Do Hybrid Electric Vehicle do more than save money at the gas pump?

A side-by-side Comparison of the CO2 and Ownership Costs of Various HEVs, PHEVs, and Gasoline Cars

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By design, Hybrids (including plug-in Hybrids or PHEVs) emit lower levels of carbon dioxide than traditional gasoline powered cars. But how significant is the CO2 reduction? Very.

Below is a comparison of the annual CO2 emissions, measured in metric tons, of a range of gasoline, hybrid and plug in hybrid vehicles. The significant reduction in CO2 as the result of increasing electric power is staggering. The Honda Accord PHEV emits 57% less CO2 than the gasoline powered model (2.0 vs. 4.6 metric tons/year*). Over the typical 10 year service life of the Honda Accord, that equates to a reduction of 26 metric tons of CO2 by driving the PHEV model in place of the gasoline powered model. Similarly the #2 selling electric vehicle, the Ford Fusion Energi, reduces CO2 by 60% from 4.8 to 1.9 metric tons of CO2. Even the Porsche Panamera Hybrid reduces CO2 by 52%, or -3.3 metric tons/year vs. the gasoline powered model. So which vehicle has the lowest CO2 emissions? The Chevrolet VOLT at just 1.2 metric tons/year owing to its extended electric range (EPA rated at 38 miles).

Carbon Dioxide Emissions, Hybrids vs. Gasoline Powered Cars *

Manufacturer	**Model**	**Gasoline**	**Hybrid**	**Plug-In Hybrid**	**CO2 Reduction**	**% Reduction**
		CO2*	CO2*	CO2*		
Honda	**Accord**	**4.6**	**2.8**	**2.0**	**-2.6**	**-57%**
Ford	**Fusion**	**4.8**	**3.1**	**1.9**	**-2.9**	**-60%**
Honda	Civic	4.1	2.9	NA	-1.2	-29%
Toyota	Camry	4.6	3.2	NA	-1.4	-30%
Porsche	**Panamera**	**6.4**	**3.1**	NA	-3.3	-52%
Toyota	Prius	NA	2.7	2.0	-0.7	-26%
Ford	C Max	NA	3.4	1.9	-1.5	-44%
Chevrolet	VOLT	NA	NA	**1.2**		

* Annual CO2 Emission - metric tons	

*All models are 2014
** CO_2 tailpipe emissions measured in metric tons per year

Source

http://www.fueleconomy.gov/feg/Find.do?action=sbsSelect

In addition to significantly reducing CO2 emissions relative to gasoline-powered cars, PHEVs and HEVs are cheaper to maintain each year than gasoline powered cars because their fuel, depreciation, and other costs are lower. The table below compares four commons vehicles. A gasoline car, a hybrid, a PHEV, and a BEV (for comparison) are all represented. The data, pulled from Edmunds.com, clearly shows that from the first to the fifth year of ownership, HEVs and PHEVs cost less than gasoline cars and only slightly more than BEVs. Instead of buying a Camry, a Civic HEV or a Volt could save Georgians $3,000 to $4,000 over five years. Of course, not all PHEVs and HEVs, such as the Prius Hatchback or the Ford Fusion Energi, are cheaper than a Camry SE, a very affordable vehicle. The point remains, that when HEVs and PHEVs are compared to gasoline cars of the same price range, the long-run savings will be positive.

True Cost of Vehicle Ownership

	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Camry SE (Gasoline)	$9,007	$7,494	$7,219	$7,496	$7,670	$38,886
Honda Civic Hybrid	$8,862	$6,880	$6,413	$6,728	$6,756	$35,629
Chevrolet Volt (PHEV)	$6,535	$7,503	$6,856	$6,908	$6,923	$34,725
Nissan Leaf (BEV)	$10,212	$6,397	$5,859	$5,905	$5,957	$34,330

Source

Edmunds.com