

# SP INNOVATION

## Plug-in Prius

*The plug-in Prius is the first available car that offers the advantages of electric driving without action radius constraints.*



The Toyota Prius is the first and most successful Hybrid Electric Vehicle (HEV). Since its market introduction, around 700.000 Priuses have been sold. The drive train of the Prius is partly electric, for which the electricity is generated by the internal combustion engine (ICE). By default, the Prius does not have the option to charge its batteries from the grid, and the battery-motor ensemble therefore functions merely as an electric flywheel.

SP Innovation/Amberjac provides the technology to turn a Prius into a 'true' electric car by installing new, high-capacity batteries and adding the possibility to charge these batteries from the grid. This creates a so-called 'Plug-in Hybrid-Electric Vehicle' (PHEV). An additional control unit ensures that the batteries are used for propulsion as much as possible, before engaging the ICE. After discharge, the ICE does not recharge the battery but keeps it at a minimum level for the car to function as a normal Prius.

With the 'electric fuel tank', the PHEV can drive inner-city around 50 kilometers without using gasoline. Although it is still possible to drive more than these 50 kilometers on gasoline, a fact is that most cars do not exceed this distance on a daily basis. On motorways she consumes  $\pm 2\frac{1}{2}$  liters of gasoline per 100km, in addition to  $\pm 6$ kWh (see next page).

### *Advantages*

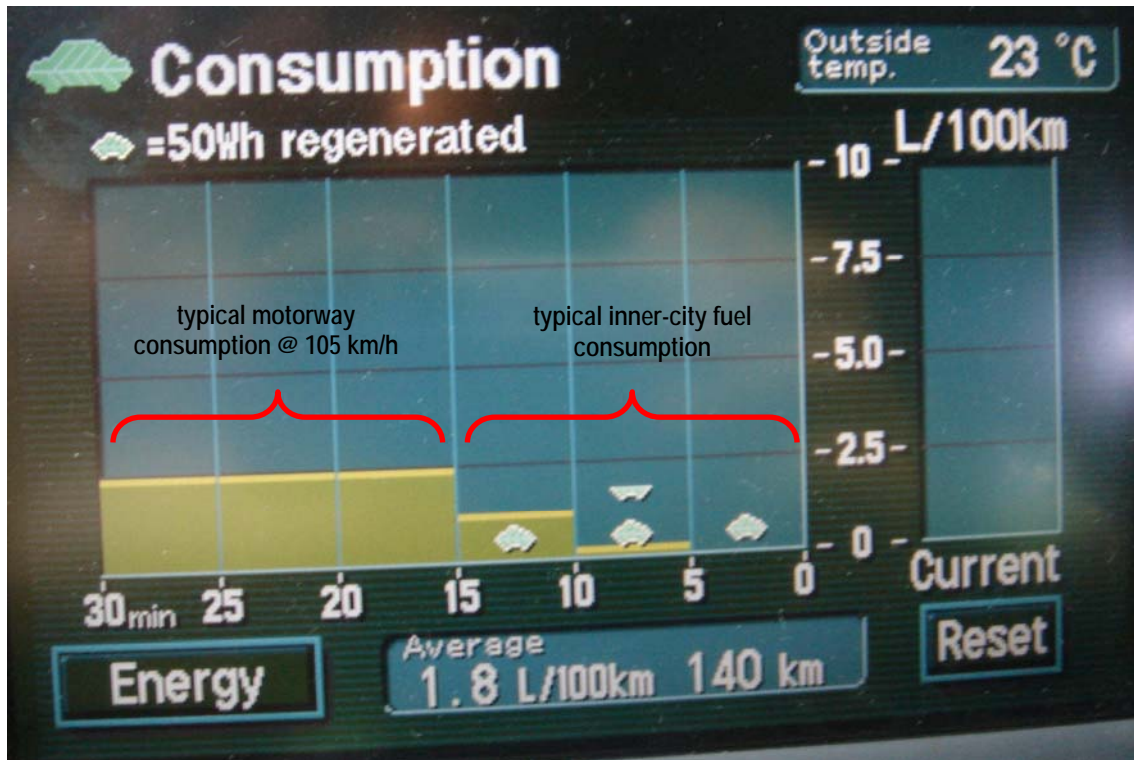
Not only is electric driving cheaper per kilometer than driving on gasoline, it is also energetically more efficient on a 'well-to-wheel' basis, even if the electricity is generated by a coal-fired power plant. It also reduces local emissions and noise. Finally, it provides national electricity companies additional income and can make a country or region less dependent on oil: If all cars were plug-in hybrids, it could reduce fuel consumption by 50%!

### *Technical details*

The original Prius (NiMH) battery is removed and replaced by a new 9 kWh Lithium-ion (LiFePO4) battery, battery management system and a 1 kW charger. An additional control unit is installed above the steering wheel, which communicates with the original Toyota system. The weight of the car only increases by 60kg and there is no loss of space in the passenger or luggage compartments. After conversion, the average fuel consumption will drop to  $\pm 2$  liter per 100km. Inner-city, the consumption is virtually zero (see next page).

For information, test rides or a quotation: +31206734850 or [info@spinnovation.com](mailto:info@spinnovation.com).

# SP INNOVATION



Screenshot of the Prius fuel consumption screen. Comments by SP Innovation.



SP Innovation's company car