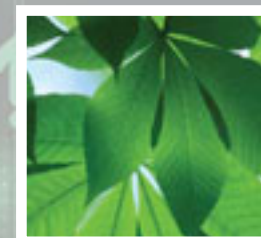
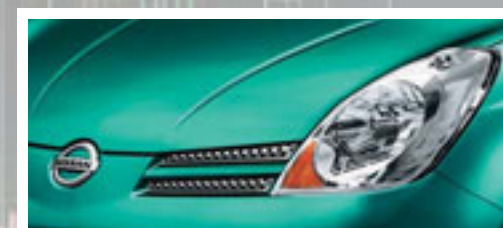




Environmental Report 2005



# Environmental Report 2005



Nissan Motor Co., Ltd.



Nissan published its first annual Environmental Report in 1998. The report included information about our efforts to create value for our stakeholders and for society at large by contributing to sustainable mobility. In 2001, we expanded the scope of our social reporting and began issuing The Environmental and Social Report, which covered our progress in both of these crucial areas. Last year, we published our first Sustainability Report that described how we conduct our business to ensure equal commitment to our economic, environmental, and social responsibilities.

The current Environmental Report is a separate publication, and is intended to provide an overview of our environmental achievements and more detailed information specifically about our ongoing environmental activities. In the context of sustainable development, this report focuses on our efforts to make sustainable mobility a reality, providing details of our initiatives to build environmentally compatible vehicles and minimize negative environmental impact.

Thanks in large part to the feedback we received regarding last year's Environmental Report, we were able to make significant progress in offering more global information, in specifying the key environmental issues for Nissan, and in improving the overall readability of our report. In similar fashion, this year's report has benefited still further from additional guidance received from all our stakeholders, and has followed the Global Reporting Initiative (GRI) 2002 Sustainability Reporting Guidelines as well as the 2003 version of the Environmental Reporting Guidelines of Japan's Ministry of the Environment. This practical input has helped us focus on the topics most relevant to our stakeholders and to communicate our corporate values and activities accordingly, all the while contributing to sustainable development and striving for environmental leadership in the automotive industry.

We look forward to receiving your feedback again this year and have provided a questionnaire at the end of this report for any comments or opinions you may wish to share.

Nissan Motor Co., Ltd.  
Environment and Safety Engineering Department

## Scope of the Report

Period covered	April 2004 - March 2005
Companies included	Nissan Motor Co., Ltd. and its consolidated subsidiaries
Data reported	Nissan Motor Co., Ltd., 22 consolidated subsidiaries, and 1 affiliated company. Information related to Nissan Motor Co., Ltd. is indicated in the report as "non-consolidated"

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## Environmental Information Disclosure

In this report, we outline Nissan's approach to addressing global environmental issues, and our environmental performance in fiscal year 2004. To guarantee our environmental reports are up-to-date, we produce regular environmental "site reports" for each plant and business site, and "technical notes" that feature short reports about our latest accomplishments in the field of environmental technology. We complement these reports by posting additional updates on our website, along with reader-friendly explanations that help make the reports easy to understand. We will continue to upgrade and expand these information resources to ensure that our disclosure is complete and that our stakeholders' needs for dialogue and transparency are being fully satisfied.

### Related Corporate Reports

In addition to the Environmental Report, we also produce a series of other documents that highlight our economic, social and environmental commitment. The Sustainability Report for example describes Nissan's activities in the three areas of sustainability: economy, environment, and society – the bedrock of our approach to sustainable mobility and our corresponding sustainability guidelines and principles. For additional information on Nissan's economic, environmental, and social activities, please refer to the following reports, which are available on our website:



## Website Information

The content of the 2005 Environmental Report is available also in the environmental section of our website, which includes additional technical data about our environmental programs and activities (visit "Environmental Activities" at <http://www.nissan-global.com/EN/ENVIRONMENT/>).

### ➔How to Download 'Technical Note' ?



Environmental Activities > Environmental Library > Technical Note

At the website 'Environmental Activities' below, click on 'Environmental Library' from the main menu, and then click on 'Technical Note' next.

**Environmental Activities:** <http://www.nissan-global.com/EN/ENVIRONMENT/>

#### <Main Menu>

- |   |  |
|---|--|
| CEO Statement   | Activities at Dealers                            |
| News Release  | Environmental Management                         |
| Global Environmental Issues<br>(Overview of Environmental Activities) | Environmentally Friendly Vehicles                |
| Activities in Products  | Environmental Library<br>(Publications and Data) |
| Activities at Plants  | Contact us                                       |



**Corporate Information**  
<http://www.nissan-global.com/EN/COMPANY/>

**Corporate Citizenship Information**  
<http://www.nissan-global.com/EN/COMPANY/CITIZENSHIP/>

**Product Information (by Country)**  
<http://www.nissan-global.com/EN/GLOBAL/>

**IR Information**  
<http://www.nissan-global.com/EN/IR/>

**Safety Activities**  
<http://www.nissan-global.com/EN/SAFETY/>



Just as achieving a high level of business performance is a necessary part of Nissan's global responsibility, so is the challenge to maintain a strong commitment to our natural environment. A sound business strategy goes hand in hand with a sound environmental policy.

Nissan's global approach to environmental protection focuses on three key issues: managing CO<sub>2</sub> emissions; protecting the air, water and soil; and recycling resources. Our Global Environment Management Committee works to assure that our corporate environmental strategy is implemented at the highest level in every region and in every area of our operations. We place a priority on rigorous environmental management, and that discipline is evident among Nissan's research, manufacturing and distribution operations around the world.

### Developing Environmental Technologies

At Nissan, we want to develop environmental technologies that will provide real benefits to the customers who choose our vehicles. We recognize that new technology only becomes affordable when its value proposition is widely accepted by customers in the marketplace. And only when a technology is widely accepted will it produce a significant environmental benefit.

In fiscal year 2004, Nissan made progress on a number of environmental protection fronts. Where have we made advances?

Progress is evident on today's streets and highways. As of March 2005, more than 90% of our passenger vehicles sold in Japan were ultra-low emissions vehicles (U-LEV\*<sup>1</sup>), and our new and more ambitious goal is set for 80% of new passenger vehicles sold by March 2006 to meet Japanese super ultra-low emissions standards (SU-LEV\*<sup>2</sup>). U-LEVs and SU-LEVs provide an immediate, widespread environmental benefit through cleaner exhaust emissions for customers and society.

\*1 U-LEV: A vehicle that emits 50% fewer exhaust emissions of nitrogen oxide (NO<sub>x</sub>) and nonmethane hydrocarbon (NMHC) than the level prescribed in the year 2000 Japanese exhaust emissions standards.

\*2 SU-LEV: A vehicle that emits 75% fewer exhaust emissions of nitrogen oxide (NO<sub>x</sub>) and nonmethane hydrocarbon (NMHC) than the level prescribed in the year 2005 Japanese exhaust emissions standards.

Nissan is also increasing the number of vehicles fitted with our Continuously Variable Transmissions, or CVTs. By fiscal year 2007, we plan to sell around 1 million CVT-fitted models worldwide – a fourfold increase from the current level. We estimate that selling 1 million CVTs would have the same effect in terms of reducing CO<sub>2</sub> emissions as selling 200,000 hybrid electric vehicles.

Nissan continues to invest in gasoline engine improvements, in lightweight vehicle construction and – with the expertise of our Alliance partner, Renault – in diesel technology.

Nissan emphasizes recycling, not just in our operational facilities, but with our vehicles as well. Currently, over 95% of a new Nissan vehicle is recyclable. From the earliest phases of development, we aim to make our vehicles easier to disassemble and recycle. We want to reduce environmental impacts at each stage of a vehicle's life cycle, from development to production, from sales and service through disposal.

In 2006, we will launch a gasoline-electric hybrid version of one of our best-selling models in one of our largest markets. The Altima Hybrid, which will be introduced in the United States, will offer our customers the cleanliness and efficiency of electricity with the convenience and performance of gasoline.

Looking into the future, hydrogen-powered fuel cell vehicles are on the horizon as a promising technological solution since their only byproduct emission is water. In fiscal year 2004, Nissan announced the development of its first in-house fuel cell stack and high-pressure hydrogen storage system. Although the potential of this technology is great, it may take many years for it to be available and affordable to customers.

To further strengthen our capabilities as we develop vehicles for the future, we are establishing the Nissan Advanced Technology Center (NATC) at the Nissan

Technical Center in Atsugi, Kanagawa Prefecture, our largest global research center. At NATC, we will explore the potential of future technologies and work consistently to make new technologies more affordable, more available and more beneficial for global society.

### Increasing Value for All Stakeholders

Sustainable value is at the heart of our new three-year business plan, NISSAN Value-Up, which began to be implemented in April 2005. As the plan name indicates, our focus is on delivering increased value for all our stakeholders – for customers, shareholders, business partners, employees and society and the environment.

For all our stakeholders, lasting value will be found in Nissan's commitment to meet the environmental challenge. As we contribute to the sustainable development of society and create environmentally friendly products that customers want to buy, we believe we will make the world a better place in which to live and to drive.

**Carlos Ghosn**  
President and Chief Executive Officer  
Nissan Motor Co., Ltd.



## Corporate Profile

- **Headquarters**  
17-1, Ginza 6-chome, Chuo-ku, Tokyo, Japan
- **Date of Establishment**  
December 26, 1933
- **Consolidated Net Sales (FY2004)**  
8.5763 trillion yen
- **Number of Employees (As of March 31, 2005)**  
183,607 (all consolidated companies)
- **Group Structure / Business Outline**  
The Nissan Group consists of Nissan Motor Co., Ltd., subsidiaries, affiliates and other associated companies. Its main business includes sales and production of vehicles, forklifts, marine products and related parts. The Nissan Group also provides various services accompanying its main business, such as logistics and sales finance.

- **Vision**  
Nissan: Enriching People's Lives
  - **Mission**  
Nissan provides unique and innovative automotive products and services that deliver superior measurable values to all stakeholders\* in alliance with Renault.  
\*Our stakeholders include customers, shareholders, employees, dealers, suppliers as well as the communities where we work and operate.
  - **Guiding Principles**
- SUCCESS**
- S Seeking Profitable Growth
  - U Unique and Innovative: "Bold and Thoughtful"
  - C Customer-Focused and Environmentally Friendly
  - C Cross-Functional and Global
  - E Earnings and Profit Driven
  - S Speed
  - S Stretch

## Our New Three-year Plan: NISSAN Value-Up

Today, Nissan looks to the future with an even more ambitious plan: NISSAN Value-Up. This three-year plan, like the Nissan Revival Plan and NISSAN 180 before it, carries a clear message of its intentions, backed by strong commitments to achieving them. NISSAN Value-Up has been implemented since April 2005, with three commitments:

- to maintain the top level of operating profit margin among global automakers for each of three years of the plan;
- to achieve global sales of 4.2 million units, measured in fiscal year 2008; and
- to achieve a 20% return on invested capital on average over the course of the plan, excluding cash on hand.

Under the plan, Nissan will expand its worldwide presence, and Infiniti will be launched as a global tier-one luxury brand. Through the end of fiscal year 2007, 28 all-new Nissan and Infiniti models will be launched globally.

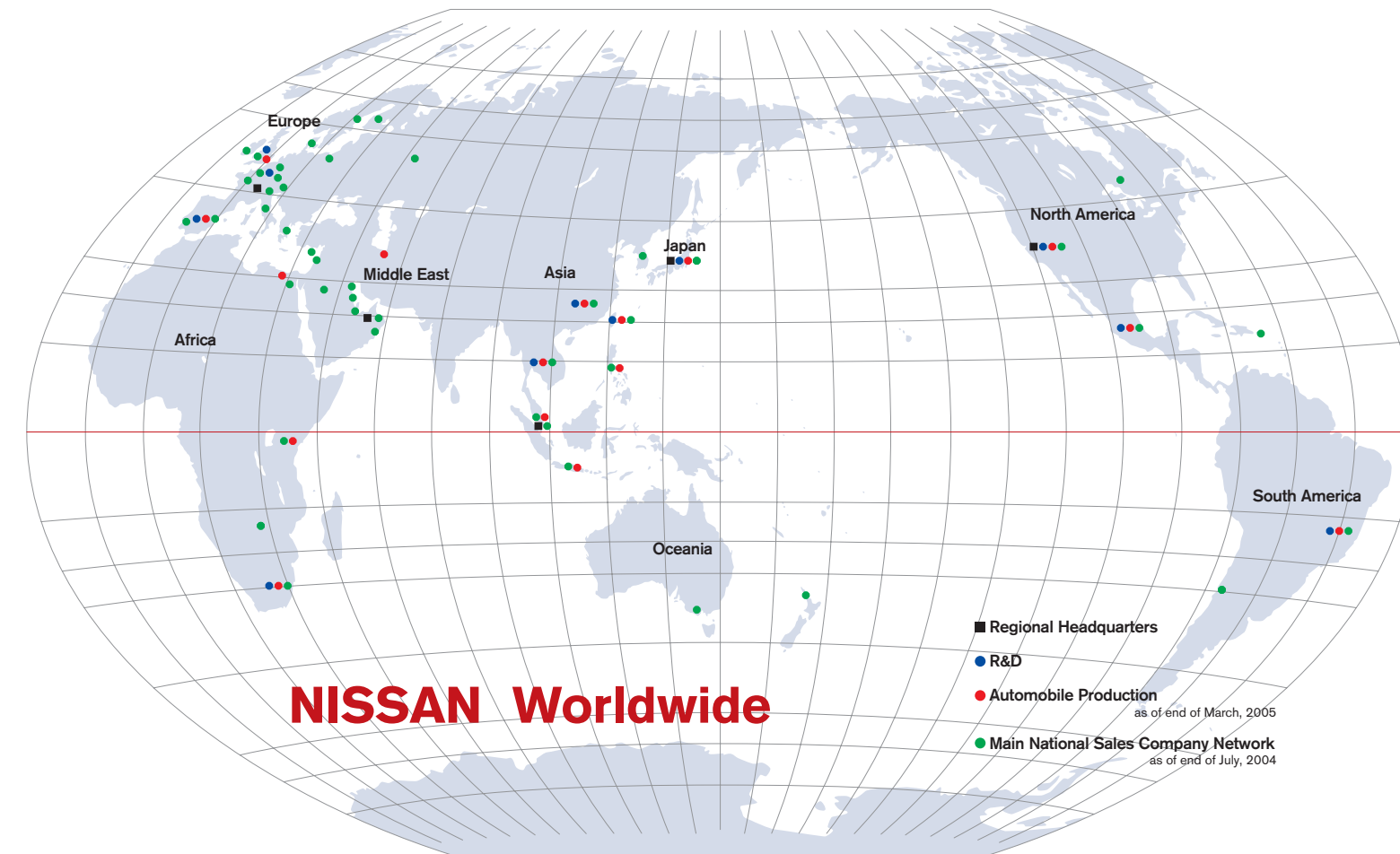
Within this framework for action in this plan, we will create more value for more stakeholders in more world markets than ever before.



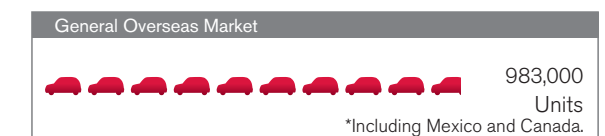
## Global Operational Presence

Today, Nissan has major production and office facilities in Japan, the United States, Mexico, Europe, the Middle East, South Africa, China, and the Southeast Asian countries, as well as in other regions of the world. As a

global company, Nissan will continue to focus on providing value to all our stakeholders as we work toward our vision of "Enriching People's Lives."



- R&D : 11 countries / areas
  - Design : Seven design centers in four countries / areas (Japan, USA, UK, Taiwan)
  - Automobile Production Plants : 16 countries / areas
  - Sales Network : More than 160 countries / approximately 10,000 dealers
- Retail sales by region in fiscal year 2004



# 1 Global Features

Nissan manufactures automobiles for customers all over the world. In this section, we highlight three stories from our many environmental efforts around the world.





# Nissan Motor Co., Ltd. (Japan)

## Optimizing Fuel Economy

### Building Eco-Friendly Vehicles

For automakers, reducing carbon dioxide (CO<sub>2</sub>) emissions remains a top priority in developing environmental technologies. While conducting research and development on fuel cell and other clean energy vehicles for future production, Nissan continues to improve the fuel economy of its vehicles for the current market as well. Optimizing fuel economy requires a comprehensive approach that improves the transmission and engine efficiencies of the vehicle, while ensuring the design is both lightweight and aerodynamic.

### Boosting Engine Efficiency

Friction is one of the main causes of energy loss within the engine and lowers its efficiency. Reducing friction improves engine efficiency, and enhances the engine's overall fuel economy. Drawing on a finishing technique traditionally used for matching parts of engines in racing cars, Nissan has successfully lowered friction resistance over the past several years by 30 percent compared to previous models. Our Tiida and Lafesta models are already equipped with the new family of HR15DE and MR20DE engines and plans are in place to install these engines in a range of models worldwide.

### Improving Transmission Efficiency

Transmission efficiency is another requirement to be fulfilled in order to achieve optimal fuel economy, and an area in which there remains significant room for improvement. In Japan, about 95 percent of all vehicles use automatic transmissions, meaning transmissions that select gears automatically based on the power required in various driving situations and conditions. In driving conditions in which there is a series of uphill and downhill slopes, conventional automatic transmissions shift gears repeatedly.

