



MiEV

Mitsubishi innovative Electric Vehicle



MITSUBISHI MOTORS



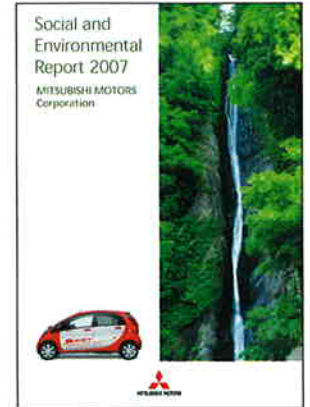
i MiEV



Environmental Activities

As a tool for transportation, automobiles are an indispensable element of our rich and varied modern lifestyles. However, they also have a significant impact on the environment throughout all stages of their lifecycles. Mitsubishi Motors Corporation (MMC) makes continuous efforts to reduce the environmental impact of the business processes involved, such as production, logistics, sales and recycling as well as the product itself.

In 2006, MMC announced the Environmental Initiative Program 2010. This program sets long-term and fiscal-year targets, and we are proactively implementing activities to achieve these targets.



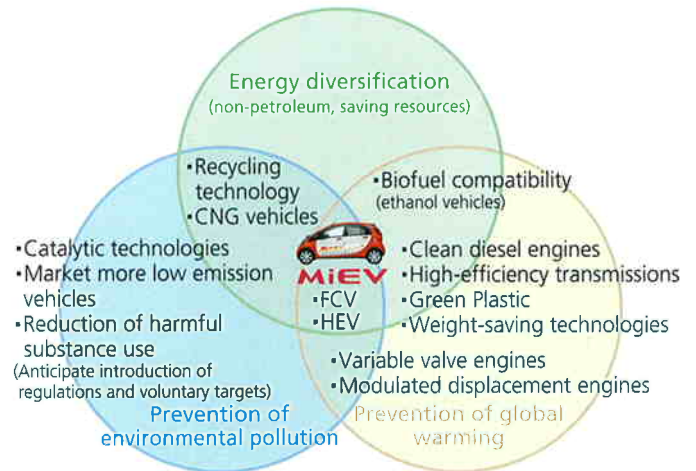
Mitsubishi Motors' "Social and Environmental Report 2007"

Environmental Technologies

Environmental problems that vehicle manufacturers have to resolve include the prevention of pollution and global warming, diversification of energy resources, and reducing dependence on petroleum.

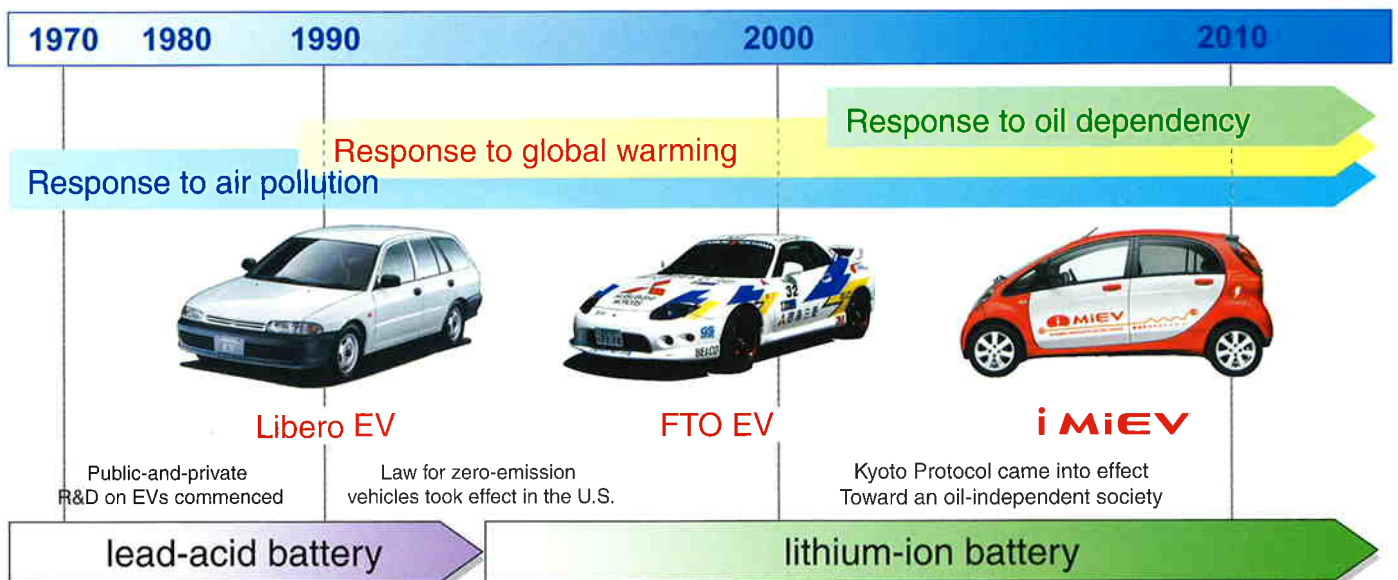
In order to resolve those issues, MMC improves on conventional engines and also develops clean diesel engines and other solutions such as Green Plastics.

