



## Why People Really Buy Hybrids

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## Introduction

*"If you owned [a hybrid car], you could feel good about using less gasoline and being a trendsetter, but you couldn't expect the fuel savings to make up for the thousands of extra dollars that the hybrid cost. There was no financial reward for environmental virtue."<sup>1</sup>*

This excerpt is from a June 2006 New York Times article and captures the essence of the conventional wisdom about why people buy hybrids. It neatly divides the world into two camps; early adopters, who are willing to pay more to be trendsetters or to do something good for the environment, and everyone else, who are motivated to buy a hybrid by the financial reward of the fuel savings that they expect to exceed the extra upfront cost.

While practically everyone predicts that the long term prospects for hybrids are rosy, this early adopter-or-financial reward model of buyer behavior raises an interesting question: What happens if the supply of early adopters runs out before hybrids truly deliver a positive return on investment?

As the growth in hybrid sales fell to 23% in 2006 and to just 11% in January 2007, after 80% growth in 2004 and 144% growth in 2005, this question became more than just theoretical. The growth slowdown raises the possibility that the early adopter segment is becoming saturated while the financial rewards are still insufficient to bring the rest of us into the market. If true, hybrid sales growth could remain slow until return on investment became more favorable through a combination of price reductions and/or gas price increases.

Our study of Prius owners who purchased their cars between 2003 and 2007 suggests that this is not the case. The study presents a far richer view of how consumers actually make decisions and describes an economic equation for purchasing hybrids that is far more complex and varied than the hybrid premium vs. gas cost savings model that is widely discussed. As a result, the study concludes that over 73% of Prius buyers had strong financial motivations for their purchase. Furthermore, given that the right financial incentives are already in place, we expect the hybrid market to expand rapidly in the short term regardless of what happens to gas prices in the coming months.

### Why Focus on the Prius?

Over the last three years, the Prius has been the dominant force in and primary driver of hybrid sales, commanding nearly half the market. As a result, studying Prius buyers provides the richest landscape for understanding the motivations of hybrid buyers as a whole.

## Why do People Buy Priuses?

While the conventional wisdom leads to the conclusion that the overwhelming majority of the 455,000 hybrids sold in the US through 2006 were purchased by early adopters – people willing to pay a premium to help the environment or to be among the first to own a hybrid – our study found that only 27% of Prius buyers could truly be classified as such. This group includes people

like Jennifer Stolulonis, who chose the Prius over a Toyota Yaris. “It was a hardship to spend the extra money on the Prius, but it was important for me to do whatever I could to help the environment,” she said. It also includes people like Charlotte Yeh, who stated, “What really attracted me to the Prius was its gadget factor and new innovative engineering. I’ve always loved cars with gadgets and new technology features.”

In contrast, the other 73% of Prius buyers had a clear financial motivation to buy one. However, if expert analysis shows that hybrids cannot save enough on gas to justify the extra upfront cost, what were the financial motivations? Our study identified four distinct segments.

#### **Four of the Five Segments of Prius Buyers had Clear Financial Motivations**

<b>Segment</b>	<b>% of Sample</b>
Early Adopters	27%
The Prius Cost Less than the Alternative	40%
Buyer Calculated the ROI Differently than the Experts	16%
Buyer Bought the Prius to Drive in the Carpool Lane	12%
Buyer Bought the Prius as an Inexpensive 'Fun' Car	5%
Total	100%

### **Segment 1: The Prius Cost Less than the Alternative**

For 40% of all study participants, the financial motivation was that they were able to purchase and operate the Prius for less, sometimes far less, than they would have spent on a car if they had not purchased a hybrid. The conventional wisdom that hybrids do not pay for themselves starts from the assumption that the consumer is choosing between two otherwise identical cars and elects to purchase the hybrid car instead of the one with the conventional gas engine (for example, a Honda Civic Hybrid vs. a conventional Honda Civic).