Continuously variable transmission (CVT) is a technology that overcomes this issue, enabling smooth shifting in uneven driving conditions by continuously altering the gear ratio during acceleration or deceleration of the vehicle without requiring any predefined steps. CVT is a special type of automatic transmission that enables "seamless" acceleration and deceleration, using the engine at more efficient condition, and thus improving fuel economy as well as driving performance.

At present Nissan's the world's only automaker with CVT-fitted models ranging from compact to full-size passenger vehicles. We introduced its first CVT-fitted vehicle, the 1.0-liter class March, in 1992. We went on to equip the 3.5-liter class Murano and Teana with CVT in 2003.

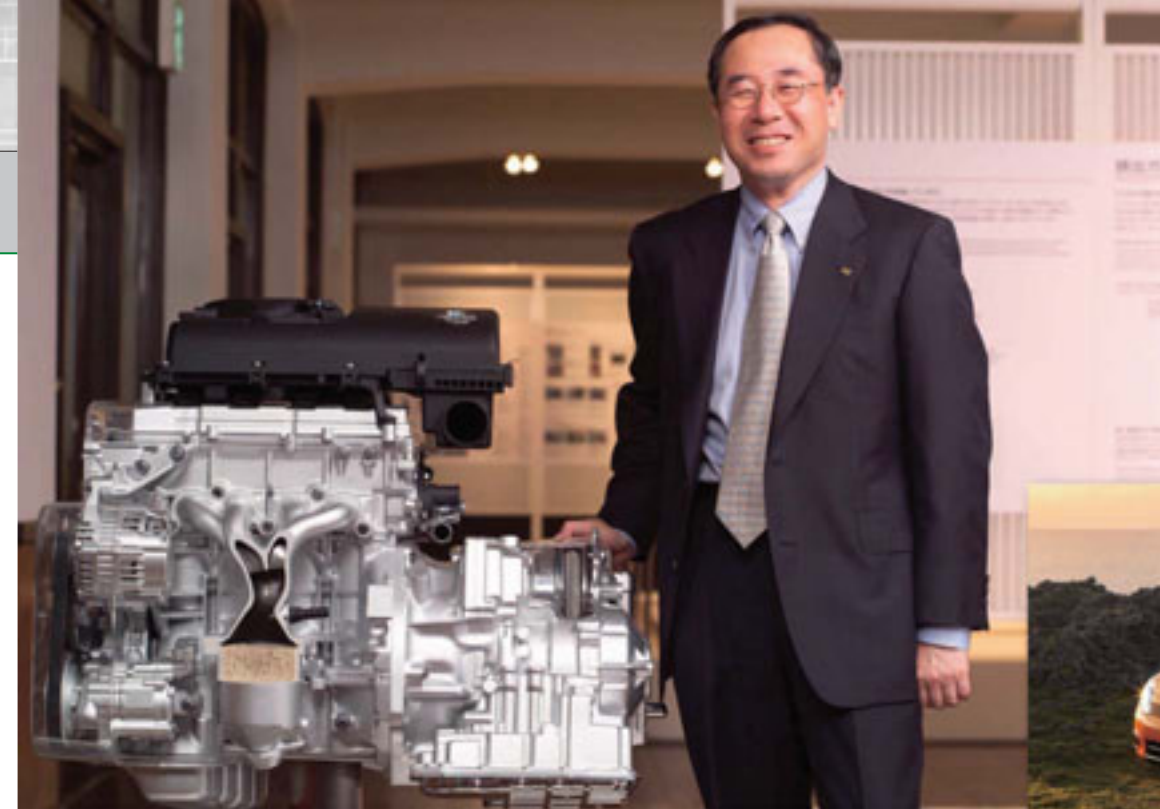
The process of reaching this milestone challenged us to innovate and proved to be a true test of our engineering capabilities. One of the obstacles we faced while creating this CVT technology occurred in the early stages of development. CVT uses metal belts for uninterrupted changes in gear ratio, which are fine-tuned through the use of hydraulic pressure.



Engineer's Challenge – Finding a breakthrough



MURANO with CVT



Senior Vice President, Powertrain Engineering Division: Yo Usuba



Lafesta (Japan)

The kind of high-pressure pumps required for high torque CVTs however, were not available during this first phase of development. It began to appear as if this new transmission would only be suitable for smaller vehicles.

In fact, due to the complexity of the technology, many parts suppliers gave up halfway through development projects. The words of Nissan Senior Vice President Yo Usuba say it all: "When it came to building a CVT for the 3.5-liter class, there were plenty of people, even here at Nissan, who couldn't believe we'd embark on such an ambitious undertaking. However, a large number of Nissan engineers and engineers at our subsidiary JATCO Ltd. were convinced, despite the many challenges and setbacks they had faced along the way, that this was a technology with outstanding potential. They were confident that we would succeed in the end and boldly pushed ahead with the development. Nissan's CVT achievement today is undoubtedly the fruit of such untiring commitment and devotion".

The combination of the new engine and other vehicle improvements optimized real-world fuel economy\* by 20 percent in the Tiida and by 37 percent in the Lafesta. Nissan will increase the number of CVT-fitted vehicles to more than one million units worldwide in fiscal year 2007, about four times the number today. One of the drivers behind this plan is our estimate that putting one million high fuel-efficient CVT-fitted vehicles on the road will reduce CO<sub>2</sub> emissions by roughly the same amount as selling 200,000 hybrid vehicles.

### Building Technologies to Meet Customer Needs

Like everything at Nissan, we strive to create new technologies for our vehicles that meet the needs of society as well as the needs of our company. By harnessing the best possible combination of technologies, we aim to build vehicles that achieve class-leading fuel economy, while offering real-world benefits for our customers.

"Developing innovative technologies is a very tough process - every step of the way". Yo Usuba continues, "But all the fatigue and frustration are outweighed many times over by the deep sense of accomplishment when we see the successful results of our efforts. That is what I believe is the most exhilarating and gratifying aspect of being a Nissan engineer. When I walk down the street and see a vehicle driving by with the technology that we developed, I have a strong feeling of pride and achievement".

Perfecting technology that contributes to a better environment, while satisfying customers all over the world, is a responsibility that we at Nissan plan to continue pursuing now and in the future.

\* Real-world fuel economy: This calculation was developed in-house and is based on fuel economy tests conducted under actual driving conditions experienced in congested cities and on highways.



# Nissan Motor Iberica, S.A. (Spain)

## Individual Awareness and Action

A popular Spanish saying states; "A truly orderly person is not just someone who diligently puts things back in order – but someone who prevents disorder in the first place".

Expanding on this perspective, Nissan Motor Iberica, S.A. (NMISA) believes that employees who are constantly aware of environmental concerns will as a matter of course make special efforts to work in an eco-friendly manner right from the very start of everything they do. Designers for example, do everything possible to draw up plans that maximize effective and waste-free use of resources. This kind of awareness not only benefits the environment, but also leads to substantial resource conservation for the company and society as a whole.

It is said that a chain is only as strong as its weakest link. In the same way, NMISA knows that it is crucial to raise the level of environmental awareness of every member of every team to develop a work culture that operates on the basis of 'waste not, want not.' NMISA firmly believes that successful environmental activities need to be carried out in a way that includes all employees through such initiatives as environmental education.

### Environmental Education in Montcada

The Montcada stamping plant provides detailed and systematic environmental education in the form of regular training for its employees and its contractors working on-site. Based on ISO 14001 environmental policies, NMISA has distributed pocket-size booklets that include a list of the environmental principles the General Director has publicly announced NMISA will follow and a checklist of environmental best practices. These booklets are also given to contractors in a concerted effort to raise the awareness of everyone working at the plant. There are also assessment sheets that evaluate each employee's level of environmental education and set appropriate targets for improving it. Using ISO 14000 criteria, individual score sheets and progress reports are posted every month to ensure every employee stays abreast of any new developments in the area of environmental management. Educational opportunities are provided as needed throughout the year and the names of participating employees and contractors are posted on announcement boards at the plant.

'Clear communication' has been found to be the single most important factor in raising employees' environmental awareness. For example, bulletin boards are used to display the amounts of electricity, gas and water consumed at the plant each day. These amounts are compared with the volumes used in the average Spanish home along with other concepts aimed at explaining environmental issues in more familiar, everyday terms that are easy to understand.

Another effective means of raising environmental awareness is the annual poster contest. The event creates a sense of community, and employees at NMISA say they identify with these posters, which they and their fellow workers have made,



Making the best use of creativity, using a bulletin board that explains environmental activities.



The winner's work of the slogan poster contest in 2004



A section manager explaining the environmental management system to employees (Zona Franca)

and that seeing them displayed around the plant has raised their motivation to participate in the company's other environmental activities as well.

### Zona Franca: Clean Workplaces

Since NMISA began implementing on-site education activities, employees have submitted a wide range of suggestions for environmental preservation – further proof of how everyday efforts lead to concrete and measurable progress.

The achievements of the NMISA transmission plant in Zona Franca provide an excellent illustration of how investing in environmental education creates positive returns for the company. In transmission plants, oil is used during the cutting processes to lower frictional heat between the cutter and manufacturing materials. As a result, oil often drips from parts carried around the facilities. Noticing this, an employee at Zona Franca submitted a suggestion to improve the situation by using a spin dryer. This dryer, a machine that uses a centrifugal separation technique, was then custom-built to remove excess oil from processed parts. The idea earned great reviews for not only helping to keep the plant clean by solving the problem of oil dripping onto the plant floor, but also for making it possible for the extra oil to be collected for reuse, thereby cutting down the amount of new oil needed at the plant.

What NMISA takes the greatest pride in is that this example could be traced back directly to the plant's strategic efforts to raise environmental awareness and action of every employee at the plant.

### Extending Environmental Education Principles to the Home, Community and Country

NMISA Managing Director José Vicente de los Mozos speaks of his resolve for the company's progress: "Our environmental activities are just getting off the ground. Because we do not expect people's awareness to change overnight, our goal is to build a new culture step by step, always keeping a long-term perspective." He pointed out that environmental management is culturally specific and is something that requires time and patience. Precisely because this endeavor calls for a long-term approach, he emphasized the importance of beginning at the earliest possible stage with each employee and the need for tailoring the training material to each individual's own unique learning requirements.

Every employee at Zona Franca takes the ideas and know-how gleaned from their environmental education at the company everywhere they go outside the company as well. The company's efforts to cultivate knowledgeable employees, always taking environmental issues into consideration, has created a ripple effect that travels outwards from the plant to the home, to the local community, and finally to the whole country and beyond. At NMISA, employees believe it is this process that best develops the understanding and the strength needed to help move society in the right direction.



# Nissan Mexicana, S.A. de C.V. (Mexico)

## Meeting Local Needs

In 1966, Nissan Mexicana, S.A. DE C.V. (NMEX) commenced operations as Nissan's first overseas production base. In the nearly four decades since then, Nissan has continued to expand corporate activities around the world, always stressing the importance of localized production. At Nissan, "localized production" means operating production bases as close to our target markets as possible, delegating responsibility for manufacturing to the people in each respective community. This means that the vehicles are manufactured in the same region in which they are sold, using local resources and suppliers.

President Hiroshi Yoshioka of NMEX offers this perspective: "A particularly important factor for local production is excelling as a company that is trusted by the local community. Nissan's regional presence is extremely large, making it all the more important for us to conduct our corporate activities in a responsible manner rooted in a firm understanding of the culture, language, customs, history and other unique characteristics of the local community". He added, "In Mexico, people often think that environmental awareness is something for the rich, and many people are therefore likely to ignore environmental regulations. This is one of the biggest challenges we face." To earn the trust of the Mexican government and of local customers, he emphasized that NMEX makes special efforts to strictly adhere to even the smallest of regulations in order to uphold its hard-earned reputation. "That is one reason," he explained, "it is imperative that NMEX understand the Mexican culture in order to continue with successful vehicle production and retail."

The same approach applies to environmental action. In addition to its proactive initiatives on global environmental issues like CO<sub>2</sub> emissions and effective use of resources, NMEX promotes an agenda of meeting the current needs of the local environment.

### Water Conservation

The state of Aguascalientes is located in the center of Mexico. It is home to an automobile assembly plant employing some 4,470 workers. The facility has grown over the years in close partnership with the local community, with as many as three generations of some families having earned their livelihoods working at the plant. In recent years, however, as a result of decreased rainfall, farmland expansion and population growth, water-related problems have become increasingly serious. Taking this situation to heart, NMEX has taken a series of measures to reduce water usage at the plant. The average amount of water used to manufacture a single vehicle has been reduced from 5.35m<sup>3</sup> in 1996, to only 1.75m<sup>3</sup> in 2004.



NMEX President: Hiroshi Yoshioka



Using solar-powered hot water for employees' shower (Aguascalientes Plant, Mexico)



(From left) Rene Erick Castro, Environmental Staff, Aguascalientes Plant; Jesús De la Torre, Environmental Staff, Lerma Plant; Nazario Dante De Dios, Environmental Staff, Civac Plant; Everardo De la Garza, Manufacturing Director; Adolfo Abraham Aburto, Environmental Staff, Head Office; Armando Ávila, Manufacturing Vice President; José Francisco Vázquez, Environmental Staff, Civac Plant; Marcos Antonio Ribera, Environmental General Manager; Francisco Esteban Ramírez, Environmental Staff, Civac Plant; Eduardo Hernández, Environmental Staff, Toluca Parts Distribution Center.



Nissan Mexicana received the Environmental Excellence Award in September 2004

Water used at the plant is not wasted. After being purified at on-site treatment facilities, it is used in forestation activities and to water the plants and lawns at the site.

One local program focuses on planting the Afghan pine, a tree well suited to the low rainfall climate and soil conditions in the region of Aguascalientes. Under the slogan of "Taking Care of the Earth, Our First and Only Home," some 1,500 trees are planted every year. Participation in the program has expanded well beyond NMEX employees to include local government officials, elementary school students and community volunteers. This popular forestation program has now been successfully carried out for more than a decade.

Also deserving mention is a project started recently at the initiative of the company's employees. They have created a pond to collect the rainwater that falls on the plant grounds. The pond is being expanded into an area open to the public, where employees and members of the local community can gather in their free time and relax in a recreational environment. The employees are now working hard to take this volunteer initiative from concept to reality as soon as possible.

### Environmental Excellence

One of the key strengths at NMEX is the company's long-term commitment to a wide range of eco-friendly activities. In addition to their persistent efforts to reduce waste, prevent air pollution, and minimize their water usage, NMEX has also introduced solar-energy devices to heat their water at the plant. These endeavors, and the regular distribution of their Environmental Report, have earned NMEX the "Environmental Excellence Award" presented by the President of Mexico, Vicente Fox, to companies that have demonstrated outstanding environmental performance.

One employee summarized what it is like to work at NMEX: "Working at Nissan has dramatically changed the way I look at the environment and at society in general. While at work, I now take special pride in finding ways to contribute to the environment and to my local community."

At NMEX, environmental protection means far more than simply complying with the local laws and regulations. Employees strive to excel as a company that earns the trust of the community and stands out as an environmental leader making a significant local contribution to the global effort for sustainable mobility.



## 2 Nissan's Perspective

Global environmental issues that surround the automobile are complex and diverse. In this section, we discuss Nissan's perspective on global environmental issues and our level of awareness in approaching these issues. Nissan's perspective is to look toward the future, aiming to attain a "Symbiosis of people, vehicles, and nature".



# Global Environmental Issues

## Three Key Issues

In this section, "Nissan's Perspective", we discuss the three key environmental issues of greatest concern to Nissan and explain our approach to creating what we call a "Symbiosis of people, vehicles and nature."

- **Managing CO<sub>2</sub> Emissions**
- **Protecting the Air, Water, and Soil**
- **Recycling of Resources**

Nissan strives to conduct business in a way that balances the three aspects of economic activity, environmental consideration and social responsibility in order to create value for all our stakeholders. What stands in the way of making this vision a reality?

One question pertinent to all three of the issues mentioned above is, "How can Nissan best leverage its position as a global automaker to contribute to society's need for sustainable mobility?"

The answer may very well lie in advanced technologies used to build eco-friendly vehicles and the ability to equip large numbers of vehicles with these technologies globally. To support this approach, we aim to build vehicles that appeal to customers for their price and function in order to also generate increased understanding among consumers about the effect eco-friendly technology has on the driving experience.

As a further measure to stay abreast of emerging issues and in order to proactively develop effective solutions to our impact on the environment, Nissan participated in the WBCSD Mobility Project\* as a means of identifying how transportation in the period leading up to 2030 and beyond could be made more sustainable.

We aim to build sustainable mobility into every stage of our business. To support this aim, we work with the Global Environmental Management Committee (G-EMC) to decide the main priorities and guiding principles of our environmental management. In Japan, our environmental activities are currently carried out under a 5-year environmental action plan called the "Nissan Green Program 2005" which focuses on vehicle development and production, the logistics involved in transporting vehicles and parts, the delivery of vehicles to customers through our dealers, and the recycling of end of life vehicles that have concluded their product lifecycle.

Our products are made from steel and aluminum and large amounts of energy, water and a broad range of chemical substances, and which are released into the atmosphere in production process. Although cars provide people with the mobility they need and serve as a vital part of the social infrastructure, the process required for manufacturing them results in substances such as SO<sub>x</sub> and NO<sub>x</sub>, which impact on the local environment and, to a certain extent, on the global environment as well.

