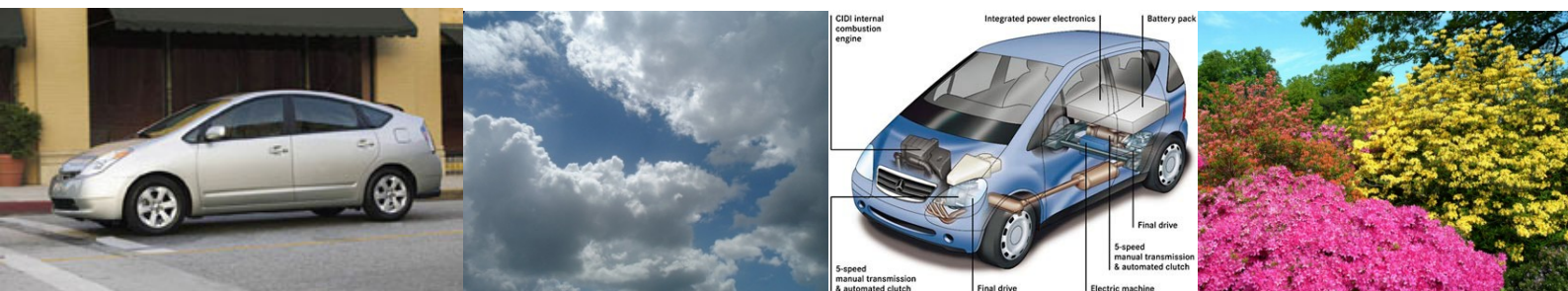


Hybrid Cars



What is the Hybrid Car initiative?

The Hybrid Car initiative is part of Roche's overall effort to reduce its environmental footprint. By using more fuel efficient vehicles, Roche is reducing its emissions of greenhouse gases and saving a limited resource - gasoline.

Roche started to incorporate hybrids into its 1400 vehicle US pharmaceutical sales fleet in 2004. Encouraged by positive feedback from drivers, the program was increased to 500 cars in 2007 and it is planned to continuously add more.

Chugai was running 150 hybrid cars at the end of 2007. Chugai is also considering a plan to raise the percentage of hybrid cars to 50% by 2010.

As technology continues to advance and more types of fuel-efficient, low-emissions vehicles become available, Roche will work to incorporate these vehicles into our fleet as a means of reducing the environmental impact of our operations.

How does it work?

Except for their exceptional fuel-efficiency, hybrids aren't any different from conventional vehicles and require no special care or maintenance. A hybrid vehicle combines a standard gasoline engine with an electric motor and generator. At slow speeds, the electric motor provides the high torque needed to accelerate the vehicle and the smaller gasoline engine runs as required at higher speeds and to provide extra power during fast acceleration.

Through a process called regenerative braking, energy that normally would be lost when slowing down or stopping the vehicle is converted to electricity and stored in batteries for future use by the electric motor. The gasoline engine is also designed to shut down when the vehicle is at a standstill to further conserve gasoline.

As a result of these technological advances, a hybrid is 20 - 50 % more fuel efficient than a comparable gasoline-only vehicle, demonstrating its greatest fuel saving in city driving when it can make greatest use of the energy recovery provided by regenerative braking.

Facts & Figures

In 2007 the Roche Group was running a total 15 630 cars.

	Energy consumption	CO ₂ emissions
Roche Group 2007	13 664 TJ	1 043 868 t
Car fleet 2007	1 361 TJ	94 524 t
Potential savings with Hybrids	- 50 % - 680 TJ	- 50 % - 43 300 t

What results have been achieved?

The substitution of hybrid cars for conventional vehicles results in a significant reduction in greenhouse gas emissions. Hybrids also generate 50% less carbon monoxide and 80% less nitrogen oxide than conventional cars.

There are also economic benefits. Put simply, because hybrids use less gas, they cost less to run. Chugai has obtained reductions of 50% for both fuel consumption and CO₂ emissions compared to their conventional vehicles. Applied to a car running 17 600 km a year, this means that up to 2 tons of CO₂ are not being released into the atmosphere.

In mixed city and interurban driving, the US hybrid fleet has improved fuel efficiency by an average of 20 - 40 % with corresponding reductions in emissions.

Why Hybrid Cars?

The key figures for energy use in the Roche Group demonstrate that the company car fleet accounted for 10% of the total energy consumption in 2007. Similarly, the vehicle fleet was responsible for 9% of total CO₂ emissions. Switching completely over to hybrid cars would achieve considerable energy savings as well as reductions in greenhouse gas emissions. An initiative of this kind could therefore go a long way towards helping Roche achieve its goal of reducing energy consumption by 10% per employee by 2010 as well as making a significant contribution to decreasing greenhouse gas emissions.

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