Protecting the Environment

Achieving a Symbiosis of People, Vehicles and Nature

Protecting the Environment

Facing Environmental Challenges

Nissan's environmental philosophy, "A Symbiosis of People, Vehicles and Nature," aptly sums up our ideal society. We adopted this philosophy in 1992, and since then we have worked hard to make it a reality. We constantly strive to assess the type of impact that our vehicles and corporate activities have on the global environment, and we work to address all issues that need to be resolved.

In 2008 the first commitment period of the Kyoto Protocol begins. In May 2008, meanwhile, the price of crude oil broke the $130 per barrel mark on the New York Mercantile Exchange. The Fourth Assessment Report of the Intergovernmental Panel on Climate Change, which was issued in November 2007, states that the climate system is warming up, and international discussions aimed at working out a post-Kyoto framework are gaining momentum.

We are already living in a carbon-constrained society. Tackling the challenges facing the global environment is a fundamental part of Nissan's business. What do we need to do so that we can continue to provide the richness of a lifestyle with mobility to the next generation, and to generations after that? Based on our midterm environmental action plan, Nissan Green Program 2010, we are making sincere efforts toward further innovations that will bring about a society in which people and vehicles coexist with nature.

NISSAN'S BUSINESS ACTIVITIES AND THE ENVIRONMENT

A Better Environment for a Better Tomorrow

Motor vehicles are built using a variety of resources and run primarily on gasoline and diesel fuels. As a global automaker, Nissan takes active steps to gauge the impact of its business on the environment and to minimize such impact. As our ultimate goal, moreover, we seek to reduce the environmental impact caused by our operations and the usage of Nissan vehicles to a level that can be absorbed naturally by the Earth. Our goal is to leave as small a footprint on the planet as possible.

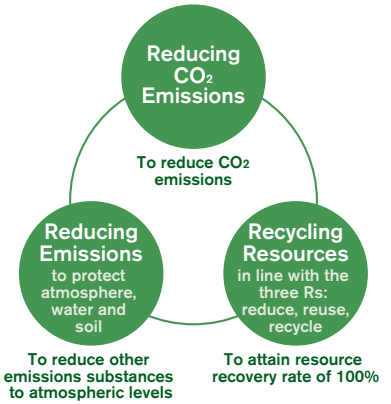
Nissan's desire is to be a "sincere eco-innovator." By *sincere*, we mean a proactive stance toward addressing environmental challenges and reducing the real-world environmental impact. Being an *eco-innovator* means providing our customers with optimal value in the form of innovative products, technologies and services to contribute to the development of a sustainable mobility society.

At Nissan, we believe that we can make meaningful efforts to help protect the global environment. The exhaust emission levels of the cleanest vehicle today are under 1/100 to 1/250 of the levels defined in regulations in the early 1970s, and our ultimate goal is to reduce this amount to levels near to the clean air of the atmosphere. We will contribute to global environmental protection by creating a sustainable mobility society and achieving "a Symbiosis of People, Vehicles and Nature."

Nissan's Three Key Issues

After considering the impact of various issues like climate change, the burden placed on the ecosystem and humans by environment-impacting substances and dwindling stores of mineral and water resources, Nissan has identified three major issues to be addressed: managing CO_2 emissions; protecting the air, water and soil; and recycling resources. We have established and are working to achieve specific goals in each of these areas in order to minimize the impact on the environment of Nissan's motor vehicles and business activities.

We feel that these issues can be resolved in a sustainable way only by offering the right products to customers at the right cost and the right time. The management of CO_2 emissions, which Nissan considers to be a high priority, is being advanced under a "QCT-C" framework that adds a CO_2 component to the traditional management indices of quality, cost and time. In this way we are undertaking companywide management of CO_2 emissions.



Nissan Green Program 2010

In December 2006 we announced our Nissan Green Program 2010, or NGP2010. This is a set of medium-term targets to be reached by 2010 as a means to help Nissan as a whole globally achieve its ultimate environmental goals. A step forward from Nissan Green Program 2005, NGP2010 strongly reflects our perceptions and resolve to protect the environment. Based on NGP2010, we will continue to rise to the various challenges of creating a sustainable society by offering products that customers want and that are environmentally friendly.

NISSAN
GREEN PROGRAM

http://www.nissan-global.com/EN/ENVIRONMENT/GREENPROGRAM_2010/

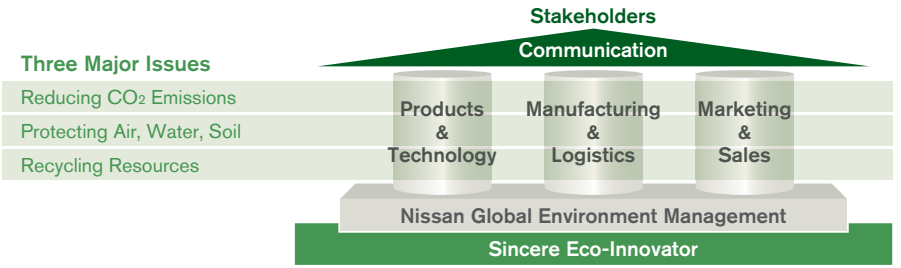
Please see our website for more information on Nissan Green Program 2010.

ENVIRONMENTAL MANAGEMENT

Global Environment Management

To achieve progress toward its goals in the three major issues to be tackled, Nissan considers it necessary to link the efforts of its divisions engaged in product and technical development, production, distribution, marketing and sales. This form of management is capable of achieving the greatest results possible through a cooperative approach that enhances our actions' effectiveness. We have established a global environmental management framework to develop our activities across this spectrum. By setting numerical targets and creating action plans for each area of our operations, we are making it possible to tackle the issues in an integrated manner.

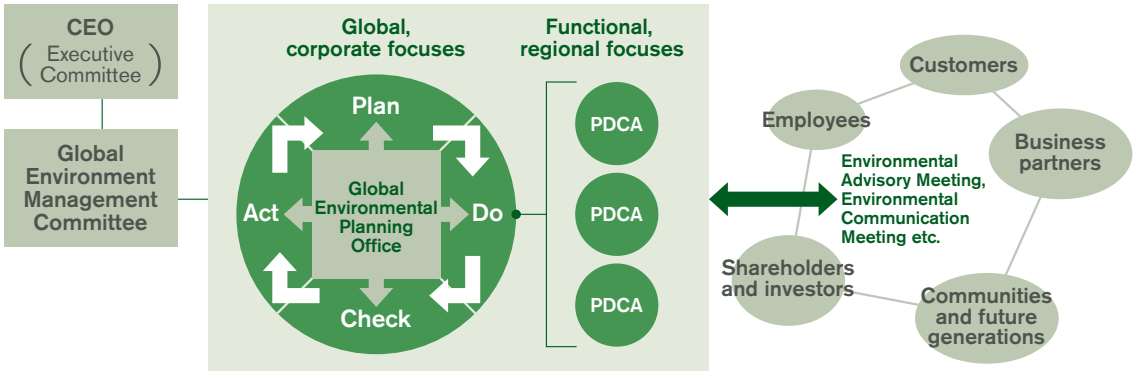
Our Framework for Global Environment Management



The organization outlined on the next page promotes environmentally oriented management on a scale that covers all our activities around the world. The Global Environment Management Committee (G-EMC), chaired by Nissan's chief operating officer, makes decisions on companywide policies and proposals to the Executive Committee. In 2007 we launched the Global Environmental Planning Office, which manages PDCA tasks—planning, doing, checking and acting—by making decisions on proposals forwarded to the G-EMC and specific actions to be taken in various divisions of the company, as well as tracking progress in these areas.

Nissan draws on external input as well as these internal organizations in refining goals and actions. We seek to deepen understanding of the views of all our stakeholders, for example through discussions with external experts and specialist organizations at our Environmental Advisory Meeting. We also work to improve the content of our actions by examining them from the perspective of trends in institutional SRI, or socially responsible investment, and by making use of rating agency evaluations.

Nissan's Global Environment Management Organization



A Sustainable Environmental Management System

All companies in the Nissan Group worldwide, including production sites, sales companies and affiliate companies, have been introducing environmental management systems to promote environmental activities.

At Nissan's main global production plants and R&D centers, we have been introducing ISO 14001. Today 16 of 18 production companies, which include Nissan and its consolidated manufacturing affiliates, have obtained ISO 14001 certification. Our basic policy is to establish environmental management systems according to the same standards whenever we expand our business into new areas.

In Japan we have built on ISO 14001 certification to introduce the Nissan Green Shop certification system, a unique environmental management system for our dealerships. As of the end of March 2008, some 3,200 dealership outlets in Japan belonging to 185 companies, including those handling parts and forklifts, had been designated as Nissan Green Shops. Every three years these dealers undergo audits by Nissan headquarters, which decides whether they can renew their certification; the dealers themselves work constantly to improve their environmental performance, carrying out their own internal examinations twice a year.

ISO 14001 Certification for Global Product Development Process

Nissan began applying the ISO 14001 standards to its product development process in fiscal 1998. In March 2008 we expanded this to our worldwide operations, receiving global ISO 14001 certification. We carried out a new review of our management systems, in line with Nissan Green Program 2010, with the aim of making solid advances in the field of product development. As a result, we were able to build uniform processes across our global operations, making it possible to establish mechanisms for expanding a more effective and efficient PDCA (plan, do, check, act) cycle.