Aware of this reality, we place a special importance on knowing exactly what society expects of Nissan as an automaker with production bases and markets all over the world. In addition to holding frequent dialogues with our stakeholders, we consult regularly with industry experts to find ways of further developing our positive potential on the global environment. Examples of this include providing mobility and infrastructures in developing countries, developing technology for effective use of energy, and raising environmental awareness. In brief, "technological development" and "the extensive application of that technology" are crucial



	Development	Production	Logistics	Sales and Service	Use	Recycling End of Life Vehicles
Key Issues	<b>Managing CO<sub>2</sub> Emissions</b>	·Improving Fuel Economy ·Fuel Cell Vehicle (FCV) Development	·Reducing CO <sub>2</sub> Emissions	·Increasing the Loading Ratio ·Modal Shift		
	<b>Protecting the Air, Water, and Soil</b>	·Cleaner Exhaust Emissions	·Reducing Substances with Environmental Impact	·Partnership between Nissan and Our Dealers ·Nissan Green Shop Activities	·Environmental Communication and Education with Customers	·Appropriate Treatment of End of Life Vehicles (ELVs)
	<b>Recycling of Resources</b>	·Design for Recycling	·Effective Use of Resources	·Reducing Containers and Packaging Materials		·Recycling Automobile Shredder Residue ·Dismantling Research ·Sales of Reusable Parts ·Materials Recycling

to Nissan's efforts to contribute to the realization of sustainable mobility.

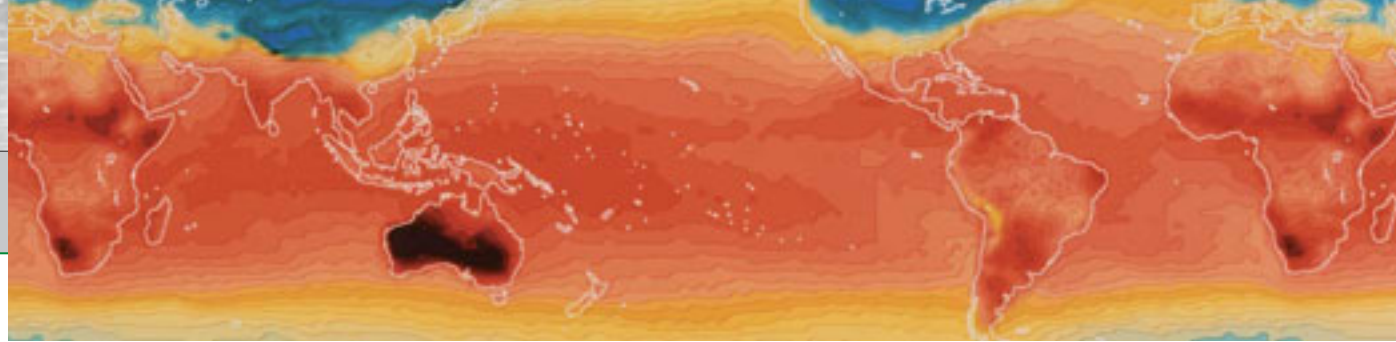
Under the Nissan Revival Plan and the NISSAN 180 plan, we have further cultivated the ability to set clear-cut targets and to advance as a unified company to achieve those targets. Regarding our environmental aims, we stress the importance of setting targets from

the perspective of how, and to what extent they will actually reduce environmental impact.

In the following section, "Nissan's Challenges", we report in detail on how we deal with these topics at each stage of our operations — from development to recycling.

\*A 4-year collaborative project hosted by World Business Council for Sustainable Development and attended by 12 leading international automotive and energy companies: More information at: <http://www.wbcsd.org/>





## Key Issue I Managing CO<sub>2</sub> Emissions

### Reducing CO<sub>2</sub> from Our Business Operations

Nissan regards carbon dioxide (CO<sub>2</sub>) emissions management to be one of the most pressing challenges we face today. In connection with the continuous growth we are experiencing in our production volume, the key challenge is how we can best approach this issue on a global scale and with a long-term perspective.

To this end, we make a concerted effort to reduce emissions of CO<sub>2</sub> in each of our business operations including planning, engineering, production, and logistics. In production, for example, by implementing energy-saving measures such as replacing older equipment with newer, more efficient equipment, we are able to manufacture various models on single integrated lines. This means that, rather than shutting down and restarting the assembly line for each different model, it is much more efficient to assemble all vehicles in one single line, thereby minimizing any potential time loss and reducing CO<sub>2</sub> emissions.

In logistics too, we promote an energy-efficient "modal shift", which means whenever possible we are moving away from conventional truck transport toward the use of railroads and ships, as these generate lower CO<sub>2</sub> emissions. Parallel to these measures, since beginning with overseas production, we have reduced our logistics volume considerably by localizing our production worldwide reducing our exporting from Japan.

### Reducing CO<sub>2</sub> from Vehicles in Use

CO<sub>2</sub> emissions are released throughout the various stages of a vehicle's lifecycle, from the raw material stage to production and finally to recycling. Most of these emissions occur while the vehicle is in use, making emissions reduction at this stage our highest technical priority.

At Nissan, we take a comprehensive approach to CO<sub>2</sub> reduction by developing highly efficient engines, continuously variable transmissions (CVTs), electric-powered 4WDs (e-4WDs), lightweight vehicle bodies as well as more aerodynamic design with low air resistance. Nissan is making in the development of clean energy vehicles, and we will launch the Altima Hybrid in the US market, starting late 2006.

Ultimately, it is only by introducing these technologies more widely that they can lead to significant reductions in CO<sub>2</sub> emissions. The key is to place as much emphasis on diffusion of environmentally friendly technology as on the development of that technology. To offer more customers the benefits of CVT, Nissan plans to sell around 1 million CVT-fitted models worldwide by fiscal year 2007, up from an estimated 250,000 in fiscal year 2004. If around 1 million CVT-fitted models were sold, we estimate this would have nearly the same effect in terms of CO<sub>2</sub> emissions reductions as selling 200,000 hybrid electric vehicles.

As well as reducing CO<sub>2</sub> emissions from vehicles sold today, the fuel cell vehicle (FCV) is expected to play an increasingly important role as a clean energy vehicle in the near future. The environmental advantage of the FCV is that its sole emission is water, produced through the generation of electric energy in a chemical reaction of hydrogen and oxygen. In March 2004, Nissan delivered the first X-TRAIL FCV to Cosmo Oil Co., Ltd., and currently carries out joint research and development on the use and supply of hydrogen.

Whether for the present or for the future, realizing sustainable mobility requires more than technological development alone, it requires collaboration with other stakeholders in society. An example of this is our continued participation in the ITS (Intelligent Transportation System) project which, in cooperation with the Japanese government and other companies, aims to make roads safer, less congested and thereby help to better manage CO<sub>2</sub> emissions.

## Key Issue II Protecting the Air, Water, and Soil

### Ambitious Targets and Advanced Technology

The severe pollution problems Japan experienced in the 1960s taught us the great importance of protecting the air, water, and soil. The lessons we learned remain valid for managing many of today's global environmental challenges as well. Nissan has continued to work proactively on these issues, steadily setting increasingly demanding standards and goals in product development and production.

In the Nissan Green Program 2005 announced in 2001, Nissan set the goal of making 80% of our gasoline passenger vehicles sold in Japan U-LEVs \*1 by the end of fiscal year 2005 (resulting in 75% fewer exhaust emissions than the level prescribed in 2000). Nissan achieved this objective in February 2003, well ahead of schedule. We have since set a new goal to make 80% of our gasoline passenger vehicles sold in Japan SU-LEVs \*2 by March 2006.

Following our compliance with the Muskie Act in the US in 1970, and since the introduction of the first emissions regulations in Japan, Nissan has made consistent efforts to stay abreast of emerging regulations in order to ensure compliance in all countries where we operate. In 1999, we registered Japan's first U-LEV vehicle, and in 2000, the world's first PZEV \*3 vehicle, earning Nissan the status of a global leader in this field. Today, Nissan's cleanest gasoline-engine cars meet emission criteria that have been cut from 1/100th down to 1/250th of the criteria used in 1970.

Leveraging Nissan's strength in developing eco-friendly technology, our next steps include expanding our business under the NISSAN Value-Up plan into developing countries. In these countries, many people lack access to even modest transportation while the environmental performance of existing means of transport is for the most part insufficient. We remain determined to mobilize the full potential of our technology to help realize a society in which people may

benefit from increased mobility as well as greater access to mobility.

\*1: U-LEV (Ultra-Low-Emissions Vehicle): See p.1  
 \*2: SU-LEV (Super-Ultra Low Emissions Vehicle): See p.1  
 \*3: PZEV (Partial-Zero-Emissions Vehicle): Certification issued by the California Air Resources Board (CARB) in the state of California (USA)

### Activities in Global Production

Efforts to protect the air, water, and soil have a long history at Nissan in Japan, a fact often attributed to Japan's economic growth in the 1970's followed by a series of large-scale pollution incidents. Since then, environmental protection and safety standards in Japan have reached a relatively high level compared to other industrialized countries and corresponding laws and regulations have been implemented at each of our plants. Today, when building new plants, we mobilize the know-how gained from these years of experience to comply with Nissan's global standards and to formulate our basic policy for production activities worldwide.

In daily production, in addition to complying with all laws and regulations, we have a continuous program of checks and improvements to prevent environmental accidents. We regard this rigorous day-to-day management approach as one of the main factors of our success in this area.

A further issue that demands attention is the painting process. Our current focus is on reducing the use of volatile organic compounds (VOCs) that make up 90% of the chemical substances emitted during the vehicle's production process. We try to reduce offsite VOC emissions by increasing the recycling ratio of used paint thinner, as well as by reducing the overall amount of VOCs used. Starting in Kyushu and expanding throughout Japan and abroad, we are switching to water-based paint, which generates lower VOC emissions. The Kyushu Plant currently maintains some of the industry's lowest VOC discharge levels from its water-based painting lines. Water-based paint has also been adopted in the US at the Smyrna Plant in Tennessee and at the Canton Plant in Mississippi.



## Key Issue III Recycling of Resources

### Eco-Friendly Design That Considers Full Lifecycle of Vehicles

Vehicles are manufactured using the Earth's finite resources. Nissan works in partnership with society in order to ensure as many of those resources as possible are recycled. Our goal is to manufacture in such a way as to generate no waste and to prevent the vehicles produced from becoming waste at the end of their serviceable lives. We make every effort to ensure that these parts are either reused, recycled into raw materials, or recovered as thermal energy.

To support these efforts, we focus on two main points: recycling technology, and partnerships. Research on vehicle dismantling for over 10 years at Nissan has led to breakthroughs in recycling technologies, such as recycle-friendly designs and extensive recycling of automobile shredder residue. Conducting dismantling tests by our own with recyclers have helped us to develop a range of dismantling methods and tools.

The second point is creating partnerships. Recycling requires a joint effort in which numerous people are involved not only in the recycling itself, but also at each stage of the vehicle's lifecycle, from the design stage through production, sales, and end-of-life recycling. Different departments are responsible for each of these stages, but when considering the overall recoverability of each car, all departments join forces and work in close collaboration. In addition to teamwork within the company, some departments such as the Recycling Promotion Department also work with dealers on issues related to recycling laws and regulations.

We still face tough challenges in recycling. It generally takes more than 10 years from the time a car is designed to the time it is recycled, making it important to foresee what society will be like then. Further, recycling infrastructures vary from country to country, and we must determine how to best respond to each of these markets. Due to different transportation systems, economic conditions, local prices and labor fees, what may be a solution in one region may not necessarily work in another. Our goal, therefore, is to design cars for easy recycling based on Nissan's global standards, while establishing effective programs that are sensitive to the unique conditions of each region by forging partnerships with local recycling operators.

### Waste-Free Production

As part of our business activities at Nissan, our way of thinking is to circulate materials with a clear overview of the full chain of vehicle production. During production for example, steel remnants, oil, packaging and various other types of waste are generated. In view of this reality, Nissan implements activities to minimize waste from our plants and has successfully attained zero landfill waste volume\* and a resource recycling rate of 99.3% in Japan. Despite these encouraging results, we remain determined to step up our efforts still further in order to eliminate waste altogether. Based on our breakthrough experience of achieving 100% recycling at our Yokohama Plant, we are convinced that this goal is attainable at other plants as well. We are also currently improving the recycling rate at overseas plants, using cases from Japan as models to be emulated.

\* Zero landfill waste volume: Reducing the volume of waste going directly to landfill to 1.0% or less of the volume in fiscal year 1990.

## Looking to the Future

### Together with Our Stakeholders

As a global company, Nissan is fully aware that the topics to which we must devote serious effort are not limited to the three aforementioned issues alone.

Other areas that demand constant attention include the problems of vehicle noise, ozone destruction through the release of chlorofluorocarbon (CFC) / hydrofluorocarbon (HFC) refrigerants into the atmosphere, the impact of road construction on the ecosystem, and the protection of biodiversity.

The scope of responsibility in these areas expands beyond Nissan as an individual company to encompass our subsidiaries, both consolidated and affiliated, as well as our partners in the supply chain.

Nissan's environmental management is in the process of designing an integrated approach encompassing all consolidated subsidiaries. Since last year, our global environmental report includes relevant information on activities by consolidated subsidiaries, and we continue to increase the efficiency of our global environmental management.

The environmental issues impacting automakers will undoubtedly continue to grow more complex and diverse over the coming years. Each era has its own special circumstances and key issues in the same way that each country or region requires specific solutions to its problems. Nissan is determined to remain abreast of these changes and to implement appropriate and effective responses.

To live up to this goal, we will continue a proactive dialogue with stakeholders as a vital source of knowledge and insight. We realize that it is through sincere communication in which Nissan can best inform stakeholders of our approach and initiatives, while listening closely to our stakeholders' opinions and establishing relationships of trust. Nissan also attaches great importance to external evaluations such as the Global Reporters Survey, sustainability indices, and the Nikkei Environmental Management Survey. We are aware that raising the evaluation of Nissan's environmental activities is vital to raising the value of the Nissan brand itself.

Sustainable mobility is a topic that reaches far beyond the scope of any single company. At the same time, we believe there is much that we can and must do on our own initiative to reduce CO<sub>2</sub> emissions, protect our air, water and soil, and recycle all resources as well as possible. We use the challenges faced as a driving force toward achieving our goal of creating a "symbiosis of people, vehicles, and nature".



# 3 Nissan's Challenges

Nissan is moving forward with environmental efforts at every stage of the vehicle's life cycle: from the development stage, to the production, logistics, sales and service stages, through the recycling of end of life vehicles. In this section, we report on Nissan's activities pertaining to each stage in the vehicle's life cycle.





# Product and Technology Development

## The pursuit of new engineering horizons, and the proliferation of effective technologies

Reducing environmental impact at all stages of a vehicle's lifecycle is our goal at Nissan. To achieve this, we strive to develop innovative environmental technologies, while supplying products that meet and surpass customer expectations.

### Our Approaches to Product and Technology Development

At Nissan, we regard two approaches as particularly vital for successful automotive development: the pursuit of technological development, and the extensive application of that technology.

We believe there is more than one scenario for the future of automotive society and therefore pursue all feasible opportunities to optimize our technical potential. Our approach to the environmental challenges we face today is not to promote one single technology, but to apply the technologies adoptable to a broad range of models and various combinations of those technologies to develop vehicles such as our U-LEVs, SU-LEVs, and CVT-fitted vehicles.

At the same time, there will be no lasting significance or impact, if the automobiles supplied are not accepted by a broad base of customers. To increase customer acceptance of eco-efficient technologies, we strive to build affordable vehicles that ensure the customer's driving pleasure. As an overall environmental approach, we are convinced that by equipping more and more vehicles with eco-efficient technology, without compromising on performance, we are able to place minimum stress on the environment and lower the environmental impact on society as a whole. (See page 24 for case of the NOTE released in January 2005 in Japan)

This is demonstrated in our plan to expand annual sales of CVT-fitted vehicles to 1 million units. Increasing sales to this point is expected to reduce CO<sub>2</sub> emissions to a level comparable to that of selling 200,000 hybrid vehicles. The advantages of CVT are not limited to improved fuel efficiency but include a smooth yet robust

driving performance, characterized by driving at more efficient engine condition. In short, this technology is capable of satisfying customers' desire for compatibility between the otherwise opposing concepts of "fuel economy" and "driving performance."

We are also looking forward to expanding the supply of Nissan vehicles that qualify as U-LEVs (units for which exhaust emissions of nitrogen oxides [NOx] and hydrocarbons [HC] are 75% lower than the 2000 standards) and SU-LEVs (units for which exhaust emissions of NOx and non-methane hydrocarbon [NMHC] are 75% lower than the 2005 standards). To date, Nissan has surpassed the target of achieving U-LEV status for 80% of all our gasoline-powered passenger vehicles sold in Japan by achieving over 90%. At present, we are working toward expanding compliance for SU-LEVs in Japan to 80% or more by the end of March 2006; a target that demands even greater emissions cuts than the U-LEV category. We estimate that by increasing SU-LEV unit sales to 80% would reduce NOx and HC by roughly the same amount as converting 40% of our unit sales into electric vehicles.

