.3	73.3	92.6	67.5	82.4	119.2	69.6	86.6	124.2
		HWFET	45.9	45.9	50.4	54.3	47.8	53.8	65.9	49.7	58.7	79.8	51.3	62.7	84.2
		Combined	53.5	53.5	58.6	63.8	55.6	63.0	78.3	58.1	69.7	97.5	60.0	73.9	102.3
	Adjusted	UDDS	44.7	44.7	48.4	52.6	46.2	51.9	63.3	48.3	57.4	77.9	49.6	59.9	80.5
		HWFET	32.4	32.4	35.5	38.3	33.7	37.9	46.3	35.0	41.3	55.9	36.2	44.1	58.9
		Combined	38.2	38.2	41.6	45.0	39.6	44.5	54.3	41.3	48.8	66.2	42.5	51.6	69.1
SI Series HEV PHEV40	Unadjusted	UDDS	70.9	70.9	77.9	85.0	74.2	83.7	107.1	77.5	95.0	136.0	80.2	100.1	144.3
		HWFET	58.0	58.0	63.7	68.7	60.3	68.1	83.3	62.9	74.5	101.5	65.0	79.5	107.1
		Combined	64.5	64.5	70.8	76.8	67.2	75.9	94.9	70.2	84.5	117.9	72.6	89.6	124.8
	Adjusted	UDDS	50.4	50.4	54.7	58.9	52.4	58.1	71.4	54.5	64.7	86.5	56.1	67.6	90.5
		HWFET	40.8	40.8	44.8	48.3	42.4	47.8	58.3	44.2	52.2	70.7	45.7	55.7	74.6
		Combined	45.6	45.6	49.7	53.6	47.4	53.0	64.9	49.3	58.4	78.6	50.9	61.6	82.6
CI Split HEV	Unadjusted	UDDS	42.6	42.6	45.6	49.7	43.4	49.5	56.7	46.2	54.6	67.7	47.8	57.6	70.7
		HWFET	35.6	35.6	38.1	41.3	36.4	41.0	46.1	38.0	44.5	53.5	39.5	47.4	56.5
		Combined	39.1	39.1	41.9	45.5	39.9	45.3	51.4	42.1	49.5	60.5	43.7	52.5	63.5
	Adjusted	UDDS	31.9	31.9	33.9	36.7	32.5	36.6	41.4	34.4	40.0	48.4	35.5	41.9	50.3
		HWFET	25.2	25.2	26.9	29.2	25.7	29.0	32.5	26.8	31.4	37.7	27.9	33.4	39.7
		Combined	28.5	28.5	30.4	32.9	29.1	32.7	36.9	30.5	35.6	42.9	31.6	37.6	44.9
CI Split HEV PHEV10	Unadjusted	UDDS	49.8	49.8	53.3	58.1	50.9	57.7	65.6	53.4	62.8	77.9	55.4	66.6	81.2
		HWFET	44.7	44.7	47.4	53.7	45.1	53.5	59.7	47.5	54.5	68.4	49.0	60.5	68.5
		Combined	47.4	47.4	50.5	56.0	48.1	55.7	62.8	50.6	58.8	73.3	52.3	63.7	74.9
	Adjusted	UDDS	36.8	36.8	39.2	42.3	37.5	42.0	47.1	39.2	45.3	54.7	40.5	47.7	56.7
		HWFET	31.6	31.6	33.4	37.8	31.9	37.7	42.0	33.5	38.4	48.0	34.5	42.5	48.1
		Combined	34.2	34.2	36.3	40.1	34.7	40.0	44.6	36.4	41.9	51.5	37.6	45.2	52.4
CI Split HEV PHEV20	Unadjusted	UDDS	71.2	71.2	77.1	83.7	73.1	82.5	93.9	76.9	89.8	112.2	79.5	95.0	116.3
		HWFET	54.7	54.7	49.7	52.9	55.8	52.7	68.3	58.0	65.4	78.3	51.0	68.9	78.5
		Combined	62.6	62.6	61.8	66.3	64.1	65.8	80.4	67.0	76.9	93.9	63.5	81.2	95.6
	Adjusted	UDDS	50.6	50.6	54.2	58.1	51.7	57.5	64.1	54.1	61.7	74.2	55.7	64.7	76.4
		HWFET	38.5	38.5	35.1	37.3	39.3	37.2	48.0	40.8	46.0	54.9	35.9	48.4	55.0
		Combined	44.3	44.3	43.5	46.4	45.3	46.1	55.7	47.2	53.5	64.1	44.6	56.2	65.0

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			Midsize_SUV												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
CI Series HEV PHEV30	Unadjusted	UDDS	63.2	63.2	68.9	77.0	65.1	75.8	90.7	69.9	86.2	111.0	72.8	91.5	116.7
		HWFET	47.0	47.0	51.1	56.0	48.2	55.5	63.8	51.3	61.4	75.9	53.6	66.1	80.1
		Combined	54.8	54.8	59.6	65.9	56.2	65.0	76.3	60.1	72.9	91.9	62.7	78.0	96.8
	Adjusted	UDDS	45.6	45.6	49.1	54.1	46.8	53.4	62.3	49.8	59.6	73.6	51.6	62.7	76.6
		HWFET	33.2	33.2	36.0	39.4	34.0	39.1	44.9	36.2	43.2	53.2	37.7	46.5	56.1
		Combined	39.0	39.0	42.2	46.4	40.0	45.8	53.0	42.6	50.9	62.8	44.3	54.2	65.8
CI Series HEV PHEV40	Unadjusted	UDDS	72.5	72.5	79.0	88.2	74.8	86.8	103.6	80.2	99.2	130.0	83.8	105.7	134.7
		HWFET	59.4	59.4	64.6	70.9	60.9	70.2	80.9	64.8	77.9	96.5	67.8	83.8	101.6
		Combined	66.0	66.0	71.8	79.5	67.8	78.5	92.0	72.4	88.4	112.5	75.8	94.6	117.5
	Adjusted	UDDS	51.4	51.4	55.3	60.8	52.8	60.0	69.5	56.1	67.1	83.5	58.2	70.7	85.8
		HWFET	41.8	41.8	45.4	49.7	42.8	49.3	56.7	45.5	54.6	67.4	47.6	58.7	70.8
		Combined	46.6	46.6	50.4	55.3	47.8	54.6	63.1	50.8	60.8	75.4	52.9	64.7	78.4
H2 Split HEV	Unadjusted	UDDS	37.5	37.5	44.9	51.6	42.6	51.3	60.4	47.0	58.0	73.3	50.4	62.6	79.7
		HWFET	32.2	32.2	38.5	43.8	36.5	43.4	50.1	39.8	48.4	58.9	42.6	52.5	64.4
		Combined	34.9	34.9	41.8	47.8	39.6	47.4	55.3	43.5	53.2	66.1	46.6	57.6	72.0
	Adjusted	UDDS	28.4	28.4	33.5	38.0	31.9	37.8	43.8	35.0	42.2	51.9	37.2	45.2	55.7
		HWFET	22.8	22.8	27.2	31.0	25.8	30.7	35.3	28.1	34.1	41.4	30.1	37.0	45.3
		Combined	25.6	25.6	30.3	34.5	28.8	34.2	39.5	31.5	38.1	46.6	33.6	41.1	50.5
H2 Split HEV PHEV10	Unadjusted	UDDS	46.8	46.8	56.0	64.1	53.2	63.2	73.8	58.0	70.5	88.8	62.0	76.2	96.5
		HWFET	42.5	42.5	50.4	57.1	48.0	56.5	64.2	51.9	61.9	77.4	55.5	67.0	84.8
		Combined	44.7	44.7	53.3	60.7	50.7	60.0	69.1	55.1	66.3	83.3	58.9	71.8	90.9
	Adjusted	UDDS	34.8	34.8	40.9	46.1	39.1	45.6	52.2	42.2	50.1	61.1	44.8	53.7	65.6
		HWFET	30.0	30.0	35.5	40.2	33.8	39.8	45.1	36.6	43.5	54.2	39.1	47.0	59.4
		Combined	32.4	32.4	38.3	43.3	36.5	42.8	48.7	39.5	46.9	57.8	42.0	50.5	62.6
H2 Split HEV PHEV20	Unadjusted	UDDS	67.2	67.2	80.9	92.4	77.3	91.0	105.6	84.6	101.3	127.6	89.7	109.1	141.0
		HWFET	52.3	52.3	60.5	70.0	59.1	68.3	73.5	63.9	73.9	74.7	68.1	76.6	89.6
		Combined	59.6	59.6	70.2	80.8	67.9	79.2	88.2	73.8	86.8	96.8	78.5	91.6	112.0
	Adjusted	UDDS	48.1	48.1	56.5	63.2	54.3	62.4	70.6	58.7	68.3	82.3	61.7	72.5	88.9
		HWFET	36.9	36.9	42.5	49.2	41.6	48.0	51.6	44.9	51.8	52.4	47.8	53.7	62.6
		Combined	42.3	42.3	49.2	56.0	47.7	55.0	60.5	51.5	59.7	65.5	54.6	62.6	74.8
H2 Series HEV PHEV30	Unadjusted	UDDS	60.2	60.2	73.8	86.0	68.9	84.5	103.1	76.8	97.4	126.8	83.2	106.9	138.4
		HWFET	45.2	45.2	54.6	62.5	51.5	61.8	72.9	56.7	69.9	85.9	60.9	76.8	94.0
		Combined	52.4	52.4	63.7	73.5	59.8	72.5	86.9	66.2	82.7	104.4	71.4	90.9	114.2
	Adjusted	UDDS	43.6	43.6	52.2	59.5	49.2	58.6	69.2	54.0	66.1	81.9	57.8	71.4	87.7
		HWFET	31.9	31.9	38.4	43.9	36.3	43.5	51.1	39.9	49.0	60.1	42.8	53.8	65.7
		Combined	37.4	37.4	44.9	51.3	42.4	50.7	59.7	46.6	57.1	70.4	50.0	62.2	76.2

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			Midsize_SUV												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
H2 Series HEV PHEV40	Unadjusted	UDDS	69.0	69.0	84.2	99.0	79.2	97.0	119.1	88.1	112.6	147.2	95.3	122.2	160.6
		HWFET	57.1	57.1	69.0	79.1	65.0	78.3	92.5	71.7	88.4	109.1	77.2	97.5	119.8
		Combined	63.1	63.1	76.6	88.9	72.1	87.6	105.5	79.9	100.2	127.2	86.2	109.7	139.2
	Adjusted	UDDS	49.2	49.2	58.5	67.0	55.4	65.8	77.9	60.7	74.4	91.9	64.9	79.5	98.2
		HWFET	40.2	40.2	48.4	55.4	45.7	54.9	64.6	50.3	61.8	76.0	54.1	68.0	83.2
		Combined	44.7	44.7	53.5	61.2	50.6	60.4	71.3	55.6	68.1	84.0	59.5	73.9	90.8
E85 Split HEV	Unadjusted	UDDS	35.4	35.4	38.4	41.4	36.6	41.5	53.2	38.5	45.2	62.9	39.5	47.1	65.9
		HWFET	30.9	30.9	33.5	35.9	31.8	35.6	44.9	33.0	38.3	51.4	33.9	40.2	54.4
		Combined	33.2	33.2	36.0	38.7	34.3	38.6	49.1	35.8	41.8	57.2	36.8	43.8	60.2
	Adjusted	UDDS	26.9	26.9	29.0	31.1	27.7	31.1	39.1	29.1	33.7	45.4	29.8	35.0	47.3
		HWFET	21.9	21.9	23.7	25.4	22.5	25.2	31.7	23.3	27.0	36.2	24.0	28.4	38.3
		Combined	24.4	24.4	26.3	28.2	25.1	28.1	35.4	26.2	30.3	40.8	26.9	31.7	42.8
E85 Split HEV PHEV10	Unadjusted	UDDS	45.1	45.1	48.8	52.8	46.7	52.1	66.3	48.0	55.9	77.3	49.2	58.7	80.9
		HWFET	40.6	40.6	43.8	46.7	41.9	46.3	57.3	42.8	49.0	65.3	44.1	51.6	69.4
		Combined	43.0	43.0	46.4	49.9	44.4	49.3	61.9	45.5	52.6	71.4	46.8	55.3	75.3
	Adjusted	UDDS	33.7	33.7	36.1	38.8	34.7	38.3	47.5	35.6	40.8	54.3	36.4	42.7	56.5
		HWFET	28.7	28.7	30.9	32.9	29.6	32.7	40.3	30.2	34.6	45.9	31.1	36.4	48.7
		Combined	31.2	31.2	33.6	35.9	32.2	35.6	44.0	33.0	37.8	50.2	33.8	39.6	52.7
E85 Split HEV PHEV20	Unadjusted	UDDS	64.4	64.4	70.3	75.5	67.9	74.6	94.2	69.9	80.0	110.7	71.2	83.7	116.1
		HWFET	49.8	49.8	52.9	55.9	51.5	55.8	66.0	52.4	56.6	74.9	54.1	58.9	80.3
		Combined	56.9	56.9	61.2	65.2	59.4	64.8	79.0	60.7	67.4	91.1	62.3	70.4	96.7
	Adjusted	UDDS	46.3	46.3	50.0	53.2	48.5	52.7	64.3	49.8	56.0	73.4	50.6	58.1	76.3
		HWFET	35.1	35.1	37.3	39.4	36.3	39.3	46.4	36.9	39.8	52.5	38.1	41.5	56.3
		Combined	40.5	40.5	43.4	45.9	42.1	45.7	54.8	43.0	47.3	62.3	44.1	49.2	65.8
E85 Series HEV PHEV30	Unadjusted	UDDS	58.0	58.0	63.7	70.1	60.4	68.4	91.8	63.5	77.4	111.4	65.5	81.4	117.9
		HWFET	43.1	43.1	47.3	51.1	44.9	50.6	65.3	46.7	55.2	75.6	48.3	58.9	79.8
		Combined	50.2	50.2	55.1	60.0	52.3	59.1	77.6	54.7	65.6	91.8	56.4	69.5	97.0
	Adjusted	UDDS	42.2	42.2	45.9	49.9	43.8	48.9	62.9	45.8	54.4	73.8	47.0	56.8	77.2
		HWFET	30.5	30.5	33.4	36.0	31.7	35.7	45.9	33.0	38.9	53.0	34.1	41.5	55.9
		Combined	36.0	36.0	39.2	42.5	37.4	41.9	53.9	39.0	46.1	62.7	40.1	48.7	65.9
E85 Series HEV PHEV40	Unadjusted	UDDS	66.0	66.0	73.0	79.9	69.5	78.5	106.0	72.9	88.8	129.0	75.3	94.2	137.7
		HWFET	54.5	54.5	59.8	64.6	56.7	64.0	82.7	59.1	70.1	96.1	61.1	74.8	101.6
		Combined	60.2	60.2	66.4	72.2	63.1	71.2	94.0	66.0	79.3	111.8	68.2	84.4	118.7
	Adjusted	UDDS	47.3	47.3	51.7	55.9	49.5	55.1	70.8	51.6	61.2	83.0	53.1	64.3	87.3
		HWFET	38.4	38.4	42.1	45.4	39.9	45.0	57.9	41.6	49.2	67.1	43.0	52.5	70.8
		Combined	42.8	42.8	46.9	50.7	44.7	50.0	64.3	46.6	55.1	75.0	48.0	58.4	79.0

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			Midsize_SUV												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
FC HEV	Unadjusted	UDDS	40.7	40.7	49.4	58.6	49.1	58.7	67.5	53.5	64.9	80.3	56.1	68.0	84.2
		HWFET	41.0	41.0	48.4	55.8	48.2	55.5	61.7	50.5	59.4	69.7	52.5	62.6	73.7
		Combined	40.8	40.8	48.9	57.3	48.7	57.2	64.7	52.1	62.3	75.2	54.4	65.5	79.1
	Adjusted	UDDS	30.6	30.6	36.5	42.6	36.3	42.7	48.3	39.3	46.6	56.1	41.0	48.6	58.5
		HWFET	29.0	29.0	34.1	39.3	34.0	39.1	43.4	35.6	41.8	49.0	37.0	44.0	51.7
		Combined	29.9	29.9	35.4	41.1	35.2	41.0	45.9	37.5	44.3	52.6	39.1	46.4	55.2
FC PHEV10	Unadjusted	UDDS	52.1	52.1	62.0	72.4	61.5	71.5	81.6	65.2	78.4	96.2	68.2	82.0	100.9
		HWFET	54.2	54.2	62.4	71.0	62.2	70.3	77.5	64.1	74.5	86.1	66.3	78.7	91.1
		Combined	53.0	53.0	62.2	71.8	61.8	71.0	79.7	64.7	76.6	91.4	67.3	80.5	96.2
	Adjusted	UDDS	38.3	38.3	44.8	51.3	44.5	50.8	56.9	46.8	55.0	65.4	48.7	57.2	68.0
		HWFET	38.2	38.2	43.9	49.8	43.7	49.4	54.3	45.1	52.3	60.3	46.6	55.2	63.7
		Combined	38.2	38.2	44.4	50.6	44.1	50.1	55.7	46.0	53.7	63.0	47.7	56.2	66.0
FC PHEV20	Unadjusted	UDDS	62.4	62.4	74.3	87.1	73.8	86.1	98.7	78.4	94.6	116.4	82.2	99.1	122.2
		HWFET	55.4	55.4	64.3	73.6	64.0	72.9	80.8	66.4	77.8	91.0	68.8	82.0	96.2
		Combined	59.0	59.0	69.4	80.4	69.0	79.6	89.7	72.5	86.2	103.4	75.6	90.6	108.9
	Adjusted	UDDS	45.0	45.0	52.5	60.1	52.2	59.5	66.8	55.0	64.5	76.4	57.3	67.0	79.5
		HWFET	39.0	39.0	45.2	51.6	45.0	51.1	56.6	46.6	54.5	63.6	48.3	57.4	67.1
		Combined	42.1	42.1	48.9	56.0	48.7	55.4	61.8	50.9	59.6	70.1	52.9	62.3	73.4
FC PHEV30	Unadjusted	UDDS	89.5	89.5	105.8	121.7	105.1	120.8	139.2	110.1	133.4	163.2	115.4	140.5	171.3
		HWFET	69.9	69.9	80.7	91.3	80.3	90.8	101.2	82.7	97.3	113.7	85.9	102.8	120.1
		Combined	79.5	79.5	92.8	105.8	92.3	105.2	119.1	95.8	114.3	136.5	99.9	120.6	143.7
	Adjusted	UDDS	61.6	61.6	70.8	79.2	70.4	78.7	88.0	73.1	85.2	99.4	75.9	88.7	103.0
		HWFET	49.1	49.1	56.5	63.8	56.3	63.5	70.6	57.9	67.9	79.1	60.1	71.7	83.4
		Combined	55.2	55.2	63.6	71.4	63.2	71.0	79.2	65.3	76.4	89.1	67.9	80.1	93.1
FC PHEV40	Unadjusted	UDDS	103.0	103.0	122.1	140.6	121.2	139.6	161.4	127.1	154.8	189.5	133.5	163.1	199.2
		HWFET	88.4	88.4	102.4	115.8	101.9	115.3	128.9	105.0	123.8	144.9	109.1	131.0	153.1
		Combined	95.9	95.9	112.4	128.3	111.7	127.5	144.9	116.1	139.1	166.4	121.2	146.9	175.5
	Adjusted	UDDS	69.2	69.2	79.4	88.7	79.0	88.3	98.6	82.0	95.5	110.9	85.2	99.3	114.9
		HWFET	61.8	61.8	71.4	80.5	71.0	80.2	89.3	73.1	85.9	100.1	75.9	90.8	105.6
		Combined	65.7	65.7	75.6	84.8	75.2	84.4	94.2	77.8	90.9	105.8	80.8	95.3	110.5

Pev details

Argonne National Laboratory Report – Light-Duty Vehicle Fuel Consumption Displacement Potential Up to 2045

				Midsize SUV												
				2010	2010			2015			2030			2045		
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Split HEV PHEV10	UDDS	CD	Wh/mile	241.9	241.9	224.5	211.5	236.1	214.2	215.8	231.8	209.1	190.6	228.8	208.9	183.3
			Distance	12.2	12.2	13.0	13.0	12.8	13.0	12.2	12.5	12.9	12.3	12.5	12.6	12.2
			MPGGE Unadjusted	431.8	431.8	456.9	491.7	443.4	484.1	870.0	454.3	543.9	1132.5	468.4	764.4	1257.7
			MPGGE Adjusted	185.6	185.6	191.1	198.3	188.2	196.8	252.6	190.6	208.2	275.4	193.6	240.8	283.8
		CS	MPGGE Unadjusted	40.8	40.8	44.1	47.4	42.1	46.8	56.4	43.3	50.4	68.6	44.5	52.7	71.8
			MPGGE Adjusted	30.7	30.7	32.9	35.2	31.6	34.8	41.2	32.4	37.2	49.0	33.2	38.7	51.0
		CD+CS	Wh/mile	50.4	50.4	46.8	44.1	49.2	44.6	45.0	48.3	43.6	39.7	47.7	43.5	38.2
			MPGGE Unadjusted	48.2	48.2	52.1	56.0	49.8	55.3	67.1	51.2	59.6	81.7	52.6	62.6	85.6
			MPGGE Adjusted	35.7	35.7	38.3	40.9	36.8	40.4	48.0	37.7	43.3	57.0	38.7	45.2	59.2
	HWFET	CD	Wh/mile	245.3	245.3	227.2	215.5	239.8	217.1	200.4	237.4	207.7	180.1	233.5	191.8	180.6
			Distance	12.5	12.5	12.5	12.5	12.6	12.5	12.4	12.5	12.4	12.2	12.5	12.8	11.8
			MPGGE Unadjusted	111.0	111.0	117.5	125.0	113.8	123.8	146.9	115.8	132.0	173.6	119.4	131.1	203.7
			MPGGE Adjusted	77.2	77.2	81.7	86.7	79.1	85.9	101.4	80.5	91.4	119.2	82.9	90.8	139.0
		CS	MPGGE Unadjusted	36.5	36.5	39.4	42.0	37.7	41.6	49.0	38.5	44.1	58.1	39.6	46.4	61.2
			MPGGE Adjusted	25.8	25.8	27.8	29.6	26.7	29.4	34.6	27.2	31.1	40.9	27.9	32.7	43.0
		CD+CS	Wh/mile	72.2	72.2	66.8	63.4	70.5	63.8	58.9	69.8	61.1	53.0	68.7	56.4	53.1
			MPGGE Unadjusted	43.5	43.5	46.8	49.9	44.9	49.5	58.4	45.8	52.5	69.1	47.1	54.9	73.5
			MPGGE Adjusted	30.7	30.7	33.0	35.2	31.7	34.9	41.1	32.3	37.0	48.5	33.2	38.7	51.6
	Combined	CD	MPGGE Unadjusted	187.7	187.7	198.7	211.9	192.5	209.6	270.5	196.3	226.2	324.8	202.3	240.9	377.9
			MPGGE Adjusted	113.7	113.7	119.2	125.6	116.2	124.5	151.2	118.0	132.2	173.2	120.9	138.2	193.2
		CS	MPGGE Unadjusted	38.7	38.7	41.8	44.8	40.0	44.3	52.8	41.0	47.4	63.5	42.1	49.7	66.6
			MPGGE Adjusted	28.3	28.3	30.4	32.5	29.2	32.1	37.9	29.8	34.2	45.0	30.6	35.8	47.1
		CD+CS	Wh/mile	60.2	60.2	55.8	52.7	58.8	53.3	51.2	58.0	51.4	45.7	57.1	49.3	44.9
			MPGGE Unadjusted	46.0	46.0	49.6	53.1	47.5	52.5	62.8	48.6	56.2	75.5	50.0	58.9	79.7
			MPGGE Adjusted	33.3	33.3	35.8	38.1	34.3	37.7	44.6	35.1	40.2	52.8	36.0	42.0	55.5

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				Midsize SUV												
				2010	2010			2015			2030			2045		
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Split HEV PHEV20	UDDS	CD	Wh/mile	269.9	269.9	254.2	238.6	274.6	241.6	213.2	263.8	224.8	188.2	265.6	211.9	180.8
			Distance	23.9	23.9	24.0	24.0	23.4	24.0	24.1	23.9	24.0	23.6	23.4	24.0	23.4
			MPGGE Unadjusted	706.0	706.0	812.7	859.7	1033.2	853.8	841.7	867.3	825.9	1118.2	1086.4	753.2	1232.4
			MPGGE Adjusted	233.4	233.4	246.5	251.6	267.7	250.9	249.7	252.4	247.9	274.3	271.9	239.4	282.2
		CS	MPGGE Unadjusted	40.5	40.5	43.8	47.0	41.9	46.4	56.2	43.0	50.1	68.6	44.2	52.6	71.9
			MPGGE Adjusted	30.4	30.4	32.7	34.9	31.4	34.5	41.0	32.2	37.0	49.0	33.0	38.7	51.0
		CD+CS	Wh/mile	140.9	140.9	133.1	125.0	143.9	126.6	112.4	137.6	117.7	99.5	139.2	111.9	95.6
			MPGGE Unadjusted	69.0	69.0	74.9	80.4	72.4	79.4	95.4	73.8	85.3	117.0	76.4	89.1	122.9
			MPGGE Adjusted	49.2	49.2	52.9	56.2	51.3	55.6	64.9	52.2	59.1	76.8	53.8	61.3	79.9
	HWFET	CD	Wh/mile	302.4	302.4	285.4	257.3	299.3	272.0	201.5	294.3	258.9	182.8	289.9	193.5	183.4
			Distance	21.4	21.4	21.4	22.0	21.4	21.3	24.8	21.4	21.1	23.5	21.4	25.0	22.5
			MPGGE Unadjusted	186.4	186.4	208.7	186.9	199.2	218.6	145.4	197.7	228.9	172.6	206.0	130.2	202.6
			MPGGE Adjusted	127.6	127.6	142.2	128.0	136.0	148.7	100.4	135.0	155.3	118.5	140.5	90.2	138.2
		CS	MPGGE Unadjusted	36.2	36.2	39.1	41.6	37.3	41.3	48.9	38.2	43.8	57.9	39.3	46.3	61.0
			MPGGE Adjusted	25.6	25.6	27.6	29.4	26.4	29.2	34.5	27.0	30.9	40.8	27.7	32.6	42.9
		CD+CS	Wh/mile	151.6	151.6	142.8	129.6	149.9	136.2	103.7	147.4	129.6	94.1	145.2	99.6	94.4
			MPGGE Unadjusted	53.2	53.2	57.7	60.3	55.1	60.9	66.8	56.2	64.5	79.3	57.9	62.6	85.2
			MPGGE Adjusted	37.5	37.5	40.6	42.4	38.8	42.8	46.9	39.5	45.3	55.5	40.7	44.0	59.6
	Combined	CD	MPGGE Unadjusted	313.1	313.1	353.0	328.1	358.2	370.0	266.8	343.6	380.0	322.7	371.6	238.8	374.8
			MPGGE Adjusted	170.0	170.0	185.4	175.4	186.5	191.6	149.6	181.4	195.5	172.4	191.4	137.3	192.1
		CS	MPGGE Unadjusted	38.4	38.4	41.5	44.4	39.7	44.0	52.6	40.7	47.1	63.4	41.8	49.5	66.6
			MPGGE Adjusted	28.0	28.0	30.2	32.2	28.9	31.9	37.8	29.6	34.0	44.9	30.4	35.7	47.0
		CD+CS	Wh/mile	145.7	145.7	137.5	127.0	146.6	130.9	108.5	142.0	123.1	97.1	141.9	106.4	95.1
			MPGGE Unadjusted	60.9	60.9	66.0	69.9	63.4	69.9	80.0	64.7	74.5	96.4	66.8	74.8	102.5
			MPGGE Adjusted	43.2	43.2	46.5	49.0	44.8	49.0	55.4	45.6	52.0	65.5	47.0	52.1	69.3

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				Midsize SUV													
				2010	2010			2015			2030			2045			
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high	
SI Series HEV PHEV30	UDDS	CD	Wh/mile	375.2	375.2	349.3	327.6	364.8	332.4	296.8	356.5	308.8	258.7	350.9	295.7	247.3	
			Distance	31.4	31.4	30.9	30.9	31.9	30.9	30.9	30.9	30.9	31.8	30.9	30.9	31.8	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	29.1	29.1	31.8	35.0	30.2	34.4	43.5	31.8	38.7	56.0	32.7	40.7	58.4	
			MPGGE Adjusted	22.4	22.4	24.4	26.6	23.2	26.2	32.5	24.3	29.2	40.9	25.0	30.6	42.5	
		CD+CS	Wh/mile	241.4	241.4	224.8	210.9	234.8	214.0	191.7	229.4	199.4	167.5	225.9	190.8	160.1	
			MPGGE Unadjusted	61.9	61.9	67.8	74.5	64.3	73.3	92.6	67.5	82.4	119.2	69.6	86.6	124.2	
			MPGGE Adjusted	44.7	44.7	48.4	52.6	46.2	51.9	63.3	48.3	57.4	77.9	49.6	59.9	80.5	
		HWFET	CD	Wh/mile	407.6	407.6	379.7	358.6	397.9	361.8	327.7	392.3	340.7	293.5	384.8	324.4	278.4
	Distance			28.5	28.5	28.5	28.1	28.3	28.3	27.7	28.0	27.8	27.0	28.1	27.9	27.2	
	MPGGE Unadjusted			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	MPGGE Adjusted			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	CS		MPGGE Unadjusted	27.1	27.1	29.7	32.1	28.2	31.8	38.9	29.3	34.6	47.1	30.3	37.0	49.7	
			MPGGE Adjusted	19.2	19.2	21.0	22.7	20.0	22.5	27.5	20.8	24.5	33.2	21.4	26.2	35.0	
	CD+CS		Wh/mile	210.1	210.1	195.7	184.8	205.1	186.5	168.9	202.1	175.6	151.2	198.3	167.2	143.4	
			MPGGE Unadjusted	45.9	45.9	50.4	54.3	47.8	53.8	65.9	49.7	58.7	79.8	51.3	62.7	84.2	
			MPGGE Adjusted	32.4	32.4	35.5	38.3	33.7	37.9	46.3	35.0	41.3	55.9	36.2	44.1	58.9	
	Combined		CD	MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		MPGGE Adjusted		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	28.2	28.2	30.8	33.6	29.3	33.2	41.3	30.6	36.8	51.6	31.6	38.9	54.1	
			MPGGE Adjusted	20.8	20.8	22.7	24.7	21.6	24.4	30.0	22.6	26.9	37.1	23.2	28.4	38.8	
		CD+CS	Wh/mile	227.3	227.3	211.7	199.1	221.4	201.6	181.4	217.1	188.7	160.2	213.4	180.2	152.6	
			MPGGE Unadjusted	53.5	53.5	58.6	63.8	55.6	63.0	78.3	58.1	69.7	97.5	60.0	73.9	102.3	

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				Midsize SUV													
				2010	2010			2015			2030			2045			
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high	
SI Series HEV PHEV40	UDDS	CD	Wh/mile	383.3	383.3	356.5	334.2	372.4	339.3	302.5	363.8	314.8	261.6	357.4	300.6	249.8	
			Distance	40.7	40.7	40.6	40.6	40.6	40.7	40.8	40.7	40.8	40.4	40.6	40.5	40.4	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	28.4	28.4	31.2	34.0	29.7	33.5	42.8	31.0	38.0	54.4	32.1	40.0	57.7	
			MPGGE Adjusted	21.8	21.8	23.9	25.9	22.8	25.5	32.1	23.8	28.7	39.9	24.5	30.1	42.0	
		CD+CS	Wh/mile	281.2	281.2	261.7	245.4	273.3	249.1	223.4	267.0	232.4	193.3	262.4	221.7	184.5	
			MPGGE Unadjusted	70.9	70.9	77.9	85.0	74.2	83.7	107.1	77.5	95.0	136.0	80.2	100.1	144.3	
			MPGGE Adjusted	50.4	50.4	54.7	58.9	52.4	58.1	71.4	54.5	64.7	86.5	56.1	67.6	90.5	
		HWFET	CD	Wh/mile	411.4	411.4	382.8	361.4	401.3	364.8	329.5	395.5	342.6	295.5	387.4	325.9	280.1
	Distance			37.6	37.6	37.6	37.4	37.4	37.6	37.2	37.2	37.2	35.9	37.3	37.4	36.1	
	MPGGE Unadjusted			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	MPGGE Adjusted			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	CS		MPGGE Unadjusted	26.7	26.7	29.3	31.6	27.7	31.3	38.3	28.9	34.3	46.7	29.9	36.6	49.3	
			MPGGE Adjusted	18.9	18.9	20.7	22.4	19.7	22.2	27.1	20.5	24.2	32.9	21.2	25.9	34.8	
	CD+CS		Wh/mile	277.7	277.7	258.5	244.0	270.9	246.3	222.5	267.0	231.3	199.6	261.6	220.0	189.2	
			MPGGE Unadjusted	58.0	58.0	63.7	68.7	60.3	68.1	83.3	62.9	74.5	101.5	65.0	79.5	107.1	
			MPGGE Adjusted	40.8	40.8	44.8	48.3	42.4	47.8	58.3	44.2	52.2	70.7	45.7	55.7	74.6	
	Combined	CD	MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
		CS	MPGGE Unadjusted	27.6	27.6	30.3	32.9	28.8	32.5	40.7	30.0	36.2	50.6	31.1	38.4	53.6	
			MPGGE Adjusted	20.4	20.4	22.4	24.2	21.3	23.9	29.6	22.2	26.5	36.4	22.9	28.0	38.4	
		CD+CS	Wh/mile	279.7	279.7	260.2	244.8	272.2	247.9	223.0	267.0	231.9	196.1	262.0	220.9	186.6	
			MPGGE Unadjusted	64.5	64.5	70.8	76.8	67.2	75.9	94.9	70.2	84.5	117.9	72.6	89.6	124.8	
			MPGGE Adjusted	45.6	45.6	49.7	53.6	47.4	53.0	64.9	49.3	58.4	78.6	50.9	61.6	82.6	

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				Midsize_SUV													
				2010	2010			2015			2030			2045			
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high	
CI Split HEV PHEV10	UDDS	CD	Wh/mile	249.7	249.7	233.2	217.1	244.0	235.4	223.7	239.3	217.1	198.1	236.1	216.5	190.2	
			Distance	12.3	12.3	12.6	12.4	12.3	12.2	12.1	12.3	12.3	11.9	12.3	12.4	12.3	
			MPGGE Unadjusted	440.6	440.6	468.4	486.4	448.9	661.8	851.1	469.0	567.3	1068.5	485.7	816.1	1132.6	
			MPGGE Adjusted	187.6	187.6	193.6	197.3	189.4	227.2	250.7	193.7	212.3	270.5	197.1	246.8	275.4	
		CS	MPGGE Unadjusted	42.1	42.1	45.1	49.2	43.1	48.6	55.1	45.2	53.1	65.5	46.9	56.1	68.2	
			MPGGE Adjusted	31.6	31.6	33.7	36.4	32.2	36.0	40.3	33.7	39.0	47.0	34.8	41.0	48.7	
		CD+CS	Wh/mile	52.0	52.0	48.6	45.2	50.8	49.0	46.6	49.9	45.2	41.3	49.2	45.1	39.6	
			MPGGE Unadjusted	49.8	49.8	53.3	58.1	50.9	57.7	65.6	53.4	62.8	77.9	55.4	66.6	81.2	
			MPGGE Adjusted	36.8	36.8	39.2	42.3	37.5	42.0	47.1	39.2	45.3	54.7	40.5	47.7	56.7	
		Distance	12.4	12.4	13.0	10.8	12.9	10.7	10.6	12.4	12.9	10.5	13.0	11.1	12.5		
		MPGGE Unadjusted	123.8	123.8	119.2	250.2	114.5	275.3	320.4	130.7	137.1	322.4	123.3	238.7	171.5		
		MPGGE Adjusted	85.9	85.9	82.8	169.0	79.6	185.0	213.4	90.6	94.9	214.6	85.6	161.7	117.8		
	CS	MPGGE Unadjusted	37.2	37.2	39.8	43.0	37.9	42.7	47.5	39.5	45.8	54.8	41.1	48.9	57.6		
		MPGGE Adjusted	26.3	26.3	28.1	30.4	26.8	30.1	33.5	27.9	32.3	38.6	29.0	34.5	40.5		
	CD+CS	Wh/mile	76.8	76.8	68.1	81.4	71.7	83.7	77.7	74.4	62.1	68.2	69.4	71.2	51.1		
		MPGGE Unadjusted	44.7	44.7	47.4	53.7	45.1	53.5	59.7	47.5	54.5	68.4	49.0	60.5	68.5		
		MPGGE Adjusted	31.6	31.6	33.4	37.8	31.9	37.7	42.0	33.5	38.4	48.0	34.5	42.5	48.1		
	MPGGE Adjusted	122.4	122.4	120.8	183.5	116.9	206.1	232.4	128.1	136.4	242.2	124.3	199.5	171.9			
	CS	MPGGE Unadjusted	39.8	39.8	42.6	46.2	40.6	45.7	51.4	42.5	49.5	60.2	44.1	52.6	63.0		
		MPGGE Adjusted	29.0	29.0	30.9	33.4	29.5	33.1	37.0	30.8	35.7	42.8	32.0	37.8	44.7		
	CD+CS	Wh/mile	63.2	63.2	57.4	61.5	60.2	64.6	60.6	60.9	52.8	53.4	58.3	56.8	44.8		
		MPGGE Unadjusted	47.4	47.4	50.5	56.0	48.1	55.7	62.8	50.6	58.8	73.3	52.3	63.7	74.9		
				MPGGE Adjusted	34.2	34.2	36.3	40.1	34.7	40.0	44.6	36.4	41.9	51.5	37.6	45.2	52.4

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				Midsize SUV												
				2010	2010			2015			2030			2045		
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
CI Split HEV PHEV20	UDDS	CD	Wh/mile	278.9	278.9	269.6	247.8	275.4	251.1	227.3	271.8	231.7	200.6	266.2	221.4	187.6
			Distance	24.0	24.0	23.8	24.0	24.0	24.0	23.9	23.9	24.0	23.4	24.0	24.0	23.7
			MPGGE Unadjusted	724.9	724.9	1033.7	917.7	800.8	910.2	995.8	879.0	833.6	1272.4	863.1	845.8	1116.2
			MPGGE Adjusted	235.8	235.8	267.7	257.4	245.1	256.7	264.5	253.6	248.8	284.7	251.9	250.1	274.2
		CS	MPGGE Unadjusted	41.7	41.7	44.7	48.8	42.7	48.2	54.9	44.9	52.9	65.4	46.5	55.9	68.2
			MPGGE Adjusted	31.3	31.3	33.4	36.2	32.0	35.7	40.2	33.5	38.9	47.0	34.6	40.9	48.7
		CD+CS	Wh/mile	145.5	145.5	141.1	129.9	143.7	131.6	119.4	141.8	121.3	105.7	138.9	116.9	99.3
			MPGGE Unadjusted	71.2	71.2	77.1	83.7	73.1	82.5	93.9	76.9	89.8	112.2	79.5	95.0	116.3
			MPGGE Adjusted	50.6	50.6	54.2	58.1	51.7	57.5	64.1	54.1	61.7	74.2	55.7	64.7	76.4
	HWFET	CD	Wh/mile	310.8	310.8	303.3	265.8	307.5	277.1	241.0	302.3	244.6	214.5	299.4	225.9	176.3
			Distance	21.4	21.4	19.5	20.1	21.4	20.0	21.8	21.4	22.5	21.4	19.7	23.3	23.8
			MPGGE Unadjusted	201.3	201.3	272.4	208.2	212.8	236.3	209.6	214.8	188.9	226.9	238.9	184.8	170.7
			MPGGE Adjusted	137.4	137.4	183.2	141.9	144.9	160.1	142.8	146.2	129.3	154.0	161.8	126.6	117.3
		CS	MPGGE Unadjusted	37.0	37.0	39.5	42.8	37.6	42.4	47.2	39.2	45.6	54.6	40.8	48.7	57.4
			MPGGE Adjusted	26.1	26.1	27.9	30.2	26.6	29.9	33.3	27.7	32.2	38.4	28.8	34.3	40.4
		CD+CS	Wh/mile	155.4	155.4	89.2	78.2	153.7	81.5	121.3	151.2	123.4	108.3	88.1	114.2	90.8
			MPGGE Unadjusted	54.7	54.7	49.7	52.9	55.8	52.7	68.3	58.0	65.4	78.3	51.0	68.9	78.5
			MPGGE Adjusted	38.5	38.5	35.1	37.3	39.3	37.2	48.0	40.8	46.0	54.9	35.9	48.4	55.0
	Combined	CD	MPGGE Unadjusted	334.0	334.0	457.9	362.2	356.9	398.7	370.5	367.6	328.7	413.9	396.7	324.1	319.6
			MPGGE Adjusted	178.4	178.4	221.7	188.4	186.9	201.9	191.2	190.6	175.7	206.0	201.4	173.8	171.1
		CS	MPGGE Unadjusted	39.4	39.4	42.2	45.9	40.2	45.4	51.2	42.1	49.4	60.0	43.8	52.4	62.9
			MPGGE Adjusted	28.8	28.8	30.7	33.2	29.3	32.9	36.8	30.6	35.6	42.7	31.7	37.6	44.6
		CD+CS	Wh/mile	150.0	150.0	117.8	106.6	148.2	109.0	120.3	146.0	122.2	106.9	116.0	115.7	95.5
			MPGGE Unadjusted	62.6	62.6	61.8	66.3	64.1	65.8	80.4	67.0	76.9	93.9	63.5	81.2	95.6
			MPGGE Adjusted	44.3	44.3	43.5	46.4	45.3	46.1	55.7	47.2	53.5	64.1	44.6	56.2	65.0

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				Midsize SUV													
				2010	2010			2015			2030			2045			
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high	
CI Series HEV PHEV30	UDDS	CD	Wh/mile	385.8	385.8	359.6	337.9	375.0	342.9	306.8	366.5	318.8	268.5	360.7	305.5	257.2	
			Distance	31.4	31.4	31.4	31.4	31.4	31.4	30.9	31.4	30.9	30.9	31.4	30.9	30.9	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	29.7	29.7	32.4	36.2	30.6	35.6	42.7	32.8	40.5	52.2	34.2	43.0	54.9	
			MPGGE Adjusted	22.8	22.8	24.7	27.5	23.5	27.0	32.0	25.1	30.5	38.4	26.0	32.2	40.2	
		CD+CS	Wh/mile	248.3	248.3	231.5	217.5	241.3	220.8	198.2	235.9	205.9	173.9	232.2	197.1	166.6	
			MPGGE Unadjusted	63.2	63.2	68.9	77.0	65.1	75.8	90.7	69.9	86.2	111.0	72.8	91.5	116.7	
			MPGGE Adjusted	45.6	45.6	49.1	54.1	46.8	53.4	62.3	49.8	59.6	73.6	51.6	62.7	76.6	
		HWFET	CD	Wh/mile	414.8	414.8	386.5	365.4	404.6	368.8	334.2	398.9	347.3	299.6	391.2	330.7	284.5
	Distance			29.4	29.4	29.2	28.6	28.8	28.8	28.2	28.4	28.2	27.5	28.5	28.5	27.7	
	MPGGE Unadjusted			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	MPGGE Adjusted			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	CS		MPGGE Unadjusted	27.8	27.8	30.2	33.0	28.4	32.7	37.7	30.3	36.2	44.8	31.6	39.0	47.3	
			MPGGE Adjusted	19.7	19.7	21.4	23.4	20.2	23.2	26.6	21.4	25.6	31.6	22.4	27.6	33.3	
	CD+CS		Wh/mile	213.7	213.7	199.2	188.3	208.5	190.1	172.2	205.6	179.0	154.4	201.6	170.5	146.6	
			MPGGE Unadjusted	47.0	47.0	51.1	56.0	48.2	55.5	63.8	51.3	61.4	75.9	53.6	66.1	80.1	
			MPGGE Adjusted	33.2	33.2	36.0	39.4	34.0	39.1	44.9	36.2	43.2	53.2	37.7	46.5	56.1	
	Combined		CD	MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		MPGGE Adjusted		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	28.8	28.8	31.3	34.7	29.6	34.2	40.2	31.6	38.5	48.6	33.0	41.1	51.2	
			MPGGE Adjusted	21.3	21.3	23.1	25.5	21.8	25.1	29.3	23.3	28.1	35.0	24.3	29.9	36.8	
		CD+CS	Wh/mile	232.7	232.7	216.9	204.4	226.6	207.0	186.5	222.2	193.8	165.1	218.4	185.1	157.6	
			MPGGE Unadjusted	54.8	54.8	59.6	65.9	56.2	65.0	76.3	60.1	72.9	91.9	62.7	78.0	96.8	
			MPGGE Adjusted	39.0	39.0	42.2	46.4	40.0	45.8	53.0	42.6	50.9	62.8	44.3	54.2	65.8	

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				Midsize SUV													
				2010	2010			2015			2030			2045			
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high	
CI Series HEV PHEV40	UDDS	CD	Wh/mile	394.2	394.2	367.2	344.4	383.1	349.4	312.7	373.9	325.0	271.4	367.7	310.5	259.9	
			Distance	40.7	40.7	40.8	40.8	40.7	40.8	40.6	40.8	40.8	40.6	40.8	40.5	40.6	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
		CS	MPGGE Unadjusted	29.0	29.0	31.6	35.3	29.9	34.7	41.4	32.1	39.7	52.0	33.5	42.3	53.9	
			MPGGE Adjusted	22.3	22.3	24.2	26.8	23.0	26.4	31.1	24.5	29.9	38.3	25.6	31.7	39.5	
		CD+CS	Wh/mile	289.3	289.3	269.6	252.9	281.2	256.6	231.0	274.5	240.0	200.6	270.0	229.0	192.1	
			MPGGE Unadjusted	72.5	72.5	79.0	88.2	74.8	86.8	103.6	80.2	99.2	130.0	83.8	105.7	134.7	
			MPGGE Adjusted	51.4	51.4	55.3	60.8	52.8	60.0	69.5	56.1	67.1	83.5	58.2	70.7	85.8	
		HWFET	CD	Wh/mile	418.6	418.6	389.9	368.1	408.3	371.4	336.0	402.1	349.2	301.6	394.2	332.2	286.4
				Distance	37.9	37.9	38.0	37.8	37.8	37.9	37.5	37.5	37.7	36.4	37.7	37.8	36.6
				MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	MPGGE Adjusted			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	CS		MPGGE Unadjusted	27.3	27.3	29.7	32.6	28.0	32.3	37.2	29.8	35.8	44.4	31.2	38.5	46.7	
			MPGGE Adjusted	19.4	19.4	21.0	23.1	19.8	22.9	26.3	21.1	25.4	31.3	22.1	27.2	33.0	
	CD+CS		Wh/mile	282.6	282.6	263.3	248.6	275.7	250.8	226.9	271.5	235.8	203.7	266.2	224.3	193.5	
			MPGGE Unadjusted	59.4	59.4	64.6	70.9	60.9	70.2	80.9	64.8	77.9	96.5	67.8	83.8	101.6	
			MPGGE Adjusted	41.8	41.8	45.4	49.7	42.8	49.3	56.7	45.5	54.6	67.4	47.6	58.7	70.8	
	Combined		CD	MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			CS	MPGGE Unadjusted	28.2	28.2	30.7	34.0	29.0	33.6	39.4	31.0	37.9	48.3	32.4	40.5	50.4
		MPGGE Adjusted		20.9	20.9	22.7	25.0	21.4	24.7	28.8	22.9	27.7	34.8	23.9	29.5	36.3	
		CD+CS	Wh/mile	286.3	286.3	266.8	251.0	278.7	254.0	229.2	273.2	238.1	202.0	268.3	226.9	192.7	
			MPGGE Unadjusted	66.0	66.0	71.8	79.5	67.8	78.5	92.0	72.4	88.4	112.5	75.8	94.6	117.5	
			MPGGE Adjusted	46.6	46.6	50.4	55.3	47.8	54.6	63.1	50.8	60.8	75.4	52.9	64.7	78.4	

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				Midsize_SUV												
				2010	2010			2015			2030			2045		
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
H2 Split HEV PHEV10	UDDS	CD	Wh/mile	242.5	242.5	224.0	209.7	237.7	212.5	213.0	232.1	207.2	195.4	224.0	203.7	191.3
			Distance	12.8	12.8	13.0	12.9	12.4	13.0	12.1	12.6	12.8	11.6	12.8	12.8	11.3
			MPGGE Unadjusted	412.3	412.3	501.9	578.1	483.4	567.8	999.6	524.0	659.2	1953.0	537.9	908.2	2834.1
			MPGGE Adjusted	181.1	181.1	200.3	214.2	196.7	212.4	264.9	204.6	226.8	314.8	207.1	256.5	335.4
		CS	MPGGE Unadjusted	39.6	39.6	47.4	54.2	45.0	53.5	62.0	49.0	59.6	74.2	52.5	64.2	80.6
			MPGGE Adjusted	29.8	29.8	35.2	39.8	33.6	39.2	44.8	36.3	43.2	52.5	38.6	46.2	56.3
		CD+CS	Wh/mile	50.5	50.5	46.7	43.7	49.5	44.3	44.4	48.4	43.2	40.7	46.7	42.4	39.9
			MPGGE Unadjusted	46.8	46.8	56.0	64.1	53.2	63.2	73.8	58.0	70.5	88.8	62.0	76.2	96.5
			MPGGE Adjusted	34.8	34.8	40.9	46.1	39.1	45.6	52.2	42.2	50.1	61.1	44.8	53.7	65.6
	HWFET	CD	Wh/mile	245.2	245.2	226.7	214.5	241.0	216.1	198.8	237.5	206.8	221.0	231.9	190.5	211.5
			Distance	12.5	12.5	12.5	12.4	12.5	12.5	12.2	12.5	12.2	8.3	12.4	12.6	8.3
			MPGGE Unadjusted	107.8	107.8	127.2	144.2	122.7	142.5	162.4	131.9	156.7	323.9	141.4	161.2	366.7
			MPGGE Adjusted	75.0	75.0	88.2	99.6	85.2	98.5	111.8	91.4	108.0	215.6	97.7	111.0	241.9
		CS	MPGGE Unadjusted	35.6	35.6	42.3	48.0	40.3	47.5	53.9	43.5	52.0	62.4	46.6	56.5	68.3
			MPGGE Adjusted	25.2	25.2	29.9	33.8	28.4	33.5	38.0	30.7	36.6	43.9	32.9	39.8	47.9
		CD+CS	Wh/mile	72.1	72.1	66.7	63.1	70.9	63.6	58.5	69.9	60.8	65.0	68.2	56.0	62.2
			MPGGE Unadjusted	42.5	42.5	50.4	57.1	48.0	56.5	64.2	51.9	61.9	77.4	55.5	67.0	84.8
			MPGGE Adjusted	30.0	30.0	35.5	40.2	33.8	39.8	45.1	36.6	43.5	54.2	39.1	47.0	59.4
	Combined	CD	MPGGE Unadjusted	181.5	181.5	215.9	245.5	208.1	242.4	301.1	224.2	269.9	598.5	237.8	294.4	703.6
			MPGGE Adjusted	110.7	110.7	127.4	141.1	123.8	139.7	163.9	131.4	151.7	260.8	137.7	161.3	285.7
		CS	MPGGE Unadjusted	37.7	37.7	45.0	51.2	42.7	50.6	58.1	46.4	55.9	68.4	49.6	60.5	74.5
			MPGGE Adjusted	27.5	27.5	32.6	36.8	31.0	36.4	41.4	33.6	40.0	48.2	35.8	43.1	52.2
		CD+CS	Wh/mile	60.2	60.2	55.7	52.4	59.1	52.9	50.7	58.0	51.1	51.6	56.4	48.6	49.9
			MPGGE Unadjusted	44.7	44.7	53.3	60.7	50.7	60.0	69.1	55.1	66.3	83.3	58.9	71.8	90.9
			MPGGE Adjusted	32.4	32.4	38.3	43.3	36.5	42.8	48.7	39.5	46.9	57.8	42.0	50.5	62.6

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				Midsize SUV												
				2010	2010			2015			2030			2045		
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
H2 Split HEV PHEV20	UDDS	CD	Wh/mile	275.1	275.1	253.7	237.6	275.8	239.1	211.3	273.3	222.0	190.5	257.2	208.8	187.4
			Distance	24.0	24.0	23.9	23.9	23.5	24.0	24.0	22.7	24.0	22.9	23.9	24.0	22.3
			MPGGE Unadjusted	748.2	748.2	911.4	1063.8	1119.9	994.1	1006.6	1386.3	995.5	1544.4	1070.3	956.4	2623.2
			MPGGE Adjusted	238.8	238.8	256.8	270.2	274.5	264.4	265.5	291.3	264.5	299.2	270.7	261.0	331.5
		CS	MPGGE Unadjusted	39.3	39.3	47.2	53.8	44.7	53.1	61.9	48.8	59.5	74.3	52.3	64.2	80.8
			MPGGE Adjusted	29.6	29.6	35.0	39.5	33.4	39.0	44.7	36.1	43.2	52.5	38.5	46.2	56.4
		CD+CS	Wh/mile	143.6	143.6	133.0	124.6	144.5	125.3	111.6	143.0	116.2	100.0	134.2	110.3	99.0
			MPGGE Unadjusted	67.2	67.2	80.9	92.4	77.3	91.0	105.6	84.6	101.3	127.6	89.7	109.1	141.0
			MPGGE Adjusted	48.1	48.1	56.5	63.2	54.3	62.4	70.6	58.7	68.3	82.3	61.7	72.5	88.9
		HWFET	CD	Wh/mile	308.5	308.5	265.2	267.1	300.4	257.7	199.9	295.4	236.3	190.9	287.3	193.8
	Distance			21.4	21.4	22.7	21.3	21.4	21.9	24.6	21.3	22.0	19.1	21.3	24.8	15.9
	MPGGE Unadjusted			193.7	193.7	177.9	248.0	215.3	212.6	161.1	225.5	207.2	206.3	241.0	162.9	N/A
	MPGGE Adjusted			132.5	132.5	122.0	167.6	146.5	144.8	110.9	153.1	141.2	140.7	163.2	112.1	N/A
	CS		MPGGE Unadjusted	35.3	35.3	42.0	47.5	40.0	47.1	53.7	43.2	51.7	62.2	46.2	56.3	68.1
			MPGGE Adjusted	25.0	25.0	29.7	33.5	28.2	33.2	37.8	30.5	36.4	43.7	32.6	39.7	47.8
	CD+CS		Wh/mile	154.4	154.4	133.9	133.8	150.4	129.8	102.8	148.9	119.5	56.2	144.0	99.7	77.8
			MPGGE Unadjusted	52.3	52.3	60.5	70.0	59.1	68.3	73.5	63.9	73.9	74.7	68.1	76.6	89.6
			MPGGE Adjusted	36.9	36.9	42.5	49.2	41.6	48.0	51.6	44.9	51.8	52.4	47.8	53.7	62.6
	Combined	CD	MPGGE Unadjusted	327.0	327.0	319.2	428.9	387.4	374.5	299.4	418.0	367.0	394.1	420.0	299.7	4618.2
			MPGGE Adjusted	175.4	175.4	171.5	211.9	197.0	192.7	163.1	207.2	189.9	198.5	208.8	163.4	553.3
		CS	MPGGE Unadjusted	37.4	37.4	44.7	50.8	42.4	50.2	57.9	46.1	55.7	68.3	49.4	60.4	74.5
			MPGGE Adjusted	27.3	27.3	32.4	36.6	30.8	36.2	41.3	33.4	39.9	48.2	35.6	43.0	52.2
		CD+CS	Wh/mile	148.4	148.4	133.4	128.7	147.2	127.3	107.6	145.6	117.7	80.3	138.6	105.6	89.5
			MPGGE Unadjusted	59.6	59.6	70.2	80.8	67.9	79.2	88.2	73.8	86.8	96.8	78.5	91.6	112.0
			MPGGE Adjusted	42.3	42.3	49.2	56.0	47.7	55.0	60.5	51.5	59.7	65.5	54.6	62.6	74.8

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				Midsize_SUV													
				2010	2010			2015			2030			2045			
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high	
H2 Series HEV PHEV30	UDDS	CD	Wh/mile	378.7	378.7	347.3	323.6	365.8	328.7	291.6	356.7	304.4	252.5	346.5	290.5	242.1	
			Distance	31.4	31.4	31.9	30.9	31.9	30.9	31.9	30.9	30.9	30.9	30.9	30.9	32.0	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	28.3	28.3	34.7	40.4	32.4	39.7	48.5	36.1	45.8	59.6	39.1	50.3	65.0	
			MPGGE Adjusted	21.8	21.8	26.4	30.4	24.8	29.9	35.9	27.4	34.1	43.3	29.5	37.1	46.7	
		CD+CS	Wh/mile	243.7	243.7	223.5	208.2	235.4	211.6	188.3	229.6	196.6	163.4	223.0	187.4	156.7	
			MPGGE Unadjusted	60.2	60.2	73.8	86.0	68.9	84.5	103.1	76.8	97.4	126.8	83.2	106.9	138.4	
			MPGGE Adjusted	43.6	43.6	52.2	59.5	49.2	58.6	69.2	54.0	66.1	81.9	57.8	71.4	87.7	
	HWFET	CD	Wh/mile	410.0	410.0	378.3	355.9	398.6	359.4	324.4	392.4	337.9	289.6	381.8	321.1	275.1	
			Distance	28.6	28.6	28.4	27.9	28.4	28.2	27.6	28.0	27.6	26.7	27.9	27.7	26.9	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	26.7	26.7	32.2	36.9	30.4	36.5	43.0	33.5	41.2	50.7	35.9	45.3	55.5	
			MPGGE Adjusted	18.9	18.9	22.8	26.1	21.5	25.8	30.4	23.7	29.1	35.7	25.4	32.0	39.1	
		CD+CS	Wh/mile	211.3	211.3	195.0	183.4	205.4	185.2	167.1	202.2	174.1	149.2	196.8	165.5	141.7	
			MPGGE Unadjusted	45.2	45.2	54.6	62.5	51.5	61.8	72.9	56.7	69.9	85.9	60.9	76.8	94.0	
			MPGGE Adjusted	31.9	31.9	38.4	43.9	36.3	43.5	51.1	39.9	49.0	60.1	42.8	53.8	65.7	
	Combined	CD	MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	27.5	27.5	33.5	38.7	31.5	38.2	45.8	34.9	43.6	55.2	37.6	47.9	60.4	
			MPGGE Adjusted	20.4	20.4	24.6	28.3	23.2	27.9	33.2	25.6	31.7	39.5	27.5	34.6	42.9	
		CD+CS	Wh/mile	229.1	229.1	210.7	197.1	221.9	199.7	178.8	217.3	186.4	157.0	211.2	177.5	150.0	
			MPGGE Unadjusted	52.4	52.4	63.7	73.5	59.8	72.5	86.9	66.2	82.7	104.4	71.4	90.9	114.2	
			MPGGE Adjusted	37.4	37.4	44.9	51.3	42.4	50.7	59.7	46.6	57.1	70.4	50.0	62.2	76.2	

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				Midsize SUV													
				2010	2010			2015			2030			2045			
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high	
H2 Series HEV PHEV40	UDDS	CD	Wh/mile	386.5	386.5	354.5	330.0	373.6	335.2	297.3	364.0	310.5	255.3	353.0	295.5	244.7	
			Distance	40.7	40.7	40.7	40.6	40.7	40.6	40.6	40.7	40.6	40.4	40.6	40.5	40.4	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	27.6	27.6	33.7	39.6	31.7	38.8	47.7	35.2	45.0	58.9	38.1	48.9	64.2	
			MPGGE Adjusted	21.3	21.3	25.7	29.8	24.2	29.3	35.4	26.8	33.6	42.8	28.8	36.2	46.2	
		CD+CS	Wh/mile	283.7	283.7	260.2	242.3	274.2	246.1	219.5	267.2	229.1	188.5	259.1	217.8	180.6	
			MPGGE Unadjusted	69.0	69.0	84.2	99.0	79.2	97.0	119.1	88.1	112.6	147.2	95.3	122.2	160.6	
			MPGGE Adjusted	49.2	49.2	58.5	67.0	55.4	65.8	77.9	60.7	74.4	91.9	64.9	79.5	98.2	
	HWFET	CD	Wh/mile	413.6	413.6	381.5	358.7	402.1	362.1	326.2	395.6	339.9	291.5	384.5	322.6	276.9	
			Distance	38.6	38.6	37.5	37.2	37.5	37.4	36.8	37.1	36.8	35.6	37.1	37.1	35.9	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
		CS	MPGGE Unadjusted	26.3	26.3	31.7	36.4	29.9	36.0	42.5	33.0	40.6	50.2	35.5	44.9	55.1	
			MPGGE Adjusted	18.6	18.6	22.5	25.7	21.2	25.5	30.0	23.3	28.7	35.4	25.1	31.7	38.8	
		CD+CS	Wh/mile	279.2	279.2	257.6	242.2	271.5	244.5	220.2	267.1	229.4	196.9	259.6	217.8	187.0	
			MPGGE Unadjusted	57.1	57.1	69.0	79.1	65.0	78.3	92.5	71.7	88.4	109.1	77.2	97.5	119.8	
			MPGGE Adjusted	40.2	40.2	48.4	55.4	45.7	54.9	64.6	50.3	61.8	76.0	54.1	68.0	83.2	
	Combined	CD	MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
		CS	MPGGE Unadjusted	27.0	27.0	32.8	38.1	30.8	37.5	45.2	34.2	42.9	54.6	36.9	47.0	59.8	
			MPGGE Adjusted	20.0	20.0	24.1	27.8	22.8	27.4	32.8	25.1	31.2	39.1	27.0	34.0	42.6	
		CD+CS	Wh/mile	281.7	281.7	259.0	242.2	272.9	245.4	219.8	267.2	229.3	192.3	259.3	217.8	183.5	
			MPGGE Unadjusted	63.1	63.1	76.6	88.9	72.1	87.6	105.5	79.9	100.2	127.2	86.2	109.7	139.2	
			MPGGE Adjusted	44.7	44.7	53.5	61.2	50.6	60.4	71.3	55.6	68.1	84.0	59.5	73.9	90.8	

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				Midsize_SUV													
				2010	2010			2015			2030			2045			
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high	
E85 Split HEV PHEV10	UDDS	CD	Wh/mile	241.8	241.8	225.1	226.9	236.6	229.8	213.8	232.0	209.8	190.7	229.3	208.9	183.5	
			Distance	12.8	12.8	13.0	12.3	12.9	12.4	12.6	12.5	12.9	12.3	12.5	12.6	12.2	
			MPGGE Unadjusted	402.8	402.8	431.0	646.4	418.1	633.5	806.7	428.6	514.1	1078.3	440.9	724.6	1191.9	
			MPGGE Adjusted	178.8	178.8	185.4	224.9	182.4	223.0	245.8	184.9	202.7	271.3	187.6	235.8	279.5	
		CS	MPGGE Unadjusted	38.2	38.2	41.3	44.4	39.5	43.8	55.8	40.6	47.2	64.9	41.7	49.4	67.9	
			MPGGE Adjusted	28.9	28.9	31.0	33.2	29.8	32.8	40.8	30.5	35.1	46.7	31.3	36.6	48.6	
		CD+CS	Wh/mile	50.4	50.4	46.9	47.3	49.3	47.9	44.5	48.3	43.7	39.7	47.8	43.5	38.2	
			MPGGE Unadjusted	45.1	45.1	48.8	52.8	46.7	52.1	66.3	48.0	55.9	77.3	49.2	58.7	80.9	
			MPGGE Adjusted	33.7	33.7	36.1	38.8	34.7	38.3	47.5	35.6	40.8	54.3	36.4	42.7	56.5	
		Distance	12.5	12.5	12.5	12.5	12.5	12.5	12.9	12.5	12.4	12.2	12.5	12.6	11.8		
		MPGGE Unadjusted	103.3	103.3	110.6	117.8	106.8	116.6	137.0	109.0	124.2	164.7	112.4	125.9	193.2		
		MPGGE Adjusted	72.0	72.0	77.0	81.9	74.4	81.0	94.8	75.9	86.2	113.3	78.2	87.3	132.1		
	CS	MPGGE Unadjusted	34.1	34.1	36.8	39.2	35.1	38.9	48.4	35.9	41.2	54.9	37.0	43.5	57.7		
		MPGGE Adjusted	24.1	24.1	26.0	27.7	24.8	27.5	34.2	25.4	29.1	38.6	26.2	30.7	40.6		
	CD+CS	Wh/mile	72.1	72.1	67.1	63.6	70.8	64.1	57.2	70.1	61.4	53.1	68.9	57.1	53.3		
		MPGGE Unadjusted	40.6	40.6	43.8	46.7	41.9	46.3	57.3	42.8	49.0	65.3	44.1	51.6	69.4		
		MPGGE Adjusted	28.7	28.7	30.9	32.9	29.6	32.7	40.3	30.2	34.6	45.9	31.1	36.4	48.7		
	MPGGE Adjusted	107.2	107.2	113.5	125.9	110.3	124.7	143.2	112.3	126.0	166.7	115.1	133.6	186.1			
	CS	MPGGE Unadjusted	36.2	36.2	39.1	41.9	37.4	41.5	52.2	38.3	44.3	60.0	39.4	46.6	62.9		
		MPGGE Adjusted	26.5	26.5	28.5	30.5	27.3	30.2	37.5	28.0	32.1	42.7	28.7	33.7	44.6		
	CD+CS	Wh/mile	60.1	60.1	56.0	54.6	59.0	55.2	50.2	58.1	51.7	45.8	57.3	49.6	45.0		
		MPGGE Unadjusted	43.0	43.0	46.4	49.9	44.4	49.3	61.9	45.5	52.6	71.4	46.8	55.3	75.3		
				MPGGE Adjusted	31.2	31.2	33.6	35.9	32.2	35.6	44.0	33.0	37.8	50.2	33.8	39.6	52.7