Nissan Green Procurement Guideline Expanded Globally

In 2006 the purchasing divisions of Nissan and Renault compiled *The Renault-Nissan Purchasing Way*. This sets forth our thinking in regard to doing business with our suppliers, who are our business partners, and it forms the basis of our supply chain management. In addition to this, in April 2008 we expanded the environmental standards for suppliers of automobile parts and materials, releasing them as the Nissan Green Procurement Guidelines. We have started work on extending the operation of the guideline, beginning in Japan and moving on to other regions as well. We are working together with our suppliers toward making our environmental philosophy, "a Symbiosis of People, Vehicles and Nature," a reality.

Suppliers meet to discuss the Nissan Green Procurement Guidelines. (Japan)

Deeper Communication with Stakeholders

Nissan provides various venues for two-way communication with stakeholders on environmental topics. We seek to reflect our understanding of their positions in our planning and business strategies in ways that help us increase our corporate value. Forums to exchange opinions with external experts help us to adjust our goals and the direction of our progress. Stakeholder engagement is a fundamental part of our corporate management, giving us access to valuable third-party reviews of our actions.

Nissan's information disclosure efforts include its Sustainability Reports, other printed materials for both adults and children and informative websites. To enhance communication with stakeholders, we organize informational exhibits, test-drive events, environmental panel displays in the guest halls at our plants, public tours of our environmental facilities, internal communications measures and Environmental Advisory Meetings.

http://www.nissan-global.com/EN/ENVIRONMENT/

Publications and other data on our environmental measures are available at our website.

Nissan's Environmental Advisory Meetings

Our annual Environmental Advisory Meetings bring experts who are on the front lines of global environmental issues to meet with Nissan executives. These gatherings aim to generate discussion whose results can be put to work in the company's environmental strategies, and are a valuable venue for us to collect input from specialists as we craft our global environmental strategy.

At the third advisory meeting, held in December 2007, a presentation on the Nissan Green Program 2010, our midterm environmental action plan, was followed by discussion based on outside responses and feedback on initiatives for Nissan to pursue in the future. We will continue to take third-party opinions to heart and evaluate them for inclusion in our environmental strategies, as part of our efforts to create a sustainable mobility society.

The annual Environmental Advisory Meeting

Environmental Education at Local Elementary Schools

Nissan started a continuing program of environmental classes at Yokohama's Honcho Elementary School, near the new Nissan headquarters, in fiscal 2006. We also give environmental classes at elementary schools near our regional offices. In fiscal 2007 we augmented our lectures on environmental problems with a new "science classroom" program. Students in the program make model fuel-cell cars that run on hydrogen and oxygen and enjoy rides in a real fuel-cell vehicle, our X-TRAIL FCV. In this way we aim to boost environmental awareness among children, on whose shoulders the future rests, by giving them the chance to experience for themselves the energy of the future. An additional goal is to help reverse the recent decline in young people's interest in science in Japan. We intend to widen the scope of our activities in the future and offer classes in more elementary schools.

Elementary schoolers learning in Nissan's environmental course (Japan)

Internal Communication for Employee Awareness in Japan

Nissan is also committed to internal communication to raise environmental awareness. In fiscal 2007, we marked Japan's Environment Month, observed in June, with a number of programs under the theme "NGP2010 and Environment Month." One of these was an on-site screening of an environmental documentary at our headquarters and nine other Nissan locations. Many employees responded positively to a questionnaire distributed after the screening, noting that the film provided them with fresh insight into their work.

Employees viewing the documentary film

Unique Education for Employees

To promote employee awareness of environmental issues, Nissan provides focused training for all its employees in Japan. Basic environmental education forms part of the orientation program for new hires, all of whom attended the program in fiscal 2007. New managers, too, undergo training when they are appointed to their posts to give them the knowledge and awareness they need to lead our environmental preservation activities. Nissan has developed a unique training curriculum that includes discussion programs with the participation of outside experts, courses to boost the eco-awareness of the company's middle management and environmental seminars for top managers in the research and development division. Nissan also plans to develop an even more systemic program that can be rolled out on a more uniform global basis.

Improving Environmental Literacy Through e-Learning

Nissan's environmental e-learning program is one of its in-house educational tools for employees. January 2008 saw the full-scale launch of courses in this program for employees in Japan. This learning tool, which we developed in concert with the Natural Step, an NPO focusing on sustainability education, clearly illustrates global environmental mechanisms and the importance to automakers of involvement with environmental challenges. We plan to take our basic environmental education program, which includes e-learning, and develop it into a global program covering affiliate companies as well.

The Nissan environmental e-learning program received the Japanese Minister of Economy, Trade and Industry's Award at the Fourth Japan e-Learning Awards, earning high praise for its simplicity and goals.

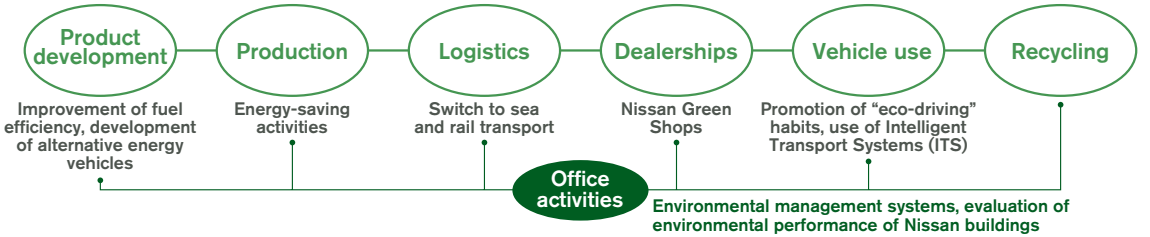
Nissan won the Japanese Minister of Economy, Trade and Industry's Award for its e-learning program.

REDUCING CO_2

Tasks to Pursue for a Low-Carbon Society

Some scientists have predicted major changes in the environment as a result of CO_2 emissions. The reduction of CO_2 is a challenge that humanity must meet on a global scale. At Nissan we take a variety of steps to minimize the emission of CO_2 at all stages of our operations, as well as during the life cycle of Nissan cars—from their production and transport to dealerships through their use by customers and their final disposal.

Nissan's Efforts to Reduce CO_2 Emissions



In November 2007 the Intergovernmental Panel on Climate Change (IPCC) released its Fourth Assessment Report, which states: "Warming of the climate system is unequivocal." In 2008 the world entered the first commitment period of the Kyoto Protocol, which runs through 2012, and international debate is now intensifying on the next framework agreement for climate change, to take effect thereafter. There are likely to be further developments this year, with the G8 Summit taking place in Hokkaido in July and the Fourteenth Conference of the Parties to the UN Framework Convention on Climate Change (COP14) scheduled for December. Against this backdrop many national governments are enforcing stricter emissions and fuel-efficiency standards for motor vehicles.

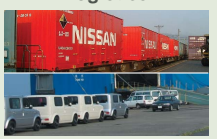
Meanwhile, the price of crude oil passed the $130 a barrel mark on the New York Mercantile Exchange in May 2008. Rising fuel costs are leading to increasing demand among our customers for environmental technologies.

We are already living in a carbon-constrained society, and today there is a need for a sense of urgency. One of our top priorities is the management of CO_2. This calls for innovative technologies and business models. We at Nissan are speeding up our efforts to pave the way to a low-carbon society.

Nissan's CO_2 Emission Levels

2,200 kton
Production

895 kton
Logistics



155,000 kton*
Use of Nissan vehicles

*Tank-to-wheel

124 kton
Offices, etc.

Calculated according to Nissan's internal standards (annual figures)

The Nissan Approach to Reducing CO_2

We believe that technology can play a significant role in advancing significant reductions of CO_2. Nonetheless, reducing emissions is a task that will require joint efforts by all of society. Furthermore, it is not enough for environmental technology to aim for CO_2 reductions alone. To be truly sustainable, technological development must also take into account such factors as basic performance and cost, and must have the potential for broad acceptance. With this awareness, we are making proactive efforts in the development of our products, and in every area of our business activities, to reduce CO_2 emissions. Our goal is to turn the challenges posed by CO_2 emissions into opportunities for Nissan.

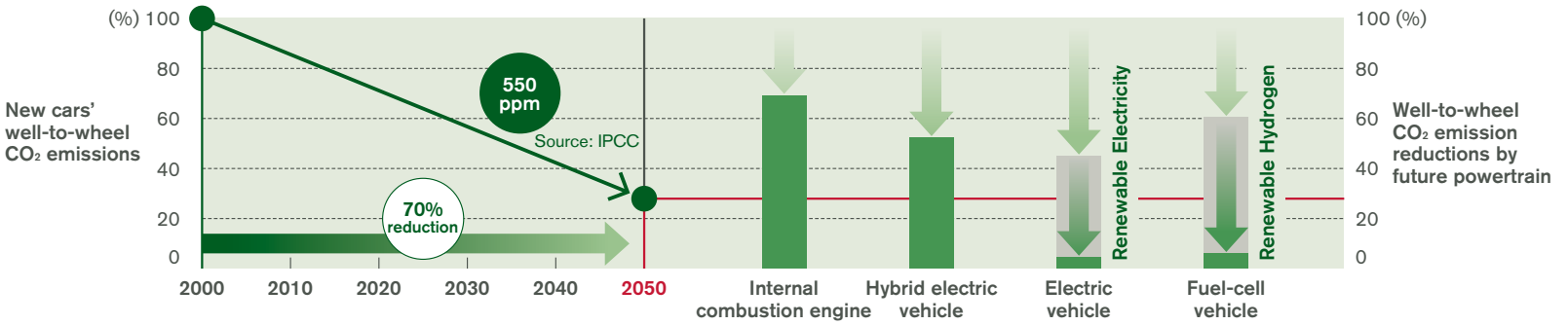
Improving CO_2 Emission Management Through QCT-C

Nissan has introduced its Global CO_2 Management Way, QCT-C, in order to strengthen its efforts to reduce CO_2 emissions. In this new set of management indices, we add a CO_2 component (C) to the traditional QCT indices of quality, cost and time in order to indicate the CO_2 reduction initiatives taking place across the whole company. QCT-C involves reducing CO_2 emissions not only from our products, but also from all aspects of our corporate operations. Balancing the often-conflicting demands of QCT and CO_2 reduction is a big challenge, but we believe that achieving this balance and providing Nissan customers with added value are essential tasks for our business.