However, as our study showed, that comparison represents a false choice. While everyone in this segment responded that their primary motivation for buying the Prius was that they “wanted an environmentally friendly car,” when asked what kind of car they would have purchased if they had not bought a hybrid, this segment of the market responded that they would have purchased cars that ranged from ones that cost about the same as the Prius, such as the Toyota Camry or Honda Accord, to ones costing thousands or tens of thousands more such as the Audi A6, BMW X3 or Acura TL. Therefore, when they faced the decision to purchase a hybrid, these individuals were not spending thousands more for their car, they were likely spending less. Even those who would have spent an identical amount on a conventional car had a financial motivation. They believed that the Prius would save them money on gas.

This segment demonstrates Toyota’s genius in creating a low cost, feature-rich, practical car with a strong environmental brand. In our analysis, it was the Prius’ ability to tap into a broad market segment – upper middle class Americans who care about the environment, but are not necessarily active in the environmental movement – that has fueled its success and by extension the success of the entire hybrid market during the last three years. The Prius’ design provided these individuals with the unique opportunity to do something good for the environment, own a car with an appealing image and set of features, and save money all at the same time. This group includes Michelle Gutierrez, who traded in her Mercedes C240 for a Prius and would have likely bought a BMW if she had not bought a Prius. “I enjoy luxury cars but with the global warming issues, I decided that the right thing to do was to purchase an environmentally friendly car. I liked the Prius because it was produced as a hybrid from the beginning. I also love the features I was able to get on it. I got everything except XM Radio because I didn’t need it. My iPod plugs right in. As for purchasing a Civic, that was absolutely not an option.”

### More about this Segment

- Median income between \$100,000 and \$150,000 per year.
- 82% only seriously considered hybrids when they bought their car.
- 50% only seriously considered the Prius when they bought their car.
- 71% said the fact that the Prius only came as a hybrid was an “important” or “very important” factor in their decision.
- 12% actively participate in environmental activities or events.

### Prospects for Future Hybrid Sales in this Segment: High

While the exact size of this segment is difficult to measure, it clearly runs into the millions and is more than large enough to fuel substantial hybrid sales growth. Some statistics that point to its size include:

- A March 2006 ABC News poll that found that 49% of Americans “called global warming extremely or very important to them personally.”<sup>2</sup>
- Over 3.6 million Americans saw the Al Gore documentary *An Inconvenient Truth* in the theater.<sup>3</sup>
- The Sierra Club and the World Wildlife Fund combined have 2 million members.

### Segment 2: The Buyer Calculated the ROI Differently than the Experts

According to our study, 16% of Prius buyers stated that the primary reason for buying the Prius was to save money on gas. Given the various analyses that show hybrids do not save enough on gas to pay for their higher purchase price, there might be a tendency to view these people as making an uninformed choice. However, while analysts present their findings as hard facts, they are in fact very much up for debate. All analyses regarding the costs and benefits of a hybrid purchase are based on assumptions, and reasonable people can make very different assumptions. As a result, whether or not hybrids make financial sense is very much in the eye of the beholder. That was certainly the case for James Moore, who commutes 45 miles each way to work three days a week. His 2004 Prius has over 60,000 miles on it and he plans to drive it until it wears out. “I heard people say that the upfront costs for the Prius were too high, but I was willing to risk it. I feel the benefits outweigh the upfront costs.”

A cash flow analysis of hybrid ownership costs bears out James’ opinion and reinforces the view that reasonable people can conclude that hybrids make economic sense. Below are two calculations of a financial comparison of a Honda Civic hybrid and a conventional Civic (we chose to run the financial comparison with Civics because, other than the engine, the two cars are identical). The first is based on reasonably conservative assumptions: Owning the car for 5 years, driving 11,500 miles per year, paying \$2.50 per gallon, and assuming a discount rate of 7.75%, the current average rate for a new car loan<sup>4</sup>. The second is based on somewhat more aggressive, but still reasonable, assumptions: Owning the car for 8 years (the median length of time our sample owned their previous car), paying an average \$3.25 per gallon for gas over that period (which is close to the average price for gas in the Western U.S. during the price run up in mid 2006), driving 13,500 miles per year, and using a discount rate of 4.5%, a typical interest rate currently paid on a money market account<sup>5</sup>. As the chart below shows, using the first set of assumptions, Civic Hybrid drivers will never recover the incremental \$4,090<sup>6</sup> they spend upfront

and can expect to spend nearly \$800 more for the privilege of driving a hybrid. Using the second set, Civic Hybrid drivers can expect to save over \$1,100.