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				Midsize SUV												
				2010	2010			2015			2030			2045		
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
E85 Split HEV PHEV20	UDDS	CD	Wh/mile	268.4	268.4	254.9	238.5	274.8	241.7	213.6	269.6	224.5	188.1	258.5	211.8	181.0
			Distance	24.0	24.0	23.9	24.0	23.4	24.0	24.0	23.5	24.0	23.6	23.9	23.9	23.4
			MPGGE Unadjusted	634.3	634.3	780.4	805.5	974.7	797.9	839.5	999.6	765.3	1063.6	793.7	713.1	1168.2
			MPGGE Adjusted	223.1	223.1	242.7	245.6	262.7	244.8	249.4	264.9	240.9	270.1	244.3	234.3	277.9
		CS	MPGGE Unadjusted	37.8	37.8	41.0	44.1	39.3	43.6	55.5	40.4	47.0	64.9	41.5	49.3	67.9
			MPGGE Adjusted	28.6	28.6	30.8	33.0	29.6	32.6	40.6	30.4	34.9	46.7	31.2	36.5	48.5
		CD+CS	Wh/mile	140.1	140.1	133.6	124.9	144.0	126.6	112.6	141.2	118.2	99.5	135.5	111.9	95.7
			MPGGE Unadjusted	64.4	64.4	70.3	75.5	67.9	74.6	94.2	69.9	80.0	110.7	71.2	83.7	116.1
			MPGGE Adjusted	46.3	46.3	50.0	53.2	48.5	52.7	64.3	49.8	56.0	73.4	50.6	58.1	76.3
	HWFET	CD	Wh/mile	302.9	302.9	271.7	252.7	299.6	259.9	202.3	294.4	216.2	183.3	290.1	195.6	184.0
			Distance	21.3	21.3	22.0	22.5	21.4	22.0	24.7	21.3	24.4	23.5	21.3	24.8	22.5
			MPGGE Unadjusted	175.2	175.2	164.7	164.3	186.7	173.7	144.5	184.6	129.5	163.8	192.7	124.9	192.2
			MPGGE Adjusted	120.3	120.3	113.3	113.0	127.8	119.3	99.8	126.4	89.8	112.7	131.8	86.7	131.4
		CS	MPGGE Unadjusted	33.8	33.8	36.5	38.9	34.8	38.5	48.2	35.6	41.0	54.7	36.7	43.4	57.5
			MPGGE Adjusted	23.9	23.9	25.8	27.5	24.6	27.2	34.0	25.1	28.9	38.5	25.9	30.6	40.5
		CD+CS	Wh/mile	151.8	151.8	136.8	127.6	150.1	130.9	104.0	147.6	110.8	94.4	145.3	100.7	94.7
			MPGGE Unadjusted	49.8	49.8	52.9	55.9	51.5	55.8	66.0	52.4	56.6	74.9	54.1	58.9	80.3
			MPGGE Adjusted	35.1	35.1	37.3	39.4	36.3	39.3	46.4	36.9	39.8	52.5	38.1	41.5	56.3
	Combined	CD	MPGGE Unadjusted	291.1	291.1	291.0	292.2	336.1	304.9	265.3	334.6	238.5	306.3	330.3	228.6	355.6
			MPGGE Adjusted	161.1	161.1	160.3	160.8	178.1	166.1	149.0	177.4	137.1	165.9	176.5	132.6	185.1
		CS	MPGGE Unadjusted	35.9	35.9	38.9	41.6	37.1	41.1	52.0	38.1	44.1	59.9	39.2	46.5	62.8
			MPGGE Adjusted	26.3	26.3	28.3	30.2	27.1	29.9	37.3	27.8	31.9	42.6	28.6	33.6	44.5
		CD+CS	Wh/mile	145.4	145.4	135.0	126.1	146.7	128.5	108.8	144.1	114.9	97.2	139.9	106.9	95.3
			MPGGE Unadjusted	56.9	56.9	61.2	65.2	59.4	64.8	79.0	60.7	67.4	91.1	62.3	70.4	96.7
			MPGGE Adjusted	40.5	40.5	43.4	45.9	42.1	45.7	54.8	43.0	47.3	62.3	44.1	49.2	65.8

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				Midsize SUV													
				2010	2010			2015			2030			2045			
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high	
E85 Series HEV PHEV30	UDDS	CD	Wh/mile	375.5	375.5	349.7	327.8	365.0	332.8	297.2	357.1	309.1	258.9	351.3	296.0	247.6	
			Distance	31.7	31.7	30.9	30.9	31.6	30.9	30.9	30.9	30.9	31.7	31.6	30.9	31.7	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	27.3	27.3	29.9	33.0	28.4	32.2	43.2	29.8	36.4	52.3	30.8	38.3	55.4	
			MPGGE Adjusted	21.0	21.0	23.0	25.2	21.9	24.6	32.3	22.9	27.6	38.5	23.6	28.9	40.5	
		CD+CS	Wh/mile	241.6	241.6	225.0	211.0	234.9	214.2	192.0	229.8	199.6	167.7	226.1	190.9	160.3	
			MPGGE Unadjusted	58.0	58.0	63.7	70.1	60.4	68.4	91.8	63.5	77.4	111.4	65.5	81.4	117.9	
			MPGGE Adjusted	42.2	42.2	45.9	49.9	43.8	48.9	62.9	45.8	54.4	73.8	47.0	56.8	77.2	
	HWFET	CD	Wh/mile	407.9	407.9	379.9	358.7	398.1	362.1	328.0	392.6	340.9	293.7	385.0	324.6	278.6	
			Distance	28.5	28.5	28.5	28.1	28.3	28.4	27.8	28.0	27.8	27.0	28.1	27.9	27.2	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	25.4	25.4	27.9	30.1	26.5	29.9	38.5	27.6	32.6	44.6	28.5	34.8	47.1	
			MPGGE Adjusted	18.0	18.0	19.8	21.3	18.8	21.1	27.2	19.5	23.1	31.5	20.2	24.6	33.2	
		CD+CS	Wh/mile	210.2	210.2	195.8	184.9	205.1	186.6	169.0	202.3	175.7	151.3	198.4	167.3	143.5	
			MPGGE Unadjusted	43.1	43.1	47.3	51.1	44.9	50.6	65.3	46.7	55.2	75.6	48.3	58.9	79.8	
			MPGGE Adjusted	30.5	30.5	33.4	36.0	31.7	35.7	45.9	33.0	38.9	53.0	34.1	41.5	55.9	
	Combined	CD	MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	26.4	26.4	29.0	31.6	27.5	31.1	40.9	28.8	34.6	48.5	29.7	36.6	51.3	
			MPGGE Adjusted	19.6	19.6	21.4	23.3	20.4	22.9	29.8	21.3	25.4	35.0	21.9	26.8	36.9	
		CD+CS	Wh/mile	227.5	227.5	211.9	199.2	221.5	201.8	181.6	217.4	188.8	160.3	213.6	180.3	152.8	
			MPGGE Unadjusted	50.2	50.2	55.1	60.0	52.3	59.1	77.6	54.7	65.6	91.8	56.4	69.5	97.0	
			MPGGE Adjusted	36.0	36.0	39.2	42.5	37.4	41.9	53.9	39.0	46.1	62.7	40.1	48.7	65.9	

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				Midsize SUV													
				2010	2010			2015			2030			2045			
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high	
E85 Series HEV PHEV40	UDDS	CD	Wh/mile	383.7	383.7	356.9	334.4	372.6	339.6	302.8	364.3	315.1	261.8	357.9	300.9	250.1	
			Distance	40.7	40.7	40.6	40.5	40.6	40.6	40.8	40.6	40.6	40.4	40.6	40.5	40.4	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	26.4	26.4	29.2	32.0	27.8	31.4	42.4	29.1	35.5	51.6	30.1	37.7	55.1	
			MPGGE Adjusted	20.4	20.4	22.5	24.5	21.4	24.0	31.8	22.4	27.0	38.0	23.1	28.5	40.3	
		CD+CS	Wh/mile	281.6	281.6	261.9	245.5	273.4	249.4	223.7	267.4	232.6	193.4	262.7	221.8	184.7	
			MPGGE Unadjusted	66.0	66.0	73.0	79.9	69.5	78.5	106.0	72.9	88.8	129.0	75.3	94.2	137.7	
			MPGGE Adjusted	47.3	47.3	51.7	55.9	49.5	55.1	70.8	51.6	61.2	83.0	53.1	64.3	87.3	
	HWFET	CD	Wh/mile	411.7	411.7	383.1	361.6	401.4	365.0	329.7	395.8	342.8	295.6	387.7	326.0	280.3	
			Distance	37.6	37.6	37.6	37.3	37.4	37.6	37.2	37.2	37.1	35.9	37.3	37.4	36.1	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
		CS	MPGGE Unadjusted	25.1	25.1	27.5	29.7	26.1	29.4	38.0	27.2	32.2	44.2	28.1	34.4	46.7	
			MPGGE Adjusted	17.8	17.8	19.5	21.1	18.5	20.8	26.9	19.3	22.8	31.2	19.9	24.4	33.0	
		CD+CS	Wh/mile	278.0	278.0	258.6	244.1	271.0	246.5	222.6	267.2	231.5	199.7	261.8	220.1	189.3	
			MPGGE Unadjusted	54.5	54.5	59.8	64.6	56.7	64.0	82.7	59.1	70.1	96.1	61.1	74.8	101.6	
			MPGGE Adjusted	38.4	38.4	42.1	45.4	39.9	45.0	57.9	41.6	49.2	67.1	43.0	52.5	70.8	
	Combined	CD	MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
		CS	MPGGE Unadjusted	25.8	25.8	28.4	30.9	27.0	30.5	40.3	28.2	34.0	48.0	29.2	36.1	51.0	
			MPGGE Adjusted	19.1	19.1	21.0	22.8	20.0	22.5	29.4	20.9	24.9	34.6	21.6	26.5	36.6	
		CD+CS	Wh/mile	279.9	279.9	260.4	244.9	272.3	248.1	223.2	267.3	232.1	196.2	262.3	221.0	186.8	
			MPGGE Unadjusted	60.2	60.2	66.4	72.2	63.1	71.2	94.0	66.0	79.3	111.8	68.2	84.4	118.7	
			MPGGE Adjusted	42.8	42.8	46.9	50.7	44.7	50.0	64.3	46.6	55.1	75.0	48.0	58.4	79.0	

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				Midsize SUV													
				2010	2010			2015			2030			2045			
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high	
FC HEV PHEV10	UDDS	CD	Wh/mile	380.7	380.7	331.4	298.2	351.5	302.1	271.0	331.7	282.2	231.6	317.2	269.3	220.9	
			Distance	11.3	11.3	11.1	10.2	10.3	10.2	10.2	11.1	10.1	10.1	10.2	10.2	10.1	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	43.2	43.2	51.4	60.1	51.0	59.4	67.7	54.1	65.1	79.8	56.6	68.1	83.7	
			MPGGE Adjusted	32.3	32.3	37.9	43.6	37.6	43.1	48.4	39.7	46.8	55.9	41.3	48.6	58.2	
		CD+CS	Wh/mile	79.3	79.3	69.0	62.1	73.2	62.9	56.5	69.1	58.8	48.3	66.1	56.1	46.0	
			MPGGE Unadjusted	52.1	52.1	62.0	72.4	61.5	71.5	81.6	65.2	78.4	96.2	68.2	82.0	100.9	
			MPGGE Adjusted	38.3	38.3	44.8	51.3	44.5	50.8	56.9	46.8	55.0	65.4	48.7	57.2	68.0	
	HWFET	CD	Wh/mile	390.8	390.8	341.3	308.6	362.1	312.0	277.3	343.2	288.1	237.7	328.4	276.6	226.6	
			Distance	9.2	9.2	9.3	9.2	9.3	9.2	8.5	9.3	8.7	8.3	10.0	8.5	8.3	
			MPGGE Unadjusted	402.5	402.5	388.7	391.1	394.3	391.4	385.9	361.7	370.8	355.3	358.2	412.2	386.0	
			MPGGE Adjusted	263.6	263.6	255.2	256.7	258.7	256.9	253.6	238.8	244.4	234.9	236.7	269.4	253.6	
		CS	MPGGE Unadjusted	42.6	42.6	49.3	56.4	49.1	55.8	61.9	50.9	59.5	69.5	52.7	62.7	73.4	
			MPGGE Adjusted	30.1	30.1	34.8	39.7	34.6	39.3	43.5	35.9	41.9	48.8	37.2	44.1	51.5	
		CD+CS	Wh/mile	114.9	114.9	100.4	90.8	106.5	91.8	81.6	101.0	84.7	69.9	96.6	81.4	66.6	
			MPGGE Unadjusted	54.2	54.2	62.4	71.0	62.2	70.3	77.5	64.1	74.5	86.1	66.3	78.7	91.1	
			MPGGE Adjusted	38.2	38.2	43.9	49.8	43.7	49.4	54.3	45.1	52.3	60.3	46.6	55.2	63.7	
	Combined	CD	MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
		CS	MPGGE Unadjusted	42.9	42.9	50.5	58.4	50.2	57.7	64.9	52.6	62.5	74.8	54.8	65.5	78.7	
			MPGGE Adjusted	31.3	31.3	36.4	41.8	36.2	41.3	46.1	37.9	44.4	52.4	39.3	46.5	55.0	
		CD+CS	Wh/mile	95.3	95.3	83.1	75.0	88.2	75.9	67.7	83.4	70.5	58.0	79.8	67.5	55.3	
			MPGGE Unadjusted	53.0	53.0	62.2	71.8	61.8	71.0	79.7	64.7	76.6	91.4	67.3	80.5	96.2	
	MPGGE Adjusted	38.2	38.2	44.4	50.6	44.1	50.1	55.7	46.0	53.7	63.0	47.7	56.2	66.0			

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				Midsize SUV													
				2010	2010			2015			2030			2045			
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high	
FC HEV PHEV20	UDDS	CD	Wh/mile	387.4	387.4	336.8	302.5	357.2	306.4	271.1	336.7	283.1	229.6	321.4	269.5	218.8	
			Distance	20.2	20.2	20.2	20.2	20.2	20.2	20.5	20.6	20.5	20.3	20.2	20.6	20.4	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	42.4	42.4	50.6	59.2	50.2	58.5	67.1	53.3	64.3	79.1	55.9	67.4	83.1	
			MPGGE Adjusted	31.8	31.8	37.3	43.0	37.1	42.6	48.0	39.1	46.3	55.4	40.8	48.2	57.8	
		CD+CS	Wh/mile	147.2	147.2	127.9	114.9	135.7	116.4	103.2	127.9	107.7	87.4	122.1	102.5	83.2	
			MPGGE Unadjusted	62.4	62.4	74.3	87.1	73.8	86.1	98.7	78.4	94.6	116.4	82.2	99.1	122.2	
			MPGGE Adjusted	45.0	45.0	52.5	60.1	52.2	59.5	66.8	55.0	64.5	76.4	57.3	67.0	79.5	
	HWFET	CD	Wh/mile	440.6	440.6	394.1	362.8	416.9	366.1	330.6	402.6	344.2	296.5	388.2	325.9	280.6	
			Distance	19.5	19.5	17.1	16.7	18.5	16.8	16.6	16.7	16.6	15.7	16.6	16.7	15.8	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
		CS	MPGGE Unadjusted	42.1	42.1	48.8	55.9	48.6	55.4	61.4	50.4	59.1	69.2	52.3	62.4	73.1	
			MPGGE Adjusted	29.7	29.7	34.4	39.4	34.3	39.0	43.2	35.6	41.6	48.6	36.9	43.8	51.3	
		CD+CS	Wh/mile	129.6	129.6	115.9	106.7	122.6	107.7	97.3	118.4	101.2	87.2	114.2	95.9	82.5	
			MPGGE Unadjusted	55.4	55.4	64.3	73.6	64.0	72.9	80.8	66.4	77.8	91.0	68.8	82.0	96.2	
			MPGGE Adjusted	39.0	39.0	45.2	51.6	45.0	51.1	56.6	46.6	54.5	63.6	48.3	57.4	67.1	
	Combined	CD	MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
		CS	MPGGE Unadjusted	42.3	42.3	49.8	57.7	49.5	57.1	64.4	52.0	61.9	74.3	54.2	65.0	78.3	
			MPGGE Adjusted	30.8	30.8	36.0	41.3	35.8	40.9	45.7	37.4	44.0	52.1	38.9	46.1	54.7	
		CD+CS	Wh/mile	139.3	139.3	122.5	111.2	129.8	112.5	100.5	123.6	104.8	87.3	118.5	99.5	82.9	
			MPGGE Unadjusted	59.0	59.0	69.4	80.4	69.0	79.6	89.7	72.5	86.2	103.4	75.6	90.6	108.9	
			MPGGE Adjusted	42.1	42.1	48.9	56.0	48.7	55.4	61.8	50.9	59.6	70.1	52.9	62.3	73.4	

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				Midsize SUV													
				2010	2010			2015			2030			2045			
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high	
FC HEV PHEV30	UDDS	CD	Wh/mile	374.6	374.6	328.2	300.5	348.1	302.8	265.1	332.5	276.8	229.2	317.2	262.7	218.6	
			Distance	33.6	33.6	32.0	32.1	33.6	33.5	32.0	32.1	32.0	32.0	32.0	32.0	32.0	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	42.1	42.1	49.7	57.2	49.4	56.8	65.4	51.7	62.7	76.7	54.3	66.0	80.5	
			MPGGE Adjusted	31.6	31.6	36.8	41.7	36.5	41.4	47.0	38.1	45.3	54.0	39.8	47.3	56.2	
		CD+CS	Wh/mile	238.7	238.7	209.1	191.5	221.8	192.9	169.4	211.8	176.9	147.1	202.1	167.9	140.3	
			MPGGE Unadjusted	89.5	89.5	105.8	121.7	105.1	120.8	139.2	110.1	133.4	163.2	115.4	140.5	171.3	
			MPGGE Adjusted	61.6	61.6	70.8	79.2	70.4	78.7	88.0	73.1	85.2	99.4	75.9	88.7	103.0	
	HWFET	CD	Wh/mile	422.0	422.0	378.5	352.5	400.3	354.2	319.4	389.3	332.5	286.1	374.7	314.5	270.9	
			Distance	27.1	27.1	26.5	28.8	28.4	26.2	28.8	28.8	25.7	25.0	28.8	25.7	25.1	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
		CS	MPGGE Unadjusted	41.2	41.2	47.6	53.9	47.4	53.6	59.7	48.8	57.4	67.1	50.7	60.7	70.9	
			MPGGE Adjusted	29.1	29.1	33.6	37.9	33.4	37.7	42.0	34.4	40.4	47.1	35.7	42.7	49.7	
		CD+CS	Wh/mile	217.2	217.2	194.7	181.4	206.0	182.3	164.5	200.4	171.2	147.4	192.8	161.9	139.6	
			MPGGE Unadjusted	69.9	69.9	80.7	91.3	80.3	90.8	101.2	82.7	97.3	113.7	85.9	102.8	120.1	
			MPGGE Adjusted	49.1	49.1	56.5	63.8	56.3	63.5	70.6	57.9	67.9	79.1	60.1	71.7	83.4	
	Combined	CD	MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
		CS	MPGGE Unadjusted	41.7	41.7	48.8	55.6	48.5	55.3	62.7	50.4	60.2	72.0	52.6	63.5	75.8	
			MPGGE Adjusted	30.4	30.4	35.3	39.9	35.1	39.7	44.6	36.3	42.9	50.6	37.8	45.1	53.1	
		CD+CS	Wh/mile	229.0	229.0	202.6	186.9	214.6	188.1	167.2	206.7	174.3	147.2	197.9	165.2	140.0	
			MPGGE Unadjusted	79.5	79.5	92.8	105.8	92.3	105.2	119.1	95.8	114.3	136.5	99.9	120.6	143.7	
	MPGGE Adjusted	55.2	55.2	63.6	71.4	63.2	71.0	79.2	65.3	76.4	89.1	67.9	80.1	93.1			

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				Midsize_SUV													
				2010	2010			2015			2030			2045			
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high	
FC HEV PHEV40	UDDS	CD	Wh/mile	382.4	382.4	334.1	305.5	354.3	307.5	267.8	338.0	279.6	232.9	322.1	265.1	222.4	
			Distance	41.8	41.8	41.3	41.2	41.3	41.1	41.0	41.3	41.0	40.7	41.2	41.0	40.5	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	41.2	41.2	48.8	56.2	48.5	55.9	64.6	50.9	61.9	75.8	53.4	65.2	79.7	
			MPGGE Adjusted	31.0	31.0	36.2	41.1	35.9	40.8	46.4	37.5	44.7	53.4	39.2	46.9	55.8	
		CD+CS	Wh/mile	276.4	276.4	241.5	220.8	256.1	222.3	194.2	244.3	202.8	170.5	232.9	192.3	163.0	
			MPGGE Unadjusted	103.0	103.0	122.1	140.6	121.2	139.6	161.4	127.1	154.8	189.5	133.5	163.1	199.2	
		MPGGE Adjusted	69.2	69.2	79.4	88.7	79.0	88.3	98.6	82.0	95.5	110.9	85.2	99.3	114.9		
		HWFET	CD	Wh/mile	427.9	427.9	382.9	356.2	405.0	357.8	322.1	393.6	335.2	287.4	378.5	316.7	271.9
				Distance	38.7	38.7	38.6	38.6	38.6	38.6	36.0	39.0	37.6	33.5	39.0	36.8	33.7
				MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	MPGGE Adjusted			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	CS		MPGGE Unadjusted	40.7	40.7	47.1	53.3	46.9	53.1	59.3	48.3	57.0	66.6	50.2	60.3	70.4	
			MPGGE Adjusted	28.7	28.7	33.2	37.5	33.1	37.4	41.7	34.0	40.1	46.8	35.4	42.4	49.4	
	CD+CS		Wh/mile	288.3	288.3	258.0	240.0	272.9	241.1	217.2	265.1	226.0	193.9	255.0	213.5	183.5	
			MPGGE Unadjusted	88.4	88.4	102.4	115.8	101.9	115.3	128.9	105.0	123.8	144.9	109.1	131.0	153.1	
	MPGGE Adjusted		61.8	61.8	71.4	80.5	71.0	80.2	89.3	73.1	85.9	100.1	75.9	90.8	105.6		
	Combined		CD	MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		MPGGE Adjusted		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
		CS	MPGGE Unadjusted	41.0	41.0	48.0	54.9	47.7	54.6	62.1	49.7	59.6	71.4	51.9	62.9	75.2	
			MPGGE Adjusted	29.9	29.9	34.8	39.4	34.6	39.2	44.2	35.9	42.5	50.2	37.4	44.7	52.7	
		CD+CS	Wh/mile	281.8	281.8	248.9	229.5	263.6	230.7	204.6	253.7	213.3	181.0	242.8	201.8	172.2	
			MPGGE Unadjusted	95.9	95.9	112.4	128.3	111.7	127.5	144.9	116.1	139.1	166.4	121.2	146.9	175.5	
		MPGGE Adjusted	65.7	65.7	75.6	84.8	75.2	84.4	94.2	77.8	90.9	105.8	80.8	95.3	110.5		
EV		UDDS	EV Only	Wh/mile	378.4	378.4	348.9	324.5	367.2	329.7	278.9	356.9	291.0	234.7	348.0	274.2	222.7
	HWFET	EV Only	Wh/mile	417.7	417.7	386.9	363.0	407.1	366.6	324.3	399.2	337.7	285.4	389.3	318.0	269.1	

Fuel consumption

			Midsize_SUV												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Conv	Unadjusted	UDDS	11.1	11.1	9.9	9.4	10.5	9.5	7.7	10.1	9.2	6.4	10.3	9.0	6.1
		HWFET	8.3	8.3	7.3	7.0	7.8	7.0	5.6	7.5	6.7	4.8	7.5	6.5	4.5
		Combined	9.8	9.8	8.7	8.3	9.3	8.4	6.8	9.0	8.1	5.6	9.0	7.9	5.4
	Adjusted	UDDS	14.2	14.2	12.7	12.1	13.5	12.2	10.0	13.0	11.9	8.4	13.2	11.7	8.1
		HWFET	11.7	11.7	10.4	9.8	11.1	9.9	8.0	10.7	9.5	6.7	10.6	9.3	6.4
		Combined	13.0	13.0	11.7	11.1	12.4	11.2	9.1	11.9	10.8	7.7	12.0	10.6	7.4
CI Conv	Unadjusted	UDDS	9.2	9.2	8.5	7.9	9.0	8.0	7.3	8.5	7.6	6.3	8.4	7.3	6.0
		HWFET	7.1	7.1	6.7	6.1	7.0	6.2	6.0	6.7	6.2	5.2	6.9	5.9	5.0
		Combined	8.3	8.3	7.7	7.1	8.1	7.2	6.7	7.7	6.9	5.8	7.7	6.6	5.6
	Adjusted	UDDS	11.8	11.8	11.1	10.2	11.6	10.4	9.6	11.0	9.9	8.3	10.9	9.5	8.0
		HWFET	10.1	10.1	9.4	8.7	9.9	8.8	8.5	9.4	8.8	7.4	9.7	8.3	7.1
		Combined	11.0	11.0	10.3	9.5	10.8	9.7	9.1	10.3	9.4	7.9	10.4	9.0	7.6
H2 Conv	Unadjusted	UDDS	13.0	13.0	10.6	9.3	11.5	9.4	8.4	10.2	8.7	7.1	9.7	8.1	6.6
		HWFET	8.6	8.6	7.4	6.5	7.6	6.6	5.7	7.1	5.9	4.9	6.6	5.5	4.5
		Combined	11.0	11.0	9.1	8.0	9.7	8.1	7.2	8.8	7.4	6.1	8.3	7.0	5.6
	Adjusted	UDDS	16.5	16.5	13.6	12.0	14.7	12.2	10.9	13.0	11.2	9.3	12.5	10.6	8.6
		HWFET	12.2	12.2	10.4	9.2	10.7	9.3	8.1	10.1	8.4	7.0	9.4	7.8	6.4
		Combined	14.6	14.6	12.2	10.7	12.9	10.9	9.6	11.7	9.9	8.2	11.1	9.3	7.6
E85 Conv	Unadjusted	UDDS	11.5	11.5	10.9	10.4	11.7	10.5	8.0	11.1	10.1	6.8	11.2	9.9	6.5
		HWFET	9.2	9.2	8.7	8.3	9.4	8.3	6.4	8.9	8.1	5.5	8.9	7.8	5.2
		Combined	10.5	10.5	9.9	9.4	10.7	9.5	7.2	10.1	9.2	6.2	10.2	9.0	5.9
	Adjusted	UDDS	14.7	14.7	13.9	13.3	15.0	13.5	10.4	14.2	13.0	8.9	14.4	12.7	8.6
		HWFET	13.0	13.0	12.2	11.7	13.3	11.8	9.0	12.6	11.4	7.8	12.6	11.0	7.4
		Combined	13.9	13.9	13.2	12.6	14.2	12.7	9.7	13.5	12.3	8.4	13.6	12.0	8.0
SI Split HEV	Unadjusted	UDDS	6.2	6.2	5.7	5.3	5.9	5.3	4.3	5.6	4.8	3.5	5.5	4.6	3.3
		HWFET	7.1	7.1	6.5	6.1	6.8	6.1	5.1	6.6	5.7	4.3	6.5	5.4	4.1
		Combined	6.6	6.6	6.0	5.6	6.3	5.7	4.7	6.1	5.2	3.9	5.9	5.0	3.7
	Adjusted	UDDS	8.1	8.1	7.5	7.1	7.9	7.0	5.9	7.5	6.5	4.9	7.4	6.3	4.7
		HWFET	10.0	10.0	9.2	8.6	9.7	8.7	7.3	9.4	8.1	6.1	9.1	7.7	5.8
		Combined	9.0	9.0	8.3	7.8	8.7	7.8	6.5	8.3	7.2	5.4	8.2	6.9	5.2
SI Split HEV PHEV10	Unadjusted	UDDS	4.9	4.9	4.5	4.2	4.7	4.3	3.5	4.6	3.9	2.9	4.5	3.8	2.7
		HWFET	5.4	5.4	5.0	4.7	5.2	4.8	4.0	5.1	4.5	3.4	5.0	4.3	3.2
		Combined	5.1	5.1	4.7	4.4	5.0	4.5	3.7	4.8	4.2	3.1	4.7	4.0	3.0
	Adjusted	UDDS	6.6	6.6	6.1	5.7	6.4	5.8	4.9	6.2	5.4	4.1	6.1	5.2	4.0
		HWFET	7.7	7.7	7.1	6.7	7.4	6.7	5.7	7.3	6.4	4.8	7.1	6.1	4.6
		Combined	7.1	7.1	6.6	6.2	6.9	6.2	5.3	6.7	5.9	4.5	6.5	5.6	4.2

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			Midsize_SUV												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Split HEV PHEV20	Unadjusted	UDDS	3.4	3.4	3.1	2.9	3.2	3.0	2.5	3.2	2.8	2.0	3.1	2.6	1.9
		HWFET	4.4	4.4	4.1	3.9	4.3	3.9	3.5	4.2	3.6	3.0	4.1	3.8	2.8
		Combined	3.9	3.9	3.6	3.4	3.7	3.4	2.9	3.6	3.2	2.4	3.5	3.1	2.3
	Adjusted	UDDS	4.8	4.8	4.4	4.2	4.6	4.2	3.6	4.5	4.0	3.1	4.4	3.8	2.9
		HWFET	6.3	6.3	5.8	5.5	6.1	5.5	5.0	5.9	5.2	4.2	5.8	5.3	3.9
		Combined	5.5	5.5	5.1	4.8	5.2	4.8	4.2	5.2	4.5	3.6	5.0	4.5	3.4
SI Series HEV PHEV30	Unadjusted	UDDS	3.8	3.8	3.5	3.2	3.7	3.2	2.5	3.5	2.9	2.0	3.4	2.7	1.9
		HWFET	5.1	5.1	4.7	4.3	4.9	4.4	3.6	4.7	4.0	2.9	4.6	3.8	2.8
		Combined	4.4	4.4	4.0	3.7	4.2	3.7	3.0	4.0	3.4	2.4	3.9	3.2	2.3
	Adjusted	UDDS	5.3	5.3	4.9	4.5	5.1	4.5	3.7	4.9	4.1	3.0	4.7	3.9	2.9
		HWFET	7.3	7.3	6.6	6.1	7.0	6.2	5.1	6.7	5.7	4.2	6.5	5.3	4.0
		Combined	6.2	6.2	5.7	5.2	5.9	5.3	4.3	5.7	4.8	3.6	5.5	4.6	3.4
SI Series HEV PHEV40	Unadjusted	UDDS	3.3	3.3	3.0	2.8	3.2	2.8	2.2	3.0	2.5	1.7	2.9	2.4	1.6
		HWFET	4.1	4.1	3.7	3.4	3.9	3.5	2.8	3.7	3.2	2.3	3.6	3.0	2.2
		Combined	3.6	3.6	3.3	3.1	3.5	3.1	2.5	3.4	2.8	2.0	3.2	2.6	1.9
	Adjusted	UDDS	4.7	4.7	4.3	4.0	4.5	4.0	3.3	4.3	3.6	2.7	4.2	3.5	2.6
		HWFET	5.8	5.8	5.3	4.9	5.5	4.9	4.0	5.3	4.5	3.3	5.1	4.2	3.2
		Combined	5.2	5.2	4.7	4.4	5.0	4.4	3.6	4.8	4.0	3.0	4.6	3.8	2.8
CI Split HEV	Unadjusted	UDDS	5.5	5.5	5.2	4.7	5.4	4.7	4.2	5.1	4.3	3.5	4.9	4.1	3.3
		HWFET	6.6	6.6	6.2	5.7	6.5	5.7	5.1	6.2	5.3	4.4	6.0	5.0	4.2
		Combined	6.0	6.0	5.6	5.2	5.9	5.2	4.6	5.6	4.8	3.9	5.4	4.5	3.7
	Adjusted	UDDS	7.4	7.4	6.9	6.4	7.2	6.4	5.7	6.8	5.9	4.9	6.6	5.6	4.7
		HWFET	9.3	9.3	8.7	8.1	9.1	8.1	7.2	8.8	7.5	6.2	8.4	7.0	5.9
		Combined	8.3	8.3	7.7	7.1	8.1	7.2	6.4	7.7	6.6	5.5	7.4	6.2	5.2
CI Split HEV PHEV10	Unadjusted	UDDS	4.7	4.7	4.4	4.1	4.6	4.1	3.6	4.4	3.7	3.0	4.2	3.5	2.9
		HWFET	5.3	5.3	5.0	4.4	5.2	4.4	3.9	5.0	4.3	3.4	4.8	3.9	3.4
		Combined	5.0	5.0	4.7	4.2	4.9	4.2	3.7	4.7	4.0	3.2	4.5	3.7	3.1
	Adjusted	UDDS	6.4	6.4	6.0	5.6	6.3	5.6	5.0	6.0	5.2	4.3	5.8	4.9	4.2
		HWFET	7.5	7.5	7.0	6.2	7.4	6.2	5.6	7.0	6.1	4.9	6.8	5.5	4.9
		Combined	6.9	6.9	6.5	5.9	6.8	5.9	5.3	6.5	5.6	4.6	6.3	5.2	4.5
CI Split HEV PHEV20	Unadjusted	UDDS	3.3	3.3	3.0	2.8	3.2	2.8	2.5	3.1	2.6	2.1	3.0	2.5	2.0
		HWFET	4.3	4.3	4.7	4.4	4.2	4.5	3.4	4.1	3.6	3.0	4.6	3.4	3.0
		Combined	3.8	3.8	3.8	3.5	3.7	3.6	2.9	3.5	3.1	2.5	3.7	2.9	2.5
	Adjusted	UDDS	4.7	4.7	4.3	4.0	4.5	4.1	3.7	4.3	3.8	3.2	4.2	3.6	3.1
		HWFET	6.1	6.1	6.7	6.3	6.0	6.3	4.9	5.8	5.1	4.3	6.5	4.9	4.3
		Combined	5.3	5.3	5.4	5.1	5.2	5.1	4.2	5.0	4.4	3.7	5.3	4.2	3.6

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			Midsize_SUV												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
CI Series HEV PHEV30	Unadjusted	UDDS	3.7	3.7	3.4	3.1	3.6	3.1	2.6	3.4	2.7	2.1	3.2	2.6	2.0
		HWFET	5.0	5.0	4.6	4.2	4.9	4.2	3.7	4.6	3.8	3.1	4.4	3.6	2.9
		Combined	4.3	4.3	3.9	3.6	4.2	3.6	3.1	3.9	3.2	2.6	3.8	3.0	2.4
	Adjusted	UDDS	5.2	5.2	4.8	4.3	5.0	4.4	3.8	4.7	3.9	3.2	4.6	3.8	3.1
		HWFET	7.1	7.1	6.5	6.0	6.9	6.0	5.2	6.5	5.4	4.4	6.2	5.1	4.2
		Combined	6.0	6.0	5.6	5.1	5.9	5.1	4.4	5.5	4.6	3.7	5.3	4.3	3.6
CI Series HEV PHEV40	Unadjusted	UDDS	3.2	3.2	3.0	2.7	3.1	2.7	2.3	2.9	2.4	1.8	2.8	2.2	1.7
		HWFET	4.0	4.0	3.6	3.3	3.9	3.3	2.9	3.6	3.0	2.4	3.5	2.8	2.3
		Combined	3.6	3.6	3.3	3.0	3.5	3.0	2.6	3.2	2.7	2.1	3.1	2.5	2.0
	Adjusted	UDDS	4.6	4.6	4.3	3.9	4.5	3.9	3.4	4.2	3.5	2.8	4.0	3.3	2.7
		HWFET	5.6	5.6	5.2	4.7	5.5	4.8	4.2	5.2	4.3	3.5	4.9	4.0	3.3
		Combined	5.0	5.0	4.7	4.3	4.9	4.3	3.7	4.6	3.9	3.1	4.4	3.6	3.0
H2 Split HEV	Unadjusted	UDDS	6.3	6.3	5.2	4.6	5.5	4.6	3.9	5.0	4.1	3.2	4.7	3.8	3.0
		HWFET	7.3	7.3	6.1	5.4	6.4	5.4	4.7	5.9	4.9	4.0	5.5	4.5	3.7
		Combined	6.7	6.7	5.6	4.9	5.9	5.0	4.3	5.4	4.4	3.6	5.1	4.1	3.3
	Adjusted	UDDS	8.3	8.3	7.0	6.2	7.4	6.2	5.4	6.7	5.6	4.5	6.3	5.2	4.2
		HWFET	10.3	10.3	8.6	7.6	9.1	7.7	6.7	8.4	6.9	5.7	7.8	6.4	5.2
		Combined	9.2	9.2	7.8	6.8	8.2	6.9	5.9	7.5	6.2	5.0	7.0	5.7	4.7
H2 Split HEV PHEV10	Unadjusted	UDDS	5.0	5.0	4.2	3.7	4.4	3.7	3.2	4.1	3.3	2.7	3.8	3.1	2.4
		HWFET	5.5	5.5	4.7	4.1	4.9	4.2	3.7	4.5	3.8	3.0	4.2	3.5	2.8
		Combined	5.3	5.3	4.4	3.9	4.6	3.9	3.4	4.3	3.5	2.8	4.0	3.3	2.6
	Adjusted	UDDS	6.8	6.8	5.7	5.1	6.0	5.2	4.5	5.6	4.7	3.8	5.3	4.4	3.6
		HWFET	7.8	7.8	6.6	5.9	6.9	5.9	5.2	6.4	5.4	4.3	6.0	5.0	4.0
		Combined	7.3	7.3	6.1	5.4	6.4	5.5	4.8	6.0	5.0	4.1	5.6	4.7	3.8
H2 Split HEV PHEV20	Unadjusted	UDDS	3.5	3.5	2.9	2.5	3.0	2.6	2.2	2.8	2.3	1.8	2.6	2.2	1.7
		HWFET	4.5	4.5	3.9	3.4	4.0	3.4	3.2	3.7	3.2	3.1	3.5	3.1	2.6
		Combined	3.9	3.9	3.3	2.9	3.5	3.0	2.7	3.2	2.7	2.4	3.0	2.6	2.1
	Adjusted	UDDS	4.9	4.9	4.2	3.7	4.3	3.8	3.3	4.0	3.4	2.9	3.8	3.2	2.6
		HWFET	6.4	6.4	5.5	4.8	5.7	4.9	4.6	5.2	4.5	4.5	4.9	4.4	3.8
		Combined	5.6	5.6	4.8	4.2	4.9	4.3	3.9	4.6	3.9	3.6	4.3	3.8	3.1
H2 Series HEV PHEV30	Unadjusted	UDDS	3.9	3.9	3.2	2.7	3.4	2.8	2.3	3.1	2.4	1.9	2.8	2.2	1.7
		HWFET	5.2	5.2	4.3	3.8	4.6	3.8	3.2	4.1	3.4	2.7	3.9	3.1	2.5
		Combined	4.5	4.5	3.7	3.2	3.9	3.2	2.7	3.6	2.8	2.3	3.3	2.6	2.1
	Adjusted	UDDS	5.4	5.4	4.5	4.0	4.8	4.0	3.4	4.4	3.6	2.9	4.1	3.3	2.7
		HWFET	7.4	7.4	6.1	5.4	6.5	5.4	4.6	5.9	4.8	3.9	5.5	4.4	3.6
		Combined	6.3	6.3	5.2	4.6	5.5	4.6	3.9	5.0	4.1	3.3	4.7	3.8	3.1

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			Midsize_SUV												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
H2 Series HEV PHEV40	Unadjusted	UDDS	3.4	3.4	2.8	2.4	3.0	2.4	2.0	2.7	2.1	1.6	2.5	1.9	1.5
		HWFET	4.1	4.1	3.4	3.0	3.6	3.0	2.5	3.3	2.7	2.2	3.0	2.4	2.0
		Combined	3.7	3.7	3.1	2.6	3.3	2.7	2.2	2.9	2.3	1.8	2.7	2.1	1.7
	Adjusted	UDDS	4.8	4.8	4.0	3.5	4.2	3.6	3.0	3.9	3.2	2.6	3.6	3.0	2.4
		HWFET	5.8	5.8	4.9	4.2	5.1	4.3	3.6	4.7	3.8	3.1	4.3	3.5	2.8
		Combined	5.3	5.3	4.4	3.8	4.7	3.9	3.3	4.2	3.5	2.8	4.0	3.2	2.6
E85 Split HEV	Unadjusted	UDDS	6.6	6.6	6.1	5.7	6.4	5.7	4.4	6.1	5.2	3.7	5.9	5.0	3.6
		HWFET	7.6	7.6	7.0	6.5	7.4	6.6	5.2	7.1	6.1	4.6	6.9	5.8	4.3
		Combined	7.1	7.1	6.5	6.1	6.9	6.1	4.8	6.6	5.6	4.1	6.4	5.4	3.9
	Adjusted	UDDS	8.8	8.8	8.1	7.6	8.5	7.6	6.0	8.1	7.0	5.2	7.9	6.7	5.0
		HWFET	10.8	10.8	9.9	9.3	10.4	9.3	7.4	10.1	8.7	6.5	9.8	8.3	6.1
		Combined	9.7	9.7	8.9	8.3	9.4	8.4	6.6	9.0	7.8	5.8	8.7	7.4	5.5
E85 Split HEV PHEV10	Unadjusted	UDDS	5.2	5.2	4.8	4.5	5.0	4.5	3.5	4.9	4.2	3.0	4.8	4.0	2.9
		HWFET	5.8	5.8	5.4	5.0	5.6	5.1	4.1	5.5	4.8	3.6	5.3	4.6	3.4
		Combined	5.5	5.5	5.1	4.7	5.3	4.8	3.8	5.2	4.5	3.3	5.0	4.3	3.1
	Adjusted	UDDS	7.0	7.0	6.5	6.1	6.8	6.1	5.0	6.6	5.8	4.3	6.5	5.5	4.2
		HWFET	8.2	8.2	7.6	7.1	8.0	7.2	5.8	7.8	6.8	5.1	7.6	6.5	4.8
		Combined	7.5	7.5	7.0	6.5	7.3	6.6	5.3	7.1	6.2	4.7	6.9	5.9	4.5
E85 Split HEV PHEV20	Unadjusted	UDDS	3.7	3.7	3.3	3.1	3.5	3.2	2.5	3.4	2.9	2.1	3.3	2.8	2.0
		HWFET	4.7	4.7	4.4	4.2	4.6	4.2	3.6	4.5	4.2	3.1	4.4	4.0	2.9
		Combined	4.1	4.1	3.8	3.6	4.0	3.6	3.0	3.9	3.5	2.6	3.8	3.3	2.4
	Adjusted	UDDS	5.1	5.1	4.7	4.4	4.8	4.5	3.7	4.7	4.2	3.2	4.7	4.0	3.1
		HWFET	6.7	6.7	6.3	6.0	6.5	6.0	5.1	6.4	5.9	4.5	6.2	5.7	4.2
		Combined	5.8	5.8	5.4	5.1	5.6	5.2	4.3	5.5	5.0	3.8	5.3	4.8	3.6
E85 Series HEV PHEV30	Unadjusted	UDDS	4.1	4.1	3.7	3.4	3.9	3.4	2.6	3.7	3.0	2.1	3.6	2.9	2.0
		HWFET	5.5	5.5	5.0	4.6	5.2	4.6	3.6	5.0	4.3	3.1	4.9	4.0	2.9
		Combined	4.7	4.7	4.3	3.9	4.5	4.0	3.0	4.3	3.6	2.6	4.2	3.4	2.4
	Adjusted	UDDS	5.6	5.6	5.1	4.7	5.4	4.8	3.7	5.1	4.3	3.2	5.0	4.1	3.0
		HWFET	7.7	7.7	7.0	6.5	7.4	6.6	5.1	7.1	6.0	4.4	6.9	5.7	4.2
		Combined	6.5	6.5	6.0	5.5	6.3	5.6	4.4	6.0	5.1	3.8	5.9	4.8	3.6
E85 Series HEV PHEV40	Unadjusted	UDDS	3.6	3.6	3.2	2.9	3.4	3.0	2.2	3.2	2.6	1.8	3.1	2.5	1.7
		HWFET	4.3	4.3	3.9	3.6	4.2	3.7	2.8	4.0	3.4	2.4	3.8	3.1	2.3
		Combined	3.9	3.9	3.5	3.3	3.7	3.3	2.5	3.6	3.0	2.1	3.4	2.8	2.0
	Adjusted	UDDS	5.0	5.0	4.5	4.2	4.7	4.3	3.3	4.6	3.8	2.8	4.4	3.7	2.7
		HWFET	6.1	6.1	5.6	5.2	5.9	5.2	4.1	5.7	4.8	3.5	5.5	4.5	3.3
		Combined	5.5	5.5	5.0	4.6	5.3	4.7	3.7	5.1	4.3	3.1	4.9	4.0	3.0

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			Midsize_SUV												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
FC HEV	Unadjusted	UDDS	5.8	5.8	4.8	4.0	4.8	4.0	3.5	4.4	3.6	2.9	4.2	3.5	2.8
		HWFET	5.7	5.7	4.9	4.2	4.9	4.2	3.8	4.7	4.0	3.4	4.5	3.8	3.2
		Combined	5.8	5.8	4.8	4.1	4.8	4.1	3.6	4.5	3.8	3.1	4.3	3.6	3.0
	Adjusted	UDDS	7.7	7.7	6.4	5.5	6.5	5.5	4.9	6.0	5.0	4.2	5.7	4.8	4.0
		HWFET	8.1	8.1	6.9	6.0	6.9	6.0	5.4	6.6	5.6	4.8	6.4	5.3	4.5
		Combined	7.9	7.9	6.6	5.7	6.7	5.7	5.1	6.3	5.3	4.5	6.0	5.1	4.3
FC PHEV10	Unadjusted	UDDS	4.5	4.5	3.8	3.2	3.8	3.3	2.9	3.6	3.0	2.4	3.4	2.9	2.3
		HWFET	4.3	4.3	3.8	3.3	3.8	3.3	3.0	3.7	3.2	2.7	3.5	3.0	2.6
		Combined	4.4	4.4	3.8	3.3	3.8	3.3	3.0	3.6	3.1	2.6	3.5	2.9	2.4
	Adjusted	UDDS	6.1	6.1	5.3	4.6	5.3	4.6	4.1	5.0	4.3	3.6	4.8	4.1	3.5
		HWFET	6.2	6.2	5.4	4.7	5.4	4.8	4.3	5.2	4.5	3.9	5.0	4.3	3.7
		Combined	6.1	6.1	5.3	4.6	5.3	4.7	4.2	5.1	4.4	3.7	4.9	4.2	3.6
FC PHEV20	Unadjusted	UDDS	3.8	3.8	3.2	2.7	3.2	2.7	2.4	3.0	2.5	2.0	2.9	2.4	1.9
		HWFET	4.2	4.2	3.7	3.2	3.7	3.2	2.9	3.5	3.0	2.6	3.4	2.9	2.4
		Combined	4.0	4.0	3.4	2.9	3.4	3.0	2.6	3.2	2.7	2.3	3.1	2.6	2.2
	Adjusted	UDDS	5.2	5.2	4.5	3.9	4.5	4.0	3.5	4.3	3.6	3.1	4.1	3.5	3.0
		HWFET	6.0	6.0	5.2	4.6	5.2	4.6	4.2	5.0	4.3	3.7	4.9	4.1	3.5
		Combined	5.6	5.6	4.8	4.2	4.8	4.2	3.8	4.6	3.9	3.4	4.4	3.8	3.2
FC PHEV30	Unadjusted	UDDS	2.6	2.6	2.2	1.9	2.2	1.9	1.7	2.1	1.8	1.4	2.0	1.7	1.4
		HWFET	3.4	3.4	2.9	2.6	2.9	2.6	2.3	2.8	2.4	2.1	2.7	2.3	2.0
		Combined	3.0	3.0	2.5	2.2	2.5	2.2	2.0	2.5	2.1	1.7	2.4	2.0	1.6
	Adjusted	UDDS	3.8	3.8	3.3	3.0	3.3	3.0	2.7	3.2	2.8	2.4	3.1	2.7	2.3
		HWFET	4.8	4.8	4.2	3.7	4.2	3.7	3.3	4.1	3.5	3.0	3.9	3.3	2.8
		Combined	4.3	4.3	3.7	3.3	3.7	3.3	3.0	3.6	3.1	2.6	3.5	2.9	2.5
FC PHEV40	Unadjusted	UDDS	2.3	2.3	1.9	1.7	1.9	1.7	1.5	1.9	1.5	1.2	1.8	1.4	1.2
		HWFET	2.7	2.7	2.3	2.0	2.3	2.0	1.8	2.2	1.9	1.6	2.2	1.8	1.5
		Combined	2.5	2.5	2.1	1.8	2.1	1.8	1.6	2.0	1.7	1.4	1.9	1.6	1.3
	Adjusted	UDDS	3.4	3.4	3.0	2.7	3.0	2.7	2.4	2.9	2.5	2.1	2.8	2.4	2.0
		HWFET	3.8	3.8	3.3	2.9	3.3	2.9	2.6	3.2	2.7	2.4	3.1	2.6	2.2
		Combined	3.6	3.6	3.1	2.8	3.1	2.8	2.5	3.0	2.6	2.2	2.9	2.5	2.1

Fuel Consumption Improvement versus the Conventional 2010 Reference

			Midsize_SUV												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Conv	Unadjusted	UDDS	0.0%	0.0%	-10.5%	-15.1%	-5.1%	-14.2%	-30.4%	-8.6%	-16.8%	-42.3%	-7.0%	-18.2%	-44.5%
		HWFET	0.0%	0.0%	-11.2%	-15.7%	-5.2%	-14.9%	-31.9%	-8.6%	-18.3%	-42.4%	-9.5%	-20.7%	-45.0%
		Combined	0.0%	0.0%	-10.8%	-15.3%	-5.1%	-14.5%	-31.0%	-8.6%	-17.4%	-42.4%	-7.9%	-19.2%	-44.7%
	Adjusted	UDDS	0.0%	0.0%	-10.0%	-14.4%	-4.9%	-13.6%	-29.1%	-8.2%	-16.1%	-40.6%	-6.7%	-17.5%	-42.6%
		HWFET	0.0%	0.0%	-11.2%	-15.6%	-5.2%	-14.9%	-31.7%	-8.6%	-18.2%	-42.1%	-9.4%	-20.6%	-44.7%
		Combined	0.0%	0.0%	-10.5%	-14.9%	-5.0%	-14.1%	-30.1%	-8.3%	-16.9%	-41.2%	-7.8%	-18.7%	-43.5%
CI Conv	Unadjusted	UDDS	-17.2%	-17.2%	-22.8%	-28.9%	-18.8%	-27.8%	-33.6%	-23.4%	-31.7%	-43.4%	-24.0%	-34.5%	-45.3%
		HWFET	-13.5%	-13.5%	-19.4%	-25.7%	-15.3%	-24.9%	-27.4%	-19.4%	-24.9%	-36.9%	-16.7%	-29.0%	-39.6%
		Combined	-15.8%	-15.8%	-21.5%	-27.7%	-17.5%	-26.7%	-31.2%	-21.9%	-29.2%	-40.9%	-21.2%	-32.4%	-43.2%
	Adjusted	UDDS	-16.5%	-16.5%	-21.8%	-27.7%	-18.0%	-26.6%	-32.2%	-22.4%	-30.4%	-41.6%	-22.9%	-33.0%	-43.4%
		HWFET	-13.4%	-13.4%	-19.3%	-25.5%	-15.2%	-24.8%	-27.2%	-19.3%	-24.8%	-36.7%	-16.6%	-28.9%	-39.4%
		Combined	-15.3%	-15.3%	-20.8%	-26.8%	-16.9%	-25.9%	-30.2%	-21.1%	-28.1%	-39.6%	-20.4%	-31.3%	-41.8%
H2 Conv	Unadjusted	UDDS	17.4%	17.4%	-4.3%	-16.0%	3.7%	-14.7%	-24.0%	-8.2%	-21.8%	-36.1%	-11.9%	-26.4%	-40.7%
		HWFET	4.3%	4.3%	-10.6%	-21.4%	-7.9%	-20.5%	-30.5%	-13.9%	-28.2%	-40.3%	-19.9%	-33.3%	-45.1%
		Combined	12.5%	12.5%	-6.7%	-18.0%	-0.7%	-16.9%	-26.5%	-10.4%	-24.2%	-37.7%	-15.0%	-29.0%	-42.4%
	Adjusted	UDDS	16.7%	16.7%	-4.1%	-15.3%	3.6%	-14.1%	-23.0%	-7.9%	-20.9%	-34.6%	-11.4%	-25.3%	-39.0%
		HWFET	4.3%	4.3%	-10.5%	-21.2%	-7.8%	-20.4%	-30.4%	-13.8%	-28.1%	-40.0%	-19.8%	-33.0%	-44.8%
		Combined	11.7%	11.7%	-6.7%	-17.7%	-1.0%	-16.6%	-26.0%	-10.3%	-23.8%	-36.8%	-14.8%	-28.4%	-41.3%
E85 Conv	Unadjusted	UDDS	3.8%	3.8%	-1.7%	-6.2%	6.1%	-5.2%	-28.0%	0.6%	-8.9%	-38.9%	1.5%	-10.7%	-41.3%
		HWFET	11.9%	11.9%	5.1%	0.2%	14.2%	1.1%	-23.0%	8.1%	-2.3%	-33.6%	8.3%	-5.3%	-36.6%
		Combined	6.9%	6.9%	0.8%	-3.7%	9.2%	-2.8%	-26.1%	3.4%	-6.4%	-36.8%	4.1%	-8.6%	-39.5%
	Adjusted	UDDS	3.6%	3.6%	-1.7%	-5.9%	5.8%	-4.9%	-26.8%	0.5%	-8.5%	-37.2%	1.4%	-10.2%	-39.5%
		HWFET	11.9%	11.9%	5.0%	0.2%	14.1%	1.1%	-22.9%	8.0%	-2.3%	-33.4%	8.3%	-5.3%	-36.4%
		Combined	6.9%	6.9%	1.0%	-3.4%	9.2%	-2.5%	-25.2%	3.6%	-6.0%	-35.7%	4.2%	-8.2%	-38.3%
SI Split HEV	Unadjusted	UDDS	-44.4%	-44.4%	-48.8%	-52.3%	-46.4%	-52.5%	-60.9%	-49.0%	-56.3%	-68.4%	-50.1%	-58.3%	-69.8%
		HWFET	-14.4%	-14.4%	-21.1%	-26.1%	-17.2%	-25.6%	-37.8%	-19.8%	-30.6%	-48.0%	-21.8%	-34.4%	-50.6%
		Combined	-33.0%	-33.0%	-38.3%	-42.4%	-35.3%	-42.3%	-52.2%	-37.9%	-46.5%	-60.7%	-39.4%	-49.2%	-62.5%
	Adjusted	UDDS	-42.5%	-42.5%	-46.7%	-50.1%	-44.4%	-50.3%	-58.4%	-46.9%	-53.9%	-65.5%	-48.0%	-55.8%	-66.8%
		HWFET	-14.3%	-14.3%	-21.0%	-25.9%	-17.1%	-25.5%	-37.6%	-19.7%	-30.4%	-47.8%	-21.7%	-34.1%	-50.3%
		Combined	-31.2%	-31.2%	-36.3%	-40.4%	-33.4%	-40.3%	-50.0%	-36.0%	-44.4%	-58.4%	-37.4%	-47.1%	-60.2%
SI Split HEV PHEV10	Unadjusted	UDDS	-55.9%	-55.9%	-59.2%	-62.1%	-57.3%	-61.5%	-68.3%	-58.4%	-64.3%	-74.0%	-59.6%	-66.0%	-75.1%
		HWFET	-34.5%	-34.5%	-39.2%	-42.9%	-36.6%	-42.4%	-51.2%	-37.8%	-45.7%	-58.8%	-39.5%	-48.1%	-61.2%
		Combined	-47.8%	-47.8%	-51.6%	-54.8%	-49.4%	-54.3%	-61.8%	-50.6%	-57.3%	-68.2%	-52.0%	-59.2%	-69.9%
	Adjusted	UDDS	-53.5%	-53.5%	-56.7%	-59.4%	-54.9%	-58.9%	-65.4%	-56.0%	-61.6%	-70.8%	-57.0%	-63.2%	-72.0%
		HWFET	-34.3%	-34.3%	-38.9%	-42.7%	-36.3%	-42.1%	-50.9%	-37.6%	-45.5%	-58.4%	-39.3%	-47.8%	-60.9%
		Combined	-45.8%	-45.8%	-49.5%	-52.7%	-47.4%	-52.2%	-59.6%	-48.6%	-55.1%	-65.8%	-49.9%	-57.0%	-67.5%

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			Midsize_SUV												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Split HEV PHEV20	Unadjusted	UDDS	-69.2%	-69.2%	-71.6%	-73.6%	-70.6%	-73.2%	-77.7%	-71.2%	-75.1%	-81.8%	-72.2%	-76.1%	-82.7%
		HWFET	-46.5%	-46.5%	-50.6%	-52.8%	-48.3%	-53.2%	-57.4%	-49.3%	-55.8%	-64.1%	-50.8%	-54.5%	-66.5%
		Combined	-60.6%	-60.6%	-63.7%	-65.7%	-62.2%	-65.7%	-70.0%	-62.9%	-67.8%	-75.1%	-64.1%	-67.9%	-76.6%
	Adjusted	UDDS	-66.3%	-66.3%	-68.6%	-70.5%	-67.6%	-70.1%	-74.4%	-68.2%	-71.9%	-78.4%	-69.1%	-72.9%	-79.2%
		HWFET	-46.2%	-46.2%	-50.3%	-52.4%	-48.0%	-52.9%	-57.0%	-49.0%	-55.5%	-63.7%	-50.4%	-54.1%	-66.1%
		Combined	-58.2%	-58.2%	-61.2%	-63.2%	-59.7%	-63.2%	-67.4%	-60.4%	-65.3%	-72.4%	-61.6%	-65.4%	-73.9%
SI Series HEV PHEV30	Unadjusted	UDDS	-65.7%	-65.7%	-68.6%	-71.5%	-66.9%	-71.0%	-77.0%	-68.5%	-74.2%	-82.2%	-69.4%	-75.5%	-82.9%
		HWFET	-38.0%	-38.0%	-43.4%	-47.6%	-40.4%	-47.1%	-56.7%	-42.7%	-51.5%	-64.3%	-44.5%	-54.6%	-66.2%
		Combined	-55.2%	-55.2%	-59.1%	-62.4%	-56.9%	-61.9%	-69.3%	-58.7%	-65.6%	-75.4%	-60.0%	-67.5%	-76.5%
	Adjusted	UDDS	-62.9%	-62.9%	-65.7%	-68.4%	-64.1%	-68.0%	-73.8%	-65.6%	-71.1%	-78.7%	-66.5%	-72.3%	-79.4%
		HWFET	-37.7%	-37.7%	-43.1%	-47.3%	-40.1%	-46.8%	-56.4%	-42.4%	-51.1%	-63.9%	-44.2%	-54.2%	-65.7%
		Combined	-52.8%	-52.8%	-56.6%	-59.9%	-54.4%	-59.4%	-66.8%	-56.3%	-63.0%	-72.7%	-57.5%	-65.0%	-73.9%
SI Series HEV PHEV40	Unadjusted	UDDS	-70.0%	-70.0%	-72.7%	-75.0%	-71.3%	-74.6%	-80.1%	-72.6%	-77.6%	-84.4%	-73.5%	-78.8%	-85.3%
		HWFET	-50.9%	-50.9%	-55.3%	-58.5%	-52.7%	-58.1%	-65.8%	-54.7%	-61.7%	-71.9%	-56.2%	-64.2%	-73.4%
		Combined	-62.8%	-62.8%	-66.1%	-68.8%	-64.3%	-68.4%	-74.7%	-65.8%	-71.6%	-79.6%	-66.9%	-73.2%	-80.8%
	Adjusted	UDDS	-67.0%	-67.0%	-69.6%	-71.8%	-68.3%	-71.4%	-76.7%	-69.5%	-74.3%	-80.8%	-70.4%	-75.4%	-81.7%
		HWFET	-50.6%	-50.6%	-54.9%	-58.2%	-52.4%	-57.8%	-65.4%	-54.3%	-61.4%	-71.5%	-55.8%	-63.8%	-73.0%
		Combined	-60.4%	-60.4%	-63.7%	-66.3%	-61.9%	-65.9%	-72.2%	-63.4%	-69.1%	-77.0%	-64.5%	-70.7%	-78.2%
CI Split HEV	Unadjusted	UDDS	-50.1%	-50.1%	-53.3%	-57.2%	-51.1%	-57.1%	-62.5%	-53.9%	-61.0%	-68.6%	-55.6%	-63.1%	-69.9%
		HWFET	-20.0%	-20.0%	-25.2%	-31.1%	-21.7%	-30.5%	-38.2%	-25.0%	-35.9%	-46.8%	-27.9%	-39.9%	-49.5%
		Combined	-38.7%	-38.7%	-42.7%	-47.3%	-39.9%	-47.0%	-53.3%	-43.0%	-51.5%	-60.3%	-45.1%	-54.3%	-62.2%
	Adjusted	UDDS	-48.0%	-48.0%	-51.1%	-54.8%	-48.9%	-54.7%	-59.8%	-51.7%	-58.5%	-65.7%	-53.2%	-60.4%	-67.0%
		HWFET	-19.9%	-19.9%	-25.1%	-30.9%	-21.5%	-30.3%	-38.0%	-24.8%	-35.7%	-46.5%	-27.7%	-39.6%	-49.2%
		Combined	-36.7%	-36.7%	-40.6%	-45.1%	-37.9%	-44.9%	-51.0%	-40.9%	-49.3%	-58.0%	-43.0%	-52.1%	-59.8%
CI Split HEV PHEV10	Unadjusted	UDDS	-57.3%	-57.3%	-60.1%	-63.4%	-58.2%	-63.1%	-67.6%	-60.2%	-66.1%	-72.7%	-61.6%	-68.1%	-73.8%
		HWFET	-36.3%	-36.3%	-39.9%	-46.9%	-36.9%	-46.8%	-52.3%	-40.0%	-47.7%	-58.3%	-41.8%	-52.9%	-58.4%
		Combined	-49.3%	-49.3%	-52.4%	-57.1%	-50.1%	-56.9%	-61.8%	-52.5%	-59.2%	-67.3%	-54.1%	-62.3%	-68.0%
	Adjusted	UDDS	-54.9%	-54.9%	-57.6%	-60.7%	-55.7%	-60.5%	-64.7%	-57.7%	-63.3%	-69.6%	-59.0%	-65.2%	-70.7%
		HWFET	-36.1%	-36.1%	-39.6%	-46.6%	-36.7%	-46.5%	-52.0%	-39.7%	-47.4%	-58.0%	-41.5%	-52.6%	-58.0%
		Combined	-47.3%	-47.3%	-50.3%	-55.0%	-48.1%	-54.8%	-59.6%	-50.4%	-56.9%	-64.9%	-52.0%	-60.1%	-65.6%
CI Split HEV PHEV20	Unadjusted	UDDS	-70.1%	-70.1%	-72.4%	-74.6%	-70.9%	-74.2%	-77.4%	-72.4%	-76.3%	-81.1%	-73.3%	-77.6%	-81.7%
		HWFET	-47.9%	-47.9%	-42.7%	-46.1%	-49.0%	-46.0%	-58.3%	-50.8%	-56.5%	-63.6%	-44.1%	-58.7%	-63.7%
		Combined	-61.7%	-61.7%	-61.2%	-63.8%	-62.6%	-63.5%	-70.1%	-64.2%	-68.8%	-74.4%	-62.2%	-70.4%	-74.9%
	Adjusted	UDDS	-67.2%	-67.2%	-69.4%	-71.4%	-67.9%	-71.1%	-74.1%	-69.3%	-73.1%	-77.6%	-70.2%	-74.3%	-78.3%
		HWFET	-47.6%	-47.6%	-42.4%	-45.8%	-48.7%	-45.7%	-57.9%	-50.5%	-56.1%	-63.2%	-43.8%	-58.3%	-63.3%
		Combined	-59.3%	-59.3%	-58.5%	-61.1%	-60.2%	-60.9%	-67.6%	-61.7%	-66.3%	-71.8%	-59.6%	-67.9%	-72.2%

Argonne National Laboratory Report – Light-Duty Vehicle Fuel Consumption Displacement Potential Up to 2045

			Midsize_SUV												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
CI Series HEV PHEV30	Unadjusted	UDDS	-66.4%	-66.4%	-69.1%	-72.4%	-67.3%	-71.9%	-76.6%	-69.6%	-75.3%	-80.8%	-70.8%	-76.8%	-81.8%
		HWFET	-39.4%	-39.4%	-44.3%	-49.1%	-40.9%	-48.6%	-55.4%	-44.5%	-53.6%	-62.5%	-46.8%	-56.9%	-64.4%
		Combined	-56.2%	-56.2%	-59.7%	-63.6%	-57.3%	-63.1%	-68.5%	-60.1%	-67.1%	-73.9%	-61.7%	-69.2%	-75.2%
	Adjusted	UDDS	-63.6%	-63.6%	-66.2%	-69.3%	-64.5%	-68.9%	-73.3%	-66.6%	-72.1%	-77.4%	-67.8%	-73.5%	-78.3%
		HWFET	-39.2%	-39.2%	-44.0%	-48.8%	-40.7%	-48.3%	-55.0%	-44.2%	-53.3%	-62.1%	-46.5%	-56.6%	-64.0%
		Combined	-53.8%	-53.8%	-57.3%	-61.1%	-54.9%	-60.6%	-66.0%	-57.6%	-64.5%	-71.3%	-59.2%	-66.7%	-72.6%
CI Series HEV PHEV40	Unadjusted	UDDS	-70.7%	-70.7%	-73.1%	-75.9%	-71.6%	-75.5%	-79.5%	-73.5%	-78.6%	-83.6%	-74.6%	-79.9%	-84.2%
		HWFET	-52.1%	-52.1%	-55.9%	-59.8%	-53.2%	-59.4%	-64.8%	-56.0%	-63.4%	-70.5%	-58.0%	-66.0%	-72.0%
		Combined	-63.6%	-63.6%	-66.6%	-69.8%	-64.6%	-69.4%	-73.9%	-66.9%	-72.8%	-78.7%	-68.3%	-74.6%	-79.6%
	Adjusted	UDDS	-67.7%	-67.7%	-70.0%	-72.7%	-68.5%	-72.3%	-76.1%	-70.4%	-75.2%	-80.1%	-71.5%	-76.5%	-80.6%
		HWFET	-51.7%	-51.7%	-55.6%	-59.4%	-52.9%	-59.1%	-64.4%	-55.7%	-63.1%	-70.1%	-57.6%	-65.6%	-71.5%
		Combined	-61.3%	-61.3%	-64.2%	-67.4%	-62.2%	-67.0%	-71.4%	-64.5%	-70.3%	-76.1%	-65.9%	-72.1%	-77.0%
H2 Split HEV	Unadjusted	UDDS	-43.3%	-43.3%	-52.6%	-58.8%	-50.0%	-58.6%	-64.8%	-54.8%	-63.3%	-71.0%	-57.8%	-66.1%	-73.3%
		HWFET	-11.6%	-11.6%	-26.0%	-35.0%	-21.9%	-34.4%	-43.2%	-28.5%	-41.1%	-51.6%	-33.1%	-45.8%	-55.8%
		Combined	-31.3%	-31.3%	-42.5%	-49.8%	-39.4%	-49.4%	-56.6%	-44.8%	-54.9%	-63.7%	-48.5%	-58.4%	-66.7%
	Adjusted	UDDS	-41.4%	-41.4%	-50.4%	-56.3%	-47.9%	-56.1%	-62.1%	-52.5%	-60.7%	-68.0%	-55.4%	-63.3%	-70.2%
		HWFET	-11.6%	-11.6%	-25.8%	-34.8%	-21.8%	-34.2%	-42.9%	-28.3%	-40.8%	-51.3%	-32.9%	-45.5%	-55.4%
		Combined	-29.4%	-29.4%	-40.5%	-47.6%	-37.4%	-47.3%	-54.4%	-42.8%	-52.7%	-61.3%	-46.3%	-56.1%	-64.3%
H2 Split HEV PHEV10	Unadjusted	UDDS	-54.5%	-54.5%	-62.1%	-66.8%	-60.0%	-66.4%	-71.2%	-63.3%	-69.8%	-76.0%	-65.7%	-72.1%	-78.0%
		HWFET	-32.9%	-32.9%	-43.5%	-50.1%	-40.6%	-49.6%	-55.6%	-45.1%	-54.0%	-63.2%	-48.7%	-57.5%	-66.4%
		Combined	-46.3%	-46.3%	-55.0%	-60.5%	-52.7%	-60.0%	-65.3%	-56.4%	-63.8%	-71.2%	-59.2%	-66.6%	-73.6%
	Adjusted	UDDS	-52.2%	-52.2%	-59.4%	-64.0%	-57.5%	-63.5%	-68.2%	-60.6%	-66.9%	-72.8%	-62.9%	-69.1%	-74.7%
		HWFET	-32.7%	-32.7%	-43.2%	-49.8%	-40.4%	-49.3%	-55.3%	-44.8%	-53.6%	-62.8%	-48.4%	-57.1%	-66.0%
		Combined	-44.4%	-44.4%	-52.9%	-58.3%	-50.6%	-57.8%	-63.0%	-54.3%	-61.5%	-68.8%	-57.1%	-64.2%	-71.2%
H2 Split HEV PHEV20	Unadjusted	UDDS	-68.4%	-68.4%	-73.7%	-77.0%	-72.5%	-76.6%	-79.9%	-74.9%	-79.0%	-83.3%	-76.3%	-80.5%	-84.9%
		HWFET	-45.5%	-45.5%	-52.9%	-59.3%	-51.8%	-58.3%	-61.2%	-55.4%	-61.4%	-61.9%	-58.2%	-62.8%	-68.2%
		Combined	-59.7%	-59.7%	-65.8%	-70.3%	-64.6%	-69.7%	-72.8%	-67.5%	-72.3%	-75.2%	-69.4%	-73.8%	-78.6%
	Adjusted	UDDS	-65.5%	-65.5%	-70.6%	-73.7%	-69.4%	-73.4%	-76.5%	-71.7%	-75.7%	-79.8%	-73.1%	-77.1%	-81.3%
		HWFET	-45.3%	-45.3%	-52.6%	-59.0%	-51.4%	-57.9%	-60.9%	-55.0%	-61.0%	-61.5%	-57.8%	-62.4%	-67.8%
		Combined	-57.3%	-57.3%	-63.3%	-67.8%	-62.2%	-67.2%	-70.2%	-65.0%	-69.8%	-72.4%	-66.9%	-71.2%	-75.9%
H2 Series HEV PHEV30	Unadjusted	UDDS	-64.7%	-64.7%	-71.2%	-75.3%	-69.2%	-74.8%	-79.4%	-72.3%	-78.2%	-83.2%	-74.4%	-80.1%	-84.6%
		HWFET	-37.0%	-37.0%	-47.8%	-54.4%	-44.7%	-53.9%	-60.9%	-49.8%	-59.2%	-66.8%	-53.2%	-62.9%	-69.7%
		Combined	-54.2%	-54.2%	-62.3%	-67.4%	-59.9%	-66.9%	-72.4%	-63.8%	-71.0%	-77.0%	-66.4%	-73.6%	-79.0%
	Adjusted	UDDS	-61.9%	-61.9%	-68.2%	-72.1%	-66.2%	-71.7%	-76.0%	-69.3%	-74.9%	-79.7%	-71.3%	-76.7%	-81.1%
		HWFET	-36.7%	-36.7%	-47.5%	-54.1%	-44.4%	-53.6%	-60.5%	-49.5%	-58.8%	-66.4%	-52.9%	-62.5%	-69.3%
		Combined	-51.8%	-51.8%	-59.9%	-64.8%	-57.5%	-64.4%	-69.8%	-61.3%	-68.4%	-74.4%	-63.9%	-71.0%	-76.3%