Another important area of concern is making effective use of the Earth's limited resources by designing vehicles that are easy to recycle. In order to expand effective recycling of resources, it is critical to take into account the full lifecycle of a vehicle. Nissan set the target of achieving a 95% recoverability rate\*<sup>1</sup> by 2005 for all new vehicles sold in Japan. This target was reached ahead of schedule for the Cube and March, marketed in 2002 as well as for the Lafesta, marketed in 2004.

\*1 The value based on Nissan's own calculation standard (by weight)



Driving the development of such technology is the pursuit of effective approaches to environmental protection, from production and use, to final disposal. Using the lifecycle assessment (LCA) method to gauge the environmental impact of our more popular vehicles, has led to lower environmental impact in models such as the Skyline and Stagea compared to previous models.

We believe that customers' values constantly evolve and change over time. People today are motivated to live fuller and more satisfying lives, while devoting greater

consideration to their own physical and mental health, espousing a concern for the global environment and other meaningful aspects of life.

Thus, the demands made by customers are not limited to the desire for vehicles with lower environmental impact alone. They also aspire to own and drive high quality vehicles with strong performance. It is the challenge of product and technology development to strike a fine balance between environmental consideration and vehicle appeal.

### Technologies featured in a vehicle — The case of the Note (Japan)

#### VOCs in Vehicle Cabins → page 32

Nissan is reducing volatile organic compounds (VOCs) emissions identified as a cause of irritation in the nose and throat.

Reviews of the components and glues used in seats, door trim, floor carpets and other vehicle parts

#### Design for Recycling → page 31

To recycle end-of-life vehicles (ELVs), Nissan is channeling a vast range of ingenuity into its vehicle structure and materials.

Achievement of recoverability rate\*<sup>1</sup> 95% and above

- Use of recovered bumpers and other recyclable materials: page 42
- Thermoplastic resin\*<sup>2</sup> use rate 84%(weight base): page 31
- Reduced use of substances with environmental impact: page 32

\*1: The value based on Nissan's own calculation standard (by weight)

\*2: Thermoplastic resins: Plastic easy to return to raw material status and recycle when adding heat.

#### Managing CO<sub>2</sub> Emissions → page 25

Nissan is using innovative technologies to improve fuel economy and reduce CO<sub>2</sub> emissions.

Achievement of fiscal year 2010 fuel economy standards + 5% (Japan)

- Highly efficient HR15DE engine: page 25
- XTRONIC CVT: page 25

#### Cleansing Exhaust Emissions → page 29

Nissan is steadily reducing the levels of CO (carbon monoxide), HC (hydrocarbons) and NOx (nitrogen oxides) in exhaust gas emissions.

Achievement of SU-LEV (75% fewer emissions than what is required by 2005 standards)

- Lower thermal mass catalyst substrate etc: page 29





1.5-liter HR15DE Engine



Continuously Variable Transmission (CVT)



Tiida (Japan)



Altima Hybrid — prototype

## Managing CO<sub>2</sub> Emissions

For Nissan, the reduction of CO<sub>2</sub> from vehicles in use is a serious issue. We actively involve in the development of new technologies to enhance fuel economy, and technical innovations such as the development of fuel cell vehicles.

### Measuring CO<sub>2</sub> in Actual Vehicle Use

Nissan pursues technology development, mindful of the potential effects emissions can have on society. In addition to official test modes in Japan such as the 10-15 mode, Nissan established its own in-house standard for a benchmark to measure what we call "real world fuel economy," which is based on evaluations of a broad range of 'real world' driving situations and which is used to develop effective technologies for improved fuel economy.

Nissan has taken a comprehensive approach to CO<sub>2</sub> reduction, developing fuel-efficient engines, highly efficient transmission systems, lightweight vehicle bodies as well as more aerodynamic vehicles with low air resistance.

### Increased Engine Efficiency

In 2004, we announced two new engines for Nissan's global strategy. These outstanding inline 4-cylinder models — the 1.5-liter "HR15DE" and the 2.0-liter "MR20DE" — were both designed to strike an ideal balance between improved real world fuel economy and acceleration performance. To reduce friction, machining technique previously used only to craft racing car engines was combined with a special technology that produces bearing components with exceptional smoothness. Frictional resistance has been cut by some 30% compared to conventional engines. In addition, the

engine's superior combustion speed enables class-leading thermal efficiency.

### Expanded CVT Promotion

Simply put, the continuously variable transmission (CVT) is a system that optimizes engine efficiency and performance for all driving conditions by two pulleys connected by a steel belt. This enables a smooth, continuous transmission which not only enhances acceleration, but which also improves fuel economy for better environmental performance. This technology strikes a fine balance between powerful driving performance and improved fuel economy. Nissan installed the first CVT in the 1.0-liter class March in 1992. The 2.0-liter class HYPER CVT developed in 1997, and the 3.5-liter front-wheel-drive adaptable XTRONIC CVT, released in 2002 in the Nissan Murano, were the first of their kind anywhere in the industry. Nissan is the world's only automaker supplying CVT technology to a broad range of passenger vehicles and is expanding global unit sales of CVT-fitted vehicles from 250,000-units to one million units. In fiscal year 2007, this will raise the share of our CVT-fitted cars from 7% to some 24%. (See pages 7-8 for "Global Features")

### Lighter Vehicle Weight

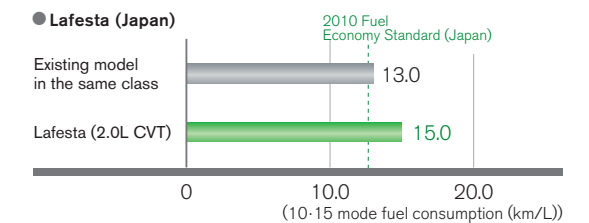
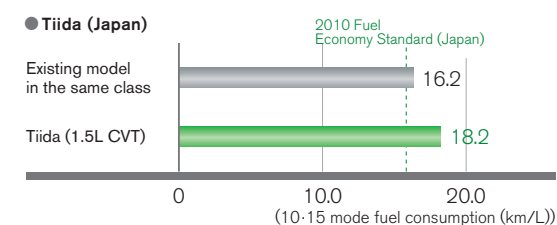
Reductions in vehicle weight can improve fuel efficiency. Nissan's Committee for Lighter Vehicle Weight Promotion, in coordination with our suppliers, sets numerical weight reduction targets for each model to reduce vehicle mass by utilizing new materials, optimizing vehicle size and performance. The weight reduction target for the upcoming generation of Nissan cars has been set at the 5% to 10% level, which results in a proportionate reduction of CO<sub>2</sub> emissions.

### Development of e · 4WD, the New 4WD System

The Nissan "e-4WD" is the lightest and most compact four-wheel-drive (4WD) system, which is based on standard front-wheel drive (2WD). The rear wheels are powered by an electric motor and put into drive mode only when required by road conditions such as off-road or uneven areas where additional traction is needed. Selecting the 2WD mode disengages the rear-wheel electromagnetic clutch and reduces driving resistance for fuel economy superior to that of conventional 4WD cars. Nissan has equipped the March and the Cube with this system since 2002, and plans to do the same for the Tiida.

### Fuel Economy of Major New Models for 2004

Nissan successfully improved the fuel economy of its new 2004 models with the implementation of new high-efficiency engines with CVT as well as lighter vehicle weight. Of these, Tiida and Lafesta were more efficient than existing models at same class, with Tiida being 12% and the Lafesta 15% under the 10-15 mode in terms of fuel economy. Under Nissan's in-house standards for real world fuel economy, these models were found to be about 20% and 37% more efficient compared to existing models in the same class.



### Hybrid Vehicle Commercialization

Powered by combinations of gasoline engines and electric motors, the main advantages of hybrid vehicles are their low CO<sub>2</sub> emissions and clean exhaust gas emissions. As can be seen in our efforts such as developing the Neo Hybrid system and marketing of the Tino Hybrid, Nissan has brought its expertise to bear on refining the technology required to build environmentally friendly hybrid vehicles.

Determined to increase the number of hybrids in the global market, Nissan formed a technical partnership with Toyota Motor Corporation, which will provide some hybrid powertrain components for the Altima Hybrid, to be built and marketed in the US in 2006. With acceleration capacity equivalent to a V-6 engine, the Altima Hybrid is a sedan size vehicle, but its fuel economy is as good as compact cars.

### Bio-Fuels

"Bio-fuels" refer to the type of ethanol and other fuels produced from plants. Because the amount of carbon emitted from the combustion of these fuels is equal to the amount of carbon absorbed by the plants used to make the fuels, there is no net increase of CO<sub>2</sub> in the atmosphere, ultimately making bio-fuels a carbon neutral source of energy. At the global level, Nissan will steadily promote a plan under which all of its production vehicles will gradually be powered by a combination fuel consisting





March (Japan)



2005 model of X-TRAIL FCV



Nissan's first in-house developed fuel cell stack

of gasoline with up to 10% ethanol (commonly known as E10). Among other innovations, we are also developing Flexible Fuel Vehicles (FFVs) that are capable of running on fuels with ethanol levels of up to 85%.

### Our Partnership with Society

#### ► Using ITS to Alleviate Congestion

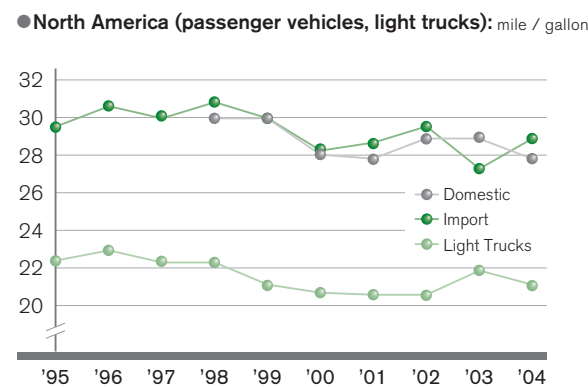
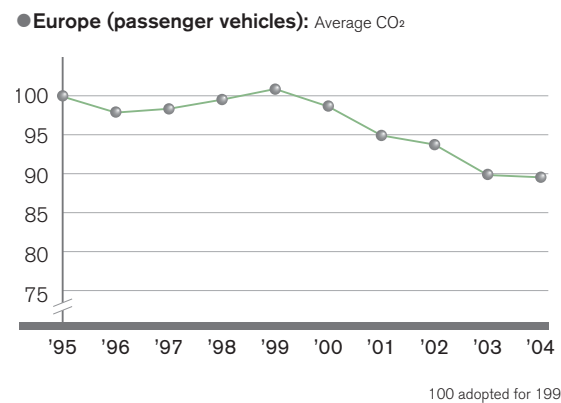
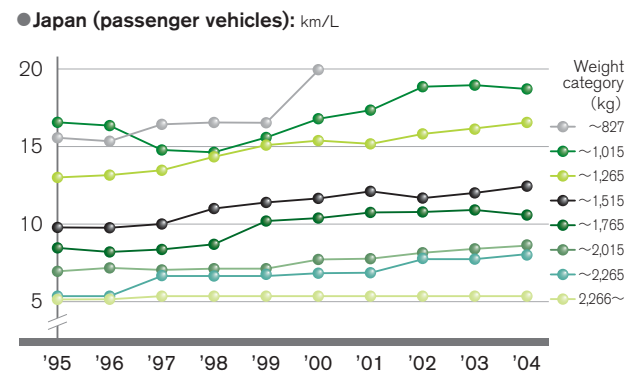
The way a vehicle operates on the road significantly influences its fuel consumption. The kind of traffic typical in today's big cities leads to more traffic lights and increased congestion, which both result in more frequent braking and excessive fuel consumption. With the aim of minimizing fuel consumption, ITS\* has become regarded as a highly promising approach to help alleviate congestion and other road traffic problems. On June 30, 2005, Nissan officially announced the start of an analysis program for testing the possibilities of reducing accidents and congestion using ITS in Kanagawa Prefecture, our major base of operations.

\*: ITS (Intelligent Transport Systems) : a traffic system that integrates people, roads, and vehicles into a seamless transportation pattern.

### Average Corporate Fuel Economy Trends by Region

At Nissan, we assess the fuel economy of all vehicles sold and their impact on the environment by monitoring the average corporate fuel economy trends.

In Japan and the US, the figure used is fuel economy, whereas in Europe the figure used as the most relevant measure is that of CO<sub>2</sub> emissions. These figures are reflected by fuel economy and annual unit sales. Nissan promotes the reduction of CO<sub>2</sub> emissions by setting mid to long term targets to achieve the regulation standards in a given region.



### Development of the Fuel Cell Vehicle (FCV)

The fuel cell vehicle (FCV) is expected to play an increasingly important role as a clean energy vehicle. The greatest feature of the FCV is that its sole emission is water, produced through the generation of electric energy in a chemical reaction of hydrogen and oxygen. The Nissan FCV employs elements of a variety of technologies, including electric vehicle (EV), hybrid electric vehicle (HEV), and compressed natural gas vehicle (CNGV) technology.

### Background of FCV Technology Development

Even the most advanced groups have only little more than a decade of experience in FCV technology. With the launch of a five-year joint program with Renault and an investment of 85 billion yen, Nissan started full-scale development of FCV technology in 2001. We conducted road tests of the Xterra FCV in California in April 2001 and participated in the Japan Hydrogen & Fuel Cell Demonstration Project (JHFC) in July 2002. In December 2002, we began road tests for the 2003 model X-TRAIL FCV, followed by limited leasing sales in Japan that same year. In March 2004, Nissan delivered the first X-TRAIL FCV to Cosmo Oil Co., Ltd. The two companies have broadened their relationship beyond

that of supplier and user of FCVs, and have begun undertaking joint research and development efforts on hydrogen fueling at the interface between hydrogen supply and use. In April 2004, X-TRAIL FCVs were delivered to Kanagawa Prefecture and the City of Yokohama in a joint effort to promote clean vehicles.

In February 2005, Nissan announced that it has designed and developed its first in-house fuel cell stack and a new high-pressure hydrogen storage system. The new stack can achieve a more compact design, reduced in volume to approximately 60% than the previous stack while providing the same level of power. The newly developed 70MPa high-pressure hydrogen storage cylinder increases the hydrogen storage capacity by approximately 30% compared with the previous 35MPa cylinder, without any change to the cylinder's dimensions. This increased storage capacity can dramatically extend the driving range of an FCV. The 2005 model of the X-TRAIL FCV, which employs these two technologies, is scheduled for completion by the first quarter of 2006.

### Challenges for Commercial Use

Nissan continues to tackle technical issues to enable large-scale use of the FCV as soon as reasonably possible. Issues still to be resolved include cost reduction, reliable starting at subzero temperatures, and realizing an adequate hydrogen fueling infrastructure.





Cube (Japan)



Micra with EURO4 certification (Europe)



Tiida meeting EURO3 Standards (China)



AGRES Compact 2.5 tons (Japan)

## Cleansing Exhaust Emissions

In order to meet increasingly rigorous emission regulations, Nissan has successfully developed cutting edge emissions-reduction technologies. While striving to advance our technology, we have also remained constantly aware of the need for improving ambient air quality, which requires further developing emission reduction technologies as well as wider penetration of these technologies. It is our belief that technology can best realize its full potential when vehicles are made more appealing and become more widely available at affordable prices.

### The Mission for Cleaner Exhaust Emissions

In January 2000, the Nissan Sentra CA, marketed in the US, became the world's first gasoline-powered vehicles to meet the strict exhaust gas emission standards set by the California Air Resources Board (CARB), earning the PZEV \*1 certification. This means that the emissions are as clean as, or cleaner than, the surrounding air into which it is emitted.

When Japan's Ministry of Land, Infrastructure and Transport established the rating system for U-LEV standards in 1999, Nissan vehicles were among the first to qualify and when certification was introduced for the "super-ultra low emissions vehicle" (SU-LEV, about half the exhaust emission of the U-LEV). This serves as one example of our dual approach to progressive technological development and rapid technology diffusion.

In Beijing, the Nissan Tiida has qualified under the exhaust emission standards of the EURO3 \*2 Regulations. This model has also earned certification from the Beijing Municipal Environmental Protection Bureau as an On-

Board Diagnostic system \*3 (OBD-fitted) vehicle, capable of diagnosing and indicating any troubles in the catalyst or other components. The Tiida is the first OBD-fitted vehicle in the industry with EURO3 certification in Beijing.

In Europe too, we are making steady progress by having already met the EU emissions regulations, EURO4 \*2 (in force as of 1 January 2005).

\* 1 PZEV: See page 18

\* 2 EURO3, EURO4: European Emission Standard Level 3 and Level 4

\* 3 On-Board Diagnostic system (OBD): on-vehicle self-diagnosing system designed to indicate problems with the catalyst or other components

### Emissions Cleansing Technology with Greater Proliferation in Mind

The achievement of PZEV status in the U.S., the U-LEV and SU-LEV designations in Japan and other high standards are all results of tenacious efforts in technological development. These high levels of achievement have been sustained by developing combustion and fuel-injection methods that reduce the generation of emission compounds by catalysts catching and removing them efficiently. These advances were engineered with the aim of accelerating improvement of ambient air quality by promoting vehicles with the lowest possible emissions.

Nissan is targeting higher levels of exhaust cleansing in diesel vehicles as well and is on course to meet the new emission regulations set to take effect in October 2005 in Japan. This performance is partly due to our diesel engines, which we equip with a "common rail fuel injection system" to efficiently burn fuel, together with the self-regeneration type diesel particulate filter (DPF) system. This DPF system is equipped with a catalyzed filter, which captures, oxidizes and removes particulate matter. We plan

to release the Caravan in Japan with this system to be sold under a leasing plan, to be offered to limited fleet users.

