



## CRS Report for Congress

# Tax Credits for Hybrid Vehicles

Salvatore Lazzari  
Specialist in Public Finance  
Resources, Science, and Industry Division

### Summary

Hybrid vehicles are propelled by a standard gasoline (or diesel) internal combustion engine in combination with an electric motor (and battery storage system), which improves fuel economy. The Energy Policy Act of 2005 replaced a \$2,000 deduction for hybrids with a system of tax credits that vary according to fuel efficiency and estimated lifetime fuel savings, compared with a 2002 comparable gasoline-only model. These credits, which range from \$250 to \$3,400 per vehicle, went into effect on January 1, 2006, and are available through December 31, 2009. However, there is an approximately 60,000-per-manufacturer limit on the number of hybrid vehicles that would qualify for the full credit. Toyota reached its limit in the second quarter of 2006, and the credits for those vehicles are being phased out and will not be available after October 1, 2007. Honda reached its limit in the third quarter of 2007. U.S. manufacturers (primarily General Motors and Ford) produce mostly SUV hybrids, which have seen slower demand. The tax credits for hybrids were enacted to promote energy conservation in the transportation sector by encouraging the demand for fuel-efficient alternative-technology vehicles. The 60,000-vehicle limit was imposed to limit the benefits accruing to foreign hybrid manufacturers, which currently dominate the hybrid market.

Section 1341 of Energy Policy Act of 2005 (EPACT05, P.L. 109-58) provides tax credits for four types of advanced-technology vehicles (ATVs): hybrid vehicles, fuel cell vehicles, advanced lean-burn vehicles, and other alternative fuel vehicles. The hybrid vehicle tax credits, which are in Internal Revenue Code (IRC) §30B, are part of a somewhat complex tax credit structure that includes separate credits for hybrid vehicles weighing 8,500 pounds or less and for hybrid vehicles weighing more than 8,500 pounds.

### Credit for Hybrid Vehicles Weighing 8,500 Pounds or Less

For vehicles weighing 8,500 lbs. or less, the formula for computing the credit has two components: a fuel economy credit, and a conservation credit. The fuel economy credit depends on how much greater the hybrid's rated *city* fuel economy is, in percentage terms, compared to a base 2002 city fuel economy figure for a vehicle in the same inertia weight class as the hybrid. The city fuel economy rating used in the formula is the same figure reported by the vehicle manufacturer to the EPA for purposes of the CAFE

standards — they are not the “label” city fuel economy ratings published by EPA in its fuel economy guide (and which appear on the stickers of the 2006 car’s window).<sup>1</sup> The schedule of base fuel economy ratings and the corresponding inertia weight class is established statutorily as part of §(b)(2)(B) of IRC § 30B).<sup>2</sup> The schedule of fuel economy credits is shown in **Table 1** below.

**Table 1. Fuel Economy Credit**

Credit	If city fuel economy of the hybrid vehicle is:	
	at least	but less than
\$400	125% of base fuel economy	150% of base fuel economy
\$800	150% of base fuel economy	175% of base fuel economy
\$1,200	175% of base fuel economy	200% of base fuel economy
\$1,600	200% of base fuel economy	225% of base fuel economy
\$2,000	225% of base fuel economy	250% of base fuel economy
\$2,400	250% of base fuel economy	

**Source:** U.S. Congress, House, *Energy Policy Act of 2005*, Conference Report to Accompany H.R. 6, 109<sup>th</sup> Cong., 1<sup>st</sup> sess., H.Rept. 109-190, Jul. 27, 2005.

**Table 2. Conservation Credit**

Estimated Lifetime Fuel Savings (in gallons)	Conservation Amount
At least 1,200 but less than 1,800	\$250
At least 1,800 but less than 2,400	\$500
At least 2,400 but less than 3,000	\$750
At least 3,000	\$1,000

**Source:** U.S. Congress, House, *Energy Policy Act of 2005*, Conference Report to Accompany H.R. 6, 109<sup>th</sup> Cong., 1<sup>st</sup> sess., H.Rept. 109-190, Jul. 27, 2005.

The second component of the tax credit, the conservation credit, depends on how much fuel a hybrid saves over 120,000 miles compared with a vehicle in the same inertia weight class and with the city fuel economy rating of the 2002 base. This part of the credit is described in **Table 2**.<sup>3</sup>

<sup>1</sup> Nor are they generally the fuel economy one may experience based on actual driving experience.