Argonne National Laboratory Report – Light-Duty Vehicle Fuel Consumption Displacement Potential Up to 2045

			Midsize_SUV												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
H2 Series HEV PHEV40	Unadjusted	UDDS	-69.2%	-69.2%	-74.8%	-78.5%	-73.1%	-78.1%	-82.2%	-75.9%	-81.1%	-85.6%	-77.7%	-82.6%	-86.8%
		HWFET	-50.1%	-50.1%	-58.7%	-64.0%	-56.2%	-63.6%	-69.2%	-60.3%	-67.8%	-73.9%	-63.1%	-70.8%	-76.2%
		Combined	-62.0%	-62.0%	-68.7%	-73.0%	-66.7%	-72.6%	-77.2%	-70.0%	-76.1%	-81.1%	-72.1%	-78.1%	-82.8%
	Adjusted	UDDS	-66.3%	-66.3%	-71.6%	-75.2%	-70.0%	-74.8%	-78.7%	-72.7%	-77.7%	-81.9%	-74.4%	-79.1%	-83.1%
		HWFET	-49.8%	-49.8%	-58.3%	-63.6%	-55.8%	-63.2%	-68.8%	-59.9%	-67.3%	-73.4%	-62.7%	-70.3%	-75.7%
		Combined	-59.6%	-59.6%	-66.3%	-70.5%	-64.3%	-70.1%	-74.7%	-67.5%	-73.5%	-78.5%	-69.7%	-75.6%	-80.1%
E85 Split HEV	Unadjusted	UDDS	-39.9%	-39.9%	-44.6%	-48.6%	-41.9%	-48.7%	-60.1%	-44.8%	-53.0%	-66.2%	-46.2%	-54.9%	-67.8%
		HWFET	-7.7%	-7.7%	-14.9%	-20.7%	-10.5%	-19.9%	-36.6%	-13.6%	-25.5%	-44.6%	-16.1%	-29.2%	-47.6%
		Combined	-27.7%	-27.7%	-33.3%	-38.0%	-30.0%	-37.8%	-51.1%	-33.0%	-42.6%	-58.0%	-34.8%	-45.1%	-60.1%
	Adjusted	UDDS	-38.2%	-38.2%	-42.7%	-46.5%	-40.1%	-46.7%	-57.5%	-42.9%	-50.8%	-63.4%	-44.3%	-52.6%	-64.9%
		HWFET	-7.7%	-7.7%	-14.8%	-20.5%	-10.4%	-19.8%	-36.3%	-13.5%	-25.4%	-44.3%	-16.0%	-29.0%	-47.3%
		Combined	-25.9%	-25.9%	-31.5%	-36.1%	-28.2%	-35.8%	-49.0%	-31.1%	-40.5%	-55.7%	-32.9%	-43.1%	-57.8%
E85 Split HEV PHEV10	Unadjusted	UDDS	-52.9%	-52.9%	-56.4%	-59.7%	-54.5%	-59.2%	-67.9%	-55.7%	-61.9%	-72.5%	-56.8%	-63.8%	-73.7%
		HWFET	-29.8%	-29.8%	-35.0%	-39.0%	-32.0%	-38.5%	-50.3%	-33.4%	-41.9%	-56.4%	-35.4%	-44.8%	-58.9%
		Combined	-44.1%	-44.1%	-48.3%	-51.9%	-45.9%	-51.3%	-61.2%	-47.3%	-54.3%	-66.4%	-48.7%	-56.6%	-68.1%
	Adjusted	UDDS	-50.7%	-50.7%	-54.0%	-57.2%	-52.2%	-56.7%	-65.0%	-53.3%	-59.3%	-69.4%	-54.4%	-61.1%	-70.6%
		HWFET	-29.6%	-29.6%	-34.8%	-38.7%	-31.8%	-38.2%	-50.0%	-33.2%	-41.6%	-56.0%	-35.2%	-44.6%	-58.6%
		Combined	-42.2%	-42.2%	-46.3%	-49.8%	-44.0%	-49.3%	-59.0%	-45.2%	-52.2%	-64.0%	-46.7%	-54.4%	-65.8%
E85 Split HEV PHEV20	Unadjusted	UDDS	-67.0%	-67.0%	-69.7%	-71.8%	-68.7%	-71.5%	-77.4%	-69.6%	-73.4%	-80.8%	-70.1%	-74.6%	-81.7%
		HWFET	-42.8%	-42.8%	-46.2%	-49.0%	-44.7%	-48.9%	-56.8%	-45.6%	-49.6%	-62.0%	-47.3%	-51.7%	-64.5%
		Combined	-57.8%	-57.8%	-60.8%	-63.2%	-59.6%	-62.9%	-69.6%	-60.5%	-64.4%	-73.7%	-61.5%	-65.9%	-75.2%
	Adjusted	UDDS	-64.1%	-64.1%	-66.8%	-68.8%	-65.8%	-68.5%	-74.2%	-66.6%	-70.3%	-77.4%	-67.2%	-71.4%	-78.2%
		HWFET	-42.5%	-42.5%	-45.9%	-48.7%	-44.4%	-48.6%	-56.5%	-45.3%	-49.3%	-61.6%	-47.0%	-51.3%	-64.1%
		Combined	-55.4%	-55.4%	-58.4%	-60.7%	-57.2%	-60.5%	-67.1%	-58.0%	-61.9%	-71.0%	-59.0%	-63.3%	-72.6%
E85 Series HEV PHEV30	Unadjusted	UDDS	-63.3%	-63.3%	-66.6%	-69.7%	-64.8%	-68.9%	-76.8%	-66.5%	-72.5%	-80.9%	-67.5%	-73.9%	-82.0%
		HWFET	-33.9%	-33.9%	-39.8%	-44.2%	-36.6%	-43.7%	-56.4%	-39.0%	-48.4%	-62.3%	-41.0%	-51.6%	-64.3%
		Combined	-52.2%	-52.2%	-56.4%	-60.0%	-54.1%	-59.4%	-69.1%	-56.1%	-63.4%	-73.9%	-57.5%	-65.5%	-75.3%
	Adjusted	UDDS	-60.6%	-60.6%	-63.8%	-66.7%	-62.1%	-66.0%	-73.6%	-63.7%	-69.5%	-77.5%	-64.7%	-70.8%	-78.5%
		HWFET	-33.7%	-33.7%	-39.5%	-44.0%	-36.3%	-43.4%	-56.0%	-38.8%	-48.1%	-61.9%	-40.7%	-51.3%	-63.9%
		Combined	-49.8%	-49.8%	-54.0%	-57.6%	-51.7%	-56.9%	-66.5%	-53.7%	-60.9%	-71.2%	-55.0%	-62.9%	-72.6%
E85 Series HEV PHEV40	Unadjusted	UDDS	-67.8%	-67.8%	-70.9%	-73.4%	-69.4%	-72.9%	-79.9%	-70.8%	-76.1%	-83.5%	-71.8%	-77.4%	-84.6%
		HWFET	-47.7%	-47.7%	-52.4%	-55.9%	-49.7%	-55.5%	-65.5%	-51.8%	-59.3%	-70.4%	-53.4%	-61.9%	-72.0%
		Combined	-60.2%	-60.2%	-63.9%	-66.8%	-61.9%	-66.3%	-74.5%	-63.6%	-69.7%	-78.5%	-64.8%	-71.6%	-79.8%
	Adjusted	UDDS	-64.9%	-64.9%	-67.9%	-70.3%	-66.5%	-69.8%	-76.6%	-67.8%	-72.8%	-80.0%	-68.7%	-74.2%	-81.0%
		HWFET	-47.4%	-47.4%	-52.0%	-55.6%	-49.4%	-55.1%	-65.1%	-51.5%	-59.0%	-69.9%	-53.1%	-61.5%	-71.5%
		Combined	-57.9%	-57.9%	-61.5%	-64.4%	-59.6%	-63.9%	-72.0%	-61.2%	-67.3%	-75.9%	-62.4%	-69.1%	-77.2%

Argonne National Laboratory Report – Light-Duty Vehicle Fuel Consumption Displacement Potential Up to 2045

			Midsize_SUV												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
FC HEV	Unadjusted	UDDS	-47.8%	-47.8%	-57.0%	-63.7%	-56.7%	-63.8%	-68.5%	-60.2%	-67.2%	-73.5%	-62.1%	-68.7%	-74.8%
		HWFET	-30.6%	-30.6%	-41.1%	-49.0%	-40.9%	-48.7%	-53.8%	-43.6%	-52.0%	-59.2%	-45.8%	-54.5%	-61.3%
		Combined	-41.2%	-41.2%	-51.0%	-58.1%	-50.7%	-58.1%	-62.9%	-53.9%	-61.5%	-68.1%	-55.9%	-63.3%	-69.7%
	Adjusted	UDDS	-45.7%	-45.7%	-54.6%	-61.0%	-54.3%	-61.1%	-65.6%	-57.7%	-64.4%	-70.4%	-59.5%	-65.8%	-71.6%
		HWFET	-30.4%	-30.4%	-40.9%	-48.7%	-40.6%	-48.4%	-53.5%	-43.4%	-51.7%	-58.8%	-45.5%	-54.1%	-61.0%
		Combined	-39.6%	-39.6%	-49.0%	-56.0%	-48.8%	-56.0%	-60.7%	-51.9%	-59.3%	-65.7%	-53.8%	-61.1%	-67.3%
FC PHEV10	Unadjusted	UDDS	-59.2%	-59.2%	-65.7%	-70.6%	-65.4%	-70.3%	-73.9%	-67.4%	-72.9%	-77.9%	-68.8%	-74.1%	-78.9%
		HWFET	-47.4%	-47.4%	-54.3%	-59.9%	-54.2%	-59.5%	-63.2%	-55.6%	-61.8%	-66.9%	-57.0%	-63.8%	-68.7%
		Combined	-54.7%	-54.7%	-61.4%	-66.6%	-61.2%	-66.2%	-69.9%	-62.9%	-68.7%	-73.7%	-64.4%	-70.2%	-75.1%
	Adjusted	UDDS	-56.7%	-56.7%	-62.9%	-67.7%	-62.7%	-67.3%	-70.8%	-64.6%	-69.8%	-74.6%	-65.9%	-70.9%	-75.6%
		HWFET	-47.1%	-47.1%	-54.0%	-59.5%	-53.8%	-59.1%	-62.8%	-55.2%	-61.4%	-66.5%	-56.7%	-63.4%	-68.3%
		Combined	-52.8%	-52.8%	-59.3%	-64.4%	-59.1%	-64.0%	-67.6%	-60.8%	-66.4%	-71.3%	-62.2%	-67.9%	-72.7%
FC PHEV20	Unadjusted	UDDS	-65.9%	-65.9%	-71.4%	-75.6%	-71.2%	-75.3%	-78.5%	-72.9%	-77.5%	-81.7%	-74.1%	-78.5%	-82.6%
		HWFET	-48.5%	-48.5%	-55.7%	-61.3%	-55.5%	-60.9%	-64.7%	-57.1%	-63.4%	-68.7%	-58.6%	-65.3%	-70.4%
		Combined	-59.3%	-59.3%	-65.4%	-70.2%	-65.2%	-69.8%	-73.3%	-66.9%	-72.2%	-76.8%	-68.2%	-73.5%	-78.0%
	Adjusted	UDDS	-63.1%	-63.1%	-68.4%	-72.4%	-68.2%	-72.1%	-75.1%	-69.8%	-74.2%	-78.3%	-71.0%	-75.2%	-79.1%
		HWFET	-48.2%	-48.2%	-55.3%	-60.9%	-55.1%	-60.5%	-64.3%	-56.7%	-63.0%	-68.3%	-58.2%	-64.9%	-69.9%
		Combined	-57.1%	-57.1%	-63.1%	-67.8%	-62.9%	-67.4%	-70.8%	-64.5%	-69.7%	-74.2%	-65.9%	-71.1%	-75.4%
FC PHEV30	Unadjusted	UDDS	-76.2%	-76.2%	-79.9%	-82.5%	-79.8%	-82.4%	-84.7%	-80.7%	-84.1%	-87.0%	-81.6%	-84.9%	-87.6%
		HWFET	-59.2%	-59.2%	-64.7%	-68.8%	-64.5%	-68.6%	-71.9%	-65.5%	-70.7%	-74.9%	-66.8%	-72.3%	-76.3%
		Combined	-69.8%	-69.8%	-74.2%	-77.3%	-74.0%	-77.2%	-79.8%	-74.9%	-79.0%	-82.4%	-76.0%	-80.1%	-83.3%
	Adjusted	UDDS	-73.0%	-73.0%	-76.5%	-79.0%	-76.4%	-78.9%	-81.1%	-77.3%	-80.5%	-83.3%	-78.1%	-81.3%	-83.9%
		HWFET	-58.9%	-58.9%	-64.3%	-68.4%	-64.1%	-68.2%	-71.4%	-65.1%	-70.3%	-74.5%	-66.4%	-71.8%	-75.8%
		Combined	-67.3%	-67.3%	-71.6%	-74.7%	-71.5%	-74.6%	-77.2%	-72.4%	-76.4%	-79.7%	-73.4%	-77.5%	-80.6%
FC PHEV40	Unadjusted	UDDS	-79.4%	-79.4%	-82.6%	-84.9%	-82.5%	-84.8%	-86.8%	-83.3%	-86.3%	-88.8%	-84.1%	-87.0%	-89.3%
		HWFET	-67.8%	-67.8%	-72.2%	-75.4%	-72.0%	-75.3%	-77.9%	-72.9%	-77.0%	-80.3%	-73.9%	-78.3%	-81.4%
		Combined	-75.0%	-75.0%	-78.6%	-81.3%	-78.5%	-81.2%	-83.4%	-79.3%	-82.7%	-85.6%	-80.2%	-83.7%	-86.3%
	Adjusted	UDDS	-76.0%	-76.0%	-79.1%	-81.3%	-79.0%	-81.2%	-83.2%	-79.8%	-82.6%	-85.0%	-80.5%	-83.3%	-85.5%
		HWFET	-67.4%	-67.4%	-71.7%	-74.9%	-71.6%	-74.8%	-77.4%	-72.4%	-76.5%	-79.8%	-73.4%	-77.8%	-80.9%
		Combined	-72.5%	-72.5%	-76.1%	-78.7%	-76.0%	-78.6%	-80.8%	-76.8%	-80.2%	-82.9%	-77.7%	-81.1%	-83.7%

Pickup Class

Fuel economy

			Pickup												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Conv	Unadjusted	UDDS	18.5	18.5	20.0	21.3	19.5	21.1	26.8	19.9	22.5	32.1	20.0	22.8	33.7
		HWFET	23.9	23.9	25.9	27.9	25.4	27.3	34.8	25.9	29.0	40.3	26.4	29.4	41.9
		Combined	20.6	20.6	22.3	23.8	21.8	23.5	29.9	22.2	25.0	35.4	22.4	25.3	37.0
	Adjusted	UDDS	14.5	14.5	15.7	16.6	15.3	16.5	20.7	15.6	17.5	24.6	15.7	17.7	25.7
		HWFET	17.0	17.0	18.4	19.7	18.0	19.3	24.6	18.3	20.6	28.4	18.7	20.8	29.6
		Combined	15.5	15.5	16.8	17.9	16.4	17.6	22.3	16.7	18.8	26.2	16.9	19.0	27.3
CI Conv	Unadjusted	UDDS	22.5	22.5	23.8	25.6	23.0	25.5	28.3	24.2	27.6	32.8	24.8	28.6	34.2
		HWFET	27.8	27.8	29.4	31.0	28.7	31.7	34.0	30.2	33.1	38.1	30.2	34.4	39.6
		Combined	24.6	24.6	26.0	27.8	25.2	28.0	30.6	26.6	29.9	35.0	26.9	30.9	36.4
	Adjusted	UDDS	17.5	17.5	18.5	19.9	17.9	19.7	21.8	18.8	21.3	25.1	19.2	22.0	26.0
		HWFET	19.7	19.7	20.8	22.0	20.3	22.5	24.0	21.4	23.4	26.9	21.4	24.3	27.9
		Combined	18.4	18.4	19.5	20.7	18.9	20.9	22.7	19.9	22.2	25.9	20.1	23.0	26.9
H2 Conv	Unadjusted	UDDS	15.9	15.9	19.0	21.3	18.1	21.4	24.1	19.9	23.4	28.6	20.9	24.8	31.1
		HWFET	22.9	22.9	27.0	30.5	26.2	30.6	34.2	28.7	33.2	39.1	30.2	35.2	42.3
		Combined	18.5	18.5	21.9	24.6	21.0	24.8	27.8	23.1	27.0	32.5	24.2	28.6	35.3
	Adjusted	UDDS	12.6	12.6	14.9	16.6	14.3	16.7	18.7	15.6	18.2	22.0	16.3	19.2	23.8
		HWFET	16.3	16.3	19.2	21.6	18.5	21.7	24.2	20.3	23.5	27.6	21.4	24.9	29.9
		Combined	14.0	14.0	16.5	18.6	15.9	18.6	20.9	17.4	20.2	24.2	18.3	21.4	26.2
E85 Conv	Unadjusted	UDDS	17.7	17.7	18.0	19.2	17.5	18.8	25.3	17.8	20.1	29.7	17.9	20.3	30.9
		HWFET	21.7	21.7	22.0	24.5	21.5	23.1	32.1	21.9	25.4	36.6	23.1	25.8	37.9
		Combined	19.3	19.3	19.6	21.2	19.1	20.6	27.9	19.4	22.2	32.4	20.0	22.4	33.7
	Adjusted	UDDS	13.9	13.9	14.1	15.0	13.8	14.8	19.6	14.0	15.7	22.8	14.1	15.9	23.7
		HWFET	15.4	15.4	15.6	17.4	15.3	16.4	22.7	15.5	18.0	25.9	16.4	18.3	26.8
		Combined	14.6	14.6	14.8	16.0	14.4	15.5	20.9	14.7	16.7	24.1	15.1	16.9	25.0
SI Split HEV	Unadjusted	UDDS	31.9	31.9	34.3	37.2	33.2	37.3	45.6	35.2	41.0	55.3	36.1	42.6	57.8
		HWFET	27.9	27.9	29.8	32.2	29.0	31.8	38.1	30.2	34.4	44.6	31.0	35.7	46.4
		Combined	30.0	30.0	32.1	34.7	31.2	34.6	41.9	32.8	37.7	49.9	33.6	39.2	52.1
	Adjusted	UDDS	24.4	24.4	26.1	28.1	25.3	28.2	34.0	26.8	30.8	40.5	27.4	31.9	42.1
		HWFET	19.8	19.8	21.1	22.8	20.6	22.5	26.9	21.4	24.3	31.5	22.0	25.2	32.8
		Combined	22.1	22.1	23.6	25.4	22.9	25.3	30.4	24.0	27.5	35.9	24.6	28.5	37.3
SI Split HEV PHEV10	Unadjusted	UDDS	40.3	40.3	43.2	46.8	42.1	46.3	55.8	43.7	50.5	67.2	44.8	51.9	70.2
		HWFET	36.6	36.6	38.9	41.9	37.9	41.1	48.7	39.4	44.0	56.6	40.6	45.4	60.4
		Combined	38.5	38.5	41.2	44.5	40.1	43.8	52.4	41.6	47.3	62.0	42.8	48.8	65.4
	Adjusted	UDDS	30.3	30.3	32.3	34.8	31.6	34.4	40.8	32.7	37.3	48.1	33.5	38.2	49.9
		HWFET	25.9	25.9	27.5	29.6	26.8	29.0	34.4	27.8	31.0	39.9	28.7	32.1	42.5
		Combined	28.1	28.1	30.0	32.2	29.2	31.8	37.6	30.3	34.2	44.0	31.1	35.2	46.3

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			Pickup												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Split HEV PHEV20	Unadjusted	UDDS	58.1	58.1	62.2	67.7	60.8	67.1	81.0	63.2	72.9	95.8	64.8	74.9	100.3
		HWFET	44.4	44.4	47.0	50.9	46.4	50.5	48.4	47.9	43.7	55.9	49.3	45.2	58.0
		Combined	51.0	51.0	54.3	58.9	53.3	58.4	62.1	55.2	56.1	72.5	56.8	57.8	75.5
	Adjusted	UDDS	42.3	42.3	44.9	48.4	44.0	48.0	56.5	45.5	51.6	65.1	46.6	52.9	67.7
		HWFET	31.4	31.4	33.2	35.9	32.7	35.6	34.1	33.8	30.9	39.3	34.8	31.9	40.8
		Combined	36.6	36.6	38.7	41.8	38.1	41.5	43.6	39.4	39.6	50.3	40.4	40.8	52.2
SI Series HEV PHEV30	Unadjusted	UDDS	51.1	51.1	55.8	61.8	53.9	60.6	76.6	57.3	68.9	95.8	59.0	71.4	101.7
		HWFET	37.8	37.8	40.8	44.6	39.8	44.3	54.1	41.9	48.6	64.0	43.4	50.6	66.5
		Combined	44.1	44.1	47.9	52.7	46.5	51.9	64.5	49.2	58.0	78.3	50.8	60.3	82.2
	Adjusted	UDDS	37.7	37.7	40.8	44.7	39.5	43.9	53.9	41.7	49.2	65.2	42.9	50.7	68.5
		HWFET	26.7	26.7	28.8	31.5	28.1	31.2	38.1	29.6	34.3	45.0	30.7	35.7	46.7
		Combined	31.8	31.8	34.4	37.6	33.4	37.1	45.4	35.2	41.1	54.2	36.4	42.6	56.6
SI Series HEV PHEV40	Unadjusted	UDDS	58.5	58.5	64.1	70.5	61.9	69.6	88.5	65.9	79.4	110.2	67.9	82.5	116.3
		HWFET	47.9	47.9	51.6	56.6	50.5	56.0	68.7	53.2	61.7	81.4	55.0	64.3	84.7
		Combined	53.2	53.2	57.8	63.5	56.2	62.8	78.3	59.5	70.3	95.1	61.4	73.2	99.6
	Adjusted	UDDS	42.5	42.5	46.1	50.1	44.7	49.6	61.0	47.3	55.6	73.1	48.5	57.4	76.4
		HWFET	33.8	33.8	36.4	39.9	35.6	39.4	48.2	37.5	43.4	57.0	38.7	45.2	59.3
		Combined	38.1	38.1	41.2	44.9	40.1	44.4	54.5	42.3	49.4	64.9	43.6	51.2	67.6
CI Split HEV	Unadjusted	UDDS	36.0	36.0	38.2	42.0	37.1	41.9	47.9	39.7	46.7	56.6	41.2	48.6	58.8
		HWFET	29.8	29.8	31.5	34.7	30.7	34.2	38.4	32.5	37.5	43.6	33.8	39.1	45.4
		Combined	32.9	32.9	34.9	38.3	33.9	38.1	43.1	36.1	42.1	49.9	37.5	43.8	51.9
	Adjusted	UDDS	27.3	27.3	28.9	31.5	28.1	31.4	35.5	29.9	34.7	41.3	30.9	36.0	42.8
		HWFET	21.1	21.1	22.3	24.5	21.7	24.2	27.1	23.0	26.5	30.8	23.9	27.7	32.1
		Combined	24.1	24.1	25.5	27.9	24.8	27.7	31.2	26.4	30.5	35.8	27.3	31.7	37.2
CI Split HEV PHEV10	Unadjusted	UDDS	42.0	42.0	44.6	49.0	43.3	48.5	55.2	46.0	53.7	64.6	47.7	55.9	67.4
		HWFET	37.6	37.6	39.6	43.2	38.7	42.8	47.7	40.7	46.5	53.7	42.3	48.4	55.7
		Combined	39.9	39.9	42.2	46.2	41.1	45.8	51.5	43.5	50.2	59.2	45.1	52.3	61.6
	Adjusted	UDDS	31.5	31.5	33.3	36.3	32.4	35.9	40.4	34.3	39.4	46.5	35.4	40.9	48.2
		HWFET	26.5	26.5	28.0	30.5	27.3	30.2	33.6	28.7	32.8	37.8	29.9	34.1	39.2
		Combined	29.1	29.1	30.7	33.4	29.9	33.1	37.0	31.5	36.1	42.1	32.7	37.5	43.7
CI Split HEV PHEV20	Unadjusted	UDDS	60.5	60.5	64.3	70.6	62.5	70.0	79.7	66.4	77.5	90.9	68.9	80.9	95.8
		HWFET	45.9	45.9	48.2	52.9	47.4	52.4	58.0	49.7	56.7	53.0	51.8	59.1	55.0
		Combined	52.9	52.9	55.9	61.3	54.6	60.8	68.2	57.7	66.5	68.7	60.0	69.4	71.8
	Adjusted	UDDS	43.8	43.8	46.3	50.2	45.1	49.8	55.8	47.6	54.5	62.4	49.2	56.5	65.2
		HWFET	32.4	32.4	34.0	37.3	33.4	36.9	40.8	35.1	39.9	37.3	36.5	41.6	38.7
		Combined	37.8	37.8	39.8	43.4	39.0	43.1	47.9	41.0	46.8	47.9	42.5	48.7	49.9

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			Pickup												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
CI Series HEV PHEV30	Unadjusted	UDDS	52.9	52.9	57.1	63.8	55.0	63.1	74.7	59.6	72.5	90.8	62.6	75.9	96.3
		HWFET	39.0	39.0	41.7	46.3	40.5	45.8	52.8	43.6	51.2	60.9	45.5	53.7	63.3
		Combined	45.6	45.6	49.0	54.5	47.4	54.0	62.9	51.2	61.1	74.4	53.5	64.0	78.0
	Adjusted	UDDS	38.9	38.9	41.7	46.0	40.3	45.5	52.7	43.3	51.4	62.3	45.2	53.5	65.4
		HWFET	27.6	27.6	29.4	32.7	28.6	32.3	37.2	30.8	36.1	42.8	32.1	37.8	44.5
		Combined	32.8	32.8	35.1	38.8	34.0	38.5	44.4	36.6	43.2	51.7	38.2	45.1	54.0
CI Series HEV PHEV40	Unadjusted	UDDS	60.7	60.7	65.6	73.8	63.2	73.0	86.2	68.5	83.7	105.2	71.4	87.8	111.5
		HWFET	49.4	49.4	52.8	58.5	51.2	58.0	67.1	55.1	65.1	77.1	57.5	68.4	80.4
		Combined	55.0	55.0	59.1	66.0	57.2	65.4	76.4	61.8	74.2	90.4	64.4	77.9	95.0
	Adjusted	UDDS	44.0	44.0	47.1	52.2	45.6	51.7	59.6	48.9	58.2	70.4	50.7	60.6	73.9
		HWFET	34.8	34.8	37.2	41.2	36.1	40.8	47.1	38.8	45.7	54.0	40.5	48.0	56.3
		Combined	39.3	39.3	42.0	46.6	40.8	46.1	53.3	43.8	51.8	62.0	45.5	54.2	64.8
H2 Split HEV	Unadjusted	UDDS	31.5	31.5	37.4	43.1	36.0	43.0	50.5	40.1	49.0	60.3	42.8	52.2	65.3
		HWFET	27.1	27.1	31.9	36.6	30.9	36.2	41.7	34.0	40.5	47.9	36.3	43.1	51.7
		Combined	29.4	29.4	34.7	39.9	33.5	39.6	46.1	37.1	44.8	54.0	39.6	47.7	58.4
	Adjusted	UDDS	24.1	24.1	28.3	32.2	27.3	32.2	37.3	30.2	36.2	43.7	32.1	38.4	46.9
		HWFET	19.2	19.2	22.6	25.9	21.9	25.6	29.5	24.1	28.6	33.8	25.7	30.5	36.5
		Combined	21.6	21.6	25.4	29.0	24.6	28.8	33.3	27.1	32.4	38.6	28.8	34.4	41.5
H2 Split HEV PHEV10	Unadjusted	UDDS	39.3	39.3	46.6	53.6	45.0	53.0	61.8	49.5	59.9	72.8	53.1	63.6	78.8
		HWFET	36.0	36.0	42.0	48.0	41.0	47.4	54.0	44.8	52.6	62.5	47.8	55.9	67.3
		Combined	37.7	37.7	44.4	50.9	43.1	50.3	58.0	47.2	56.3	67.8	50.6	59.9	73.2
	Adjusted	UDDS	29.6	29.6	34.7	39.4	33.5	38.9	44.6	36.6	43.4	51.6	39.0	45.8	55.2
		HWFET	25.5	25.5	29.7	33.8	28.9	33.5	38.0	31.6	37.0	43.9	33.7	39.3	47.3
		Combined	27.6	27.6	32.2	36.7	31.3	36.3	41.4	34.2	40.3	47.8	36.4	42.6	51.3
H2 Split HEV PHEV20	Unadjusted	UDDS	56.6	56.6	67.3	77.7	64.7	76.9	89.7	71.5	86.8	104.0	76.7	91.3	112.8
		HWFET	43.7	43.7	50.9	47.7	49.7	47.1	53.6	54.4	51.7	60.0	58.1	55.1	64.9
		Combined	50.0	50.0	58.8	60.5	56.9	59.9	68.9	62.6	66.5	78.2	67.0	70.5	84.6
	Adjusted	UDDS	41.3	41.3	48.2	54.5	46.5	54.1	61.7	50.8	60.0	69.7	53.9	62.6	74.5
		HWFET	30.9	30.9	35.9	33.6	35.0	33.3	37.8	38.3	36.4	42.2	40.9	38.8	45.6
		Combined	35.9	35.9	41.7	42.6	40.5	42.2	48.0	44.3	46.5	53.9	47.1	49.1	58.0
H2 Series HEV PHEV30	Unadjusted	UDDS	50.3	50.3	61.0	71.2	58.0	70.2	85.2	65.8	82.0	105.0	71.0	87.6	114.2
		HWFET	37.4	37.4	44.3	51.3	43.0	50.8	59.7	47.9	57.6	69.0	51.4	61.9	74.5
		Combined	43.6	43.6	52.1	60.6	50.1	59.9	71.4	56.4	68.9	85.0	60.6	73.8	92.1
	Adjusted	UDDS	37.2	37.2	44.2	50.6	42.2	50.0	59.0	47.2	57.2	70.3	50.5	60.5	75.3
		HWFET	26.5	26.5	31.2	36.1	30.4	35.8	42.0	33.8	40.6	48.4	36.2	43.5	52.3
		Combined	31.4	31.4	37.2	42.9	35.9	42.4	49.9	40.1	48.3	58.4	42.9	51.5	62.8

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			Pickup												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
H2 Series HEV PHEV40	Unadjusted	UDDS	57.7	57.7	69.5	81.7	66.7	80.5	98.0	75.1	94.8	121.5	81.5	101.5	130.7
		HWFET	47.5	47.5	56.0	65.0	54.5	64.5	75.7	60.9	73.5	87.7	65.3	79.1	94.8
		Combined	52.6	52.6	62.7	73.2	60.6	72.4	86.6	67.9	83.8	103.5	73.3	90.0	111.6
	Adjusted	UDDS	42.0	42.0	49.5	56.9	47.8	56.2	66.4	53.0	64.6	79.1	56.8	68.4	83.8
		HWFET	33.5	33.5	39.5	45.7	38.4	45.3	53.1	42.8	51.5	61.3	45.9	55.4	66.2
		Combined	37.7	37.7	44.4	51.3	43.1	50.8	59.7	47.9	58.0	70.0	51.3	61.9	74.8
E85 Split HEV	Unadjusted	UDDS	29.1	29.1	31.4	34.3	30.5	34.5	44.6	32.4	38.2	51.8	33.3	39.5	54.0
		HWFET	25.8	25.8	27.6	29.9	26.9	29.6	37.5	28.0	32.2	42.0	28.8	33.3	43.6
		Combined	27.5	27.5	29.6	32.2	28.8	32.1	41.1	30.3	35.2	46.9	31.1	36.4	48.8
	Adjusted	UDDS	22.4	22.4	24.0	26.1	23.4	26.2	33.3	24.8	28.8	38.2	25.4	29.8	39.6
		HWFET	18.3	18.3	19.5	21.1	19.1	21.0	26.5	19.9	22.8	29.7	20.4	23.5	30.8
		Combined	20.3	20.3	21.8	23.6	21.2	23.6	29.8	22.3	25.8	33.8	22.9	26.6	35.1
E85 Split HEV PHEV10	Unadjusted	UDDS	37.6	37.6	40.4	43.8	39.5	43.4	55.2	41.0	47.3	63.4	42.1	48.7	66.2
		HWFET	34.2	34.2	36.1	38.9	35.7	38.5	48.1	36.5	41.3	53.5	37.6	42.6	57.1
		Combined	36.0	36.0	38.4	41.5	37.7	41.0	51.7	38.8	44.4	58.5	40.0	45.7	61.8
	Adjusted	UDDS	28.5	28.5	30.4	32.8	29.7	32.5	40.4	30.8	35.1	45.7	31.6	36.1	47.5
		HWFET	24.2	24.2	25.5	27.5	25.2	27.2	33.9	25.8	29.2	37.7	26.6	30.1	40.2
		Combined	26.4	26.4	28.0	30.2	27.5	29.9	37.2	28.3	32.2	41.7	29.1	33.1	43.9
E85 Split HEV PHEV20	Unadjusted	UDDS	54.2	54.2	58.4	63.5	57.0	62.8	80.0	59.1	68.3	90.7	60.8	70.4	94.8
		HWFET	41.4	41.4	44.1	47.7	43.3	47.2	47.8	44.8	41.1	52.8	46.1	42.4	54.9
		Combined	47.6	47.6	51.0	55.3	49.9	54.7	61.4	51.7	52.6	68.5	53.2	54.3	71.4
	Adjusted	UDDS	39.8	39.8	42.5	45.7	41.6	45.3	56.0	43.0	48.8	62.3	44.0	50.1	64.6
		HWFET	29.2	29.2	31.2	33.7	30.6	33.3	33.7	31.6	29.0	37.2	32.5	29.9	38.6
		Combined	34.2	34.2	36.5	39.4	35.8	39.0	43.1	37.0	37.3	47.8	38.0	38.5	49.6
E85 Series HEV PHEV30	Unadjusted	UDDS	47.9	47.9	52.5	57.6	50.6	56.9	76.0	53.8	64.8	90.1	55.5	67.2	95.1
		HWFET	35.6	35.6	38.3	41.9	37.5	41.6	53.6	39.4	45.7	60.7	40.9	47.6	63.0
		Combined	41.4	41.4	45.0	49.3	43.7	48.8	64.0	46.2	54.6	74.0	47.8	56.7	77.4
	Adjusted	UDDS	35.6	35.6	38.6	42.0	37.3	41.5	53.5	39.5	46.6	61.9	40.6	48.1	64.8
		HWFET	25.1	25.1	27.1	29.6	26.5	29.4	37.8	27.8	32.3	42.7	28.9	33.6	44.3
		Combined	30.0	30.0	32.4	35.3	31.5	35.0	45.1	33.2	38.8	51.5	34.3	40.3	53.6
E85 Series HEV PHEV40	Unadjusted	UDDS	54.8	54.8	60.0	66.2	58.0	65.3	87.6	61.7	74.6	104.4	63.7	77.6	110.2
		HWFET	45.0	45.0	48.5	53.2	47.5	52.7	68.1	50.0	58.1	77.1	51.7	60.5	80.3
		Combined	49.9	49.9	54.2	59.7	52.7	59.0	77.6	55.8	66.1	90.0	57.7	68.9	94.4
	Adjusted	UDDS	40.1	40.1	43.5	47.5	42.2	46.9	60.4	44.6	52.7	70.0	45.9	54.5	73.2
		HWFET	31.8	31.8	34.2	37.5	33.5	37.1	47.8	35.3	40.9	54.0	36.5	42.6	56.2
		Combined	35.9	35.9	38.8	42.4	37.8	41.9	54.0	39.9	46.6	61.8	41.1	48.4	64.4

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			Pickup												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
FC HEV	Unadjusted	UDDS	33.7	33.7	40.9	48.9	41.2	49.0	56.6	45.4	55.0	66.2	47.7	56.7	69.3
		HWFET	33.7	33.7	39.3	45.9	40.1	45.4	50.8	42.6	49.3	55.9	44.3	50.7	58.1
		Combined	33.7	33.7	40.1	47.5	40.7	47.3	53.8	44.1	52.3	61.2	46.1	53.9	63.8
	Adjusted	UDDS	25.7	25.7	30.7	36.2	31.0	36.2	41.3	33.8	40.2	47.5	35.4	41.4	49.4
		HWFET	23.9	23.9	27.7	32.4	28.3	32.1	35.8	30.1	34.8	39.4	31.2	35.8	40.9
		Combined	24.9	24.9	29.3	34.4	29.7	34.2	38.6	32.0	37.6	43.5	33.4	38.7	45.2
FC PHEV10	Unadjusted	UDDS	43.3	43.3	51.5	60.7	52.0	60.0	68.8	55.7	66.7	79.6	58.3	68.6	83.2
		HWFET	44.5	44.5	50.4	58.1	51.7	57.5	63.3	54.0	61.5	68.4	55.8	63.2	70.9
		Combined	43.8	43.8	51.0	59.5	51.9	58.8	66.2	54.9	64.3	74.1	57.1	66.0	77.2
	Adjusted	UDDS	32.4	32.4	37.9	44.0	38.3	43.5	49.1	40.7	47.8	55.7	42.4	49.0	57.8
		HWFET	31.4	31.4	35.5	40.9	36.5	40.5	44.5	38.1	43.2	48.0	39.3	44.4	49.8
		Combined	31.9	31.9	36.8	42.5	37.4	42.1	46.9	39.5	45.6	52.0	40.9	46.8	53.9
FC PHEV20	Unadjusted	UDDS	51.8	51.8	61.7	72.9	62.3	72.1	82.9	66.9	80.5	96.2	70.1	83.0	100.7
		HWFET	45.5	45.5	52.1	60.4	53.4	59.7	66.5	56.1	64.5	72.6	58.1	66.4	75.5
		Combined	48.8	48.8	57.0	66.7	57.9	65.9	74.6	61.6	72.4	83.9	64.1	74.6	87.5
	Adjusted	UDDS	38.2	38.2	44.6	51.6	45.0	51.1	57.7	47.9	56.2	65.4	49.9	57.7	67.9
		HWFET	32.1	32.1	36.7	42.5	37.6	42.0	46.7	39.5	45.4	50.9	40.9	46.6	52.9
		Combined	35.2	35.2	40.7	47.1	41.3	46.6	52.2	43.7	50.8	58.0	45.4	52.1	60.2
FC PHEV30	Unadjusted	UDDS	74.8	74.8	88.0	101.8	88.8	101.5	117.2	94.4	113.5	134.7	98.9	117.5	140.9
		HWFET	57.5	57.5	65.4	74.9	67.0	74.5	83.2	69.9	80.7	90.6	72.5	83.1	94.2
		Combined	65.9	65.9	76.2	87.6	77.4	87.2	99.0	81.5	96.0	110.5	84.9	99.1	115.2
	Adjusted	UDDS	52.8	52.8	60.7	68.5	61.1	68.4	76.8	64.4	74.9	85.8	66.9	77.0	88.9
		HWFET	40.5	40.5	46.0	52.5	47.0	52.2	58.2	49.1	56.5	63.3	50.8	58.2	65.8
		Combined	46.4	46.4	53.0	60.2	53.9	60.0	67.2	56.4	65.3	74.0	58.6	67.2	76.8
FC PHEV40	Unadjusted	UDDS	85.9	85.9	101.4	117.6	102.4	117.3	135.8	109.0	131.6	156.4	114.3	136.5	163.8
		HWFET	72.7	72.7	82.9	95.0	84.9	94.6	105.8	88.7	102.7	115.5	92.1	105.9	120.2
		Combined	79.4	79.4	92.1	106.2	93.7	105.8	120.4	98.8	116.8	134.9	103.1	120.8	140.8
	Adjusted	UDDS	59.5	59.5	68.3	77.1	68.9	76.9	86.4	72.5	84.3	96.3	75.3	86.7	99.7
		HWFET	51.0	51.0	58.0	66.3	59.4	66.0	73.7	62.0	71.6	80.3	64.3	73.8	83.5
		Combined	55.3	55.3	63.3	71.8	64.3	71.6	80.2	67.4	78.1	88.4	69.9	80.4	91.7

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Pev details

				Pickup												
				2010	2010			2015			2030			2045		
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Split HEV PHEV10	UDDS	CD	Wh/mile	281.1	281.1	264.7	251.7	271.8	252.7	234.3	263.3	241.9	213.2	260.3	237.7	205.1
			Distance	12.4	12.4	12.4	12.3	12.4	12.8	12.3	12.6	12.8	12.3	12.8	12.6	12.2
			MPGGE Unadjusted	326.4	326.4	349.6	402.4	339.7	391.3	466.8	350.1	427.4	619.1	361.0	453.3	660.0
			MPGGE Adjusted	158.6	158.6	165.1	178.7	162.4	176.0	193.2	165.3	184.6	220.8	168.2	190.4	226.9
		CS	MPGGE Unadjusted	34.1	34.1	36.6	39.6	35.7	39.2	47.3	37.1	42.7	56.9	38.0	43.9	59.3
			MPGGE Adjusted	26.0	26.0	27.8	29.8	27.1	29.6	35.1	28.1	32.0	41.5	28.7	32.8	43.1
		CD+CS	Wh/mile	58.6	58.6	55.1	52.4	56.6	52.6	48.8	54.9	50.4	44.4	54.2	49.5	42.7
			MPGGE Unadjusted	40.3	40.3	43.2	46.8	42.1	46.3	55.8	43.7	50.5	67.2	44.8	51.9	70.2
			MPGGE Adjusted	30.3	30.3	32.3	34.8	31.6	34.4	40.8	32.7	37.3	48.1	33.5	38.2	49.9
	HWFET	CD	Wh/mile	309.7	309.7	293.9	275.5	285.6	263.9	242.5	292.4	249.4	235.8	289.0	242.7	263.2
			Distance	12.4	12.4	12.2	12.2	12.6	12.5	12.4	12.2	12.5	11.6	12.2	12.4	8.1
			MPGGE Unadjusted	100.6	100.6	106.6	114.8	95.2	102.7	121.7	107.5	109.8	154.0	111.7	113.5	230.1
			MPGGE Adjusted	70.1	70.1	74.2	79.8	66.5	71.6	84.5	74.8	76.4	106.2	77.7	78.9	156.1
		CS	MPGGE Unadjusted	30.5	30.5	32.4	34.9	31.8	34.5	41.0	32.8	37.0	47.2	33.8	38.2	49.0
			MPGGE Adjusted	21.6	21.6	22.9	24.7	22.5	24.4	28.9	23.2	26.1	33.3	23.9	27.0	34.5
		CD+CS	Wh/mile	91.1	91.1	86.4	81.0	84.0	77.6	71.3	86.0	73.3	69.3	85.0	71.4	77.4
			MPGGE Unadjusted	36.6	36.6	38.9	41.9	37.9	41.1	48.7	39.4	44.0	56.6	40.6	45.4	60.4
			MPGGE Adjusted	25.9	25.9	27.5	29.6	26.8	29.0	34.4	27.8	31.0	39.9	28.7	32.1	42.5
	Combined	CD	MPGGE Unadjusted	162.4	162.4	172.5	189.1	157.6	172.8	205.1	173.6	185.7	262.4	180.1	193.1	358.5
			MPGGE Adjusted	101.2	101.2	106.5	114.7	98.5	106.3	122.4	107.0	112.8	148.6	110.3	116.4	188.5
		CS	MPGGE Unadjusted	32.4	32.4	34.6	37.3	33.8	36.9	44.2	35.0	39.9	52.1	36.0	41.2	54.2
			MPGGE Adjusted	23.8	23.8	25.4	27.3	24.8	27.0	32.0	25.7	29.1	37.3	26.3	29.9	38.8
		CD+CS	Wh/mile	73.2	73.2	69.2	65.3	68.9	63.9	58.9	68.9	60.7	55.6	68.1	59.4	58.3
			MPGGE Unadjusted	38.5	38.5	41.2	44.5	40.1	43.8	52.4	41.6	47.3	62.0	42.8	48.8	65.4
			MPGGE Adjusted	28.1	28.1	30.0	32.2	29.2	31.8	37.6	30.3	34.2	44.0	31.1	35.2	46.3

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				Pickup												
				2010	2010			2015			2030			2045		
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Split HEV PHEV20	UDDS	CD	Wh/mile	334.2	334.2	312.4	295.1	323.2	297.7	266.3	312.6	268.7	224.1	308.9	262.9	217.0
			Distance	23.7	23.7	23.9	23.5	23.5	23.5	23.5	23.9	23.9	24.0	23.7	23.7	23.9
			MPGGE Unadjusted	797.2	797.2	795.2	969.7	834.9	960.3	1003.6	841.9	787.9	799.6	861.8	802.6	890.1
			MPGGE Adjusted	244.7	244.7	244.5	262.2	248.9	261.4	265.2	249.7	243.6	245.0	251.8	245.3	254.7
		CS	MPGGE Unadjusted	33.7	33.7	36.2	39.2	35.3	38.9	47.2	36.7	42.7	56.7	37.7	43.8	59.2
			MPGGE Adjusted	25.7	25.7	27.5	29.6	26.8	29.3	35.1	27.8	32.0	41.4	28.5	32.8	43.0
		CD+CS	Wh/mile	173.7	173.7	162.4	153.5	168.0	154.8	138.7	162.3	140.4	117.6	160.4	137.3	113.9
			MPGGE Unadjusted	58.1	58.1	62.2	67.7	60.8	67.1	81.0	63.2	72.9	95.8	64.8	74.9	100.3
			MPGGE Adjusted	42.3	42.3	44.9	48.4	44.0	48.0	56.5	45.5	51.6	65.1	46.6	52.9	67.7
	HWFET	CD	Wh/mile	364.7	364.7	344.7	323.8	353.4	326.6	243.1	345.2	249.6	226.9	340.1	244.3	219.1
			Distance	21.7	21.7	21.6	21.4	21.6	21.4	20.2	21.5	20.2	19.3	21.4	20.0	19.2
			MPGGE Unadjusted	152.8	152.8	158.5	172.7	159.5	171.1	120.4	163.8	108.9	138.3	169.1	112.6	144.1
			MPGGE Adjusted	105.4	105.4	109.1	118.6	109.9	117.5	83.6	112.7	75.8	95.6	116.2	78.3	99.6
		CS	MPGGE Unadjusted	30.3	30.3	32.1	34.6	31.6	34.3	40.7	32.5	36.8	47.0	33.5	38.0	48.8
			MPGGE Adjusted	21.4	21.4	22.7	24.5	22.4	24.3	28.7	23.0	26.0	33.2	23.7	26.9	34.4
		CD+CS	Wh/mile	182.8	182.8	172.9	163.4	177.1	164.8	71.5	174.1	73.4	66.7	171.5	71.9	64.4
			MPGGE Unadjusted	44.4	44.4	47.0	50.9	46.4	50.5	48.4	47.9	43.7	55.9	49.3	45.2	58.0
			MPGGE Adjusted	31.4	31.4	33.2	35.9	32.7	35.6	34.1	33.8	30.9	39.3	34.8	31.9	40.8
	Combined	CD	MPGGE Unadjusted	275.1	275.1	283.2	315.2	287.4	312.2	233.4	294.1	207.0	253.6	303.1	213.6	267.3
			MPGGE Adjusted	153.4	153.4	156.9	169.7	158.6	168.6	134.1	161.4	122.0	143.9	165.1	125.2	149.7
		CS	MPGGE Unadjusted	32.1	32.1	34.2	37.0	33.5	36.7	44.0	34.7	39.8	51.9	35.7	41.0	54.0
			MPGGE Adjusted	23.6	23.6	25.1	27.1	24.6	26.8	31.9	25.4	29.0	37.2	26.1	29.8	38.7
		CD+CS	Wh/mile	177.8	177.8	167.1	157.9	172.1	159.3	108.5	167.6	110.2	94.7	165.4	107.8	91.6
			MPGGE Unadjusted	51.0	51.0	54.3	58.9	53.3	58.4	62.1	55.2	56.1	72.5	56.8	57.8	75.5
			MPGGE Adjusted	36.6	36.6	38.7	41.8	38.1	41.5	43.6	39.4	39.6	50.3	40.4	40.8	52.2

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				Pickup														
				2010	2010			2015			2030			2045				
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high		
SI Series HEV PHEV30	UDDS	CD	Wh/mile	444.2	444.2	416.3	387.8	427.4	392.2	349.4	413.3	359.8	309.8	406.9	349.7	296.3		
			Distance	31.9	31.9	31.4	31.9	31.4	32.0	30.9	31.4	30.9	31.8	31.4	30.9	31.8		
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
		CS	MPGGE Unadjusted	24.0	24.0	26.2	29.0	25.3	28.5	36.0	26.9	32.4	45.0	27.7	33.6	47.8		
			MPGGE Adjusted	18.7	18.7	20.3	22.3	19.6	21.9	27.3	20.8	24.8	33.6	21.4	25.6	35.5		
		CD+CS	Wh/mile	285.7	285.7	267.8	249.5	274.9	252.3	225.5	265.9	232.2	200.4	261.8	225.4	191.6		
			MPGGE Unadjusted	51.1	51.1	55.8	61.8	53.9	60.6	76.6	57.3	68.9	95.8	59.0	71.4	101.7		
			MPGGE Adjusted	37.7	37.7	40.8	44.7	39.5	43.9	53.9	41.7	49.2	65.2	42.9	50.7	68.5		
		HWFET	CD	Wh/mile	493.2	493.2	466.5	435.3	475.5	439.6	397.1	462.7	408.7	366.0	454.3	399.0	352.0	
				Distance	27.7	27.7	28.4	28.4	27.6	28.4	27.1	28.4	27.1	26.0	27.5	26.9	25.8	
				MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	MPGGE Adjusted			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	CS		MPGGE Unadjusted	22.3	22.3	24.1	26.3	23.5	26.1	31.9	24.7	28.7	37.8	25.6	29.9	39.3		
			MPGGE Adjusted	15.8	15.8	17.1	18.7	16.7	18.5	22.6	17.5	20.3	26.7	18.2	21.2	27.7		
	CD+CS		Wh/mile	254.1	254.1	240.3	224.3	245.0	226.5	204.6	238.4	210.6	188.5	234.1	205.6	181.3		
			MPGGE Unadjusted	37.8	37.8	40.8	44.6	39.8	44.3	54.1	41.9	48.6	64.0	43.4	50.6	66.5		
			MPGGE Adjusted	26.7	26.7	28.8	31.5	28.1	31.2	38.1	29.6	34.3	45.0	30.7	35.7	46.7		
	Combined		CD	MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			CS	MPGGE Unadjusted	23.2	23.2	25.2	27.7	24.5	27.4	34.0	25.9	30.6	41.4	26.7	31.8	43.5	
		MPGGE Adjusted		17.3	17.3	18.7	20.5	18.2	20.2	25.0	19.2	22.5	30.1	19.8	23.4	31.5		
		CD+CS	Wh/mile	271.4	271.4	255.4	238.1	261.4	240.7	216.1	253.5	222.4	195.0	249.3	216.5	187.0		
			MPGGE Unadjusted	44.1	44.1	47.9	52.7	46.5	51.9	64.5	49.2	58.0	78.3	50.8	60.3	82.2		
	MPGGE Adjusted	31.8	31.8	34.4	37.6	33.4	37.1	45.4	35.2	41.1	54.2	36.4	42.6	56.6				

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				Pickup													
				2010	2010			2015			2030			2045			
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high	
SI Series HEV PHEV40	UDDS	CD	Wh/mile	454.2	454.2	425.1	395.6	436.5	400.4	356.5	421.8	367.1	312.8	414.7	356.2	299.3	
			Distance	40.7	40.7	40.6	40.6	40.7	40.7	40.8	40.7	40.8	40.5	40.6	40.6	40.8	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	23.4	23.4	25.6	28.2	24.7	27.8	35.4	26.4	31.8	44.1	27.2	33.0	46.5	
			MPGGE Adjusted	18.2	18.2	19.9	21.7	19.2	21.5	26.9	20.4	24.3	32.9	21.0	25.2	34.6	
		CD+CS	Wh/mile	333.0	333.0	311.7	290.2	320.1	293.8	263.0	309.4	270.7	230.6	304.3	262.5	220.6	
			MPGGE Unadjusted	58.5	58.5	64.1	70.5	61.9	69.6	88.5	65.9	79.4	110.2	67.9	82.5	116.3	
			MPGGE Adjusted	42.5	42.5	46.1	50.1	44.7	49.6	61.0	47.3	55.6	73.1	48.5	57.4	76.4	
	HWFET	CD	Wh/mile	498.2	498.2	470.7	438.9	479.8	443.3	399.6	466.6	411.3	368.5	457.7	401.1	354.5	
			Distance	38.6	38.6	36.5	36.4	36.7	36.5	38.6	38.6	38.6	35.7	36.5	37.6	34.6	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
		CS	MPGGE Unadjusted	22.0	22.0	23.8	26.1	23.2	25.8	31.6	24.5	28.4	37.4	25.3	29.6	39.0	
			MPGGE Adjusted	15.6	15.6	16.8	18.5	16.5	18.3	22.4	17.4	20.1	26.5	17.9	21.0	27.5	
		CD+CS	Wh/mile	336.3	336.3	317.7	296.3	323.9	299.3	269.7	314.9	277.6	248.8	309.0	270.7	239.3	
			MPGGE Unadjusted	47.9	47.9	51.6	56.6	50.5	56.0	68.7	53.2	61.7	81.4	55.0	64.3	84.7	
			MPGGE Adjusted	33.8	33.8	36.4	39.9	35.6	39.4	48.2	37.5	43.4	57.0	38.7	45.2	59.3	
	Combined	CD	MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
		CS	MPGGE Unadjusted	22.8	22.8	24.8	27.2	24.0	26.9	33.6	25.5	30.2	40.8	26.3	31.4	42.8	
			MPGGE Adjusted	16.9	16.9	18.4	20.1	17.9	19.9	24.6	18.9	22.2	29.7	19.5	23.1	31.0	
		CD+CS	Wh/mile	334.5	334.5	314.4	292.9	321.8	296.2	266.0	311.9	273.8	238.8	306.4	266.2	229.0	
			MPGGE Unadjusted	53.2	53.2	57.8	63.5	56.2	62.8	78.3	59.5	70.3	95.1	61.4	73.2	99.6	
		MPGGE Adjusted	38.1	38.1	41.2	44.9	40.1	44.4	54.5	42.3	49.4	64.9	43.6	51.2	67.6		

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				Pickup												
				2010	2010			2015			2030			2045		
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
CI Split HEV PHEV10	UDDS	CD	Wh/mile	290.5	290.5	272.9	258.3	280.8	256.2	244.3	274.5	250.4	220.7	267.4	238.7	212.2
			Distance	12.4	12.4	12.4	12.4	12.4	12.9	12.3	12.4	12.3	12.3	12.9	12.3	12.3
			MPGGE Unadjusted	341.7	341.7	360.0	412.1	352.4	383.1	474.2	384.7	459.8	582.2	380.4	476.6	615.9
			MPGGE Adjusted	163.0	163.0	168.0	181.0	165.9	173.9	194.8	174.4	191.7	214.8	173.3	195.3	220.3
		CS	MPGGE Unadjusted	35.6	35.6	37.8	41.5	36.7	41.1	46.7	39.0	45.5	54.6	40.4	47.3	57.0
			MPGGE Adjusted	27.0	27.0	28.6	31.2	27.8	30.9	34.8	29.4	33.9	40.0	30.4	35.2	41.5
		CD+CS	Wh/mile	60.5	60.5	56.9	53.8	58.5	53.4	50.9	57.2	52.2	46.0	55.7	49.7	44.2
			MPGGE Unadjusted	42.0	42.0	44.6	49.0	43.3	48.5	55.2	46.0	53.7	64.6	47.7	55.9	67.4
			MPGGE Adjusted	31.5	31.5	33.3	36.3	32.4	35.9	40.4	34.3	39.4	46.5	35.4	40.9	48.2
		Distance	12.4	12.4	12.5	12.4	12.4	12.4	12.2	12.4	12.2	11.8	12.5	12.1	11.6	
		MPGGE Unadjusted	103.6	103.6	108.6	118.2	106.5	117.0	129.8	111.6	125.9	145.1	115.9	131.2	151.2	
		MPGGE Adjusted	72.2	72.2	75.6	82.1	74.2	81.3	89.9	77.7	87.3	100.2	80.6	90.9	104.3	
	CS	MPGGE Unadjusted	31.3	31.3	33.0	36.0	32.2	35.6	39.7	33.9	38.7	44.7	35.3	40.4	46.5	
		MPGGE Adjusted	22.1	22.1	23.3	25.5	22.8	25.2	28.1	24.0	27.4	31.6	24.9	28.5	32.8	
	CD+CS	Wh/mile	92.4	92.4	87.7	82.0	89.4	82.7	75.8	87.2	77.7	70.0	85.7	75.8	67.6	
		MPGGE Unadjusted	37.6	37.6	39.6	43.2	38.7	42.8	47.7	40.7	46.5	53.7	42.3	48.4	55.7	
		MPGGE Adjusted	26.5	26.5	28.0	30.5	27.3	30.2	33.6	28.7	32.8	37.8	29.9	34.1	39.2	
	MPGGE Adjusted	104.1	104.1	108.4	117.4	106.6	115.0	127.7	111.7	124.6	141.8	114.1	128.8	146.8		
	CS	MPGGE Unadjusted	33.5	33.5	35.5	38.8	34.5	38.5	43.3	36.5	42.2	49.7	37.9	43.9	51.7	
		MPGGE Adjusted	24.6	24.6	26.0	28.3	25.3	28.1	31.4	26.7	30.6	35.7	27.7	31.8	37.1	
	CD+CS	Wh/mile	74.9	74.9	70.7	66.5	72.4	66.6	62.1	70.7	63.7	56.8	69.2	61.5	54.7	
		MPGGE Unadjusted	39.9	39.9	42.2	46.2	41.1	45.8	51.5	43.5	50.2	59.2	45.1	52.3	61.6	
		MPGGE Adjusted	29.1	29.1	30.7	33.4	29.9	33.1	37.0	31.5	36.1	42.1	32.7	37.5	43.7	

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				Pickup												
				2010	2010			2015			2030			2045		
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
CI Split HEV PHEV20	UDDS	CD	Wh/mile	343.8	343.8	324.2	302.8	332.5	304.9	275.3	322.8	283.1	228.8	318.8	276.9	222.2
			Distance	23.9	23.9	23.9	23.9	23.9	23.9	23.7	23.9	23.7	24.0	23.9	23.4	24.0
			MPGGE Unadjusted	824.0	824.0	880.1	950.5	856.0	935.1	1007.1	914.1	983.3	651.9	956.9	1025.3	792.1
			MPGGE Adjusted	247.7	247.7	253.7	260.5	251.2	259.1	265.5	257.1	263.5	225.8	261.1	267.0	244.1
		CS	MPGGE Unadjusted	35.1	35.1	37.4	41.0	36.3	40.7	46.4	38.5	45.1	54.4	40.0	47.1	56.8
			MPGGE Adjusted	26.7	26.7	28.3	30.8	27.5	30.6	34.5	29.1	33.7	39.9	30.1	35.0	41.4
		CD+CS	Wh/mile	178.7	178.7	168.5	157.3	172.8	158.4	143.5	167.8	147.5	119.8	165.7	144.3	116.6
			MPGGE Unadjusted	60.5	60.5	64.3	70.6	62.5	70.0	79.7	66.4	77.5	90.9	68.9	80.9	95.8
			MPGGE Adjusted	43.8	43.8	46.3	50.2	45.1	49.8	55.8	47.6	54.5	62.4	49.2	56.5	65.2
	HWFET	CD	Wh/mile	375.9	375.9	354.8	333.1	363.5	335.8	304.6	353.0	314.2	229.1	349.3	307.2	221.1
			Distance	21.7	21.7	21.6	21.6	21.7	21.6	21.3	21.6	21.3	19.5	21.4	21.0	19.4
			MPGGE Unadjusted	168.2	168.2	171.9	189.9	172.3	188.0	202.4	177.0	200.4	130.1	188.9	208.2	135.7
			MPGGE Adjusted	115.6	115.6	118.1	130.0	118.3	128.7	138.1	121.5	136.8	90.2	129.3	141.9	93.9
		CS	MPGGE Unadjusted	31.0	31.0	32.6	35.7	32.0	35.4	39.5	33.6	38.6	44.6	35.0	40.2	46.3
			MPGGE Adjusted	21.9	21.9	23.1	25.3	22.6	25.0	27.9	23.8	27.3	31.5	24.7	28.4	32.7
		CD+CS	Wh/mile	189.1	189.1	178.6	167.7	182.9	169.0	152.4	177.7	157.1	67.4	175.7	153.6	65.0
			MPGGE Unadjusted	45.9	45.9	48.2	52.9	47.4	52.4	58.0	49.7	56.7	53.0	51.8	59.1	55.0
			MPGGE Adjusted	32.4	32.4	34.0	37.3	33.4	36.9	40.8	35.1	39.9	37.3	36.5	41.6	38.7
	Combined	CD	MPGGE Unadjusted	299.1	299.1	308.4	339.2	307.3	335.3	361.1	318.1	356.5	232.5	338.1	370.6	249.3
			MPGGE Adjusted	163.6	163.6	167.3	179.4	166.9	177.9	187.6	171.1	186.0	134.7	179.0	191.2	142.0
		CS	MPGGE Unadjusted	33.1	33.1	35.1	38.5	34.2	38.1	43.0	36.2	41.9	49.5	37.6	43.7	51.5
			MPGGE Adjusted	24.3	24.3	25.7	28.1	25.1	27.8	31.2	26.5	30.4	35.6	27.4	31.7	37.0
		CD+CS	Wh/mile	183.4	183.4	173.0	162.0	177.3	163.1	147.5	172.2	151.8	96.2	170.2	148.5	93.4
			MPGGE Unadjusted	52.9	52.9	55.9	61.3	54.6	60.8	68.2	57.7	66.5	68.7	60.0	69.4	71.8
			MPGGE Adjusted	37.8	37.8	39.8	43.4	39.0	43.1	47.9	41.0	46.8	47.9	42.5	48.7	49.9

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				Pickup													
				2010	2010			2015			2030			2045			
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high	
CI Series HEV PHEV30	UDDS	CD	Wh/mile	454.6	454.6	426.8	398.0	437.8	402.4	359.5	423.5	369.8	319.5	416.5	359.4	306.4	
			Distance	31.9	31.9	31.9	31.4	31.9	31.4	31.9	31.9	31.9	30.9	31.9	30.9	31.9	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	24.9	24.9	26.9	30.0	25.9	29.7	35.1	28.0	34.1	42.7	29.4	35.7	45.2	
			MPGGE Adjusted	19.3	19.3	20.7	23.0	20.0	22.8	26.7	21.6	26.0	32.0	22.6	27.1	33.7	
		CD+CS	Wh/mile	292.4	292.4	274.5	256.0	281.7	258.9	232.1	272.5	238.7	206.7	268.0	231.7	198.2	
			MPGGE Unadjusted	52.9	52.9	57.1	63.8	55.0	63.1	74.7	59.6	72.5	90.8	62.6	75.9	96.3	
			MPGGE Adjusted	38.9	38.9	41.7	46.0	40.3	45.5	52.7	43.3	51.4	62.3	45.2	53.5	65.4	
		Distance	28.0	28.0	27.7	27.7	27.9	27.7	27.4	27.7	27.4	26.3	27.8	27.2	26.2		
		MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
		MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	CS	MPGGE Unadjusted	23.0	23.0	24.6	27.3	23.9	27.0	31.1	25.7	30.2	35.9	26.8	31.7	37.3		
		MPGGE Adjusted	16.3	16.3	17.4	19.4	17.0	19.2	22.0	18.2	21.4	25.4	19.0	22.4	26.4		
	CD+CS	Wh/mile	257.7	257.7	244.0	227.8	248.6	230.0	208.0	241.9	214.0	191.7	237.4	208.9	184.6		
		MPGGE Unadjusted	39.0	39.0	41.7	46.3	40.5	45.8	52.8	43.6	51.2	60.9	45.5	53.7	63.3		
		MPGGE Adjusted	27.6	27.6	29.4	32.7	28.6	32.3	37.2	30.8	36.1	42.8	32.1	37.8	44.5		
	MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
	CS	MPGGE Unadjusted	24.0	24.0	25.8	28.7	24.9	28.4	33.2	26.9	32.2	39.4	28.2	33.8	41.3		
		MPGGE Adjusted	17.8	17.8	19.1	21.2	18.5	21.0	24.4	19.9	23.7	28.6	20.8	24.8	30.0		
	CD+CS	Wh/mile	276.8	276.8	260.8	243.3	266.8	245.9	221.3	258.7	227.6	200.0	254.2	221.4	192.1		
		MPGGE Unadjusted	45.6	45.6	49.0	54.5	47.4	54.0	62.9	51.2	61.1	74.4	53.5	64.0	78.0		