### Expanding U-LEV and SU-LEV Markets

Nissan announced the goal to achieve U-LEV certification by March 2003 for 80% of its gasoline-powered passenger vehicles sold in Japan. That target was reached in February 2003.

Our trial calculations show that if 80% of Nissan gasoline-engine passenger vehicles sold in Japan were switched to SU-LEVs, the resulting reductions in NOx and HC would be equivalent to switching 40% of all Nissan unit sales to electric vehicles.

With a view to the future, we plan to increase our efforts still further, and have set a new objective to make 80% of our gasoline vehicles sold in Japan certified as SU-LEVs by March 2006.

### Our Partnership with Society

Vehicle maintenance, as well as fuel quality that is compliant with relevant emission regulations, both play vital roles in reducing emissions. Nissan builds on its experience gained over the years to optimize emissions reduction performance and the know-how required to maintain that performance. We also work to strengthen our partnership programs with society, to contribute to environmental education and to establish the infrastructure required to support sustainable mobility.

In China, for example, mandatory equipping of vehicles with OBD \*3 to facilitate appropriate maintenance of exhaust-emission reduction systems is currently well under way. This makes the establishment of inspection processes and the training of experts an urgent issue. Nissan, to help

ensure the swift introduction of these regulations, reached a basic partnership agreement last year with the Chinese government.

In this partnership, we support OBD training of professional personnel, such as government officials and engineers from official testing facilities. In order to set up the OBD certification system in China, we are also donating vehicles and training participants how to develop an emissions compliance system.

### Compressed Natural Gas Vehicles

The amount of NOx emissions from compressed natural gas vehicles (CNGVs) are considerably less than those from vehicles that rely on diesel. What is more, CNGVs discharge hardly any soot into the air. Nissan has taken an active role in the research and development and subsequent commercialization of CNGVs with higher performance. In 2000, for example, the AD Van CNG small-size commercial vehicle earned certification as Japan's first CNG U-LEV. In 2003, a CNG version was added to the Caravan lineup. Nissan also supplies a wide selection of CNG buses and trucks in this genre.

### Forklifts

The Nissan AGRES forklift series (1.0 to 3.5 ton gasoline and LPG models) was marketed in 2003, and is distinctive for being equipped with Electronic Concentrated Controlled System engines (ECCS). This system has been the key to reducing carbon monoxide (CO) and HC to the levels set by the United States Environmental Protection Agency — the strictest standard of its type in the world (in force since January 2004). This and other technological achievements have earned Nissan ECCS engines a place among the cleanest performing industrial vehicle engines in the world.



Evaluation of harness dismantling ease

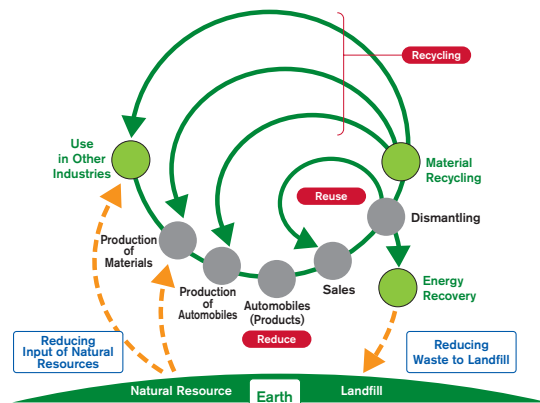


Brought cabin VOC concentrations below guideline values set by the Ministry of Health, Labor, and Welfare in the March (Japan).

### Design for Recycling

To enable comprehensive and thorough recycling, we consider what to do with each vehicle at the end of its service life right from the beginning, during the design phase. (See pages 43–46 for “Recycling End-of-Life Vehicle”) To ensure a systematic approach, we have prepared “Recycling Design Guidelines” based on the concept of the 3Rs (Reduce, Reuse, and Recycle). We strive to minimize the impact on the environment by efficient and innovative use of resources throughout each vehicle’s lifecycle, and by reducing waste materials from used vehicles.

#### ● Effective use of resources through recycling



### For Easier Recycling

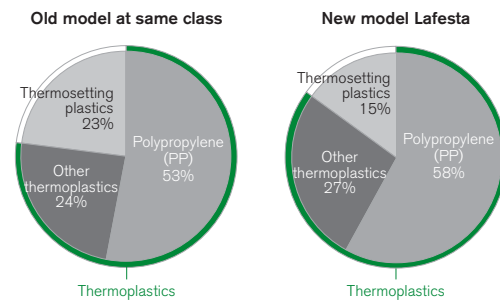
We develop products to enable ease of recycling (recoverability rate), ease of dismantling at the end of life stage (dismantling efficiency), material identification

markings for plastic parts (plastic parts marking rate), and reduction of environment-impacting substances.

Nissan achieved the goal of 95% recoverability rate (See page 23) for new vehicles in 2005 through structural improvements such as harness removal and use of recyclable materials such as thermoplastics. A 95% plus recoverability rate was achieved for the March in 2002, the Lafesta in 2004, and the Note and Serena in 2005. These are the results of diligent efforts in research and development, and improvements in dismantling efficiency. By adopting eco-efficient structural designs such as those that enable easier harness removal, we improved our overall recoverability rate from 50% to 85%.

To avoid recycling difficulties when, for example thermoplastics and thermosetting plastics are mixed after use, we have developed markers to clearly identify the materials used. Other efforts along these lines include the design of parts made from the same materials, conversion to recycle-friendly thermoplastics, and development of materials designed for easy recycling. (See page 32 for Major Recyclable Parts on the Note.)

#### ● Plastic Use Rate Comparison



### Major Recyclable Parts on the Note

(\* Nissan Green Parts : See page 46)

**Polypropylene (PP) Parts**  
Because of high versatility, reusable in other applications besides automobiles

**Reusable Parts**  
Reusable as Nissan Green Parts \*

**Polypropylene Bumpers**  
Reusable as Nissan Green Parts \* (depending on condition) or as resin material

**Thermoplastic Parts**  
Reusable as resin



### Reduction of Substances with Environmental Impact

Based on the Nissan chemical substance guidelines, and through activities such as Nissan Green Procurement and the Nissan Engineering Standard, we carefully monitor and control the chemicals contained in our products, striving to reduce the use of materials that negatively impact the environment. We have adopted lead-free materials for fuel tanks, electro-deposition coating, wheel balance weights, and other areas where lead was formerly used. In Japan, Nissan met the industry target of lowering lead use already in fiscal year 2003, three years ahead of schedule. The aim was to reduce the volume of lead used in 1996 to one tenth by 2006. We have also stopped nearly all use of mercury and cadmium and continue working hard to achieve the industry reduction goal to discontinue all use of hexavalent chromium by January 2008.

### Reducing VOCs in Vehicle Cabins

VOCs (volatile organic compounds) include formaldehyde, toluene, and other compounds prone to volatility at room temperature. These are believed to cause nose and throat irritation. A thorough review of the components, adhesives, and other materials used in seats, door trim, floor carpets, and the like was carried out to reduce VOCs in vehicle cabins. In the Cube and Cube Cubic, both of which were put through minor model changes in 2005, cabin concentrations for the substances in question were below the guideline values set by the Ministry of Health, Labor, and Welfare. Here too, Nissan swiftly took the appropriate measures and achieved the industry’s goal in this regard well ahead of schedule. The industry target for new passenger vehicle models to comply with these guidelines is 2007.



# Production

## Environmentally friendly products from environmentally friendly plants

We strive to improve production efficiency while balancing our production systems with the needs of the environment. In the promotion of global business activities, Nissan's manufacturing division considers environmental awareness to be its cornerstone.

### The Nissan Production Philosophy

Environmentally conscious craftsmanship is the basis of the Nissan Production Way (NPW), which sees efficient production as an effective means of delivering vehicles to our customers as soon as possible while at the same time reducing environmental impacts.

When building eco-friendly vehicles, Nissan focuses on three critical objectives: "reduction of CO<sub>2</sub> emissions", "effective use of resources", and "reduction of substances with environmental impact". To this end, we collaborate closely with our global network of production bases to coordinate our business activities and ensure they are aligned with these objectives.

#### ► Managing CO<sub>2</sub> — Reducing CO<sub>2</sub> Emissions

Energy efficiency is imperative to reducing greenhouse gases, in particular the large volumes of CO<sub>2</sub> released during the automobile production process. Nissan works proactively to manage CO<sub>2</sub> emissions from our plants. In our plants, we have increased energy efficiency significantly through the introduction of numerous energy saving measures, including cogeneration systems. We are also adopting new energy sources for production such as the use of wind power at our production plant in the UK, where seven 750kW turbines will supply 7% of the electrical demand at the site. In addition, we incorporate CO<sub>2</sub> reduction into our supply chain through eco-efficient logistics such as the modal shift from road transport to ship and rail to ensure that reduction of CO<sub>2</sub> is actively incorporated into each stage of our business.

#### ► Recycling of Resources — Effective Use of Resources

Aware of the need for an effective use of the Earth's precious and finite resources, Nissan has a long history of conducting research on dismantling and recycling end-of-life vehicles. The experience gained through this research has now been linked to activities at the development stage of new vehicles. We pursue automobile production with the aim of generating little to no waste by minimizing all resources used. This process considers steps from the vehicle's design stage to the end of its service life, using joint, cross-departmental approaches. As a result of such efforts, a 100% recycling rate was achieved at the Yokohama plant for fiscal year 2004. Ongoing efforts to improve recycling rates at our production bases worldwide are set to continue.

#### ► Protecting the Air, Water, and Soil — Reducing Substances with Environmental Impact

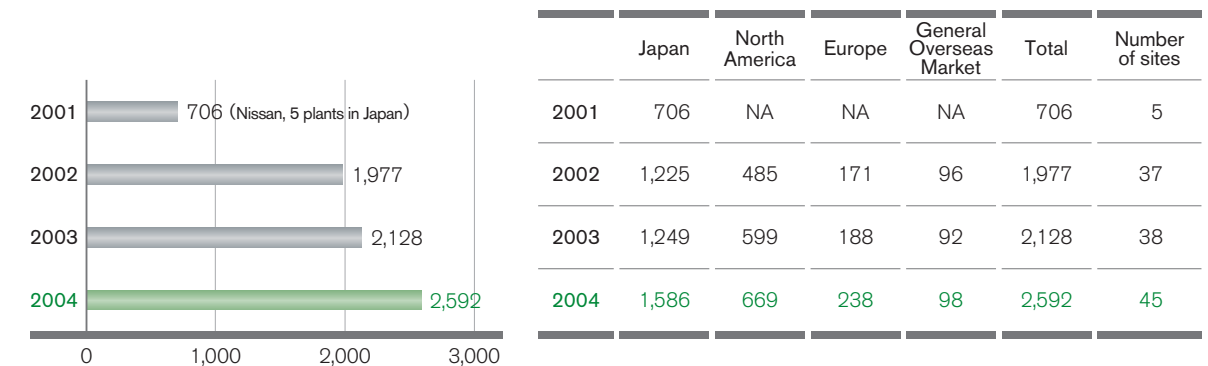
A wide range of substances known to have an impact on the environment is used in the production of automobiles. At Nissan, we work to enhance our system for managing these substances, specifically by promoting measures aimed at reducing both the volumes used and the amounts emitted. Special attention is given to volatile organic compounds (VOCs) used in the painting process, which are the substances released most during automobile production. Given the extensive effect VOCs have on the environment, we are currently promoting the use of water-based paint, which contains lower levels of VOCs. In the painting process, we have successfully reduced VOCs from 110g/m<sup>2</sup> in 1994 to 44.1g/m<sup>2</sup>.



Nissan Mexicana : Aguascalientes Plant

### Reducing CO<sub>2</sub> Emissions

#### ● CO<sub>2</sub> Emissions of Major Global Production Sites (1,000t-CO<sub>2</sub>)



\* See page 60 for the consolidated subsidiaries included

\* Because the values have been rounded off to the first decimal place, there are some cases where the aggregated amount for each item does not agree with the sum total

\* NA : No aggregate data available

A large amount of CO<sub>2</sub> is emitted during power generation using fossil fuels. Nissan promotes conservation activities at its plants that aim to make facilities and operational procedures more eco-efficient so that less energy is consumed during the production process.

#### Promoting Energy Conservation Activities

The total emissions of CO<sub>2</sub> at Nissan's global production bases during fiscal year 2004 amounted to 2.6 million tons, 0.5 million tons over the 2.1 million tons from the previous year. The increase is attributed to a proportionate increase in production and the number of sites, from 38 in 2003 to 45 in 2004.

For Nissan Motor Co., Ltd. alone, CO<sub>2</sub> emissions for fiscal year 2004 amounted to 790,000 tons (a 5.7% decrease from fiscal year 1999, down 38% from 1990). The goal for fiscal year 2005 is to cut emissions by 10% or more from the 1999 level, which was 826,000 tons.

As the volume of global automobile production increases, it is imperative that CO<sub>2</sub> emissions are lowered. As mentioned above, the goal is to cut fiscal year 2005 emissions by at least 10 percent of the 1999 level at all of our production bases. We are currently establishing global KPIs to evaluate environmental performance.





Cogeneration systems



On-site incinerator



Panel showing progress of waste reduction

#### ► NESCO: Nissan's "Energy Service Company" Initiative

In Japan, Nissan produces automobiles at five separate plants. The Nissan Energy Service Company (NESCO) was formed to achieve more efficient energy conservation at these sites. NESCO implements energy-saving methods based on the results of detailed and regular surveys.

During fiscal year 2004, NESCO initiatives focused on optimizing the supply of compressed air and steam to prevent their excess production and to save energy. At present, a considerable number of compressors are in use at all the plants. Last year, a control system was introduced that maintains optimum energy use. While meeting unit production levels, the system also coordinates compressor use to ensure flexible responses to production-line changes and other variables. We have gradually expanded the use of the control system to include all Nissan plants in Japan. At the Kyushu, Iwaki, Oppama, and Tochigi Plants, this has helped reduce CO<sub>2</sub> emissions by 910 tons per year to a total of 790,000 tons.

Nissan is also introducing a control system to streamline the supply of steam. The facility planning department provides instructions and guidance when facilities are replaced to ensure installment of more energy-efficient machines and equipment.

#### ► Introduction of Cogeneration Systems

Cogeneration is an approach that utilizes the heat produced when generating electricity. This raises energy efficiency and leads to lasting energy conservation. Nissan is actively adopting these cogeneration systems, with their rate of use increasing steadily every year.

### The Nissan Global Approach

Nissan promotes global sharing of information and energy conservation at all production bases. To bolster this cooperation for the systematic reduction of CO<sub>2</sub> emissions, we are moving toward global management of all CO<sub>2</sub> emissions.

#### ► Global Energy Benchmark Meetings

Since 2003, we have held annual meetings on implementing effective energy-conservation policies at all our global production bases. At the 2004 Global Energy Benchmark Meeting, officers from major production bases in Japan, the US, the UK, Spain, and Mexico gathered to exchange information. We discussed the status quo regarding CO<sub>2</sub> emissions and the automobile industry and examples of improvements in the energy-saving measures promoted. The information discussed at the meetings is being used to reduce the generation of CO<sub>2</sub> at our production bases.

#### ► Introducing Wind Power (UK)

Nissan Motor Manufacturing (UK) Ltd. is situated in Sunderland, in the rich natural environment of the northeast of the United Kingdom. Nissan is introducing a wind power generator as part of an initiative at the plant to make use of renewable sources. Seven 750kW turbines will be installed, which will cover 7% of the site's electricity. The project is expected to reduce CO<sub>2</sub> emissions by approximately 10,000 tons per year.

### Effective Use of Resources

Nissan promotes a dual program of resource conservation. Measures are implemented to minimize any generation of waste right from the very beginning of the production stage. This means that minimizing waste is taken into account already during the planning phase of the production process itself and coordinated with extensive resource-recycling steps, which include the systematic sorting and separation of waste throughout the recycling process.

### Promoting the "3R"\* 1 Activities

Nissan was able to achieve a recycling rate \* 2 of 99.3% in fiscal year 2004 in Japan, meaning that diligent promotion of the 3Rs reduced waste to only 0.7% of all materials used. This is the fourth consecutive year that we have met the "zero direct landfill waste" target since the 2001 launch of the standard. (Landfill for 2004 was below 16,299 tons, 1% of the 1990 amount)

Our aim of reducing the volume of waste incineration to 50% or less of the 1999 level 27,900 ton was set for 2005, but already achieved well ahead of schedule.

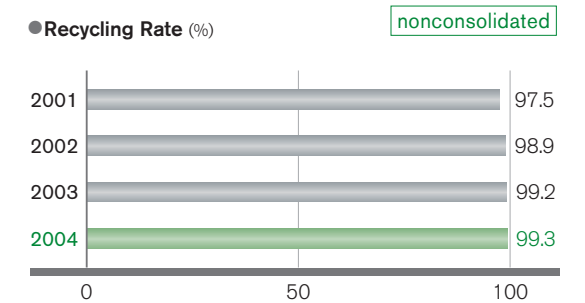
\* 1 3R: "reduce," "reuse," and "recycle".

\* 2 Recycling rate: the percentage of the total amount of waste generated that is recycled, with thermal recovery (heat used to create steam for manufacturing) included in the calculation.