**Depending on Assumptions, the Financial Picture of Hybrid Ownership Changes Substantially**

	<b>Conservative Case</b>	<b>Alternative Scenario</b>
<b>Assumptions</b>		
Miles Driven/Year	11,500	13,500
Average Price of Gas (\$/gal)	\$2.50	\$3.25
Ownership Period	5	8
Cost of Capital	7.75%	4.50%
Incremental Civic Hybrid Cost	4,090	4,090
Federal Tax Credit	2,100	2,100
Net Incremental Civic Hybrid Cost	1,990	1,990
Gallons Saved/Year	122	145
Annual Gas Savings	\$305	\$471
NPV of Gas Savings	\$1,228	\$3,101
<b>Actual Net Civic Hybrid Gain/(Cost)</b>	<b>(\$762)</b>	<b>\$1,111</b>

**Prospects for Future Hybrid Sales in this Segment: Very High**

The fact that a meaningful number of people can reasonably expect for their hybrid purchase to save them money is perhaps the most important indicator for future hybrid sales. When coupled with the increasing number of makes and models offering hybrid options, it means that the hybrid market has opened up to millions of new buyers who might be motivated by financial reward alone. In fact, the hybrid-option segment is the fastest growing portion of the hybrid market. While the hybrid market overall grew by 23% in 2006, sales of conventional vehicles with the hybrid option grew at 49%.<sup>7</sup>

**Segment 3: The Buyer Gets to Drive Alone in the Carpool Lane**

For 12% of buyers, getting to drive in the carpool lane even when they were driving alone was their primary motivation for buying a Prius. Currently six states (Arizona, California, Florida, New Jersey, Utah, and Virginia)<sup>8</sup> allow some hybrid drivers to drive in the carpool lane regardless of the number of passengers in the car. For these buyers, the value of getting to avoid traffic by driving in the carpool lane far exceeds the incremental cost of the car. For Martin, who asked that we just use his first name, driving in the carpool lane was so valuable that he bought a Prius just for commuting and kept his Lexus 300RX. "It saves me 30 minutes each way every day, not to mention the gas. It was really worth it to me to own an extra car." While he originally bought it for commuting, the Prius has grown on him. "I must say, I enjoy driving the car, and it does feel good to be using less of the Earth's resources. I might even get rid of the SUV."

**Prospects for Future Hybrid Sales in this Segment: High**

Already, three other states (Colorado, Georgia, and Tennessee) have passed laws to allow hybrids in the carpool lane and are in the process of implementing their programs. In addition, legislation is under consideration in eight more states<sup>9</sup>. As these states' programs come on line, they will spur additional hybrid sales.

## Segment 4: The Prius' Image as a 'Fun' Car

The final 5% of the respondents purchased their Prius because they liked its image as a fun car. For all of these individuals, the Prius' distinct image was an important factor and all of these people would have bought a less expensive car if they had not purchased the Prius.

The fact that a car's image is an important purchase factor is well established. So is the fact that consumers will spend thousands of dollars extra to own a car with the right image. For example, the top of the line Nissan Altima and the basic version of the Infiniti G35 are built on the same chassis and are nearly identical in performance, features and styling. However, consumers are willing to spend over \$5,000<sup>10</sup> more to buy a G35 instead of a "poor man's G35," as one auto analyst dubbed the Altima.<sup>11</sup>

With the incremental lifetime cost of a hybrid conservatively estimated at \$800, buying a Prius is a very inexpensive way to get a fun car. Theresa Meyer certainly thought so. "My main criteria for a car were that I wanted something low maintenance, reliable, that got good gas mileage, had four doors and didn't look like a suburban mom car. The Prius won out because it had a lot more fun-factor built in. It's a car that people ask me about, something different from a Civic, which you see everywhere."

### Prospects for Future Growth in this Segment: Low

Sales of cars that are bought for the fun factor, like the Volkswagen Beetle and Mini Cooper tend to climb quickly and then level out after the novelty factor starts to wear off. Therefore, this segment of buyers has likely already reached its peak.