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				Pickup													
				2010	2010			2015			2030			2045			
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high	
CI Series HEV PHEV40	UDDS	CD	Wh/mile	464.8	464.8	435.7	406.0	446.8	410.3	366.4	432.0	377.1	322.6	424.7	366.1	309.3	
			Distance	40.7	40.7	40.7	40.7	40.7	40.7	40.6	40.7	40.6	40.5	40.7	40.8	40.5	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	24.3	24.3	26.2	29.5	25.3	29.2	34.5	27.4	33.5	42.1	28.6	35.1	44.6	
			MPGGE Adjusted	18.9	18.9	20.3	22.7	19.6	22.4	26.2	21.1	25.5	31.6	22.0	26.7	33.3	
		CD+CS	Wh/mile	340.8	340.8	319.6	297.9	327.8	301.1	270.4	317.0	278.2	238.0	311.7	269.9	228.1	
			MPGGE Unadjusted	60.7	60.7	65.6	73.8	63.2	73.0	86.2	68.5	83.7	105.2	71.4	87.8	111.5	
			MPGGE Adjusted	44.0	44.0	47.1	52.2	45.6	51.7	59.6	48.9	58.2	70.4	50.7	60.6	73.9	
		HWFET	CD	Wh/mile	505.3	505.3	477.8	445.8	486.6	449.8	406.0	473.3	417.7	374.7	464.2	407.4	360.8
	Distance			37.1	37.1	38.6	36.7	37.1	38.6	36.4	38.6	36.5	35.1	36.9	36.4	34.9	
	MPGGE Unadjusted			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	MPGGE Adjusted			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	CS		MPGGE Unadjusted	22.7	22.7	24.3	26.9	23.6	26.7	30.9	25.3	29.9	35.5	26.5	31.5	37.0	
			MPGGE Adjusted	16.1	16.1	17.2	19.1	16.7	18.9	21.8	18.0	21.2	25.1	18.8	22.3	26.2	
	CD+CS		Wh/mile	341.1	341.1	322.5	301.0	328.5	303.7	274.1	319.5	282.0	253.0	313.4	275.0	243.6	
			MPGGE Unadjusted	49.4	49.4	52.8	58.5	51.2	58.0	67.1	55.1	65.1	77.1	57.5	68.4	80.4	
			MPGGE Adjusted	34.8	34.8	37.2	41.2	36.1	40.8	47.1	38.8	45.7	54.0	40.5	48.0	56.3	
	Combined	CD	MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
		CS	MPGGE Unadjusted	23.6	23.6	25.3	28.3	24.5	28.0	32.7	26.4	31.8	38.8	27.6	33.4	40.8	
			MPGGE Adjusted	17.5	17.5	18.8	20.9	18.2	20.7	24.1	19.6	23.4	28.3	20.4	24.5	29.7	
		CD+CS	Wh/mile	340.9	340.9	320.9	299.3	328.1	302.2	272.0	318.1	279.9	244.7	312.5	272.2	235.1	
			MPGGE Unadjusted	55.0	55.0	59.1	66.0	57.2	65.4	76.4	61.8	74.2	90.4	64.4	77.9	95.0	
			MPGGE Adjusted	39.3	39.3	42.0	46.6	40.8	46.1	53.3	43.8	51.8	62.0	45.5	54.2	64.8	

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				Pickup												
				2010	2010			2015			2030			2045		
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
H2 Split HEV PHEV10	UDDS	CD	Wh/mile	284.3	284.3	267.2	246.3	272.2	251.2	234.9	263.0	243.6	209.2	261.3	236.2	206.2
			Distance	12.3	12.3	12.3	12.4	12.5	12.3	12.3	12.8	12.2	12.2	12.4	12.3	12.1
			MPGGE Unadjusted	328.8	328.8	407.0	454.1	370.1	465.2	569.6	404.1	562.3	693.5	461.6	590.2	853.1
			MPGGE Adjusted	159.3	159.3	179.8	190.5	170.6	192.9	212.7	179.1	211.4	231.7	192.1	216.2	250.9
		CS	MPGGE Unadjusted	33.3	33.3	39.5	45.4	38.1	44.9	52.2	41.9	50.6	61.5	45.0	53.8	66.5
			MPGGE Adjusted	25.4	25.4	29.7	33.9	28.8	33.5	38.4	31.5	37.4	44.5	33.5	39.4	47.6
		CD+CS	Wh/mile	59.2	59.2	55.7	51.3	56.7	52.3	48.9	54.8	50.8	43.6	54.4	49.2	43.0
			MPGGE Unadjusted	39.3	39.3	46.6	53.6	45.0	53.0	61.8	49.5	59.9	72.8	53.1	63.6	78.8
			MPGGE Adjusted	29.6	29.6	34.7	39.4	33.5	38.9	44.6	36.6	43.4	51.6	39.0	45.8	55.2
	HWFET	CD	Wh/mile	312.0	312.0	292.9	273.3	300.1	276.0	252.4	292.1	260.8	269.1	286.1	253.0	258.6
			Distance	12.2	12.2	12.2	12.2	12.2	12.2	12.2	12.2	11.7	8.0	12.2	12.1	7.8
			MPGGE Unadjusted	99.9	99.9	115.5	131.9	112.8	130.4	147.4	122.5	144.1	232.6	131.5	152.7	247.1
			MPGGE Adjusted	69.7	69.7	80.3	91.4	78.5	90.3	101.8	85.0	99.6	157.8	91.1	105.3	167.0
		CS	MPGGE Unadjusted	29.9	29.9	35.0	40.0	34.1	39.5	45.0	37.3	43.8	50.8	39.8	46.5	54.7
			MPGGE Adjusted	21.2	21.2	24.7	28.2	24.1	27.9	31.8	26.4	30.9	35.8	28.1	32.8	38.6
		CD+CS	Wh/mile	91.8	91.8	86.2	80.4	88.3	81.2	74.2	85.9	76.7	79.1	84.2	74.4	76.1
			MPGGE Unadjusted	36.0	36.0	42.0	48.0	41.0	47.4	54.0	44.8	52.6	62.5	47.8	55.9	67.3
			MPGGE Adjusted	25.5	25.5	29.7	33.8	28.9	33.5	38.0	31.6	37.0	43.9	33.7	39.3	47.3
	Combined	CD	MPGGE Unadjusted	161.9	161.9	190.6	216.3	182.7	215.8	248.8	198.6	243.9	366.6	216.7	257.8	405.5
			MPGGE Adjusted	100.9	100.9	115.4	128.0	111.6	127.7	142.7	119.6	140.4	191.3	128.1	146.7	204.6
		CS	MPGGE Unadjusted	31.7	31.7	37.3	42.8	36.2	42.3	48.7	39.7	47.3	56.2	42.5	50.2	60.6
			MPGGE Adjusted	23.3	23.3	27.3	31.1	26.5	30.7	35.1	28.9	34.1	40.1	30.9	36.2	43.1
		CD+CS	Wh/mile	73.9	73.9	69.4	64.4	70.9	65.3	60.3	68.8	62.4	59.6	67.8	60.6	57.9
			MPGGE Unadjusted	37.7	37.7	44.4	50.9	43.1	50.3	58.0	47.2	56.3	67.8	50.6	59.9	73.2
			MPGGE Adjusted	27.6	27.6	32.2	36.7	31.3	36.3	41.4	34.2	40.3	47.8	36.4	42.6	51.3

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				Pickup												
				2010	2010			2015			2030			2045		
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
H2 Split HEV PHEV20	UDDS	CD	Wh/mile	336.8	336.8	313.7	291.7	321.3	294.4	265.1	312.5	273.5	221.0	304.6	253.2	212.7
			Distance	23.8	23.8	23.8	23.7	23.9	23.7	23.4	23.9	23.4	23.9	23.8	23.9	23.8
			MPGGE Unadjusted	791.4	791.4	976.2	1134.0	843.5	1119.4	1291.5	970.7	1251.3	934.4	1040.5	874.9	1028.9
			MPGGE Adjusted	244.0	244.0	262.8	275.5	249.9	274.4	285.9	262.3	283.4	259.0	268.3	253.2	267.3
		CS	MPGGE Unadjusted	32.9	32.9	39.0	45.0	37.6	44.5	52.0	41.5	50.3	61.3	44.6	53.7	66.4
			MPGGE Adjusted	25.1	25.1	29.4	33.6	28.5	33.2	38.3	31.2	37.2	44.4	33.3	39.4	47.6
		CD+CS	Wh/mile	175.1	175.1	163.1	151.7	167.0	153.1	138.2	162.3	142.6	116.0	158.2	132.5	111.6
			MPGGE Unadjusted	56.6	56.6	67.3	77.7	64.7	76.9	89.7	71.5	86.8	104.0	76.7	91.3	112.8
			MPGGE Adjusted	41.3	41.3	48.2	54.5	46.5	54.1	61.7	50.8	60.0	69.7	53.9	62.6	74.5
	HWFET	CD	Wh/mile	369.0	369.0	344.7	276.2	354.1	278.9	253.0	345.1	248.1	224.2	335.9	242.1	216.7
			Distance	21.5	21.5	21.4	20.3	21.5	20.3	19.9	21.4	20.2	19.2	21.4	19.9	19.2
			MPGGE Unadjusted	153.4	153.4	173.1	131.7	172.1	130.2	146.3	185.5	129.5	149.2	196.0	137.9	161.6
			MPGGE Adjusted	105.8	105.8	118.9	91.2	118.2	90.2	101.0	127.1	89.7	103.0	134.0	95.4	111.3
		CS	MPGGE Unadjusted	29.6	29.6	34.6	39.7	33.8	39.2	44.7	37.0	43.5	50.5	39.5	46.3	54.5
			MPGGE Adjusted	21.0	21.0	24.5	28.0	23.9	27.7	31.6	26.1	30.7	35.6	27.9	32.7	38.4
		CD+CS	Wh/mile	186.0	186.0	173.9	81.2	177.4	82.0	74.4	174.0	73.0	65.9	169.4	71.2	63.7
			MPGGE Unadjusted	43.7	43.7	50.9	47.7	49.7	47.1	53.6	54.4	51.7	60.0	58.1	55.1	64.9
			MPGGE Adjusted	30.9	30.9	35.9	33.6	35.0	33.3	37.8	38.3	36.4	42.2	40.9	38.8	45.6
	Combined	CD	MPGGE Unadjusted	275.6	275.6	316.1	256.2	306.2	253.3	285.6	334.2	255.4	277.4	354.1	257.0	301.3
			MPGGE Adjusted	153.7	153.7	170.1	144.3	166.5	143.0	156.8	177.4	143.8	154.0	184.9	145.2	163.9
		CS	MPGGE Unadjusted	31.3	31.3	36.9	42.4	35.8	42.0	48.4	39.3	47.0	55.9	42.1	50.1	60.5
			MPGGE Adjusted	23.0	23.0	27.0	30.8	26.2	30.5	34.9	28.7	33.9	39.9	30.6	36.1	43.0
		CD+CS	Wh/mile	180.0	180.0	168.0	120.0	171.7	121.1	109.5	167.5	111.3	93.4	163.3	104.9	90.1
			MPGGE Unadjusted	50.0	50.0	58.8	60.5	56.9	59.9	68.9	62.6	66.5	78.2	67.0	70.5	84.6
			MPGGE Adjusted	35.9	35.9	41.7	42.6	40.5	42.2	48.0	44.3	46.5	53.9	47.1	49.1	58.0

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				Pickup														
				2010	2010			2015			2030			2045				
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high		
H2 Series HEV PHEV30	UDDS	CD	Wh/mile	446.2	446.2	413.0	382.6	427.5	387.2	343.0	412.6	354.6	302.1	401.3	343.5	290.1		
			Distance	31.7	31.7	31.7	32.0	31.9	32.0	31.8	32.0	31.7	31.9	31.4	30.9	31.9		
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
		CS	MPGGE Unadjusted	23.7	23.7	28.7	33.5	27.3	33.0	40.0	31.0	38.6	49.3	33.4	41.2	53.7		
			MPGGE Adjusted	18.4	18.4	22.1	25.5	21.1	25.2	30.2	23.7	29.1	36.5	25.4	30.9	39.4		
		CD+CS	Wh/mile	286.9	286.9	265.6	246.1	275.0	249.1	221.3	265.4	228.8	195.4	258.2	221.4	187.6		
			MPGGE Unadjusted	50.3	50.3	61.0	71.2	58.0	70.2	85.2	65.8	82.0	105.0	71.0	87.6	114.2		
			MPGGE Adjusted	37.2	37.2	44.2	50.6	42.2	50.0	59.0	47.2	57.2	70.3	50.5	60.5	75.3		
		HWFET	CD	Wh/mile	494.5	494.5	464.2	431.8	475.6	436.2	392.9	462.2	405.3	361.1	450.6	395.0	348.1	
				Distance	27.7	27.7	28.4	27.3	27.6	27.4	26.9	28.4	26.9	25.8	28.4	26.7	25.7	
				MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	MPGGE Adjusted			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	CS		MPGGE Unadjusted	22.1	22.1	26.1	30.3	25.4	30.0	35.2	28.3	34.0	40.7	30.3	36.5	44.0		
			MPGGE Adjusted	15.7	15.7	18.5	21.4	18.0	21.2	24.9	20.0	24.1	28.8	21.5	25.8	31.0		
	CD+CS		Wh/mile	254.8	254.8	239.2	222.5	245.0	224.8	202.4	238.1	208.8	186.0	232.2	203.5	179.3		
			MPGGE Unadjusted	37.4	37.4	44.3	51.3	43.0	50.8	59.7	47.9	57.6	69.0	51.4	61.9	74.5		
			MPGGE Adjusted	26.5	26.5	31.2	36.1	30.4	35.8	42.0	33.8	40.6	48.4	36.2	43.5	52.3		
	Combined		CD	MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			CS	MPGGE Unadjusted	22.9	22.9	27.5	31.9	26.4	31.6	37.7	29.7	36.4	45.0	31.9	38.9	48.8	
		MPGGE Adjusted		17.1	17.1	20.3	23.5	19.5	23.2	27.5	21.9	26.6	32.5	23.5	28.4	35.1		
		CD+CS	Wh/mile	272.5	272.5	253.7	235.5	261.5	238.2	212.8	253.1	219.8	191.1	246.5	213.4	183.9		
			MPGGE Unadjusted	43.6	43.6	52.1	60.6	50.1	59.9	71.4	56.4	68.9	85.0	60.6	73.8	92.1		
			MPGGE Adjusted	31.4	31.4	37.2	42.9	35.9	42.4	49.9	40.1	48.3	58.4	42.9	51.5	62.8		

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				Pickup													
				2010	2010			2015			2030			2045			
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high	
H2 Series HEV PHEV40	UDDS	CD	Wh/mile	456.3	456.3	421.8	390.4	436.6	395.2	349.9	420.9	361.5	305.2	409.0	350.1	292.9	
			Distance	40.7	40.7	40.7	40.7	40.7	40.6	40.8	40.7	40.8	40.5	40.7	40.6	40.4	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	23.1	23.1	27.8	32.7	26.7	32.2	39.2	30.0	37.9	48.6	32.6	40.6	52.3	
			MPGGE Adjusted	18.0	18.0	21.4	24.9	20.6	24.6	29.6	23.0	28.7	36.0	24.9	30.5	38.5	
		CD+CS	Wh/mile	334.5	334.5	309.3	286.4	320.2	289.9	258.0	308.8	266.6	225.0	300.0	258.0	215.9	
			MPGGE Unadjusted	57.7	57.7	69.5	81.7	66.7	80.5	98.0	75.1	94.8	121.5	81.5	101.5	130.7	
			MPGGE Adjusted	42.0	42.0	49.5	56.9	47.8	56.2	66.4	53.0	64.6	79.1	56.8	68.4	83.8	
	HWFET	CD	Wh/mile	499.6	499.6	468.5	435.5	479.9	439.9	395.4	466.0	407.7	363.7	454.0	397.2	350.5	
			Distance	38.6	38.6	38.6	38.6	36.7	38.6	36.0	38.6	36.0	34.5	36.4	35.8	34.5	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	21.8	21.8	25.8	29.9	25.1	29.7	34.8	28.0	33.8	40.3	30.0	36.4	43.6	
			MPGGE Adjusted	15.5	15.5	18.3	21.2	17.8	21.0	24.6	19.8	23.9	28.5	21.3	25.7	30.8	
		CD+CS	Wh/mile	337.2	337.2	316.2	294.0	323.9	296.9	266.8	314.6	275.2	245.5	306.5	268.0	236.5	
			MPGGE Unadjusted	47.5	47.5	56.0	65.0	54.5	64.5	75.7	60.9	73.5	87.7	65.3	79.1	94.8	
			MPGGE Adjusted	33.5	33.5	39.5	45.7	38.4	45.3	53.1	42.8	51.5	61.3	45.9	55.4	66.2	
	Combined	CD	MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	22.5	22.5	26.9	31.4	25.9	31.0	37.1	29.1	35.9	44.5	31.4	38.6	48.0	
			MPGGE Adjusted	16.8	16.8	19.9	23.1	19.2	22.9	27.1	21.5	26.3	32.2	23.1	28.2	34.6	
		CD+CS	Wh/mile	335.7	335.7	312.4	289.8	321.9	293.1	262.0	311.4	270.5	234.2	302.9	262.5	225.2	
			MPGGE Unadjusted	52.6	52.6	62.7	73.2	60.6	72.4	86.6	67.9	83.8	103.5	73.3	90.0	111.6	
			MPGGE Adjusted	37.7	37.7	44.4	51.3	43.1	50.8	59.7	47.9	58.0	70.0	51.3	61.9	74.8	

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				Pickup													
				2010	2010			2015			2030			2045			
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high	
E85 Split HEV PHEV10	UDDS	CD	Wh/mile	281.5	281.5	265.2	251.4	272.0	252.7	234.7	263.7	243.7	213.5	260.2	238.1	205.6	
			Distance	12.4	12.4	12.4	12.3	12.4	12.8	12.3	12.6	12.6	12.3	12.9	12.6	12.2	
			MPGGE Unadjusted	307.1	307.1	329.6	376.0	320.5	368.5	464.6	329.6	413.9	588.7	338.8	428.0	627.8	
			MPGGE Adjusted	152.9	152.9	159.5	172.1	156.9	170.2	192.8	159.5	181.5	215.9	162.1	184.7	222.1	
		CS	MPGGE Unadjusted	31.9	31.9	34.3	37.1	33.5	36.8	46.7	34.8	40.0	53.6	35.7	41.2	56.0	
			MPGGE Adjusted	24.4	24.4	26.1	28.1	25.5	27.8	34.7	26.5	30.2	39.4	27.1	31.0	40.9	
		CD+CS	Wh/mile	58.6	58.6	55.3	52.4	56.7	52.6	48.9	54.9	50.8	44.5	54.2	49.6	42.8	
			MPGGE Unadjusted	37.6	37.6	40.4	43.8	39.5	43.4	55.2	41.0	47.3	63.4	42.1	48.7	66.2	
			MPGGE Adjusted	28.5	28.5	30.4	32.8	29.7	32.5	40.4	30.8	35.1	45.7	31.6	36.1	47.5	
		Distance	12.4	12.4	12.5	12.5	12.2	12.5	12.4	12.5	12.5	11.6	12.6	12.4	8.1		
		MPGGE Unadjusted	94.4	94.4	91.1	98.1	98.6	96.6	120.7	91.9	103.7	146.3	95.0	106.9	218.6		
		MPGGE Adjusted	65.9	65.9	63.7	68.4	68.8	67.4	83.8	64.2	72.2	101.0	66.3	74.4	148.6		
	CS	MPGGE Unadjusted	28.5	28.5	30.3	32.7	29.7	32.4	40.4	30.7	34.7	44.6	31.6	35.8	46.3		
		MPGGE Adjusted	20.2	20.2	21.5	23.1	21.0	22.9	28.5	21.7	24.5	31.5	22.4	25.3	32.7		
	CD+CS	Wh/mile	91.3	91.3	82.6	77.3	88.5	77.8	71.5	82.2	73.6	69.5	80.9	71.6	77.5		
		MPGGE Unadjusted	34.2	34.2	36.1	38.9	35.7	38.5	48.1	36.5	41.3	53.5	37.6	42.6	57.1		
		MPGGE Adjusted	24.2	24.2	25.5	27.5	25.2	27.2	33.9	25.8	29.2	37.7	26.6	30.1	40.2		
	MPGGE Adjusted	95.9	95.9	95.1	102.4	99.5	101.0	121.6	95.6	108.0	142.8	98.2	110.8	181.7			
	CS	MPGGE Unadjusted	30.3	30.3	32.4	35.0	31.6	34.6	43.7	32.8	37.4	49.1	33.7	38.6	51.2		
		MPGGE Adjusted	22.3	22.3	23.8	25.6	23.3	25.4	31.6	24.1	27.3	35.4	24.8	28.1	36.7		
	CD+CS	Wh/mile	73.3	73.3	67.5	63.6	71.0	63.9	59.1	67.2	61.0	55.7	66.2	59.5	58.4		
		MPGGE Unadjusted	36.0	36.0	38.4	41.5	37.7	41.0	51.7	38.8	44.4	58.5	40.0	45.7	61.8		
				MPGGE Adjusted	26.4	26.4	28.0	30.2	27.5	29.9	37.2	28.3	32.2	41.7	29.1	33.1	43.9

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				Pickup													
				2010	2010			2015			2030			2045			
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high	
E85 Split HEV PHEV20	UDDS	CD	Wh/mile	332.3	332.3	314.5	295.4	323.5	298.2	266.6	313.1	269.4	226.8	309.9	263.1	217.2	
			Distance	23.8	23.8	23.8	23.5	23.7	23.5	23.5	23.8	23.9	23.9	23.7	23.7	23.9	
			MPGGE Unadjusted	701.0	701.0	790.1	915.5	786.5	905.4	999.0	792.8	753.6	809.2	842.0	758.1	846.6	
			MPGGE Adjusted	232.7	232.7	243.9	257.2	243.5	256.2	264.8	244.2	239.5	246.1	249.7	240.0	250.2	
		CS	MPGGE Unadjusted	31.6	31.6	33.9	36.8	33.1	36.4	46.6	34.4	39.9	53.5	35.3	41.2	55.9	
			MPGGE Adjusted	24.2	24.2	25.8	27.9	25.2	27.6	34.7	26.2	30.1	39.3	26.8	31.0	40.9	
		CD+CS	Wh/mile	172.7	172.7	163.4	153.7	168.1	155.1	138.8	162.6	140.8	119.0	161.1	137.4	114.0	
			MPGGE Unadjusted	54.2	54.2	58.4	63.5	57.0	62.8	80.0	59.1	68.3	90.7	60.8	70.4	94.8	
			MPGGE Adjusted	39.8	39.8	42.5	45.7	41.6	45.3	56.0	43.0	48.8	62.3	44.0	50.1	64.6	
		HWFET	CD	Wh/mile	365.1	365.1	346.8	324.2	353.7	327.1	243.7	345.6	250.3	227.7	340.7	245.0	219.4
				Distance	21.6	21.6	21.4	21.4	21.5	21.4	20.2	21.4	20.2	19.3	21.4	20.0	19.2
				MPGGE Unadjusted	142.8	142.8	150.7	162.3	149.4	160.4	119.5	153.3	102.6	131.4	159.3	106.2	136.8
	MPGGE Adjusted			98.7	98.7	104.0	111.7	103.1	110.4	83.0	105.7	71.5	91.0	109.7	74.0	94.6	
	CS		MPGGE Unadjusted	28.2	28.2	30.0	32.5	29.5	32.1	40.2	30.4	34.5	44.4	31.3	35.6	46.1	
			MPGGE Adjusted	20.0	20.0	21.2	23.0	20.9	22.7	28.4	21.5	24.4	31.3	22.2	25.2	32.5	
	CD+CS		Wh/mile	183.0	183.0	175.0	163.6	177.3	165.1	71.7	174.3	73.6	67.0	171.8	72.1	64.5	
			MPGGE Unadjusted	41.4	41.4	44.1	47.7	43.3	47.2	47.8	44.8	41.1	52.8	46.1	42.4	54.9	
			MPGGE Adjusted	29.2	29.2	31.2	33.7	30.6	33.3	33.7	31.6	29.0	37.2	32.5	29.9	38.6	
	Combined		CD	MPGGE Unadjusted	254.1	254.1	271.6	296.5	269.4	293.0	231.7	275.6	195.4	243.7	287.5	201.5	253.8
				MPGGE Adjusted	144.4	144.4	151.9	162.2	151.0	160.7	133.4	153.6	116.4	139.3	158.6	119.4	143.8
			CS	MPGGE Unadjusted	29.9	29.9	32.0	34.7	31.4	34.3	43.5	32.5	37.3	49.0	33.4	38.5	51.0
		MPGGE Adjusted		22.1	22.1	23.5	25.4	23.1	25.2	31.5	23.9	27.2	35.3	24.5	28.1	36.7	
		CD+CS	Wh/mile	177.3	177.3	168.6	158.1	172.3	159.6	108.6	167.9	110.6	95.6	165.9	108.0	91.7	
			MPGGE Unadjusted	47.6	47.6	51.0	55.3	49.9	54.7	61.4	51.7	52.6	68.5	53.2	54.3	71.4	
	MPGGE Adjusted	34.2	34.2	36.5	39.4	35.8	39.0	43.1	37.0	37.3	47.8	38.0	38.5	49.6			

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				Pickup														
				2010	2010			2015			2030			2045				
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high		
E85 Series HEV PHEV30	UDDS	CD	Wh/mile	444.5	444.5	416.7	388.3	427.7	392.8	349.7	414.1	360.3	310.1	407.2	350.0	296.7		
			Distance	31.9	31.9	31.9	31.7	31.4	31.9	30.9	31.4	30.9	31.7	31.9	30.9	31.7		
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
		CS	MPGGE Unadjusted	22.5	22.5	24.7	27.1	23.8	26.8	35.7	25.3	30.5	42.4	26.1	31.6	44.7		
			MPGGE Adjusted	17.6	17.6	19.1	20.9	18.5	20.7	27.1	19.6	23.4	31.8	20.2	24.2	33.4		
		CD+CS	Wh/mile	285.9	285.9	268.0	249.8	275.1	252.7	225.7	266.4	232.5	200.6	262.0	225.7	191.9		
			MPGGE Unadjusted	47.9	47.9	52.5	57.6	50.6	56.9	76.0	53.8	64.8	90.1	55.5	67.2	95.1		
			MPGGE Adjusted	35.6	35.6	38.6	42.0	37.3	41.5	53.5	39.5	46.6	61.9	40.6	48.1	64.8		
		HWFET	CD	Wh/mile	493.4	493.4	466.7	435.6	475.7	439.9	397.3	463.2	409.0	366.2	454.5	399.3	352.2	
				Distance	27.7	27.7	28.4	27.5	27.7	27.5	27.1	27.5	27.1	26.0	27.5	27.0	25.9	
				MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	MPGGE Adjusted			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	CS		MPGGE Unadjusted	21.0	21.0	22.6	24.7	22.1	24.5	31.6	23.3	27.0	35.8	24.1	28.1	37.2		
			MPGGE Adjusted	14.9	14.9	16.0	17.5	15.7	17.4	22.4	16.5	19.1	25.3	17.1	19.9	26.3		
	CD+CS		Wh/mile	254.2	254.2	240.5	224.4	245.1	226.7	204.7	238.7	210.7	188.6	234.2	205.7	181.4		
			MPGGE Unadjusted	35.6	35.6	38.3	41.9	37.5	41.6	53.6	39.4	45.7	60.7	40.9	47.6	63.0		
			MPGGE Adjusted	25.1	25.1	27.1	29.6	26.5	29.4	37.8	27.8	32.3	42.7	28.9	33.6	44.3		
	Combined		CD	MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			CS	MPGGE Unadjusted	21.8	21.8	23.7	26.0	23.0	25.7	33.8	24.3	28.8	39.1	25.2	29.9	41.0	
		MPGGE Adjusted		16.2	16.2	17.6	19.2	17.1	19.1	24.8	18.1	21.2	28.5	18.7	22.1	29.8		
		CD+CS	Wh/mile	271.6	271.6	255.6	238.4	261.6	241.0	216.2	253.9	222.7	195.2	249.5	216.7	187.2		
			MPGGE Unadjusted	41.4	41.4	45.0	49.3	43.7	48.8	64.0	46.2	54.6	74.0	47.8	56.7	77.4		
	MPGGE Adjusted	30.0	30.0	32.4	35.3	31.5	35.0	45.1	33.2	38.8	51.5	34.3	40.3	53.6				

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				Pickup													
				2010	2010			2015			2030			2045			
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high	
E85 Series HEV PHEV40	UDDS	CD	Wh/mile	454.5	454.5	425.6	396.0	436.8	400.7	356.8	422.3	367.4	313.1	415.0	356.7	299.6	
			Distance	40.7	40.7	40.6	40.6	40.7	40.7	40.6	40.6	40.8	40.5	40.6	40.6	40.8	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	21.9	21.9	24.0	26.5	23.2	26.1	35.0	24.7	29.9	41.8	25.5	31.1	44.1	
			MPGGE Adjusted	17.1	17.1	18.7	20.5	18.1	20.2	26.6	19.1	22.9	31.3	19.7	23.8	33.0	
		CD+CS	Wh/mile	333.2	333.2	312.1	290.5	320.4	294.0	263.2	309.9	271.0	230.9	304.5	262.8	220.9	
			MPGGE Unadjusted	54.8	54.8	60.0	66.2	58.0	65.3	87.6	61.7	74.6	104.4	63.7	77.6	110.2	
			MPGGE Adjusted	40.1	40.1	43.5	47.5	42.2	46.9	60.4	44.6	52.7	70.0	45.9	54.5	73.2	
	HWFET	CD	Wh/mile	498.4	498.4	471.0	439.2	480.0	443.5	399.8	466.9	411.5	368.7	457.9	401.4	354.7	
			Distance	38.6	38.6	36.5	36.4	36.7	36.5	38.6	38.6	38.6	35.7	36.6	37.1	34.6	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
		CS	MPGGE Unadjusted	20.7	20.7	22.3	24.5	21.8	24.2	31.3	23.0	26.7	35.5	23.8	27.9	36.9	
			MPGGE Adjusted	14.7	14.7	15.8	17.4	15.5	17.2	22.2	16.3	18.9	25.1	16.9	19.7	26.1	
		CD+CS	Wh/mile	336.4	336.4	317.9	296.4	324.0	299.4	269.9	315.2	277.7	248.9	309.1	270.9	239.4	
			MPGGE Unadjusted	45.0	45.0	48.5	53.2	47.5	52.7	68.1	50.0	58.1	77.1	51.7	60.5	80.3	
			MPGGE Adjusted	31.8	31.8	34.2	37.5	33.5	37.1	47.8	35.3	40.9	54.0	36.5	42.6	56.2	
	Combined	CD	MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
		CS	MPGGE Unadjusted	21.4	21.4	23.2	25.5	22.6	25.2	33.3	23.9	28.4	38.7	24.7	29.5	40.6	
			MPGGE Adjusted	15.9	15.9	17.3	18.9	16.8	18.7	24.4	17.8	20.9	28.2	18.3	21.8	29.5	
		CD+CS	Wh/mile	334.7	334.7	314.7	293.2	322.0	296.4	266.2	312.3	274.0	239.0	306.6	266.4	229.2	
			MPGGE Unadjusted	49.9	49.9	54.2	59.7	52.7	59.0	77.6	55.8	66.1	90.0	57.7	68.9	94.4	
			MPGGE Adjusted	35.9	35.9	38.8	42.4	37.8	41.9	54.0	39.9	46.6	61.8	41.1	48.4	64.4	

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				Pickup													
				2010	2010			2015			2030			2045			
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high	
FC HEV PHEV10	UDDS	CD	Wh/mile	457.9	457.9	400.5	357.0	416.6	361.0	322.4	389.2	332.3	280.3	371.8	322.7	268.4	
			Distance	11.5	11.5	11.3	10.3	11.4	11.1	11.1	11.3	11.1	10.2	11.2	10.2	10.2	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	36.0	36.0	42.7	50.4	43.2	49.8	57.1	46.2	55.4	66.1	48.4	56.9	69.0	
			MPGGE Adjusted	27.3	27.3	32.0	37.2	32.3	36.8	41.6	34.4	40.5	47.4	35.9	41.5	49.2	
		CD+CS	Wh/mile	95.4	95.4	83.4	74.4	86.8	75.2	67.2	81.1	69.2	58.4	77.5	67.2	55.9	
			MPGGE Unadjusted	43.3	43.3	51.5	60.7	52.0	60.0	68.8	55.7	66.7	79.6	58.3	68.6	83.2	
			MPGGE Adjusted	32.4	32.4	37.9	44.0	38.3	43.5	49.1	40.7	47.8	55.7	42.4	49.0	57.8	
	HWFET	CD	Wh/mile	470.1	470.1	414.5	370.6	430.0	376.3	330.0	403.7	340.2	293.4	385.8	332.5	281.1	
			Distance	10.6	10.6	10.5	10.0	10.6	10.0	10.0	10.0	10.0	8.0	10.0	9.7	8.0	
			MPGGE Unadjusted	302.3	302.3	282.0	296.0	307.8	299.1	282.4	292.1	275.4	261.4	283.9	283.9	265.5	
			MPGGE Adjusted	202.0	202.0	189.3	198.1	205.5	200.1	189.5	195.6	185.1	176.2	190.5	190.5	178.8	
		CS	MPGGE Unadjusted	35.0	35.0	40.0	46.3	41.0	45.8	50.8	43.0	49.4	55.5	44.5	50.7	57.6	
			MPGGE Adjusted	24.8	24.8	28.2	32.7	28.9	32.3	35.8	30.3	34.8	39.1	31.4	35.8	40.5	
		CD+CS	Wh/mile	138.3	138.3	121.9	109.0	126.5	110.7	97.1	118.7	100.0	86.3	113.5	97.8	82.7	
			MPGGE Unadjusted	44.5	44.5	50.4	58.1	51.7	57.5	63.3	54.0	61.5	68.4	55.8	63.2	70.9	
			MPGGE Adjusted	31.4	31.4	35.5	40.9	36.5	40.5	44.5	38.1	43.2	48.0	39.3	44.4	49.8	
	Combined	CD	MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
		CS	MPGGE Unadjusted	35.5	35.5	41.4	48.5	42.1	47.9	54.1	44.7	52.5	60.8	46.6	54.0	63.4	
			MPGGE Adjusted	26.1	26.1	30.2	35.0	30.7	34.6	38.8	32.4	37.7	43.2	33.7	38.7	44.9	
		CD+CS	Wh/mile	114.7	114.7	100.8	90.0	104.7	91.2	80.6	98.0	83.1	70.9	93.7	81.0	68.0	
			MPGGE Unadjusted	43.8	43.8	51.0	59.5	51.9	58.8	66.2	54.9	64.3	74.1	57.1	66.0	77.2	
	MPGGE Adjusted	31.9	31.9	36.8	42.5	37.4	42.1	46.9	39.5	45.6	52.0	40.9	46.8	53.9			

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				Pickup													
				2010	2010			2015			2030			2045			
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high	
FC HEV PHEV20	UDDS	CD	Wh/mile	466.5	466.5	407.1	362.6	423.3	366.5	323.3	394.9	333.4	278.5	376.8	322.9	266.4	
			Distance	20.5	20.5	20.3	20.6	20.3	20.6	20.5	20.6	20.5	20.7	20.7	20.5	20.7	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	35.3	35.3	42.0	49.6	42.3	49.0	56.4	45.5	54.7	65.4	47.7	56.4	68.5	
			MPGGE Adjusted	26.8	26.8	31.5	36.6	31.7	36.3	41.2	33.9	40.1	47.0	35.4	41.2	48.9	
		CD+CS	Wh/mile	177.2	177.2	154.7	137.7	160.8	139.2	123.0	150.0	126.9	105.9	143.2	122.9	101.3	
			MPGGE Unadjusted	51.8	51.8	61.7	72.9	62.3	72.1	82.9	66.9	80.5	96.2	70.1	83.0	100.7	
			MPGGE Adjusted	38.2	38.2	44.6	51.6	45.0	51.1	57.7	47.9	56.2	65.4	49.9	57.7	67.9	
		HWFET	CD	Wh/mile	538.3	538.3	488.8	444.0	501.6	448.9	404.1	478.3	416.3	373.3	461.8	405.1	359.6
	Distance			19.5	19.5	18.5	18.5	18.5	18.5	16.3	18.5	18.5	17.1	18.5	16.1	17.1	
	MPGGE Unadjusted			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	MPGGE Adjusted			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	CS		MPGGE Unadjusted	34.6	34.6	39.6	45.9	40.6	45.4	50.5	42.6	49.1	55.2	44.2	50.5	57.3	
			MPGGE Adjusted	24.5	24.5	28.0	32.4	28.7	32.0	35.6	30.1	34.6	38.9	31.2	35.6	40.4	
	CD+CS		Wh/mile	158.3	158.3	143.8	130.6	147.5	132.0	118.8	140.7	122.4	109.8	135.8	119.2	105.8	
			MPGGE Unadjusted	45.5	45.5	52.1	60.4	53.4	59.7	66.5	56.1	64.5	72.6	58.1	66.4	75.5	
			MPGGE Adjusted	32.1	32.1	36.7	42.5	37.6	42.0	46.7	39.5	45.4	50.9	40.9	46.6	52.9	
	Combined		CD	MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		MPGGE Adjusted		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
		CS	MPGGE Unadjusted	35.0	35.0	40.9	47.8	41.5	47.3	53.6	44.2	52.0	60.4	46.0	53.6	63.0	
			MPGGE Adjusted	25.7	25.7	29.8	34.6	30.3	34.2	38.5	32.1	37.4	42.9	33.4	38.5	44.6	
		CD+CS	Wh/mile	168.7	168.7	149.8	134.5	154.8	136.0	121.1	145.8	124.9	107.7	139.9	121.2	103.3	
			MPGGE Unadjusted	48.8	48.8	57.0	66.7	57.9	65.9	74.6	61.6	72.4	83.9	64.1	74.6	87.5	
	MPGGE Adjusted	35.2	35.2	40.7	47.1	41.3	46.6	52.2	43.7	50.8	58.0	45.4	52.1	60.2			

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				Pickup													
				2010	2010			2015			2030			2045			
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high	
FC HEV PHEV30	UDDS	CD	Wh/mile	449.0	449.0	396.1	360.0	412.0	361.0	315.5	388.5	325.7	277.9	370.7	314.7	265.6	
			Distance	33.6	33.6	33.6	32.0	33.6	33.6	32.0	33.6	32.0	31.9	33.6	32.0	31.9	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	35.1	35.1	41.3	47.8	41.7	47.7	55.1	44.4	53.4	63.3	46.5	55.2	66.2	
			MPGGE Adjusted	26.7	26.7	31.1	35.5	31.3	35.4	40.3	33.1	39.2	45.6	34.6	40.4	47.5	
		CD+CS	Wh/mile	286.1	286.1	252.4	229.3	262.5	230.0	201.6	247.5	208.1	178.2	236.2	201.0	170.3	
			MPGGE Unadjusted	74.8	74.8	88.0	101.8	88.8	101.5	117.2	94.4	113.5	134.7	98.9	117.5	140.9	
			MPGGE Adjusted	52.8	52.8	60.7	68.5	61.1	68.4	76.8	64.4	74.9	85.8	66.9	77.0	88.9	
		HWFET	CD	Wh/mile	513.3	513.3	467.6	430.1	480.5	432.3	388.7	460.9	400.6	358.3	444.2	389.1	344.5
				Distance	28.8	28.8	28.8	28.8	28.8	28.8	25.2	28.8	25.2	25.8	28.8	25.0	25.3
				MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	MPGGE Adjusted			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	CS		MPGGE Unadjusted	33.9	33.9	38.6	44.2	39.5	43.9	49.1	41.2	47.6	53.5	42.8	49.0	55.6	
			MPGGE Adjusted	24.0	24.0	27.3	31.2	27.9	31.0	34.6	29.1	33.6	37.7	30.2	34.6	39.1	
	CD+CS		Wh/mile	264.2	264.2	240.6	221.3	247.3	222.5	200.1	237.2	206.2	184.6	228.6	200.3	177.4	
			MPGGE Unadjusted	57.5	57.5	65.4	74.9	67.0	74.5	83.2	69.9	80.7	90.6	72.5	83.1	94.2	
			MPGGE Adjusted	40.5	40.5	46.0	52.5	47.0	52.2	58.2	49.1	56.5	63.3	50.8	58.2	65.8	
	Combined		CD	MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			CS	MPGGE Unadjusted	34.6	34.6	40.1	46.1	40.7	45.9	52.2	42.9	50.6	58.5	44.7	52.3	61.0
		MPGGE Adjusted		25.4	25.4	29.2	33.4	29.7	33.3	37.5	31.2	36.4	41.7	32.4	37.6	43.3	
		CD+CS	Wh/mile	276.2	276.2	247.1	225.7	255.6	226.6	200.9	242.8	207.3	181.1	232.8	200.7	173.5	
			MPGGE Unadjusted	65.9	65.9	76.2	87.6	77.4	87.2	99.0	81.5	96.0	110.5	84.9	99.1	115.2	
	MPGGE Adjusted	46.4	46.4	53.0	60.2	53.9	60.0	67.2	56.4	65.3	74.0	58.6	67.2	76.8			

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				Pickup													
				2010	2010			2015			2030			2045			
				Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high	
FC HEV PHEV40	UDDS	CD	Wh/mile	458.8	458.8	403.6	366.0	419.4	366.8	319.2	395.0	329.4	282.9	376.7	317.5	270.1	
			Distance	42.2	42.2	41.3	41.3	41.4	41.3	41.0	41.3	41.0	40.6	41.3	40.9	40.5	
			MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
			MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
		CS	MPGGE Unadjusted	34.4	34.4	40.6	47.0	41.0	46.9	54.3	43.6	52.6	62.6	45.7	54.6	65.5	
			MPGGE Adjusted	26.2	26.2	30.5	34.9	30.8	34.9	39.8	32.6	38.7	45.2	34.0	40.0	47.0	
		CD+CS	Wh/mile	331.6	331.6	291.8	264.6	303.2	265.1	231.4	285.5	238.9	207.0	272.3	230.2	197.6	
			MPGGE Unadjusted	85.9	85.9	101.4	117.6	102.4	117.3	135.8	109.0	131.6	156.4	114.3	136.5	163.8	
			MPGGE Adjusted	59.5	59.5	68.3	77.1	68.9	76.9	86.4	72.5	84.3	96.3	75.3	86.7	99.7	
		HWFET	CD	Wh/mile	520.8	520.8	473.3	434.7	486.1	436.8	392.2	465.8	404.1	360.0	448.8	391.9	346.0
				Distance	38.6	38.6	39.0	39.0	39.0	39.0	36.0	39.0	36.0	32.9	39.0	33.2	32.0
	MPGGE Unadjusted			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	MPGGE Adjusted			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	CS		MPGGE Unadjusted	33.5	33.5	38.1	43.7	39.1	43.5	48.7	40.8	47.2	53.1	42.3	48.7	55.3	
			MPGGE Adjusted	23.7	23.7	27.0	30.9	27.6	30.7	34.3	28.8	33.3	37.4	29.9	34.4	38.9	
	CD+CS		Wh/mile	350.8	350.8	318.9	292.9	327.5	294.3	264.4	313.8	272.5	242.8	302.3	264.1	233.4	
			MPGGE Unadjusted	72.7	72.7	82.9	95.0	84.9	94.6	105.8	88.7	102.7	115.5	92.1	105.9	120.2	
			MPGGE Adjusted	51.0	51.0	58.0	66.3	59.4	66.0	73.7	62.0	71.6	80.3	64.3	73.8	83.5	
	Combined		CD	MPGGE Unadjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				MPGGE Adjusted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CS	MPGGE Unadjusted	33.9	33.9	39.4	45.5	40.1	45.3	51.6	42.3	50.1	57.9	44.1	51.8	60.5	
			MPGGE Adjusted	25.0	25.0	28.8	33.0	29.3	32.9	37.1	30.8	36.1	41.3	32.0	37.2	43.0	
		CD+CS	Wh/mile	340.3	340.3	304.0	277.3	314.1	278.2	246.3	298.2	254.0	223.1	285.8	245.5	213.7	
			MPGGE Unadjusted	79.4	79.4	92.1	106.2	93.7	105.8	120.4	98.8	116.8	134.9	103.1	120.8	140.8	
			MPGGE Adjusted	55.3	55.3	63.3	71.8	64.3	71.6	80.2	67.4	78.1	88.4	69.9	80.4	91.7	
	EV	UDDS	EV Only	Wh/mile	456.0	456.0	424.2	391.2	436.6	395.6	333.7	418.4	343.3	286.2	407.9	329.4	272.4
		HWFET	EV Only	Wh/mile	507.4	507.4	478.6	444.7	488.6	449.1	395.8	473.6	407.3	358.3	462.2	393.5	343.5

Fuel consumption

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			Pickup												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Conv	Unadjusted	UDDS	12.7	12.7	11.8	11.0	12.0	11.2	8.8	11.8	10.5	7.3	11.8	10.3	7.0
		HWFET	9.8	9.8	9.1	8.4	9.3	8.6	6.8	9.1	8.1	5.8	8.9	8.0	5.6
		Combined	11.4	11.4	10.6	9.9	10.8	10.0	7.9	10.6	9.4	6.7	10.5	9.3	6.4
	Adjusted	UDDS	16.2	16.2	15.0	14.1	15.4	14.3	11.3	15.1	13.4	9.6	15.0	13.3	9.2
		HWFET	13.9	13.9	12.8	11.9	13.1	12.2	9.6	12.8	11.4	8.3	12.6	11.3	7.9
		Combined	15.2	15.2	14.0	13.1	14.3	13.3	10.5	14.1	12.5	9.0	13.9	12.4	8.6
CI Conv	Unadjusted	UDDS	10.5	10.5	9.9	9.2	10.2	9.2	8.3	9.7	8.5	7.2	9.5	8.2	6.9
		HWFET	8.5	8.5	8.0	7.6	8.2	7.4	6.9	7.8	7.1	6.2	7.8	6.8	5.9
		Combined	9.6	9.6	9.0	8.5	9.3	8.4	7.7	8.8	7.9	6.7	8.7	7.6	6.5
	Adjusted	UDDS	13.4	13.4	12.7	11.8	13.1	11.9	10.8	12.5	11.0	9.4	12.2	10.7	9.0
		HWFET	11.9	11.9	11.3	10.7	11.6	10.5	9.8	11.0	10.0	8.7	11.0	9.7	8.4
		Combined	12.8	12.8	12.1	11.3	12.4	11.3	10.3	11.8	10.6	9.1	11.7	10.2	8.8
H2 Conv	Unadjusted	UDDS	14.7	14.7	12.4	11.0	13.0	11.0	9.8	11.8	10.1	8.2	11.3	9.5	7.6
		HWFET	10.3	10.3	8.7	7.7	9.0	7.7	6.9	8.2	7.1	6.0	7.8	6.7	5.6
		Combined	12.7	12.7	10.7	9.5	11.2	9.5	8.5	10.2	8.7	7.2	9.7	8.2	6.7
	Adjusted	UDDS	18.7	18.7	15.8	14.1	16.5	14.1	12.6	15.1	12.9	10.7	14.4	12.2	9.9
		HWFET	14.5	14.5	12.3	10.9	12.7	10.9	9.7	11.6	10.0	8.5	11.0	9.4	7.9
		Combined	16.8	16.8	14.2	12.7	14.8	12.6	11.3	13.5	11.6	9.7	12.9	11.0	9.0
E85 Conv	Unadjusted	UDDS	13.3	13.3	13.1	12.3	13.5	12.5	9.3	13.2	11.7	7.9	13.1	11.6	7.6
		HWFET	10.8	10.8	10.7	9.6	10.9	10.2	7.3	10.7	9.2	6.4	10.2	9.1	6.2
		Combined	12.2	12.2	12.0	11.1	12.3	11.4	8.4	12.1	10.6	7.2	11.8	10.5	7.0
	Adjusted	UDDS	16.9	16.9	16.6	15.6	17.1	15.9	12.0	16.8	15.0	10.3	16.7	14.8	9.9
		HWFET	15.3	15.3	15.1	13.5	15.4	14.3	10.3	15.1	13.0	9.1	14.3	12.9	8.8
		Combined	16.2	16.2	15.9	14.7	16.3	15.2	11.3	16.1	14.1	9.8	15.6	13.9	9.4
SI Split HEV	Unadjusted	UDDS	7.4	7.4	6.9	6.3	7.1	6.3	5.2	6.7	5.7	4.3	6.5	5.5	4.1
		HWFET	8.4	8.4	7.9	7.3	8.1	7.4	6.2	7.8	6.8	5.3	7.6	6.6	5.1
		Combined	7.8	7.8	7.3	6.8	7.5	6.8	5.6	7.2	6.2	4.7	7.0	6.0	4.5
	Adjusted	UDDS	9.6	9.6	9.0	8.4	9.3	8.3	6.9	8.8	7.6	5.8	8.6	7.4	5.6
		HWFET	11.9	11.9	11.2	10.3	11.4	10.4	8.7	11.0	9.7	7.5	10.7	9.3	7.2
		Combined	10.7	10.7	10.0	9.2	10.3	9.3	7.7	9.8	8.6	6.6	9.5	8.3	6.3
SI Split HEV PHEV10	Unadjusted	UDDS	5.8	5.8	5.4	5.0	5.6	5.1	4.2	5.4	4.7	3.5	5.2	4.5	3.4
		HWFET	6.4	6.4	6.0	5.6	6.2	5.7	4.8	6.0	5.3	4.2	5.8	5.2	3.9
		Combined	6.1	6.1	5.7	5.3	5.9	5.4	4.5	5.6	5.0	3.8	5.5	4.8	3.6
	Adjusted	UDDS	7.8	7.8	7.3	6.8	7.5	6.8	5.8	7.2	6.3	4.9	7.0	6.2	4.7
		HWFET	9.1	9.1	8.6	7.9	8.8	8.1	6.8	8.5	7.6	5.9	8.2	7.3	5.5
		Combined	8.4	8.4	7.9	7.3	8.1	7.4	6.3	7.8	6.9	5.3	7.6	6.7	5.1

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			Pickup												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Split HEV PHEV20	Unadjusted	UDDS	4.0	4.0	3.8	3.5	3.9	3.5	2.9	3.7	3.2	2.5	3.6	3.1	2.3
		HWFET	5.3	5.3	5.0	4.6	5.1	4.7	4.9	4.9	5.4	4.2	4.8	5.2	4.1
		Combined	4.6	4.6	4.3	4.0	4.4	4.0	3.8	4.3	4.2	3.2	4.1	4.1	3.1
	Adjusted	UDDS	5.6	5.6	5.2	4.9	5.3	4.9	4.2	5.2	4.6	3.6	5.1	4.5	3.5
		HWFET	7.5	7.5	7.1	6.6	7.2	6.6	6.9	7.0	7.6	6.0	6.8	7.4	5.8
		Combined	6.4	6.4	6.1	5.6	6.2	5.7	5.4	6.0	5.9	4.7	5.8	5.8	4.5
SI Series HEV PHEV30	Unadjusted	UDDS	4.6	4.6	4.2	3.8	4.4	3.9	3.1	4.1	3.4	2.5	4.0	3.3	2.3
		HWFET	6.2	6.2	5.8	5.3	5.9	5.3	4.4	5.6	4.8	3.7	5.4	4.6	3.5
		Combined	5.3	5.3	4.9	4.5	5.1	4.5	3.6	4.8	4.1	3.0	4.6	3.9	2.9
	Adjusted	UDDS	6.2	6.2	5.8	5.3	6.0	5.4	4.4	5.6	4.8	3.6	5.5	4.6	3.4
		HWFET	8.8	8.8	8.2	7.5	8.4	7.5	6.2	7.9	6.9	5.2	7.7	6.6	5.0
		Combined	7.4	7.4	6.8	6.3	7.0	6.3	5.2	6.7	5.7	4.3	6.5	5.5	4.2
SI Series HEV PHEV40	Unadjusted	UDDS	4.0	4.0	3.7	3.3	3.8	3.4	2.7	3.6	3.0	2.1	3.5	2.9	2.0
		HWFET	4.9	4.9	4.6	4.2	4.7	4.2	3.4	4.4	3.8	2.9	4.3	3.7	2.8
		Combined	4.4	4.4	4.1	3.7	4.2	3.7	3.0	4.0	3.3	2.5	3.8	3.2	2.4
	Adjusted	UDDS	5.5	5.5	5.1	4.7	5.3	4.7	3.9	5.0	4.2	3.2	4.8	4.1	3.1
		HWFET	7.0	7.0	6.5	5.9	6.6	6.0	4.9	6.3	5.4	4.1	6.1	5.2	4.0
		Combined	6.2	6.2	5.7	5.2	5.9	5.3	4.3	5.6	4.8	3.6	5.4	4.6	3.5
CI Split HEV	Unadjusted	UDDS	6.5	6.5	6.2	5.6	6.3	5.6	4.9	5.9	5.0	4.2	5.7	4.8	4.0
		HWFET	7.9	7.9	7.5	6.8	7.7	6.9	6.1	7.2	6.3	5.4	7.0	6.0	5.2
		Combined	7.1	7.1	6.7	6.1	6.9	6.2	5.5	6.5	5.6	4.7	6.3	5.4	4.5
	Adjusted	UDDS	8.6	8.6	8.1	7.5	8.4	7.5	6.6	7.9	6.8	5.7	7.6	6.5	5.5
		HWFET	11.1	11.1	10.5	9.6	10.8	9.7	8.7	10.2	8.9	7.6	9.8	8.5	7.3
		Combined	9.8	9.8	9.2	8.4	9.5	8.5	7.5	8.9	7.7	6.6	8.6	7.4	6.3
CI Split HEV PHEV10	Unadjusted	UDDS	5.6	5.6	5.3	4.8	5.4	4.8	4.3	5.1	4.4	3.6	4.9	4.2	3.5
		HWFET	6.3	6.3	5.9	5.4	6.1	5.5	4.9	5.8	5.1	4.4	5.6	4.9	4.2
		Combined	5.9	5.9	5.6	5.1	5.7	5.1	4.6	5.4	4.7	4.0	5.2	4.5	3.8
	Adjusted	UDDS	7.5	7.5	7.1	6.5	7.3	6.5	5.8	6.9	6.0	5.1	6.6	5.8	4.9
		HWFET	8.9	8.9	8.4	7.7	8.6	7.8	7.0	8.2	7.2	6.2	7.9	6.9	6.0
		Combined	8.1	8.1	7.7	7.0	7.9	7.1	6.4	7.5	6.5	5.6	7.2	6.3	5.4
CI Split HEV PHEV20	Unadjusted	UDDS	3.9	3.9	3.7	3.3	3.8	3.4	3.0	3.5	3.0	2.6	3.4	2.9	2.5
		HWFET	5.1	5.1	4.9	4.4	5.0	4.5	4.1	4.7	4.1	4.4	4.5	4.0	4.3
		Combined	4.4	4.4	4.2	3.8	4.3	3.9	3.4	4.1	3.5	3.4	3.9	3.4	3.3
	Adjusted	UDDS	5.4	5.4	5.1	4.7	5.2	4.7	4.2	4.9	4.3	3.8	4.8	4.2	3.6
		HWFET	7.3	7.3	6.9	6.3	7.0	6.4	5.8	6.7	5.9	6.3	6.4	5.7	6.1
		Combined	6.2	6.2	5.9	5.4	6.0	5.5	4.9	5.7	5.0	4.9	5.5	4.8	4.7

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			Pickup												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
CI Series HEV PHEV30	Unadjusted	UDDS	4.4	4.4	4.1	3.7	4.3	3.7	3.1	3.9	3.2	2.6	3.8	3.1	2.4
		HWFET	6.0	6.0	5.6	5.1	5.8	5.1	4.5	5.4	4.6	3.9	5.2	4.4	3.7
		Combined	5.2	5.2	4.8	4.3	5.0	4.4	3.7	4.6	3.9	3.2	4.4	3.7	3.0
	Adjusted	UDDS	6.0	6.0	5.6	5.1	5.8	5.2	4.5	5.4	4.6	3.8	5.2	4.4	3.6
		HWFET	8.5	8.5	8.0	7.2	8.2	7.3	6.3	7.6	6.5	5.5	7.3	6.2	5.3
		Combined	7.2	7.2	6.7	6.1	6.9	6.1	5.3	6.4	5.5	4.5	6.2	5.2	4.4
CI Series HEV PHEV40	Unadjusted	UDDS	3.9	3.9	3.6	3.2	3.7	3.2	2.7	3.4	2.8	2.2	3.3	2.7	2.1
		HWFET	4.8	4.8	4.5	4.0	4.6	4.1	3.5	4.3	3.6	3.1	4.1	3.4	2.9
		Combined	4.3	4.3	4.0	3.6	4.1	3.6	3.1	3.8	3.2	2.6	3.7	3.0	2.5
	Adjusted	UDDS	5.3	5.3	5.0	4.5	5.2	4.6	3.9	4.8	4.0	3.3	4.6	3.9	3.2
		HWFET	6.8	6.8	6.3	5.7	6.5	5.8	5.0	6.1	5.1	4.4	5.8	4.9	4.2
		Combined	6.0	6.0	5.6	5.0	5.8	5.1	4.4	5.4	4.5	3.8	5.2	4.3	3.6
H2 Split HEV	Unadjusted	UDDS	7.5	7.5	6.3	5.5	6.5	5.5	4.7	5.9	4.8	3.9	5.5	4.5	3.6
		HWFET	8.7	8.7	7.4	6.4	7.6	6.5	5.6	6.9	5.8	4.9	6.5	5.5	4.5
		Combined	8.0	8.0	6.8	5.9	7.0	5.9	5.1	6.3	5.3	4.4	5.9	4.9	4.0
	Adjusted	UDDS	9.7	9.7	8.3	7.3	8.6	7.3	6.3	7.8	6.5	5.4	7.3	6.1	5.0
		HWFET	12.2	12.2	10.4	9.1	10.8	9.2	8.0	9.8	8.2	7.0	9.2	7.7	6.5
		Combined	10.9	10.9	9.3	8.1	9.6	8.2	7.1	8.7	7.3	6.1	8.2	6.8	5.7
H2 Split HEV PHEV10	Unadjusted	UDDS	6.0	6.0	5.0	4.4	5.2	4.4	3.8	4.8	3.9	3.2	4.4	3.7	3.0
		HWFET	6.5	6.5	5.6	4.9	5.7	5.0	4.4	5.3	4.5	3.8	4.9	4.2	3.5
		Combined	6.2	6.2	5.3	4.6	5.5	4.7	4.1	5.0	4.2	3.5	4.7	3.9	3.2
	Adjusted	UDDS	7.9	7.9	6.8	6.0	7.0	6.0	5.3	6.4	5.4	4.6	6.0	5.1	4.3
		HWFET	9.2	9.2	7.9	6.9	8.1	7.0	6.2	7.4	6.4	5.4	7.0	6.0	5.0
		Combined	8.5	8.5	7.3	6.4	7.5	6.5	5.7	6.9	5.8	4.9	6.5	5.5	4.6
H2 Split HEV PHEV20	Unadjusted	UDDS	4.2	4.2	3.5	3.0	3.6	3.1	2.6	3.3	2.7	2.3	3.1	2.6	2.1
		HWFET	5.4	5.4	4.6	4.9	4.7	5.0	4.4	4.3	4.5	3.9	4.1	4.3	3.6
		Combined	4.7	4.7	4.0	3.9	4.1	3.9	3.4	3.8	3.5	3.0	3.5	3.3	2.8
	Adjusted	UDDS	5.7	5.7	4.9	4.3	5.1	4.4	3.8	4.6	3.9	3.4	4.4	3.8	3.2
		HWFET	7.6	7.6	6.6	7.0	6.7	7.1	6.2	6.1	6.5	5.6	5.8	6.1	5.2
		Combined	6.6	6.6	5.6	5.5	5.8	5.6	4.9	5.3	5.1	4.4	5.0	4.8	4.1
H2 Series HEV PHEV30	Unadjusted	UDDS	4.7	4.7	3.9	3.3	4.1	3.3	2.8	3.6	2.9	2.2	3.3	2.7	2.1
		HWFET	6.3	6.3	5.3	4.6	5.5	4.6	3.9	4.9	4.1	3.4	4.6	3.8	3.2
		Combined	5.4	5.4	4.5	3.9	4.7	3.9	3.3	4.2	3.4	2.8	3.9	3.2	2.6
	Adjusted	UDDS	6.3	6.3	5.3	4.6	5.6	4.7	4.0	5.0	4.1	3.3	4.7	3.9	3.1
		HWFET	8.9	8.9	7.5	6.5	7.7	6.6	5.6	7.0	5.8	4.9	6.5	5.4	4.5
		Combined	7.5	7.5	6.3	5.5	6.5	5.5	4.7	5.9	4.9	4.0	5.5	4.6	3.7

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			Pickup												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
H2 Series HEV PHEV40	Unadjusted	UDDS	4.1	4.1	3.4	2.9	3.5	2.9	2.4	3.1	2.5	1.9	2.9	2.3	1.8
		HWFET	5.0	5.0	4.2	3.6	4.3	3.6	3.1	3.9	3.2	2.7	3.6	3.0	2.5
		Combined	4.5	4.5	3.7	3.2	3.9	3.2	2.7	3.5	2.8	2.3	3.2	2.6	2.1
	Adjusted	UDDS	5.6	5.6	4.7	4.1	4.9	4.2	3.5	4.4	3.6	3.0	4.1	3.4	2.8
		HWFET	7.0	7.0	6.0	5.1	6.1	5.2	4.4	5.5	4.6	3.8	5.1	4.2	3.6
		Combined	6.2	6.2	5.3	4.6	5.5	4.6	3.9	4.9	4.1	3.4	4.6	3.8	3.1
E85 Split HEV	Unadjusted	UDDS	8.1	8.1	7.5	6.9	7.7	6.8	5.3	7.3	6.2	4.5	7.1	6.0	4.4
		HWFET	9.1	9.1	8.5	7.9	8.7	7.9	6.3	8.4	7.3	5.6	8.2	7.1	5.4
		Combined	8.6	8.6	8.0	7.3	8.2	7.3	5.7	7.8	6.7	5.0	7.6	6.5	4.8
	Adjusted	UDDS	10.5	10.5	9.8	9.0	10.1	9.0	7.1	9.5	8.2	6.2	9.3	7.9	5.9
		HWFET	12.9	12.9	12.0	11.1	12.3	11.2	8.9	11.8	10.3	7.9	11.5	10.0	7.6
		Combined	11.6	11.6	10.8	10.0	11.1	10.0	7.9	10.5	9.1	7.0	10.3	8.8	6.7
E85 Split HEV PHEV10	Unadjusted	UDDS	6.3	6.3	5.8	5.4	6.0	5.4	4.3	5.7	5.0	3.7	5.6	4.8	3.6
		HWFET	6.9	6.9	6.5	6.0	6.6	6.1	4.9	6.4	5.7	4.4	6.3	5.5	4.1
		Combined	6.5	6.5	6.1	5.7	6.2	5.7	4.5	6.1	5.3	4.0	5.9	5.1	3.8
	Adjusted	UDDS	8.3	8.3	7.7	7.2	7.9	7.2	5.8	7.6	6.7	5.1	7.4	6.5	5.0
		HWFET	9.7	9.7	9.2	8.6	9.3	8.6	6.9	9.1	8.1	6.2	8.8	7.8	5.9
		Combined	8.9	8.9	8.4	7.8	8.5	7.9	6.3	8.3	7.3	5.6	8.1	7.1	5.4
E85 Split HEV PHEV20	Unadjusted	UDDS	4.3	4.3	4.0	3.7	4.1	3.7	2.9	4.0	3.4	2.6	3.9	3.3	2.5
		HWFET	5.7	5.7	5.3	4.9	5.4	5.0	4.9	5.3	5.7	4.5	5.1	5.5	4.3
		Combined	4.9	4.9	4.6	4.3	4.7	4.3	3.8	4.6	4.5	3.4	4.4	4.3	3.3
	Adjusted	UDDS	5.9	5.9	5.5	5.1	5.7	5.2	4.2	5.5	4.8	3.8	5.3	4.7	3.6
		HWFET	8.0	8.0	7.5	7.0	7.7	7.1	7.0	7.4	8.1	6.3	7.2	7.9	6.1
		Combined	6.9	6.9	6.4	6.0	6.6	6.0	5.5	6.4	6.3	4.9	6.2	6.1	4.7
E85 Series HEV PHEV30	Unadjusted	UDDS	4.9	4.9	4.5	4.1	4.6	4.1	3.1	4.4	3.6	2.6	4.2	3.5	2.5
		HWFET	6.6	6.6	6.1	5.6	6.3	5.7	4.4	6.0	5.1	3.9	5.8	4.9	3.7
		Combined	5.7	5.7	5.2	4.8	5.4	4.8	3.7	5.1	4.3	3.2	4.9	4.1	3.0
	Adjusted	UDDS	6.6	6.6	6.1	5.6	6.3	5.7	4.4	6.0	5.0	3.8	5.8	4.9	3.6
		HWFET	9.4	9.4	8.7	7.9	8.9	8.0	6.2	8.4	7.3	5.5	8.1	7.0	5.3
		Combined	7.8	7.8	7.3	6.7	7.5	6.7	5.2	7.1	6.1	4.6	6.9	5.8	4.4
E85 Series HEV PHEV40	Unadjusted	UDDS	4.3	4.3	3.9	3.6	4.1	3.6	2.7	3.8	3.2	2.3	3.7	3.0	2.1
		HWFET	5.2	5.2	4.8	4.4	5.0	4.5	3.5	4.7	4.1	3.1	4.5	3.9	2.9
		Combined	4.7	4.7	4.3	3.9	4.5	4.0	3.0	4.2	3.6	2.6	4.1	3.4	2.5
	Adjusted	UDDS	5.9	5.9	5.4	5.0	5.6	5.0	3.9	5.3	4.5	3.4	5.1	4.3	3.2
		HWFET	7.4	7.4	6.9	6.3	7.0	6.3	4.9	6.7	5.8	4.4	6.5	5.5	4.2
		Combined	6.6	6.6	6.1	5.5	6.2	5.6	4.4	5.9	5.0	3.8	5.7	4.9	3.7