Nissan's Long-Term Reduction Roadmap

We at Nissan have established long-term CO_2-reduction targets and are carrying out the necessary research and development to achieve those goals. Opinion is divided over the extent to which humanity needs to control rising global temperatures and atmospheric concentrations of CO_2. In line with the IPCC's Third Assessment Report, we believe that if society at large can stabilize atmospheric CO_2 at 550 parts per million, it will help prevent average temperatures from rising more than 2 degrees Celsius. To achieve this, we calculate that the "well-to-wheel" CO_2 emissions of new vehicles in 2050 will need to be reduced by 70% from 2000 levels. (Well-to-wheel emissions are the total CO_2 emissions from oil extraction through its consumption as refined fuel when the vehicle is driven. Well-to-tank emissions—over which automakers have very little control—include emissions from oil extraction through refining and delivery of fuel to the customer.) The latest scientific forecasts in the IPCC's Fourth Assessment Report, issued in November 2007, suggest that further reductions may be necessary.

Long-Term CO_2 Reduction Goals



Looking in terms of vehicle power source, gasoline engines have the potential for an additional 30% cut in CO_2 emissions over the long term. Over the short and medium term, the focus of CO_2 reduction efforts will be on enhancing the fuel efficiency of engines. Diesel engines produce less CO_2 than gasoline, but we are fully aware of the need to make diesel emissions cleaner.

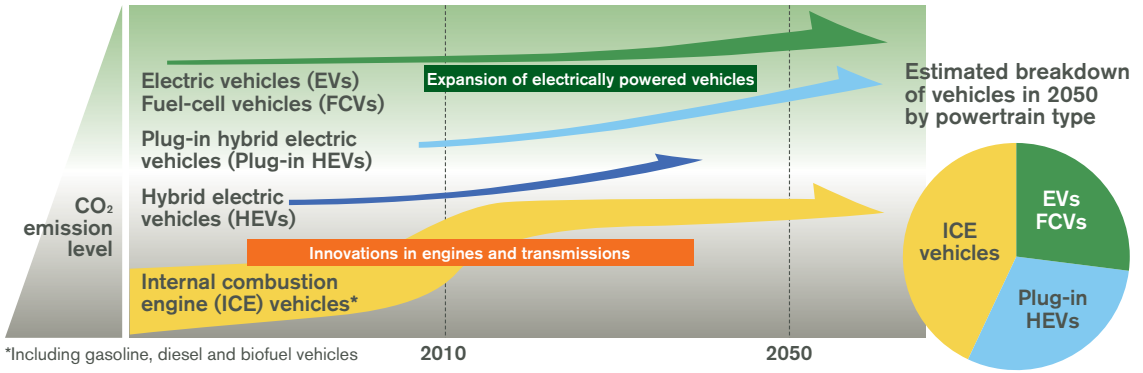
Further reductions, however, will require the spread of new types of electric-powered vehicles, such as hybrid, fuel-cell and electric vehicles. Nonetheless, the 70% CO_2 reduction target cannot be met even with these technologies unless renewable energy is used to power the motors and/or recharge the batteries. It will therefore be key to strengthen coordination with the energy sector.

"Four Rights"

Our focus at Nissan is on making steady reductions in CO_2 emissions by providing effective technologies at prices that customers can afford, thus ensuring that the technologies can be quickly and broadly embraced by the market. We therefore take the view that technology must be introduced in accordance with "four rights": the right technology, at the right time, in the right market at the right value to the customer.

Through the four rights, we strive to meet the needs of our customers and society as a whole, providing technologies that have genuine value. We see this as our responsibility to society as a global automaker, and as an indication of our unwavering sincerity.

Nissan's Powertrain Roadmap



Integrated Approach for Reducing CO_2 Emissions

Nissan takes a holistic approach to CO_2 reduction that links together vehicles (the Nissan product), drivers and the driving environment. The amount of CO_2 emitted while driving is influenced not only by a vehicle's performance and the type of fuel, but also by how the vehicle is driven and under what road and traffic conditions. For this reason, we aim for more effective CO_2 reductions by developing and popularizing fuel-efficient vehicles while at the same time encouraging environmentally friendly driving practices and working in cooperation with regional and national governments and other industries to improve the driving environment.

Utilizing the Merits of the Alliance

Research on and development of technologies to reduce CO_2 are undertakings that require considerable resources. Nissan works with its Alliance partner, Renault, by developing joint platforms and sharing the tasks of engine and transmission development. The fruit of this collaboration, our new X-TRAIL, will be released in Japan in 2008. This X-TRAIL model features a clean diesel engine based on the M9R engine co-developed with Renault and Nissan's own high-performance catalyst and advanced engine-management technologies.

Reducing CO_2 Through Products and Technologies

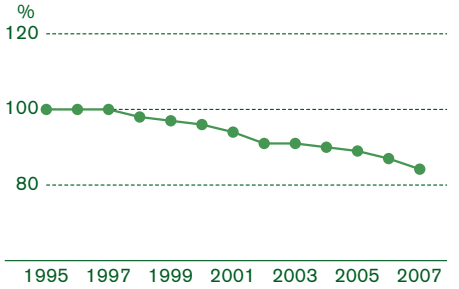
Aiming for a 70% Reduction by 2050

Nissan has established a long-term goal of reducing CO_2 emissions from new vehicles by approximately 70% from 2000 levels by 2050, and is working on a variety of approaches to achieve this target. Nissan discloses fuel-consumption data for its vehicles in accordance with the measurement standards prescribed in each country, and it also sets its own in-house standards for average real-world fuel economy by considering a mix of figures for city, highway and heavy-traffic road conditions to be used as an index for enhanced fuel efficiency.

We also calculate the companywide averages for fuel consumption in Japan and North America, and for CO_2 emissions in Europe, by taking note of the number and type of vehicles shipped each year. This helps us set targets to meet regulatory standards in each region and to reduce overall CO_2 emissions.

The figure at right shows the average annual CO_2 emissions of new Nissan cars sold in the Japanese, U.S. and European markets based on actual shipments.

Sales-Weighted Average CO_2 Emissions of New Passenger Cars
(Japan, EU, USA)



Fuel-Efficient Engines and CVTs

As part of Nissan's efforts to enhance the fuel efficiency of gasoline engines and reduce CO_2 emissions, it has developed a new 1.5-liter gasoline engine and the electronically improved Xtronic continuously variable transmission (CVT) system for the Note 2WD. This gives a 6% improvement in mileage compared to the earlier models, at the same time allowing us to achieve a recoverability rate of 95%.

The Note surpasses fuel-efficiency standards for fiscal 2010 by 20%. It has been certified as a Super Ultra-Low Emission Vehicle (SU-LEV), with emission levels 75% lower than 2005 standards. It thus qualifies for the highest available "green tax" breaks in Japan for low-polluting vehicles.

We have achieved top fuel-efficiency levels in a number of models, including the Nissan Note.

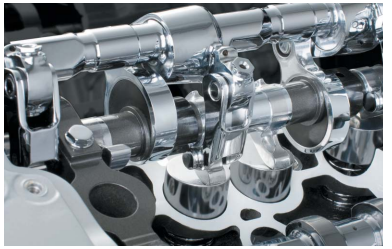
Annual Global Sales of CVT Vehicles Reach 1 Million

Under Nissan Green Program 2010, we set forth the goal of increasing annual global sales of vehicles fitted with our CVT to 1 million units by fiscal 2007, and we have been working to boost vehicles using this technology. In fiscal 2007 we achieved this goal as sales of CVT vehicles reached 1,088,000 units. Approximately 28.6% of all Nissan cars sold worldwide were CVT vehicles, compared to just 7% in fiscal 2004. The ratio in North America was 47.7%, and in Japan, 43.8%.

Global sales of CVT-equipped vehicles broke the 1 million mark.

Global Rollout for VVEL

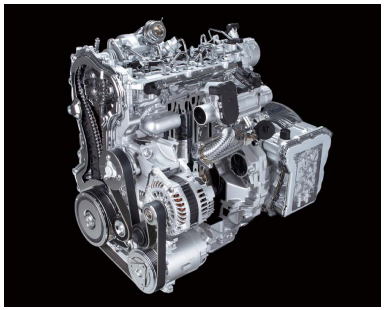
Nissan uses the variable valve event and lift (VVEL) system in its V6 and V8 engines, and is introducing the system on a global basis through such models as the Skyline Coupe. The VVEL system achieves higher response, greater power, lower fuel consumption and cleaner emissions by continuously varying the angle and lift of an engine's intake valve according to the pressure applied to the accelerator, so that there is direct control over the amount of air fed to the engine. Combining this system with continuous valve timing control (C-VTC) allows control over the timing and lift of the valves, giving improvements in intake resistance and air intake response. This leads to both better vehicle performance and improved environmental performance, with CO_2 emissions reduced by up to 10%, according to internal measurements comparing the CO_2 output of engines with and without VVEL systems.



