



## Vehicle Technologies Program

### North American PHEV Demonstration

Monthly report for: Consumers Energy

Vehicle ID:

Reporting Period: August 2009

Date range of data received:

8/11/2009 to 8/26/2009

Number of days when the vehicle was driven: 4

#### All Trips Combined

Overall gasoline fuel economy (mpg)	56
Total number of trips	15
Total distance traveled (mi)	115

#### Trips in Charge Depleting (CD) mode \*

Gasoline fuel economy (mpg)	56
Number of trips	6
Percent of trips city / highway	50.0% / 50.0%
Distance traveled (mi)	53
Percent of total distance traveled	46.0%

#### Trips in combined Charge Depleting and Charge Sustaining (CD/CS) modes\*\*

Gasoline fuel economy (mpg)	71
Number of trips	1
Percent of trips city / highway	0.0% / 100.0%
Distance traveled (mi)	41
Percent of total distance traveled	35.2%

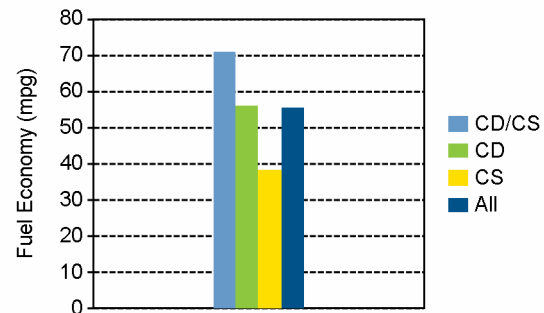
#### Trips in Charge Sustaining (CS) mode\*\*\*

Gasoline fuel economy (mpg)	39
Number of trips	8
Percent of trips city / highway	87.5% / 12.5%
Distance traveled (mi)	22
Percent of total distance traveled	18.8%

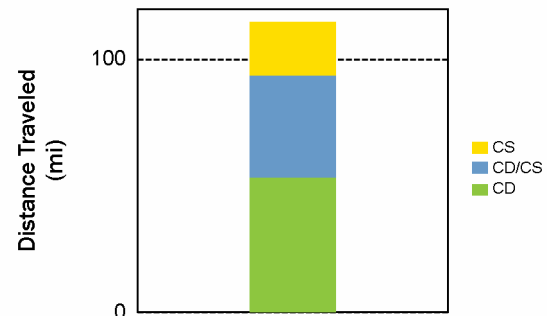
Number of trips when the plug-in battery pack was turned off by the vehicle operator^ 0

Distance traveled with plug-in battery pack turned off (mi)^ 0

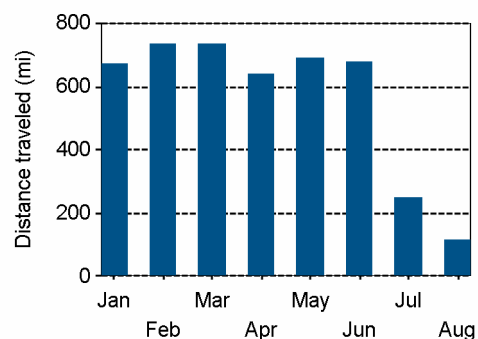
#### Gasoline Fuel Economy By Trip Type



#### Distance Traveled By Trip Type



#### Miles Logged by Month This Year



\* Trips when the plug-in battery pack charge is depleted to propel the vehicle throughout entire trip

\*\* Trips when the plug-in battery pack is depleted to propel the vehicle for a portion of the trip, but is fully depleted prior to the end of the trip

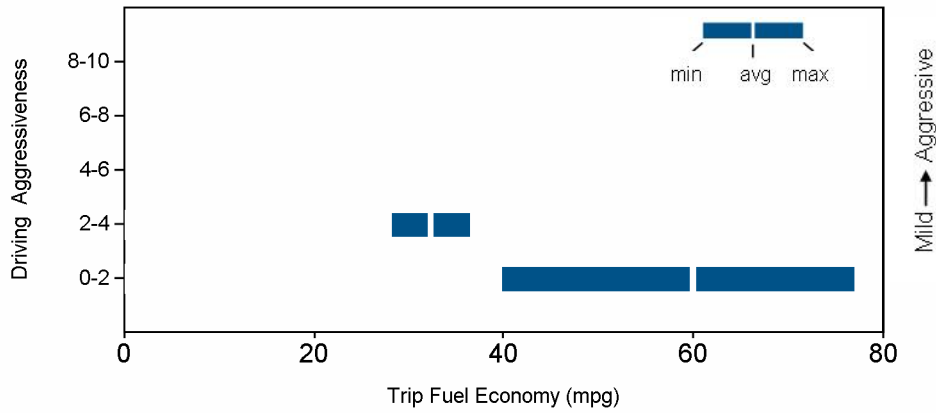
\*\*\* Trips when the plug-in battery pack is not used to propel the vehicle - either the plug-in battery is fully depleted before the beginning of the trip, or the plug-in battery pack is turned off