#### ► Reduce – Curbing the Generation of Waste

Nissan is engaged in capital investment and a wide range of other activities to reduce the volume of waste generated during the production process. Among the innovative ideas currently implemented are use of returnable palettes, longer service life for materials, and

spraying the cutting oil in mist form to reduce the volume.



#### ► Reuse – Reusing Waste

Efforts at reusing include the collection and repeated use of protective cover for parts, which in the past was disposed of after use. The goal is to steadily expand the range of parts and materials being reused at plants throughout Japan and at overseas facilities.

#### ► Recycle – Recycling Waste

Nissan promotes effective recycling through the thorough and detailed segregating of about 100 types of waste. As a result, a 100% recycling rate was achieved at our Yokohama plant for fiscal year 2004. Our next goal is to achieve 100% recycling in fiscal year 2005 at the Kyushu and Iwaki Plants.

### The Nissan Global Approach

Laws and infrastructure are different in each country and the challenge for Nissan has been to find optimum ways to reduce waste at each of our production bases. We are redoubling our commitment to improve recycling rates globally.



Water-base paint



Proper management of chemical substances

### Reducing Substances with Environmental Impact

It is Nissan's responsibility to prevent our production processes from causing air, water, or soil pollution. We make every possible effort to prevent any negative impact on surrounding areas and local residents. To this end, we provide our employees in Japan and abroad with emergency training based on ISO14001 to limit any damage in the case of an oil discharge or related accident.

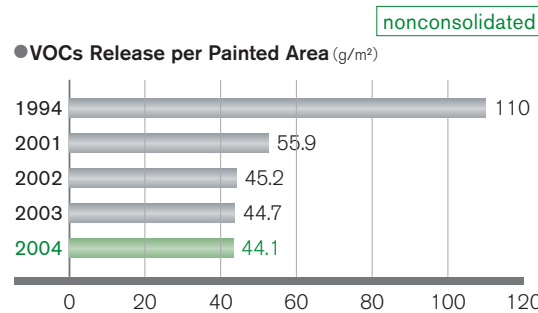
### Controls More Demanding than the Law

► Air pollution prevention

Nissan has moved fast to adopt effective measures that reduce the emission of air pollutants (NOx, SOx) from our plants. Our emissions level in Japan has been reduced to about one-fourth of the 1970 level.

At present, our challenge is to reduce the presence of volatile organic compounds (VOCs), a category that makes up 90% of all chemicals emitted during automobile production. Nissan has worked hard to comply with regulations even before they are introduced in each respective country of operation, raising our VOCs collection rates and reducing the volumes emitted outside the plants, in addition to cutting down on overall VOCs use.

To reduce VOCs volumes, Nissan is systematically converting to water-based paint (a variety characterized by low volumes of VOCs). Opportunities are also being realized to renew facilities and steadily adopt water-based painting lines. The paint line at our Tochigi plant, for example, converted to water-based painting equipment already in fiscal year 2004.



► Prevention of water pollution

Nissan is working hard to reduce and recycle the water being used in the production process by treating and purifying wastewater. At the Oppama Plant, for example, water quality sensors have been installed in the overflow outlets in the plant's wastewater treatment facility, enabling automatic shutdown of off-site wastewater drainage, in case any irregularities are detected. These kinds of proactive measures are vital in continuing our commitment to the prevention of water contamination.

► Prevention of soil and groundwater pollution

Each Nissan organizes independent studies of the chemical contents in the local soil and groundwater, as well as the chemicals that have been used at the site itself. The use of chemicals such as tetrachloroethylene, trichloroethylene and 1.1.1 trichloroethylene has been banned for use on local grounds in accordance with environmental regulation standards for VOCs at plants in Japan, North America and Europe. We are currently taking steps to implement these bans at production bases in other regions as well.

### Sound Management of Chemical Substances

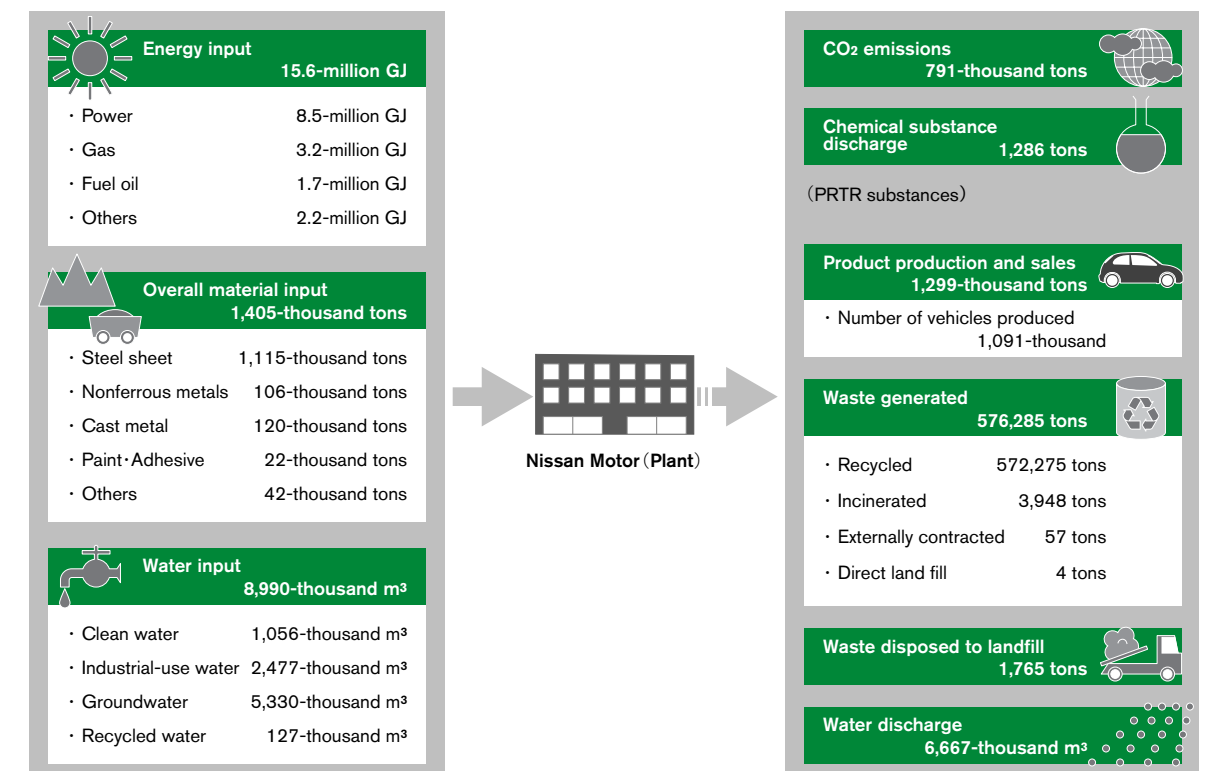
In Japan, the Pollutant Release and Transfer Register Law (PRTR) requires data reports on the release and transfer of 354 designated chemical substances. At Nissan, we register the chemical substances contained in materials intended for production processes in a tabulation system, where we list data on both the use and emission volumes of each substance. This tabulation system is linked to our purchasing management system, which enables a fully integrated approach to our environmental management. In fiscal year 2004, following implementation in Japan, the US, and the UK, Nissan also introduced the chemical substance management scheme for operations in Mexico.

### Establishing Global Management Policies

Each Nissan plant fully complies with the laws in each country of operation, while at the same time taking proactive measures to prevent environmental accidents such as oil or fuel leaks outside the plant.

Despite local differences in legislation and regulations, we believe that applying Nissan's globally integrated standards to each of the countries where we operate enables us to further improve our performance.

### 2004 Material Balance Sheet (intake and discharge of resources)





# Logistics

## Teaming up with suppliers to reduce environmental impact

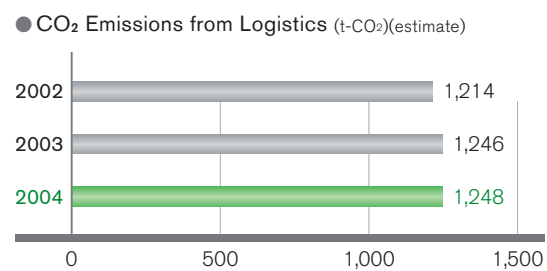
With markets and production bases around the world, reducing environmental impact in logistics is a serious matter for Nissan. We remain committed to localizing our global production and joining forces with local suppliers to reform our logistics management.

### Reducing CO<sub>2</sub> Emissions

In fiscal year 2004, total CO<sub>2</sub> emissions generated by Nissan logistics came to approximately 1.25 million tons, roughly equal to the level of the previous year. This includes CO<sub>2</sub> emissions from transporting finished cars and parts in Japan, as well as shipments between domestic and foreign ports. Nissan, the most successful among Japanese automakers at managing logistics-related CO<sub>2</sub> emissions for domestic shipments, is increasingly adopting eco-friendly methods to be applied at our overseas facilities as well.

However, with the current unit of measuring CO<sub>2</sub> emissions [t-CO<sub>2</sub> / t-km \*], it is impossible to monitor such reductions as those achieved by improving loading efficiency. Nissan is conducting research on this point to develop a unit of measurement that will facilitate more accurate monitoring in the near future.

\* From "Source Measures for Carbon Dioxide Emissions in Cargo Transport", Japan Ministry of the Environment, Central Environment Council.



### Improving Efficiency in Logistics

The cooperation of parts suppliers and logistics companies is critical in streamlining the overall logistics flow and reducing CO<sub>2</sub> emissions throughout the process. At Nissan, to promote greater efficiency in our

logistics operations, we have established a feedback mechanism for obtaining constructive input from our parts makers and cooperating logistics firms. There are two main approaches to improving efficiency. The first involves realizing higher loading ratios by increasing the volume of each load, thereby reducing the number of trips needed. The second is the promotion of transportation modes with lower CO<sub>2</sub> emissions than conventional truck transport.

#### ► Improving the loading ratio

In fiscal year 2000, Nissan became the first Japanese automaker to employ a "roundup" system of collecting required parts. This means that, in addition to the traditional dispatch system in which different suppliers deliver various individual parts required, we use chartered trucks to pick these parts up directly from the suppliers ourselves, allowing us to sometimes consolidate parts from several different suppliers into larger single loads.

This has resulted in noticeable improvements over systems that only dispatch. The over 2,500 deliveries per day, traditionally made by 10-ton trucks, have now come down to 2,200. This system has already been adopted in China as well and we plan to expand it to Thailand and other countries in the near future.

Nissan is also improving the design of its transport containers. By using for example, collapsible containers for empty return trips to minimize excess volume. We have also developed 55 different container types for more efficient loading, thereby raising the loading ratio by some 10 percent.

The use of Computer Aided Design (CAD) helps us to simulate packing types, enabling maximum loading ratios during the design stage, and eliminating the need



Modal shift to rail



Modal shift to ferry transport

for prototype parts in our studies. In April 2005, the Logistics Engineering Group was established to refine this work, and to streamline Nissan's logistics even more systematically.

We also use joint transport arrangements with other companies to achieve greater logistics efficiency. In Europe, for example, Nissan cooperates with Renault in transporting cars and parts. We worked with Renault for some time in ferry transport between the UK and the European mainland for finished cars. In January 2004, we began collaborating with other manufacturers on the same route. When manufacturers send finished cars from Europe to the UK, the ships return empty. However, Nissan, which has plants in the UK, needs to ship in the opposite direction. By aligning our common interests to avoid empty return trips, coordinating trips both to and from continental Europe, and have eliminated the unnecessary waste of transporting empty containers.

#### ► Modal shift

In Japan, Nissan has begun transporting finished cars and parts over longer distances, such as between the Kanto and the Kansai or Kyushu areas, by sea rather than by road. Currently, 51% of these shipments are made by sea. In addition, an increasing number of parts from inland suppliers are forwarded to ports by train, a mode of transportation with CO<sub>2</sub> emissions less than half that of ferries.

Rail containers were first used in place of trucks to ship parts from the Kanto region of Greater Tokyo to the plant in Kyushu, accounting for 3% of the value of total parts shipped domestically and 0.5% of total volume. This system was completed in fiscal year 2004, and is projected to cut CO<sub>2</sub> emissions by about 70% compared to transporting the same volume by truck. Our studies continue on how to best employ rail

containers between Kanto and the Kansai region of western Japan.

Vehicle orders usually increase in February and March. In 2005, we introduced the "Nissan Car Pack" for the two-month period to help deal with the higher volume. This method uses a double-stack container that carries two vehicles, one above and one below. We used the Nissan Car Pack to ship 1,000 export-bound sports cars from the Tochigi Plant to the Yokohama Honmoku Pier. In addition to steadily expanding this method, Nissan's modal shift to rail transport is also being extended to our affiliated subsidiaries. The parts supplier Calsonic Kansei Corp. has completed its transition from marine transport to rail between Atsugi and Hiroshima and has reduced its CO<sub>2</sub> emissions in fiscal year 2004 by about 16 tons per month compared to fiscal year 2003.

### Reducing Waste

Another issue in the field of logistics is waste reduction. We transport parts by placing them in containers and stacking them on pallets. However, most pallets are made out of wood, and eventually are left over as waste at our plants. Early on, for the purpose of forest preservation, we began a switch to a returnable pallets system. Since 2001, we have promoted the establishment of systems that minimize the number of pallets and improve efficiency by sharing them with Renault. This practice is now being adopted in China and other parts of Asia, and the global shift to this pallet mode is soon to be completed and applied to Nissan's international suppliers. In co-ordination with our suppliers, studies on replacing paper, vinyl and other such packing materials for several products are also currently underway.

# 4 Management

We work toward attaining the Nissan Environmental Philosophy  
"Symbiosis of people, vehicles, and nature."

In this section, we report on the environmental management system that provides  
the framework through which we pursue our environmental efforts at Nissan.





# Environmental Philosophy, Policies and Organization

## The Foundation of Nissan Environmental Protection Initiatives

Firmly anchored in Nissan's environmental philosophy of creating a "Symbiosis of people, vehicles and nature", we promote environmental protection activities on a truly global scale.

### Nissan's Environmental Philosophy and Policies

In April 2005, we launched the "NISSAN Value-Up" business plan, in which we announced our commitment to sustainable mobility by "creating value for all our stakeholders". Within this framework for action, we pledged to create more value for more stakeholders in more world markets than ever before.

Environment is a core element of sustainable mobility, which itself is a basic and essential condition for the sustained success of our business activities. We developed our vision and mission in 2002 with the goal of sharing our vision of the ideal company with all Nissan stakeholders worldwide. Our vision, "Enriching

People's Lives," demonstrates one of our long-standing corporate values, while our mission signifies the role the company should play in pursuing it. Further to this, we established guiding principles to help our employees understand how they should support our mission. Nissan works to create a corporate culture that inspires the entire company to join together in meeting common goals based on our vision, mission, and guiding principles.

Our environmental philosophy and environmental policy are based on one of our guiding principles, which is to be "customer focused and environmentally friendly". We consider it our social mission to conduct our business based on our philosophy and guiding principles to help build a sustainable and recycling-based society.

#### ● Nissan's Environmental Philosophy ●

##### Symbiosis of people, vehicles and nature

It is our view that the basis of environmental protection lies in the human capacity to show kindness and concern. Along with striving to understand the environment better, all of us at Nissan bring a shared concern for people, society, nature and the Earth to bear on our activities.

This commitment and concern are embodied in every Nissan product and throughout all of the company's operations as the driving forces of Nissan's ongoing contributions to the advancement and enrichment of society.

##### Action Policy

1. To promote creative activities
2. To advance comprehensive activities
3. To foster cooperative activities

#### ● Environmental Policy ●

Nissan is taking the initiative to promote wide-ranging activities aimed at improving the environment both globally and locally in line with the guidelines noted here. These efforts are being pursued in all areas of the company's operations, including product development, manufacturing, sales and service, in order to make Nissan's Environmental Philosophy a reality.

##### 1. Achieving a cleaner automotive society

Nissan aims to reduce the environmental impact at every stage of the vehicle life cycle, namely product development, manufacturing, use and disposal, in order to create a cleaner living environment.

Besides working to improve vehicles themselves, Nissan also contributes to the improvement of social systems involving vehicle use.

##### 2. Conserving natural resources and energy

Because the earth's natural resources and energy supplies are finite, Nissan is advancing efforts to minimize their consumption at every stage of the vehicle life cycle.

##### 3. Expanding and continuously improving Nissan's environmental management system

Nissan is implementing an in-house environmental management system that conforms to the environmental management system standard formulated by the International Organization for Standardization (ISO).

- (1) Preventing environmental issues in the first place and observing laws and regulations
- (2) Cultivating a corporate culture dedicated to environmental protection
- (3) Undertaking cooperative activities with subsidiaries and affiliates
- (4) Strengthening communications and cooperation with customers

##### 4. Issuing reports on environmental activities

Nissan regularly issues announcements and publications explaining the company's efforts to address environmental concerns.



Technical Center Environmental Committee Meeting



The audit of Nissan Green Shop Certification at a dealer

### Nissan's Global Promotion System

In 1993, Nissan established the Environment Management Committee, chaired by our Executive Vice President to develop company-wide policies and goals and to assess and confirm our progress in the area of environmental management. Environmental committees have also been launched and operated in Europe and North America. In 2003, the Environmental Management Committee was expanded globally into the Global Environmental Management Committee, chaired by our CEO. At the second meeting of this committee, in October 2004, we confirmed the status of our current environmental approach and discussed the proper direction to be pursued by Nissan in its environmental preservation initiatives and strategies. (See page 55-56 for a progress update on Nissan Green Program 2005.)