The VVEL system is available in the Skyline Coupe.

Aiming for 30 Kilometers per Liter

Nissan is targeting the introduction of gasoline-powered cars that reduce CO_2 emissions to levels equivalent to hybrid vehicles by 2010, starting in the Japanese market. The aim is a car that can run for 100 kilometers on just 3 liters of gasoline, meaning it gets more than 30 kilometers per liter. Nissan is working toward this goal by combining ultra-efficient, supercharged engines with next-generation CVTs, a hydrogen-free diamond-like carbon (DLC) coating for valve lifters and integrated control systems.



Clean diesel engines offer reduced CO_2 emissions.

Introducing Clean Diesel Vehicles

Clean diesel engines are seen as a promising technology for reducing CO_2 emissions. Nissan has already launched clean diesel engines running on blended biodiesel fuel on the European market, beginning with the release in 2007 of the Qashqai fitted with a clean diesel engine. The new X-TRAIL—the first car on the Japanese market with a clean diesel engine, which complies with Japan's Post–New Long-Term Exhaust Emission Regulations—is slated for launch in fall 2008. In North America, the clean diesel engine will be installed in the Maxima in fiscal 2010, and we have plans to take the technology to the Chinese market as well.

This 2008 X-TRAIL features a clean diesel engine.

Developing the 100% Biofuel Car

Biofuels, which are made mainly from plant matter, are a renewable energy source. The main biofuels used for automobiles are bioethanol and biodiesel. All new gasoline-fueled vehicles released by Nissan can already run on gasoline with a 10% blend of bioethanol (E10), and in North America, Nissan markets the Titan FFV and Armada FFV, which can run on 85% bioethanol fuel (E85). We plan to introduce a 100% bioethanol model in Brazil in 2008.

The Titan pickup sold in North America can run on fuel mixtures of up to 85% biofuel (E85).

Participation in Tokachi Biofuel Trials

Since April 2008 Nissan has been taking part in the Tokachi E10 trials, a project held in Hokkaido's Tokachi region that aims to spread the use of E10 fuel, a gasoline mixture including 10% bioethanol. As part of its participation Nissan has developed an E10-compatible Murano, the first car in Japan to receive official certification from the Minister of Land, Infrastructure, Transport and Tourism as an E10 vehicle. The bioethanol used for the Tokachi trials is made from substandard wheat and sugar beet, and so has little impact on food supplies, yet according to our estimates it has the potential to replace 1% (15,000 kiloliters) of the annual gasoline demand of Hokkaido.

The Nissan Murano was the first car in Japan certified as compatible with E10 fuel.

Nissan-Exclusive Hybrid Vehicles

Hybrid electric vehicles (HEVs), which combine a gasoline engine and an electric motor, have such eco-friendly features as low CO_2 emissions and cleaner exhausts. Nissan launched the Atlas 20 Hybrid truck in Japan in 2006 and the Altima Hybrid in North America in 2007. In fiscal 2010, it will launch new HEVs with Nissan's original hybrid technologies in North America and Japan.

The Altima Hybrid achieves low exhaust emissions and outstanding fuel economy without sacrificing the acceleration and power performance of conventional vehicles.

Plug-in Hybrid Development

Research and development is being carried out into plug-in hybrid technology, which is an effective technology for reducing vehicle CO_2 emissions. Plug-in HEVs can run on motors whose batteries may be charged using ordinary electric sockets to enable CO_2-free driving when operating on electric power, just like conventional electric cars.

The Next Generation of Fuel-Cell Vehicles

Fuel-cell vehicles (FCVs) run on electricity generated from hydrogen and oxygen. FCVs do not give off CO_2 or other exhaust gases, as the only waste emitted during driving is water. With our X-TRAIL FCV, equipped with a 70 megapascal high-pressure hydrogen tank and a Nissan-developed fuel-cell stack, we have achieved cruising ranges and acceleration on a par with gasoline models. In Japan, Nissan vehicles became part of the world's first FCV chauffeur-driven hired-car business in 2007.

Nissan's latest FCV, the X-TRAIL FCV 2005 model

Rolling Out New Electric Vehicles

Electric vehicles, which run on motors and batteries, are very clean cars that do not give off CO_2 or other exhaust gases. Nissan has been developing electric vehicles since the 1960s, and has announced and marketed numerous models. We will introduce an all-electric vehicle in the United States and Japan in fiscal 2010 and then mass-market vehicles to consumers globally in fiscal 2012, working closely with other industries on recharging facilities and other infrastructure.

Our Pivo 2 concept car, unveiled at the 2007 Tokyo Motor Show

Promoting a Shift to Electric Cars

The core technologies in electric-powered cars are the motor, battery and inverter. Nissan has long focused its energies on development in these areas, and it will continue to do so under Nissan Green Program 2010, working particularly hard to reduce costs for mass production. Our innovations include the establishment of a battery manufacturing company as part of these efforts, and we are striving to improve performance and further reduce costs. The batteries produced are slated for use in hybrid, next-generation fuel-cell and electric vehicles.

Laminated Li-ion batteries can provide twice the power in half the size of older battery packs.

Joint Venture to Produce Li-ion Batteries

Nissan has established Automotive Energy Supply Corp. (AESC), a joint venture with NEC Corp. and NEC Tokin Corp., to manufacture lithium-ion batteries. AESC aims to supply lithium-ion batteries for electric-powered vehicles to Nissan, as well as to other automakers worldwide, by fiscal 2009. AESC was established in the belief that lithium-ion battery technology offers a key solution for achieving a sustainable mobile society.

Nissan teamed up with NEC to form Automotive Energy Supply Corp., a manufacturer of Li-ion batteries.

Reducing Congestion in Beijing, China

In October 2006 Nissan launched the ITS Project, an experimental effort in Kanagawa Prefecture that aims to reduce traffic accidents and relieve congestion through the use of Intelligent Transport Systems (ITS). The following year we began work on the Star Wings project in Beijing, China, in collaboration with the Beijing Transportation Information Center. This project aims to develop a new traffic system to relieve congestion and improve driving conditions in Beijing and across China. Nissan has thus gone beyond the conventional role of an automaker in our proactive efforts to bring about the social infrastructure that will improve the driving environment.

Star Wings, our new traffic information system being developed in Beijing

Ranking Drivers' Eco-Drivings

In Japan, Nissan is using its Carwings car navigation service to calculate drivers' average fuel consumption. The system compiles a monthly ranking of drivers according to their fuel efficiency, displaying the results on the navigation system screens. This is a fun way to prompt drivers to adopt sustainable eco-driving habits.

The Carwings service was awarded the 2007 Minister of Land, Infrastructure, Transport and Tourism Prize in the Eco-Services Category of the 2007 Eco-Products Awards for the combination of its eco-driving advisory program and its high-speed route search function, which suggests detailed routes to drivers. In 2008 Carwings also received the Agency for Natural Resources and Energy Director-General's award, given as part of the Energy Conservation Grand Prize program.

Ranking eco-drivers with the Carwings navigation service

Reducing CO_2 in Our Business Activities

Global Reduction of CO_2 Emissions from Manufacturing

Most of the CO_2 emissions from the manufacturing process are due to the consumption of fossil fuels. As a part of the Nissan Production Way, Nissan is engaging in a variety of energy-saving activities in manufacturing its vehicles.

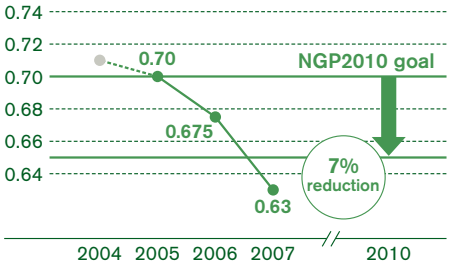
In the area of production technology, we have introduced more efficient facilities, improved production methods and installed energy-saving lighting in our business locations. We carry out careful management of lighting and air-conditioning systems as well as complete operations of the facilities with lower levels of energy loss. We are moving forward with CO_2 reductions by sharing these activities and other optimal methods among all manufacturing sites worldwide.

We have also started to utilize renewable energy sources in line with the geographical conditions of each plant. Nissan Motor Manufacturing (UK) Ltd. has introduced wind-generated electricity, and in Japan, Nissan Motor Co. participates as a Y-Green Partner in a wind electricity project in the city of Yokohama. We are making use of solar energy in Spain, where Nissan Motor Iberica S.A. has installed photovoltaic panels, and in Mexico, where Nissan Mexicana, S.A. de C.V. is introducing facilities to produce hot water by solar power.

Nissan's target is to reduce CO_2 emissions by 7% below the fiscal 2005 level by fiscal 2010 as measured by the indicator "CO_2 emissions per global vehicle" (total emissions generated from global Nissan vehicle manufacturing sites divided by the total Nissan vehicle production volume). In order to achieve this, Nissan is promoting CO_2 emission reduction activities and disseminating Japan's cutting-edge energy conservation technology to all its plants worldwide, and the plants in all countries are learning and sharing best practices with each other.

CO_2 emissions per vehicle in our global manufacturing sites for fiscal 2007 were approximately 0.63 tons, a 10% reduction from the fiscal 2005 level.

Global CO_2 Emissions per Vehicle
(t-CO_2/vehicle produced)



*2004 figure is per vehicle emissions for major global production plants.

