



## 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 is projected to reach its limit sometime in 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.<sup>1</sup> 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.

---

<sup>1</sup> See CRS Report RS22351, *Tax Incentives for Alternative Fuels and Advanced Technology Vehicles*, by Brent D. Yacobucci.

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

For vehicles weighing 8,500 pounds or less, the credit amount is the sum of two components: a fuel economy credit, which varies with the rated city fuel economy of the vehicle compared with that of a 2002 model year vehicle, and a conservation credit, which is based on the estimated lifetime fuel savings of a qualifying vehicle compared with that of a comparable 2002 model year vehicle. The conservation credit is described in **Table 1**; the fuel economy credit is described in **Table 2**. In the case of the conservation credit in Table 2, a hybrid vehicle's lifetime fuel savings is estimated for a vehicle that is assumed to travel, over its lifetime, 120,000 miles.

**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.

**Example.** As an example of how the total credit would be computed for passenger cars and light trucks weighing 8,500 pounds or less (which, incidentally, comprises the vast majority of the vehicle stock in the United States), consider a hybrid automobile weighing 4,000 pounds and having a city fuel efficiency rating of 60 miles per gallon (mpg). Further, assume that a comparable 2002 gasoline engine automobile has a city fuel

economy of 25 mpg. Because the fuel economy of the hybrid is 240% of the base fuel economy ( $60 \div 25 \times 100 = 240\%$ ), the purchaser of this vehicle would qualify for a fuel economy tax credit of \$2,000 (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 model. Assuming that each of the vehicles would be driven 120,000 miles (as specified by statute), the hybrid vehicle would use an estimated 2,000 gallons of gasoline (120,000 miles  $\div$  60 mpg), and the standard 2002 vehicle would use 4,800 gallons of gasoline (120,000 miles  $\div$  25 mpg). Thus, the estimated lifetime fuel savings would be 2,800 gallons. According to **Table 2**, the allowed conservation tax credit corresponding to this fuel savings is \$750. Thus, the total tax credit that this taxpayer would be able to claim on his or her 2006 income tax return would be \$2,750 (\$2,000 + \$750).

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

In the case of any new qualified hybrid motor vehicle weighing more than 8,500 pounds (heavy vehicles), the amount of tax credit is determined by multiplying the applicable percentage by the qualified marginal or incremental hybrid cost of the vehicle, subject to certain limits. There are three applicable percentages, each corresponding to three differences in fuel economy relative to a comparable gasoline or diesel powered vehicle. These percentages are shown in **Table 3**. The right-side column shows the applicable percentages; the left-side column shows corresponding fuel efficiency differences. 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. The applicable percentages (corresponding to those 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 pounds (primarily heavy duty trucks, such as semis), consider a hybrid truck weighing 20,000 pounds, 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 (see **Table 4**) is \$15,000. Thus, this taxpayer could claim a tax credit of \$15,000 against his or her tax liability.

## Definition of Hybrid Vehicle

In each case, a *hybrid vehicle* is defined 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 regulations under the Clean Air Act. For a vehicle with a gross vehicle weight rating of 6,000 pounds or less (passenger cars and many light trucks), the applicable emissions standards are the Bin 5 Tier II emissions standards of the Clean Air Act.<sup>2</sup> For a vehicle with a gross vehicle weight rating greater than 6,000 pounds and less than or equal to 8,500 pounds, the applicable emissions standards are the Bin 8 Tier II emissions standards. The tax credit for hybrid vehicles is available for vehicles purchased after December 31, 2005, and before January 1, 2010.

## Rationale for the Hybrid Vehicle Tax Credits

The idea underlying the hybrid vehicle tax credits was twofold: first, to promote energy conservation by developing alternative vehicle technologies, and, second, to help the domestic automobile industry.

More specifically, the hybrid tax credits were part of the tax subtitle of EPACT05 that addressed the demand for energy in the transportation sector, the biggest single petroleum-using sector in the United States. They are part of an energy policy that focuses on reducing the demand for energy to address energy and environmental policy goals. Congress believed that further investments in ATVs would transform the mode of

---

<sup>2</sup> The Tier II standards are described in CRS Report RS20247, *EPA's Tier 2 Emission Standards for New Motor Vehicles: A Fact Sheet*, by David M. Bearden.

transportation in the United States toward cleaner and more energy efficient vehicles. This would reduce the demand for petroleum, which would reduce petroleum importation and promote U.S. energy and economic security. Also, reduced petroleum consumption would reduce mobile emissions of pollutants in addition to carbon dioxide. 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.

A second reason for the tax credits is that Congress reportedly wanted to help the ailing domestic automobile industry.<sup>3</sup> That was the specific rationale for the 60,000 cap for each manufacturer. Because hybrids were developed in Japan, Japanese manufacturers had an advantage in their production. Congress did not want the benefits of the tax credits to accrue excessively to foreign hybrid manufacturers. The additional demand for hybrids stimulated by the tax credits, combined with the cap on individual manufacturers, would be filled by domestic production. As noted above, Toyota has already reached its production limit, and Honda is expected to reach it in 2007. Sales of domestic hybrids have been disappointing to many, however, as domestic manufacturers have concentrated on producing large hybrid vehicles (SUVs and trucks, such as the Chevrolet Silverado). While the SUV and truck hybrid are somewhat more fuel efficient than their gasoline counterparts, it is only marginally so, and the economics — payback period or rates of return — are not as favorable as the smaller, Japanese-produced hybrids, such as the Toyota Prius or Honda Insight. In addition, the overall demand for SUVs and other large fuel-inefficient automobiles has slumped recently in response largely to high gasoline prices.

### **Prior-Law Deduction for Clean, Alternative Fuel Vehicles**

Prior to January 1, 2006, federal tax law provided purchasers of hybrids with a deduction from adjusted gross income, rather than a credit against tax liability. The deduction was for a portion of the cost associated with the purchase of a hybrid vehicle. A tax deduction is subtracted from income, thus reducing the amount of adjusted gross income on which the taxpayer is taxed. A tax credit reduces the tax liability dollar for dollar — the taxpayer's marginal tax rate does not determine its value. Typically, the maximum deduction was \$2,000. The deduction for hybrids was part of a tax code section that applied to clean-burning alternative fuel vehicles. An IRS ruling in August 2002 allowed hybrid vehicles to be eligible as clean-burning alternative fuel vehicles.

### **Limitation and Phaseout of the New Hybrid Vehicle Credit Based on Total Sales**

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

---

<sup>3</sup> Leonhardt, David. *U.S. Hybrids Get More Miles Per Congress*. *New York Times*, June 21, 2006, p. C-1.

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. If a manufacturer also produces advanced lean-burn vehicles, which, as noted, also qualify for the new tax credits, then the 60,000 vehicle threshold applies to the sum of the two types of vehicles, hybrid and advanced lean-burn, produced and sold by each manufacturer. In other words, the limit does not apply to each type separately.

**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 2008, 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 5** shows the credit levels for the seven Toyota hybrid 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 during 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.

**Table 5. 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	\$1,575	\$787.50	\$0
2006 and 2007 Highlander 2WD and 4WD	\$2,600	\$1,300	\$650	\$0
2007 Camry Hybrid	\$2,600	\$1,300	\$650	\$0
2006 and 2007 Lexus RX 400h 2WD and 4WD	\$2,200	\$1,100	\$550	\$0
2007 Lexus GS450h	\$1,550	\$775	\$387.50	\$0

**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, Nov. 9, 2006.