^ "Number of trips with plug-in battery pack turned off by the vehicle operator" is a subset of number of trips in combined CD/CS and CS mode

^^ "Distance traveled with plug-in battery pack turned off" is a subset of distance traveled in combined CD/CS and CS modes

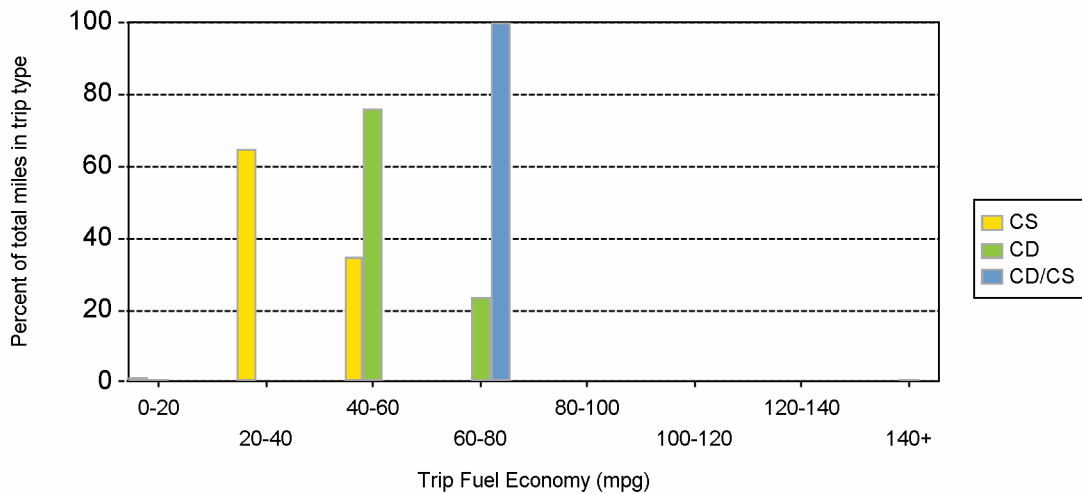
Trips in Charge Depleting (CD) mode		City	Highway
Gasoline fuel economy (mpg)		30	56
Percent of miles in electric-only mode		91.0%	4.0%
Average trip aggressiveness (on scale 0 - 10)		0.7	1.2
Average trip distance (mi)		0.0	17.6
Trips in combined Charge Depleting and Charge Sustaining (CD/CS) modes		City	Highway
Gasoline fuel economy (mpg)		0	71
Percent of miles in electric-only mode		0.0%	1.0%
Average trip aggressiveness (on scale 0 - 10)		0.0	1.9
Average trip distance (mi)		0.0	40.6
Trips in Charge Sustaining (CS) mode		City	Highway
Gasoline fuel economy (mpg)		35	49
Percent of miles in electric-only mode		14.0%	13.0%
Average trip aggressiveness (on scale 0 - 10)		1.9	1.2
Average trip distance (mi)		2.0	7.5
Average ambient temperature this month:		77 deg F	

### Effect Of Driving Aggressiveness on Fuel Economy This Month



Aggressiveness factor is based on accelerator pedal position. The more time spent during a trip at higher accelerator pedal position, the higher the trip aggressiveness. The above plot excludes trips with distance less than 1 mile.

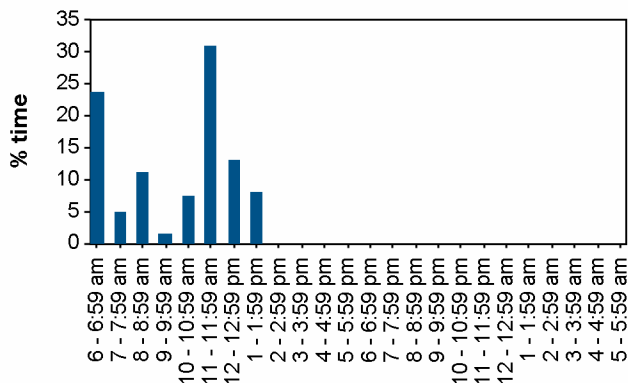
### Trip Fuel Economy Distribution By Trip Type This Month