<sup>2</sup> In other words, each hybrid vehicle has a corresponding inertia weight which is used to establish the 2002 city fuel economy base. Inertia weight is basically curb weight plus 300 lbs.

<sup>3</sup> Procedurally, the vehicle manufacturer calculates the two tax credit components based on the above formulas and files for certification with the IRS. U.S. Department of the Treasury. Internal Revenue Service. IRS Notice 2000-06, February 6, 2006. *Cumulative Bulletin: 2006-6*.

**Example.** As an example of how the total credit would be computed for passenger cars and light trucks weighing 8,500 lbs. or less (which comprise the vast majority of the vehicle stock in the United States), consider the 2006 Toyota Highlander 2WD. This hybrid was rated by Toyota Motor Sales, Inc., as having a city fuel economy of 36.8 miles per gallon and inertia weight of 4,500 lbs. For vehicles having an inertia weight of 4,500 lbs., the tax code (IRC § 30(B)(b)(2)) establishes a corresponding base city fuel economy of 17.6 mpg. Since the Highlander is rated at 209% of the base fuel economy ( $36.8 \div 17.6 \times 100 = 209\%$ ), the purchaser of this vehicle would qualify for a fuel economy tax credit of \$1,600 (as shown in **Table 1**).

The conservation credit is determined based on the estimated lifetime fuel savings of the hybrid vehicles over the 2002 base fuel economy. Continuing with the same example, over 120,000 miles (as specified by statute) the Highlander hybrid would use an estimated 3,260 gallons of gasoline (120,000 miles  $\div$  36.8 mpg), and the standard 2002 vehicle would use 6,818 gallons of gasoline (120,000 miles  $\div$  17.6 mpg). Thus, the estimated lifetime fuel savings would be 3,557 gallons. According to **Table 2**, the allowed conservation tax credit corresponding to this fuel savings is \$1,000. Thus, the total tax credit that this taxpayer would be able to claim on his or her 2006 income tax return would be \$2,600 (\$1,600 + \$1,000).

### Credit for Hybrid Vehicles Heavier than 8,500 Pounds

For hybrids weighing more than 8,500 lbs. (heavy duty hybrid vehicles), the credit is a percent of the qualified marginal or incremental hybrid cost for that vehicle, subject to certain limits. There are three applicable percentages, each corresponding to differences in fuel economy relative to a comparable 2002 model gasoline or diesel powered vehicle. These are shown in **Table 3**. Column (1) shows the fuel efficiency differences; column (2) shows the corresponding tax credit as a percent of marginal cost. The marginal cost of the hybrid vehicle is the difference in the suggested manufacturer selling price between the hybrid vehicle and a gasoline or diesel powered vehicle comparable in weight, size, and use, as determined and certified by the manufacturer. As noted, the amount of the tax credit for heavy vehicles cannot exceed certain limits, which are also specified by statute. These limits, which depend on the vehicle's gross weight, are shown in **Table 4**.

**Table 3. Hybrid Credit for Vehicles Weighing More than 8,500 Pounds**

Relative Increase in Fuel Economy	Credit as % of Marginal Cost
At least 30% but less than 40%	20%
At least 40% but less than 50%	30%
Greater than or equal to 50%	40%

**Source:** U.S. Congress, House, *Energy Policy Act of 2005*, conference report to accompany H.R. 6, 109<sup>th</sup> Cong., 1<sup>st</sup> sess., H.Rept. 109-190, Jul. 27, 2005.

**Table 4. Credit Limit for Vehicles Weighing More than 8,500 Pounds**

Gross Vehicle Weight	Maximum Credit Amount
Less than, or equal to, 14,000 lb.	\$7,500
At least 14,000 but not more than 26,000 lb.	\$15,000
More than 26,000 lb.	\$30,000

**Source:** U.S. Congress, House, *Energy Policy Act of 2005*, conference report to accompany H.R. 6, 109<sup>th</sup> Cong., 1<sup>st</sup> sess., H.Rept. 109-190, Jul. 27, 2005.