Increasing Our Use of Wind Power (UK)

In March 2008, Nissan Motor Manufacturing (UK) Ltd. added two more wind turbines to the wind power facility at its Sunderland Plant. A further two turbines are also planned to be installed within fiscal 2008, which will bring the total number to 10. Electricity generated by these turbines accounts for approximately 7% of the annual electricity requirements of the plant. This is expected to reduce CO_2 emissions by approximately 5,600 tons per year.

Wind turbines at the Sunderland Plant (U.K.)

Modal Shifts and Increased Transport Efficiency

The transport of parts and finished products, an integral aspect of any production activity, is handled mainly by trucks that emit large quantities of CO_2. Nissan is seeking to enhance the efficiency of its overall distribution network and reduce emissions by shifting to other transportation modes, such as rail and sea. We are also improving our parts packaging to increase the loading ratio.

The CO_2 emissions resulting from Nissan's distribution activities in Japan totaled about 111,000 tons in fiscal 2007. In establishing targets for Nissan Green Program 2010, we recalculated emissions during distribution using updated energy consumption methods based on ton-kilometers and the type and amount of fuel used. At the same time, we increased the number of activities included in our calculations of CO_2 emissions. These activities include all domestic transport, including between ports, of finished vehicles, as well as parts for production and repair. In fiscal 2006 we included such new categories as delivery of internal documents between our offices, shipments of industrial waste and the distribution of pamphlets and other promotional materials to dealers. A further expansion of our scope of calculations came in fiscal 2007, when we began tracking and managing emission levels during shipments between Japanese and foreign ports, as well as those from distribution within the North American, European and other markets.

Measures to Improve Loading Ratios

Nissan has been sending its own trucks to take delivery of parts from suppliers since 2000, the first Japanese automaker to do so. Compared to the earlier practice of having the suppliers deliver the parts themselves, this led to an improvement in the loading ratio. Whereas deliveries used to require some 2,500 10-ton trucks a day, under the new system we have been able to reduce the number of trucks to 2,200. We have introduced this approach in China and Thailand, and we plan to extend it to other countries as well.

In Europe, Nissan has an arrangement with Renault for the joint shipment of parts and completed vehicles. Both companies ship finished cars across the English Channel together on the same ferries, and we have included other automakers in this joint use to further improve transport efficiency.

Nissan has also made innovations to the containers used for packing parts. We have independently developed 55 varieties of container to hold parts more efficiently. These containers can be folded after use to save space, giving a 10% increase in the loading ratio when the containers are shipped back after delivery. Our Parts Logistics Engineering Department, which specializes in developments of this type, is working to bring further efficiency to our distribution of parts.


Modal shift to ferry transport

Modal Shifts to Streamline Shipping

To increase transportation efficiency and reduce CO_2 emissions, Nissan has been promoting a modal shift from truck to maritime and rail transport. Some 60% of our completed vehicles in Japan are transported by sea. We are also moving forward with use of the Nissan Car Pack, a dedicated rail freight car that can hold vehicles on upper and lower decks; in fiscal 2007 we transported 6,000 vehicles in this way. Furthermore, vehicle parts manufactured by makers in the Kanto region that used to be sent to Nissan's Kyushu manufacturing plant by truck are now being sent by rail container, which results in less than half the CO_2 emissions of transportation by ship.

Modal shift to rail

Steps Taken at Offices and Dealerships

We are currently working to upgrade the Nissan Green Shop program implemented throughout Japan to introduce comprehensive CO_2 management measures at our dealers. In fiscal 2008, based on Nissan Green Program 2010, we commenced management of CO_2 emissions resulting from the business activities of Nissan dealers.

The Nissan Advanced Technical Development Center in Atsugi, completed in May 2007, has qualified for the top "S" ranking under the Comprehensive Assessment System for Building Environmental Efficiency (CASBEE), which is implemented by Japan's Ministry of Land, Infrastructure, Transport and Tourism. The new Nissan headquarters in Yokohama, scheduled for completion in 2009, received a local CASBEE certification from the city of Yokohama in March 2007 and is expected to gain the "S" ranking from MLIT. CASBEE forms part of the Japanese government's efforts to fulfill its obligations under the Kyoto Protocol by promoting energy-saving structures, and Nissan is helping Japan meet the government's challenge.

In the United States, too, Nissan has taken environmental concerns into consideration in the design of its new Nissan North America headquarters, an energy-efficient facility scheduled for completion in July 2008.


Nissan's new Yokohama headquarters will be an eco-friendly facility.


The Nissan Advanced Technical Development Center in Atsugi, Kanagawa Prefecture

PROTECTING THE AIR, WATER AND SOIL

Eco-Friendliness as a New Value for Nissan Cars

Nissan has worked to comply fully with vehicle exhaust regulations and restrictions on materials that can impact water or soil quality when vehicles are disposed of, and to meet targets for the reduction of volatile organic compounds (VOCs) in vehicle cabins. We have promptly responded to these regulations by developing cars that comply with them, or else with our own voluntary standards, which are even more rigorous. Today, emissions from our SU-LEV (Super Ultra-Low Emissions Vehicle) models are under 1/250 of the level permitted in the early 1970s. Our focus is on bringing the direct and indirect environmental burden of the total life cycle of our cars and of our corporate activities as close to zero as possible. We are dedicated to making this a new value for our customers and for society, and to developing the environmental technologies that will make this possible.

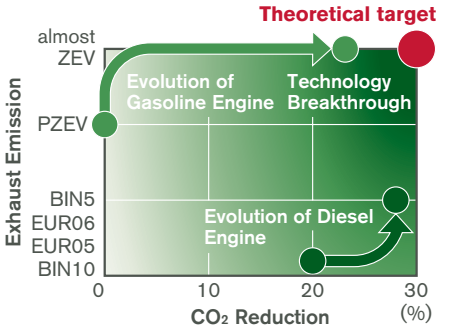
Meeting Global Environmental Quality Standards

In order to reduce our use and emissions of substances that adversely affect the air, water and soil, Nissan considers the automobile over its entire life cycle—from development and production through use and disposal.

The impact of Nissan's products on air quality comes primarily in the form of emissions released while a car is on the road. Regulations covering these exhaust emissions are becoming stricter all around the world. Euro4, the European Emissions Standards Level 4, went into effect in Europe in 2005, and the follow-up Euro5 standards will come into effect in 2009; in the United States, meanwhile, the Environmental Protection Agency's Tier 2 or California Air Resources Board's Zero Emission Vehicle (ZEV) requirements regulate vehicle emissions in that country; and Japan is now implementing new long-term emission standards. The technology of diesel vehicles is an effective means of reducing CO_2 emissions, and governments are expected to bring the regulations on them into line with those now covering gasoline vehicles. And China and other countries are now moving toward closing the time lag in implementation of exhaust regulations as stringent as those seen in Japan, Europe and North America.

Nissan is making aggressive efforts to reduce the health effects of formaldehyde, toluene and other VOCs that can be released in vehicle cabins. Under a voluntary program carried out by the Japan Automobile Manufacturers Association to reduce cabin VOCs, all new models launched for Japan from April 2007 will meet standards set by the Japanese Ministry of Health, Labor and Welfare for concentration levels of 13 compounds in vehicle interiors. There is also a need to minimize the VOCs released on the painting lines in our plants.

Advances in Gasoline and Diesel Engine Technologies



The European End-of-Life Vehicles (ELV) Directive is a set of advanced regulations seeking to reduce the environment-impacting substances used in vehicles around the world. Nissan sources an increasing portion of its parts from locations all across the globe, and we are strongly aware of our responsibility to reduce the environmental impact of the substances we use in all the areas where we do business.

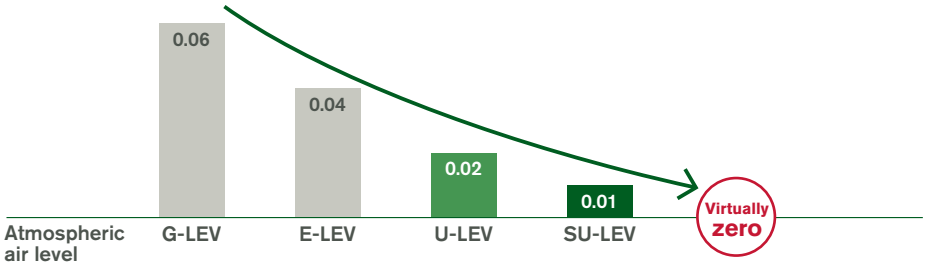
In accordance with the European Commission's Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) Regulation, adopted in December 2006, we are also working on the management of chemical substances all the way up our supply chain.

Production to Meet Future Environmental Standards

To become a more eco-friendly auto manufacturer, Nissan sets strict regulations and targets for the design and production of its vehicles. Our Sentra CA, released in the United States in January 2000, was the first gasoline-powered car in the world to comply with the emissions requirements of CARB, the California Air Resources Board, receiving Partial Zero Emissions Vehicle (PZEV) certification. Our Bluebird Sylphy, released in Japan in August 2000, became the first vehicle to gain certification from the Ministry of Transport (now the Ministry of Land, Infrastructure, Transport and Tourism) as an Ultra-Low Emission Vehicle (U-LEV), a vehicle producing 75% less nitrogen oxide (NOx) and hydrocarbon (HC) than the level prescribed in the 2000 emission standards. In 2003 this model became Japan's first to receive SU-LEV certification as a Super Ultra-Low Emission Vehicle producing 75% less NOx and non-methane hydrocarbon (NMHC) emissions than prescribed by the standards for 2005. As of the end of December 2007, over 85% of all Nissans sold in Japan are SU-LEVs.