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			Pickup												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
FC HEV	Unadjusted	UDDS	7.0	7.0	5.8	4.8	5.7	4.8	4.2	5.2	4.3	3.6	4.9	4.1	3.4
		HWFET	7.0	7.0	6.0	5.1	5.9	5.2	4.6	5.5	4.8	4.2	5.3	4.6	4.0
		Combined	7.0	7.0	5.9	4.9	5.8	5.0	4.4	5.3	4.5	3.8	5.1	4.4	3.7
	Adjusted	UDDS	9.1	9.1	7.7	6.5	7.6	6.5	5.7	7.0	5.8	5.0	6.6	5.7	4.8
		HWFET	9.9	9.9	8.5	7.3	8.3	7.3	6.6	7.8	6.8	6.0	7.5	6.6	5.7
		Combined	9.5	9.5	8.0	6.8	7.9	6.9	6.1	7.3	6.3	5.4	7.0	6.1	5.2
FC PHEV10	Unadjusted	UDDS	5.4	5.4	4.6	3.9	4.5	3.9	3.4	4.2	3.5	3.0	4.0	3.4	2.8
		HWFET	5.3	5.3	4.7	4.1	4.5	4.1	3.7	4.4	3.8	3.4	4.2	3.7	3.3
		Combined	5.4	5.4	4.6	4.0	4.5	4.0	3.6	4.3	3.7	3.2	4.1	3.6	3.0
	Adjusted	UDDS	7.3	7.3	6.2	5.4	6.1	5.4	4.8	5.8	4.9	4.2	5.5	4.8	4.1
		HWFET	7.5	7.5	6.6	5.8	6.5	5.8	5.3	6.2	5.4	4.9	6.0	5.3	4.7
		Combined	7.4	7.4	6.4	5.5	6.3	5.6	5.0	6.0	5.2	4.5	5.7	5.0	4.4
FC PHEV20	Unadjusted	UDDS	4.5	4.5	3.8	3.2	3.8	3.3	2.8	3.5	2.9	2.4	3.4	2.8	2.3
		HWFET	5.2	5.2	4.5	3.9	4.4	3.9	3.5	4.2	3.6	3.2	4.0	3.5	3.1
		Combined	4.8	4.8	4.1	3.5	4.1	3.6	3.2	3.8	3.2	2.8	3.7	3.2	2.7
	Adjusted	UDDS	6.2	6.2	5.3	4.6	5.2	4.6	4.1	4.9	4.2	3.6	4.7	4.1	3.5
		HWFET	7.3	7.3	6.4	5.5	6.3	5.6	5.0	6.0	5.2	4.6	5.8	5.0	4.4
		Combined	6.7	6.7	5.8	5.0	5.7	5.0	4.5	5.4	4.6	4.1	5.2	4.5	3.9
FC PHEV30	Unadjusted	UDDS	3.1	3.1	2.7	2.3	2.7	2.3	2.0	2.5	2.1	1.7	2.4	2.0	1.7
		HWFET	4.1	4.1	3.6	3.1	3.5	3.2	2.8	3.4	2.9	2.6	3.2	2.8	2.5
		Combined	3.6	3.6	3.1	2.7	3.0	2.7	2.4	2.9	2.5	2.1	2.8	2.4	2.0
	Adjusted	UDDS	4.5	4.5	3.9	3.4	3.8	3.4	3.1	3.7	3.1	2.7	3.5	3.1	2.6
		HWFET	5.8	5.8	5.1	4.5	5.0	4.5	4.0	4.8	4.2	3.7	4.6	4.0	3.6
		Combined	5.1	5.1	4.4	3.9	4.4	3.9	3.5	4.2	3.6	3.2	4.0	3.5	3.1
FC PHEV40	Unadjusted	UDDS	2.7	2.7	2.3	2.0	2.3	2.0	1.7	2.2	1.8	1.5	2.1	1.7	1.4
		HWFET	3.2	3.2	2.8	2.5	2.8	2.5	2.2	2.7	2.3	2.0	2.6	2.2	2.0
		Combined	3.0	3.0	2.6	2.2	2.5	2.2	2.0	2.4	2.0	1.7	2.3	1.9	1.7
	Adjusted	UDDS	4.0	4.0	3.4	3.1	3.4	3.1	2.7	3.2	2.8	2.4	3.1	2.7	2.4
		HWFET	4.6	4.6	4.1	3.5	4.0	3.6	3.2	3.8	3.3	2.9	3.7	3.2	2.8
		Combined	4.3	4.3	3.7	3.3	3.7	3.3	2.9	3.5	3.0	2.7	3.4	2.9	2.6

Fuel Consumption Improvement versus the Conventional 2010 Reference

			Pickup												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Conv	Unadjusted	UDDS	0.0%	0.0%	-7.7%	-13.4%	-5.5%	-12.4%	-31.2%	-7.1%	-17.9%	-42.6%	-7.7%	-18.9%	-45.2%
		HWFET	0.0%	0.0%	-7.6%	-14.1%	-5.8%	-12.3%	-31.2%	-7.5%	-17.5%	-40.6%	-9.2%	-18.7%	-42.9%
		Combined	0.0%	0.0%	-7.7%	-13.7%	-5.6%	-12.3%	-31.2%	-7.2%	-17.7%	-41.8%	-8.3%	-18.8%	-44.3%
	Adjusted	UDDS	0.0%	0.0%	-7.4%	-12.9%	-5.3%	-11.9%	-30.0%	-6.8%	-17.2%	-41.0%	-7.4%	-18.2%	-43.6%
		HWFET	0.0%	0.0%	-7.6%	-14.0%	-5.8%	-12.3%	-31.0%	-7.4%	-17.4%	-40.3%	-9.2%	-18.6%	-42.7%
		Combined	0.0%	0.0%	-7.5%	-13.4%	-5.5%	-12.1%	-30.4%	-7.1%	-17.3%	-40.7%	-8.2%	-18.3%	-43.2%
CI Conv	Unadjusted	UDDS	-17.8%	-17.8%	-22.3%	-28.0%	-19.7%	-27.5%	-34.7%	-23.9%	-33.2%	-43.8%	-25.5%	-35.5%	-46.0%
		HWFET	-14.0%	-14.0%	-18.5%	-22.8%	-16.5%	-24.6%	-29.6%	-20.8%	-27.7%	-37.2%	-20.7%	-30.4%	-39.5%
		Combined	-16.3%	-16.3%	-20.8%	-26.0%	-18.4%	-26.4%	-32.7%	-22.7%	-31.1%	-41.2%	-23.6%	-33.5%	-43.5%
	Adjusted	UDDS	-17.1%	-17.1%	-21.5%	-27.0%	-18.9%	-26.5%	-33.4%	-23.0%	-32.0%	-42.2%	-24.5%	-34.1%	-44.3%
		HWFET	-13.9%	-13.9%	-18.4%	-22.7%	-16.4%	-24.5%	-29.4%	-20.7%	-27.6%	-37.0%	-20.6%	-30.2%	-39.3%
		Combined	-15.8%	-15.8%	-20.2%	-25.2%	-17.9%	-25.7%	-31.8%	-22.0%	-30.2%	-40.0%	-22.9%	-32.5%	-42.2%
H2 Conv	Unadjusted	UDDS	15.8%	15.8%	-2.6%	-13.3%	1.8%	-13.8%	-23.4%	-7.3%	-21.0%	-35.3%	-11.5%	-25.5%	-40.5%
		HWFET	4.4%	4.4%	-11.5%	-21.5%	-8.5%	-21.8%	-30.1%	-16.5%	-27.9%	-38.8%	-20.7%	-32.0%	-43.4%
		Combined	11.4%	11.4%	-6.0%	-16.5%	-2.2%	-16.9%	-26.0%	-10.9%	-23.7%	-36.7%	-15.1%	-28.0%	-41.7%
	Adjusted	UDDS	15.2%	15.2%	-2.5%	-12.8%	1.7%	-13.3%	-22.6%	-7.0%	-20.2%	-34.0%	-11.1%	-24.6%	-39.0%
		HWFET	4.3%	4.3%	-11.4%	-21.4%	-8.5%	-21.7%	-29.9%	-16.5%	-27.7%	-38.6%	-20.6%	-31.9%	-43.2%
		Combined	10.7%	10.7%	-6.2%	-16.4%	-2.5%	-16.8%	-25.6%	-10.9%	-23.3%	-35.9%	-15.0%	-27.6%	-40.8%
E85 Conv	Unadjusted	UDDS	4.3%	4.3%	2.7%	-3.7%	5.7%	-2.0%	-26.9%	3.8%	-7.9%	-37.9%	3.0%	-8.9%	-40.2%
		HWFET	10.2%	10.2%	8.8%	-2.3%	11.2%	3.4%	-25.5%	9.2%	-5.9%	-34.6%	3.4%	-7.2%	-36.8%
		Combined	6.6%	6.6%	5.1%	-3.1%	7.8%	0.1%	-26.4%	5.9%	-7.2%	-36.6%	3.1%	-8.3%	-38.9%
	Adjusted	UDDS	4.1%	4.1%	2.6%	-3.5%	5.5%	-2.0%	-25.9%	3.6%	-7.6%	-36.5%	2.8%	-8.6%	-38.7%
		HWFET	10.2%	10.2%	8.8%	-2.3%	11.2%	3.4%	-25.4%	9.1%	-5.9%	-34.4%	3.4%	-7.2%	-36.6%
		Combined	6.6%	6.6%	5.1%	-3.0%	7.8%	0.3%	-25.7%	5.9%	-6.9%	-35.6%	3.1%	-8.0%	-37.8%
SI Split HEV	Unadjusted	UDDS	-42.1%	-42.1%	-46.2%	-50.3%	-44.4%	-50.5%	-59.5%	-47.6%	-54.9%	-66.6%	-48.8%	-56.6%	-68.1%
		HWFET	-14.3%	-14.3%	-19.7%	-25.6%	-17.5%	-24.8%	-37.2%	-20.7%	-30.4%	-46.4%	-22.9%	-32.9%	-48.5%
		Combined	-31.3%	-31.3%	-35.9%	-40.8%	-34.0%	-40.6%	-50.9%	-37.2%	-45.4%	-58.8%	-38.8%	-47.4%	-60.5%
	Adjusted	UDDS	-40.5%	-40.5%	-44.5%	-48.5%	-42.7%	-48.6%	-57.3%	-45.8%	-52.9%	-64.2%	-47.0%	-54.5%	-65.6%
		HWFET	-14.2%	-14.2%	-19.6%	-25.4%	-17.4%	-24.7%	-37.0%	-20.6%	-30.2%	-46.1%	-22.7%	-32.7%	-48.2%
		Combined	-29.7%	-29.7%	-34.2%	-39.0%	-32.3%	-38.8%	-49.0%	-35.4%	-43.6%	-56.7%	-37.0%	-45.6%	-58.4%
SI Split HEV PHEV10	Unadjusted	UDDS	-54.1%	-54.1%	-57.3%	-60.5%	-56.1%	-60.1%	-66.9%	-57.8%	-63.4%	-72.5%	-58.8%	-64.4%	-73.7%
		HWFET	-34.6%	-34.6%	-38.5%	-42.9%	-36.8%	-41.7%	-50.9%	-39.2%	-45.6%	-57.7%	-41.0%	-47.3%	-60.4%
		Combined	-46.6%	-46.6%	-50.0%	-53.7%	-48.6%	-53.0%	-60.7%	-50.6%	-56.5%	-66.8%	-51.9%	-57.8%	-68.5%
	Adjusted	UDDS	-52.1%	-52.1%	-55.1%	-58.3%	-54.0%	-57.9%	-64.4%	-55.6%	-61.1%	-69.9%	-56.6%	-62.0%	-71.0%
		HWFET	-34.4%	-34.4%	-38.3%	-42.7%	-36.6%	-41.5%	-50.6%	-39.0%	-45.3%	-57.4%	-40.8%	-47.1%	-60.1%
		Combined	-44.9%	-44.9%	-48.2%	-51.9%	-46.8%	-51.1%	-58.7%	-48.8%	-54.6%	-64.7%	-50.1%	-55.9%	-66.5%

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			Pickup												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Split HEV PHEV20	Unadjusted	UDDS	-68.2%	-68.2%	-70.3%	-72.7%	-69.6%	-72.5%	-77.2%	-70.8%	-74.7%	-80.7%	-71.5%	-75.3%	-81.6%
		HWFET	-46.1%	-46.1%	-49.1%	-53.0%	-48.4%	-52.6%	-50.5%	-50.0%	-45.3%	-57.1%	-51.5%	-47.1%	-58.7%
		Combined	-59.7%	-59.7%	-62.1%	-65.1%	-61.4%	-64.8%	-66.9%	-62.7%	-63.3%	-71.6%	-63.8%	-64.4%	-72.7%
	Adjusted	UDDS	-65.7%	-65.7%	-67.7%	-70.0%	-67.0%	-69.8%	-74.3%	-68.1%	-71.9%	-77.7%	-68.9%	-72.6%	-78.6%
		HWFET	-45.9%	-45.9%	-48.9%	-52.7%	-48.1%	-52.3%	-50.3%	-49.7%	-45.0%	-56.8%	-51.2%	-46.8%	-58.4%
		Combined	-57.6%	-57.6%	-60.0%	-62.9%	-59.3%	-62.6%	-64.4%	-60.6%	-60.9%	-69.1%	-61.6%	-62.0%	-70.3%
SI Series HEV PHEV30	Unadjusted	UDDS	-63.9%	-63.9%	-66.9%	-70.1%	-65.7%	-69.5%	-75.9%	-67.8%	-73.2%	-80.7%	-68.7%	-74.1%	-81.8%
		HWFET	-36.7%	-36.7%	-41.3%	-46.4%	-39.9%	-45.9%	-55.7%	-42.9%	-50.8%	-62.6%	-44.9%	-52.7%	-64.0%
		Combined	-53.4%	-53.4%	-57.0%	-60.9%	-55.7%	-60.4%	-68.1%	-58.1%	-64.5%	-73.7%	-59.5%	-65.8%	-74.9%
	Adjusted	UDDS	-61.5%	-61.5%	-64.4%	-67.5%	-63.3%	-66.9%	-73.1%	-65.3%	-70.5%	-77.8%	-66.2%	-71.4%	-78.8%
		HWFET	-36.5%	-36.5%	-41.1%	-46.1%	-39.7%	-45.7%	-55.4%	-42.7%	-50.5%	-62.3%	-44.6%	-52.4%	-63.7%
		Combined	-51.2%	-51.2%	-54.8%	-58.7%	-53.6%	-58.2%	-65.8%	-56.0%	-62.3%	-71.4%	-57.3%	-63.6%	-72.6%
SI Series HEV PHEV40	Unadjusted	UDDS	-68.4%	-68.4%	-71.2%	-73.8%	-70.1%	-73.5%	-79.1%	-72.0%	-76.8%	-83.2%	-72.8%	-77.6%	-84.1%
		HWFET	-50.0%	-50.0%	-53.7%	-57.7%	-52.6%	-57.3%	-65.2%	-55.0%	-61.2%	-70.6%	-56.5%	-62.8%	-71.7%
		Combined	-61.3%	-61.3%	-64.4%	-67.6%	-63.4%	-67.2%	-73.7%	-65.4%	-70.7%	-78.3%	-66.5%	-71.9%	-79.3%
	Adjusted	UDDS	-65.9%	-65.9%	-68.6%	-71.1%	-67.6%	-70.8%	-76.2%	-69.3%	-73.9%	-80.2%	-70.1%	-74.7%	-81.0%
		HWFET	-49.8%	-49.8%	-53.4%	-57.4%	-52.3%	-57.0%	-64.8%	-54.8%	-60.9%	-70.2%	-56.2%	-62.5%	-71.4%
		Combined	-59.3%	-59.3%	-62.3%	-65.5%	-61.3%	-65.1%	-71.5%	-63.3%	-68.6%	-76.1%	-64.4%	-69.7%	-77.0%
CI Split HEV	Unadjusted	UDDS	-48.7%	-48.7%	-51.7%	-56.0%	-50.2%	-55.9%	-61.5%	-53.5%	-60.4%	-67.4%	-55.1%	-62.0%	-68.6%
		HWFET	-19.7%	-19.7%	-24.1%	-31.0%	-22.0%	-30.1%	-37.7%	-26.4%	-36.2%	-45.2%	-29.2%	-38.8%	-47.3%
		Combined	-37.5%	-37.5%	-41.0%	-46.3%	-39.3%	-45.9%	-52.3%	-43.0%	-51.1%	-58.8%	-45.1%	-53.0%	-60.4%
	Adjusted	UDDS	-46.9%	-46.9%	-49.8%	-54.0%	-48.4%	-53.9%	-59.2%	-51.5%	-58.2%	-64.9%	-53.1%	-59.7%	-66.1%
		HWFET	-19.6%	-19.6%	-24.0%	-30.8%	-21.9%	-29.9%	-37.5%	-26.3%	-36.0%	-44.9%	-29.0%	-38.6%	-47.1%
		Combined	-35.6%	-35.6%	-39.2%	-44.4%	-37.5%	-44.0%	-50.3%	-41.1%	-49.1%	-56.7%	-43.2%	-51.0%	-58.3%
CI Split HEV PHEV10	Unadjusted	UDDS	-56.0%	-56.0%	-58.6%	-62.3%	-57.4%	-61.9%	-66.6%	-59.9%	-65.6%	-71.4%	-61.3%	-67.0%	-72.6%
		HWFET	-36.3%	-36.3%	-39.6%	-44.7%	-38.1%	-44.1%	-49.8%	-41.2%	-48.5%	-55.4%	-43.5%	-50.6%	-57.1%
		Combined	-48.4%	-48.4%	-51.2%	-55.5%	-49.9%	-55.0%	-60.1%	-52.6%	-59.0%	-65.2%	-54.4%	-60.6%	-66.6%
	Adjusted	UDDS	-53.9%	-53.9%	-56.4%	-60.0%	-55.2%	-59.7%	-64.1%	-57.7%	-63.2%	-68.8%	-59.0%	-64.5%	-69.9%
		HWFET	-36.1%	-36.1%	-39.4%	-44.4%	-37.9%	-43.8%	-49.5%	-41.0%	-48.2%	-55.1%	-43.2%	-50.3%	-56.8%
		Combined	-46.6%	-46.6%	-49.4%	-53.6%	-48.1%	-53.1%	-58.1%	-50.8%	-57.1%	-63.1%	-52.5%	-58.7%	-64.5%
CI Split HEV PHEV20	Unadjusted	UDDS	-69.5%	-69.5%	-71.3%	-73.8%	-70.4%	-73.6%	-76.8%	-72.2%	-76.2%	-79.7%	-73.2%	-77.2%	-80.7%
		HWFET	-47.9%	-47.9%	-50.4%	-54.7%	-49.5%	-54.3%	-58.7%	-51.9%	-57.8%	-64.8%	-53.8%	-59.5%	-66.5%
		Combined	-61.1%	-61.1%	-63.2%	-66.5%	-62.3%	-66.1%	-69.8%	-64.3%	-69.1%	-70.1%	-65.7%	-70.3%	-71.4%
	Adjusted	UDDS	-66.9%	-66.9%	-68.7%	-71.1%	-67.8%	-70.9%	-74.0%	-69.5%	-73.4%	-76.7%	-70.5%	-74.3%	-77.7%
		HWFET	-47.6%	-47.6%	-50.1%	-54.5%	-49.2%	-54.0%	-58.4%	-51.6%	-57.5%	-64.5%	-53.5%	-59.2%	-66.2%
		Combined	-59.0%	-59.0%	-61.0%	-64.3%	-60.2%	-64.0%	-67.6%	-62.1%	-66.8%	-67.6%	-63.5%	-68.1%	-71.9%

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			Pickup												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
CI Series HEV PHEV30	Unadjusted	UDDS	-65.1%	-65.1%	-67.7%	-71.1%	-66.4%	-70.7%	-75.3%	-69.0%	-74.5%	-79.7%	-70.5%	-75.7%	-80.8%
		HWFET	-38.7%	-38.7%	-42.6%	-48.3%	-40.9%	-47.8%	-54.6%	-45.1%	-53.3%	-60.7%	-47.4%	-55.4%	-62.2%
		Combined	-54.9%	-54.9%	-58.0%	-62.3%	-56.6%	-61.9%	-67.3%	-59.8%	-66.3%	-72.3%	-61.5%	-67.8%	-73.6%
	Adjusted	UDDS	-62.7%	-62.7%	-65.2%	-68.4%	-64.0%	-68.1%	-72.5%	-66.5%	-71.8%	-76.7%	-67.9%	-72.9%	-77.8%
		HWFET	-38.5%	-38.5%	-42.4%	-48.1%	-40.7%	-47.5%	-54.4%	-44.8%	-53.0%	-60.4%	-47.1%	-55.1%	-61.8%
		Combined	-52.7%	-52.7%	-55.8%	-60.1%	-54.4%	-59.7%	-65.0%	-57.6%	-64.0%	-70.0%	-59.3%	-65.6%	-71.3%
CI Series HEV PHEV40	Unadjusted	UDDS	-69.6%	-69.6%	-71.8%	-75.0%	-70.8%	-74.7%	-78.6%	-73.1%	-77.9%	-82.4%	-74.1%	-79.0%	-83.4%
		HWFET	-51.5%	-51.5%	-54.7%	-59.1%	-53.3%	-58.7%	-64.3%	-56.6%	-63.2%	-69.0%	-58.4%	-65.0%	-70.2%
		Combined	-62.6%	-62.6%	-65.2%	-68.8%	-64.0%	-68.5%	-73.1%	-66.7%	-72.3%	-77.2%	-68.1%	-73.6%	-78.3%
	Adjusted	UDDS	-67.0%	-67.0%	-69.2%	-72.2%	-68.2%	-71.9%	-75.7%	-70.4%	-75.1%	-79.4%	-71.4%	-76.1%	-80.4%
		HWFET	-51.2%	-51.2%	-54.4%	-58.8%	-53.0%	-58.4%	-64.0%	-56.3%	-62.9%	-68.6%	-58.1%	-64.7%	-69.9%
		Combined	-60.5%	-60.5%	-63.1%	-66.7%	-61.9%	-66.4%	-70.9%	-64.6%	-70.1%	-75.0%	-65.9%	-71.4%	-76.0%
H2 Split HEV	Unadjusted	UDDS	-41.5%	-41.5%	-50.6%	-57.1%	-48.7%	-57.0%	-63.4%	-53.9%	-62.3%	-69.4%	-56.9%	-64.6%	-71.7%
		HWFET	-11.7%	-11.7%	-24.9%	-34.7%	-22.5%	-33.9%	-42.6%	-29.7%	-40.9%	-50.0%	-34.1%	-44.5%	-53.7%
		Combined	-30.0%	-30.0%	-40.7%	-48.4%	-38.6%	-48.1%	-55.4%	-44.5%	-54.0%	-61.9%	-48.1%	-56.8%	-64.8%
	Adjusted	UDDS	-39.9%	-39.9%	-48.7%	-55.0%	-46.9%	-54.9%	-61.1%	-51.9%	-60.0%	-66.8%	-54.8%	-62.2%	-69.1%
		HWFET	-11.7%	-11.7%	-24.8%	-34.5%	-22.4%	-33.7%	-42.4%	-29.5%	-40.7%	-49.8%	-33.9%	-44.3%	-53.5%
		Combined	-28.3%	-28.3%	-38.9%	-46.6%	-36.8%	-46.2%	-53.4%	-42.7%	-52.1%	-59.8%	-46.2%	-54.8%	-62.6%
H2 Split HEV PHEV10	Unadjusted	UDDS	-53.0%	-53.0%	-60.4%	-65.6%	-58.9%	-65.2%	-70.1%	-62.7%	-69.2%	-74.6%	-65.2%	-71.0%	-76.6%
		HWFET	-33.5%	-33.5%	-43.0%	-50.1%	-41.6%	-49.5%	-55.7%	-46.5%	-54.5%	-61.7%	-49.9%	-57.2%	-64.4%
		Combined	-45.4%	-45.4%	-53.7%	-59.6%	-52.2%	-59.1%	-64.5%	-56.4%	-63.5%	-69.6%	-59.3%	-65.6%	-71.9%
	Adjusted	UDDS	-51.0%	-51.0%	-58.1%	-63.1%	-56.8%	-62.8%	-67.5%	-60.4%	-66.6%	-71.9%	-62.8%	-68.3%	-73.7%
		HWFET	-33.3%	-33.3%	-42.8%	-49.9%	-41.3%	-49.3%	-55.4%	-46.3%	-54.2%	-61.4%	-49.7%	-56.9%	-64.1%
		Combined	-43.7%	-43.7%	-51.8%	-57.7%	-50.4%	-57.2%	-62.5%	-54.6%	-61.5%	-67.6%	-57.4%	-63.6%	-69.8%
H2 Split HEV PHEV20	Unadjusted	UDDS	-67.4%	-67.4%	-72.6%	-76.2%	-71.5%	-76.0%	-79.4%	-74.2%	-78.7%	-82.2%	-75.9%	-79.8%	-83.6%
		HWFET	-45.3%	-45.3%	-53.0%	-49.8%	-51.8%	-49.2%	-55.4%	-56.0%	-53.7%	-60.1%	-58.8%	-56.6%	-63.1%
		Combined	-58.8%	-58.8%	-65.0%	-66.0%	-63.9%	-65.6%	-70.1%	-67.1%	-69.1%	-73.7%	-69.3%	-70.8%	-75.7%
	Adjusted	UDDS	-64.9%	-64.9%	-69.9%	-73.4%	-68.8%	-73.2%	-76.5%	-71.4%	-75.8%	-79.2%	-73.1%	-76.8%	-80.5%
		HWFET	-45.0%	-45.0%	-52.7%	-49.5%	-51.5%	-49.0%	-55.1%	-55.7%	-53.4%	-59.8%	-58.5%	-56.3%	-62.8%
		Combined	-56.7%	-56.7%	-62.8%	-63.6%	-61.7%	-63.2%	-67.7%	-65.0%	-66.6%	-71.2%	-67.1%	-68.4%	-73.2%
H2 Series HEV PHEV30	Unadjusted	UDDS	-63.3%	-63.3%	-69.8%	-74.1%	-68.2%	-73.7%	-78.3%	-72.0%	-77.5%	-82.4%	-74.0%	-78.9%	-83.8%
		HWFET	-36.0%	-36.0%	-45.9%	-53.3%	-44.3%	-52.9%	-59.9%	-50.1%	-58.5%	-65.3%	-53.4%	-61.3%	-67.9%
		Combined	-52.8%	-52.8%	-60.5%	-66.0%	-59.0%	-65.7%	-71.2%	-63.5%	-70.1%	-75.8%	-66.0%	-72.1%	-77.7%
	Adjusted	UDDS	-61.0%	-61.0%	-67.2%	-71.3%	-65.7%	-71.0%	-75.4%	-69.3%	-74.6%	-79.4%	-71.3%	-76.0%	-80.7%
		HWFET	-35.9%	-35.9%	-45.7%	-53.0%	-44.1%	-52.6%	-59.6%	-49.8%	-58.2%	-65.0%	-53.1%	-61.0%	-67.5%
		Combined	-50.6%	-50.6%	-58.3%	-63.8%	-56.8%	-63.4%	-68.9%	-61.3%	-67.9%	-73.4%	-63.8%	-69.8%	-75.3%

Argonne National Laboratory Report – Light-Duty Vehicle Fuel Consumption Displacement Potential Up to 2045

			Pickup												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
H2 Series HEV PHEV40	Unadjusted	UDDS	-68.0%	-68.0%	-73.4%	-77.4%	-72.3%	-77.1%	-81.2%	-75.4%	-80.5%	-84.8%	-77.3%	-81.8%	-85.9%
		HWFET	-49.6%	-49.6%	-57.3%	-63.2%	-56.1%	-62.9%	-68.4%	-60.7%	-67.4%	-72.7%	-63.3%	-69.8%	-74.8%
		Combined	-60.9%	-60.9%	-67.2%	-71.9%	-66.1%	-71.6%	-76.2%	-69.7%	-75.5%	-80.1%	-71.9%	-77.1%	-81.6%
	Adjusted	UDDS	-65.5%	-65.5%	-70.7%	-74.5%	-69.6%	-74.2%	-78.2%	-72.6%	-77.5%	-81.7%	-74.5%	-78.8%	-82.7%
		HWFET	-49.3%	-49.3%	-57.0%	-62.8%	-55.8%	-62.6%	-68.0%	-60.4%	-67.1%	-72.3%	-63.0%	-69.4%	-74.4%
		Combined	-58.8%	-58.8%	-65.1%	-69.7%	-64.0%	-69.4%	-74.0%	-67.6%	-73.2%	-77.8%	-69.8%	-74.9%	-79.3%
E85 Split HEV	Unadjusted	UDDS	-36.5%	-36.5%	-41.2%	-46.2%	-39.5%	-46.4%	-58.6%	-43.1%	-51.6%	-64.4%	-44.5%	-53.2%	-65.8%
		HWFET	-7.2%	-7.2%	-13.3%	-19.9%	-11.2%	-19.1%	-36.2%	-14.7%	-25.6%	-43.0%	-16.9%	-28.0%	-45.1%
		Combined	-25.1%	-25.1%	-30.4%	-36.0%	-28.5%	-35.9%	-49.9%	-32.1%	-41.6%	-56.1%	-33.9%	-43.5%	-57.8%
	Adjusted	UDDS	-35.1%	-35.1%	-39.7%	-44.5%	-38.0%	-44.7%	-56.4%	-41.5%	-49.7%	-62.0%	-42.9%	-51.2%	-63.4%
		HWFET	-7.2%	-7.2%	-13.2%	-19.8%	-11.1%	-19.0%	-36.0%	-14.6%	-25.5%	-42.8%	-16.8%	-27.9%	-44.9%
		Combined	-23.6%	-23.6%	-28.8%	-34.3%	-26.9%	-34.1%	-48.0%	-30.4%	-39.7%	-54.1%	-32.2%	-41.6%	-55.8%
E85 Split HEV PHEV10	Unadjusted	UDDS	-50.9%	-50.9%	-54.3%	-57.9%	-53.2%	-57.5%	-66.5%	-55.0%	-61.0%	-70.9%	-56.1%	-62.1%	-72.1%
		HWFET	-30.1%	-30.1%	-33.7%	-38.5%	-32.9%	-37.8%	-50.2%	-34.4%	-42.0%	-55.3%	-36.4%	-43.8%	-58.1%
		Combined	-42.9%	-42.9%	-46.3%	-50.4%	-45.3%	-49.9%	-60.2%	-47.0%	-53.6%	-64.8%	-48.5%	-55.0%	-66.7%
	Adjusted	UDDS	-49.1%	-49.1%	-52.3%	-55.7%	-51.2%	-55.3%	-64.1%	-52.9%	-58.7%	-68.3%	-54.1%	-59.8%	-69.4%
		HWFET	-29.9%	-29.9%	-33.5%	-38.3%	-32.7%	-37.6%	-50.0%	-34.2%	-41.8%	-55.0%	-36.2%	-43.6%	-57.8%
		Combined	-41.2%	-41.2%	-44.6%	-48.5%	-43.6%	-48.0%	-58.3%	-45.2%	-51.7%	-62.8%	-46.7%	-53.1%	-64.6%
E85 Split HEV PHEV20	Unadjusted	UDDS	-66.0%	-66.0%	-68.4%	-70.9%	-67.6%	-70.6%	-76.9%	-68.8%	-73.0%	-79.7%	-69.6%	-73.8%	-80.5%
		HWFET	-42.2%	-42.2%	-45.8%	-49.9%	-44.8%	-49.3%	-49.9%	-46.6%	-41.7%	-54.7%	-48.1%	-43.6%	-56.4%
		Combined	-56.8%	-56.8%	-59.6%	-62.8%	-58.8%	-62.3%	-66.5%	-60.2%	-60.9%	-70.0%	-61.3%	-62.1%	-71.2%
	Adjusted	UDDS	-63.5%	-63.5%	-65.8%	-68.3%	-65.1%	-68.0%	-74.1%	-66.2%	-70.3%	-76.7%	-67.1%	-71.1%	-77.5%
		HWFET	-41.9%	-41.9%	-45.5%	-49.6%	-44.5%	-49.0%	-49.6%	-46.3%	-41.5%	-54.4%	-47.9%	-43.3%	-56.1%
		Combined	-54.6%	-54.6%	-57.5%	-60.6%	-56.6%	-60.2%	-64.0%	-58.0%	-58.4%	-67.5%	-59.2%	-59.6%	-68.7%
E85 Series HEV PHEV30	Unadjusted	UDDS	-61.5%	-61.5%	-64.8%	-67.9%	-63.5%	-67.6%	-75.7%	-65.7%	-71.5%	-79.5%	-66.7%	-72.5%	-80.6%
		HWFET	-32.7%	-32.7%	-37.5%	-42.9%	-36.1%	-42.5%	-55.4%	-39.3%	-47.7%	-60.5%	-41.4%	-49.8%	-62.0%
		Combined	-50.3%	-50.3%	-54.2%	-58.3%	-52.9%	-57.8%	-67.8%	-55.5%	-62.3%	-72.2%	-56.9%	-63.7%	-73.4%
	Adjusted	UDDS	-59.2%	-59.2%	-62.4%	-65.4%	-61.2%	-65.1%	-72.9%	-63.3%	-68.9%	-76.6%	-64.3%	-69.8%	-77.6%
		HWFET	-32.5%	-32.5%	-37.3%	-42.7%	-35.9%	-42.2%	-55.1%	-39.1%	-47.4%	-60.2%	-41.2%	-49.5%	-61.7%
		Combined	-48.2%	-48.2%	-52.1%	-56.1%	-50.8%	-55.7%	-65.6%	-53.3%	-60.0%	-69.8%	-54.8%	-61.5%	-71.1%
E85 Series HEV PHEV40	Unadjusted	UDDS	-66.3%	-66.3%	-69.2%	-72.1%	-68.2%	-71.7%	-78.9%	-70.1%	-75.3%	-82.3%	-71.0%	-76.2%	-83.3%
		HWFET	-46.8%	-46.8%	-50.7%	-55.0%	-49.6%	-54.6%	-64.9%	-52.2%	-58.8%	-69.0%	-53.7%	-60.5%	-70.2%
		Combined	-58.8%	-58.8%	-62.1%	-65.5%	-61.0%	-65.1%	-73.5%	-63.1%	-68.9%	-77.1%	-64.3%	-70.1%	-78.2%
	Adjusted	UDDS	-63.9%	-63.9%	-66.7%	-69.4%	-65.7%	-69.1%	-76.0%	-67.5%	-72.5%	-79.3%	-68.4%	-73.4%	-80.2%
		HWFET	-46.6%	-46.6%	-50.4%	-54.8%	-49.3%	-54.3%	-64.5%	-51.9%	-58.5%	-68.6%	-53.5%	-60.2%	-69.8%
		Combined	-56.7%	-56.7%	-60.0%	-63.4%	-58.9%	-63.0%	-71.3%	-61.1%	-66.7%	-74.9%	-62.2%	-67.9%	-75.9%

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			Pickup												
			2010	2010			2015			2030			2045		
			Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
FC HEV	Unadjusted	UDDS	-45.3%	-45.3%	-54.8%	-62.3%	-55.2%	-62.3%	-67.4%	-59.3%	-66.4%	-72.1%	-61.3%	-67.5%	-73.4%
		HWFET	-29.1%	-29.1%	-39.0%	-47.9%	-40.3%	-47.3%	-52.9%	-43.8%	-51.5%	-57.2%	-45.9%	-52.8%	-58.8%
		Combined	-39.0%	-39.0%	-48.7%	-56.7%	-49.4%	-56.5%	-61.8%	-53.3%	-60.6%	-66.4%	-55.4%	-61.8%	-67.7%
	Adjusted	UDDS	-43.6%	-43.6%	-52.8%	-60.0%	-53.2%	-60.0%	-64.9%	-57.1%	-64.0%	-69.5%	-59.1%	-65.0%	-70.6%
		HWFET	-28.9%	-28.9%	-38.8%	-47.6%	-40.1%	-47.1%	-52.6%	-43.6%	-51.2%	-56.9%	-45.7%	-52.5%	-58.5%
		Combined	-37.6%	-37.6%	-47.1%	-54.9%	-47.8%	-54.7%	-59.8%	-51.5%	-58.7%	-64.3%	-53.6%	-59.9%	-65.7%
FC PHEV10	Unadjusted	UDDS	-57.4%	-57.4%	-64.1%	-69.6%	-64.5%	-69.2%	-73.2%	-66.8%	-72.3%	-76.8%	-68.3%	-73.1%	-77.8%
		HWFET	-46.2%	-46.2%	-52.5%	-58.8%	-53.7%	-58.4%	-62.2%	-55.7%	-61.1%	-65.0%	-57.1%	-62.1%	-66.3%
		Combined	-53.0%	-53.0%	-59.6%	-65.4%	-60.3%	-65.0%	-68.9%	-62.5%	-68.0%	-72.2%	-64.0%	-68.8%	-73.3%
	Adjusted	UDDS	-55.2%	-55.2%	-61.8%	-67.0%	-62.1%	-66.7%	-70.4%	-64.4%	-69.7%	-74.0%	-65.8%	-70.4%	-74.9%
		HWFET	-45.9%	-45.9%	-52.2%	-58.5%	-53.5%	-58.1%	-61.9%	-55.4%	-60.8%	-64.7%	-56.8%	-61.8%	-65.9%
		Combined	-51.4%	-51.4%	-57.8%	-63.5%	-58.6%	-63.1%	-66.9%	-60.7%	-66.0%	-70.1%	-62.1%	-66.8%	-71.2%
FC PHEV20	Unadjusted	UDDS	-64.4%	-64.4%	-70.1%	-74.7%	-70.3%	-74.4%	-77.7%	-72.4%	-77.1%	-80.8%	-73.7%	-77.7%	-81.7%
		HWFET	-47.4%	-47.4%	-54.1%	-60.4%	-55.2%	-59.9%	-64.0%	-57.3%	-62.9%	-67.0%	-58.8%	-63.9%	-68.3%
		Combined	-57.8%	-57.8%	-63.9%	-69.1%	-64.5%	-68.8%	-72.4%	-66.6%	-71.6%	-75.5%	-67.9%	-72.4%	-76.5%
	Adjusted	UDDS	-62.0%	-62.0%	-67.5%	-71.9%	-67.7%	-71.6%	-74.9%	-69.7%	-74.2%	-77.8%	-70.9%	-74.9%	-78.6%
		HWFET	-47.2%	-47.2%	-53.8%	-60.0%	-54.9%	-59.6%	-63.6%	-57.0%	-62.6%	-66.7%	-58.5%	-63.6%	-67.9%
		Combined	-55.9%	-55.9%	-61.8%	-67.0%	-62.4%	-66.7%	-70.2%	-64.5%	-69.4%	-73.2%	-65.8%	-70.2%	-74.2%
FC PHEV30	Unadjusted	UDDS	-75.3%	-75.3%	-79.0%	-81.9%	-79.2%	-81.8%	-84.2%	-80.4%	-83.7%	-86.3%	-81.3%	-84.3%	-86.9%
		HWFET	-58.4%	-58.4%	-63.4%	-68.0%	-64.3%	-67.9%	-71.2%	-65.8%	-70.3%	-73.6%	-67.0%	-71.2%	-74.6%
		Combined	-68.8%	-68.8%	-73.0%	-76.5%	-73.4%	-76.4%	-79.2%	-74.8%	-78.6%	-81.4%	-75.8%	-79.2%	-82.1%
	Adjusted	UDDS	-72.5%	-72.5%	-76.1%	-78.8%	-76.3%	-78.8%	-81.1%	-77.5%	-80.6%	-83.1%	-78.3%	-81.2%	-83.7%
		HWFET	-58.1%	-58.1%	-63.1%	-67.7%	-63.9%	-67.5%	-70.9%	-65.4%	-70.0%	-73.2%	-66.6%	-70.8%	-74.2%
		Combined	-66.6%	-66.6%	-70.7%	-74.2%	-71.2%	-74.1%	-76.9%	-72.5%	-76.3%	-79.0%	-73.5%	-76.9%	-79.8%
FC PHEV40	Unadjusted	UDDS	-78.5%	-78.5%	-81.8%	-84.3%	-82.0%	-84.3%	-86.4%	-83.1%	-86.0%	-88.2%	-83.8%	-86.5%	-88.7%
		HWFET	-67.1%	-67.1%	-71.1%	-74.8%	-71.8%	-74.7%	-77.4%	-73.0%	-76.7%	-79.3%	-74.0%	-77.4%	-80.1%
		Combined	-74.1%	-74.1%	-77.7%	-80.6%	-78.0%	-80.6%	-82.9%	-79.2%	-82.4%	-84.7%	-80.0%	-83.0%	-85.4%
	Adjusted	UDDS	-75.6%	-75.6%	-78.8%	-81.2%	-78.9%	-81.1%	-83.2%	-80.0%	-82.8%	-84.9%	-80.7%	-83.3%	-85.4%
		HWFET	-66.7%	-66.7%	-70.8%	-74.4%	-71.4%	-74.3%	-77.0%	-72.6%	-76.3%	-78.9%	-73.6%	-77.0%	-79.7%
		Combined	-72.0%	-72.0%	-75.5%	-78.4%	-75.9%	-78.3%	-80.6%	-77.0%	-80.1%	-82.4%	-77.8%	-80.7%	-83.1%

Appendix C

Vehicle Cost Tables

Compact Class

Incremental Cost versus the Conventional 2010 Reference

		Compact												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Conv	Vehicle Cost LOW	0	0	-38	-36	-17	-44	-63	802	765	780	1240	1177	1142
	Vehicle Cost AVG	0	0	-38	-36	784	760	742	1118	1078	1091	1220	1160	1125
	Vehicle Cost HIGH	0	0	-38	-36	148	122	102	605	567	581	680	619	584
CI Conv	Vehicle Cost LOW	1928	1928	1865	1838	1701	1693	1595	2523	2428	2398	2609	2514	2412
	Vehicle Cost AVG	1873	1873	1815	1794	2551	2549	2462	2634	2551	2531	2642	2560	2472
	Vehicle Cost HIGH	1598	1598	1549	1540	1596	1603	1533	1980	1907	1895	1929	1858	1782
H2 Conv	Vehicle Cost LOW	-435	-435	-464	-430	-522	-496	-519	266	233	243	527	491	452
	Vehicle Cost AVG	2577	2577	2547	2580	2244	2270	2248	2243	2208	2215	951	914	874
	Vehicle Cost HIGH	2022	2022	1992	2025	856	879	853	1091	1048	1047	623	576	526
E85 Conv	Vehicle Cost LOW	-45	-45	-80	-74	-58	-63	-113	789	733	727	1209	1138	1070
	Vehicle Cost AVG	-44	-44	-79	-73	746	743	695	1104	1045	1035	1191	1122	1056
	Vehicle Cost HIGH	-45	-45	-80	-74	106	102	52	590	532	524	647	578	511
SI Split HEV	Vehicle Cost LOW	3403	3403	3187	2988	2744	2504	2198	2885	2533	2128	3091	2709	2238
	Vehicle Cost AVG	3277	3277	3066	2872	2802	2611	2365	2588	2297	1959	2540	2226	1840
	Vehicle Cost HIGH	2285	2285	2121	1968	1355	1200	1010	1243	1046	814	988	794	560
SI Split HEV PHEV10	Vehicle Cost LOW	5931	5931	5592	5267	4239	3889	3354	3895	3380	2857	3673	3233	2757
	Vehicle Cost AVG	5296	5296	4991	4699	3846	3583	3197	3377	3001	2605	3200	2830	2424
	Vehicle Cost HIGH	4188	4188	3937	3700	1827	1654	1348	1628	1346	1077	1250	995	786
SI Split HEV PHEV20	Vehicle Cost LOW	7956	7956	7497	7003	5510	5035	4230	4701	3984	3269	4086	3512	2954
	Vehicle Cost AVG	6992	6992	6588	6153	4690	4343	3774	3795	3310	2808	3532	3053	2581
	Vehicle Cost HIGH	5482	5482	5159	4809	2711	2454	1973	2256	1826	1419	1710	1327	1029
SI Series HEV PHEV30	Vehicle Cost LOW	16751	16751	15785	14789	11804	10865	9049	9347	7815	6465	7732	6523	5462
	Vehicle Cost AVG	14745	14745	13889	13011	9394	8703	7404	7305	6257	5293	6626	5612	4713
	Vehicle Cost HIGH	11796	11796	11101	10394	5468	4988	3963	4159	3296	2588	3108	2359	1856
SI Series HEV PHEV40	Vehicle Cost LOW	19599	19599	18450	17264	13695	12537	10325	10545	8719	7080	8402	6982	5804
	Vehicle Cost AVG	17150	17150	16137	15098	10673	9832	8265	7976	6759	5634	7173	5986	4991
	Vehicle Cost HIGH	13649	13649	12833	12000	6719	6097	4814	5024	3953	3037	3745	2800	2188
CI Split HEV	Vehicle Cost LOW	5791	5791	5542	5313	4758	4581	4247	4912	4495	4062	4831	4388	3906
	Vehicle Cost AVG	5638	5638	5399	5178	4787	4648	4383	4395	4061	3714	4294	3936	3550
	Vehicle Cost HIGH	4301	4301	4118	3949	3041	2936	2740	2831	2608	2376	2465	2257	2037

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		Compact												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
CI Split HEV PHEV10	Vehicle Cost LOW	8518	8518	8175	7829	6522	6135	5495	6074	5484	4913	5543	5050	4506
	Vehicle Cost AVG	7818	7818	7508	7199	6059	5768	5303	5344	4916	4490	5093	4683	4226
	Vehicle Cost HIGH	6392	6392	6142	5894	3613	3424	3072	3264	2957	2669	2779	2512	2290
CI Split HEV PHEV20	Vehicle Cost LOW	10609	10609	10187	9720	7868	7399	6456	6971	6132	5363	5989	5369	4738
	Vehicle Cost AVG	9569	9569	9197	8783	6953	6609	5938	5818	5249	4718	5452	4940	4411
	Vehicle Cost HIGH	7728	7728	7432	7101	4548	4299	3749	3950	3466	3030	3277	2865	2551
CI Series HEV PHEV30	Vehicle Cost LOW	19328	19328	18299	17277	14024	13043	11133	11440	9848	8418	9469	8223	7145
	Vehicle Cost AVG	17219	17219	16309	15410	11554	10831	9462	9161	8081	7073	8401	7364	6457
	Vehicle Cost HIGH	13941	13941	13209	12489	7255	6756	5684	5792	4901	4155	4629	3861	3370
CI Series HEV PHEV40	Vehicle Cost LOW	22298	22298	21140	19911	16029	14799	12489	12697	10784	9085	10159	8698	7480
	Vehicle Cost AVG	19725	19725	18706	17631	12911	12019	10378	9864	8598	7441	8962	7749	6729
	Vehicle Cost HIGH	15870	15870	15053	14197	8579	7916	6586	6694	5583	4642	5285	4321	3700
H2 Split HEV	Vehicle Cost LOW	3490	3490	3175	2928	2647	2365	2012	2677	2286	1871	2706	2329	1934
	Vehicle Cost AVG	6370	6370	6064	5823	4625	4404	4126	4042	3726	3392	2578	2272	1953
	Vehicle Cost HIGH	4760	4760	4526	4341	2397	2228	2021	1999	1785	1562	1193	1013	828
H2 Split HEV PHEV10	Vehicle Cost LOW	6361	6361	5881	5478	4432	3939	3334	3909	3283	2718	3500	3049	2554
	Vehicle Cost AVG	8694	8694	8261	7898	5917	5546	5108	5042	4581	4153	3426	3049	2629
	Vehicle Cost HIGH	6944	6944	6591	6297	2986	2760	2441	2465	2158	1891	1534	1293	1099
H2 Split HEV PHEV20	Vehicle Cost LOW	8379	8379	7759	7250	5790	5149	4211	4783	3886	3131	3924	3304	2729
	Vehicle Cost AVG	10384	10384	9833	9381	6823	6354	5686	5507	4888	4360	3768	3251	2767
	Vehicle Cost HIGH	8234	8234	7790	7428	3914	3585	3062	3123	2636	2224	2002	1616	1333
H2 Series HEV PHEV30	Vehicle Cost LOW	16966	16966	15679	14576	11767	10606	8753	9146	7504	6102	7285	6099	5081
	Vehicle Cost AVG	17927	17927	16789	15817	11269	10419	9100	8768	7649	6662	6616	5626	4767
	Vehicle Cost HIGH	14358	14358	13439	12659	6540	5960	4933	4918	4021	3299	3298	2576	2109
H2 Series HEV PHEV40	Vehicle Cost LOW	19845	19845	18340	17019	13659	12239	10012	10349	8392	6725	7935	6543	5410
	Vehicle Cost AVG	20358	20358	19033	17876	12546	11520	9947	9439	8140	7004	7145	5987	5034
	Vehicle Cost HIGH	16229	16229	15166	14242	7790	7041	5771	5782	4666	3754	3924	3007	2432
E85 Split HEV	Vehicle Cost LOW	3421	3421	3226	3057	2738	2568	2216	2922	2555	2161	3111	2730	2279
	Vehicle Cost AVG	3295	3295	3106	2942	2802	2664	2384	2624	2319	1992	2560	2246	1875
	Vehicle Cost HIGH	2303	2303	2155	2028	1355	1249	1027	1273	1065	840	1004	810	583

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		Compact												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
E85 Split HEV PHEV10	Vehicle Cost LOW	5952	5952	5608	5287	4260	3908	3377	3917	3392	2877	3695	3257	2779
	Vehicle Cost AVG	5317	5317	5007	4720	3866	3603	3220	3399	3018	2627	3221	2853	2445
	Vehicle Cost HIGH	4208	4208	3953	3719	1844	1672	1366	1646	1356	1093	1266	1012	802
E85 Split HEV PHEV20	Vehicle Cost LOW	7977	7977	7518	7024	5530	5058	4253	4719	4004	3288	4109	3536	2975
	Vehicle Cost AVG	7013	7013	6610	6174	4710	4366	3796	3814	3331	2829	3555	3076	2601
	Vehicle Cost HIGH	5502	5502	5179	4828	2729	2473	1992	2273	1843	1435	1727	1344	1045
E85 Series HEV PHEV30	Vehicle Cost LOW	16774	16774	15808	14813	11827	10893	9075	9369	7840	6486	7755	6549	5486
	Vehicle Cost AVG	14768	14768	13912	13035	9416	8728	7429	7327	6281	5314	6648	5637	4736
	Vehicle Cost HIGH	11817	11817	11122	10416	5487	5009	3983	4177	3315	2605	3125	2377	1873
E85 Series HEV PHEV40	Vehicle Cost LOW	19643	19643	18475	17288	13718	12551	10363	10567	8741	7101	8426	7008	5826
	Vehicle Cost AVG	17190	17190	16162	15122	10695	9849	8298	7998	6781	5656	7195	6011	5013
	Vehicle Cost HIGH	13683	13683	12855	12022	6738	6107	4842	5042	3971	3054	3763	2818	2205
FC HEV	Vehicle Cost LOW	8302	8302	6716	5788	7505	5822	4618	3389	2472	1718	1812	1269	714
	Vehicle Cost AVG	12228	12228	9953	8467	7477	5974	4849	4490	3393	2691	1739	1210	740
	Vehicle Cost HIGH	9688	9688	7814	6588	3593	2681	1986	2191	1490	1013	353	17	-264
FC HEV PHEV10	Vehicle Cost LOW	9897	9897	8289	7251	7894	6607	5331	4439	3300	2421	2661	2042	1345
	Vehicle Cost AVG	13051	13051	10978	9456	7896	6662	5486	5184	3984	3266	2477	1886	1304
	Vehicle Cost HIGH	10376	10376	8670	7415	3538	2811	2064	2303	1537	1066	508	119	-186
FC HEV PHEV20	Vehicle Cost LOW	12380	12380	10541	9274	9552	7932	6396	5388	3985	2863	3127	2365	1543
	Vehicle Cost AVG	15194	15194	12925	11204	9038	7571	6216	5714	4366	3492	2859	2152	1462
	Vehicle Cost HIGH	12019	12019	10163	8759	4672	3733	2788	3048	2075	1411	1026	483	56
FC HEV PHEV30	Vehicle Cost LOW	17652	17652	15639	14259	13192	11555	9531	8365	6637	5188	5490	4360	3346
	Vehicle Cost AVG	19905	19905	17472	15671	12096	10570	8829	8171	6587	5371	4946	3917	3036
	Vehicle Cost HIGH	15992	15992	13997	12523	5841	4907	3705	3910	2786	1968	1648	905	431
FC HEV PHEV40	Vehicle Cost LOW	20460	20460	18124	16495	15001	13058	10621	9445	7391	5759	6035	4738	3647
	Vehicle Cost AVG	22396	22396	19669	17637	13389	11636	9607	8821	7053	5688	5399	4233	3281
	Vehicle Cost HIGH	17919	17919	15695	14042	7061	5923	4438	4726	3347	2376	2200	1280	721
EV	Vehicle Cost LOW	43649	43649	40907	37558	28156	25101	18121	18608	13238	9401	10649	7229	5267
	Vehicle Cost AVG	36550	36550	34228	31399	19434	17337	12602	10667	7628	5415	8557	5762	4144
	Vehicle Cost HIGH	28050	28050	26235	24036	16108	14218	9721	5159	3216	1851	4638	2516	1446

Cost saving per powertrain

		Compact												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Conv	Vehicle Cost LOW	0	0	-38	-36	-17	-44	-63	802	765	780	1240	1177	1142
	Vehicle Cost AVG	0	0	-38	-36	784	760	742	1118	1078	1091	1220	1160	1125
	Vehicle Cost HIGH	0	0	-38	-36	148	122	102	605	567	581	680	619	584
CI Conv	Vehicle Cost LOW	0	0	-64	-91	-227	-236	-333	595	500	470	681	585	484
	Vehicle Cost AVG	0	0	-59	-80	678	676	588	761	678	657	769	687	599
	Vehicle Cost HIGH	0	0	-49	-58	-2	5	-66	382	309	297	331	260	184
H2 Conv	Vehicle Cost LOW	0	0	-29	5	-87	-61	-84	701	668	678	963	927	887
	Vehicle Cost AVG	0	0	-30	3	-333	-306	-329	-334	-369	-362	-1626	-1663	-1703
	Vehicle Cost HIGH	0	0	-30	3	-1166	-1143	-1169	-931	-974	-975	-1399	-1446	-1496
E85 Conv	Vehicle Cost LOW	0	0	-35	-29	-13	-18	-68	835	779	773	1254	1183	1115
	Vehicle Cost AVG	0	0	-35	-29	791	788	740	1149	1089	1079	1235	1166	1101
	Vehicle Cost HIGH	0	0	-35	-29	152	147	97	635	577	569	692	623	557
SI Split HEV	Vehicle Cost LOW	0	0	-216	-416	-659	-899	-1206	-518	-871	-1275	-313	-694	-1165
	Vehicle Cost AVG	0	0	-210	-405	-475	-666	-911	-689	-980	-1317	-737	-1051	-1437
	Vehicle Cost HIGH	0	0	-164	-317	-930	-1085	-1276	-1042	-1239	-1472	-1298	-1492	-1725
SI Split HEV PHEV10	Vehicle Cost LOW	0	0	-339	-665	-1692	-2042	-2577	-2036	-2552	-3074	-2258	-2698	-3174
	Vehicle Cost AVG	0	0	-306	-597	-1450	-1713	-2099	-1920	-2295	-2691	-2097	-2466	-2873
	Vehicle Cost HIGH	0	0	-251	-488	-2362	-2535	-2840	-2560	-2843	-3111	-2939	-3193	-3402
SI Split HEV PHEV20	Vehicle Cost LOW	0	0	-460	-954	-2446	-2922	-3727	-3255	-3973	-4687	-3871	-4444	-5002
	Vehicle Cost AVG	0	0	-404	-839	-2302	-2649	-3218	-3197	-3682	-4183	-3459	-3939	-4411
	Vehicle Cost HIGH	0	0	-323	-673	-2771	-3028	-3509	-3226	-3656	-4064	-3772	-4156	-4453
SI Series HEV PHEV30	Vehicle Cost LOW	0	0	-966	-1962	-4947	-5886	-7702	-7404	-8936	-10286	-9019	-10228	-11289
	Vehicle Cost AVG	0	0	-856	-1734	-5351	-6042	-7341	-7440	-8488	-9452	-8119	-9133	-10032
	Vehicle Cost HIGH	0	0	-695	-1402	-6327	-6808	-7833	-7636	-8499	-9207	-8688	-9437	-9940
SI Series HEV PHEV40	Vehicle Cost LOW	0	0	-1149	-2336	-5904	-7062	-9274	-9054	-10880	-12520	-11197	-12617	-13795
	Vehicle Cost AVG	0	0	-1012	-2052	-6477	-7317	-8885	-9174	-10390	-11516	-9977	-11163	-12158
	Vehicle Cost HIGH	0	0	-817	-1649	-6931	-7552	-8835	-8625	-9696	-10612	-9904	-10849	-11461
CI Split HEV	Vehicle Cost LOW	0	0	-249	-478	-1034	-1210	-1544	-879	-1296	-1729	-960	-1403	-1885
	Vehicle Cost AVG	0	0	-240	-461	-851	-991	-1255	-1243	-1577	-1924	-1345	-1702	-2089
	Vehicle Cost HIGH	0	0	-183	-352	-1259	-1365	-1560	-1470	-1693	-1925	-1836	-2044	-2264

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		Compact												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
CI Split HEV PHEV10	Vehicle Cost LOW	0	0	-344	-690	-1996	-2383	-3023	-2445	-3034	-3606	-2975	-3468	-4012
	Vehicle Cost AVG	0	0	-310	-619	-1759	-2050	-2515	-2473	-2902	-3328	-2724	-3134	-3592
	Vehicle Cost HIGH	0	0	-250	-498	-2779	-2968	-3320	-3128	-3435	-3723	-3612	-3880	-4102
CI Split HEV PHEV20	Vehicle Cost LOW	0	0	-421	-889	-2741	-3210	-4153	-3637	-4477	-5246	-4619	-5239	-5871
	Vehicle Cost AVG	0	0	-372	-786	-2616	-2960	-3630	-3751	-4320	-4851	-4116	-4629	-5157
	Vehicle Cost HIGH	0	0	-296	-626	-3180	-3429	-3979	-3777	-4261	-4697	-4451	-4863	-5177
CI Series HEV PHEV30	Vehicle Cost LOW	0	0	-1029	-2052	-5304	-6285	-8196	-7888	-9480	-10910	-9859	-11105	-12183
	Vehicle Cost AVG	0	0	-910	-1809	-5665	-6388	-7757	-8058	-9137	-10146	-8818	-9855	-10762
	Vehicle Cost HIGH	0	0	-732	-1453	-6686	-7185	-8257	-8150	-9040	-9786	-9313	-10080	-10572
CI Series HEV PHEV40	Vehicle Cost LOW	0	0	-1158	-2387	-6269	-7499	-9809	-9601	-11514	-13213	-12139	-13600	-14818
	Vehicle Cost AVG	0	0	-1019	-2094	-6814	-7706	-9347	-9861	-11127	-12284	-10763	-11976	-12996
	Vehicle Cost HIGH	0	0	-818	-1673	-7291	-7954	-9284	-9176	-10287	-11228	-10585	-11549	-12170
H2 Split HEV	Vehicle Cost LOW	0	0	-315	-562	-843	-1125	-1478	-813	-1204	-1619	-784	-1160	-1556
	Vehicle Cost AVG	0	0	-306	-547	-1745	-1967	-2245	-2329	-2645	-2979	-3792	-4098	-4418
	Vehicle Cost HIGH	0	0	-234	-419	-2362	-2532	-2739	-2761	-2975	-3197	-3567	-3747	-3932
H2 Split HEV PHEV10	Vehicle Cost LOW	0	0	-480	-883	-1929	-2422	-3027	-2452	-3078	-3643	-2861	-3312	-3807
	Vehicle Cost AVG	0	0	-433	-796	-2777	-3147	-3586	-3652	-4113	-4541	-5267	-5645	-6065
	Vehicle Cost HIGH	0	0	-353	-648	-3958	-4184	-4503	-4479	-4786	-5053	-5410	-5651	-5845
H2 Split HEV PHEV20	Vehicle Cost LOW	0	0	-621	-1129	-2589	-3231	-4168	-3597	-4493	-5248	-4455	-5076	-5650
	Vehicle Cost AVG	0	0	-551	-1003	-3561	-4030	-4698	-4877	-5496	-6023	-6616	-7133	-7617
	Vehicle Cost HIGH	0	0	-444	-806	-4320	-4649	-5172	-5111	-5598	-6010	-6232	-6618	-6901
H2 Series HEV PHEV30	Vehicle Cost LOW	0	0	-1286	-2390	-5198	-6360	-8212	-7819	-9462	-10864	-9680	-10866	-11884
	Vehicle Cost AVG	0	0	-1139	-2110	-6658	-7508	-8828	-9160	-10278	-11266	-11311	-12302	-13161
	Vehicle Cost HIGH	0	0	-919	-1699	-7818	-8399	-9426	-9440	-10337	-11059	-11061	-11782	-12250
H2 Series HEV PHEV40	Vehicle Cost LOW	0	0	-1505	-2826	-6186	-7607	-9833	-9496	-11453	-13120	-11910	-13302	-14435
	Vehicle Cost AVG	0	0	-1325	-2481	-7811	-8837	-10411	-10919	-12218	-13353	-13213	-14371	-15324
	Vehicle Cost HIGH	0	0	-1063	-1987	-8439	-9189	-10459	-10447	-11563	-12476	-12306	-13223	-13798
E85 Split HEV	Vehicle Cost LOW	0	0	-195	-364	-683	-854	-1206	-500	-867	-1260	-310	-692	-1142
	Vehicle Cost AVG	0	0	-190	-353	-493	-631	-911	-672	-976	-1303	-735	-1049	-1420
	Vehicle Cost HIGH	0	0	-148	-275	-948	-1054	-1276	-1030	-1238	-1463	-1299	-1493	-1720

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		Compact												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
E85 Split HEV PHEV10	Vehicle Cost LOW	0	0	-344	-665	-1692	-2043	-2575	-2035	-2560	-3074	-2257	-2695	-3173
	Vehicle Cost AVG	0	0	-310	-597	-1451	-1714	-2098	-1918	-2299	-2690	-2096	-2464	-2872
	Vehicle Cost HIGH	0	0	-255	-489	-2363	-2536	-2841	-2562	-2851	-3114	-2941	-3195	-3405
E85 Split HEV PHEV20	Vehicle Cost LOW	0	0	-460	-954	-2447	-2919	-3724	-3259	-3973	-4689	-3868	-4441	-5002
	Vehicle Cost AVG	0	0	-404	-839	-2303	-2647	-3217	-3199	-3682	-4184	-3458	-3937	-4412
	Vehicle Cost HIGH	0	0	-323	-674	-2773	-3028	-3510	-3229	-3658	-4067	-3775	-4158	-4457
E85 Series HEV PHEV30	Vehicle Cost LOW	0	0	-966	-1962	-4948	-5882	-7699	-7406	-8935	-10289	-9019	-10226	-11288
	Vehicle Cost AVG	0	0	-856	-1733	-5352	-6040	-7340	-7441	-8487	-9454	-8120	-9132	-10032
	Vehicle Cost HIGH	0	0	-695	-1401	-6330	-6808	-7834	-7640	-8502	-9212	-8692	-9440	-9944
E85 Series HEV PHEV40	Vehicle Cost LOW	0	0	-1168	-2355	-5925	-7092	-9279	-9076	-10902	-12542	-11217	-12635	-13817
	Vehicle Cost AVG	0	0	-1028	-2068	-6495	-7341	-8892	-9192	-10408	-11534	-9995	-11179	-12177
	Vehicle Cost HIGH	0	0	-829	-1662	-6945	-7576	-8842	-8642	-9713	-10629	-9920	-10865	-11479
FC HEV	Vehicle Cost LOW	0	0	-1586	-2514	-797	-2480	-3684	-4913	-5830	-6584	-6490	-7033	-7588
	Vehicle Cost AVG	0	0	-2275	-3760	-4750	-6253	-7378	-7738	-8835	-9536	-10489	-11017	-11487
	Vehicle Cost HIGH	0	0	-1874	-3100	-6095	-7007	-7702	-7497	-8199	-8675	-9335	-9671	-9952
FC HEV PHEV10	Vehicle Cost LOW	0	0	-1608	-2647	-2003	-3291	-4566	-5459	-6597	-7476	-7236	-7856	-8553
	Vehicle Cost AVG	0	0	-2073	-3595	-5155	-6389	-7565	-7867	-9067	-9785	-10574	-11165	-11747
	Vehicle Cost HIGH	0	0	-1706	-2961	-6838	-7565	-8312	-8073	-8839	-9311	-9868	-10257	-10563
FC HEV PHEV20	Vehicle Cost LOW	0	0	-1839	-3106	-2828	-4448	-5984	-6993	-8395	-9517	-9254	-10015	-10838
	Vehicle Cost AVG	0	0	-2269	-3989	-6156	-7623	-8978	-9479	-10827	-11702	-12335	-13041	-13731
	Vehicle Cost HIGH	0	0	-1856	-3260	-7347	-8286	-9231	-8971	-9944	-10609	-10993	-11536	-11963
FC HEV PHEV30	Vehicle Cost LOW	0	0	-2012	-3393	-4460	-6097	-8120	-9287	-11015	-12464	-12162	-13292	-14306
	Vehicle Cost AVG	0	0	-2433	-4234	-7810	-9336	-11076	-11734	-13318	-14534	-14960	-15989	-16870
	Vehicle Cost HIGH	0	0	-1995	-3469	-10151	-11085	-12287	-12083	-13206	-14025	-14344	-15087	-15561
FC HEV PHEV40	Vehicle Cost LOW	0	0	-2336	-3964	-5458	-7402	-9839	-11014	-13069	-14701	-14425	-15722	-16813
	Vehicle Cost AVG	0	0	-2727	-4759	-9007	-10760	-12789	-13575	-15343	-16708	-16997	-18163	-19116
	Vehicle Cost HIGH	0	0	-2224	-3876	-10857	-11995	-13480	-13193	-14572	-15543	-15719	-16639	-17198
EV	Vehicle Cost LOW	0	0	-2741	-6091	-15493	-18548	-25528	-25041	-30410	-34247	-33000	-36419	-38382
	Vehicle Cost AVG	0	0	-2322	-5151	-17117	-19213	-23948	-25884	-28922	-31135	-27993	-30788	-32407
	Vehicle Cost HIGH	0	0	-1815	-4014	-11942	-13832	-18329	-22891	-24834	-26199	-23412	-25534	-26604