MMC is giving priority to promoting the development of electric vehicles (EVs), positioning them as the pinnacle of its environmental technology.



Development of Electric Vehicles

MMC was an early researcher into the potential of lithium-ion batteries, now a core technology for electric vehicles and regarded as the favorite hereafter.



Features of the **i MiEV**



Halting Global Warming

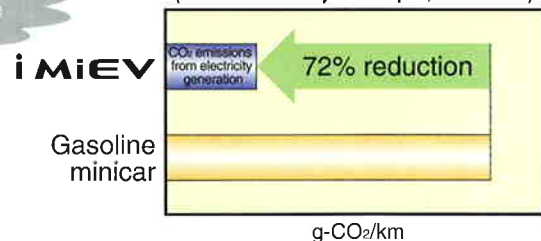
The car emits absolutely no CO₂ while operating. Even when taking into account CO₂ emissions at the power plants that generate the power needed for charging the car, it emits only 28% of the CO₂ of a gasoline minicar.

Using an **i MiEV** means one ton* less of CO₂ per year in comparison with a gasoline minicar.



* One ton of CO₂ is the amount absorbed per year by 76 Japanese cedar trees.
 (Figures based on driving mileage of 10,000km/year.)
 One 50-year-old cedar tree absorbs 14kg of CO₂/year

CO₂ emissions per kilometer (well to wheel analysis in Japan, 10-15 mode)

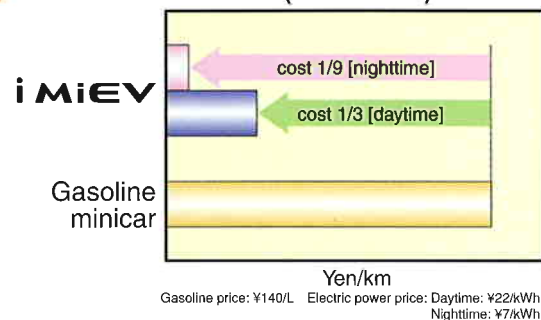


Easy on the wallet

As the vehicle uses low-cost electric power, the cost of electric power when driving the same distance as in a gasoline-powered vehicle is one-third that of the cost of gasoline during the daytime, and one-ninth at nighttime, which is extremely reasonable.



Cost for Driving the Same Distance (10-15 mode)

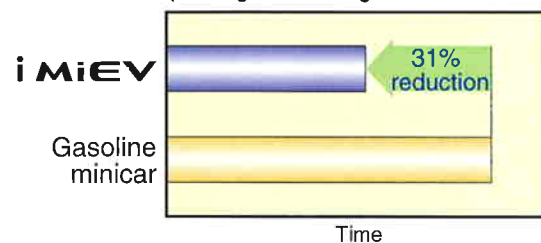


Strong Acceleration

Strong acceleration is achieved through a compact and highly efficient permanent magnet synchronous motor that generates high torque from a low speed.



Acceleration (Passing: accelerating from 40 to 60km/h)

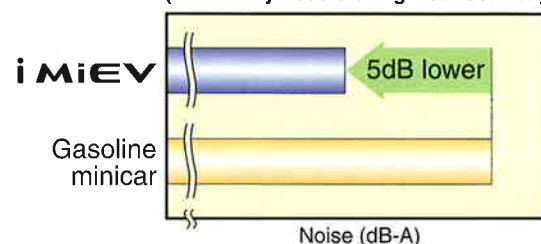


Quietness That Does Not Disturb Sleep

Because the vehicle uses an electric motor free of the vertical vibration associated with gasoline engines, it runs extremely quietly.