## Conclusion

Consumers' decision processes regarding hybrid cars are far more complex and varied than the early adopter-or-financial reward model that is widely presented. As a result, attempting to predict the future direction of the market by narrowly focusing on factors such as gas prices will inevitably prove inaccurate. Our analysis shows that the fundamentals are in place for the hybrid market to expand rapidly, and we expect it to do so, especially given Toyota's aggressive new hybrid marketing campaign.

## About the Study

The study was conducted during February and March 2007. The survey included 118 respondents. Ninety percent of participants were recruited by placing flyers on the windshields of Priuses. The remaining 10% were recruited online through Topline Strategy's database. Responses were collected through a combination of an online survey and phone interviews.

## Appendix: Selected Survey Results

1. What was your primary motivation for buying the Prius?

Response	% of Sample
I wanted an environmentally friendly car	66%
I wanted to save money on gas	16%
With the Prius, I can drive alone in the carpool lane	11%
Other - Bought it for the technology	3%
Other - miscellaneous	3%
Other - Reduce dependence on foreign oil	2%

2. Which of the following best describes your purchase?

<b>Response</b>	<b>% of Sample</b>
The Prius was the only car I seriously considered	56%
In addition to the Prius, I also seriously considered other hybrid cars	22%
In addition to the Prius, I also seriously considered hybrid and non-hybrid cars	12%
In addition to the Prius, I also seriously considered non-hybrid cars	10%

3. In comparing the Prius to OTHER HYBRID CARS, please rate the importance of each of the following in your decision to buy a Prius:

<b>Factor</b>	<b>Very Important (6 or 7)</b>	<b>Important (5)</b>	<b>Somewhat Important (3 or 4)</b>	<b>Not Important (1 or 2)</b>
The Prius comes only as a hybrid. It is not a conventional car that has a hybrid option.	44%	13%	12%	32%
The Prius had higher gas mileage	70%	17%	9%	4%
The Prius had a better reputation	69%	19%	10%	2%
The Prius had features (such as hatchback) that I really liked	37%	15%	26%	22%
The Prius had the most space for the money	38%	19%	23%	20%

4. If there were no hybrids, the buyer would have bought:

<b>Response</b>	<b>% of Sample</b>
A more expensive car (Audi, BMW, etc.)	35%
A less expensive car (Civic, Yaris, Matrix, etc.)	21%
A car that costs about the same (Accord, Camry, Altima, etc.)	38%
Nothing - kept the car they had	6%

5. How happy are you with your Prius?

<b>Response</b>	<b>% of Sample</b>
Very happy	88%
Somewhat happy	12%
Neither happy or unhappy	0%
Somewhat unhappy	0%
Very unhappy	0%

6. How frequently do friends and/or strangers ask you about your Prius?

<b>Response</b>	<b>% of Sample</b>
Very often	48%
Somewhat often	35%
Occasionally	15%
Almost never	2%

7. Which of the following environmental activities do you participate in/actions have you taken?

<b>Response</b>	<b>% of Sample</b>
I have reduced energy usage in my house through conservation	89%
I donate money to environmental causes	50%
I am a member of the Sierra Club or other environmental organizations and participate primarily through online activities	21%
I regularly attend meetings and participate in other in-person environmental activities.	10%
I have installed solar electric or solar hot water equipment at my house	5%

8. Age

<b>Response</b>	<b>% of Sample</b>
20-29	3%
30 to 39	24%
40 to 49	27%
50 to 59	36%
60 or Older	10%

9. Sex

<b>Response</b>	<b>% of Sample</b>
Male	58%
Female	42%

10. Household Income

<b>Response</b>	<b>% of Sample</b>
Under \$50,000	5%
\$50,000 to \$100,000	24%
\$100,000 to \$150,000	21%
\$150,000 to \$200,000	22%
\$200,000 or more	28%



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- <sup>9</sup> Ibid
- <sup>10</sup> Topline Strategy Analysis, [www.edmunds.com](http://www.edmunds.com)
- <sup>11</sup> Maynard, Micheline. "Fraternal Twins in the Showroom; Some Foreign Carmakers' Lines Are Much Alike, Except for the Price" *The New York Times*. January 18, 2007