Percentage decrease cost per powertrain

		Compact												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Conv	Vehicle Cost LOW	0.0%	0.0%	0.3%	0.3%	0.1%	0.3%	0.5%	-5.8%	-5.5%	-5.7%	-9.0%	-8.5%	-8.3%
	Vehicle Cost AVG	0.0%	0.0%	-0.3%	-0.3%	5.7%	5.5%	5.4%	8.1%	7.8%	7.9%	8.8%	8.4%	8.2%
	Vehicle Cost HIGH	0.0%	0.0%	-0.3%	-0.3%	1.0%	0.8%	0.7%	4.2%	3.9%	4.0%	4.7%	4.3%	4.0%
CI Conv	Vehicle Cost LOW	0.0%	0.0%	-0.4%	-0.6%	-1.4%	-1.5%	-2.1%	3.8%	3.2%	3.0%	4.3%	3.7%	3.1%
	Vehicle Cost AVG	0.0%	0.0%	-0.4%	-0.5%	4.3%	4.3%	3.8%	4.9%	4.3%	4.2%	4.9%	4.4%	3.8%
	Vehicle Cost HIGH	0.0%	0.0%	-0.3%	-0.4%	0.0%	0.0%	-0.4%	2.4%	1.9%	1.9%	2.1%	1.6%	1.1%
H2 Conv	Vehicle Cost LOW	0.0%	0.0%	-0.2%	0.0%	-0.6%	-0.5%	-0.6%	5.2%	5.0%	5.1%	7.2%	6.9%	6.6%
	Vehicle Cost AVG	0.0%	0.0%	-0.2%	0.0%	-2.0%	-1.9%	-2.0%	-2.0%	-2.3%	-2.2%	-9.9%	-10.2%	-10.4%
	Vehicle Cost HIGH	0.0%	0.0%	-0.2%	0.0%	-7.1%	-6.9%	-7.1%	-5.7%	-5.9%	-5.9%	-8.5%	-8.8%	-9.1%
E85 Conv	Vehicle Cost LOW	0.0%	0.0%	-0.3%	-0.2%	-0.1%	-0.1%	-0.5%	6.1%	5.7%	5.6%	9.1%	8.6%	8.1%
	Vehicle Cost AVG	0.0%	0.0%	-0.3%	-0.2%	5.7%	5.7%	5.4%	8.3%	7.9%	7.8%	9.0%	8.5%	8.0%
	Vehicle Cost HIGH	0.0%	0.0%	-0.2%	-0.2%	1.1%	1.0%	0.7%	4.4%	4.0%	3.9%	4.8%	4.3%	3.9%
SI Split HEV	Vehicle Cost LOW	0.0%	0.0%	-1.3%	-2.4%	-3.8%	-5.2%	-7.0%	-3.0%	-5.1%	-7.4%	-1.8%	-4.0%	-6.8%
	Vehicle Cost AVG	0.0%	0.0%	-1.2%	-2.4%	-2.8%	-3.9%	-5.3%	-4.0%	-5.7%	-7.7%	-4.3%	-6.2%	-8.4%
	Vehicle Cost HIGH	0.0%	0.0%	-1.0%	-1.9%	-5.6%	-6.5%	-7.6%	-6.2%	-7.4%	-8.8%	-7.8%	-8.9%	-10.3%
SI Split HEV PHEV10	Vehicle Cost LOW	0.0%	0.0%	-1.7%	-3.4%	-8.6%	-10.4%	-13.1%	-10.3%	-12.9%	-15.6%	-11.4%	-13.7%	-16.1%
	Vehicle Cost AVG	0.0%	0.0%	-1.6%	-3.1%	-7.6%	-9.0%	-11.0%	-10.1%	-12.0%	-14.1%	-11.0%	-12.9%	-15.0%
	Vehicle Cost HIGH	0.0%	0.0%	-1.3%	-2.6%	-12.7%	-13.6%	-15.2%	-13.7%	-15.3%	-16.7%	-15.8%	-17.1%	-18.3%
SI Split HEV PHEV20	Vehicle Cost LOW	0.0%	0.0%	-2.1%	-4.4%	-11.2%	-13.4%	-17.1%	-15.0%	-18.3%	-21.5%	-17.8%	-20.4%	-23.0%
	Vehicle Cost AVG	0.0%	0.0%	-1.9%	-4.0%	-11.1%	-12.7%	-15.5%	-15.4%	-17.7%	-20.1%	-16.6%	-18.9%	-21.2%
	Vehicle Cost HIGH	0.0%	0.0%	-1.6%	-3.4%	-13.9%	-15.2%	-17.6%	-16.2%	-18.3%	-20.4%	-18.9%	-20.9%	-22.3%
SI Series HEV PHEV30	Vehicle Cost LOW	0.0%	0.0%	-3.2%	-6.4%	-16.2%	-19.3%	-25.2%	-24.2%	-29.3%	-33.7%	-29.5%	-33.5%	-37.0%
	Vehicle Cost AVG	0.0%	0.0%	-3.0%	-6.1%	-18.7%	-21.2%	-25.7%	-26.1%	-29.7%	-33.1%	-28.4%	-32.0%	-35.1%
	Vehicle Cost HIGH	0.0%	0.0%	-2.6%	-5.3%	-24.1%	-25.9%	-29.8%	-29.1%	-32.4%	-35.1%	-33.1%	-36.0%	-37.9%
SI Series HEV PHEV40	Vehicle Cost LOW	0.0%	0.0%	-3.4%	-7.0%	-17.7%	-21.1%	-27.8%	-27.1%	-32.6%	-37.5%	-33.5%	-37.8%	-41.3%
	Vehicle Cost AVG	0.0%	0.0%	-3.3%	-6.6%	-20.9%	-23.6%	-28.7%	-29.6%	-33.6%	-37.2%	-32.2%	-36.1%	-39.3%
	Vehicle Cost HIGH	0.0%	0.0%	-2.9%	-5.9%	-24.7%	-26.9%	-31.4%	-30.7%	-34.5%	-37.8%	-35.3%	-38.6%	-40.8%
CI Split HEV	Vehicle Cost LOW	0.0%	0.0%	-1.3%	-2.4%	-5.3%	-6.2%	-7.9%	-4.5%	-6.6%	-8.8%	-4.9%	-7.2%	-9.6%
	Vehicle Cost AVG	0.0%	0.0%	-1.2%	-2.4%	-4.4%	-5.1%	-6.5%	-6.4%	-8.1%	-9.9%	-6.9%	-8.8%	-10.7%
	Vehicle Cost HIGH	0.0%	0.0%	-1.0%	-1.9%	-6.7%	-7.3%	-8.3%	-7.8%	-9.0%	-10.3%	-9.8%	-10.9%	-12.1%

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		Compact												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
CI Split HEV PHEV10	Vehicle Cost LOW	0.0%	0.0%	-1.5%	-3.1%	-8.9%	-10.7%	-13.5%	-11.0%	-13.6%	-16.2%	-13.3%	-15.5%	-18.0%
	Vehicle Cost AVG	0.0%	0.0%	-1.4%	-2.9%	-8.1%	-9.5%	-11.6%	-11.4%	-13.4%	-15.4%	-12.6%	-14.5%	-16.6%
	Vehicle Cost HIGH	0.0%	0.0%	-1.2%	-2.4%	-13.3%	-14.2%	-15.9%	-15.0%	-16.5%	-17.9%	-17.3%	-18.6%	-19.7%
CI Split HEV PHEV20	Vehicle Cost LOW	0.0%	0.0%	-1.7%	-3.6%	-11.2%	-13.2%	-17.0%	-14.9%	-18.3%	-21.5%	-18.9%	-21.5%	-24.1%
	Vehicle Cost AVG	0.0%	0.0%	-1.6%	-3.4%	-11.2%	-12.7%	-15.5%	-16.0%	-18.5%	-20.8%	-17.6%	-19.8%	-22.1%
	Vehicle Cost HIGH	0.0%	0.0%	-1.3%	-2.8%	-14.3%	-15.5%	-17.9%	-17.0%	-19.2%	-21.2%	-20.1%	-21.9%	-23.3%
CI Series HEV PHEV30	Vehicle Cost LOW	0.0%	0.0%	-3.1%	-6.2%	-16.0%	-19.0%	-24.7%	-23.8%	-28.6%	-32.9%	-29.8%	-33.5%	-36.8%
	Vehicle Cost AVG	0.0%	0.0%	-2.9%	-5.8%	-18.3%	-20.6%	-25.0%	-26.0%	-29.5%	-32.7%	-28.4%	-31.8%	-34.7%
	Vehicle Cost HIGH	0.0%	0.0%	-2.6%	-5.1%	-23.6%	-25.3%	-29.1%	-28.7%	-31.8%	-34.5%	-32.8%	-35.5%	-37.2%
CI Series HEV PHEV40	Vehicle Cost LOW	0.0%	0.0%	-3.2%	-6.6%	-17.4%	-20.8%	-27.2%	-26.6%	-31.9%	-36.6%	-33.6%	-37.7%	-41.1%
	Vehicle Cost AVG	0.0%	0.0%	-3.0%	-6.2%	-20.3%	-23.0%	-27.9%	-29.4%	-33.2%	-36.6%	-32.1%	-35.7%	-38.8%
	Vehicle Cost HIGH	0.0%	0.0%	-2.7%	-5.5%	-24.0%	-26.2%	-30.6%	-30.3%	-33.9%	-37.0%	-34.9%	-38.1%	-40.1%
H2 Split HEV	Vehicle Cost LOW	0.0%	0.0%	-1.8%	-3.3%	-4.9%	-6.5%	-8.6%	-4.7%	-7.0%	-9.4%	-4.5%	-6.7%	-9.0%
	Vehicle Cost AVG	0.0%	0.0%	-1.5%	-2.7%	-8.6%	-9.7%	-11.1%	-11.5%	-13.1%	-14.8%	-18.8%	-20.3%	-21.9%
	Vehicle Cost HIGH	0.0%	0.0%	-1.2%	-2.2%	-12.3%	-13.2%	-14.3%	-14.4%	-15.5%	-16.6%	-18.6%	-19.5%	-20.5%
H2 Split HEV PHEV10	Vehicle Cost LOW	0.0%	0.0%	-2.4%	-4.4%	-9.6%	-12.0%	-15.0%	-12.2%	-15.3%	-18.1%	-14.2%	-16.4%	-18.9%
	Vehicle Cost AVG	0.0%	0.0%	-1.9%	-3.5%	-12.3%	-14.0%	-15.9%	-16.2%	-18.3%	-20.2%	-23.4%	-25.1%	-27.0%
	Vehicle Cost HIGH	0.0%	0.0%	-1.7%	-3.0%	-18.5%	-19.6%	-21.1%	-20.9%	-22.4%	-23.6%	-25.3%	-26.4%	-27.3%
H2 Split HEV PHEV20	Vehicle Cost LOW	0.0%	0.0%	-2.8%	-5.1%	-11.7%	-14.6%	-18.8%	-16.2%	-20.3%	-23.7%	-20.1%	-22.9%	-25.5%
	Vehicle Cost AVG	0.0%	0.0%	-2.3%	-4.1%	-14.7%	-16.7%	-19.4%	-20.2%	-22.7%	-24.9%	-27.4%	-29.5%	-31.5%
	Vehicle Cost HIGH	0.0%	0.0%	-2.0%	-3.6%	-19.0%	-20.5%	-22.8%	-22.5%	-24.7%	-26.5%	-27.5%	-29.2%	-30.4%
H2 Series HEV PHEV30	Vehicle Cost LOW	0.0%	0.0%	-4.2%	-7.8%	-16.9%	-20.7%	-26.7%	-25.4%	-30.8%	-35.3%	-31.5%	-35.3%	-38.6%
	Vehicle Cost AVG	0.0%	0.0%	-3.6%	-6.7%	-21.0%	-23.7%	-27.8%	-28.9%	-32.4%	-35.5%	-35.6%	-38.8%	-41.5%
	Vehicle Cost HIGH	0.0%	0.0%	-3.2%	-5.9%	-27.1%	-29.2%	-32.7%	-32.8%	-35.9%	-38.4%	-38.4%	-40.9%	-42.5%
H2 Series HEV PHEV40	Vehicle Cost LOW	0.0%	0.0%	-4.5%	-8.4%	-18.4%	-22.6%	-29.2%	-28.2%	-34.0%	-39.0%	-35.4%	-39.5%	-42.9%
	Vehicle Cost AVG	0.0%	0.0%	-3.9%	-7.3%	-22.9%	-25.9%	-30.5%	-32.0%	-35.8%	-39.1%	-38.7%	-42.1%	-44.9%
	Vehicle Cost HIGH	0.0%	0.0%	-3.5%	-6.5%	-27.5%	-30.0%	-34.1%	-34.1%	-37.7%	-40.7%	-40.1%	-43.1%	-45.0%
E85 Split HEV	Vehicle Cost LOW	0.0%	0.0%	-1.1%	-2.1%	-4.0%	-5.0%	-7.0%	-2.9%	-5.0%	-7.3%	-1.8%	-4.0%	-6.6%
	Vehicle Cost AVG	0.0%	0.0%	-1.1%	-2.1%	-2.9%	-3.7%	-5.3%	-3.9%	-5.7%	-7.6%	-4.3%	-6.1%	-8.3%
	Vehicle Cost HIGH	0.0%	0.0%	-0.9%	-1.6%	-5.7%	-6.3%	-7.6%	-6.2%	-7.4%	-8.7%	-7.8%	-8.9%	-10.3%

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		Compact												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
E85 Split HEV PHEV10	Vehicle Cost LOW	0.0%	0.0%	-1.7%	-3.4%	-8.6%	-10.3%	-13.0%	-10.3%	-13.0%	-15.6%	-11.4%	-13.6%	-16.1%
	Vehicle Cost AVG	0.0%	0.0%	-1.6%	-3.1%	-7.6%	-9.0%	-11.0%	-10.0%	-12.0%	-14.1%	-11.0%	-12.9%	-15.0%
	Vehicle Cost HIGH	0.0%	0.0%	-1.4%	-2.6%	-12.7%	-13.6%	-15.2%	-13.7%	-15.3%	-16.7%	-15.8%	-17.1%	-18.3%
E85 Split HEV PHEV20	Vehicle Cost LOW	0.0%	0.0%	-2.1%	-4.4%	-11.2%	-13.4%	-17.1%	-15.0%	-18.2%	-21.5%	-17.8%	-20.4%	-23.0%
	Vehicle Cost AVG	0.0%	0.0%	-1.9%	-4.0%	-11.1%	-12.7%	-15.5%	-15.4%	-17.7%	-20.1%	-16.6%	-18.9%	-21.2%
	Vehicle Cost HIGH	0.0%	0.0%	-1.6%	-3.4%	-13.9%	-15.2%	-17.6%	-16.2%	-18.3%	-20.4%	-18.9%	-20.8%	-22.3%
E85 Series HEV PHEV30	Vehicle Cost LOW	0.0%	0.0%	-3.2%	-6.4%	-16.2%	-19.2%	-25.2%	-24.2%	-29.2%	-33.7%	-29.5%	-33.5%	-36.9%
	Vehicle Cost AVG	0.0%	0.0%	-3.0%	-6.1%	-18.7%	-21.1%	-25.7%	-26.0%	-29.7%	-33.1%	-28.4%	-32.0%	-35.1%
	Vehicle Cost HIGH	0.0%	0.0%	-2.6%	-5.3%	-24.1%	-25.9%	-29.8%	-29.1%	-32.4%	-35.1%	-33.1%	-35.9%	-37.9%
E85 Series HEV PHEV40	Vehicle Cost LOW	0.0%	0.0%	-3.5%	-7.0%	-17.7%	-21.2%	-27.8%	-27.1%	-32.6%	-37.5%	-33.5%	-37.8%	-41.3%
	Vehicle Cost AVG	0.0%	0.0%	-3.3%	-6.7%	-21.0%	-23.7%	-28.7%	-29.7%	-33.6%	-37.2%	-32.2%	-36.1%	-39.3%
	Vehicle Cost HIGH	0.0%	0.0%	-2.9%	-5.9%	-24.7%	-26.9%	-31.4%	-30.7%	-34.5%	-37.8%	-35.3%	-38.6%	-40.8%
FC HEV	Vehicle Cost LOW	0.0%	0.0%	-7.2%	-11.4%	-3.6%	-11.2%	-16.7%	-22.2%	-26.4%	-29.8%	-29.4%	-31.8%	-34.3%
	Vehicle Cost AVG	0.0%	0.0%	-8.7%	-14.4%	-18.2%	-24.0%	-28.3%	-29.7%	-33.9%	-36.6%	-40.3%	-42.3%	-44.1%
	Vehicle Cost HIGH	0.0%	0.0%	-7.8%	-12.8%	-25.3%	-29.0%	-31.9%	-31.1%	-34.0%	-35.9%	-38.7%	-40.1%	-41.2%
FC HEV PHEV10	Vehicle Cost LOW	0.0%	0.0%	-6.8%	-11.2%	-8.5%	-13.9%	-19.3%	-23.0%	-27.8%	-31.6%	-30.5%	-33.2%	-36.1%
	Vehicle Cost AVG	0.0%	0.0%	-7.7%	-13.4%	-19.2%	-23.8%	-28.2%	-29.3%	-33.8%	-36.4%	-39.4%	-41.6%	-43.7%
	Vehicle Cost HIGH	0.0%	0.0%	-6.9%	-11.9%	-27.5%	-30.5%	-33.5%	-32.5%	-35.6%	-37.5%	-39.8%	-41.3%	-42.6%
FC HEV PHEV20	Vehicle Cost LOW	0.0%	0.0%	-7.0%	-11.9%	-10.8%	-17.0%	-22.9%	-26.7%	-32.1%	-36.4%	-35.4%	-38.3%	-41.4%
	Vehicle Cost AVG	0.0%	0.0%	-7.8%	-13.8%	-21.2%	-26.3%	-31.0%	-32.7%	-37.3%	-40.4%	-42.5%	-45.0%	-47.4%
	Vehicle Cost HIGH	0.0%	0.0%	-7.0%	-12.3%	-27.8%	-31.3%	-34.9%	-33.9%	-37.6%	-40.1%	-41.5%	-43.6%	-45.2%
FC HEV PHEV30	Vehicle Cost LOW	0.0%	0.0%	-6.4%	-10.8%	-14.2%	-19.4%	-25.8%	-29.5%	-35.0%	-39.6%	-38.7%	-42.3%	-45.5%
	Vehicle Cost AVG	0.0%	0.0%	-7.2%	-12.6%	-23.2%	-27.7%	-32.9%	-34.8%	-39.5%	-43.1%	-44.4%	-47.4%	-50.0%
	Vehicle Cost HIGH	0.0%	0.0%	-6.6%	-11.4%	-33.3%	-36.4%	-40.4%	-39.7%	-43.4%	-46.1%	-47.1%	-49.6%	-51.1%
FC HEV PHEV40	Vehicle Cost LOW	0.0%	0.0%	-6.8%	-11.6%	-15.9%	-21.6%	-28.7%	-32.2%	-38.2%	-42.9%	-42.1%	-45.9%	-49.1%
	Vehicle Cost AVG	0.0%	0.0%	-7.5%	-13.1%	-24.9%	-29.7%	-35.3%	-37.5%	-42.4%	-46.2%	-47.0%	-50.2%	-52.8%
	Vehicle Cost HIGH	0.0%	0.0%	-6.9%	-12.0%	-33.5%	-37.1%	-41.7%	-40.8%	-45.0%	-48.0%	-48.6%	-51.4%	-53.1%
EV	Vehicle Cost LOW	0.0%	0.0%	-4.8%	-10.6%	-27.0%	-32.3%	-44.4%	-43.6%	-52.9%	-59.6%	-57.4%	-63.4%	-66.8%
	Vehicle Cost AVG	0.0%	0.0%	-4.6%	-10.2%	-34.0%	-38.2%	-47.6%	-51.4%	-57.4%	-61.8%	-55.6%	-61.1%	-64.4%
	Vehicle Cost HIGH	0.0%	0.0%	-4.3%	-9.4%	-28.1%	-32.5%	-43.1%	-53.9%	-58.4%	-61.6%	-55.1%	-60.1%	-62.6%

Midsized Class

Incremental Cost versus the Conventional 2010 Reference

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		Midsize												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Conv	Vehicle Cost LOW	0	0	-40	-31	38	12	-17	830	790	745	1223	1169	1090
	Vehicle Cost AVG	0	0	-40	-31	837	813	786	1153	1107	1057	1201	1149	1073
	Vehicle Cost HIGH	0	0	-40	-31	204	178	148	637	594	546	661	609	532
CI Conv	Vehicle Cost LOW	1992	1992	1913	1901	1821	1755	1705	2556	2483	2392	2585	2535	2399
	Vehicle Cost AVG	1928	1928	1854	1846	2656	2601	2560	2653	2594	2519	2609	2571	2454
	Vehicle Cost HIGH	1633	1633	1572	1571	1676	1638	1612	1988	1940	1878	1888	1861	1760
H2 Conv	Vehicle Cost LOW	-525	-525	-564	-557	-578	-594	-590	137	123	113	369	366	316
	Vehicle Cost AVG	2488	2488	2447	2453	2182	2169	2174	2113	2097	2086	793	789	738
	Vehicle Cost HIGH	1933	1933	1892	1898	803	783	784	971	944	922	474	458	394
E85 Conv	Vehicle Cost LOW	-25	-25	-65	-64	14	-16	-45	811	752	707	1196	1141	1043
	Vehicle Cost AVG	-24	-24	-65	-63	815	787	761	1133	1068	1017	1175	1123	1029
	Vehicle Cost HIGH	-25	-25	-65	-64	179	149	120	616	553	505	632	579	484
SI Split HEV	Vehicle Cost LOW	3876	3876	3624	3397	3086	2815	2524	3214	2741	2236	3390	2895	2343
	Vehicle Cost AVG	3730	3730	3484	3263	3040	2822	2588	2825	2432	2014	2749	2341	1888
	Vehicle Cost HIGH	2593	2593	2400	2227	1473	1305	1126	1340	1070	786	1035	781	506
SI Split HEV PHEV10	Vehicle Cost LOW	6632	6632	6261	5885	4737	4323	3687	4211	3590	2991	3938	3430	2835
	Vehicle Cost AVG	5911	5911	5579	5242	4178	3869	3408	3594	3139	2683	3396	2970	2462
	Vehicle Cost HIGH	4656	4656	4388	4112	1941	1729	1370	1645	1308	1000	1225	925	683
SI Split HEV PHEV20	Vehicle Cost LOW	8917	8917	8373	7803	6185	5580	4656	5128	4273	3438	4409	3729	3051
	Vehicle Cost AVG	7828	7828	7347	6848	5138	4701	4047	4071	3495	2905	3776	3208	2633
	Vehicle Cost HIGH	6123	6123	5736	5337	2951	2608	2061	2359	1841	1369	1751	1288	948
SI Series HEV PHEV30	Vehicle Cost LOW	18510	18510	17207	16153	12980	11790	9756	10098	8311	6745	8316	6875	5692
	Vehicle Cost AVG	16275	16275	15127	14197	10212	9337	7881	7818	6587	5469	7090	5881	4878
	Vehicle Cost HIGH	12991	12991	12065	11315	5945	5333	4192	4406	3410	2593	3260	2385	1830
SI Series HEV PHEV40	Vehicle Cost LOW	21767	21767	20226	18963	15067	13672	11162	11446	9304	7429	9059	7379	6059
	Vehicle Cost AVG	19023	19023	17673	16567	11623	10608	8828	8572	7140	5849	7696	6292	5177
	Vehicle Cost HIGH	15107	15107	14025	13139	7329	6584	5131	5380	4134	3091	3969	2873	2191
CI Split HEV	Vehicle Cost LOW	6359	6359	6049	5681	5277	4945	4532	5233	4727	4172	5107	4632	4034
	Vehicle Cost AVG	6177	6177	5879	5524	5159	4896	4568	4610	4205	3761	4474	4092	3612
	Vehicle Cost HIGH	4662	4662	4434	4163	3252	3058	2818	2901	2631	2338	2478	2258	1983

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		Midsize												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
CI Split HEV PHEV10	Vehicle Cost LOW	9366	9366	8929	8504	7085	6632	5904	6440	5764	5058	5855	5275	4610
	Vehicle Cost AVG	8565	8565	8173	7793	6443	6102	5572	5598	5109	4571	5325	4843	4282
	Vehicle Cost HIGH	6961	6961	6648	6340	3747	3523	3125	3295	2936	2598	2762	2447	2192
CI Split HEV PHEV20	Vehicle Cost LOW	11767	11767	11154	10590	8625	6073	6940	7412	6474	5561	6352	5600	4874
	Vehicle Cost AVG	10576	10576	10037	9539	7465	5795	6256	6105	5472	4832	5725	5103	4494
	Vehicle Cost HIGH	8494	8494	8069	7672	4819	3387	3859	4046	3496	2993	3310	2829	2476
CI Series HEV PHEV30	Vehicle Cost LOW	21135	21135	19799	18670	15220	14009	11873	12205	10370	8736	10062	8597	7378
	Vehicle Cost AVG	18789	18789	17611	16620	12390	11497	9965	9681	8426	7270	8867	7647	6622
	Vehicle Cost HIGH	15161	15161	14217	13423	7734	7117	5929	6036	5025	4177	4776	3906	3342
CI Series HEV PHEV40	Vehicle Cost LOW	24555	24555	22927	21623	17390	15990	13354	13621	11407	9466	10843	9106	7758
	Vehicle Cost AVG	21673	21673	20249	19109	13857	12836	10964	10469	9002	7675	9503	8060	6931
	Vehicle Cost HIGH	17379	17379	16245	15337	9170	8431	6914	7059	5777	4707	5521	4395	3708
H2 Split HEV	Vehicle Cost LOW	3870	3870	3498	3211	2913	2583	2225	2854	2360	1890	2846	2422	1919
	Vehicle Cost AVG	6732	6732	6369	6089	4780	4521	4239	4127	3731	3353	2638	2295	1889
	Vehicle Cost HIGH	4974	4974	4696	4482	2437	2241	2030	1963	1698	1448	1113	912	679
H2 Split HEV PHEV10	Vehicle Cost LOW	7048	7048	6460	6007	4853	4313	3576	4200	3426	2783	3694	3151	2543
	Vehicle Cost AVG	9289	9289	8759	8353	6171	5769	5230	5225	4647	4160	3552	3097	2580
	Vehicle Cost HIGH	7384	7384	6954	6623	3013	2755	2380	2409	2043	1739	1428	1140	918
H2 Split HEV PHEV20	Vehicle Cost LOW	9379	9379	8578	7954	6317	5587	4535	5123	4110	3222	4159	3434	2758
	Vehicle Cost AVG	11241	11241	10533	9982	7149	6614	5863	5704	5007	4379	3926	3322	2751
	Vehicle Cost HIGH	8874	8874	8307	7865	4010	3643	3060	3125	2568	2096	1944	1495	1176
H2 Series HEV PHEV30	Vehicle Cost LOW	18563	18563	16947	15782	12787	11384	9326	9784	7883	6302	7742	6344	5217
	Vehicle Cost AVG	19305	19305	17880	16854	11950	10924	9457	9172	7871	6751	6961	5792	4841
	Vehicle Cost HIGH	15414	15414	14269	13445	6895	6193	5056	5068	4040	3236	3350	2515	2012
H2 Series HEV PHEV40	Vehicle Cost LOW	21896	21896	19908	18497	14915	13247	10704	11135	8859	6962	8464	6830	5561
	Vehicle Cost AVG	22114	22114	20377	19142	13385	12180	10384	9921	8409	7114	7548	6187	5120
	Vehicle Cost HIGH	17574	17574	16189	15204	8304	7428	5974	6045	4749	3718	4040	2989	2348
E85 Split HEV	Vehicle Cost LOW	3911	3911	3643	3416	3132	2886	2497	3192	2764	2294	3413	2954	2383
	Vehicle Cost AVG	3765	3765	3504	3283	3080	2880	2573	2809	2455	2065	2772	2394	1924
	Vehicle Cost HIGH	2623	2623	2419	2246	1510	1359	1111	1329	1089	821	1053	820	534

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		Midsize												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
E85 Split HEV PHEV10	Vehicle Cost LOW	6657	6657	6286	5910	4760	4347	3710	4238	3612	3013	3964	3455	2861
	Vehicle Cost AVG	5936	5936	5605	5267	4200	3892	3431	3621	3163	2706	3421	2994	2486
	Vehicle Cost HIGH	4679	4679	4411	4135	1960	1748	1388	1665	1326	1018	1244	942	700
E85 Split HEV PHEV20	Vehicle Cost LOW	8938	8938	8399	7828	6210	5642	4680	5156	4297	3462	4436	3749	3074
	Vehicle Cost AVG	7849	7849	7373	6873	5162	4750	4070	4106	3518	2929	3801	3228	2655
	Vehicle Cost HIGH	6143	6143	5759	5360	2971	2655	2080	2365	1860	1386	1770	1305	966
E85 Series HEV PHEV30	Vehicle Cost LOW	18546	18546	17253	16185	13006	11819	9786	10134	8341	6770	8345	6900	5720
	Vehicle Cost AVG	16310	16310	15170	14228	10236	9364	7909	7852	6616	5494	7117	5905	4904
	Vehicle Cost HIGH	13021	13021	12102	11343	5965	5355	4214	4431	3432	2612	3280	2404	1849
E85 Series HEV PHEV40	Vehicle Cost LOW	21782	21782	20282	18996	15097	13702	11195	11483	9334	7457	9090	7406	6087
	Vehicle Cost AVG	19040	19040	17724	16598	11650	10636	8858	8606	7168	5875	7726	6317	5203
	Vehicle Cost HIGH	15125	15125	14068	13167	7352	6607	5155	5406	4155	3111	3991	2892	2210
FC HEV	Vehicle Cost LOW	9593	9593	7779	6675	8955	6846	5404	3960	2889	1884	2080	1418	731
	Vehicle Cost AVG	14063	14063	11368	9650	8699	6791	5473	5114	3835	2756	1972	1327	707
	Vehicle Cost HIGH	11152	11152	8931	7515	4254	3110	2290	2513	1694	985	402	-5	-390
FC HEV PHEV10	Vehicle Cost LOW	11355	11355	9465	8277	9146	7555	6059	4988	3673	2685	3027	2257	1420
	Vehicle Cost AVG	14924	14924	12428	10713	8976	7463	6094	5785	4392	3416	2796	2065	1324
	Vehicle Cost HIGH	11877	11877	9822	8410	4063	3160	2293	2532	1648	1044	547	78	-312
FC HEV PHEV20	Vehicle Cost LOW	14390	14390	12086	10573	11075	9035	7265	6097	4447	3143	3550	2620	1633
	Vehicle Cost AVG	17564	17564	14691	12697	10293	8477	6919	6414	4822	3642	3225	2361	1494
	Vehicle Cost HIGH	13909	13909	11567	9936	5346	4192	3112	3389	2255	1410	1129	483	-54
FC HEV PHEV30	Vehicle Cost LOW	19681	19681	17209	15680	14666	12645	10379	9144	7152	5476	5964	4632	3504
	Vehicle Cost AVG	22244	22244	19222	17239	13363	11481	9539	8913	7068	5530	5360	4146	3129
	Vehicle Cost HIGH	17858	17858	15384	13764	6491	5334	3989	4244	2949	1935	1739	883	328
FC HEV PHEV40	Vehicle Cost LOW	22868	22868	19889	18119	16628	14298	11588	10341	7975	6077	6604	5046	3823
	Vehicle Cost AVG	25061	25061	21590	19378	14759	12660	10399	9637	7579	5861	5891	4491	3389
	Vehicle Cost HIGH	20034	20034	17215	15416	7817	6453	4805	5148	3566	2369	2392	1291	637
EV	Vehicle Cost LOW	48935	48935	44713	41331	31148	27404	19713	20415	14287	9953	11635	7727	5582
	Vehicle Cost AVG	40984	40984	37413	34552	21416	18845	13628	11637	8166	5666	9324	6130	4361
	Vehicle Cost HIGH	31432	31432	28656	26432	17821	15510	10555	5616	3397	1855	5044	2633	1460

Cost saving per powertrain

		Midsize												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Conv	Vehicle Cost LOW	0	0	-40	-31	38	12	-17	830	790	745	1223	1169	1090
	Vehicle Cost AVG	0	0	-40	-31	837	813	786	1153	1107	1057	1201	1149	1073
	Vehicle Cost HIGH	0	0	-40	-31	204	178	148	637	594	546	661	609	532
CI Conv	Vehicle Cost LOW	0	0	-79	-91	-171	-237	-287	564	491	399	593	543	407
	Vehicle Cost AVG	0	0	-73	-81	728	673	632	726	666	591	682	644	527
	Vehicle Cost HIGH	0	0	-61	-62	43	5	-21	355	307	245	255	228	127
H2 Conv	Vehicle Cost LOW	0	0	-39	-32	-54	-70	-65	661	647	638	894	890	841
	Vehicle Cost AVG	0	0	-40	-35	-305	-319	-313	-374	-390	-402	-1695	-1699	-1749
	Vehicle Cost HIGH	0	0	-40	-35	-1130	-1150	-1149	-962	-988	-1011	-1459	-1475	-1538
E85 Conv	Vehicle Cost LOW	0	0	-41	-39	39	9	-20	836	777	732	1221	1165	1068
	Vehicle Cost AVG	0	0	-41	-39	839	811	785	1157	1092	1041	1200	1147	1053
	Vehicle Cost HIGH	0	0	-41	-39	204	174	145	640	578	530	657	604	509
SI Split HEV	Vehicle Cost LOW	0	0	-252	-479	-790	-1060	-1351	-662	-1134	-1640	-485	-980	-1533
	Vehicle Cost AVG	0	0	-246	-467	-690	-908	-1142	-905	-1298	-1716	-981	-1389	-1842
	Vehicle Cost HIGH	0	0	-193	-366	-1120	-1288	-1468	-1253	-1524	-1807	-1558	-1813	-2088
SI Split HEV PHEV10	Vehicle Cost LOW	0	0	-371	-747	-1895	-2309	-2945	-2421	-3042	-3642	-2694	-3202	-3797
	Vehicle Cost AVG	0	0	-332	-669	-1734	-2043	-2503	-2317	-2772	-3228	-2515	-2941	-3450
	Vehicle Cost HIGH	0	0	-269	-544	-2715	-2928	-3287	-3011	-3348	-3656	-3431	-3732	-3974
SI Split HEV PHEV20	Vehicle Cost LOW	0	0	-544	-1113	-2732	-3337	-4260	-3788	-4643	-5479	-4508	-5188	-5866
	Vehicle Cost AVG	0	0	-481	-980	-2690	-3126	-3781	-3757	-4333	-4922	-4052	-4619	-5194
	Vehicle Cost HIGH	0	0	-387	-786	-3172	-3515	-4062	-3764	-4282	-4754	-4372	-4835	-5175
SI Series HEV PHEV30	Vehicle Cost LOW	0	0	-1303	-2358	-5530	-6720	-8754	-8413	-10200	-11765	-10194	-11635	-12818
	Vehicle Cost AVG	0	0	-1149	-2079	-6064	-6938	-8394	-8457	-9688	-10806	-9185	-10394	-11397
	Vehicle Cost HIGH	0	0	-926	-1676	-7046	-7658	-8799	-8586	-9581	-10398	-9731	-10606	-11161
SI Series HEV PHEV40	Vehicle Cost LOW	0	0	-1541	-2804	-6700	-8095	-10606	-10322	-12463	-14338	-12709	-14388	-15708
	Vehicle Cost AVG	0	0	-1350	-2456	-7401	-8415	-10195	-10451	-11883	-13174	-11327	-12731	-13846
	Vehicle Cost HIGH	0	0	-1082	-1968	-7778	-8523	-9976	-9727	-10974	-12016	-11138	-12234	-12916
CI Split HEV	Vehicle Cost LOW	0	0	-310	-677	-1082	-1414	-1827	-1126	-1632	-2187	-1252	-1727	-2325
	Vehicle Cost AVG	0	0	-298	-653	-1017	-1281	-1609	-1567	-1972	-2416	-1703	-2085	-2565
	Vehicle Cost HIGH	0	0	-228	-499	-1410	-1604	-1844	-1761	-2031	-2325	-2184	-2404	-2679

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		Midsize												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
CI Split HEV PHEV10	Vehicle Cost LOW	0	0	-437	-862	-2281	-2734	-3462	-2925	-3601	-4308	-3511	-4091	-4756
	Vehicle Cost AVG	0	0	-391	-772	-2122	-2463	-2993	-2967	-3456	-3994	-3239	-3721	-4282
	Vehicle Cost HIGH	0	0	-313	-620	-3214	-3438	-3836	-3666	-4025	-4363	-4198	-4514	-4769
CI Split HEV PHEV20	Vehicle Cost LOW	0	0	-613	-1178	-3143	-5694	-4827	-4355	-5294	-6207	-5415	-6167	-6894
	Vehicle Cost AVG	0	0	-539	-1037	-3111	-4781	-4320	-4471	-5104	-5744	-4850	-5473	-6081
	Vehicle Cost HIGH	0	0	-425	-822	-3675	-5108	-4635	-4448	-4998	-5501	-5184	-5665	-6018
CI Series HEV PHEV30	Vehicle Cost LOW	0	0	-1337	-2466	-5915	-7127	-9262	-8930	-10765	-12400	-11074	-12538	-13757
	Vehicle Cost AVG	0	0	-1178	-2169	-6399	-7292	-8825	-9108	-10363	-11519	-9922	-11142	-12167
	Vehicle Cost HIGH	0	0	-944	-1738	-7427	-8044	-9232	-9124	-10136	-10984	-10384	-11254	-11819
CI Series HEV PHEV40	Vehicle Cost LOW	0	0	-1628	-2933	-7166	-8566	-11201	-10935	-13148	-15090	-13712	-15449	-16797
	Vehicle Cost AVG	0	0	-1424	-2564	-7816	-8837	-10709	-11204	-12672	-13998	-12171	-13613	-14742
	Vehicle Cost HIGH	0	0	-1134	-2042	-8208	-8948	-10465	-10320	-11601	-12672	-11858	-12984	-13671
H2 Split HEV	Vehicle Cost LOW	0	0	-372	-659	-958	-1287	-1645	-1017	-1510	-1981	-1025	-1449	-1952
	Vehicle Cost AVG	0	0	-363	-643	-1952	-2211	-2493	-2605	-3001	-3379	-4094	-4437	-4843
	Vehicle Cost HIGH	0	0	-278	-492	-2537	-2733	-2944	-3011	-3276	-3526	-3861	-4062	-4296
H2 Split HEV PHEV10	Vehicle Cost LOW	0	0	-588	-1041	-2195	-2735	-3472	-2848	-3622	-4265	-3354	-3897	-4505
	Vehicle Cost AVG	0	0	-529	-936	-3117	-3519	-4058	-4064	-4641	-5129	-5737	-6192	-6708
	Vehicle Cost HIGH	0	0	-430	-760	-4371	-4629	-5004	-4975	-5340	-5645	-5956	-6243	-6465
H2 Split HEV PHEV20	Vehicle Cost LOW	0	0	-801	-1425	-3063	-3793	-4845	-4256	-5269	-6158	-5220	-5945	-6622
	Vehicle Cost AVG	0	0	-708	-1259	-4092	-4628	-5378	-5537	-6234	-6862	-7315	-7919	-8490
	Vehicle Cost HIGH	0	0	-567	-1009	-4864	-5231	-5814	-5749	-6306	-6778	-6931	-7379	-7698
H2 Series HEV PHEV30	Vehicle Cost LOW	0	0	-1616	-2781	-5776	-7179	-9238	-8779	-10681	-12261	-10822	-12219	-13346
	Vehicle Cost AVG	0	0	-1425	-2451	-7355	-8382	-9849	-10133	-11435	-12554	-12345	-13513	-14464
	Vehicle Cost HIGH	0	0	-1145	-1969	-8519	-9221	-10358	-10346	-11375	-12178	-12064	-12899	-13402
H2 Series HEV PHEV40	Vehicle Cost LOW	0	0	-1988	-3399	-6980	-8648	-11192	-10760	-13037	-14933	-13432	-15066	-16335
	Vehicle Cost AVG	0	0	-1738	-2972	-8729	-9935	-11730	-12193	-13705	-15000	-14566	-15927	-16994
	Vehicle Cost HIGH	0	0	-1385	-2371	-9270	-10147	-11600	-11529	-12826	-13857	-13534	-14585	-15227
E85 Split HEV	Vehicle Cost LOW	0	0	-268	-495	-779	-1025	-1414	-719	-1147	-1617	-498	-957	-1528
	Vehicle Cost AVG	0	0	-261	-482	-685	-885	-1193	-956	-1310	-1700	-994	-1371	-1841
	Vehicle Cost HIGH	0	0	-204	-378	-1114	-1264	-1512	-1294	-1534	-1802	-1570	-1803	-2090

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		Midsize												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
E85 Split HEV PHEV10	Vehicle Cost LOW	0	0	-370	-747	-1896	-2310	-2947	-2418	-3044	-3644	-2693	-3202	-3796
	Vehicle Cost AVG	0	0	-331	-669	-1736	-2044	-2505	-2315	-2773	-3230	-2515	-2942	-3450
	Vehicle Cost HIGH	0	0	-268	-544	-2718	-2931	-3291	-3014	-3353	-3661	-3435	-3737	-3978
E85 Split HEV PHEV20	Vehicle Cost LOW	0	0	-539	-1109	-2728	-3296	-4258	-3782	-4641	-5476	-4502	-5189	-5864
	Vehicle Cost AVG	0	0	-476	-976	-2687	-3099	-3780	-3743	-4331	-4920	-4048	-4621	-5194
	Vehicle Cost HIGH	0	0	-383	-782	-3171	-3488	-4063	-3777	-4282	-4756	-4373	-4837	-5177
E85 Series HEV PHEV30	Vehicle Cost LOW	0	0	-1293	-2361	-5540	-6727	-8760	-8412	-10205	-11776	-10201	-11646	-12826
	Vehicle Cost AVG	0	0	-1140	-2082	-6073	-6946	-8401	-8458	-9694	-10816	-9192	-10405	-11405
	Vehicle Cost HIGH	0	0	-919	-1679	-7056	-7667	-8808	-8590	-9589	-10410	-9741	-10618	-11172
E85 Series HEV PHEV40	Vehicle Cost LOW	0	0	-1500	-2787	-6685	-8080	-10588	-10299	-12448	-14326	-12692	-14377	-15696
	Vehicle Cost AVG	0	0	-1317	-2442	-7390	-8405	-10182	-10434	-11872	-13165	-11315	-12723	-13837
	Vehicle Cost HIGH	0	0	-1057	-1958	-7773	-8518	-9970	-9718	-10969	-12014	-11134	-12233	-12914
FC HEV	Vehicle Cost LOW	0	0	-1814	-2918	-638	-2748	-4189	-5633	-6704	-7710	-7513	-8175	-8862
	Vehicle Cost AVG	0	0	-2695	-4413	-5363	-7271	-8589	-8949	-10228	-11307	-12091	-12736	-13356
	Vehicle Cost HIGH	0	0	-2220	-3637	-6898	-8042	-8862	-8639	-9458	-10167	-10750	-11157	-11542
FC HEV PHEV10	Vehicle Cost LOW	0	0	-1890	-3078	-2209	-3800	-5296	-6367	-7682	-8670	-8328	-9098	-9934
	Vehicle Cost AVG	0	0	-2496	-4211	-5947	-7461	-8830	-9138	-10532	-11508	-12127	-12859	-13600
	Vehicle Cost HIGH	0	0	-2055	-3467	-7814	-8717	-9584	-9345	-10229	-10833	-11330	-11800	-12190
FC HEV PHEV20	Vehicle Cost LOW	0	0	-2303	-3817	-3315	-5354	-7124	-8293	-9943	-11247	-10839	-11770	-12757
	Vehicle Cost AVG	0	0	-2873	-4866	-7271	-9087	-10645	-11150	-12742	-13922	-14339	-15203	-16070
	Vehicle Cost HIGH	0	0	-2342	-3974	-8563	-9717	-10798	-10520	-11654	-12499	-12780	-13426	-13963
FC HEV PHEV30	Vehicle Cost LOW	0	0	-2472	-4001	-5015	-7036	-9302	-10537	-12529	-14205	-13717	-15049	-16177
	Vehicle Cost AVG	0	0	-3023	-5006	-8881	-10763	-12706	-13331	-15176	-16714	-16885	-18099	-19115
	Vehicle Cost HIGH	0	0	-2473	-4094	-11367	-12524	-13869	-13613	-14909	-15923	-16119	-16975	-17530
FC HEV PHEV40	Vehicle Cost LOW	0	0	-2979	-4749	-6241	-8570	-11280	-12527	-14893	-16792	-16264	-17822	-19045
	Vehicle Cost AVG	0	0	-3471	-5683	-10302	-12400	-14662	-15424	-17482	-19200	-19170	-20570	-21672
	Vehicle Cost HIGH	0	0	-2820	-4618	-12217	-13581	-15229	-14887	-16468	-17665	-17643	-18744	-19397
EV	Vehicle Cost LOW	0	0	-4222	-7605	-17787	-21531	-29222	-28521	-34649	-38982	-37301	-41208	-43354
	Vehicle Cost AVG	0	0	-3570	-6432	-19568	-22139	-27356	-29346	-32818	-35317	-31659	-34854	-36623
	Vehicle Cost HIGH	0	0	-2776	-5000	-13611	-15922	-20877	-25816	-28035	-29577	-26388	-28799	-29972

Percentage decrease cost per powertrain

		Midsize												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Conv	Vehicle Cost LOW	0.0%	0.0%	-0.3%	-0.2%	0.3%	0.1%	-0.1%	5.7%	5.5%	5.1%	8.4%	8.1%	7.5%
	Vehicle Cost AVG	0.0%	0.0%	-0.3%	-0.2%	5.8%	5.6%	5.4%	8.0%	7.6%	7.3%	8.3%	7.9%	7.4%
	Vehicle Cost HIGH	0.0%	0.0%	-0.3%	-0.2%	1.3%	1.2%	1.0%	4.2%	3.9%	3.6%	4.4%	4.0%	3.5%
CI Conv	Vehicle Cost LOW	0.0%	0.0%	-0.5%	-0.6%	-1.0%	-1.4%	-1.7%	3.4%	3.0%	2.4%	3.6%	3.3%	2.5%
	Vehicle Cost AVG	0.0%	0.0%	-0.4%	-0.5%	4.4%	4.1%	3.9%	4.4%	4.1%	3.6%	4.2%	3.9%	3.2%
	Vehicle Cost HIGH	0.0%	0.0%	-0.4%	-0.4%	0.3%	0.0%	-0.1%	2.1%	1.8%	1.5%	1.5%	1.4%	0.8%
H2 Conv	Vehicle Cost LOW	0.0%	0.0%	-0.3%	-0.2%	-0.4%	-0.5%	-0.5%	4.7%	4.6%	4.6%	6.4%	6.4%	6.0%
	Vehicle Cost AVG	0.0%	0.0%	-0.2%	-0.2%	-1.8%	-1.9%	-1.8%	-2.2%	-2.3%	-2.4%	-10.0%	-10.0%	-10.3%
	Vehicle Cost HIGH	0.0%	0.0%	-0.2%	-0.2%	-6.6%	-6.7%	-6.7%	-5.6%	-5.8%	-5.9%	-8.5%	-8.6%	-9.0%
E85 Conv	Vehicle Cost LOW	0.0%	0.0%	-0.3%	-0.3%	0.3%	0.1%	-0.1%	5.8%	5.4%	5.1%	8.4%	8.1%	7.4%
	Vehicle Cost AVG	0.0%	0.0%	-0.3%	-0.3%	5.8%	5.6%	5.4%	8.0%	7.5%	7.2%	8.3%	7.9%	7.3%
	Vehicle Cost HIGH	0.0%	0.0%	-0.3%	-0.3%	1.3%	1.1%	1.0%	4.2%	3.8%	3.5%	4.3%	4.0%	3.4%
SI Split HEV	Vehicle Cost LOW	0.0%	0.0%	-1.4%	-2.6%	-4.3%	-5.8%	-7.4%	-3.6%	-6.2%	-8.9%	-2.6%	-5.3%	-8.4%
	Vehicle Cost AVG	0.0%	0.0%	-1.3%	-2.6%	-3.8%	-5.0%	-6.3%	-5.0%	-7.1%	-9.4%	-5.4%	-7.6%	-10.1%
	Vehicle Cost HIGH	0.0%	0.0%	-1.1%	-2.1%	-6.3%	-7.3%	-8.3%	-7.1%	-8.6%	-10.2%	-8.8%	-10.2%	-11.8%
SI Split HEV PHEV10	Vehicle Cost LOW	0.0%	0.0%	-1.8%	-3.5%	-9.0%	-10.9%	-14.0%	-11.5%	-14.4%	-17.2%	-12.8%	-15.2%	-18.0%
	Vehicle Cost AVG	0.0%	0.0%	-1.6%	-3.3%	-8.5%	-10.0%	-12.3%	-11.4%	-13.6%	-15.8%	-12.3%	-14.4%	-16.9%
	Vehicle Cost HIGH	0.0%	0.0%	-1.4%	-2.7%	-13.7%	-14.8%	-16.6%	-15.2%	-16.9%	-18.5%	-17.3%	-18.9%	-20.1%
SI Split HEV PHEV20	Vehicle Cost LOW	0.0%	0.0%	-2.3%	-4.8%	-11.7%	-14.3%	-18.2%	-16.2%	-19.8%	-23.4%	-19.3%	-22.2%	-25.1%
	Vehicle Cost AVG	0.0%	0.0%	-2.2%	-4.4%	-12.1%	-14.0%	-16.9%	-16.8%	-19.4%	-22.1%	-18.2%	-20.7%	-23.3%
	Vehicle Cost HIGH	0.0%	0.0%	-1.8%	-3.7%	-14.9%	-16.5%	-19.1%	-17.7%	-20.1%	-22.4%	-20.6%	-22.7%	-24.3%
SI Series HEV PHEV30	Vehicle Cost LOW	0.0%	0.0%	-4.0%	-7.1%	-16.8%	-20.4%	-26.5%	-25.5%	-30.9%	-35.7%	-30.9%	-35.3%	-38.9%
	Vehicle Cost AVG	0.0%	0.0%	-3.7%	-6.8%	-19.7%	-22.6%	-27.3%	-27.5%	-31.5%	-35.1%	-29.9%	-33.8%	-37.0%
	Vehicle Cost HIGH	0.0%	0.0%	-3.3%	-6.0%	-25.1%	-27.2%	-31.3%	-30.5%	-34.1%	-37.0%	-34.6%	-37.7%	-39.7%
SI Series HEV PHEV40	Vehicle Cost LOW	0.0%	0.0%	-4.3%	-7.7%	-18.5%	-22.3%	-29.3%	-28.5%	-34.4%	-39.6%	-35.1%	-39.7%	-43.3%
	Vehicle Cost AVG	0.0%	0.0%	-4.0%	-7.3%	-22.1%	-25.1%	-30.4%	-31.2%	-35.5%	-39.3%	-33.8%	-38.0%	-41.3%
	Vehicle Cost HIGH	0.0%	0.0%	-3.6%	-6.5%	-25.7%	-28.2%	-33.0%	-32.2%	-36.3%	-39.7%	-36.8%	-40.5%	-42.7%
CI Split HEV	Vehicle Cost LOW	0.0%	0.0%	-1.5%	-3.3%	-5.2%	-6.8%	-8.8%	-5.4%	-7.8%	-10.5%	-6.0%	-8.3%	-11.2%
	Vehicle Cost AVG	0.0%	0.0%	-1.4%	-3.2%	-4.9%	-6.2%	-7.8%	-7.6%	-9.5%	-11.7%	-8.2%	-10.1%	-12.4%
	Vehicle Cost HIGH	0.0%	0.0%	-1.2%	-2.5%	-7.1%	-8.1%	-9.3%	-8.9%	-10.3%	-11.7%	-11.0%	-12.1%	-13.5%

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		Midsize												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
CI Split HEV PHEV10	Vehicle Cost LOW	0.0%	0.0%	-1.8%	-3.6%	-9.6%	-11.5%	-14.5%	-12.3%	-15.1%	-18.1%	-14.7%	-17.2%	-19.9%
	Vehicle Cost AVG	0.0%	0.0%	-1.7%	-3.3%	-9.2%	-10.7%	-13.0%	-12.9%	-15.0%	-17.3%	-14.1%	-16.1%	-18.6%
	Vehicle Cost HIGH	0.0%	0.0%	-1.4%	-2.8%	-14.5%	-15.6%	-17.4%	-16.6%	-18.2%	-19.7%	-19.0%	-20.4%	-21.6%
CI Split HEV PHEV20	Vehicle Cost LOW	0.0%	0.0%	-2.3%	-4.5%	-12.0%	-21.7%	-18.4%	-16.6%	-20.2%	-23.6%	-20.6%	-23.5%	-26.3%
	Vehicle Cost AVG	0.0%	0.0%	-2.2%	-4.1%	-12.4%	-19.1%	-17.2%	-17.8%	-20.4%	-22.9%	-19.4%	-21.8%	-24.3%
	Vehicle Cost HIGH	0.0%	0.0%	-1.8%	-3.5%	-15.6%	-21.6%	-19.6%	-18.8%	-21.2%	-23.3%	-21.9%	-24.0%	-25.5%
CI Series HEV PHEV30	Vehicle Cost LOW	0.0%	0.0%	-3.8%	-6.9%	-16.6%	-20.0%	-26.0%	-25.1%	-30.2%	-34.8%	-31.1%	-35.2%	-38.6%
	Vehicle Cost AVG	0.0%	0.0%	-3.5%	-6.5%	-19.2%	-21.9%	-26.5%	-27.4%	-31.1%	-34.6%	-29.8%	-33.5%	-36.6%
	Vehicle Cost HIGH	0.0%	0.0%	-3.1%	-5.7%	-24.5%	-26.6%	-30.5%	-30.1%	-33.5%	-36.3%	-34.3%	-37.2%	-39.0%
CI Series HEV PHEV40	Vehicle Cost LOW	0.0%	0.0%	-4.2%	-7.5%	-18.4%	-21.9%	-28.7%	-28.0%	-33.7%	-38.7%	-35.1%	-39.6%	-43.0%
	Vehicle Cost AVG	0.0%	0.0%	-3.9%	-7.1%	-21.6%	-24.4%	-29.6%	-31.0%	-35.0%	-38.7%	-33.7%	-37.6%	-40.8%
	Vehicle Cost HIGH	0.0%	0.0%	-3.5%	-6.3%	-25.2%	-27.5%	-32.2%	-31.7%	-35.7%	-39.0%	-36.5%	-39.9%	-42.1%
H2 Split HEV	Vehicle Cost LOW	0.0%	0.0%	-2.0%	-3.6%	-5.2%	-7.0%	-9.0%	-5.5%	-8.2%	-10.8%	-5.6%	-7.9%	-10.6%
	Vehicle Cost AVG	0.0%	0.0%	-1.7%	-3.0%	-9.2%	-10.4%	-11.7%	-12.3%	-14.1%	-15.9%	-19.3%	-20.9%	-22.8%
	Vehicle Cost HIGH	0.0%	0.0%	-1.4%	-2.4%	-12.6%	-13.6%	-14.6%	-15.0%	-16.3%	-17.5%	-19.2%	-20.2%	-21.4%
H2 Split HEV PHEV10	Vehicle Cost LOW	0.0%	0.0%	-2.7%	-4.8%	-10.2%	-12.7%	-16.1%	-13.2%	-16.8%	-19.8%	-15.6%	-18.1%	-20.9%
	Vehicle Cost AVG	0.0%	0.0%	-2.2%	-3.9%	-13.1%	-14.8%	-17.1%	-17.1%	-19.5%	-21.6%	-24.1%	-26.0%	-28.2%
	Vehicle Cost HIGH	0.0%	0.0%	-1.9%	-3.4%	-19.4%	-20.6%	-22.2%	-22.1%	-23.7%	-25.1%	-26.5%	-27.7%	-28.7%
H2 Split HEV PHEV20	Vehicle Cost LOW	0.0%	0.0%	-3.4%	-6.0%	-12.8%	-15.9%	-20.3%	-17.8%	-22.1%	-25.8%	-21.9%	-24.9%	-27.8%
	Vehicle Cost AVG	0.0%	0.0%	-2.8%	-4.9%	-15.9%	-18.0%	-20.9%	-21.5%	-24.2%	-26.7%	-28.4%	-30.8%	-33.0%
	Vehicle Cost HIGH	0.0%	0.0%	-2.4%	-4.2%	-20.3%	-21.8%	-24.2%	-23.9%	-26.3%	-28.2%	-28.9%	-30.7%	-32.1%
H2 Series HEV PHEV30	Vehicle Cost LOW	0.0%	0.0%	-4.9%	-8.4%	-17.5%	-21.7%	-28.0%	-26.6%	-32.3%	-37.1%	-32.7%	-37.0%	-40.4%
	Vehicle Cost AVG	0.0%	0.0%	-4.2%	-7.3%	-21.8%	-24.8%	-29.1%	-30.0%	-33.8%	-37.1%	-36.5%	-40.0%	-42.8%
	Vehicle Cost HIGH	0.0%	0.0%	-3.7%	-6.4%	-27.9%	-30.2%	-33.9%	-33.9%	-37.2%	-39.9%	-39.5%	-42.2%	-43.9%
H2 Series HEV PHEV40	Vehicle Cost LOW	0.0%	0.0%	-5.5%	-9.3%	-19.2%	-23.8%	-30.8%	-29.6%	-35.8%	-41.1%	-36.9%	-41.4%	-44.9%
	Vehicle Cost AVG	0.0%	0.0%	-4.7%	-8.1%	-23.8%	-27.1%	-32.0%	-33.3%	-37.4%	-41.0%	-39.8%	-43.5%	-46.4%
	Vehicle Cost HIGH	0.0%	0.0%	-4.2%	-7.2%	-28.3%	-31.0%	-35.5%	-35.3%	-39.2%	-42.4%	-41.4%	-44.6%	-46.6%
E85 Split HEV	Vehicle Cost LOW	0.0%	0.0%	-1.5%	-2.7%	-4.2%	-5.6%	-7.7%	-3.9%	-6.2%	-8.8%	-2.7%	-5.2%	-8.3%
	Vehicle Cost AVG	0.0%	0.0%	-1.4%	-2.6%	-3.8%	-4.8%	-6.5%	-5.2%	-7.2%	-9.3%	-5.4%	-7.5%	-10.1%
	Vehicle Cost HIGH	0.0%	0.0%	-1.2%	-2.1%	-6.3%	-7.1%	-8.5%	-7.3%	-8.6%	-10.2%	-8.8%	-10.2%	-11.8%

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		Midsize												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
E85 Split HEV PHEV10	Vehicle Cost LOW	0.0%	0.0%	-1.8%	-3.5%	-9.0%	-10.9%	-13.9%	-11.4%	-14.4%	-17.2%	-12.7%	-15.2%	-18.0%
	Vehicle Cost AVG	0.0%	0.0%	-1.6%	-3.3%	-8.5%	-10.0%	-12.3%	-11.3%	-13.6%	-15.8%	-12.3%	-14.4%	-16.9%
	Vehicle Cost HIGH	0.0%	0.0%	-1.4%	-2.7%	-13.7%	-14.8%	-16.6%	-15.2%	-16.9%	-18.5%	-17.3%	-18.9%	-20.1%
E85 Split HEV PHEV20	Vehicle Cost LOW	0.0%	0.0%	-2.3%	-4.7%	-11.6%	-14.1%	-18.2%	-16.2%	-19.8%	-23.4%	-19.2%	-22.2%	-25.0%
	Vehicle Cost AVG	0.0%	0.0%	-2.1%	-4.4%	-12.0%	-13.9%	-16.9%	-16.8%	-19.4%	-22.0%	-18.1%	-20.7%	-23.3%
	Vehicle Cost HIGH	0.0%	0.0%	-1.8%	-3.7%	-14.9%	-16.4%	-19.1%	-17.8%	-20.1%	-22.4%	-20.6%	-22.7%	-24.3%
E85 Series HEV PHEV30	Vehicle Cost LOW	0.0%	0.0%	-3.9%	-7.1%	-16.8%	-20.4%	-26.5%	-25.5%	-30.9%	-35.7%	-30.9%	-35.3%	-38.8%
	Vehicle Cost AVG	0.0%	0.0%	-3.7%	-6.8%	-19.7%	-22.6%	-27.3%	-27.5%	-31.5%	-35.1%	-29.8%	-33.8%	-37.0%
	Vehicle Cost HIGH	0.0%	0.0%	-3.3%	-6.0%	-25.1%	-27.2%	-31.3%	-30.5%	-34.1%	-37.0%	-34.6%	-37.7%	-39.7%
E85 Series HEV PHEV40	Vehicle Cost LOW	0.0%	0.0%	-4.1%	-7.7%	-18.4%	-22.3%	-29.2%	-28.4%	-34.3%	-39.5%	-35.0%	-39.6%	-43.3%
	Vehicle Cost AVG	0.0%	0.0%	-3.9%	-7.3%	-22.0%	-25.1%	-30.4%	-31.1%	-35.4%	-39.3%	-33.7%	-37.9%	-41.3%
	Vehicle Cost HIGH	0.0%	0.0%	-3.5%	-6.5%	-25.7%	-28.2%	-33.0%	-32.1%	-36.3%	-39.7%	-36.8%	-40.4%	-42.7%
FC HEV	Vehicle Cost LOW	0.0%	0.0%	-7.5%	-12.1%	-2.7%	-11.4%	-17.4%	-23.4%	-27.8%	-32.0%	-31.2%	-34.0%	-36.8%
	Vehicle Cost AVG	0.0%	0.0%	-9.4%	-15.5%	-18.8%	-25.5%	-30.1%	-31.3%	-35.8%	-39.6%	-42.3%	-44.6%	-46.8%
	Vehicle Cost HIGH	0.0%	0.0%	-8.4%	-13.8%	-26.2%	-30.6%	-33.7%	-32.9%	-36.0%	-38.7%	-40.9%	-42.4%	-43.9%
FC HEV PHEV10	Vehicle Cost LOW	0.0%	0.0%	-7.3%	-11.9%	-8.5%	-14.7%	-20.5%	-24.6%	-29.7%	-33.6%	-32.2%	-35.2%	-38.5%
	Vehicle Cost AVG	0.0%	0.0%	-8.5%	-14.3%	-20.2%	-25.4%	-30.0%	-31.1%	-35.8%	-39.1%	-41.2%	-43.7%	-46.2%
	Vehicle Cost HIGH	0.0%	0.0%	-7.6%	-12.8%	-28.9%	-32.3%	-35.5%	-34.6%	-37.9%	-40.1%	-41.9%	-43.7%	-45.1%
FC HEV PHEV20	Vehicle Cost LOW	0.0%	0.0%	-8.0%	-13.2%	-11.5%	-18.5%	-24.7%	-28.7%	-34.4%	-39.0%	-37.5%	-40.8%	-44.2%
	Vehicle Cost AVG	0.0%	0.0%	-9.0%	-15.2%	-22.7%	-28.3%	-33.2%	-34.8%	-39.8%	-43.4%	-44.7%	-47.4%	-50.1%
	Vehicle Cost HIGH	0.0%	0.0%	-8.1%	-13.7%	-29.5%	-33.5%	-37.2%	-36.2%	-40.1%	-43.0%	-44.0%	-46.2%	-48.1%
FC HEV PHEV30	Vehicle Cost LOW	0.0%	0.0%	-7.2%	-11.7%	-14.7%	-20.6%	-27.2%	-30.8%	-36.7%	-41.6%	-40.2%	-44.1%	-47.4%
	Vehicle Cost AVG	0.0%	0.0%	-8.2%	-13.6%	-24.2%	-29.3%	-34.6%	-36.3%	-41.3%	-45.5%	-46.0%	-49.3%	-52.0%
	Vehicle Cost HIGH	0.0%	0.0%	-7.5%	-12.4%	-34.5%	-38.0%	-42.0%	-41.3%	-45.2%	-48.3%	-48.9%	-51.5%	-53.1%
FC HEV PHEV40	Vehicle Cost LOW	0.0%	0.0%	-8.0%	-12.7%	-16.7%	-22.9%	-30.2%	-33.5%	-39.9%	-45.0%	-43.5%	-47.7%	-51.0%
	Vehicle Cost AVG	0.0%	0.0%	-8.8%	-14.4%	-26.0%	-31.4%	-37.1%	-39.0%	-44.2%	-48.5%	-48.5%	-52.0%	-54.8%
	Vehicle Cost HIGH	0.0%	0.0%	-8.0%	-13.1%	-34.7%	-38.6%	-43.3%	-42.3%	-46.8%	-50.2%	-50.2%	-53.3%	-55.2%
EV	Vehicle Cost LOW	0.0%	0.0%	-6.7%	-12.0%	-28.0%	-34.0%	-46.1%	-45.0%	-54.6%	-61.5%	-58.8%	-65.0%	-68.4%
	Vehicle Cost AVG	0.0%	0.0%	-6.4%	-11.6%	-35.3%	-39.9%	-49.3%	-52.9%	-59.2%	-63.7%	-57.1%	-62.8%	-66.0%
	Vehicle Cost HIGH	0.0%	0.0%	-6.0%	-10.7%	-29.2%	-34.2%	-44.8%	-55.4%	-60.2%	-63.5%	-56.7%	-61.8%	-64.4%

Small SUV Class

Incremental Cost versus the Conventional 2010 Reference

		Small_SUV												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Conv	Vehicle Cost LOW	0	0	99	49	11	91	-641	999	191	87	1356	547	416
	Vehicle Cost AVG	0	0	99	49	826	908	129	1359	484	372	1299	495	368
	Vehicle Cost HIGH	0	0	99	49	146	226	-475	731	-1	-110	650	-15	-143
CI Conv	Vehicle Cost LOW	1348	1348	1464	1384	1123	1212	1050	2041	1857	1725	1965	1877	1736
	Vehicle Cost AVG	1250	1250	1369	1296	1926	2022	1869	2101	1931	1816	1951	1875	1754
	Vehicle Cost HIGH	981	981	1104	1043	974	1080	941	1461	1302	1201	1254	1188	1084
H2 Conv	Vehicle Cost LOW	-529	-529	-1074	-1100	-1280	-1169	-1283	-412	-538	-583	-289	-329	-381
	Vehicle Cost AVG	2489	2489	1907	1880	1450	1562	1449	1534	1406	1359	105	64	11
	Vehicle Cost HIGH	1928	1928	1382	1355	102	209	91	425	286	229	-180	-232	-299
E85 Conv	Vehicle Cost LOW	-46	-46	69	-537	-29	-518	-669	979	165	66	1329	521	398
	Vehicle Cost AVG	-45	-45	70	-566	790	252	103	1338	456	350	1274	470	351
	Vehicle Cost HIGH	-46	-46	69	-537	106	-353	-504	706	-31	-134	620	-43	-163
SI Split HEV	Vehicle Cost LOW	3678	3678	3395	3136	2807	2578	2116	2771	2332	1731	2965	2466	1855
	Vehicle Cost AVG	3502	3502	3225	2972	2630	2447	2079	2325	1958	1456	2257	1842	1339
	Vehicle Cost HIGH	2300	2300	2083	1883	1070	922	631	827	570	221	502	240	-70
SI Split HEV PHEV10	Vehicle Cost LOW	7186	7186	6672	6219	4925	4428	3659	4247	3440	2835	3834	3237	2601
	Vehicle Cost AVG	6324	6324	5864	5457	4110	3739	3177	3440	2845	2396	3170	2671	2129
	Vehicle Cost HIGH	4881	4881	4509	4178	1687	1431	1019	1303	871	526	796	421	156
SI Split HEV PHEV20	Vehicle Cost LOW	9809	9809	9113	8475	6601	5921	4810	5336	4234	3283	4407	3566	2806
	Vehicle Cost AVG	8522	8522	7908	7346	5220	4728	3944	4004	3264	2591	3631	2931	2288
	Vehicle Cost HIGH	6557	6557	6067	5617	2863	2479	1811	2156	1479	950	1423	837	463
SI Series HEV PHEV30	Vehicle Cost LOW	20304	20304	18589	17315	13930	12523	10220	10755	8504	6797	8609	6866	5587
	Vehicle Cost AVG	17748	17748	16239	15116	10689	9656	8008	8074	6523	5309	7196	5736	4651
	Vehicle Cost HIGH	14056	14056	12843	11939	6107	5380	4087	4411	3156	2256	3084	2012	1411
SI Series HEV PHEV40	Vehicle Cost LOW	24013	24013	21985	20436	16270	14638	11783	12300	9612	7584	9478	7436	6017
	Vehicle Cost AVG	20880	20880	19106	17749	12274	11087	9064	8943	7144	5748	7905	6199	5002
	Vehicle Cost HIGH	16470	16470	15052	13966	7652	6781	5126	5523	3955	2827	3909	2558	1825
CI Split HEV	Vehicle Cost LOW	6151	6151	5848	5529	4997	4642	4163	4830	4304	3707	4704	4179	3525
	Vehicle Cost AVG	5929	5929	5637	5329	4744	4464	4086	4127	3704	3226	3989	3565	3040
	Vehicle Cost HIGH	4339	4339	4115	3880	2824	2612	2330	2390	2101	1782	1933	1684	1384