Nissan has set itself the ultimate goal of emissions as clean as the atmosphere, and we are continuing research and development in this direction. Nissan Green Program 2010 sets a target of achieving early compliance by 2010 with upcoming exhaust emission regulations in each region.

Exhaust Emissions Reductions and Future Target for LEVs (NOx and HC) [g/km]



Major Nissan Models Certified in Japan as SU-LEVs

Tiida

Note

March

Bluebird Sylphy

Skyline

Top-Level Technology to Reduce Emissions

In the pursuit of cleaner vehicle emissions, Nissan sees it as necessary and effective to begin with the improvement of gasoline engines. We have built up a storehouse of industry-leading catalytic technologies, and we are putting these to work in the development of cleaner engines, providing effective technology to our customers at an affordable price.

By December 2007, more than 85% of the Nissan vehicles sold in Japan had earned four-star SU-LEV certification, the highest rank for clean emissions.

Reducing Environmental Impact Throughout the Product Life Cycle

Nissan is advancing measures to reduce its usage of substances that impact the environment. Regulations and guidelines differ from country to country, but our procurement network has expanded to a worldwide scale, and we are applying one set of global standards to all our procurement activities.

We are currently working to reduce volatile organic compounds (VOCs) in the vehicle production process ahead of any regulations coming into force, aiming both to cut back on their use and to reduce the amount of VOCs emitted by our products. Specific steps include a systematic switch to water-based painting, a reduction in the amount of paint and thinners used and the collection of used thinners.

Low-Pollution Products and Technologies

World Leader in Catalytic Technology

Nissan has long been one of the world's leading developers of catalytic technology, beginning with its moves to meet the requirements of the U.S. Clean Air Act of 1970 and including the world's first PZEV certification, earned by the Sentra CA in 2000, and the first U-LEV certification awarded in Japan, earned by the Bluebird Sylphy in the same year.

In May 2006 we reached our goal of earning SU-LEV certification for 80% of our gasoline-powered passenger vehicles sold in Japan. As of the end of December 2007, this figure had risen above 85%. We plan to move forward with expanded production and marketing of SU-LEV models. The Nissan Tiida, which is marketed in Beijing, China, met with the Euro3 emission standards that the Beijing government adopted at the end of December 2005 as an early phase of implementation across China; this was followed by the Sylphy, which has been certified as meeting Euro4 standards. We were also one of the first automakers to receive Beijing Environmental Protection Bureau certification for our on-board diagnostic (OBD) system, a self-diagnosing system that warns of problems with a vehicle's catalytic converter or other emission-control systems. In Europe, too, we moved steadily ahead with programs to comply with Euro4 regulations, introducing qualifying vehicles in 2003 ahead of the dates required by the regulations.

The Nissan Tiida marketed in China

Cleaner Diesel Engines

Auto manufacturers are being required to produce cleaner diesel engines, and we aim to stay ahead of the regulatory curve in this field. Our new clean diesel vehicles make use of diesel particulate filters (DPFs) that trap and remove the substances that make up dark fumes, NOx-absorbent catalysts and oxidation catalysts.

The Qashqai SUV, which we released in Europe in 2007, is fitted with a 2-liter diesel engine and a DPF that clears the Euro4 standards. A clean diesel that meets Japan's Post–New Long-Term Exhaust Emission Regulations, which will be applied from October 2009, is slated for release in fall 2008. Beginning in 2010 we will market cleaner diesel vehicles that meet the United States' Tier 2 Bin 5 and Europe's Euro5 regulations.

The clean diesel Qashqai for the European market

New Catalyst Halves Use of Precious Metals

Nissan has developed a catalyst for gasoline vehicles that uses only half the precious metals of conventional catalysts, while maintaining the same level of performance. Exhaust-cleaning automotive catalysts use such metals as platinum to facilitate chemical reactions that convert the nitrogen oxide (NOx), carbon monoxide (CO) and hydrocarbon (HC) in exhaust gases into less harmful byproducts. In conventional automotive catalysts, the high temperatures of exhaust gases reduce the cleaning ability of the catalyst, making it necessary to use large quantities of precious metals. Nissan's pioneering catalyst technology uses nanotechnology to ensure that there is no drop in cleaning efficiency under high temperatures, while significantly reducing production costs. The catalyst will appear in new models released from fiscal 2008 onward.

Diesel Technology with SU-LEV Standard Emissions

Using high-performance catalysts, Nissan has developed clean diesel technology that may potentially meet the SU-LEV standard of the emissions regulations of the State of California (equivalent to the U.S. Tier 2 Bin 2 emissions requirements). Nissan's hydrocarbon–nitrogen oxide (HC-NOx) trap catalyst technology has added an HC-absorbing layer to the layers that trap and clean NOx. The HC absorbed by this layer is oxidized by minute quantities of oxygen (O_2) to produce hydrogen (H_2) and carbon monoxide (CO), which effectively reduce NOx to give cleaner emissions. This promising new technology is a major step toward Nissan's ultimate goal of achieving the lowest possible emissions. We will carry out further research and development to put it to practical use.

Uniform Global Standards on Environment-Impacting Substances

Nissan is working on a global basis to reduce or completely do away with certain substances in all new models launched from July 2007 onward: heavy metals including mercury, lead, cadmium and hexavalent chromium, in-cabin volatile organic compounds (VOCs), and polybrominated diphenyl ether (PBDE) flame retardants.

We are reconsidering the adhesives and other substances used in the seats, door trim, floor carpets and other parts of our vehicle cabins, with the aim of reducing VOCs. In Japan, we have reduced the cabin concentrations of 13 substances in all new models from 2007 onward to levels below those permitted by Japan's Ministry of Health, Labor and Welfare. This puts us ahead of voluntary moves within the Japan Automobile Manufacturers Association to meet government guidelines.

We brought cabin VOC concentrations below guideline values set by the Ministry of Health, Labor and Welfare in the Bluebird Sylphy. (Japan)

Low-Pollution Business Activities

Reduced Environmental Impact at the Production Stage

Nissan has clearly defined management system and usage standards in place to control environment-impacting substances in the manufacturing process. We are working to reduce both usage and emissions of such substances. We are also trying to achieve higher performance toward satisfying legal requirements in all the regions where our main plants exist. For example, in Japan, fiscal 2006 saw the enforcement of a revised Air Pollution Control Law, with new requirements for VOCs to be met by fiscal 2010. Nissan has already complied with these requirements by switching to water-based paints and installing regenerative thermal oxidizers to capture and destroy pollutants at production sites.

A Kyushu Plant line switched to water-based paint, producing less VOCs. (Japan)

TOWARD SUSTAINABLE RECYCLING OF RESOURCES

Sustainable Resource Use Around the World

Nissan is an automaker with operations all around the globe, and uses a wide range of resources. Another major issue related to our business is the rapid price increases of crude oil and precious metals.

Nissan hopes to continue offering people access to lifestyles with mobility. We view the sustainable recycling of resources as essential to the achievement of this goal. Our basic stance

is to treat resources as precious things to be used as efficiently as possible. We intend to work on recycling resources around the world, using the methods best suited to each area in which we do business.

An average passenger vehicle weighs from 1 to 2 tons and is made of valuable, finite materials, including iron, aluminum, copper and synthetic resin. Furthermore, cars consume fossil fuels once they are on the road.

It is against this backdrop that nations around the world are implementing measures to boost efficient resource usage. Japan and the countries of the European Union were among the first to regulate automobile recycling. Legislation has given these efforts fresh momentum: the End-of-Life Vehicles (ELV) Directive came into effect in Europe in 2000, and Japan's Automobile Recycling Law, enforced in 2005, promotes the creation of better recycling systems. Korea also brought into force a law mandating ELV recycling in 2008. China and other developing economies are expected to see drastic increases in ELVs accompanying the rapid rise in car sales there, and they are already preparing measures to cope with this development.

New Life for Old Cars

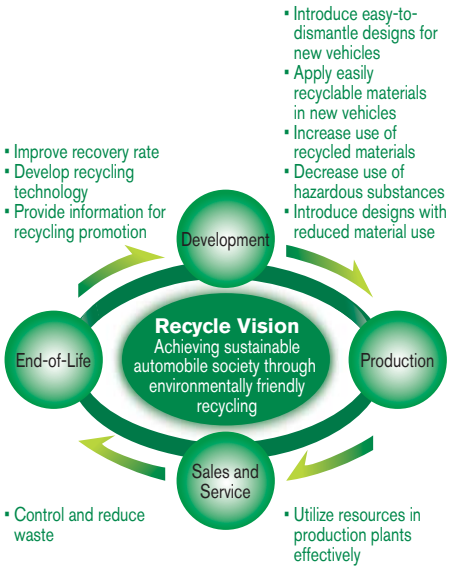
Nissan's hope is to achieve a sustainable society with mobility through automobile recycling. Our basic approach is the "three Rs"—reducing the use of substances that will end up as waste, reusing what we can and recycling materials whenever possible. At every stage of a car's life cycle, we seek to make effective use of the precious, limited resources available to us, thereby contributing to the sustainability of the resource cycle.

