

Toyota

Toyota, and its market success with the Prius model, has been the driving force in the auto market for hybrids. First introduced in Japan in December 1997 after an extensive development program the Prius and its hybrid technology have become the technological platform that Toyota is adapting across many of its models.

Introduced into North America as a 2001 model in July 2000 the vehicle's sales success is reflected in the fact that Toyota has sold one million Prius to date. As more models like the Camry, Highlander and Lexus models incorporate Toyota's Hybrid Synergy Drive the company has grown its market share. Toyota is on track to sell over 250,000 hybrids this year in North America and has stated that its goal is to offer a hybrid option on all its models. Speculation in the auto industry has suggested that the success of the Prius may result in it becoming a separate Group brand for Toyota.

The hybrid features of the Prius include idle stop, regenerative braking, electric drive assist, and engine-off drive. In addition, the Prius further improves its fuel efficiency by using advanced aerodynamics (14% less drag than a regular sedan) and low rolling resistance tires.

The Hybrid Synergy Drive combines a gasoline engine, two electric motor/generators, a Nickel-Metal Hydride battery pack, an electronically controlled continuously variable transmission, and power and control electronics.

The robustness of the Prius technology is reflected in taxi applications. This industry, in a city such as Victoria, BC has switched en mass to the Prius model with some taxi operators achieving 700,000 kilometres without any major repairs.

The first 2001 Prius taxi in Victoria was owned by Jatinder Parhar of Yellow Cabs. This Prius operated for over 435,000 kilometres with only a few maintenance repair issues.

North America's first hybrid taxi was a 2001 Toyota Prius operated by Andrew Grant in Vancouver, British Columbia. Grant's 2001 Yellow Taxi Prius travelled over 332,000 km before it was replaced with a 2004 Prius Taxi. View the 2001 (pdf) and 2004 (pdf) Yellow Taxi Prius's detailed service and maintenance records.

View a video about the Yellow Taxi Prius. Windows Media Player (12 MB) QuickTime (25MB).

In Field Performance

- Prius
- Camry
- Highlander
- Lexus

Prius ‐ 4 Million Kilometres Experience

The Hybrid Experience Report has collected detailed fuel consumption information from a number of organizations and individuals. These vehicles are located in different provinces and are used for a variety of different tasks. As a result the fuel efficiency of individual vehicles varies. This information provides a more realistic expectation on actual fuel efficiency under real world driving conditions.

The Toyota Prius has been widely used in fleet applications across Canada. Consequently there is more fuel consumption information available compared to other hybrid vehicles. The Hybrid Experience Report contains information collected from more than 130 Toyota Prius that have traveled about 4 Million kilometres.

The first reporting fleet is BC Hydro. Its fleet average is slightly above the MPG rating range for the Prius. There are a few vehicles that the data shows are well above the likely actual performance level for the vehicle, for example achieving 2.2 L/100 km or 128 MPG. This may be a fuel data collection issue since this level of performance is highly unlikely.

The City of Hamilton reports that its fleet of Prius are experiencing below average fuel efficiency. This may be related to the types of trips and usage patterns of the vehicles (see City of Vancouver data study below)

This older study of the BC Government fleet confirms the experience of other fleets that the actual fleet average is below

the ratings.

More current data from the BC Government:

The next three reports reiterate the findings from the other fleets.

The following report from the Government of Manitoba illustrates clearly the similarity in performance of a hybrid vs. non-hybrid as a function of temperature conditions.

This important report by the City of Vancouver illustrates the significant impact short distance trips have on fuel economy levels. This may be an important factor in understanding the differences in City type fleets vs. other fleets.

This report by the Province of Manitoba confirms the findings from the City of Vancouver that short distance travel has a significant impact on fuel economy. It also shows that like all vehicles fuel economy is poorer under cold weather start up conditions.

Camry

To date, there is only one report of the fuel performance of a Camry hybrid, that of a taxi operating in Calgary, Alberta. The performance of the Camry in this application appears to be within the normal range of rating vs. actual performance.

Current BC Government data:

HighLander

There are no detailed reports yet of the performance of a Highlander as this model is priced at a near luxury price point and not usually purchased by fleets.

Lexus

There are no detailed reports yet of the performance of any of the Lexus hybrids as this brand is priced at a luxury price point and not usually purchased by fleets.

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