Our goals for the environmental management systems of individual divisions are formulated under the guidance of the Global Environment Management Committee, with each division promoting activities aimed at attaining its own divisional targets.

### Environmental Management Promotion System within Each Department

#### ► Product development division

We have established an environmental management system at our Technical Center headed by the executive vice president in charge of coordinating the technical development division. Nissan targets five key environmental activities — "fuel economy improvements", "exhaust emissions cleansing", "vehicle noise reduction", "environmental impact substance management and reduction", and "recycling-friendly design promotion"— all

within product development. The Technical Center promotes "optimization of manufacturing development operations", "environmental risk prevention", "promotion of resource and energy conservation" and other programs to achieve the designated goals.

One example of these is the "air-conditioner refrigerant curbs", which signify work processes that have led to improvements in air conditioning units, which reduce refrigerants. Following these positive results, this area has been removed from the target list, with system upkeep operations now being carried out in its place.

#### ► Manufacturing and logistics divisions

In 1972, within the manufacturing division, specialized environmental management organizations were established at Nissan's Head Office and at each plant to prevent any environmental issues. Presently, we maintain the "Manufacturing Environment Energy Committee," chaired by the Senior Vice President of the manufacturing division, with heads of the manufacturing management, logistics, manufacturing technology and plant divisions serving as members. We implement specific measures in each sector of Nissan business operations on the basis of the decisions made by this committee. In the logistics division, environmental representatives are assigned to lead activities to lower the impact exerted on the environment.

#### ► Sales companies and the Nissan Motor Co., Ltd. sales division

Our sales companies promote "Nissan Green Shop" activities — an on-site certification-based approach to environmental management created exclusively by Nissan. Under this scheme, our sales division acts as the Green Shop Activity Secretariat, and implements both regular inspections and renewal inspections in administering the Green Shop certification system. (See page 41 for Sales and Service.)

# Environmental Management

## For continually improving our activities



Regular confirmation is made to ensure that activities are based on ISO14001, the recognized international standard for environmental management systems, and that these are implemented and sustained in a professional way. Concerted efforts are made to ensure disclosure of information and full transparency of all related programs and activities.

### Environmental Management System Operation and Auditing

Nissan, in its mission to promote activities that reduce environmental impact, has steadily advanced efforts to obtain certification under ISO14001 (the recognized international standard for environmental management activities). All of our domestic production plants and business sites excluding the Head Office, and major overseas plants and product development processes have obtained this certification as well. Nissan has established effective environmental management systems at all production bases worldwide, as well as in product development processes. (See "Site Environment Reports" for information on each plant and business site.)

Based on the ISO14001 requirements, approaches are devised and implemented by each organization to comply with our environmental policies and targets. To ensure compliance, it is important to confirm improvements on a regular basis. For this, we conduct internal environmental audits and independent third-party audits. For the internal audits, independent environmental auditors perform "system audits" to confirm environmental management system operation status from an objective standpoint, together with "environmental performance audits" to confirm individual system effectiveness. External audits, meanwhile, are also conducted on an annual basis. In addition to this, upper-level managers at each plant and business site conduct annual reviews to verify that their respective environmental management systems are functioning properly.

### Risk Management

At Nissan, every division and workplace has devised systems that are in full compliance with all environmental laws and regulations as well as regional government ordinances and industry group guidelines. Detailed schemes have also been put into place so that we stay abreast of emerging and future trends and all recent and relevant information available. This facilitates swift and precise responses to any new developments in environmental laws and regulations. Nissan obtains this information as early as possible through its global network of local specialists in order to take prompt and appropriate action.

#### ►Local communication

Nissan places special emphasis on open and regular communication with the local residents of the communities where it has plants or business sites. This helps them to more fully understand the details of our business activities and the risk management systems we have in place. This commitment includes the scheduling of public discussions such as plant tours and "Open House" days to elaborate on the various environmental preservation activities and other specific steps that we undertake at individual business sites.

#### ►Emergency responses

We have taken proactive measures to be prepared for environmental accidents and other emergencies. These measures include steps to prevent the occurrence of such accidents as well as employee training based on emergency response manuals issued by Nissan. Parallel to this training, we keep all employees up-to-date on the processes and procedures used to report such occurrences to the proper authorities. In fiscal year 2004, based on the success of a program carried out the previous year, we conducted environmental accident response drills, simulating an oil or chemical spill at a

water treatment facility, a leak at a fueling station, and other potential emergency situations.

#### ►Environmental accidents and litigation

During fiscal year 2004, Nissan Motor Co., Ltd. experienced only one single environmental accident, an incident that occurred at our Sagamihara Parts Center. Fuel that had inadvertently leaked from the fuel tank of a delivery vehicle passed through a rain-water drainage, and was eventually released from a discharge port at the plant. Following the mishap, we immediately engaged in close teamwork with Sagamihara City and all pertinent in-house divisions were mobilized to take swift and precise measures. This prevented any direct damage anywhere outside the plant. Subsequent countermeasures that were undertaken included thorough education on environmental and on-site rules for subcontractors and all Nissan employees operating on the Center grounds. In the interest of preventing any such future recurrence, a decision was also made to regularly audit this newly revised system.

In connection with environmental litigation in 2004, at present we have a case that is being heard in the courts regarding automotive exhaust emissions.

#### ►Recalls

Nissan is determined to drastically minimize any customer inconvenience or concern of any kind. With this commitment in mind, we have launched an initiative that will enable us to promptly recall products any time the need may arise. In Japan, during the fiscal year 2004, Nissan carried out a total of four environment-related recalls. Two of these concerned exhaust emissions, one case was related to noise, while another case targeted both exhaust emissions and noise. Proper notifications of these recalls were made to the Ministry of Land, Infrastructure and Transport. We also

collaborated closely with all sales companies throughout Japan and asked them to recover and if necessary repair the equipment in question.

### Green Procurement

Nissan implements technical standards to exercise effective global control over the "environmental impact substances" contained in our products. Additionally, in Japan, we have specified "Nissan Green Procurement Standards", and issued the following three directives to all parts supplier companies.

#### ►Environmental impact substance data reports

Nissan requires that all suppliers submit data on substances found to impact the environment. For parts and materials (oils, paints, chemicals, etc.), this data is used to confirm that no substances banned under Nissan standards are being used. This also enables us to identify already at the development stage itself any materials that require caution, and develop the appropriate alternative technologies at an early stage in the manufacturing process.

#### ►Environmental management system establishment

Nissan had requested its suppliers to establish environmental management systems by March 2003, and work voluntarily to obtain ISO14001 certification by March 2005. We can report today that all suppliers have complied with the first request and that 95% of our suppliers have gained certification either under ISO14001 or the Japanese Eco Action 21 as of March 2005. Nissan will continue to encourage concerted efforts by its suppliers to further improve their environmental management systems.





Communication with stakeholders at Readers' Meeting for the Sustainability and Environmental Reports

#### ► Environmental representative identification

We have asked our suppliers to specify who their environmental representatives are in order to ensure smooth and reliable information about our environmental conservation measures, the impact of our products, and any other relevant environmental data.

### Environmental Education

Nissan conducts environmental education programs for all our employees, including lectures for employees who are new to the company. In addition to these lectures, a series of training courses based on ISO14001 is held for all employees at each facility. This is based on our conviction that a good understanding on their part, combined with our own comprehensive approach to employee training, is one of the most effective means of ensuring environmental awareness and safety. To support each employee's individual learning needs, we offer the courses on an ongoing basis and tailor the content as much as possible.

In fiscal year 2004, all our nearly 540 new workers received environmental education training as part of their orientation program. New section managers receive further training in order to take the lead in the conservation activities already under way.

Nissan also conducts awareness-raising programs that target middle level management in which they hold in-depth discussions with environmental experts such as university professors, critics and business people from other companies. Environmental seminars for top management personnel from our technical development division are also to be found among other unique Nissan curriculum offerings.

[Environmental Activities](#) > [Environmental Management](#) > [Environmental Education](#)

[Environmental Activities](#) > [Environmental Management](#) > [Environmental Communication](#)

We have included "Environmental Series" pages in our internal bulletin, which we use to provide environmental information on a regular basis to all employees and family members of Nissan and its affiliates, including retired employees.

Building on Nissan's environmental education activities in Japan and other countries where we operate, we are currently planning an environmental education system under the name "Global Nissan".

### Environmental Communication

Nissan actively promotes open and regular communication with all our stakeholders. These efforts include environmental reports, pamphlets, websites, vehicle exhibitions and test-drive events, and direct communication via our Customer Support Center. We also have an exclusive e-mail address for environmental matters, where our specialists respond to questions and comments regarding environmental matters.

#### ► Environmental information disclosure and communication tools

Since 1998, Nissan has published the annual "Environmental Report" as a summary of its environmental vision and achievements. A summarized "Digest Edition" communicates the report's key points for easier reading. The Nissan "Environmental Report 2004" was honored with the "Excellent Environmental Report Award" at the Eighth Environmental Communication Awards, sponsored by the Global Environmental Forum. At the same awards ceremony, our Sustainability Report 2004 received the "Excellent Sustainability Report Award".

For general users, we offer model-specific environmental information in our complete vehicle model catalogue, and we have "Technical Notes" for those interested in learning the details of Nissan's environmental technologies. Site reports with environmental data for each plant and business site are supplied to the local residents. The "Green Cycle Newsletter" is an additional environmental information magazine designed for our sales companies. With these and other publications, Nissan has developed an impressive range of communication tools tailored to the needs of all concerned.

The environmental facility tour, established as one of the Oppama Plant's tour routes, and eco-related photo panel displays in the guest halls of our production plants help to deepen the public's understanding of Nissan's environmental commitment.

#### ► Environmental report workshop

In February 2005, Nissan held the "Readers' Meeting for the Sustainability and Environmental Reports". Some 40 citizens, representatives of suppliers, sales companies and consumer advisors were joined by 22 Nissan personnel for an exchange of views. Using a group discussion format, the participants made constructive suggestions that improved the report and led to concrete changes such as our decision to increase our environmental communication via the Internet. Some of the other issues probed included the most appropriate formats for disclosing information about corporate sustainability and the environment.

Regarding the Environmental Report, positive comments received included, "There is a narrative quality that makes the text easy to read", and, "The themes are clearly stated, providing a ready understanding of Nissan's thinking in this area". Among the more critical

remarks were, "It is difficult to perceive the linkage between the Sustainability Report and Environmental Report", "The length of the text and contents made it difficult to get through", and "There is too little data". We have made a sincere effort to consider this valuable and constructive feedback in preparing this report.

Nissan will continue to host such workshop-format meetings in the future as well. Our goal is to attract an even greater number of stakeholders in the discussions to improve the quality of our reports and our broader environmental information disclosure.

#### ► Law and regulation explanatory session

In February 2005, a meeting was held at the Nissan Technical Center in Atsugi and at our Head Office in Tokyo. To share information on employee motivation, social trends and the latest environmental and safety regulations in markets of key importance to the Nissan including Japan, the EU, the US, Canada, Southeast Asia, the Middle East and Latin America.

### Environmental Accounting

Nissan introduced the practice of environmental accounting in 1998, and continues to promote environment-related research and development. The calculation is based mainly on the guidelines of the Ministry of the Environment's "Environmental Accounting Guidebook". The total cost of Nissan's environmental conservation during fiscal year 2004 was 142.8 billion yen (8.4 billion yen over FY2003). The bulk of the cost, 134.8 billion yen (up 13.9 billion yen from FY2003), was accounted for research and development spending. One reason for this increase was the rising development cost of fuel cell vehicle (FCV) fuel stacks and other technical innovations.

# Nissan Green Program 2005 Progress and Results

To realize Nissan's philosophy of "Symbiosis of People, Vehicles, and Nature," we are promoting the Nissan Green Program throughout the entire company. We continue to move forward with actions to meet our 2005 goals as outlined in our mid-term environmental action plan, the Nissan Green Program 2005.



Models achieved 95% recoverability rate



## Nissan Green Program 2005: FY2004 Environmental Action Plan Progress and Results

Area	Item	Objectives and Activities up to 2005
Product Development	Improvement of fuel economy (curbing global warming)	Early attainment of Japanese 2010 fuel economy standards for gasoline vehicles and 2005 standards for diesel vehicles [Objective] Attainment of the new standards by 2005 target date
	Reduction of exhaust emissions	Gasoline vehicles: Steady expansion of Nissan's ultra-low emission vehicle (U-LEV) lineup, starting with the 2000 launch of the Bluebird Sylphy [Objective] Achieve U-LEV certification for more than 80% of all Nissan passenger cars sold in Japan by end of March 2003 Diesel vehicles: early release of vehicles complying with the latest exhaust emission regulations
	Development of clean-energy vehicles (CEVs)	Fuel cell vehicles (FCVs) · Projecting the year 2005 as our technical development goal for practical use · Participation in domestic testing program for FCVs under the auspices of the Japanese government in 2002 Other CEVs · Research, development, and market introduction of electric vehicles (EVs), compressed natural gas vehicles
	Promotion of design for recycling and management/ Reduction of environmentally impacting substances	Advancing the recycling of new models Attainment of a recoverability rate of 95% or higher* by weight for new models by 2005 (*based on Nissan's in-house calculation standards) Reduction of environmentally impacting substances Banning the use of mercury and cadmium with some partial exceptions Reducing the use of lead (to be largely phased out by the end of 2002) and hexavalent chromium (to be reduced to one-half of 1996 levels by 2005)
	Reduction of vehicle noise	Compliance by all models with voluntary standards for vehicle noise that are stricter than regulatory noise limits
	Control of air-conditioner refrigerant emissions	Attainment of Nissan's voluntary targets for reduced use of the HFC-143a refrigerant
Production	Promotion of energy savings (curbing global warming)	Reduction of total CO <sub>2</sub> emissions by more than 10% from FY1999 levels by FY2005 Reduce total CO <sub>2</sub> emissions by 10% or more from FY1999 levels by FY2005 (approx. 42% compared to 1990)
	Reduction of waste and promotion of recycling	All plants eliminated direct landfill disposal of waste by FY2001 Reduction of amount of waste incinerated by more than 50% from FY1999 levels by FY2005 (All plants initiated a zero emission program during FY2001)
	Improved management of chemical substances	Installation in FY2002 of a model paint line that reduces volatile organic compounds (VOCs) emissions to 20 g/m <sup>2</sup> and promotion of efforts to reduce substances subject to the Pollution Release and Transfer Register (PRTR) system
	Environmental protection in logistics operations	Reduction of total CO <sub>2</sub> emissions by more than 10% from FY1999 levels by FY2005
Sales and Service	Environmental management at dealers	Thorough the Nissan Green Shop Dealer Certification System, implementation and improvement of environmental management · Establish system of implementation of appropriate treatment of end of life vehicles (ELVs) at domestic dealers · Improvement of dealers' ability to cope with coming Japan's Automobile Recycling Law (execution of responsibility for taking back ELVs)
Recycling	Appropriate treatment and recycling of ELVs	Development and deployment of technology to promote recycling and new scrapping disposal techniques. · Design for recycling · Continued expansion of the Nissan Green Parts program
Environmental Management	Environmental management system (EMS)	Implementation, operation, and improvement of EMS in line with ISO 14001 (ongoing) Construction of a global EMS encompassing major consolidated subsidiaries Prevention of environmental issues and improvement of risk management
	Environmental communications	Publication of an annual environmental report and improvement of content Continued release of environmental communications whenever appropriate Participation in and organization of environment-related lectures and exhibitions Issuing and improvement of environmental communications to local communities
	Green procurement	Thorough management of environmentally impacting substances and requests to suppliers to acquire ISO 14001 certification by March 2005
	Employee education and training	Continued implementation and improvement of Nissan's employee education system and regular educational efforts through in-house publications and other activities
	Environmental protection in Nissan offices (Green Office Program)	Reduction of paper consumption, reuse of resources, and promotion of energy savings Examining and promoting ways of reducing emissions from company-owned vehicles

## Major Results in FY2004

Achieved FY2010 gasoline passenger vehicle fuel economy standard for four of the target weight classes and for all target weight classes for gasoline trucks Achieved FY2005 diesel vehicle fuel economy standard in all target weight classes
The goals mentioned on the left, established in NGP2005, have already been attained 1. For U-LEV, certification was expanded to more than 90% of all Nissan gasoline engine passenger cars sold in Japan (April 2005) 2. For diesel vehicles, the transition was completed to new Japanese domestic regulations, while also introducing models certified as "ultra-low PM emissions diesel vehicles." The goal was further raised in the current year, setting the new target of SU-LEV certification for 80% of all gasoline passenger cars in Japan by March 2006. Efforts are currently being advanced to achieve that goal
Began lease of "X-TRAIL FCV" 2003 model to Kanagawa Prefecture, Yokohama City and Cosmo Oil Company Announced in-house developed fuel cell stack and 70Mpa high-pressure hydrogen storage system Completed market launch of the Caravan CNG (compressed natural gas) vehicle
Models for which 95% recoverability was attained: March, Cube, Cube Cubic, Lafesta, Note Materials banned for use: Mercury, cadmium (some exceptions) Materials for which use was reduce: Lead: Reduced to 1/10 (or less) of 1996 levels for all new models Hexavalent chromium: Cuts being promoted to achieve goal
Achieved voluntary standards for all models
Achieved voluntary standards for 26 models
Reduced total CO <sub>2</sub> emissions by 5.7% from FY1999 (2004 emissions = 38% reduction vs. FY1990) Projected to achieve goal in FY2005 while absorbing increase caused by production increase through energy conservation investment
Zero waste directly to landfill achieved in FY2001 Waste incineration volumes reduced by 85% from 1999 levels
Completed installation of model paint line at Kyushu Plant in FY2002. Promoting move to water-based paints at other plant paint lines as well
CO <sub>2</sub> emission levels reduced by 12% from 1999 levels
Audits completed for all (209) dealers in Japan (among which 194 were re-certification audits)
Automobile Recycling Law enacted from January 1, 2005, commencing recovery and treatment of CFCs/HFCs, airbags, Automotive Shredder Residue FY2005 Nissan Green Parts sales: Approx. ¥1.5 billion
Operation and continuous improvement of ISO 14001 at all production facilities Reexamination of facilities improvements, maintenance, management enhancements
Published Environmental Report 2004 Held readers workshop on Sustainability Report and Environmental Report Participation in many FCV exhibitions and test-ride events Response to related environmental questionnaires, data collection
Finished investigating six new vehicle models 95% of suppliers ISO 14001 certified
Implementation of in-house educational curriculum Ongoing education through in-house publication (Nissan News)
Introduction of low-emission vehicles for use as company cars



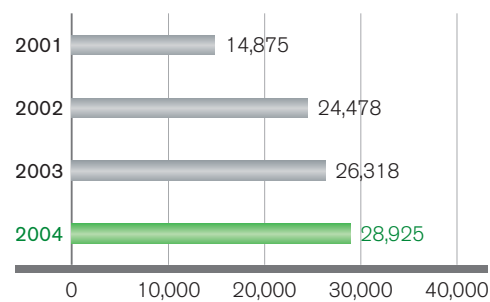
# Environmental Data: Business Activities

Here we report on the environmental impact of Nissan's business activities, including data from our consolidated subsidiaries across the globe. Since fiscal year 2003, we began in earnest to manage and understand the whole picture of our global environmental impact, including consolidated subsidiaries. Shown on page 60 are the consolidated subsidiaries we have been able to include in fiscal year 2004.