In Japan, the Automobile Recycling Law has set a 95% recovery rate as the target to achieve by 2015. Nissan has moved its own recycling target up by five years, and has stated the aim of achieving this figure by 2010 in the Nissan Green Program 2010 (NGP2010) commitments. Thanks to successful activities covering a number of business areas, we hit this target even earlier, in fiscal 2006—four years ahead of NGP2010 and nine years ahead of the legal requirement.

For the next stage, we are aiming to reach this 95% target on a global basis. As one step toward this goal we are working with our Alliance partner, Renault, to create a European network for used vehicle recovery.

At the development stage, Nissan vehicles are designed to reduce their use of environment-impacting substances and make them easier to recycle. To reduce reliance on nonrenewable resources, we also give consideration to the use of recycled plastics and other materials, as well as renewable bio-materials. Material reclaimed from bumpers exchanged in repairs is recycled for new vehicles. We are also examining the possibility of recycling synthetic resins from ELVs as material for new vehicles, exploring methods to overcome the technical challenge of maintaining their quality.

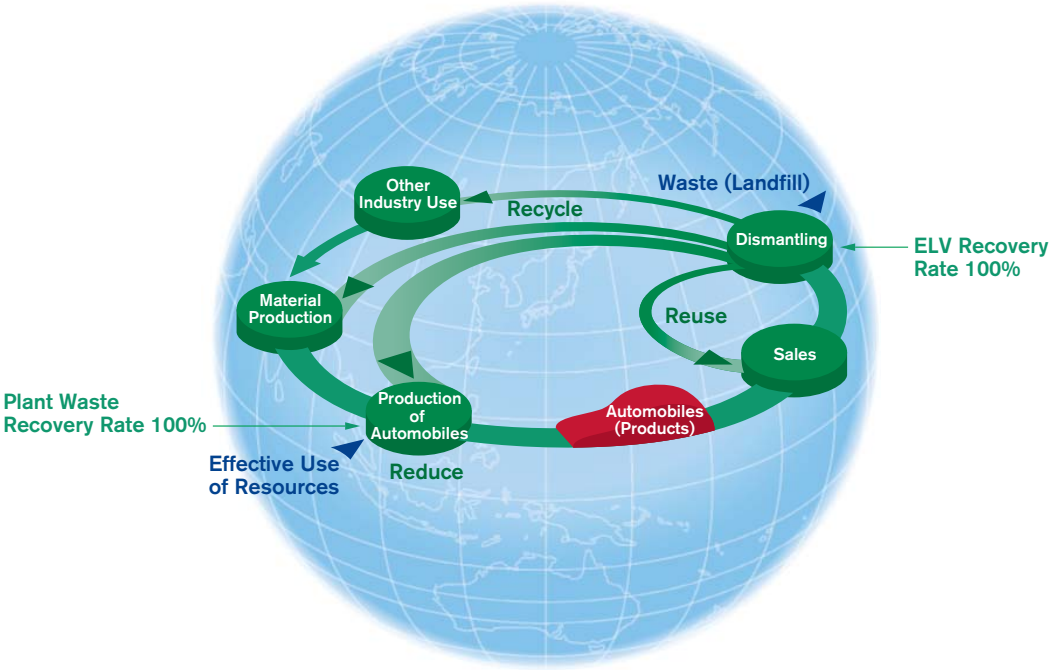
The Global Nissan Recycling Way



Nissan's goal is to reduce, reuse and recycle the waste generated at each stage of the production phase as much as possible. Reused parts play an important role at the sales and service phases of a vehicle's life cycle, and we research ways to make dismantling and recycling easier at the end of a vehicle's life. We share the knowledge and techniques gained in this work with people involved in the earlier phases of the life cycle to improve the total process. Nissan places particular emphasis on finding ways to prevent the degradation of reused materials and recycle used cars into new vehicles, rather than other products.

All these steps are part of our pursuit of the ultimate goal: a recovery rate—the percentage of all byproducts from production and other business activities, including heat exhaust, that is recovered instead of discarded—of 100% for all our products. We are also implementing measures that will bring our global recovery rate, the actual recovery percentage when a vehicle reaches the end of its life, to 95%. Cooperation with many other actors in society is essential for making society truly sustainable. In pursuing effective resource-usage policies, we stress the formation of partnerships outside our corporate sphere. We hope to make the synergies formed in this way a part of the grand cycle of recycling resources.

Resource Recycling Flows: Our Ultimate Goals



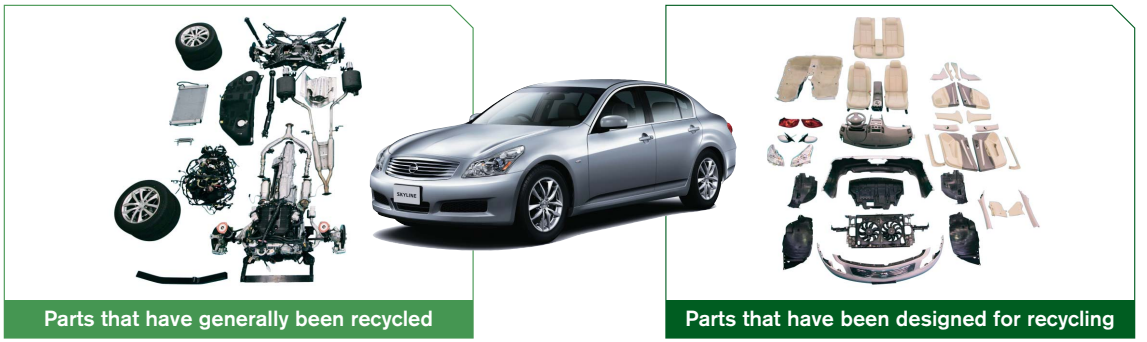
Development: Recycling a Part of Design

Designing for the Complete Life Cycle

Making efficient use of the Earth's limited natural resources to produce eco-friendly vehicles is essential to the creation of a sustainable mobile society. In its design and development of new models, Nissan takes an overall view of the car's life, from the design stage until the end of its useful life, avoiding the use of substances that impact the environment and ensuring ease of recycling. In Japan, all new Nissan models produced since 2005 have a recoverability rate of 95% or greater, and we are focusing development efforts on pushing this rate still higher.

Working together with our Alliance partner Renault, we have created OPERA, a recycling simulation system used in the early design stages to calculate recoverability rates and recovery costs for new models. Recycling is thus a key concept at the very earliest stage in the development of new vehicles.

Achieving a 95% Recoverability Rate with the Skyline



Parts that have generally been recycled

Parts that have been designed for recycling

Bottle Caps Recycled into Components

In January 2008 we started a program of collecting the caps from plastic bottles discarded at Nissan offices and facilities and some related companies nationwide and recycling them into material for vehicle parts. This activity, which all staff can take part in, promotes the responsible use of resources in our auto manufacturing. The caps are made of polypropylene, a resin used in many vehicle parts, but in some areas they had simply been treated as waste. As a way of making maximum use of a finite, valuable resource, we collaborated with other companies to create a flow for recycling the polypropylene as a material for our vehicles. Nissan is keen to work on activities that will recycle used cars into new vehicles wherever possible. We are encouraging this activity as a way of nurturing among our employees the mindset that resources are to be used responsibly.

Bottle caps are collected separately for recycling.

Production and Distribution: Efficient Use of Resources

Waste Reduction and Recycling

To minimize the waste generated during the production stage, Nissan actively promotes measures based on the "three Rs"—reducing, reusing and recycling whenever possible. Nissan Green Program 2010, our midterm environmental action plan, defines our goals in this area as achieving a 100% recovery rate for our operations in Japan and bringing this rate to an industry-best level globally. Our efforts are paying off, and in Japan we have achieved this 100% rate at four manufacturing plants and one operations center, as well as at three of our affiliates.

Reduced Packaging

As part of our pursuit of eco-friendly business methods, we moved quickly to focus on the wooden pallets used in parts shipping, replacing them with steel and plastic shipping units that could be returned for reuse. Since 2001 we have worked with our Alliance partner Renault to standardize our returnable pallets. This global standardization is now nearly complete, including in China and other Asian markets. We are reexamining packing methods to reduce the space our products occupy during shipping and the amount of packing materials they require. We are also working with our suppliers to develop and adopt packaging materials for shock absorbers that can be reused or recycled, unlike the paper and plastic that has been used in the past.

Recycling Activities at Dealerships

Nissan Green Shop Certification for Environmental Efforts

Nissan's dealerships in Japan, which totaled some 3,200 outlets belonging to 185 companies as of March 2008, are the points of closest contact with customers. To ensure a responsible environmental stance at our sales outlets, we undertake a range of activities based on our Nissan Green Shop environmental management system, which is in line with ISO 14001 standards. Dealers certified as Nissan Green Shops designate officers responsible for environmental issues. These officers maintain dealer compliance with environmental regulations, ensure that ELVs and various forms of waste are disposed of properly, manage all environment-related equipment and carry out communication activities aimed at customers.

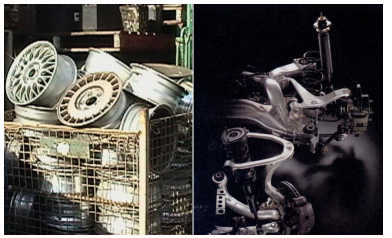
A sign at a certified Nissan Green Shop

Nissan Green Parts: Smart Use of Limited Resources

Nissan collects parts reclaimed from ELVs and parts that were replaced during repairs. After a thorough check of the quality of these secondhand parts, they are marketed through our sales outlets as Nissan Green Parts. We sell 42 different part types this way, in two categories: reusable parts, which are cleaned and tested for quality before sale, and rebuilt parts, which are disassembled and have components replaced as needed. Sales of these parts in fiscal 2007 exceeded ¥2.12 billion.