Noise Level (when fully accelerating from 50km/h)



Charge the Battery Anywhere

Using the on-board charger, the vehicle can be charged with a 100V or 200V power source in the home. In addition, if quick-chargers currently being developed by power companies are used, it will be possible to charge the vehicle in a short time.



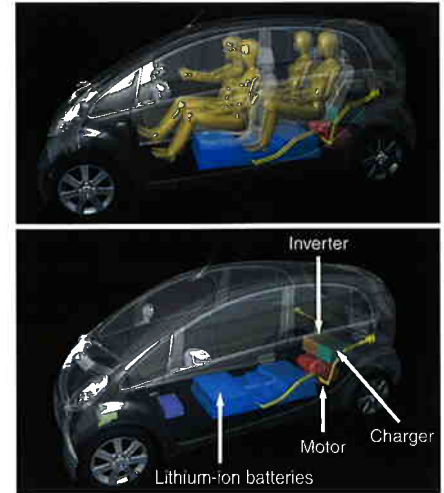
Charging Time

	Power Supply	Charging Time
Household Charger System (Full charged)	200V (15A)	Approx. 7h
	100V (15A)	Approx. 14h
Quick-charger System (80% charged)	3-phase 200V-50kW	Approx. 30min

i MIEV Four "innovations"

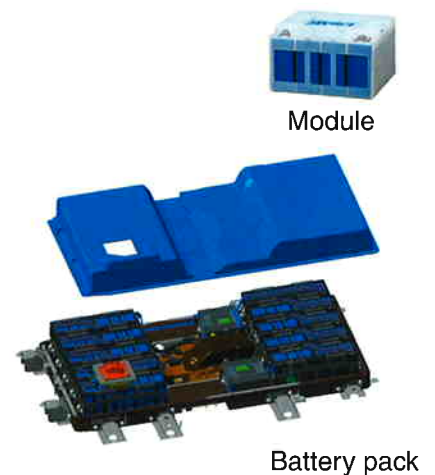
1. Optimum packaging for EVs

Based on the "i" minicar's rear-midship layout platform, **i MIEV** replaces the conventional engine, transmission and fuel tank with a lithium-ion battery system, motor, inverter and other EV components. The long wheelbase, a feature of rear-midship layout, provides space for high capacity lithium-ion batteries under the floor. It also enables the motor and inverter to be installed in the space that used to house the conventional engine and transmission. **i MIEV** ensures ample cabin space for passengers (4-occupant capacity) and reasonable luggage compartment space in the rear. The installation of batteries under the floor makes the **i MIEV**'s center of gravity low, which provides a more stable driving dynamic.



2. High-capacity lithium-ion batteries

EV batteries must have high energy density, and the **i MIEV** utilizes high energy density lithium-ion batteries. A module consists of 4 cells, and 22 modules make one battery pack. Thanks to the structure of the modules, which allows them to be installed in either a vertical or transverse position, each high-capacity battery pack can fit under the floor. With these batteries installed, the target range is 160km (driving pattern: Japan 10-15 mode) for fleet monitoring test vehicles in 2007.



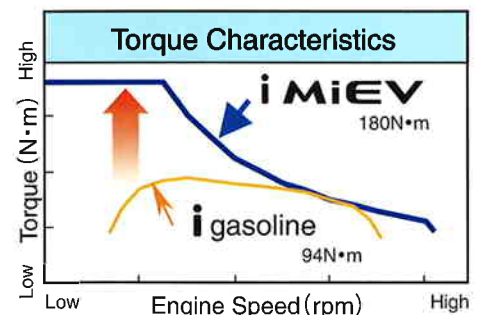
3. Small, highly efficient motor

Highly efficient motor can be built smaller than gasoline engine, while still producing high torque at low revolutions.

The **i MIEV**'s small, light weight, highly efficient permanent magnet synchronous motor provides sportier, quieter driving and power superior to the gasoline "i" 's turbo charged 660cc engine.