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		Small_SUV												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
CI Split HEV PHEV10	Vehicle Cost LOW	9783	9783	9222	8721	7175	6648	5866	6376	5582	4865	5660	5043	4331
	Vehicle Cost AVG	8837	8837	8335	7887	6308	5914	5345	5352	4784	4250	5019	4512	3911
	Vehicle Cost HIGH	7070	7070	6669	6308	3435	3166	2735	2903	2463	2093	2292	1911	1638
CI Split HEV PHEV20	Vehicle Cost LOW	12525	12525	11780	11077	8927	8203	7015	7540	6371	5365	6246	5368	4559
	Vehicle Cost AVG	11133	11133	10478	9859	7471	6944	6101	5966	5186	4480	5491	4767	4088
	Vehicle Cost HIGH	8821	8821	8303	7810	4654	4257	3558	3792	3091	2540	2940	2345	1961
CI Series HEV PHEV30	Vehicle Cost LOW	22987	22987	21217	19899	16199	14758	12361	12900	10580	8812	10367	8583	7275
	Vehicle Cost AVG	20309	20309	18755	17594	12891	11830	10111	9951	8368	7120	8977	7492	6393
	Vehicle Cost HIGH	16253	16253	15012	14082	7907	7170	5831	6058	4772	3851	4598	3510	2906
CI Series HEV PHEV40	Vehicle Cost LOW	26833	26833	24745	23122	18641	16960	14009	14498	11724	9645	11270	9166	7719
	Vehicle Cost AVG	23557	23557	21732	20313	14546	13320	11225	10848	9005	7584	9712	7966	6753
	Vehicle Cost HIGH	18753	18753	17302	16173	9513	8624	6923	7203	5599	4453	5452	4072	3336
H2 Split HEV	Vehicle Cost LOW	3627	3627	3236	2913	2613	2196	1783	2451	1915	1360	2410	1933	1396
	Vehicle Cost AVG	6459	6459	6076	5760	4341	4017	3695	3645	3211	2765	2128	1741	1307
	Vehicle Cost HIGH	4635	4635	4341	4097	2000	1749	1501	1454	1154	858	554	325	74
H2 Split HEV PHEV10	Vehicle Cost LOW	7507	7507	6736	6199	4947	4312	3482	4094	3203	2533	3476	2875	2220
	Vehicle Cost AVG	9618	9618	8924	8441	6017	5545	4937	4937	4282	3783	3223	2723	2167
	Vehicle Cost HIGH	7527	7527	6965	6573	2735	2430	2013	2030	1587	1244	968	616	372
H2 Split HEV PHEV20	Vehicle Cost LOW	10170	10170	9174	8445	6667	5802	4626	5194	3978	3009	4055	3191	2432
	Vehicle Cost AVG	11848	11848	10966	10321	7162	6533	5701	5508	4687	4006	3690	2972	2332
	Vehicle Cost HIGH	9228	9228	8522	8007	3920	3469	2791	2883	2182	1660	1587	1022	672
H2 Series HEV PHEV30	Vehicle Cost LOW	20313	20313	18296	16899	13695	12091	9754	10389	8042	6318	7991	6301	5064
	Vehicle Cost AVG	20736	20736	18962	17731	12387	11215	9550	9374	7770	6555	7026	5615	4571
	Vehicle Cost HIGH	16439	16439	15018	14029	7020	6216	4923	5034	3758	2873	3141	2116	1553
H2 Series HEV PHEV40	Vehicle Cost LOW	24071	24071	21660	19997	16046	14174	11307	11942	9130	7089	8839	6862	5483
	Vehicle Cost AVG	23906	23906	21801	20343	13975	12621	10597	10242	8375	6983	7717	6071	4912
	Vehicle Cost HIGH	18879	18879	17203	16039	8570	7591	5952	6145	4541	3430	3950	2658	1958
E85 Split HEV	Vehicle Cost LOW	3737	3737	3434	3157	2829	2621	2157	2878	2327	1751	2989	2531	1876
	Vehicle Cost AVG	3561	3561	3264	2994	2652	2485	2116	2419	1957	1477	2279	1900	1360
	Vehicle Cost HIGH	2351	2351	2116	1904	1089	956	664	895	570	239	521	282	-52

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		Small_SUV												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
E85 Split HEV PHEV10	Vehicle Cost LOW	7211	7211	6700	6243	4949	4452	3684	4273	3463	2859	3859	3294	2626
	Vehicle Cost AVG	6349	6349	5892	5482	4133	3763	3201	3466	2868	2420	3193	2723	2153
	Vehicle Cost HIGH	4904	4904	4534	4200	1706	1451	1038	1322	889	544	814	443	173
E85 Split HEV PHEV20	Vehicle Cost LOW	9839	9839	9140	8502	6629	5948	4834	5361	4258	3334	4433	3591	2832
	Vehicle Cost AVG	8551	8551	7935	7372	5246	4753	3967	4028	3288	2638	3657	2955	2312
	Vehicle Cost HIGH	6583	6583	6091	5640	2883	2500	1830	2175	1497	973	1442	855	481
E85 Series HEV PHEV30	Vehicle Cost LOW	20332	20332	18634	17352	13952	12549	10247	10781	8532	6822	8636	6892	5615
	Vehicle Cost AVG	17776	17776	16281	15151	10711	9681	8033	8100	6550	5334	7222	5760	4678
	Vehicle Cost HIGH	14082	14082	12880	11969	6125	5401	4108	4432	3176	2275	3104	2030	1430
E85 Series HEV PHEV40	Vehicle Cost LOW	24037	24037	22038	20475	16300	14668	11814	12334	9638	7615	9510	7463	6043
	Vehicle Cost AVG	20904	20904	19155	17785	12301	11114	9092	8974	7170	5778	7935	6226	5026
	Vehicle Cost HIGH	16493	16493	15094	13998	7676	6804	5150	5548	3975	2849	3934	2578	1843
FC HEV	Vehicle Cost LOW	10269	10269	8253	6882	9239	7098	5595	3917	2657	1611	1821	1062	320
	Vehicle Cost AVG	15511	15511	12425	10306	9038	7062	5662	5342	3774	2530	1707	953	236
	Vehicle Cost HIGH	12256	12256	9718	7965	4205	3011	2140	2391	1400	601	-5	-484	-936
FC HEV PHEV10	Vehicle Cost LOW	12537	12537	10294	8905	10089	8073	6409	5182	3642	2344	2843	1880	955
	Vehicle Cost AVG	16710	16710	13681	11682	9763	7892	6374	6109	4427	3043	2587	1665	792
	Vehicle Cost HIGH	13240	13240	10743	9098	4343	3221	2247	2545	1460	600	224	-384	-878
FC HEV PHEV20	Vehicle Cost LOW	16019	16019	13235	11418	12216	9841	7766	6476	4507	2994	3528	2283	1263
	Vehicle Cost AVG	19755	19755	16229	13845	11226	9103	7301	6845	4908	3418	3150	1995	1045
	Vehicle Cost HIGH	15584	15584	12703	10756	5792	4428	3168	3548	2140	1098	940	66	-541
FC HEV PHEV30	Vehicle Cost LOW	22105	22105	18998	17218	16159	13839	11239	10052	7482	5654	6301	4650	3418
	Vehicle Cost AVG	25170	25170	21375	19037	14649	12503	10240	9805	7398	5677	5606	4089	2949
	Vehicle Cost HIGH	20131	20131	17035	15124	7063	5737	4177	4606	2900	1773	1672	576	-57
FC HEV PHEV40	Vehicle Cost LOW	26046	26046	22168	20026	18466	15769	12611	11492	8433	6379	7056	5124	3794
	Vehicle Cost AVG	28683	28683	24191	21559	16301	13880	11222	10687	7978	6121	6243	4487	3264
	Vehicle Cost HIGH	22848	22848	19214	17074	8623	7042	5097	5689	3606	2309	2431	1043	313
EV	Vehicle Cost LOW	57651	57651	51645	47253	35919	31409	22479	23970	16010	11166	13443	8431	6044
	Vehicle Cost AVG	48221	48221	43149	39438	24460	21359	15296	13435	8907	6114	10657	6559	4592
	Vehicle Cost HIGH	36925	36925	32986	30102	20447	17674	11938	6407	3535	1809	5755	2665	1355

Cost saving per powertrain

		Small_SUV												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Conv	Vehicle Cost LOW	0	0	99	49	11	91	-641	999	191	87	1356	547	416
	Vehicle Cost AVG	0	0	99	49	826	908	129	1359	484	372	1299	495	368
	Vehicle Cost HIGH	0	0	99	49	146	226	-475	731	-1	-110	650	-15	-143
CI Conv	Vehicle Cost LOW	0	0	116	37	-225	-135	-297	693	509	377	617	529	389
	Vehicle Cost AVG	0	0	119	45	676	771	619	851	681	565	701	625	504
	Vehicle Cost HIGH	0	0	124	62	-7	99	-40	480	321	220	273	207	103
H2 Conv	Vehicle Cost LOW	0	0	-545	-571	-751	-640	-754	117	-9	-54	240	200	148
	Vehicle Cost AVG	0	0	-582	-610	-1039	-927	-1040	-955	-1083	-1130	-2384	-2425	-2478
	Vehicle Cost HIGH	0	0	-546	-574	-1826	-1719	-1837	-1503	-1642	-1699	-2108	-2160	-2227
E85 Conv	Vehicle Cost LOW	0	0	115	-492	17	-472	-624	1025	211	111	1374	566	444
	Vehicle Cost AVG	0	0	115	-522	834	296	148	1383	500	395	1319	514	396
	Vehicle Cost HIGH	0	0	115	-492	151	-308	-459	752	14	-88	666	2	-117
SI Split HEV	Vehicle Cost LOW	0	0	-284	-543	-871	-1100	-1563	-908	-1347	-1948	-713	-1212	-1824
	Vehicle Cost AVG	0	0	-277	-530	-872	-1055	-1423	-1176	-1544	-2046	-1245	-1660	-2163
	Vehicle Cost HIGH	0	0	-217	-417	-1230	-1378	-1669	-1473	-1730	-2079	-1798	-2061	-2370
SI Split HEV PHEV10	Vehicle Cost LOW	0	0	-514	-967	-2261	-2758	-3527	-2939	-3746	-4351	-3352	-3949	-4585
	Vehicle Cost AVG	0	0	-460	-867	-2214	-2585	-3147	-2884	-3479	-3928	-3154	-3653	-4195
	Vehicle Cost HIGH	0	0	-372	-703	-3194	-3449	-3862	-3578	-4010	-4354	-4085	-4460	-4724
SI Split HEV PHEV20	Vehicle Cost LOW	0	0	-696	-1334	-3208	-3888	-4999	-4473	-5575	-6526	-5402	-6243	-7003
	Vehicle Cost AVG	0	0	-614	-1175	-3302	-3794	-4578	-4518	-5257	-5931	-4890	-5590	-6234
	Vehicle Cost HIGH	0	0	-490	-940	-3694	-4078	-4746	-4401	-5078	-5607	-5134	-5720	-6094
SI Series HEV PHEV30	Vehicle Cost LOW	0	0	-1716	-2989	-6374	-7781	-10084	-9549	-11800	-13507	-11695	-13438	-14717
	Vehicle Cost AVG	0	0	-1509	-2632	-7059	-8092	-9740	-9674	-11225	-12439	-10552	-12013	-13097
	Vehicle Cost HIGH	0	0	-1213	-2118	-7949	-8676	-9969	-9645	-10901	-11800	-10973	-12045	-12646
SI Series HEV PHEV40	Vehicle Cost LOW	0	0	-2029	-3577	-7743	-9375	-12230	-11713	-14401	-16430	-14536	-16578	-17996
	Vehicle Cost AVG	0	0	-1774	-3131	-8606	-9793	-11816	-11937	-13736	-15132	-12975	-14680	-15878
	Vehicle Cost HIGH	0	0	-1418	-2504	-8818	-9689	-11344	-10947	-12515	-13643	-12561	-13912	-14645
CI Split HEV	Vehicle Cost LOW	0	0	-303	-622	-1154	-1509	-1987	-1321	-1846	-2443	-1446	-1971	-2625
	Vehicle Cost AVG	0	0	-292	-600	-1186	-1465	-1843	-1802	-2226	-2704	-1940	-2364	-2889
	Vehicle Cost HIGH	0	0	-224	-459	-1515	-1727	-2009	-1949	-2238	-2557	-2406	-2655	-2955

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		Small_SUV												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
CI Split HEV PHEV10	Vehicle Cost LOW	0	0	-561	-1063	-2608	-3136	-3918	-3408	-4201	-4918	-4124	-4740	-5452
	Vehicle Cost AVG	0	0	-501	-950	-2529	-2923	-3491	-3485	-4053	-4586	-3817	-4324	-4925
	Vehicle Cost HIGH	0	0	-400	-762	-3635	-3904	-4335	-4167	-4607	-4977	-4778	-5159	-5432
CI Split HEV PHEV20	Vehicle Cost LOW	0	0	-745	-1447	-3597	-4322	-5510	-4985	-6154	-7160	-6279	-7157	-7965
	Vehicle Cost AVG	0	0	-655	-1274	-3662	-4190	-5032	-5167	-5948	-6653	-5642	-6366	-7045
	Vehicle Cost HIGH	0	0	-519	-1012	-4167	-4564	-5263	-5029	-5730	-6281	-5881	-6476	-6861
CI Series HEV PHEV30	Vehicle Cost LOW	0	0	-1770	-3089	-6788	-8229	-10626	-10088	-12408	-14176	-12620	-14405	-15713
	Vehicle Cost AVG	0	0	-1554	-2716	-7418	-8479	-10198	-10359	-11942	-13190	-11332	-12817	-13917
	Vehicle Cost HIGH	0	0	-1241	-2171	-8346	-9083	-10421	-10194	-11481	-12402	-11655	-12742	-13347
CI Series HEV PHEV40	Vehicle Cost LOW	0	0	-2088	-3712	-8192	-9873	-12824	-12336	-15109	-17188	-15563	-17668	-19114
	Vehicle Cost AVG	0	0	-1825	-3244	-9011	-10237	-12332	-12709	-14552	-15973	-13845	-15591	-16804
	Vehicle Cost HIGH	0	0	-1451	-2580	-9240	-10130	-11830	-11550	-13154	-14300	-13301	-14681	-15417
H2 Split HEV	Vehicle Cost LOW	0	0	-391	-714	-1014	-1431	-1844	-1176	-1712	-2267	-1218	-1694	-2231
	Vehicle Cost AVG	0	0	-383	-699	-2118	-2442	-2763	-2814	-3247	-3693	-4331	-4718	-5152
	Vehicle Cost HIGH	0	0	-294	-538	-2635	-2886	-3133	-3181	-3480	-3777	-4081	-4310	-4561
H2 Split HEV PHEV10	Vehicle Cost LOW	0	0	-771	-1308	-2560	-3195	-4025	-3413	-4304	-4974	-4031	-4631	-5287
	Vehicle Cost AVG	0	0	-693	-1176	-3601	-4072	-4680	-4681	-5336	-5835	-6395	-6895	-7451
	Vehicle Cost HIGH	0	0	-562	-953	-4792	-5097	-5514	-5497	-5940	-6283	-6559	-6911	-7155
H2 Split HEV PHEV20	Vehicle Cost LOW	0	0	-995	-1725	-3502	-4368	-5544	-4975	-6192	-7161	-6115	-6979	-7738
	Vehicle Cost AVG	0	0	-882	-1527	-4687	-5315	-6147	-6340	-7161	-7842	-8159	-8876	-9516
	Vehicle Cost HIGH	0	0	-707	-1222	-5308	-5759	-6437	-6345	-7046	-7568	-7642	-8206	-8557
H2 Series HEV PHEV30	Vehicle Cost LOW	0	0	-2017	-3415	-6618	-8222	-10559	-9924	-12271	-13995	-12322	-14012	-15249
	Vehicle Cost AVG	0	0	-1774	-3005	-8348	-9520	-11185	-11362	-12966	-14181	-13710	-15121	-16165
	Vehicle Cost HIGH	0	0	-1421	-2410	-9418	-10222	-11515	-11404	-12681	-13565	-13298	-14322	-14886
H2 Series HEV PHEV40	Vehicle Cost LOW	0	0	-2410	-4074	-8024	-9896	-12763	-12129	-14941	-16981	-15231	-17209	-18587
	Vehicle Cost AVG	0	0	-2106	-3563	-9931	-11285	-13309	-13664	-15531	-16923	-16189	-17836	-18994
	Vehicle Cost HIGH	0	0	-1677	-2840	-10309	-11289	-12927	-12734	-14339	-15450	-14929	-16221	-16922
E85 Split HEV	Vehicle Cost LOW	0	0	-303	-580	-909	-1117	-1580	-860	-1411	-1987	-749	-1206	-1861
	Vehicle Cost AVG	0	0	-297	-567	-910	-1077	-1446	-1142	-1604	-2084	-1282	-1661	-2202
	Vehicle Cost HIGH	0	0	-235	-447	-1262	-1395	-1687	-1456	-1781	-2112	-1830	-2069	-2403

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		Small_SUV												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
E85 Split HEV PHEV10	Vehicle Cost LOW	0	0	-511	-968	-2262	-2759	-3528	-2939	-3748	-4353	-3353	-3917	-4585
	Vehicle Cost AVG	0	0	-457	-867	-2216	-2586	-3148	-2883	-3481	-3929	-3156	-3626	-4196
	Vehicle Cost HIGH	0	0	-369	-703	-3198	-3453	-3865	-3581	-4015	-4359	-4089	-4461	-4730
E85 Split HEV PHEV20	Vehicle Cost LOW	0	0	-699	-1337	-3210	-3891	-5005	-4478	-5581	-6505	-5406	-6248	-7007
	Vehicle Cost AVG	0	0	-616	-1179	-3305	-3798	-4584	-4523	-5263	-5913	-4894	-5596	-6239
	Vehicle Cost HIGH	0	0	-492	-943	-3700	-4083	-4753	-4408	-5086	-5610	-5142	-5729	-6102
E85 Series HEV PHEV30	Vehicle Cost LOW	0	0	-1699	-2980	-6380	-7783	-10086	-9551	-11800	-13510	-11697	-13440	-14717
	Vehicle Cost AVG	0	0	-1495	-2625	-7065	-8094	-9743	-9676	-11226	-12442	-10554	-12016	-13098
	Vehicle Cost HIGH	0	0	-1202	-2112	-7956	-8680	-9973	-9650	-10906	-11806	-10978	-12051	-12652
E85 Series HEV PHEV40	Vehicle Cost LOW	0	0	-1999	-3562	-7737	-9369	-12223	-11703	-14399	-16422	-14527	-16574	-17994
	Vehicle Cost AVG	0	0	-1749	-3119	-8603	-9790	-11813	-11930	-13735	-15127	-12969	-14679	-15878
	Vehicle Cost HIGH	0	0	-1399	-2495	-8817	-9689	-11343	-10945	-12518	-13644	-12558	-13915	-14649
FC HEV	Vehicle Cost LOW	0	0	-2016	-3387	-1030	-3171	-4675	-6353	-7612	-8658	-8449	-9207	-9949
	Vehicle Cost AVG	0	0	-3086	-5205	-6474	-8450	-9849	-10169	-11738	-12982	-13804	-14559	-15275
	Vehicle Cost HIGH	0	0	-2539	-4291	-8051	-9246	-10116	-9865	-10857	-11655	-12261	-12740	-13193
FC HEV PHEV10	Vehicle Cost LOW	0	0	-2244	-3632	-2448	-4464	-6128	-7355	-8895	-10193	-9695	-10658	-11582
	Vehicle Cost AVG	0	0	-3029	-5028	-6947	-8817	-10336	-10601	-12283	-13667	-14123	-15045	-15918
	Vehicle Cost HIGH	0	0	-2496	-4142	-8897	-10019	-10992	-10695	-11780	-12640	-13015	-13624	-14117
FC HEV PHEV20	Vehicle Cost LOW	0	0	-2785	-4602	-3804	-6178	-8254	-9544	-11512	-13025	-12491	-13736	-14756
	Vehicle Cost AVG	0	0	-3526	-5910	-8529	-10652	-12455	-12910	-14847	-16338	-16605	-17760	-18710
	Vehicle Cost HIGH	0	0	-2881	-4829	-9792	-11156	-12416	-12036	-13444	-14486	-14644	-15518	-16125
FC HEV PHEV30	Vehicle Cost LOW	0	0	-3107	-4887	-5946	-8266	-10866	-12053	-14623	-16451	-15804	-17455	-18687
	Vehicle Cost AVG	0	0	-3795	-6132	-10521	-12666	-14930	-15365	-17772	-19492	-19564	-21081	-22220
	Vehicle Cost HIGH	0	0	-3096	-5007	-13068	-14394	-15954	-15525	-17231	-18358	-18458	-19555	-20188
FC HEV PHEV40	Vehicle Cost LOW	0	0	-3878	-6020	-7580	-10277	-13435	-14555	-17613	-19667	-18990	-20922	-22252
	Vehicle Cost AVG	0	0	-4492	-7124	-12382	-14803	-17461	-17996	-20706	-22562	-22440	-24196	-25419
	Vehicle Cost HIGH	0	0	-3635	-5774	-14226	-15806	-17751	-17159	-19243	-20539	-20418	-21805	-22536
EV	Vehicle Cost LOW	0	0	-6007	-10398	-21732	-26242	-35172	-33681	-41642	-46485	-44209	-49220	-51607
	Vehicle Cost AVG	0	0	-5073	-8783	-23761	-26862	-32925	-34786	-39315	-42107	-37564	-41662	-43629
	Vehicle Cost HIGH	0	0	-3939	-6823	-16478	-19251	-24987	-30518	-33390	-35116	-31170	-34261	-35570

Percentage decrease cost per powertrain

		Small_SUV												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Conv	Vehicle Cost LOW	0.0%	0.0%	0.6%	0.3%	0.1%	0.6%	-4.1%	6.4%	1.2%	0.6%	8.7%	3.5%	2.7%
	Vehicle Cost AVG	0.0%	0.0%	0.6%	0.3%	5.3%	5.8%	0.8%	8.7%	3.1%	2.4%	8.3%	3.2%	2.4%
	Vehicle Cost HIGH	0.0%	0.0%	0.6%	0.3%	0.9%	1.4%	-2.9%	4.5%	0.0%	-0.7%	4.0%	-0.1%	-0.9%
CI Conv	Vehicle Cost LOW	0.0%	0.0%	0.7%	0.2%	-1.3%	-0.8%	-1.8%	4.1%	3.0%	2.2%	3.6%	3.1%	2.3%
	Vehicle Cost AVG	0.0%	0.0%	0.7%	0.3%	4.0%	4.6%	3.7%	5.0%	4.0%	3.3%	4.1%	3.7%	3.0%
	Vehicle Cost HIGH	0.0%	0.0%	0.7%	0.4%	0.0%	0.6%	-0.2%	2.8%	1.9%	1.3%	1.6%	1.2%	0.6%
H2 Conv	Vehicle Cost LOW	0.0%	0.0%	-3.6%	-3.8%	-5.0%	-4.2%	-5.0%	0.8%	-0.1%	-0.4%	1.6%	1.3%	1.0%
	Vehicle Cost AVG	0.0%	0.0%	-3.2%	-3.4%	-5.7%	-5.1%	-5.7%	-5.3%	-6.0%	-6.2%	-13.2%	-13.4%	-13.7%
	Vehicle Cost HIGH	0.0%	0.0%	-3.0%	-3.2%	-10.0%	-9.5%	-10.1%	-8.3%	-9.0%	-9.3%	-11.6%	-11.9%	-12.2%
E85 Conv	Vehicle Cost LOW	0.0%	0.0%	0.7%	-3.2%	0.1%	-3.0%	-4.0%	6.6%	1.4%	0.7%	8.8%	3.6%	2.9%
	Vehicle Cost AVG	0.0%	0.0%	0.7%	-3.3%	5.3%	1.9%	0.9%	8.9%	3.2%	2.5%	8.5%	3.3%	2.5%
	Vehicle Cost HIGH	0.0%	0.0%	0.7%	-3.0%	0.9%	-1.9%	-2.8%	4.6%	0.1%	-0.5%	4.1%	0.0%	-0.7%
SI Split HEV	Vehicle Cost LOW	0.0%	0.0%	-1.5%	-2.8%	-4.5%	-5.7%	-8.1%	-4.7%	-7.0%	-10.1%	-3.7%	-6.3%	-9.5%
	Vehicle Cost AVG	0.0%	0.0%	-1.4%	-2.8%	-4.6%	-5.5%	-7.4%	-6.1%	-8.1%	-10.7%	-6.5%	-8.7%	-11.3%
	Vehicle Cost HIGH	0.0%	0.0%	-1.2%	-2.2%	-6.6%	-7.4%	-9.0%	-7.9%	-9.3%	-11.2%	-9.7%	-11.1%	-12.8%
SI Split HEV PHEV10	Vehicle Cost LOW	0.0%	0.0%	-2.3%	-4.2%	-9.9%	-12.1%	-15.5%	-12.9%	-16.4%	-19.1%	-14.7%	-17.3%	-20.1%
	Vehicle Cost AVG	0.0%	0.0%	-2.1%	-3.9%	-10.1%	-11.8%	-14.3%	-13.1%	-15.8%	-17.9%	-14.4%	-16.6%	-19.1%
	Vehicle Cost HIGH	0.0%	0.0%	-1.8%	-3.3%	-15.1%	-16.3%	-18.3%	-16.9%	-19.0%	-20.6%	-19.3%	-21.1%	-22.4%
SI Split HEV PHEV20	Vehicle Cost LOW	0.0%	0.0%	-2.7%	-5.2%	-12.6%	-15.3%	-19.7%	-17.6%	-21.9%	-25.7%	-21.3%	-24.6%	-27.6%
	Vehicle Cost AVG	0.0%	0.0%	-2.5%	-4.9%	-13.7%	-15.7%	-18.9%	-18.7%	-21.8%	-24.5%	-20.2%	-23.1%	-25.8%
	Vehicle Cost HIGH	0.0%	0.0%	-2.1%	-4.1%	-16.2%	-17.9%	-20.8%	-19.3%	-22.3%	-24.6%	-22.5%	-25.1%	-26.7%
SI Series HEV PHEV30	Vehicle Cost LOW	0.0%	0.0%	-4.8%	-8.3%	-17.8%	-21.7%	-28.1%	-26.6%	-32.9%	-37.6%	-32.6%	-37.4%	-41.0%
	Vehicle Cost AVG	0.0%	0.0%	-4.5%	-7.9%	-21.1%	-24.2%	-29.2%	-29.0%	-33.6%	-37.3%	-31.6%	-36.0%	-39.2%
	Vehicle Cost HIGH	0.0%	0.0%	-4.0%	-7.0%	-26.2%	-28.6%	-32.9%	-31.8%	-36.0%	-38.9%	-36.2%	-39.7%	-41.7%
SI Series HEV PHEV40	Vehicle Cost LOW	0.0%	0.0%	-5.1%	-9.0%	-19.5%	-23.7%	-30.9%	-29.6%	-36.4%	-41.5%	-36.7%	-41.9%	-45.4%
	Vehicle Cost AVG	0.0%	0.0%	-4.9%	-8.6%	-23.6%	-26.8%	-32.4%	-32.7%	-37.6%	-41.4%	-35.5%	-40.2%	-43.5%
	Vehicle Cost HIGH	0.0%	0.0%	-4.3%	-7.7%	-26.9%	-29.6%	-34.7%	-33.5%	-38.2%	-41.7%	-38.4%	-42.5%	-44.8%
CI Split HEV	Vehicle Cost LOW	0.0%	0.0%	-1.4%	-2.9%	-5.3%	-6.9%	-9.1%	-6.1%	-8.5%	-11.2%	-6.6%	-9.1%	-12.1%
	Vehicle Cost AVG	0.0%	0.0%	-1.4%	-2.8%	-5.5%	-6.8%	-8.5%	-8.4%	-10.3%	-12.5%	-9.0%	-11.0%	-13.4%
	Vehicle Cost HIGH	0.0%	0.0%	-1.1%	-2.2%	-7.4%	-8.4%	-9.8%	-9.5%	-10.9%	-12.4%	-11.7%	-12.9%	-14.4%

Argonne National Laboratory Report – Light-Duty Vehicle Fuel Consumption Displacement Potential Up to 2045

		Small_SUV												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
CI Split HEV PHEV10	Vehicle Cost LOW	0.0%	0.0%	-2.2%	-4.2%	-10.3%	-12.4%	-15.4%	-13.4%	-16.6%	-19.4%	-16.2%	-18.7%	-21.5%
	Vehicle Cost AVG	0.0%	0.0%	-2.0%	-3.9%	-10.3%	-11.9%	-14.3%	-14.2%	-16.6%	-18.7%	-15.6%	-17.7%	-20.1%
	Vehicle Cost HIGH	0.0%	0.0%	-1.7%	-3.3%	-15.6%	-16.7%	-18.6%	-17.9%	-19.8%	-21.3%	-20.5%	-22.1%	-23.3%
CI Split HEV PHEV20	Vehicle Cost LOW	0.0%	0.0%	-2.6%	-5.1%	-12.8%	-15.4%	-19.6%	-17.7%	-21.9%	-25.5%	-22.3%	-25.4%	-28.3%
	Vehicle Cost AVG	0.0%	0.0%	-2.4%	-4.8%	-13.7%	-15.6%	-18.8%	-19.3%	-22.2%	-24.9%	-21.1%	-23.8%	-26.3%
	Vehicle Cost HIGH	0.0%	0.0%	-2.1%	-4.0%	-16.6%	-18.2%	-21.0%	-20.1%	-22.9%	-25.1%	-23.5%	-25.8%	-27.4%
CI Series HEV PHEV30	Vehicle Cost LOW	0.0%	0.0%	-4.6%	-8.0%	-17.6%	-21.3%	-27.5%	-26.1%	-32.2%	-36.7%	-32.7%	-37.3%	-40.7%
	Vehicle Cost AVG	0.0%	0.0%	-4.3%	-7.6%	-20.6%	-23.6%	-28.4%	-28.8%	-33.2%	-36.7%	-31.5%	-35.7%	-38.7%
	Vehicle Cost HIGH	0.0%	0.0%	-3.8%	-6.7%	-25.7%	-27.9%	-32.1%	-31.4%	-35.3%	-38.2%	-35.9%	-39.2%	-41.1%
CI Series HEV PHEV40	Vehicle Cost LOW	0.0%	0.0%	-4.9%	-8.7%	-19.3%	-23.3%	-30.2%	-29.1%	-35.6%	-40.5%	-36.7%	-41.6%	-45.0%
	Vehicle Cost AVG	0.0%	0.0%	-4.7%	-8.3%	-23.0%	-26.1%	-31.5%	-32.4%	-37.1%	-40.8%	-35.3%	-39.8%	-42.9%
	Vehicle Cost HIGH	0.0%	0.0%	-4.1%	-7.4%	-26.4%	-28.9%	-33.8%	-33.0%	-37.6%	-40.9%	-38.0%	-41.9%	-44.0%
H2 Split HEV	Vehicle Cost LOW	0.0%	0.0%	-2.0%	-3.7%	-5.3%	-7.4%	-9.6%	-6.1%	-8.9%	-11.8%	-6.3%	-8.8%	-11.6%
	Vehicle Cost AVG	0.0%	0.0%	-1.7%	-3.2%	-9.6%	-11.1%	-12.5%	-12.7%	-14.7%	-16.7%	-19.6%	-21.4%	-23.3%
	Vehicle Cost HIGH	0.0%	0.0%	-1.4%	-2.6%	-12.6%	-13.8%	-15.0%	-15.2%	-16.7%	-18.1%	-19.5%	-20.6%	-21.8%
H2 Split HEV PHEV10	Vehicle Cost LOW	0.0%	0.0%	-3.3%	-5.7%	-11.1%	-13.8%	-17.4%	-14.8%	-18.6%	-21.5%	-17.4%	-20.0%	-22.9%
	Vehicle Cost AVG	0.0%	0.0%	-2.7%	-4.7%	-14.3%	-16.1%	-18.5%	-18.5%	-21.1%	-23.1%	-25.3%	-27.3%	-29.5%
	Vehicle Cost HIGH	0.0%	0.0%	-2.4%	-4.0%	-20.2%	-21.4%	-23.2%	-23.1%	-25.0%	-26.4%	-27.6%	-29.1%	-30.1%
H2 Split HEV PHEV20	Vehicle Cost LOW	0.0%	0.0%	-3.9%	-6.7%	-13.6%	-16.9%	-21.5%	-19.3%	-24.0%	-27.8%	-23.7%	-27.1%	-30.0%
	Vehicle Cost AVG	0.0%	0.0%	-3.2%	-5.6%	-17.1%	-19.3%	-22.4%	-23.1%	-26.1%	-28.5%	-29.7%	-32.3%	-34.6%
	Vehicle Cost HIGH	0.0%	0.0%	-2.8%	-4.8%	-20.8%	-22.6%	-25.3%	-24.9%	-27.7%	-29.7%	-30.0%	-32.2%	-33.6%
H2 Series HEV PHEV30	Vehicle Cost LOW	0.0%	0.0%	-5.6%	-9.5%	-18.4%	-22.9%	-29.4%	-27.6%	-34.2%	-39.0%	-34.3%	-39.0%	-42.5%
	Vehicle Cost AVG	0.0%	0.0%	-4.9%	-8.3%	-23.0%	-26.2%	-30.8%	-31.2%	-35.6%	-39.0%	-37.7%	-41.6%	-44.4%
	Vehicle Cost HIGH	0.0%	0.0%	-4.3%	-7.4%	-28.8%	-31.3%	-35.2%	-34.9%	-38.8%	-41.5%	-40.7%	-43.8%	-45.5%
H2 Series HEV PHEV40	Vehicle Cost LOW	0.0%	0.0%	-6.1%	-10.3%	-20.2%	-24.9%	-32.2%	-30.6%	-37.7%	-42.8%	-38.4%	-43.4%	-46.9%
	Vehicle Cost AVG	0.0%	0.0%	-5.3%	-9.0%	-25.1%	-28.5%	-33.7%	-34.6%	-39.3%	-42.8%	-40.9%	-45.1%	-48.0%
	Vehicle Cost HIGH	0.0%	0.0%	-4.8%	-8.1%	-29.3%	-32.1%	-36.8%	-36.2%	-40.8%	-44.0%	-42.5%	-46.2%	-48.2%
E85 Split HEV	Vehicle Cost LOW	0.0%	0.0%	-1.6%	-3.0%	-4.7%	-5.8%	-8.2%	-4.4%	-7.3%	-10.3%	-3.9%	-6.2%	-9.6%
	Vehicle Cost AVG	0.0%	0.0%	-1.5%	-3.0%	-4.7%	-5.6%	-7.5%	-5.9%	-8.4%	-10.9%	-6.7%	-8.7%	-11.5%
	Vehicle Cost HIGH	0.0%	0.0%	-1.3%	-2.4%	-6.8%	-7.5%	-9.1%	-7.8%	-9.6%	-11.4%	-9.8%	-11.1%	-12.9%

Argonne National Laboratory Report – Light-Duty Vehicle Fuel Consumption Displacement Potential Up to 2045

		Small_SUV												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
E85 Split HEV PHEV10	Vehicle Cost LOW	0.0%	0.0%	-2.2%	-4.2%	-9.9%	-12.1%	-15.5%	-12.9%	-16.4%	-19.1%	-14.7%	-17.2%	-20.1%
	Vehicle Cost AVG	0.0%	0.0%	-2.1%	-3.9%	-10.1%	-11.8%	-14.3%	-13.1%	-15.8%	-17.9%	-14.4%	-16.5%	-19.1%
	Vehicle Cost HIGH	0.0%	0.0%	-1.7%	-3.3%	-15.1%	-16.3%	-18.3%	-16.9%	-19.0%	-20.6%	-19.3%	-21.1%	-22.4%
E85 Split HEV PHEV20	Vehicle Cost LOW	0.0%	0.0%	-2.7%	-5.3%	-12.6%	-15.3%	-19.7%	-17.6%	-21.9%	-25.6%	-21.3%	-24.6%	-27.5%
	Vehicle Cost AVG	0.0%	0.0%	-2.5%	-4.9%	-13.7%	-15.7%	-18.9%	-18.7%	-21.8%	-24.4%	-20.2%	-23.1%	-25.8%
	Vehicle Cost HIGH	0.0%	0.0%	-2.2%	-4.1%	-16.2%	-17.9%	-20.8%	-19.3%	-22.3%	-24.6%	-22.5%	-25.1%	-26.7%
E85 Series HEV PHEV30	Vehicle Cost LOW	0.0%	0.0%	-4.7%	-8.3%	-17.8%	-21.7%	-28.1%	-26.6%	-32.8%	-37.6%	-32.6%	-37.4%	-41.0%
	Vehicle Cost AVG	0.0%	0.0%	-4.5%	-7.9%	-21.1%	-24.2%	-29.2%	-29.0%	-33.6%	-37.2%	-31.6%	-36.0%	-39.2%
	Vehicle Cost HIGH	0.0%	0.0%	-4.0%	-7.0%	-26.2%	-28.6%	-32.9%	-31.8%	-36.0%	-38.9%	-36.2%	-39.7%	-41.7%
E85 Series HEV PHEV40	Vehicle Cost LOW	0.0%	0.0%	-5.0%	-9.0%	-19.5%	-23.6%	-30.8%	-29.5%	-36.3%	-41.4%	-36.7%	-41.8%	-45.4%
	Vehicle Cost AVG	0.0%	0.0%	-4.8%	-8.5%	-23.5%	-26.8%	-32.3%	-32.6%	-37.6%	-41.4%	-35.5%	-40.2%	-43.5%
	Vehicle Cost HIGH	0.0%	0.0%	-4.3%	-7.6%	-26.9%	-29.6%	-34.6%	-33.4%	-38.2%	-41.7%	-38.4%	-42.5%	-44.7%
FC HEV	Vehicle Cost LOW	0.0%	0.0%	-7.8%	-13.1%	-4.0%	-12.3%	-18.1%	-24.6%	-29.4%	-33.5%	-32.7%	-35.6%	-38.5%
	Vehicle Cost AVG	0.0%	0.0%	-9.9%	-16.7%	-20.8%	-27.1%	-31.6%	-32.6%	-37.7%	-41.7%	-44.3%	-46.7%	-49.0%
	Vehicle Cost HIGH	0.0%	0.0%	-8.9%	-15.1%	-28.2%	-32.4%	-35.5%	-34.6%	-38.1%	-40.9%	-43.0%	-44.7%	-46.3%
FC HEV PHEV10	Vehicle Cost LOW	0.0%	0.0%	-8.0%	-12.9%	-8.7%	-15.9%	-21.8%	-26.1%	-31.6%	-36.2%	-34.5%	-37.9%	-41.2%
	Vehicle Cost AVG	0.0%	0.0%	-9.4%	-15.5%	-21.5%	-27.3%	-32.0%	-32.8%	-38.0%	-42.3%	-43.7%	-46.5%	-49.2%
	Vehicle Cost HIGH	0.0%	0.0%	-8.5%	-14.0%	-30.2%	-34.0%	-37.3%	-36.3%	-39.9%	-42.9%	-44.1%	-46.2%	-47.9%
FC HEV PHEV20	Vehicle Cost LOW	0.0%	0.0%	-8.8%	-14.6%	-12.0%	-19.5%	-26.1%	-30.2%	-36.4%	-41.2%	-39.5%	-43.4%	-46.7%
	Vehicle Cost AVG	0.0%	0.0%	-10.0%	-16.7%	-24.1%	-30.1%	-35.2%	-36.5%	-41.9%	-46.2%	-46.9%	-50.2%	-52.9%
	Vehicle Cost HIGH	0.0%	0.0%	-9.1%	-15.2%	-30.8%	-35.0%	-39.0%	-37.8%	-42.2%	-45.5%	-46.0%	-48.7%	-50.7%
FC HEV PHEV30	Vehicle Cost LOW	0.0%	0.0%	-8.2%	-13.0%	-15.8%	-21.9%	-28.8%	-32.0%	-38.8%	-43.6%	-41.9%	-46.3%	-49.6%
	Vehicle Cost AVG	0.0%	0.0%	-9.3%	-15.0%	-25.8%	-31.0%	-36.6%	-37.7%	-43.5%	-47.8%	-47.9%	-51.7%	-54.4%
	Vehicle Cost HIGH	0.0%	0.0%	-8.5%	-13.8%	-35.9%	-39.6%	-43.9%	-42.7%	-47.4%	-50.5%	-50.7%	-53.7%	-55.5%
FC HEV PHEV40	Vehicle Cost LOW	0.0%	0.0%	-9.3%	-14.5%	-18.2%	-24.7%	-32.3%	-34.9%	-42.3%	-47.2%	-45.6%	-50.2%	-53.4%
	Vehicle Cost AVG	0.0%	0.0%	-10.1%	-16.1%	-27.9%	-33.4%	-39.4%	-40.6%	-46.7%	-50.9%	-50.6%	-54.6%	-57.4%
	Vehicle Cost HIGH	0.0%	0.0%	-9.3%	-14.8%	-36.4%	-40.4%	-45.4%	-43.9%	-49.2%	-52.5%	-52.2%	-55.8%	-57.6%
EV	Vehicle Cost LOW	0.0%	0.0%	-8.2%	-14.2%	-29.7%	-35.8%	-48.0%	-46.0%	-56.8%	-63.5%	-60.4%	-67.2%	-70.5%
	Vehicle Cost AVG	0.0%	0.0%	-7.9%	-13.8%	-37.2%	-42.1%	-51.6%	-54.5%	-61.6%	-65.9%	-58.8%	-65.2%	-68.3%
	Vehicle Cost HIGH	0.0%	0.0%	-7.4%	-12.8%	-31.0%	-36.2%	-47.0%	-57.4%	-62.8%	-66.0%	-58.6%	-64.4%	-66.9%

Midsized SUV Class

Incremental Cost versus the Conventional 2010 Reference

		Midsize_SUV												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Conv	Vehicle Cost LOW	0	0	-108	-165	2	-123	-93	797	783	13	1349	1210	348
	Vehicle Cost AVG	0	0	-108	-165	810	690	721	1164	1147	307	1286	1152	295
	Vehicle Cost HIGH	0	0	-108	-165	138	12	43	532	517	-179	638	503	-214
CI Conv	Vehicle Cost LOW	2494	2494	1340	1243	1139	1072	1006	1872	1785	1614	1906	1781	1616
	Vehicle Cost AVG	2427	2427	1230	1140	1918	1862	1808	1914	1843	1693	1871	1764	1622
	Vehicle Cost HIGH	2068	2068	936	861	928	890	853	1257	1200	1068	1157	1064	942
H2 Conv	Vehicle Cost LOW	-735	-735	-758	-788	-825	-853	-1511	-75	-775	-834	208	-572	-637
	Vehicle Cost AVG	2283	2283	2259	2227	1954	1930	1215	1936	1169	1106	602	-180	-244
	Vehicle Cost HIGH	1722	1722	1698	1666	555	521	-133	741	63	-13	274	-458	-540
E85 Conv	Vehicle Cost LOW	-32	-32	-127	-171	-16	-129	-122	780	763	-15	1321	1182	313
	Vehicle Cost AVG	-31	-31	-126	-170	794	687	695	1147	1126	277	1259	1125	262
	Vehicle Cost HIGH	-32	-32	-127	-171	118	6	13	512	492	-211	607	472	-251
SI Split HEV	Vehicle Cost LOW	4528	4528	4164	3859	3458	3077	2574	3240	2670	1996	3432	2776	2053
	Vehicle Cost AVG	4325	4325	3969	3671	3081	2777	2374	2659	2184	1625	2583	2041	1447
	Vehicle Cost HIGH	2874	2874	2594	2361	1345	1103	792	953	623	242	575	238	-124
SI Split HEV PHEV10	Vehicle Cost LOW	8640	8640	8080	7592	5939	5351	4438	4905	4016	3235	4417	3710	2875
	Vehicle Cost AVG	7613	7613	7109	6671	4800	4357	3685	3901	3239	2653	3618	3028	2314
	Vehicle Cost HIGH	5878	5878	5467	5109	1975	1693	1221	1412	956	528	829	397	77
SI Split HEV PHEV20	Vehicle Cost LOW	11712	11712	11019	10349	7894	7120	5822	6217	5007	3812	5072	4063	3134
	Vehicle Cost AVG	10186	10186	9571	8979	6092	5525	4604	4591	3766	2914	4143	3302	2515
	Vehicle Cost HIGH	7837	7837	7342	6866	3356	2943	2185	2423	1707	1053	1571	905	454
SI Series HEV PHEV30	Vehicle Cost LOW	23524	23524	21920	20534	16106	14622	12039	12280	9915	7842	9805	7815	6316
	Vehicle Cost AVG	20556	20556	19141	17920	12209	11116	9269	9119	7491	6017	8158	6489	5219
	Vehicle Cost HIGH	16257	16257	15117	14134	7032	6276	4819	4989	3667	2575	3478	2264	1556
SI Series HEV PHEV40	Vehicle Cost LOW	27857	27857	25917	24302	18834	17140	13947	14090	11254	8801	10818	8494	6828
	Vehicle Cost AVG	24215	24215	22515	21100	14055	12819	10557	10137	8238	6552	8984	7042	5637
	Vehicle Cost HIGH	19077	19077	17716	16582	8834	7941	6088	6288	4639	3270	4439	2920	2050
CI Split HEV	Vehicle Cost LOW	7120	7120	6732	6384	5716	5352	4730	5395	4719	3998	5178	4526	3720
	Vehicle Cost AVG	6853	6853	6479	6144	5242	4953	4463	4515	3971	3394	4306	3780	3132
	Vehicle Cost HIGH	4967	4967	4681	4426	3106	2891	2523	2539	2171	1790	1976	1669	1296

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		Midsize_SUV												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
CI Split HEV PHEV10	Vehicle Cost LOW	11346	11346	10728	10186	8267	7623	6689	7122	6189	5340	6253	5568	4664
	Vehicle Cost AVG	10216	10216	9662	9175	7063	6575	5891	5875	5190	4561	5468	4905	4141
	Vehicle Cost HIGH	8130	8130	7683	7289	3740	3438	2947	3025	2550	2101	2317	1885	1557
CI Split HEV PHEV20	Vehicle Cost LOW	14514	14514	13760	13029	10290	9478	8108	8447	7168	5946	6957	5933	4934
	Vehicle Cost AVG	12869	12869	12200	11555	8402	7805	6829	6561	5693	4835	6034	5188	4349
	Vehicle Cost HIGH	10150	10150	9615	9100	5164	4738	3947	4060	3322	2652	3085	2411	1954
CI Series HEV PHEV30	Vehicle Cost LOW	26300	26300	24599	23219	18461	16943	14260	14449	12030	9897	11579	9552	8027
	Vehicle Cost AVG	23194	23194	21697	20482	14477	13356	11435	11005	9354	7848	9942	8254	6972
	Vehicle Cost HIGH	18500	18500	17302	16329	8865	8098	6595	6629	5290	4181	4983	3762	3055
CI Series HEV PHEV40	Vehicle Cost LOW	30730	30730	28760	27088	21295	19516	16211	16325	13422	10886	12638	10258	8567
	Vehicle Cost AVG	26934	26934	25210	23746	16399	15098	12753	12058	10127	8398	10804	8827	7411
	Vehicle Cost HIGH	21379	21379	20005	18839	10730	9799	7888	7974	6299	4896	5981	4438	3569
H2 Split HEV	Vehicle Cost LOW	4294	4294	3826	3459	3065	2608	2084	2738	2094	1407	2693	2085	1398
	Vehicle Cost AVG	7099	7099	6643	6284	4601	4242	3835	3792	3274	2723	2279	1785	1230
	Vehicle Cost HIGH	5032	5032	4681	4406	2095	1825	1511	1419	1066	700	471	181	-141
H2 Split HEV PHEV10	Vehicle Cost LOW	8776	8776	8008	7421	5822	5094	4080	4662	3605	2817	3921	3215	2379
	Vehicle Cost AVG	10730	10730	10037	9508	6571	6024	5273	5297	4502	3920	3535	2948	2239
	Vehicle Cost HIGH	8354	8354	7791	7360	2898	2567	2090	2024	1546	1126	878	472	177
H2 Split HEV PHEV20	Vehicle Cost LOW	12031	12031	10944	10158	7798	6859	5517	5943	4571	3396	4575	3572	2634
	Vehicle Cost AVG	13460	13460	12496	11800	7879	7193	6242	5961	5012	4187	4061	3227	2436
	Vehicle Cost HIGH	10440	10440	9665	9106	4279	3802	3040	3021	2277	1641	1608	967	546
H2 Series HEV PHEV30	Vehicle Cost LOW	23329	23329	21394	19909	15676	14001	11397	11736	9275	7201	9004	7073	5631
	Vehicle Cost AVG	23348	23348	21642	20334	13727	12501	10648	10246	8566	7105	7814	6201	4985
	Vehicle Cost HIGH	18456	18456	17086	16036	7787	6954	5508	5460	4121	3055	3385	2230	1566
H2 Series HEV PHEV40	Vehicle Cost LOW	27669	27669	25346	23602	18406	16437	13255	13534	10590	8131	9991	7736	6132
	Vehicle Cost AVG	27011	27011	24976	23449	15571	14145	11900	11250	9297	7621	8619	6740	5393
	Vehicle Cost HIGH	21276	21276	19651	18433	9587	8563	6740	6750	5068	3727	4324	2869	2050
E85 Split HEV	Vehicle Cost LOW	4555	4555	4219	3881	3507	3126	2597	3293	2687	2034	3457	2851	2072
	Vehicle Cost AVG	4352	4352	4024	3695	3124	2820	2397	2709	2202	1663	2607	2108	1466
	Vehicle Cost HIGH	2899	2899	2641	2382	1384	1142	812	993	639	273	595	287	-108

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		Midsize_SUV												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
E85 Split HEV PHEV10	Vehicle Cost LOW	8675	8675	8112	7619	5964	5380	4464	4975	4043	3260	4446	3772	2901
	Vehicle Cost AVG	7647	7647	7140	6697	4825	4384	3710	3965	3266	2678	3645	3084	2339
	Vehicle Cost HIGH	5908	5908	5495	5133	1995	1714	1242	1441	976	546	849	420	95
E85 Split HEV PHEV20	Vehicle Cost LOW	11750	11750	11051	10377	7920	7154	5854	6246	5035	3868	5100	4121	3162
	Vehicle Cost AVG	10223	10223	9603	9007	6117	5556	4633	4621	3794	2967	4170	3355	2541
	Vehicle Cost HIGH	7870	7870	7371	6891	3377	2969	2209	2443	1728	1077	1591	924	474
E85 Series HEV PHEV30	Vehicle Cost LOW	23564	23564	21959	20565	16135	14663	12076	12316	9945	7867	9835	7840	6344
	Vehicle Cost AVG	20594	20594	19178	17950	12236	11152	9302	9151	7520	6042	8186	6514	5245
	Vehicle Cost HIGH	16291	16291	15149	14161	7054	6304	4845	5014	3688	2595	3499	2283	1575
E85 Series HEV PHEV40	Vehicle Cost LOW	27913	27913	25959	24326	18863	17159	13980	14127	11284	8828	10853	8521	6857
	Vehicle Cost AVG	24267	24267	22555	21125	14083	12840	10587	10172	8269	6579	9018	7068	5664
	Vehicle Cost HIGH	19122	19122	17750	16606	8856	7955	6113	6314	4658	3291	4465	2941	2070
FC HEV	Vehicle Cost LOW	12966	12966	10332	8634	11694	8764	7148	4846	3387	2059	2342	1437	494
	Vehicle Cost AVG	19217	19217	15415	12853	11183	8597	7091	6487	4769	3204	2191	1307	404
	Vehicle Cost HIGH	15240	15240	12111	9991	5374	3812	2879	2982	1882	876	147	-411	-981
FC HEV PHEV10	Vehicle Cost LOW	15319	15319	12689	11091	12330	9887	8058	6321	4540	2965	3520	2371	1252
	Vehicle Cost AVG	20245	20245	16786	14500	11745	9547	7882	7367	5510	3829	3201	2118	1065
	Vehicle Cost HIGH	16080	16080	13224	11340	5370	4058	2992	3145	1947	904	398	-306	-895
FC HEV PHEV20	Vehicle Cost LOW	19428	19428	16256	14256	14844	12017	9522	7853	5661	3720	4253	2902	1630
	Vehicle Cost AVG	23831	23831	19882	17237	13470	11005	8880	8242	6145	4252	3801	2553	1375
	Vehicle Cost HIGH	18839	18839	15605	13444	7080	5511	4036	4331	2815	1495	1208	262	-480
FC HEV PHEV30	Vehicle Cost LOW	25839	25839	22649	20764	19001	16479	13580	11711	9028	6810	7391	5508	4074
	Vehicle Cost AVG	29481	29481	25579	23103	17141	14826	12306	11432	8974	6870	6591	4864	3537
	Vehicle Cost HIGH	23587	23587	20400	18375	8415	6985	5231	5441	3686	2299	2053	819	77
FC HEV PHEV40	Vehicle Cost LOW	30486	30486	26516	24257	21687	18775	15249	13407	10199	7706	8280	6090	4543
	Vehicle Cost AVG	33623	33623	29021	26199	19063	16466	13506	12466	9697	7427	7336	5354	3931
	Vehicle Cost HIGH	26791	26791	23063	20768	10231	8539	6358	6719	4562	2967	2943	1392	536
EV	Vehicle Cost LOW	67745	67745	62336	57876	42274	37718	27587	28132	19779	13785	15917	10226	7419
	Vehicle Cost AVG	56699	56699	52128	48360	28713	25576	18701	15748	11000	7548	12625	7970	5658
	Vehicle Cost HIGH	43431	43431	39876	36947	24152	21366	14847	7580	4565	2427	6913	3417	1865

Cost saving per powertrain

		Midsize_SUV												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Conv	Vehicle Cost LOW	0	0	-108	-165	2	-123	-93	797	783	13	1349	1210	348
	Vehicle Cost AVG	0	0	-108	-165	810	690	721	1164	1147	307	1286	1152	295
	Vehicle Cost HIGH	0	0	-108	-165	138	12	43	532	517	-179	638	503	-214
CI Conv	Vehicle Cost LOW	0	0	-1154	-1252	-1356	-1423	-1489	-623	-709	-880	-589	-714	-879
	Vehicle Cost AVG	0	0	-1197	-1287	-509	-565	-620	-514	-584	-734	-556	-663	-805
	Vehicle Cost HIGH	0	0	-1133	-1207	-1140	-1178	-1215	-811	-868	-1000	-911	-1004	-1127
H2 Conv	Vehicle Cost LOW	0	0	-22	-53	-89	-117	-775	661	-39	-99	944	163	99
	Vehicle Cost AVG	0	0	-24	-55	-329	-353	-1067	-347	-1114	-1176	-1681	-2462	-2527
	Vehicle Cost HIGH	0	0	-24	-55	-1167	-1200	-1855	-980	-1659	-1734	-1448	-2180	-2262
E85 Conv	Vehicle Cost LOW	0	0	-95	-140	16	-97	-90	812	795	16	1353	1214	345
	Vehicle Cost AVG	0	0	-95	-140	825	718	726	1178	1157	308	1290	1156	293
	Vehicle Cost HIGH	0	0	-95	-140	150	37	45	544	524	-179	639	504	-219
SI Split HEV	Vehicle Cost LOW	0	0	-364	-670	-1071	-1451	-1954	-1288	-1858	-2533	-1096	-1752	-2476
	Vehicle Cost AVG	0	0	-356	-654	-1244	-1548	-1950	-1665	-2141	-2700	-1742	-2284	-2878
	Vehicle Cost HIGH	0	0	-281	-514	-1530	-1771	-2083	-1922	-2251	-2632	-2299	-2636	-2999
SI Split HEV PHEV10	Vehicle Cost LOW	0	0	-560	-1048	-2701	-3289	-4202	-3735	-4624	-5405	-4223	-4930	-5765
	Vehicle Cost AVG	0	0	-504	-942	-2813	-3256	-3927	-3712	-4374	-4960	-3995	-4585	-5299
	Vehicle Cost HIGH	0	0	-411	-769	-3902	-4185	-4656	-4465	-4922	-5349	-5048	-5480	-5801
SI Split HEV PHEV20	Vehicle Cost LOW	0	0	-693	-1363	-3818	-4592	-5890	-5495	-6705	-7900	-6640	-7648	-8578
	Vehicle Cost AVG	0	0	-615	-1206	-4094	-4661	-5582	-5595	-6420	-7272	-6043	-6884	-7671
	Vehicle Cost HIGH	0	0	-495	-971	-4481	-4895	-5652	-5414	-6130	-6784	-6266	-6932	-7383
SI Series HEV PHEV30	Vehicle Cost LOW	0	0	-1603	-2990	-7418	-8901	-11485	-11243	-13609	-15682	-13719	-15709	-17208
	Vehicle Cost AVG	0	0	-1415	-2636	-8347	-9440	-11287	-11437	-13064	-14539	-12398	-14067	-15337
	Vehicle Cost HIGH	0	0	-1141	-2124	-9226	-9981	-11439	-11269	-12591	-13682	-12779	-13993	-14702
SI Series HEV PHEV40	Vehicle Cost LOW	0	0	-1940	-3555	-9023	-10717	-13910	-13767	-16602	-19056	-17039	-19363	-21028
	Vehicle Cost AVG	0	0	-1700	-3115	-10160	-11395	-13658	-14077	-15977	-17663	-15230	-17173	-18578
	Vehicle Cost HIGH	0	0	-1361	-2495	-10243	-11136	-12989	-12789	-14438	-15807	-14639	-16157	-17027
CI Split HEV	Vehicle Cost LOW	0	0	-389	-736	-1404	-1769	-2390	-1725	-2402	-3123	-1942	-2595	-3400
	Vehicle Cost AVG	0	0	-374	-709	-1611	-1900	-2390	-2339	-2883	-3459	-2548	-3073	-3721
	Vehicle Cost HIGH	0	0	-286	-542	-1862	-2077	-2444	-2428	-2796	-3178	-2992	-3298	-3671

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		Midsize_SUV												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
CI Split HEV PHEV10	Vehicle Cost LOW	0	0	-618	-1160	-3079	-3723	-4657	-4224	-5157	-6006	-5093	-5778	-6682
	Vehicle Cost AVG	0	0	-554	-1040	-3153	-3641	-4325	-4341	-5026	-5655	-4748	-5311	-6075
	Vehicle Cost HIGH	0	0	-448	-841	-4390	-4692	-5183	-5105	-5580	-6029	-5813	-6245	-6573
CI Split HEV PHEV20	Vehicle Cost LOW	0	0	-755	-1486	-4224	-5037	-6407	-6068	-7347	-8568	-7558	-8582	-9580
	Vehicle Cost AVG	0	0	-669	-1313	-4467	-5064	-6040	-6308	-7176	-8033	-6835	-7680	-8519
	Vehicle Cost HIGH	0	0	-535	-1050	-4986	-5412	-6203	-6091	-6828	-7498	-7065	-7739	-8196
CI Series HEV PHEV30	Vehicle Cost LOW	0	0	-1701	-3081	-7839	-9357	-12039	-11851	-14270	-16402	-14721	-16748	-18273
	Vehicle Cost AVG	0	0	-1497	-2712	-8717	-9838	-11759	-12189	-13840	-15346	-13252	-14941	-16222
	Vehicle Cost HIGH	0	0	-1198	-2172	-9635	-10403	-11905	-11871	-13210	-14320	-13517	-14738	-15445
CI Series HEV PHEV40	Vehicle Cost LOW	0	0	-1970	-3642	-9435	-11214	-14519	-14405	-17308	-19844	-18092	-20472	-22163
	Vehicle Cost AVG	0	0	-1725	-3188	-10536	-11837	-14181	-14877	-16808	-18536	-16131	-18107	-19523
	Vehicle Cost HIGH	0	0	-1375	-2540	-10649	-11580	-13492	-13405	-15080	-16484	-15398	-16941	-17810
H2 Split HEV	Vehicle Cost LOW	0	0	-467	-835	-1229	-1686	-2210	-1556	-2199	-2886	-1601	-2209	-2896
	Vehicle Cost AVG	0	0	-457	-816	-2498	-2857	-3264	-3307	-3826	-4377	-4821	-5314	-5869
	Vehicle Cost HIGH	0	0	-351	-627	-2938	-3208	-3521	-3614	-3967	-4332	-4561	-4851	-5174
H2 Split HEV PHEV10	Vehicle Cost LOW	0	0	-769	-1356	-2954	-3682	-4697	-4115	-5171	-5959	-4855	-5562	-6397
	Vehicle Cost AVG	0	0	-693	-1222	-4160	-4706	-5457	-5433	-6229	-6810	-7195	-7782	-8492
	Vehicle Cost HIGH	0	0	-563	-994	-5456	-5787	-6264	-6330	-6808	-7228	-7476	-7882	-8177
H2 Split HEV PHEV20	Vehicle Cost LOW	0	0	-1087	-1874	-4234	-5172	-6514	-6088	-7460	-8635	-7456	-8459	-9397
	Vehicle Cost AVG	0	0	-964	-1660	-5582	-6267	-7219	-7499	-8448	-9273	-9399	-10233	-11025
	Vehicle Cost HIGH	0	0	-775	-1334	-6161	-6639	-7400	-7419	-8164	-8799	-8832	-9473	-9894
H2 Series HEV PHEV30	Vehicle Cost LOW	0	0	-1935	-3420	-7653	-9328	-11932	-11592	-14054	-16128	-14325	-16256	-17698
	Vehicle Cost AVG	0	0	-1706	-3013	-9620	-10846	-12700	-13101	-14782	-16243	-15533	-17147	-18362
	Vehicle Cost HIGH	0	0	-1370	-2420	-10669	-11503	-12949	-12997	-14335	-15401	-15071	-16226	-16890
H2 Series HEV PHEV40	Vehicle Cost LOW	0	0	-2323	-4067	-9263	-11232	-14414	-14135	-17080	-19539	-17678	-19934	-21537
	Vehicle Cost AVG	0	0	-2035	-3562	-11440	-12866	-15110	-15761	-17714	-19389	-18392	-20270	-21618
	Vehicle Cost HIGH	0	0	-1625	-2843	-11689	-12713	-14536	-14526	-16208	-17549	-16952	-18408	-19226
E85 Split HEV	Vehicle Cost LOW	0	0	-336	-673	-1048	-1428	-1957	-1262	-1868	-2520	-1097	-1703	-2483
	Vehicle Cost AVG	0	0	-328	-657	-1228	-1532	-1955	-1642	-2150	-2689	-1745	-2244	-2886
	Vehicle Cost HIGH	0	0	-258	-517	-1515	-1757	-2087	-1906	-2260	-2627	-2304	-2612	-3007

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		Midsize_SUV												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
E85 Split HEV PHEV10	Vehicle Cost LOW	0	0	-563	-1056	-2711	-3295	-4211	-3700	-4632	-5415	-4229	-4903	-5774
	Vehicle Cost AVG	0	0	-506	-950	-2822	-3263	-3937	-3682	-4381	-4969	-4002	-4563	-5308
	Vehicle Cost HIGH	0	0	-413	-775	-3913	-4194	-4666	-4467	-4932	-5362	-5059	-5488	-5813
E85 Split HEV PHEV20	Vehicle Cost LOW	0	0	-699	-1374	-3830	-4596	-5896	-5504	-6716	-7882	-6650	-7629	-8588
	Vehicle Cost AVG	0	0	-620	-1216	-4106	-4667	-5590	-5602	-6429	-7256	-6053	-6868	-7682
	Vehicle Cost HIGH	0	0	-499	-979	-4493	-4901	-5661	-5427	-6142	-6793	-6279	-6946	-7396
E85 Series HEV PHEV30	Vehicle Cost LOW	0	0	-1604	-2999	-7429	-8900	-11487	-11247	-13619	-15697	-13729	-15723	-17220
	Vehicle Cost AVG	0	0	-1416	-2644	-8358	-9442	-11291	-11443	-13074	-14552	-12408	-14080	-15349
	Vehicle Cost HIGH	0	0	-1141	-2130	-9237	-9987	-11446	-11277	-12602	-13696	-12791	-14008	-14716
E85 Series HEV PHEV40	Vehicle Cost LOW	0	0	-1955	-3587	-9050	-10755	-13933	-13786	-16629	-19085	-17060	-19393	-21056
	Vehicle Cost AVG	0	0	-1712	-3142	-10184	-11427	-13680	-14095	-15998	-17688	-15249	-17199	-18603
	Vehicle Cost HIGH	0	0	-1371	-2516	-10266	-11167	-13009	-12808	-14464	-15831	-14657	-16181	-17052
FC HEV	Vehicle Cost LOW	0	0	-2634	-4331	-1271	-4202	-5818	-8119	-9578	-10907	-10624	-11528	-12472
	Vehicle Cost AVG	0	0	-3802	-6364	-8034	-10620	-12126	-12730	-14447	-16013	-17026	-17910	-18813
	Vehicle Cost HIGH	0	0	-3128	-5249	-9865	-11427	-12361	-12257	-13358	-14364	-15092	-15651	-16221
FC HEV PHEV10	Vehicle Cost LOW	0	0	-2629	-4228	-2989	-5432	-7261	-8998	-10779	-12354	-11799	-12947	-14067
	Vehicle Cost AVG	0	0	-3459	-5746	-8500	-10698	-12363	-12878	-14735	-16417	-17044	-18127	-19180
	Vehicle Cost HIGH	0	0	-2855	-4739	-10710	-12022	-13087	-12935	-14133	-15175	-15681	-16385	-16975
FC HEV PHEV20	Vehicle Cost LOW	0	0	-3172	-5173	-4584	-7411	-9906	-11575	-13767	-15709	-15176	-16526	-17798
	Vehicle Cost AVG	0	0	-3949	-6594	-10362	-12826	-14951	-15589	-17686	-19579	-20030	-21279	-22456
	Vehicle Cost HIGH	0	0	-3234	-5395	-11760	-13328	-14803	-14508	-16024	-17344	-17632	-18577	-19319
FC HEV PHEV30	Vehicle Cost LOW	0	0	-3190	-5076	-6838	-9361	-12259	-14128	-16811	-19030	-18449	-20331	-21766
	Vehicle Cost AVG	0	0	-3902	-6378	-12340	-14655	-17175	-18049	-20507	-22611	-22890	-24617	-25944
	Vehicle Cost HIGH	0	0	-3187	-5212	-15172	-16602	-18357	-18146	-19902	-21288	-21534	-22768	-23510
FC HEV PHEV40	Vehicle Cost LOW	0	0	-3970	-6229	-8799	-11711	-15237	-17079	-20287	-22780	-22206	-24396	-25943
	Vehicle Cost AVG	0	0	-4602	-7424	-14560	-17157	-20117	-21157	-23926	-26196	-26287	-28269	-29692
	Vehicle Cost HIGH	0	0	-3728	-6023	-16560	-18252	-20434	-20072	-22229	-23824	-23848	-25399	-26255
EV	Vehicle Cost LOW	0	0	-5408	-9869	-25470	-30027	-40158	-39612	-47966	-53959	-51827	-57519	-60326
	Vehicle Cost AVG	0	0	-4571	-8339	-27986	-31124	-37998	-40952	-45699	-49152	-44075	-48729	-51042
	Vehicle Cost HIGH	0	0	-3555	-6484	-19280	-22065	-28584	-35851	-38866	-41004	-36519	-40015	-41566