Aluminum from End-of-Life Wheels

One unique recycling program we carry out is our recycling of aluminum wheels. We work together with recyclers throughout Japan to collect these wheels from Nissan ELVs. We recycle the wheels in a process that causes no metal degradation, putting the recycled high-grade aluminum back to use in suspensions and other important vehicle parts. At present we collect and recycle around 100 tons of end-of-life aluminum wheels each month.



End-of-life aluminum wheels are reborn as suspension parts.

Studies on Optimal Methods of Recycling

Nissan is working to optimize processing and improve the ELV recovery rate by carrying out experimental studies to develop more efficient ways of dismantling its cars. The results already obtained from these studies have been put to use in processing waste oil, waste liquids, lead and other substances that impact the environment, as well as in the development of our airbag recovery system. Research is currently under way to further increase the recovery rate in order to reclaim valuable raw materials from ELVs.

The studies also provide feedback that helps our product design division choose suitable materials and create vehicles that are easier to dismantle.

Research to improve dismantling efficiency

Leading the Industry in Legal Compliance

In January 2005 Japan's ELV Recycling Law went into force, requiring automakers to take back automobile shredder residue (ASR) and airbags, as well as to take back and dispose of chlorofluorocarbons and hydrofluorocarbons (CFCs and HFCs) from their ELVs.

As part of its efforts to comply with the law and increase the efficiency of its resource recovery, Nissan is one of 11 automobile manufacturers and other firms that formed the ASR

Recycling Promotion Team (ART). As a leading member of the ART, Nissan is working as a part of society to improve recovery cost efficiency for vehicle owners.

Nissan's recovery rate in Japan for ASR from April 2007 through March 2008 was 72.0%. This result comfortably clears the 50% level mandated by the law for fiscal 2010, and even satisfies the 70% requirement set for fiscal 2015. We have also achieved an airbag recovery rate of 94.3%, exceeding the legally required 85%, and we have recovered and safely destroyed 164,261 kilograms of CFCs and HFCs.

Using Shredder Residue as a Resource

Nissan has focused on recovering automobile shredder residue, or ASR, since well before the 2002 enactment of Japan's Automobile Recycling Law. The high heat index of ASR makes it difficult to control the temperature during the heat recovery process. Nissan has developed technology that lets us overcome this problem. By modifying the furnace at our Oppama Plant, in fall 2003 we became the world's first automaker to recover energy from ASR in its own furnace. Since the Automobile Recycling Law went into force in 2005, we have processed about 400 tons of ASR each month. With the energy generated in the incineration we generate steam used in the painting process at the factory.

Working Together for Recycling

The European Union's End-of-Life Vehicles (ELV) Directive was enacted in October 2000, requiring automobile manufacturers and sales distributors to take back and recover ELVs. To comply with this directive, Nissan Europe S.A.S. and Renault are cooperating in activities in the countries where Alliance synergy effects are expected. These activities include the establishment of networks for collecting and recycling ELVs and supporting the sales distributors in each country.

RESPONDING TO VARIOUS ENVIRONMENTAL ISSUES

The environmental philosophy of "a Symbiosis of People, Vehicles and Nature" informs Nissan's ideal picture of society. Having positioned our vehicles and business activities as part of an ecosystem, we have defined three key areas of focus for our environmental efforts. As the goals we pursue continue to evolve, we ceaselessly search for new issues to address, focusing on solving the variety of challenges we face while remaining committed to our concept of this symbiosis.

Recycling Performance Overview (Apr. 2007–Mar. 2008)

ASR	Volume Received	134,935.7 t
	Volume Recovered	97,195.7 t
	Recovery Rate	72.0%
Airbags	Volume Received	48,248.8 kg
	Volume Recovered	45,481.5 kg
	Recovery Rate	94.3%
CFCs/ HFCs	Volume Received	164,261 kg
Total Deposits Received		¥6,092,098,207
Total Cost for Recovery, etc.		¥5,956,720,099

http://www.nissan-global.com/EN/ENVIRONMENT/CAR/RECYCLE/REGULATIONS/

For more information on our recycling efforts and compliance, see our website.

Nissan recovers energy from ASR at its Oppama Plant.

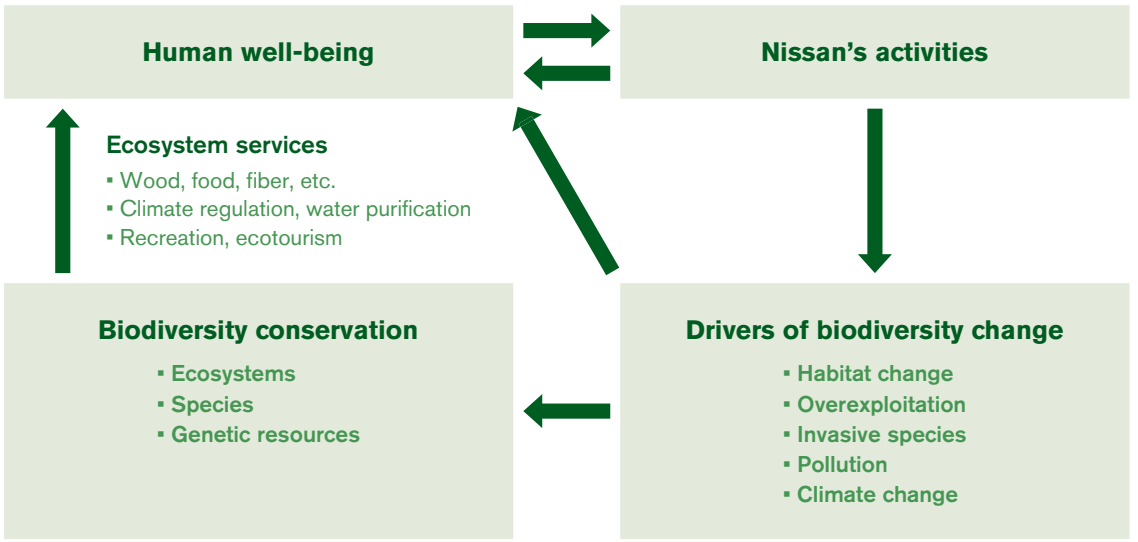
Reducing Use of Water Resources

At the 2000 United Nations Millennium Summit, member countries adopted a declaration establishing the Millennium Development Goals. The seventh of these goals, "ensure environmental sustainability," defines the target of halving the proportion of people without sustainable access to safe drinking water by 2015. Nissan is doing its part to reduce its own water consumption by cutting back on the amounts used and making use of reclaimed water in its manufacturing processes.

Measures to Protect Biodiversity

In 1992 the U.N. Conference on Environment and Development, held in Rio de Janeiro, Brazil, adopted the Convention on Biological Diversity, the goals of which the signatory nations have been pursuing since. In March 2005, a global team of U.N. and other scientists unveiled the Millennium Ecosystem Assessment (MA) and explained how changes in ecosystems affect human well-being. Based on the framework provided by the MA, Nissan envisions its relationship with biodiversity as indicated in the figure below, and we will continue to search for areas to focus our environmental efforts on within this framework.

The Relationship Between Biodiversity and Nissan



Working with the United Nations University

At Nissan, we believe it is extremely important to gain a full understanding of the present and future of global environmental challenges, such as climate change, preservation of biodiversity and water resources. This understanding must be put to work to identify the roles auto manufacturers should play. Collaboration with experts from outside our own organization is essential to any efforts aimed at finding solutions to such vast challenges. Nissan is therefore promoting discussions on these issues with the United Nations University Institute of Advanced Studies, a UN think tank that has played a central role in such projects as the Millennium Ecosystem Assessment and the Global Environment Outlook.

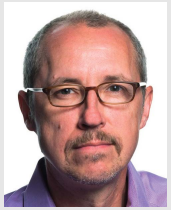
The Nissan Prince Oita Forest

Nissan Prince Oita Co., Ltd. is working to create the Nissan Prince Oita Forest as part of its local social contributions. This afforestation project, carried out in collaboration with the Oita prefectural government, the local forestry cooperative and local landowners, involves planting and nurturing trees on cleared land on the hills around the city of Yufu. Local residents and Nissan staff take part in this project on a voluntary basis. Nissan Prince Oita hopes that having staff working alongside other members of the community for local environmental protection will increase communication and make the local Nissan dealership more approachable for its neighbors.

Nissan staff work with local residents to create the Nissan Prince Oita Forest.

Messages from Our Stakeholders

Brand Advantage Through Sustainability



Russel H. Meyer
Chief Strategy Officer
Landor Associates (USA)

Nissan has achieved business and brand success by keeping its promises. It has made public Nissan Green Program 2010, its environmental plan, achieving recognition for doing so. Now Nissan stands poised to gain brand advantage from identifying unique sustainability initiatives that are relevant to customers.

Nissan's bold vision takes both an immediate and a long-term approach to brand advantage through sustainability. By committing to producing battery-powered vehicles, Nissan shows that something can be achieved today. At the same time, it is exploring a more systemic approach to sustainability through its ongoing study of the relationship between vehicles and driving behavior.

It will take innovative thinking and collaboration with many corporations and governments to achieve this vision. However, Nissan's thoughtful plan, its public commitments and its sincerity in helping to reduce CO_2 emissions are strong steps toward making a difference in our world—and gaining brand advantage from doing so.