



## Promotion of Technical Development with Emphasis on the Environment

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Concern over the environment is growing as abnormal global weather and the depletion of natural resources threaten the world. The Kyoto Protocol came into effect last year and discussions on the environment have continued ceaselessly. The United States, which refused to sign the Kyoto Protocol, has started efforts to reduce domestic emissions of CO<sub>2</sub>. Hence, the auto industry is actively working to develop environment-friendly technologies since the industry inevitably has a major impact on the environment. The auto industry showcased its environmental conservation efforts at the Tokyo Motor Show last autumn and at various other events around the world.

In January 2005 Mitsubishi Motors Corporation (MMC) announced its new revitalization plan, and in September announced a new slogan, the "*Kuruma zukuri no genten e*" (meaning "Pursuing the Origins of Car Engineering" in English. The English phrase is not used in the company's marketing efforts), which will be reflected in our products. MMC has resolved to make more attractive automobiles that offer both drivability and durability, and has promised customers to sincerely consider the environment in carrying out the plan.

As part of its environmental conservation work, MMC defined its environmental principle as a basic policy in 1999, drew up a 5-year medium-term environmental action plan in 2002 to execute that policy, and has taken various steps accordingly. For instance, the Design for Environment (DfE) promotes designing based on not only the reduction of CO<sub>2</sub> emitted while operating the vehicle and realizing cleaner exhaust emissions, but also on the reduction of CO<sub>2</sub> emitted during the production of automobiles, together with the maximizing of the recycling potential upon scrapping. In 2002, MMC set up a special division for automobile recycling to prepare for the Recycling Law which came into force in January 2005. MMC has already achieved a shredder dust recycling rate of 59.3 % in 2004, significantly exceeding the legal requirement of over 30 % in 2005 and later. Our environment-related actions and achievements are announced in the Environment Sustainability Plan in four categories: environment management, recycling, prevention of global warming and prevention of contamination of the environment.

The OUTLANDER model released last October includes specific environmental features. For instance, its exhaust emissions are 75 % lower than those mandated by Japan's 2005 LEV regulations and its fuel efficiency is 5 % higher than Japan's 2010 fuel efficiency standard, thanks to improved combustion and exhaust systems and minimized weight increase by adopting a newly developed platform. As for safety – another key factor of automobiles – even though the weight increase has been suppressed, the OUTLANDER series achieves safety equivalent to the highest 6☆ rating in the JNCAP safety performance com-

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parison test by a public organization (result of in-company test), and the vehicle is designed to minimize the damage of a smaller car in the event of a crash and to improve protection for pedestrians. Meanwhile, the minicar model "i" released in January satisfied the voluntary regulation of the auto industry on Volatile Organic Compounds (VOCs) that cause the "sick-house syndrome" in order to improve the ambience inside the car. And for safety, since the "i" series adopts a rear midship layout, it creates a sufficient crush zone by using the front area without engine. Although the "i" series is a minicar, it meets the 5☆ safety rating of JNCAP (result of in-company test). These new technologies adopted on OUTLANDER and "i" are featured on this [MITSUBISHI MOTORS TECHNICAL REVIEW](#).

The target low pollution model in the future environmental technologies is the next-generation electric vehicle "MIEV" which emits no gas at all. First of all, it makes exceptional use of space since the motor is contained inside a wheel and thus no large drive system is necessary. With this concept, it is easier to develop not only basic electric cars but also hybrid cars and fuel cell electric cars. The vehicle performance will also be significantly enhanced as the in-wheel motors can be controlled independently for each wheel without a transmission, differential gears or other complex drive systems. MMC will use lithium ion batteries with higher energy density to replace the conventional batteries. MMC will work hard to study the technologies required to achieve this target to make customers experience our minicar-based environment-friendly electric cars by 2010.

Today, company managers must be both environmentally and socially aware. As we promised in the revitalization plan last year, MMC will add "contribution to environmental preservation" to the "driving pleasure and safety" while putting the customer first. We will focus on achieving our targets and developing the required new technologies, which we will continue to announce in [MITSUBISHI MOTORS TECHNICAL REVIEW](#). We hope you enjoy reading these articles.