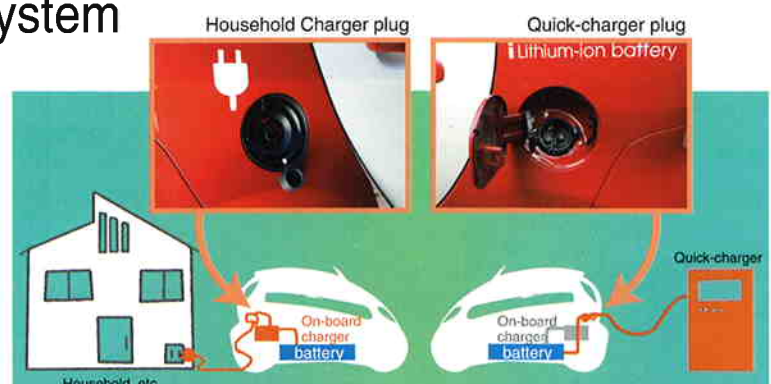
Permanent magnet synchronous motor



4. Three-way battery charging system

i MIEV accepts three types of battery charging systems: The household charger system (100V, 200V) for charging at home or a parking lot, and the quick-charger system for speedy charging. With the household charger system, **i MIEV** could be charged from either a 100V or 200V ordinary electric outlet via the household charger plug located on the right side of the vehicle.

With the quick-charger system, **i MIEV** could be charged in short time via the quick-charger plug located on the left side of the vehicle.



Joint research with power companies

For the diffusion of EVs, infrastructure development is as important as developing the car itself. MMC has been conducting joint research with power companies using the **iMiEV**. The power companies will evaluate and analyze EVs' practical applicability and quick-charge compatibility, which will help to develop vehicles and infrastructure for safe and convenient EV use.



Joint research vehicle with Tokyo Electric Power Co.



Joint research vehicle with The Chugoku Electric Power Co., Inc.



Joint research vehicle with Kyushu Electric Power Co., Inc.

New company to manufacture batteries

GS Yuasa Corporation, Mitsubishi Corporation and MMC are working to establish a joint venture company to manufacture high-capacity, high-performance lithium-ion batteries before the end of 2007.

GS Yuasa Corporation is currently the only mass producer of large lithium-ion batteries in Japan. The new company will produce batteries with substantially improved performance and higher capacities suitable for EVs.

Mass production lines capable of manufacturing 200,000 cells per year will be installed within GS Yuasa's Kyoto head office plant. Operations are slated to commence by 2009.



Large lithium-ion batteries (cells)

Toward the future

MMC began joint research with power companies in November 2006. In the autumn of 2007, MMC will begin fleet monitoring test in order to verify the vehicle's technical capabilities in daily use and to evaluate the market acceptability in collaboration with the power companies. Through this joint research, MMC hopes the future commercial application of EVs.

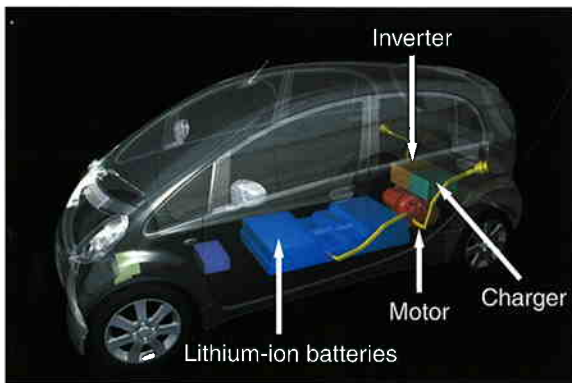
	2006	2007	2008	2009 and beyond
November	Joint Research			
Autumn		Fleet Monitoring Test		Commercialization (Goal)

Purpose and Content		
2006	Joint Research	Study of EVs for use by power companies
		Research on practical use of quick-charger and related infrastructure
2007	Fleet Monitoring Test	Driving under real-life conditions (temperature tolerances, etc.)
		Survey of market acceptability (charging time, utility etc.)
		Collection and analysis of technical data

Scenes featuring



Specifications (Targets for 2007 fleet monitoring test EVs)



Overall length x width x height		3,395x1,475x1,600mm
Curb weight		1,080kg
Seating capacity		4
Max. speed		130km/h
Range (driving pattern: Japan 10-15 mode)		160km
Motor	Type	Permanent magnet synchronous
	Max. power	47kW
	Max. torque	180N·m
Drive system		Rear wheel drive
Battery	Type	Lithium-ion
	Total voltage	330V
	Total energy	16kWh