Percentage decrease cost per powertrain

		Midsize_SUV												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Conv	Vehicle Cost LOW	0.0%	0.0%	0.7%	1.0%	0.0%	0.7%	0.6%	-4.8%	-4.8%	-0.1%	-8.2%	-7.4%	-2.1%
	Vehicle Cost AVG	-0.2%	-0.2%	0.4%	0.8%	-5.2%	-4.4%	-4.6%	-7.3%	-7.2%	-2.1%	-8.1%	-7.3%	-2.0%
	Vehicle Cost HIGH	-4.0%	-4.0%	-3.3%	-3.0%	-4.8%	-4.0%	-4.2%	-7.2%	-7.1%	-2.9%	-7.9%	-7.0%	-2.7%
CI Conv	Vehicle Cost LOW	-15.2%	-15.2%	-8.2%	-7.6%	-6.9%	-6.5%	-6.1%	-11.4%	-10.9%	-9.8%	-11.6%	-10.8%	-9.8%
	Vehicle Cost AVG	-15.0%	-15.0%	-7.7%	-7.2%	-11.9%	-11.6%	-11.2%	-11.9%	-11.5%	-10.5%	-11.6%	-11.0%	-10.1%
	Vehicle Cost HIGH	-16.6%	-16.6%	-9.7%	-9.2%	-9.6%	-9.4%	-9.2%	-11.6%	-11.3%	-10.5%	-11.0%	-10.4%	-9.7%
H2 Conv	Vehicle Cost LOW	4.5%	4.5%	4.6%	4.8%	5.0%	5.2%	9.2%	0.5%	4.7%	5.1%	-1.3%	3.5%	3.9%
	Vehicle Cost AVG	-14.1%	-14.1%	-14.0%	-13.8%	-12.1%	-12.0%	-7.6%	-12.0%	-7.4%	-7.0%	-3.9%	0.8%	1.2%
	Vehicle Cost HIGH	-14.4%	-14.4%	-14.3%	-14.1%	-7.3%	-7.1%	-3.2%	-8.5%	-4.4%	-3.9%	-5.6%	-1.2%	-0.7%
E85 Conv	Vehicle Cost LOW	0.2%	0.2%	0.8%	1.0%	0.1%	0.8%	0.7%	-4.7%	-4.6%	0.1%	-8.0%	-7.2%	-1.9%
	Vehicle Cost AVG	-0.1%	-0.1%	0.5%	0.8%	-5.1%	-4.4%	-4.5%	-7.2%	-7.1%	-1.9%	-7.9%	-7.1%	-1.8%
	Vehicle Cost HIGH	-3.8%	-3.8%	-3.2%	-2.9%	-4.7%	-4.0%	-4.0%	-7.1%	-7.0%	-2.7%	-7.7%	-6.8%	-2.4%
SI Split HEV	Vehicle Cost LOW	-27.6%	-27.6%	-25.3%	-23.5%	-21.0%	-18.7%	-15.7%	-19.7%	-16.2%	-12.1%	-20.9%	-16.9%	-12.5%
	Vehicle Cost AVG	-26.6%	-26.6%	-24.4%	-22.6%	-19.0%	-17.1%	-14.7%	-16.4%	-13.5%	-10.1%	-16.0%	-12.7%	-9.0%
	Vehicle Cost HIGH	-21.5%	-21.5%	-19.8%	-18.3%	-12.2%	-10.7%	-8.8%	-9.8%	-7.8%	-5.4%	-7.5%	-5.4%	-3.2%
SI Split HEV PHEV10	Vehicle Cost LOW	-52.6%	-52.6%	-49.2%	-46.2%	-36.1%	-32.6%	-27.0%	-29.8%	-24.4%	-19.7%	-26.9%	-22.6%	-17.5%
	Vehicle Cost AVG	-46.6%	-46.6%	-43.5%	-40.8%	-29.5%	-26.8%	-22.7%	-24.0%	-20.0%	-16.4%	-22.3%	-18.7%	-14.3%
	Vehicle Cost HIGH	-39.7%	-39.7%	-37.2%	-35.1%	-16.0%	-14.3%	-11.4%	-12.6%	-9.8%	-7.2%	-9.0%	-6.4%	-4.4%
SI Split HEV PHEV20	Vehicle Cost LOW	-71.3%	-71.3%	-67.1%	-63.0%	-48.0%	-43.3%	-35.4%	-37.8%	-30.5%	-23.2%	-30.9%	-24.7%	-19.1%
	Vehicle Cost AVG	-62.2%	-62.2%	-58.5%	-54.9%	-37.3%	-33.9%	-28.3%	-28.2%	-23.2%	-18.0%	-25.5%	-20.3%	-15.5%
	Vehicle Cost HIGH	-51.7%	-51.7%	-48.7%	-45.8%	-24.4%	-21.9%	-17.3%	-18.7%	-14.4%	-10.4%	-13.5%	-9.5%	-6.7%
SI Series HEV PHEV30	Vehicle Cost LOW	-143.1%	-143.1%	-133.4%	-125.0%	-98.0%	-89.0%	-73.3%	-74.7%	-60.3%	-47.7%	-59.7%	-47.6%	-38.4%
	Vehicle Cost AVG	-125.3%	-125.3%	-116.7%	-109.3%	-74.5%	-67.9%	-56.6%	-55.7%	-45.8%	-36.9%	-49.9%	-39.7%	-32.0%
	Vehicle Cost HIGH	-102.9%	-102.9%	-96.0%	-90.0%	-46.8%	-42.2%	-33.3%	-34.3%	-26.3%	-19.6%	-25.1%	-17.7%	-13.4%
SI Series HEV PHEV40	Vehicle Cost LOW	-169.5%	-169.5%	-157.7%	-147.9%	-114.6%	-104.3%	-84.9%	-85.7%	-68.5%	-53.6%	-65.8%	-51.7%	-41.6%
	Vehicle Cost AVG	-147.6%	-147.6%	-137.3%	-128.6%	-85.8%	-78.3%	-64.5%	-61.9%	-50.4%	-40.1%	-54.9%	-43.1%	-34.5%
	Vehicle Cost HIGH	-120.1%	-120.1%	-111.8%	-104.9%	-57.7%	-52.3%	-41.0%	-42.2%	-32.2%	-23.9%	-31.0%	-21.7%	-16.4%
CI Split HEV	Vehicle Cost LOW	-43.3%	-43.3%	-41.0%	-38.8%	-34.8%	-32.6%	-28.8%	-32.8%	-28.7%	-24.3%	-31.5%	-27.5%	-22.6%
	Vehicle Cost AVG	-41.9%	-41.9%	-39.7%	-37.6%	-32.1%	-30.4%	-27.4%	-27.7%	-24.4%	-20.9%	-26.4%	-23.2%	-19.3%
	Vehicle Cost HIGH	-34.2%	-34.2%	-32.5%	-30.9%	-22.9%	-21.6%	-19.3%	-19.4%	-17.2%	-14.9%	-16.0%	-14.1%	-11.9%

Argonne National Laboratory Report – Light-Duty Vehicle Fuel Consumption Displacement Potential Up to 2045

		Midsize_SUV												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
CI Split HEV PHEV10	Vehicle Cost LOW	-69.0%	-69.0%	-65.3%	-62.0%	-50.3%	-46.4%	-40.7%	-43.3%	-37.7%	-32.5%	-38.1%	-33.9%	-28.4%
	Vehicle Cost AVG	-62.4%	-62.4%	-59.0%	-56.1%	-43.2%	-40.3%	-36.1%	-36.0%	-31.8%	-28.0%	-33.5%	-30.1%	-25.4%
	Vehicle Cost HIGH	-53.4%	-53.4%	-50.7%	-48.3%	-26.7%	-24.9%	-21.9%	-22.4%	-19.5%	-16.8%	-18.1%	-15.4%	-13.4%
CI Split HEV PHEV20	Vehicle Cost LOW	-88.3%	-88.3%	-83.7%	-79.3%	-62.6%	-57.7%	-49.3%	-51.4%	-43.6%	-36.2%	-42.3%	-36.1%	-30.0%
	Vehicle Cost AVG	-78.6%	-78.6%	-74.5%	-70.6%	-51.4%	-47.7%	-41.8%	-40.2%	-34.9%	-29.7%	-37.0%	-31.8%	-26.7%
	Vehicle Cost HIGH	-65.7%	-65.7%	-62.5%	-59.3%	-35.4%	-32.8%	-28.0%	-28.7%	-24.2%	-20.1%	-22.7%	-18.6%	-15.9%
CI Series HEV PHEV30	Vehicle Cost LOW	-160.0%	-160.0%	-149.7%	-141.3%	-112.3%	-103.1%	-86.8%	-87.9%	-73.2%	-60.2%	-70.5%	-58.1%	-48.8%
	Vehicle Cost AVG	-141.4%	-141.4%	-132.3%	-124.9%	-88.3%	-81.5%	-69.8%	-67.2%	-57.2%	-48.0%	-60.7%	-50.5%	-42.7%
	Vehicle Cost HIGH	-116.5%	-116.5%	-109.3%	-103.3%	-57.9%	-53.2%	-44.1%	-44.3%	-36.2%	-29.4%	-34.3%	-26.9%	-22.6%
CI Series HEV PHEV40	Vehicle Cost LOW	-187.0%	-187.0%	-175.0%	-164.8%	-129.6%	-118.8%	-98.6%	-99.3%	-81.7%	-66.2%	-76.9%	-62.4%	-52.1%
	Vehicle Cost AVG	-164.1%	-164.1%	-153.7%	-144.7%	-100.0%	-92.1%	-77.9%	-73.6%	-61.9%	-51.3%	-66.0%	-54.0%	-45.3%
	Vehicle Cost HIGH	-134.1%	-134.1%	-125.7%	-118.6%	-69.3%	-63.6%	-52.0%	-52.5%	-42.3%	-33.8%	-40.4%	-31.0%	-25.7%
H2 Split HEV	Vehicle Cost LOW	-26.1%	-26.1%	-23.3%	-21.0%	-18.6%	-15.9%	-12.7%	-16.7%	-12.7%	-8.6%	-16.4%	-12.7%	-8.5%
	Vehicle Cost AVG	-43.4%	-43.4%	-40.7%	-38.5%	-28.2%	-26.1%	-23.6%	-23.3%	-20.2%	-16.8%	-14.1%	-11.1%	-7.7%
	Vehicle Cost HIGH	-34.6%	-34.6%	-32.5%	-30.8%	-16.7%	-15.1%	-13.2%	-12.6%	-10.5%	-8.2%	-6.8%	-5.1%	-3.1%
H2 Split HEV PHEV10	Vehicle Cost LOW	-53.4%	-53.4%	-48.7%	-45.2%	-35.4%	-31.0%	-24.8%	-28.4%	-21.9%	-17.1%	-23.9%	-19.6%	-14.5%
	Vehicle Cost AVG	-65.5%	-65.5%	-61.3%	-58.1%	-40.2%	-36.9%	-32.3%	-32.5%	-27.6%	-24.1%	-21.8%	-18.2%	-13.9%
	Vehicle Cost HIGH	-54.8%	-54.8%	-51.4%	-48.8%	-21.6%	-19.6%	-16.7%	-16.3%	-13.4%	-10.8%	-9.3%	-6.8%	-5.0%
H2 Split HEV PHEV20	Vehicle Cost LOW	-73.2%	-73.2%	-66.6%	-61.8%	-47.5%	-41.7%	-33.6%	-36.2%	-27.8%	-20.7%	-27.8%	-21.7%	-16.0%
	Vehicle Cost AVG	-82.2%	-82.2%	-76.3%	-72.1%	-48.2%	-44.0%	-38.2%	-36.5%	-30.7%	-25.7%	-25.0%	-19.9%	-15.1%
	Vehicle Cost HIGH	-67.5%	-67.5%	-62.8%	-59.4%	-30.0%	-27.1%	-22.5%	-22.4%	-17.8%	-14.0%	-13.8%	-9.9%	-7.3%
H2 Series HEV PHEV30	Vehicle Cost LOW	-142.0%	-142.0%	-130.2%	-121.2%	-95.4%	-85.2%	-69.4%	-71.4%	-56.4%	-43.8%	-54.8%	-43.0%	-34.3%
	Vehicle Cost AVG	-142.3%	-142.3%	-131.9%	-124.0%	-83.8%	-76.3%	-65.0%	-62.6%	-52.4%	-43.5%	-47.8%	-38.0%	-30.6%
	Vehicle Cost HIGH	-116.3%	-116.3%	-107.9%	-101.6%	-51.4%	-46.3%	-37.5%	-37.2%	-29.0%	-22.6%	-24.6%	-17.5%	-13.5%
H2 Series HEV PHEV40	Vehicle Cost LOW	-168.4%	-168.4%	-154.2%	-143.6%	-112.0%	-100.0%	-80.7%	-82.4%	-64.4%	-49.5%	-60.8%	-47.1%	-37.3%
	Vehicle Cost AVG	-164.6%	-164.6%	-152.2%	-142.9%	-95.0%	-86.3%	-72.7%	-68.7%	-56.8%	-46.6%	-52.7%	-41.3%	-33.1%
	Vehicle Cost HIGH	-133.4%	-133.4%	-123.6%	-116.1%	-62.3%	-56.1%	-45.0%	-45.0%	-34.8%	-26.7%	-30.3%	-21.4%	-16.4%
E85 Split HEV	Vehicle Cost LOW	-27.7%	-27.7%	-25.7%	-23.6%	-21.3%	-19.0%	-15.8%	-20.0%	-16.4%	-12.4%	-21.0%	-17.3%	-12.6%
	Vehicle Cost AVG	-26.7%	-26.7%	-24.7%	-22.7%	-19.3%	-17.4%	-14.8%	-16.7%	-13.6%	-10.4%	-16.1%	-13.1%	-9.2%
	Vehicle Cost HIGH	-21.6%	-21.6%	-20.0%	-18.5%	-12.4%	-10.9%	-8.9%	-10.0%	-7.9%	-5.6%	-7.6%	-5.7%	-3.3%

Argonne National Laboratory Report – Light-Duty Vehicle Fuel Consumption Displacement Potential Up to 2045

		Midsize_SUV												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
E85 Split HEV PHEV10	Vehicle Cost LOW	-52.8%	-52.8%	-49.4%	-46.4%	-36.3%	-32.7%	-27.2%	-30.3%	-24.6%	-19.8%	-27.1%	-23.0%	-17.7%
	Vehicle Cost AVG	-46.8%	-46.8%	-43.7%	-41.0%	-29.6%	-26.9%	-22.8%	-24.4%	-20.1%	-16.5%	-22.4%	-19.0%	-14.5%
	Vehicle Cost HIGH	-39.9%	-39.9%	-37.4%	-35.2%	-16.1%	-14.4%	-11.5%	-12.7%	-9.9%	-7.3%	-9.1%	-6.5%	-4.5%
E85 Split HEV PHEV20	Vehicle Cost LOW	-71.5%	-71.5%	-67.3%	-63.1%	-48.2%	-43.5%	-35.6%	-38.0%	-30.6%	-23.5%	-31.0%	-25.1%	-19.2%
	Vehicle Cost AVG	-62.5%	-62.5%	-58.7%	-55.1%	-37.5%	-34.1%	-28.4%	-28.4%	-23.3%	-18.3%	-25.6%	-20.7%	-15.7%
	Vehicle Cost HIGH	-51.9%	-51.9%	-48.8%	-45.9%	-24.5%	-22.0%	-17.4%	-18.8%	-14.5%	-10.5%	-13.7%	-9.6%	-6.9%
E85 Series HEV PHEV30	Vehicle Cost LOW	-143.4%	-143.4%	-133.6%	-125.1%	-98.2%	-89.2%	-73.5%	-74.9%	-60.5%	-47.9%	-59.8%	-47.7%	-38.6%
	Vehicle Cost AVG	-125.6%	-125.6%	-116.9%	-109.5%	-74.7%	-68.1%	-56.9%	-55.9%	-46.0%	-37.0%	-50.1%	-39.9%	-32.2%
	Vehicle Cost HIGH	-103.1%	-103.1%	-96.2%	-90.1%	-46.9%	-42.3%	-33.5%	-34.5%	-26.4%	-19.8%	-25.3%	-17.9%	-13.6%
E85 Series HEV PHEV40	Vehicle Cost LOW	-169.9%	-169.9%	-158.0%	-148.0%	-114.8%	-104.4%	-85.1%	-86.0%	-68.7%	-53.7%	-66.0%	-51.9%	-41.7%
	Vehicle Cost AVG	-147.9%	-147.9%	-137.5%	-128.8%	-85.9%	-78.4%	-64.7%	-62.1%	-50.6%	-40.3%	-55.1%	-43.3%	-34.7%
	Vehicle Cost HIGH	-120.3%	-120.3%	-112.0%	-105.0%	-57.9%	-52.4%	-41.2%	-42.4%	-32.3%	-24.0%	-31.1%	-21.9%	-16.6%
FC HEV	Vehicle Cost LOW	-78.9%	-78.9%	-62.9%	-52.5%	-71.2%	-53.3%	-43.5%	-29.5%	-20.6%	-12.5%	-14.3%	-8.7%	-3.0%
	Vehicle Cost AVG	-117.2%	-117.2%	-94.0%	-78.5%	-68.3%	-52.6%	-43.4%	-39.7%	-29.3%	-19.7%	-13.6%	-8.2%	-2.7%
	Vehicle Cost HIGH	-96.7%	-96.7%	-77.7%	-64.8%	-36.7%	-27.2%	-21.5%	-22.1%	-15.4%	-9.3%	-4.9%	-1.5%	2.0%
FC HEV PHEV10	Vehicle Cost LOW	-93.2%	-93.2%	-77.2%	-67.5%	-75.0%	-60.2%	-49.0%	-38.5%	-27.6%	-18.0%	-21.4%	-14.4%	-7.6%
	Vehicle Cost AVG	-123.4%	-123.4%	-102.4%	-88.5%	-71.7%	-58.3%	-48.2%	-45.1%	-33.8%	-23.5%	-19.7%	-13.1%	-6.7%
	Vehicle Cost HIGH	-101.8%	-101.8%	-84.4%	-73.0%	-36.6%	-28.7%	-22.2%	-23.1%	-15.8%	-9.5%	-6.4%	-2.1%	1.5%
FC HEV PHEV20	Vehicle Cost LOW	-118.2%	-118.2%	-98.9%	-86.7%	-90.3%	-73.1%	-57.9%	-47.8%	-34.5%	-22.6%	-25.9%	-17.7%	-9.9%
	Vehicle Cost AVG	-145.3%	-145.3%	-121.2%	-105.1%	-82.2%	-67.2%	-54.3%	-50.4%	-37.6%	-26.1%	-23.4%	-15.8%	-8.6%
	Vehicle Cost HIGH	-118.6%	-118.6%	-98.9%	-85.8%	-47.1%	-37.5%	-28.5%	-30.3%	-21.1%	-13.1%	-11.3%	-5.6%	-1.1%
FC HEV PHEV30	Vehicle Cost LOW	-157.2%	-157.2%	-137.8%	-126.4%	-115.6%	-100.3%	-82.6%	-71.3%	-54.9%	-41.4%	-45.0%	-33.5%	-24.8%
	Vehicle Cost AVG	-179.6%	-179.6%	-155.9%	-140.8%	-104.6%	-90.5%	-75.1%	-69.8%	-54.9%	-42.1%	-40.4%	-29.8%	-21.8%
	Vehicle Cost HIGH	-147.5%	-147.5%	-128.1%	-115.8%	-55.2%	-46.5%	-35.8%	-37.1%	-26.4%	-18.0%	-16.5%	-9.0%	-4.4%
FC HEV PHEV40	Vehicle Cost LOW	-185.5%	-185.5%	-161.4%	-147.6%	-132.0%	-114.2%	-92.8%	-81.6%	-62.1%	-46.9%	-50.4%	-37.1%	-27.6%
	Vehicle Cost AVG	-204.8%	-204.8%	-176.8%	-159.7%	-116.2%	-100.4%	-82.4%	-76.1%	-59.3%	-45.4%	-44.9%	-32.8%	-24.2%
	Vehicle Cost HIGH	-167.0%	-167.0%	-144.3%	-130.4%	-66.2%	-55.9%	-42.7%	-44.9%	-31.7%	-22.0%	-21.9%	-12.4%	-7.2%
EV	Vehicle Cost LOW	-412.2%	-412.2%	-379.3%	-352.2%	-257.3%	-229.5%	-167.9%	-171.2%	-120.4%	-83.9%	-96.9%	-62.2%	-45.1%
	Vehicle Cost AVG	-345.3%	-345.3%	-317.5%	-294.5%	-175.0%	-155.9%	-114.0%	-96.1%	-67.2%	-46.2%	-77.1%	-48.7%	-34.7%
	Vehicle Cost HIGH	-268.3%	-268.3%	-246.6%	-228.8%	-150.9%	-134.0%	-94.3%	-50.1%	-31.8%	-18.7%	-46.0%	-24.8%	-15.3%

Pickup Class

Incremental Cost versus the Conventional 2010 Reference

		Pickup												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Conv	Vehicle Cost LOW	0	0	-63	-155	2	-99	-229	825	653	492	1269	1088	870
	Vehicle Cost AVG	0	0	-63	-155	803	706	580	1208	1027	855	1198	1024	813
	Vehicle Cost HIGH	0	0	-63	-155	137	36	-93	569	392	225	552	377	164
CI Conv	Vehicle Cost LOW	2534	2534	2422	2330	2261	2150	893	3021	1644	1478	2984	1626	1443
	Vehicle Cost AVG	2452	2452	2348	2260	3131	3032	1677	3096	1684	1539	2979	1591	1434
	Vehicle Cost HIGH	2061	2061	1975	1895	2001	1920	695	2264	1026	899	2087	877	741
H2 Conv	Vehicle Cost LOW	-904	-904	-953	-1019	-1000	-1059	-1139	-281	-379	-1145	-92	-152	-957
	Vehicle Cost AVG	2114	2114	2064	1997	1774	1717	1639	1728	1629	795	302	241	-565
	Vehicle Cost HIGH	1553	1553	1503	1436	382	318	235	549	437	-313	-9	-87	-850
E85 Conv	Vehicle Cost LOW	-30	-30	-106	-199	-31	-133	-252	792	629	459	1231	1065	857
	Vehicle Cost AVG	-29	-29	-105	-198	774	675	560	1173	1001	820	1163	1003	802
	Vehicle Cost HIGH	-30	-30	-106	-199	104	1	-117	531	364	187	512	350	148
SI Split HEV	Vehicle Cost LOW	5961	5961	5534	4615	4769	3726	3118	4421	3115	2249	4627	3162	2243
	Vehicle Cost AVG	5763	5763	5347	4408	4234	3231	2749	3770	2515	1795	3645	2314	1559
	Vehicle Cost HIGH	4043	4043	3717	2884	2254	1416	1031	1721	778	284	1257	307	-152
SI Split HEV PHEV10	Vehicle Cost LOW	10442	10442	9817	9122	7118	6455	5251	5758	4599	3748	5089	4289	3270
	Vehicle Cost AVG	9218	9218	8655	8030	5625	5123	4222	4531	3638	3010	4150	3481	2609
	Vehicle Cost HIGH	7140	7140	6681	6169	2390	2079	1512	1630	1115	623	939	472	93
SI Split HEV PHEV20	Vehicle Cost LOW	14195	14195	13346	12457	9454	8609	7003	7269	5847	4493	5828	4722	3610
	Vehicle Cost AVG	12364	12364	11614	10828	7170	6548	5408	5315	4342	3365	4741	3819	2876
	Vehicle Cost HIGH	9534	9534	8931	8299	4034	3596	2659	2817	1984	1267	1807	1068	556
SI Series HEV PHEV30	Vehicle Cost LOW	27463	27463	25756	23991	18645	17056	13966	13959	11302	9052	11062	8919	7225
	Vehicle Cost AVG	23997	23997	22491	20934	14002	12832	10622	10285	8462	6860	9180	7384	5949
	Vehicle Cost HIGH	18972	18972	17758	16504	8200	7388	5648	5684	4193	3012	3950	2625	1819
SI Series HEV PHEV40	Vehicle Cost LOW	32649	32649	30538	28397	21863	20009	16225	16067	12880	10205	12240	9731	7855
	Vehicle Cost AVG	28376	28376	26529	24654	16181	14830	12149	11472	9345	7506	10142	8046	6462
	Vehicle Cost HIGH	22348	22348	20870	19369	10323	9340	7148	7199	5334	3846	5064	3405	2420
CI Split HEV	Vehicle Cost LOW	8210	8210	7730	7212	6561	6079	5370	5987	5148	4295	5724	4910	3951
	Vehicle Cost AVG	7899	7899	7436	6936	5845	5461	4901	4939	4265	3582	4694	4038	3267
	Vehicle Cost HIGH	5707	5707	5353	4969	3496	3214	2797	2743	2288	1832	2089	1707	1264

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		Pickup												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
CI Split HEV PHEV10	Vehicle Cost LOW	13151	13151	12520	11813	9494	8794	7586	7997	6825	5890	6965	6150	5081
	Vehicle Cost AVG	11812	11812	11246	10613	7932	7401	6503	6511	5633	4936	6027	5355	4449
	Vehicle Cost HIGH	9374	9374	8917	8404	4157	3833	3241	3235	2687	2198	2415	1932	1563
CI Split HEV PHEV20	Vehicle Cost LOW	17024	17024	16108	15174	11866	10981	9331	9513	8030	6671	7740	6586	5441
	Vehicle Cost AVG	15056	15056	14249	13425	9498	8844	7672	7287	6273	5314	6647	5693	4731
	Vehicle Cost HIGH	11841	11841	11197	10538	5835	5384	4423	4438	3595	2863	3311	2558	2041
CI Series HEV PHEV30	Vehicle Cost LOW	30326	30326	28552	26723	21082	19440	16246	16190	13452	11136	12858	10671	8955
	Vehicle Cost AVG	26706	26706	25145	23535	16336	15124	12836	12201	10338	8702	10972	9151	7710
	Vehicle Cost HIGH	21254	21254	20005	18715	10063	9232	7443	7348	5824	4621	5450	4114	3314
CI Series HEV PHEV40	Vehicle Cost LOW	35598	35598	33472	31286	24378	22442	18543	18357	15063	12320	14080	11508	9607
	Vehicle Cost AVG	31159	31159	29298	27386	18570	17156	14389	13420	11238	9363	11966	9832	8240
	Vehicle Cost HIGH	24682	24682	23201	21679	12233	11213	8965	8896	6985	5475	6595	4913	3933
H2 Split HEV	Vehicle Cost LOW	5695	5695	5183	4076	4313	3087	2492	3817	2359	1563	3737	2325	1484
	Vehicle Cost AVG	8513	8513	8014	6881	5697	4533	4070	4797	3423	2784	3202	1919	1239
	Vehicle Cost HIGH	6170	6170	5787	4791	2971	1980	1626	2144	1069	641	1115	127	-269
H2 Split HEV PHEV10	Vehicle Cost LOW	10442	10442	9567	8820	6934	6052	4808	5391	4051	3154	4450	3631	2598
	Vehicle Cost AVG	12207	12207	11417	10745	7317	6649	5719	5799	4769	4103	3930	3248	2368
	Vehicle Cost HIGH	9488	9488	8843	8297	3226	2849	2295	2140	1590	1121	882	441	93
H2 Split HEV PHEV20	Vehicle Cost LOW	14234	14234	13141	12059	9232	8216	6511	6869	5301	3924	5243	4092	2972
	Vehicle Cost AVG	15383	15383	14414	13455	8833	8087	6872	6555	5474	4488	4568	3610	2666
	Vehicle Cost HIGH	11907	11907	11129	10357	4851	4345	3402	3309	2454	1749	1739	1028	545
H2 Series HEV PHEV30	Vehicle Cost LOW	27056	27056	25036	23168	18052	16268	13166	13273	10524	8265	10110	8025	6405
	Vehicle Cost AVG	26587	26587	24807	23161	15370	14063	11856	11267	9398	7808	8693	6953	5586
	Vehicle Cost HIGH	20986	20986	19556	18235	8816	7930	6207	6036	4530	3372	3737	2467	1721
H2 Series HEV PHEV40	Vehicle Cost LOW	32256	32256	29757	27550	21255	19141	15374	15358	12066	9390	11258	8822	7022
	Vehicle Cost AVG	30977	30977	28791	26858	17533	16004	13345	12433	10255	8433	9628	7601	6088
	Vehicle Cost HIGH	24366	24366	22623	21080	10926	9821	7669	7531	5643	4182	4826	3230	2310
E85 Split HEV	Vehicle Cost LOW	6058	6058	5639	4679	4806	3794	3144	4478	3101	2271	4686	3211	2319
	Vehicle Cost AVG	5861	5861	5453	4472	4269	3292	2773	3825	2506	1819	3699	2358	1625
	Vehicle Cost HIGH	4125	4125	3804	2939	2285	1459	1053	1765	773	303	1298	340	-109

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		Pickup												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
E85 Split HEV PHEV10	Vehicle Cost LOW	10520	10520	9813	9154	7211	6543	5275	5787	4626	3779	5120	4318	3298
	Vehicle Cost AVG	9291	9291	8655	8062	5704	5199	4246	4560	3665	3040	4179	3508	2636
	Vehicle Cost HIGH	7204	7204	6681	6198	2428	2115	1533	1651	1135	643	959	492	112
E85 Split HEV PHEV20	Vehicle Cost LOW	14236	14236	13396	12492	9485	8642	7033	7300	5876	4521	5906	4751	3639
	Vehicle Cost AVG	12404	12404	11661	10862	7199	6578	5436	5345	4370	3393	4810	3847	2903
	Vehicle Cost HIGH	9569	9569	8971	8329	4057	3621	2681	2838	2005	1287	1838	1088	575
E85 Series HEV PHEV30	Vehicle Cost LOW	27505	27505	25796	24039	18685	17111	14000	14007	11333	9081	11093	8949	7256
	Vehicle Cost AVG	24037	24037	22529	20980	14037	12877	10653	10325	8492	6889	9209	7412	5978
	Vehicle Cost HIGH	19007	19007	17792	16543	8228	7427	5673	5719	4216	3033	3972	2646	1841
E85 Series HEV PHEV40	Vehicle Cost LOW	32692	32692	30606	28452	21900	20050	16259	16107	12917	10235	12273	9765	7884
	Vehicle Cost AVG	28417	28417	26592	24705	16215	14866	12179	11508	9380	7534	10172	8077	6490
	Vehicle Cost HIGH	22384	22384	20923	19413	10351	9369	7173	7227	5360	3868	5087	3428	2441
FC HEV	Vehicle Cost LOW	15852	15852	12678	10508	14337	10989	8760	6013	4227	2707	2966	1922	801
	Vehicle Cost AVG	23429	23429	18867	15613	13590	10633	8610	7924	5854	4112	2783	1776	712
	Vehicle Cost HIGH	18659	18659	14904	12215	6736	4957	3695	3782	2449	1324	397	-238	-906
FC HEV PHEV10	Vehicle Cost LOW	18595	18595	15408	13356	14810	12101	9669	7684	5481	3676	4315	3040	1638
	Vehicle Cost AVG	24530	24530	20384	17461	14023	11577	9420	8873	6616	4744	3935	2742	1440
	Vehicle Cost HIGH	19543	19543	16119	13711	6631	5179	3795	3947	2488	1334	692	-80	-798
FC HEV PHEV20	Vehicle Cost LOW	23532	23532	19699	17155	17781	14639	11631	9477	6805	4598	5220	3631	2097
	Vehicle Cost AVG	28841	28841	24113	20759	16070	13322	10763	9895	7364	5258	4679	3224	1817
	Vehicle Cost HIGH	22862	22862	18987	16248	8657	6912	5133	5336	3512	2053	1664	578	-292
FC HEV PHEV30	Vehicle Cost LOW	30631	30631	27098	24613	22416	19606	16071	13611	10578	8183	8614	6566	4954
	Vehicle Cost AVG	35074	35074	30711	27503	20175	17612	14544	13302	10540	8293	7704	5840	4344
	Vehicle Cost HIGH	28090	28090	24529	21909	10194	8590	6442	6489	4489	3007	2588	1217	375
FC HEV PHEV40	Vehicle Cost LOW	36214	36214	31734	28843	25545	22331	18065	15582	11951	9268	9636	7253	5525
	Vehicle Cost AVG	40062	40062	34853	31249	22422	19564	16017	14510	11396	8968	8562	6411	4826
	Vehicle Cost HIGH	31949	31949	27734	24805	12303	10429	7807	7974	5516	3821	3603	1887	937
EV	Vehicle Cost LOW	81567	81567	75765	69788	50378	45457	33299	33044	23567	16911	18671	12442	9165
	Vehicle Cost AVG	68331	68331	63429	58378	34181	30795	22540	18519	13136	9311	14834	9742	7045
	Vehicle Cost HIGH	52392	52392	48581	44653	29007	25991	18181	9075	5654	3275	8283	4437	2599

Cost saving per powertrain

		Pickup												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Conv	Vehicle Cost LOW	0	0	-63	-155	2	-99	-229	825	653	492	1269	1088	870
	Vehicle Cost AVG	0	0	-63	-155	803	706	580	1208	1027	855	1198	1024	813
	Vehicle Cost HIGH	0	0	-63	-155	137	36	-93	569	392	225	552	377	164
CI Conv	Vehicle Cost LOW	0	0	-112	-205	-274	-385	-1641	487	-890	-1056	450	-909	-1091
	Vehicle Cost AVG	0	0	-103	-192	679	580	-774	644	-768	-913	528	-861	-1017
	Vehicle Cost HIGH	0	0	-86	-167	-61	-142	-1367	203	-1035	-1163	26	-1185	-1321
H2 Conv	Vehicle Cost LOW	0	0	-49	-115	-95	-155	-234	623	525	-240	812	752	-53
	Vehicle Cost AVG	0	0	-50	-117	-340	-397	-475	-386	-485	-1319	-1812	-1873	-2679
	Vehicle Cost HIGH	0	0	-50	-117	-1171	-1235	-1318	-1004	-1116	-1866	-1562	-1640	-2403
E85 Conv	Vehicle Cost LOW	0	0	-77	-170	-1	-104	-222	822	659	488	1261	1095	887
	Vehicle Cost AVG	0	0	-77	-170	803	704	588	1201	1030	849	1192	1031	831
	Vehicle Cost HIGH	0	0	-77	-170	134	31	-88	561	393	217	542	380	178
SI Split HEV	Vehicle Cost LOW	0	0	-427	-1345	-1192	-2235	-2842	-1540	-2846	-3712	-1334	-2799	-3718
	Vehicle Cost AVG	0	0	-416	-1356	-1529	-2532	-3014	-1993	-3248	-3968	-2118	-3449	-4204
	Vehicle Cost HIGH	0	0	-326	-1159	-1789	-2627	-3012	-2322	-3264	-3759	-2785	-3736	-4195
SI Split HEV PHEV10	Vehicle Cost LOW	0	0	-625	-1321	-3324	-3988	-5191	-4684	-5843	-6694	-5353	-6153	-7173
	Vehicle Cost AVG	0	0	-563	-1188	-3593	-4094	-4996	-4687	-5580	-6208	-5068	-5737	-6609
	Vehicle Cost HIGH	0	0	-460	-972	-4751	-5061	-5628	-5511	-6025	-6517	-6202	-6669	-7048
SI Split HEV PHEV20	Vehicle Cost LOW	0	0	-849	-1738	-4741	-5586	-7192	-6926	-8348	-9702	-8367	-9473	-10585
	Vehicle Cost AVG	0	0	-750	-1536	-5194	-5816	-6956	-7049	-8022	-8999	-7623	-8545	-9488
	Vehicle Cost HIGH	0	0	-603	-1235	-5499	-5938	-6874	-6717	-7550	-8267	-7726	-8465	-8978
SI Series HEV PHEV30	Vehicle Cost LOW	0	0	-1707	-3472	-8818	-10407	-13497	-13505	-16161	-18411	-16401	-18544	-20238
	Vehicle Cost AVG	0	0	-1506	-3062	-9995	-11165	-13375	-13712	-15535	-17136	-14816	-16613	-18048
	Vehicle Cost HIGH	0	0	-1214	-2469	-10772	-11584	-13324	-13288	-14779	-15961	-15022	-16347	-17153
SI Series HEV PHEV40	Vehicle Cost LOW	0	0	-2111	-4251	-10786	-12639	-16423	-16582	-19769	-22444	-20409	-22917	-24794
	Vehicle Cost AVG	0	0	-1848	-3723	-12195	-13546	-16228	-16904	-19031	-20871	-18235	-20330	-21914
	Vehicle Cost HIGH	0	0	-1478	-2979	-12025	-13008	-15200	-15149	-17014	-18502	-17284	-18943	-19927
CI Split HEV	Vehicle Cost LOW	0	0	-480	-998	-1649	-2131	-2840	-2223	-3062	-3915	-2486	-3300	-4259
	Vehicle Cost AVG	0	0	-463	-963	-2055	-2438	-2998	-2960	-3634	-4318	-3205	-3862	-4632
	Vehicle Cost HIGH	0	0	-355	-738	-2212	-2493	-2910	-2965	-3419	-3875	-3619	-4000	-4443

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		Pickup												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
CI Split HEV PHEV10	Vehicle Cost LOW	0	0	-631	-1338	-3656	-4357	-5564	-5154	-6326	-7261	-6186	-7001	-8070
	Vehicle Cost AVG	0	0	-566	-1200	-3880	-4411	-5309	-5301	-6179	-6876	-5785	-6457	-7363
	Vehicle Cost HIGH	0	0	-457	-969	-5217	-5541	-6132	-6139	-6687	-7176	-6958	-7442	-7810
CI Split HEV PHEV20	Vehicle Cost LOW	0	0	-916	-1850	-5158	-6043	-7692	-7510	-8994	-10353	-9284	-10438	-11583
	Vehicle Cost AVG	0	0	-807	-1632	-5559	-6212	-7384	-7769	-8783	-9743	-8409	-9363	-10325
	Vehicle Cost HIGH	0	0	-644	-1303	-6006	-6457	-7418	-7403	-8246	-8979	-8530	-9283	-9800
CI Series HEV PHEV30	Vehicle Cost LOW	0	0	-1773	-3603	-9244	-10886	-14079	-14136	-16874	-19190	-17468	-19655	-21370
	Vehicle Cost AVG	0	0	-1561	-3172	-10370	-11583	-13871	-14506	-16369	-18004	-15735	-17555	-18997
	Vehicle Cost HIGH	0	0	-1250	-2540	-11192	-12022	-13811	-13907	-15430	-16634	-15805	-17141	-17940
CI Series HEV PHEV40	Vehicle Cost LOW	0	0	-2126	-4312	-11221	-13156	-17055	-17241	-20535	-23278	-21518	-24090	-25991
	Vehicle Cost AVG	0	0	-1860	-3772	-12589	-14003	-16770	-17738	-19921	-21795	-19193	-21327	-22919
	Vehicle Cost HIGH	0	0	-1481	-3004	-12449	-13469	-15717	-15786	-17697	-19207	-18087	-19769	-20749
H2 Split HEV	Vehicle Cost LOW	0	0	-511	-1619	-1381	-2607	-3202	-1878	-3335	-4132	-1957	-3370	-4210
	Vehicle Cost AVG	0	0	-499	-1632	-2817	-3980	-4444	-3716	-5090	-5730	-5312	-6594	-7274
	Vehicle Cost HIGH	0	0	-383	-1379	-3200	-4190	-4544	-4026	-5101	-5530	-5055	-6044	-6439
H2 Split HEV PHEV10	Vehicle Cost LOW	0	0	-875	-1622	-3508	-4390	-5633	-5051	-6391	-7288	-5992	-6810	-7844
	Vehicle Cost AVG	0	0	-789	-1462	-4890	-5557	-6488	-6408	-7437	-8104	-8277	-8959	-9839
	Vehicle Cost HIGH	0	0	-645	-1191	-6262	-6639	-7194	-7348	-7898	-8367	-8606	-9047	-9395
H2 Split HEV PHEV20	Vehicle Cost LOW	0	0	-1093	-2175	-5002	-6018	-7723	-7365	-8933	-10310	-8991	-10142	-11262
	Vehicle Cost AVG	0	0	-969	-1928	-6551	-7296	-8511	-8828	-9909	-10895	-10815	-11773	-12718
	Vehicle Cost HIGH	0	0	-778	-1549	-7055	-7562	-8504	-8597	-9452	-10158	-10167	-10878	-11362
H2 Series HEV PHEV30	Vehicle Cost LOW	0	0	-2021	-3889	-9004	-10788	-13890	-13783	-16533	-18791	-16946	-19031	-20652
	Vehicle Cost AVG	0	0	-1780	-3426	-11217	-12524	-14731	-15320	-17189	-18779	-17894	-19635	-21002
	Vehicle Cost HIGH	0	0	-1430	-2751	-12169	-13056	-14779	-14950	-16456	-17614	-17249	-18519	-19265
H2 Series HEV PHEV40	Vehicle Cost LOW	0	0	-2499	-4706	-11001	-13115	-16882	-16898	-20190	-22866	-20998	-23434	-25234
	Vehicle Cost AVG	0	0	-2186	-4118	-13444	-14972	-17631	-18544	-20722	-22543	-21349	-23376	-24889
	Vehicle Cost HIGH	0	0	-1743	-3286	-13440	-14545	-16697	-16835	-18723	-20184	-19540	-21136	-22056
E85 Split HEV	Vehicle Cost LOW	0	0	-418	-1379	-1252	-2264	-2914	-1580	-2956	-3786	-1372	-2847	-3738
	Vehicle Cost AVG	0	0	-408	-1389	-1592	-2569	-3088	-2037	-3355	-4042	-2163	-3503	-4236
	Vehicle Cost HIGH	0	0	-321	-1186	-1840	-2666	-3072	-2360	-3352	-3822	-2827	-3785	-4234

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		Pickup												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
E85 Split HEV PHEV10	Vehicle Cost LOW	0	0	-706	-1365	-3309	-3976	-5244	-4733	-5894	-6741	-5400	-6202	-7221
	Vehicle Cost AVG	0	0	-636	-1229	-3587	-4092	-5045	-4731	-5626	-6251	-5112	-5783	-6654
	Vehicle Cost HIGH	0	0	-523	-1006	-4776	-5089	-5671	-5554	-6069	-6561	-6245	-6712	-7092
E85 Split HEV PHEV20	Vehicle Cost LOW	0	0	-840	-1745	-4751	-5594	-7203	-6936	-8361	-9716	-8330	-9485	-10597
	Vehicle Cost AVG	0	0	-743	-1542	-5205	-5825	-6967	-7058	-8034	-9011	-7594	-8557	-9500
	Vehicle Cost HIGH	0	0	-598	-1240	-5511	-5948	-6887	-6730	-7564	-8282	-7731	-8481	-8994
E85 Series HEV PHEV30	Vehicle Cost LOW	0	0	-1710	-3466	-8821	-10395	-13505	-13498	-16172	-18424	-16413	-18557	-20249
	Vehicle Cost AVG	0	0	-1508	-3057	-10000	-11160	-13384	-13712	-15545	-17148	-14828	-16625	-18059
	Vehicle Cost HIGH	0	0	-1215	-2464	-10779	-11581	-13334	-13289	-14791	-15974	-15035	-16361	-17167
E85 Series HEV PHEV40	Vehicle Cost LOW	0	0	-2086	-4240	-10792	-12642	-16433	-16585	-19775	-22457	-20419	-22928	-24808
	Vehicle Cost AVG	0	0	-1826	-3712	-12203	-13551	-16238	-16909	-19038	-20883	-18245	-20340	-21928
	Vehicle Cost HIGH	0	0	-1461	-2971	-12033	-13014	-15211	-15157	-17024	-18516	-17297	-18956	-19943
FC HEV	Vehicle Cost LOW	0	0	-3173	-5343	-1515	-4862	-7091	-9839	-11625	-13145	-12886	-13929	-15050
	Vehicle Cost AVG	0	0	-4563	-7816	-9839	-12796	-14819	-15506	-17576	-19318	-20646	-21653	-22717
	Vehicle Cost HIGH	0	0	-3755	-6443	-11922	-13701	-14963	-14877	-16209	-17335	-18262	-18897	-19565
FC HEV PHEV10	Vehicle Cost LOW	0	0	-3187	-5239	-3785	-6494	-8926	-10911	-13114	-14919	-14280	-15555	-16957
	Vehicle Cost AVG	0	0	-4145	-7069	-10507	-12952	-15110	-15657	-17913	-19785	-20594	-21788	-23089
	Vehicle Cost HIGH	0	0	-3424	-5832	-12912	-14364	-15748	-15596	-17055	-18209	-18851	-19623	-20341
FC HEV PHEV20	Vehicle Cost LOW	0	0	-3833	-6376	-5751	-8892	-11900	-14054	-16727	-18933	-18311	-19901	-21434
	Vehicle Cost AVG	0	0	-4728	-8082	-12771	-15520	-18078	-18946	-21477	-23583	-24162	-25617	-27024
	Vehicle Cost HIGH	0	0	-3875	-6614	-14204	-15950	-17729	-17526	-19350	-20809	-21198	-22283	-23153
FC HEV PHEV30	Vehicle Cost LOW	0	0	-3534	-6018	-8215	-11025	-14561	-17021	-20053	-22448	-22017	-24066	-25677
	Vehicle Cost AVG	0	0	-4363	-7570	-14899	-17462	-20530	-21772	-24533	-26780	-27369	-29234	-30730
	Vehicle Cost HIGH	0	0	-3561	-6181	-17895	-19500	-21648	-21601	-23601	-25082	-25502	-26873	-27714
FC HEV PHEV40	Vehicle Cost LOW	0	0	-4480	-7372	-10669	-13883	-18150	-20632	-24263	-26946	-26578	-28961	-30689
	Vehicle Cost AVG	0	0	-5209	-8812	-17640	-20498	-24045	-25552	-28666	-31094	-31500	-33651	-35236
	Vehicle Cost HIGH	0	0	-4215	-7144	-19646	-21520	-24142	-23974	-26432	-28128	-28345	-30062	-31011
EV	Vehicle Cost LOW	0	0	-5802	-11779	-31189	-36110	-48269	-48523	-58001	-64657	-62897	-69125	-72403
	Vehicle Cost AVG	0	0	-4902	-9953	-34150	-37536	-45791	-49811	-55194	-59019	-53497	-58588	-61286
	Vehicle Cost HIGH	0	0	-3810	-7738	-23385	-26400	-34211	-43316	-46737	-49116	-44108	-47955	-49793

Percentage decrease cost per powertrain

		Pickup												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
SI Conv	Vehicle Cost LOW	0.0%	0.0%	0.4%	0.9%	0.0%	0.6%	1.3%	-4.8%	-3.8%	-2.9%	-7.4%	-6.3%	-5.1%
	Vehicle Cost AVG	-0.2%	-0.2%	0.1%	0.7%	-4.9%	-4.3%	-3.6%	-7.3%	-6.2%	-5.2%	-7.2%	-6.2%	-5.0%
	Vehicle Cost HIGH	-3.8%	-3.8%	-3.4%	-2.9%	-4.6%	-4.0%	-3.3%	-7.1%	-6.1%	-5.1%	-7.0%	-6.0%	-4.8%
CI Conv	Vehicle Cost LOW	-14.7%	-14.7%	-14.1%	-13.6%	-13.2%	-12.5%	-5.2%	-17.6%	-9.6%	-8.6%	-17.4%	-9.5%	-8.4%
	Vehicle Cost AVG	-14.5%	-14.5%	-13.9%	-13.4%	-18.5%	-17.9%	-10.0%	-18.2%	-10.0%	-9.2%	-17.6%	-9.5%	-8.6%
	Vehicle Cost HIGH	-15.8%	-15.8%	-15.3%	-14.8%	-15.4%	-15.0%	-7.8%	-17.0%	-9.8%	-9.0%	-15.9%	-8.9%	-8.1%
H2 Conv	Vehicle Cost LOW	5.3%	5.3%	5.5%	5.9%	5.8%	6.2%	6.6%	1.6%	2.2%	6.7%	0.5%	0.9%	5.6%
	Vehicle Cost AVG	-12.5%	-12.5%	-12.2%	-11.9%	-10.6%	-10.2%	-9.8%	-10.3%	-9.7%	-4.9%	-2.0%	-1.6%	3.1%
	Vehicle Cost HIGH	-12.8%	-12.8%	-12.5%	-12.2%	-6.0%	-5.6%	-5.2%	-7.0%	-6.3%	-2.0%	-3.7%	-3.3%	1.1%
E85 Conv	Vehicle Cost LOW	0.2%	0.2%	0.6%	1.2%	0.2%	0.8%	1.5%	-4.6%	-3.7%	-2.7%	-7.2%	-6.2%	-5.0%
	Vehicle Cost AVG	-0.1%	-0.1%	0.4%	0.9%	-4.7%	-4.2%	-3.5%	-7.1%	-6.1%	-5.0%	-7.0%	-6.1%	-4.9%
	Vehicle Cost HIGH	-3.6%	-3.6%	-3.2%	-2.6%	-4.4%	-3.8%	-3.1%	-6.9%	-5.9%	-4.9%	-6.8%	-5.8%	-4.7%
SI Split HEV	Vehicle Cost LOW	-34.7%	-34.7%	-32.2%	-26.9%	-27.7%	-21.7%	-18.1%	-25.7%	-18.1%	-13.1%	-26.9%	-18.4%	-13.0%
	Vehicle Cost AVG	-33.8%	-33.8%	-31.3%	-25.9%	-24.9%	-19.0%	-16.2%	-22.2%	-14.9%	-10.7%	-21.4%	-13.7%	-9.3%
	Vehicle Cost HIGH	-27.3%	-27.3%	-25.4%	-20.6%	-16.9%	-12.0%	-9.8%	-13.8%	-8.3%	-5.4%	-11.1%	-5.6%	-2.9%
SI Split HEV PHEV10	Vehicle Cost LOW	-60.8%	-60.8%	-57.1%	-53.1%	-41.4%	-37.6%	-30.6%	-33.5%	-26.8%	-21.8%	-29.6%	-25.0%	-19.0%
	Vehicle Cost AVG	-53.9%	-53.9%	-50.6%	-47.0%	-33.0%	-30.0%	-24.8%	-26.6%	-21.4%	-17.7%	-24.4%	-20.5%	-15.4%
	Vehicle Cost HIGH	-45.3%	-45.3%	-42.7%	-39.7%	-17.7%	-15.9%	-12.6%	-13.3%	-10.3%	-7.4%	-9.3%	-6.5%	-4.3%
SI Split HEV PHEV20	Vehicle Cost LOW	-82.6%	-82.6%	-77.7%	-72.5%	-55.0%	-50.1%	-40.8%	-42.3%	-34.0%	-26.1%	-33.9%	-27.5%	-21.0%
	Vehicle Cost AVG	-72.2%	-72.2%	-67.8%	-63.2%	-42.0%	-38.3%	-31.7%	-31.2%	-25.5%	-19.8%	-27.8%	-22.5%	-17.0%
	Vehicle Cost HIGH	-59.3%	-59.3%	-55.8%	-52.1%	-27.3%	-24.7%	-19.3%	-20.2%	-15.3%	-11.2%	-14.3%	-10.0%	-7.0%
SI Series HEV PHEV30	Vehicle Cost LOW	-159.8%	-159.8%	-149.9%	-139.6%	-108.5%	-99.2%	-81.3%	-81.2%	-65.8%	-52.7%	-64.4%	-51.9%	-42.0%
	Vehicle Cost AVG	-139.9%	-139.9%	-131.1%	-122.0%	-81.7%	-74.9%	-62.0%	-60.1%	-49.5%	-40.2%	-53.7%	-43.2%	-34.8%
	Vehicle Cost HIGH	-114.2%	-114.2%	-107.1%	-99.8%	-51.5%	-46.8%	-36.7%	-36.9%	-28.2%	-21.3%	-26.8%	-19.1%	-14.4%
SI Series HEV PHEV40	Vehicle Cost LOW	-190.0%	-190.0%	-177.7%	-165.2%	-127.2%	-116.4%	-94.4%	-93.5%	-74.9%	-59.4%	-71.2%	-56.6%	-45.7%
	Vehicle Cost AVG	-165.3%	-165.3%	-154.6%	-143.7%	-94.4%	-86.5%	-70.9%	-67.0%	-54.6%	-43.9%	-59.2%	-47.1%	-37.8%
	Vehicle Cost HIGH	-133.8%	-133.8%	-125.2%	-116.5%	-63.9%	-58.1%	-45.4%	-45.7%	-34.8%	-26.2%	-33.3%	-23.6%	-17.9%
CI Split HEV	Vehicle Cost LOW	-47.8%	-47.8%	-45.0%	-42.0%	-38.2%	-35.4%	-31.2%	-34.8%	-30.0%	-25.0%	-33.3%	-28.6%	-23.0%
	Vehicle Cost AVG	-46.2%	-46.2%	-43.5%	-40.6%	-34.2%	-32.0%	-28.8%	-29.0%	-25.1%	-21.1%	-27.5%	-23.7%	-19.2%
	Vehicle Cost HIGH	-37.0%	-37.0%	-34.9%	-32.7%	-24.1%	-22.5%	-20.1%	-19.8%	-17.1%	-14.5%	-16.0%	-13.7%	-11.2%

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		Pickup												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
CI Split HEV PHEV10	Vehicle Cost LOW	-76.5%	-76.5%	-72.8%	-68.7%	-55.2%	-51.2%	-44.1%	-46.5%	-39.7%	-34.3%	-40.5%	-35.8%	-29.6%
	Vehicle Cost AVG	-69.0%	-69.0%	-65.7%	-62.0%	-46.4%	-43.3%	-38.1%	-38.1%	-33.0%	-29.0%	-35.3%	-31.4%	-26.1%
	Vehicle Cost HIGH	-58.3%	-58.3%	-55.7%	-52.7%	-28.0%	-26.1%	-22.7%	-22.6%	-19.4%	-16.6%	-17.8%	-15.0%	-12.9%
CI Split HEV PHEV20	Vehicle Cost LOW	-99.1%	-99.1%	-93.7%	-88.3%	-69.0%	-63.9%	-54.3%	-55.4%	-46.7%	-38.8%	-45.0%	-38.3%	-31.7%
	Vehicle Cost AVG	-87.8%	-87.8%	-83.1%	-78.3%	-55.5%	-51.7%	-44.9%	-42.6%	-36.7%	-31.2%	-38.9%	-33.4%	-27.8%
	Vehicle Cost HIGH	-72.7%	-72.7%	-68.9%	-65.1%	-37.7%	-35.1%	-29.5%	-29.6%	-24.7%	-20.5%	-23.1%	-18.7%	-15.7%
CI Series HEV PHEV30	Vehicle Cost LOW	-176.5%	-176.5%	-166.1%	-155.5%	-122.7%	-113.1%	-94.5%	-94.2%	-78.3%	-64.8%	-74.8%	-62.1%	-52.1%
	Vehicle Cost AVG	-155.6%	-155.6%	-146.5%	-137.2%	-95.3%	-88.2%	-74.9%	-71.2%	-60.4%	-50.9%	-64.1%	-53.5%	-45.1%
	Vehicle Cost HIGH	-127.5%	-127.5%	-120.2%	-112.7%	-62.3%	-57.5%	-47.1%	-46.6%	-37.7%	-30.7%	-35.5%	-27.7%	-23.1%
CI Series HEV PHEV40	Vehicle Cost LOW	-207.1%	-207.1%	-194.8%	-182.0%	-141.8%	-130.6%	-107.9%	-106.8%	-87.6%	-71.7%	-81.9%	-67.0%	-55.9%
	Vehicle Cost AVG	-181.5%	-181.5%	-170.7%	-159.6%	-108.3%	-100.1%	-84.0%	-78.3%	-65.6%	-54.7%	-69.9%	-57.4%	-48.2%
	Vehicle Cost HIGH	-147.4%	-147.4%	-138.8%	-129.9%	-75.0%	-69.0%	-56.0%	-55.6%	-44.4%	-35.7%	-42.2%	-32.4%	-26.7%
H2 Split HEV	Vehicle Cost LOW	-33.1%	-33.1%	-30.2%	-23.7%	-25.1%	-18.0%	-14.5%	-22.2%	-13.7%	-9.1%	-21.7%	-13.5%	-8.6%
	Vehicle Cost AVG	-49.8%	-49.8%	-46.9%	-40.3%	-33.4%	-26.6%	-23.9%	-28.1%	-20.2%	-16.4%	-18.9%	-11.4%	-7.4%
	Vehicle Cost HIGH	-39.7%	-39.7%	-37.5%	-31.7%	-21.1%	-15.3%	-13.3%	-16.3%	-10.0%	-7.5%	-10.3%	-4.5%	-2.2%
H2 Split HEV PHEV10	Vehicle Cost LOW	-60.8%	-60.8%	-55.7%	-51.3%	-40.3%	-35.2%	-28.0%	-31.4%	-23.6%	-18.4%	-25.9%	-21.1%	-15.1%
	Vehicle Cost AVG	-71.3%	-71.3%	-66.7%	-62.8%	-42.8%	-38.9%	-33.5%	-34.0%	-28.0%	-24.1%	-23.1%	-19.1%	-14.0%
	Vehicle Cost HIGH	-59.0%	-59.0%	-55.3%	-52.1%	-22.6%	-20.4%	-17.1%	-16.2%	-13.0%	-10.3%	-8.9%	-6.4%	-4.3%
H2 Split HEV PHEV20	Vehicle Cost LOW	-82.8%	-82.8%	-76.5%	-70.2%	-53.7%	-47.8%	-37.9%	-40.0%	-30.8%	-22.8%	-30.5%	-23.8%	-17.3%
	Vehicle Cost AVG	-89.7%	-89.7%	-84.1%	-78.5%	-51.6%	-47.3%	-40.2%	-38.4%	-32.1%	-26.3%	-26.8%	-21.2%	-15.7%
	Vehicle Cost HIGH	-73.1%	-73.1%	-68.6%	-64.1%	-32.0%	-29.1%	-23.6%	-23.1%	-18.1%	-14.0%	-13.9%	-9.8%	-7.0%
H2 Series HEV PHEV30	Vehicle Cost LOW	-157.4%	-157.4%	-145.7%	-134.8%	-105.0%	-94.7%	-76.6%	-77.2%	-61.2%	-48.1%	-58.8%	-46.7%	-37.3%
	Vehicle Cost AVG	-154.9%	-154.9%	-144.6%	-135.0%	-89.7%	-82.1%	-69.2%	-65.8%	-54.9%	-45.7%	-50.8%	-40.7%	-32.7%
	Vehicle Cost HIGH	-125.9%	-125.9%	-117.6%	-109.9%	-55.1%	-49.9%	-39.9%	-38.9%	-30.2%	-23.4%	-25.5%	-18.2%	-13.8%
H2 Series HEV PHEV40	Vehicle Cost LOW	-187.7%	-187.7%	-173.1%	-160.3%	-123.7%	-111.4%	-89.5%	-89.4%	-70.2%	-54.6%	-65.5%	-51.3%	-40.9%
	Vehicle Cost AVG	-180.5%	-180.5%	-167.8%	-156.5%	-102.3%	-93.4%	-77.9%	-72.6%	-59.9%	-49.3%	-56.3%	-44.5%	-35.7%
	Vehicle Cost HIGH	-145.6%	-145.6%	-135.4%	-126.5%	-67.4%	-60.9%	-48.4%	-47.6%	-36.6%	-28.1%	-31.9%	-22.6%	-17.2%
E85 Split HEV	Vehicle Cost LOW	-35.2%	-35.2%	-32.8%	-27.2%	-28.0%	-22.1%	-18.3%	-26.1%	-18.0%	-13.2%	-27.3%	-18.7%	-13.5%
	Vehicle Cost AVG	-34.3%	-34.3%	-32.0%	-26.3%	-25.1%	-19.4%	-16.4%	-22.5%	-14.8%	-10.8%	-21.8%	-14.0%	-9.7%
	Vehicle Cost HIGH	-27.8%	-27.8%	-25.9%	-20.9%	-17.1%	-12.3%	-9.9%	-14.1%	-8.3%	-5.6%	-11.3%	-5.8%	-3.2%

Argonne National Laboratory Report – Light-Duty Vehicle Fuel Consumption Displacement Potential Up to 2045

		Pickup												
		2010	2010			2015			2030			2045		
		Ref	low	avg	high	low	avg	high	low	avg	high	low	avg	high
E85 Split HEV PHEV10	Vehicle Cost LOW	-61.2%	-61.2%	-57.1%	-53.3%	-42.0%	-38.1%	-30.7%	-33.7%	-26.9%	-22.0%	-29.8%	-25.1%	-19.2%
	Vehicle Cost AVG	-54.3%	-54.3%	-50.6%	-47.1%	-33.4%	-30.5%	-24.9%	-26.8%	-21.6%	-17.9%	-24.5%	-20.6%	-15.6%
	Vehicle Cost HIGH	-45.7%	-45.7%	-42.7%	-39.9%	-17.9%	-16.1%	-12.7%	-13.4%	-10.4%	-7.5%	-9.4%	-6.7%	-4.4%
E85 Split HEV PHEV20	Vehicle Cost LOW	-82.8%	-82.8%	-77.9%	-72.7%	-55.2%	-50.3%	-40.9%	-42.5%	-34.2%	-26.3%	-34.4%	-27.6%	-21.2%
	Vehicle Cost AVG	-72.4%	-72.4%	-68.1%	-63.4%	-42.1%	-38.5%	-31.9%	-31.3%	-25.7%	-20.0%	-28.2%	-22.6%	-17.1%
	Vehicle Cost HIGH	-59.5%	-59.5%	-56.0%	-52.3%	-27.4%	-24.9%	-19.4%	-20.3%	-15.5%	-11.3%	-14.5%	-10.1%	-7.1%
E85 Series HEV PHEV30	Vehicle Cost LOW	-160.0%	-160.0%	-150.1%	-139.9%	-108.7%	-99.6%	-81.5%	-81.5%	-65.9%	-52.8%	-64.5%	-52.1%	-42.2%
	Vehicle Cost AVG	-140.1%	-140.1%	-131.3%	-122.3%	-81.9%	-75.2%	-62.2%	-60.3%	-49.6%	-40.3%	-53.8%	-43.4%	-35.0%
	Vehicle Cost HIGH	-114.4%	-114.4%	-107.3%	-100.1%	-51.7%	-47.0%	-36.8%	-37.1%	-28.3%	-21.4%	-26.9%	-19.2%	-14.5%
E85 Series HEV PHEV40	Vehicle Cost LOW	-190.2%	-190.2%	-178.1%	-165.6%	-127.4%	-116.7%	-94.6%	-93.7%	-75.2%	-59.6%	-71.4%	-56.8%	-45.9%
	Vehicle Cost AVG	-165.6%	-165.6%	-155.0%	-144.0%	-94.6%	-86.7%	-71.1%	-67.2%	-54.8%	-44.1%	-59.4%	-47.2%	-38.0%
	Vehicle Cost HIGH	-134.0%	-134.0%	-125.5%	-116.8%	-64.0%	-58.3%	-45.5%	-45.8%	-35.0%	-26.3%	-33.4%	-23.7%	-18.0%
FC HEV	Vehicle Cost LOW	-92.2%	-92.2%	-73.8%	-61.1%	-83.4%	-63.9%	-51.0%	-35.0%	-24.6%	-15.8%	-17.3%	-11.2%	-4.7%
	Vehicle Cost AVG	-136.6%	-136.6%	-110.0%	-91.1%	-79.3%	-62.1%	-50.3%	-46.3%	-34.3%	-24.2%	-16.4%	-10.6%	-4.4%
	Vehicle Cost HIGH	-112.4%	-112.4%	-90.5%	-74.9%	-43.0%	-32.6%	-25.3%	-25.8%	-18.0%	-11.5%	-6.1%	-2.4%	1.5%
FC HEV PHEV10	Vehicle Cost LOW	-108.2%	-108.2%	-89.7%	-77.7%	-86.2%	-70.4%	-56.3%	-44.7%	-31.9%	-21.4%	-25.1%	-17.7%	-9.5%
	Vehicle Cost AVG	-143.0%	-143.0%	-118.8%	-101.8%	-81.8%	-67.6%	-55.0%	-51.9%	-38.7%	-27.8%	-23.1%	-16.2%	-8.6%
	Vehicle Cost HIGH	-117.5%	-117.5%	-97.6%	-83.6%	-42.4%	-33.9%	-25.9%	-26.8%	-18.3%	-11.6%	-7.8%	-3.3%	0.8%
FC HEV PHEV20	Vehicle Cost LOW	-136.9%	-136.9%	-114.6%	-99.8%	-103.5%	-85.2%	-67.7%	-55.1%	-39.6%	-26.8%	-30.4%	-21.1%	-12.2%
	Vehicle Cost AVG	-168.0%	-168.0%	-140.5%	-121.0%	-93.7%	-77.7%	-62.9%	-57.8%	-43.1%	-30.8%	-27.5%	-19.0%	-10.8%
	Vehicle Cost HIGH	-136.8%	-136.8%	-114.3%	-98.3%	-54.2%	-44.0%	-33.7%	-34.8%	-24.2%	-15.7%	-13.5%	-7.2%	-2.1%
FC HEV PHEV30	Vehicle Cost LOW	-178.2%	-178.2%	-157.7%	-143.2%	-130.4%	-114.1%	-93.5%	-79.2%	-61.5%	-47.6%	-50.1%	-38.2%	-28.8%
	Vehicle Cost AVG	-204.3%	-204.3%	-178.9%	-160.3%	-117.6%	-102.7%	-84.9%	-77.6%	-61.6%	-48.5%	-45.1%	-34.2%	-25.5%
	Vehicle Cost HIGH	-167.2%	-167.2%	-146.5%	-131.3%	-63.1%	-53.8%	-41.3%	-41.6%	-29.9%	-21.3%	-18.9%	-10.9%	-6.0%
FC HEV PHEV40	Vehicle Cost LOW	-210.7%	-210.7%	-184.7%	-167.8%	-148.6%	-129.9%	-105.1%	-90.7%	-69.5%	-53.9%	-56.1%	-42.2%	-32.2%
	Vehicle Cost AVG	-233.3%	-233.3%	-203.0%	-182.1%	-130.7%	-114.1%	-93.4%	-84.7%	-66.5%	-52.4%	-50.1%	-37.5%	-28.3%
	Vehicle Cost HIGH	-189.7%	-189.7%	-165.2%	-148.1%	-75.4%	-64.5%	-49.2%	-50.2%	-35.9%	-26.0%	-24.8%	-14.8%	-9.3%
EV	Vehicle Cost LOW	-474.6%	-474.6%	-440.9%	-406.1%	-293.1%	-264.5%	-193.8%	-192.3%	-137.1%	-98.4%	-108.6%	-72.4%	-53.3%
	Vehicle Cost AVG	-397.8%	-397.8%	-369.3%	-339.9%	-199.1%	-179.4%	-131.4%	-108.0%	-76.7%	-54.4%	-86.5%	-56.9%	-41.2%
	Vehicle Cost HIGH	-308.6%	-308.6%	-286.5%	-263.6%	-172.6%	-155.0%	-109.6%	-56.6%	-36.7%	-22.9%	-52.0%	-29.6%	-18.9%

Appendix

Extras

Conventional vehicle

A conventional vehicle uses a thermal engine to create power. The engine, by the mean of a transmission directly gives the power to the wheel. It is the most common configuration.

Figure 141 - Conventional vehicle

Electric vehicle

Electric vehicles only use batteries and electric motors to move.

This configuration has no direct emissions but has a limited range.

Figure 142 - Electric vehicle

Hybrid vehicle

Uses two or more distinct power sources to move the vehicle. Most of the hybrid vehicle combines a thermal engine with electrical motors.

Figure 143 - Hybrid vehicle

Long vehicle range (up to 400 miles)

Quick fuel refill

Very good efficiency (electrical motor efficiency is above 80%)

Less pollution, less noise

Capture a part of the energy during braking

It combines the advantages of conventional and electric vehicles (EVs), while minimizing their disadvantages.

Three main types of hybrid can be differentiated according to their configuration.

Poor efficiency (peak efficiency is around 35%)

Idling energy waste

Low vehicle range

Long charging time

A short cycle life

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2045

MPG	L/100km	-	L/100km	MPG
10	23.6	-	3	79
15	15.7	-	3.5	67
20	11.8	-	4	59
25	9.4	-	4.5	52
30	7.9	-	5	47
35	6.7	-	5.5	43
40	5.9	-	6	39
45	5.2	-	7	34
50	4.7	-	8	30
55	4.3	-	9	26
60	3.9	-	10	24
65	3.6	-	11	21
70	3.4	-	12	20
75	3.1	-	13	18
80	3.0	-	14	17

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