**Example.** As an example of how the credit would be computed for hybrid vehicles weighing more than 8,500 lbs (primarily heavy duty trucks such as semis), consider a hybrid truck weighing 20,000 lbs, rated at 20 mpg, and selling for \$150,000. Assume that a comparable diesel truck is rated at 10 mpg, and sells for \$100,000. Because the difference in mpg is 100% ( $20 \text{ mpg} \div 10 \text{ mpg}$ ) the taxpayer would be entitled (tentatively) to a hybrid vehicle tax credit of \$20,000 (40% of \$50,000). However, the maximum credit limit for vehicles in this weight range (**Table 4**) is \$15,000. Thus, this taxpayer could claim a tax credit of \$15,000 against his or her tax liability. No hybrid vehicles weighing more than 8,500 lbs have been produced that have been certified by the Internal Revenue Service (IRS).

## Definition of Hybrid Vehicle

In each case, the tax statute defines a “hybrid vehicle” as a motor vehicle that draws propulsion energy from two onboard sources of stored energy: a standard internal combustion or heat engine using consumable fuel (primarily gasoline), and a rechargeable energy storage system (or battery). A qualifying hybrid vehicle must meet the applicable Tier II emissions standards of the Clean Air Act (bin 5 for a vehicle with a gross vehicle weight rating 6,000 pounds and less; Bin 8 for a vehicle weighing between 6000 and 8,500 pounds). The tax credit for hybrid vehicles is available for vehicles purchased after December 31, 2005, and before January 1, 2010.

## 60,000 Vehicle Limitation and Credit Phaseout

The hybrid vehicle tax credits are limited to the sale of the first 60,000 vehicles for each manufacturer plus any vehicle sold during the first calendar quarter after reaching its 60,000 vehicle threshold. After that the credit begins to gradually phase out over four quarters as follows: 50% of the otherwise available tax credit is available in the second and third quarters after the quarter in which a manufacturer records the sale of 60,000 hybrids; 25% of the otherwise available tax credit is available in the fourth and fifth calendar quarters after the quarter in which a manufacturer records the sale of the 60,000<sup>th</sup> vehicle. Thus, there is a one-quarter delay in reducing the credit, and the phaseout period is actually one year.

**Example.** An example of how this limitation works is as follows: Assume that manufacturer A sells its 60,000<sup>th</sup> hybrid and advanced lean-burn vehicle in February 2007 (the first quarter). Then the full tax credit is available for purchases made through June 30, 2007 (the second quarter). Half of the credit would be available on purchases made

from July 1, 2007, through December 31, 2007. One-quarter of the credit would be available on purchases made from January 1, 2008, through June 30, 2008. No tax credit would be available for purchases made after June 30, 2008. However, the hybrid vehicle tax credit ends on December 31, 2009, which means that if the 60,000<sup>th</sup> vehicle is sold in September 2009, the full allowable tax credit is available on purchases made through December 31, 2009. Thus, there would not be a gradual phasing down of the amount of the tax credit. If the 60,000<sup>th</sup> vehicle sale occurs in May 2009, then 100% of the credit could be claimed on sales from July through September 30, 2009, and 50% of the otherwise allowable credit would be available from October 1, 2009, through December 31, 2009. No credit would be available after that — there would be no reduction to 25%. **Table 6** shows the credit levels for the seven Toyota 2005-2007 models that qualify for the credit. Credit levels are shown through October 1, 2007. Because Toyota Motor Corporation reached its 60,000 threshold in the second quarter of 2006, the full credit ended after the third quarter, half of the otherwise available tax credit is available in the fourth quarter of 2006 and the first quarter of 2007, and one quarter of the otherwise allowable credit is available during the second and third quarters of 2007. The credit is completely phased out for Toyota beginning on October 1, 2007. Honda's cumulative sales to dealers reached the 60,000 threshold during the calendar quarter ending September 31, 2007.