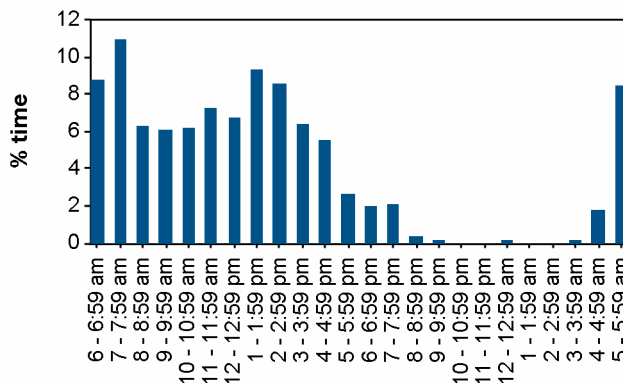
Plug-in charging

Number of charging events	6
Average number of charging events per day when vehicle driven	1.5
Average number of trips between charging events	2.5
Average duration of charging event (hr)*	33.8
Average energy per charging event (AC kWh)	1.8
Total charging energy (AC kWh)	10.9

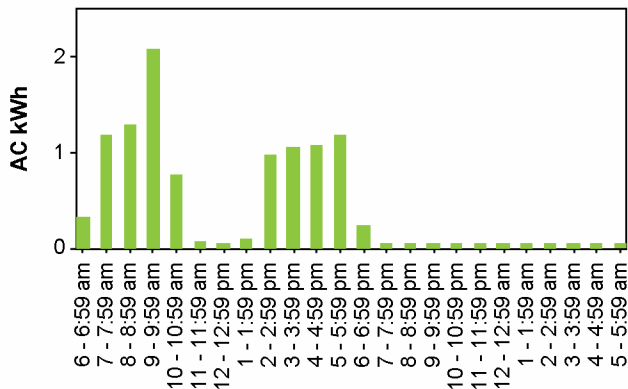
Time of Day When Driving - This Month



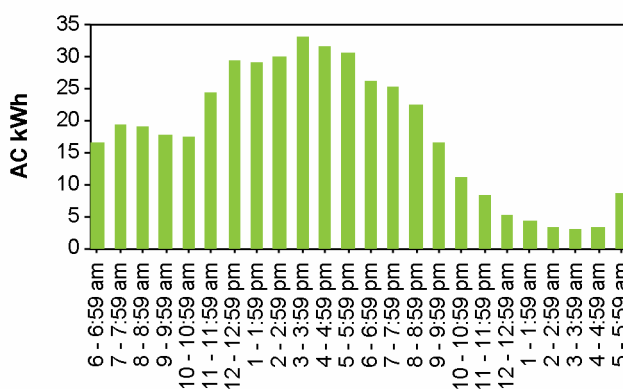
Time of Day When Driving - Lifetime



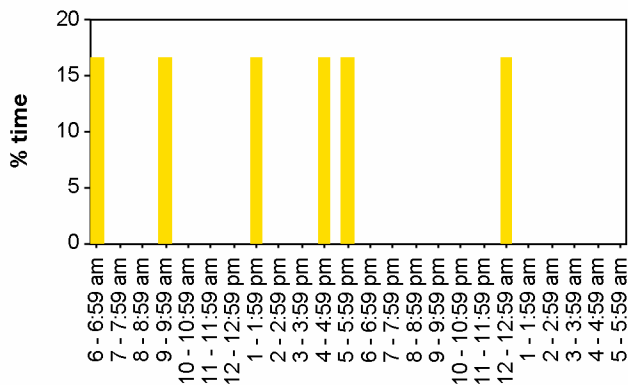
Time of Day When Charging - This Month



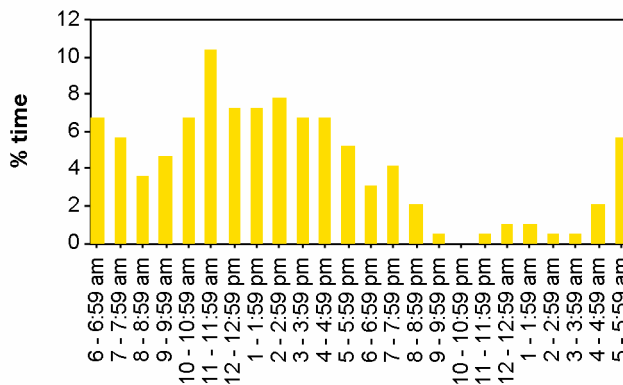
Time of Day When Charging - Lifetime



Time at the Start of Charging Events - This Month



Time at the Start of Charging Events - Lifetime



\*Average duration of charging event is the average length of time per charging event when the vehicle was plugged into the electrical grid. Electrical energy was not necessarily drawn during the entire period when the vehicle was plugged in.