**Table 6. Scheduled Phaseout of Hybrid Tax Credit for Toyota Motor Corporation**

Qualifying Vehicle	Full 100% Credit When Purchased By 9/30/06	50% Credit When Purchased From 10/1/06 through 3/31/07	25% Credit When Purchased From 4/1/07 through 9/30/07	Zero Beginning 10/1/07
2005, 2006, and 2007 Prius	\$3,150.00	\$1,575.00	\$787.50	\$0.00
2006 and 2007 Highlander 2WD and 4WD	\$2,600.00	\$1,300.00	\$650.00	\$0.00
2007 Camry Hybrid	\$2,600.00	\$1,300.00	\$650.00	\$0.00
2006 and 2007 Lexus RX 400h 2WD and 4WD	\$2,200.00	\$1,100.00	\$550.00	\$0.00
2007 Lexus GS450h	\$1,550.00	\$775.00	\$387.50	\$0.00

**Source:** U.S. Department of the Treasury. Internal Revenue Service. *Credit for Toyota and Lexus Hybrids Begins Phase-Out With Reporting of Third Quarter Sales*. Internal Revenue Notice IR-2006-172, November 9, 2006.

## Rationale for the Hybrid Vehicle Tax Credits

The hybrid tax credits were part of a broader tax provision in EPACT05 that provided tax credits for three other categories of ATVs. Subsidizing the purchase of ATVs through tax credits was viewed by the Congress as a way of generating greater

consumer demand for, and acceptance of, alternatives to conventional gasoline and diesel powered automotive technologies, technologies that would be both more fuel efficient and cleaner. The Congress believed that there was consumer resistance to these technologies which would be weakened by a system of consumer tax credits. Congress also believed that in order to achieve these goals, a policy was needed that would transform the mode of transportation in the United States toward cleaner and more energy efficient ATVs. In this regard, hybrids and alternative fueled vehicles (e.g., ethanol fueled or flex-fueled vehicles) were viewed as the short term options; advanced lean-burn and fuel cell vehicles were viewed as longer-term options. Ultimately, the ideas underlying the hybrid vehicle tax credits were, first, to promote energy policy goals (petroleum conservation) and environmental policy goals (reducing emissions of pollutants) by developing more fuel efficient ATVs. However, while the ultimate goals were focused on energy and environmental objectives, policymakers wanted to achieve this in a way that benefitted, or at least did not harm, the domestic auto industry. In particular proponents of the auto industry wanted to avoid an increase in CAFE standards and other government mandates — they aspired for a more “free-market” approach, and incentives are more consistent with this than standards. A brief discussion of the origin and evolution of the hybrid vehicle tax credits as part of efforts to enact comprehensive energy policy legislation supports this point.

In 2000 of the 106<sup>th</sup> Congress, Congressman Kildee and Senator Levin (both of Michigan) introduced hybrid tax credit legislation (H.R. 4270, introduced in April 2000; S. 2685, introduced in June 2000). Another Michigan representative, Representative Camp, also introduced the original CLEAR Act of 2001 (H.R. 1864, Clean Efficient Automobiles Resulting From Advanced Car Technologies Act), which proposed a system of hybrid vehicle tax credits very similar to current law but without the 60,000 unit cap. The same bill was introduced on April 21, 2001, by Senator Hatch in the Senate (S. 760). For a variety of reasons, these bills, which received support from the auto industry, were not incorporated into comprehensive energy policy legislation (H.R. 4, or S. 389 and S. 596), which in any event failed to be approved by the Congress. In 2005 another effort was made to enact comprehensive energy policy legislation. As in earlier versions, the Senate bill included tax credits for hybrids and other ATVs while the House versions did not. Subsequent comprehensive energy policy legislation (H.R. 6) did eventually include the hybrid vehicle tax credits. In the Senate, S. 760 was reintroduced again as S. 971 in 2005 and eventually incorporated into H.R. 6, which became law on August 8, 2005. By this time, the domestic automobile industry was declining, and the Congress did not want to enact policies, such as higher CAFE standards, that could be harmful to the industry. In conference, the House offered to recede on the ATV tax credits but only if the Senate accepted a 60,000 vehicle limit and the phase-out provisions. The final conference report on H.R. 6 included this limit. House versions of energy policy legislation did not contain tax credits for hybrids and other ATVs.

The most likely reason for the cap was to limit estimated revenue losses. But some analysts speculate that this lower cap was introduced to prevent benefits from accruing excessively to foreign auto companies at the expense of domestic manufacturers. Since hybrids were developed in Japan, Japanese manufacturers had an advantage in their production, particularly by 2005, just before EPCACT05 was enacted. The additional demand for hybrids stimulated by the tax credits, combined with the cap on individual manufacturers, would be filled by domestic production. Toyota reached its limit in the second quarter of 2006; Honda reached its limit in the third quarter of 2007.