\* Graphs or charts that only include Nissan Motor Co., Ltd. data as so marked in the upper right corner "nonconsolidated".  
 \* Because the values have been rounded off to the first decimal place, there are some cases where the aggregated amount for each item does not agree with the sum total  
 \* NA : No aggregate data available

## Resource Input

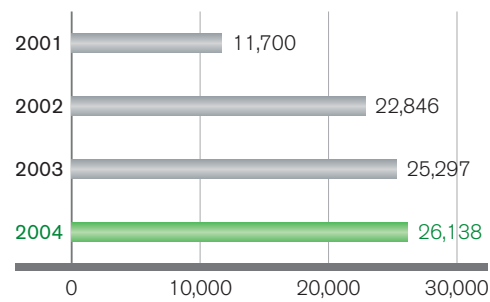
### ● Energy Input (1,000GJ)



	Japan	North America	Europe	General Overseas Market	Total
2001	14,875	NA	NA	NA	14,875
2002	16,205	5,273	2,241	759	24,478
2003	16,824	6,372	2,474	648	26,318
2004	18,092	7,318	3,052	463	28,925

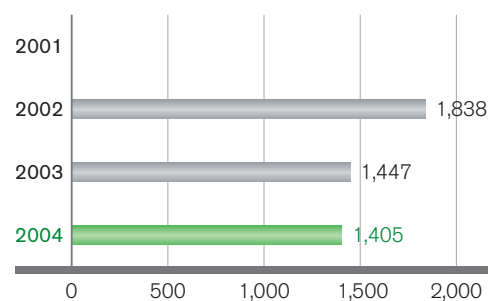
(See page 59 for Energy Input Breakdown.)

### ● Water Input (1,000m³)



	Japan	North America	Europe	General Overseas Market	Total
2001	11,700	NA	NA	NA	11,700
2002	17,409	3,083	1,028	1,326	22,846
2003	17,322	3,797	1,256	2,922	25,297
2004	17,400	4,532	2,702	1,505	26,138

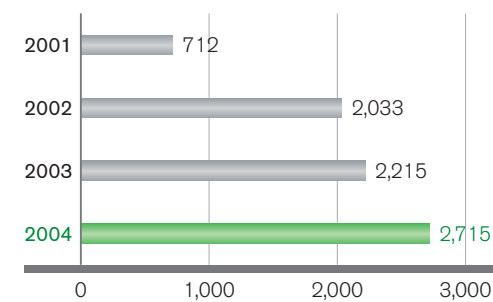
### ● Overall Material Input (1,000t)



	Japan	North America	Europe	General Overseas Market	Total
2001	NA	NA	NA	NA	NA
2002	1,838	NA	NA	NA	1,838
2003	1,447	NA	NA	NA	1,447
2004	1,405	NA	NA	NA	1,405

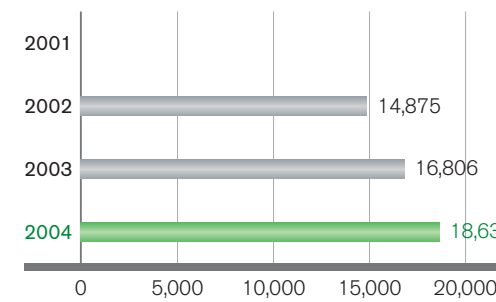
## Emissions

### ● CO<sub>2</sub> Emissions (1,000t-CO<sub>2</sub>)



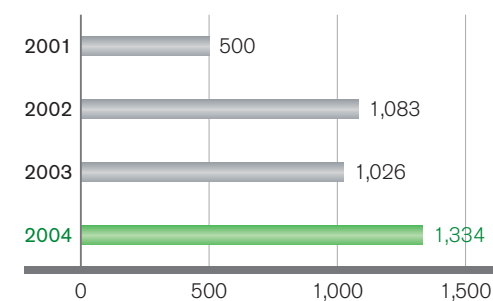
	Japan	North America	Europe	General Overseas Market	Total
2001	712	NA	NA	NA	712
2002	1,281	485	171	96	2,033
2003	1,306	617	200	92	2,215
2004	1,639	735	249	74	2,715

### ● Water Discharge (1,000m³)



	Japan	North America	Europe	General Overseas Market	Total
2001	NA	NA	NA	NA	NA
2002	11,642	1,871	591	771	14,875
2003	11,738	2,355	790	1,923	16,806
2004	12,991	2,791	2,368	482	18,632

### ● Waste Generated (1,000t)



	Japan	North America	Europe	General Overseas Market	Total
2001	500	NA	NA	NA	500
2002	759	242	67	15	1,083
2003	744	182	86	14	1,026
2004	779	294	148	113	1,334

## Scope of the Report

● Period Covered: April 2004 - March 2005 (including some part from before and after this time period)

● Target Companies: Nissan Motor Co., Ltd. and its consolidated subsidiaries (including a portion of unaffiliated companies and dealers)

● Data included for Nissan Motor Co., Ltd., 22 consolidated subsidiaries, 1 affiliated company

\*We are extending the coverage starting from the production bases of 200 consolidated subsidiaries.

Region	Company	Function
Japan	Nissan Motor Co., Ltd.	Headquarters
	Oppama Plant	Production
	Tochigi Plant	Production
	Kyushu Plant	Production
	Yokohama Plant	Production
	Iwaki Plant	Production
	Zama Operations Center	Production
	Sagamihara Parts Center	Production
	Honmoku Wharf	Production
	Technical Center	R&D
	Research Center	R&D
	Powertrain Engineering Division	R&D
	Corporate Quality Assurance and Customer Service Division	Other
	Nissan Service Development Center	Other
	Nissan Business College	Other
	Nissan Institute of Mechanic and Business	Other
	Nissan Global Information System Center	Other
	Nissan Kohki Co., Ltd.	Production
	Calsonic Kansei Corporation	Production
	Aichi Machine Industry Co., Ltd.	Production
	Nissan Shatai Co., Ltd.	Production
	JATCO Ltd.	Production
North America	Nissan North America, Inc.	Regional Headquarters
	Smyrna	Production
	Decherd	Production
	Canton	Production
	Nissan Technical Center North America, Inc.	R&D
	Nissan Mexicana, S.A. de C.V.	Regional Company
	Aguascalientes	Production
	Cuernavaca	Production
	Lerma	Production
	Europe	Nissan Europe S.A.S. (France)
Nissan Motor Manufacturing (UK) Ltd.		Production
Nissan Motor Iberica, S.A.		Production
Zona Franca		Production
Cuatro Vientos		Production
Montcada		Production
Cantabria		Production
Avila		Production
Nissan Technical Centere Europe, Ltd.		R&D
Nissan Technical Centere Europe (Spain), S.A.		R&D
Nissan Motor (GB) Ltd.		Sales
Nissan France S.A.		Sales
Nissan Italia S.p.A.	Sales	
Nissan Motor Espana S.A.	Sales	
Reicomsa, S.A.	Sales	
Nissan Motor Parts Espana, S.A.	Sales	
Aprite (Gb) Ltd.	Sales	
General Overseas Market	Nissan South Africa (Pty) Ltd.	Production
	Siam Nissan Automobile Co., Ltd.	Production/Sales
	Zhengzhou Nissan Automobile Co., Ltd.	Production

### ● Energy Input Breakdown (1,000GJ)

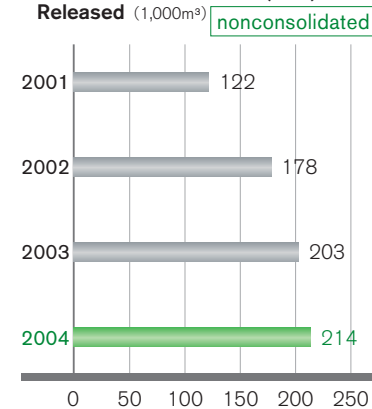
	Gasoline	Kerosene	Diesel fuel	Heavy oil	Electricity *	LPG	Natural gas	Hydrogen rich-gas	Coke
Japan	281	1,615	89	1,903	7,095	1,411	4,926	0	772
North America	0	0	1	0	3,595	140	2,989	0	593
Europe	0	0	0	3	1,398	0	1,375	0	276
General Overseas Market	0	0	0	0	183	2	0	125	154
Total	281	1,615	90	1,907	12,271	1,553	9,290	125	1,794

\* Used conversion factor 3.6 (MJ/kWh)

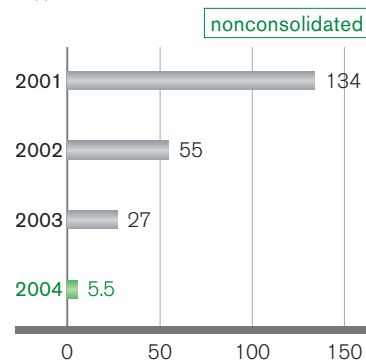
### ● Water Input Breakdown (1,000m³)

	Water supply	Industrial use water	Underground water	Recycled water
Japan	2,553	7,223	7,367	239
North America	1,350	2,601	581	0
Europe	504	640	6	1,525
General Overseas Market	344	992	169	0
Total	4,751	11,456	8,123	1,764

### ● Volume of Sulfur Oxide (SOx) Released (1,000m³)

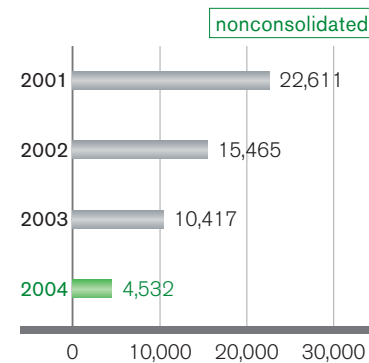


### ● Waste Disposed Directly to Landfill\* (t)

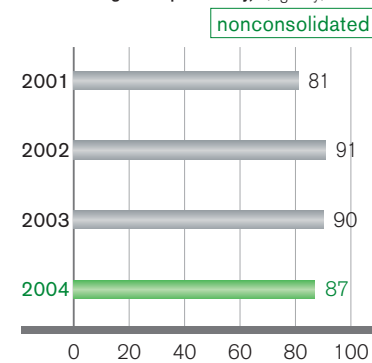


\* Shows the volume of waste that goes directly into landfills from plants and business offices.

### ● Volume of Incinerated Waste at Nissan (t)

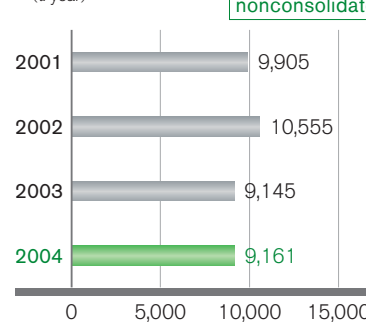


### ● COD\* in Discharged Water (for volume-regulated plants only) (kg/day)



\* Chemical oxygen demand

### ● Amount Handled of PRTR\* Substances (t/year)



\* PRTR: Pollutant Release and Transfer Register

	Amount handled	Air	Water	Waste	Buried by Nissan	Recycled	Chemically changed	Product
2001	9,905	2,024	4	20	6	2,021	1,121	4,709
2002	10,555	2,146	5	18	12	2,440	1,397	4,538
2003	9,145	1,869	2	15	12	2,204	1,278	3,765
2004	9,161	2,158	2	18	10	2,322	1,332	3,319



## Our Efforts to Improve Our Report

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In environmental communication, ensuring the credibility of the information involved is an essential requirement. In order to actually achieve such reliability, the two primary demands include verifying the materiality of the contents, and the credibility of the data.

The first requirement, verifying the materiality of the contents, means checking whether the issues covered in the report are really important to both Nissan and its stakeholders. In our judgment, however, no truly competent scheme for this verification has been established as yet. In view of this, the method adopted at Nissan is to establish a process to gather opinions directly from experts and stakeholders, utilizing such input to achieve the appropriate information disclosure.

SustainAbility, a UK think tank and consultancy, is well known for its excellent work in evaluating corporate reports on sustainability and environmental issues. In assessing the Nissan Environmental Report 2004, SustainAbility indicated that our selection of three key environmental issues gave real focus and coherence to the report. Among suggested points of improvement, meanwhile, it pointed out the need to provide mention of the approaches being taken to achieve sustainable mobility, as well as to provide more extensive information on management activities relating to future objectives and issues across the economic, social and environmental impacts of our business.

From Japanese experts, meanwhile, the report earned recognition for its willingness to clarify key internal themes and the thinking applied to them, and steps taken to enhance understanding of the contents. On the improvement front, remarks included the need to better explain and analyze performance data.

Since 2003, an "Environmental Report workshop" has been convened annually. These sessions bring together Nissan customers, shareholders, suppliers and dealers, along with NPO representatives, students and other stakeholders to share valuable opinions on how best to improve our overseas activities, the quality of communication with dealers and customers, and other essential improvements.

Based on these indications, we have devoted special attention in this latest report to spelling out the Nissan thinking on issues that will help realize the goal of sustainable mobility, while adding pertinent commentary on the performance data disclosed. With regard to future objectives, we are in the process of preparing new Nissan targets to be reported in the next report.

The second aspect of maintaining information credibility (verification of the data itself) refers primarily to the process of sustaining accuracy in the process of measuring and computing environmental data. From 2005, Nissan is moving to enlist the cooperation of an outside professional organization in working to further enhance our scheme of measuring and computing environmental data. Also under study in this area is the proposed introduction of "third-party data verification."

**Thank you for reading  
Nissan's Environmental Report 2005.  
We would like to hear from you.**

We hope to receive opinions and comments from our readers with the aim of continuous improvement and to reexamine the content of future reports. Therefore, we would appreciate if you could please fill out and send us the questionnaire on the reverse with your honest opinions and comments.

**Nissan Motor Co., Ltd.  
Environmental and Safety Engineering Department**

17-1, Ginza 6-chome, Chuo-ku  
Tokyo 104-8023, Japan

**FAX +81(0)3-3546-3266**

**<Regarding the Use of Personal Information>**

We will not use the personal information provided for any purpose other than to send the Environmental Report.

We will disclose the results of any statistical analysis performed, but not in any way that will reveal the identity of respondents to our questionnaire.





Please provide us with your opinions and comments.

**FAX+81(0)3-3546-3266**

Nissan Motor Co., Ltd.  
Environmental and Safety  
Engineering Department

## Environmental Report 2005 Questionnaire

What is your general impression of the Nissan 2005 Environmental Report?

**Q1**

Good		Average		Poor
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please evaluate the following areas of the report:

● How good is your understanding of Nissan's position and awareness regarding global environmental problems?

Good		Average		Poor
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

● Do you feel the information that Nissan reports is all-encompassing?

Agree		Average		Disagree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

If you disagree, what additional information should we be reporting?

**Q2**

● Did you refer related information within this report or our website?

Referred		Partly		Not referred
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please let us know if you have any other opinions or suggestions.

Which of the following sections did you find interesting?

- CEO Statement
- 1 Global Features
  - Japan
  - Spain
  - Mexico
- 2 Nissan's Perspective
  - Global Environmental Issues
- 3 Nissan's Challenges
  - Product and Technology Development
  - Production
  - Logistics
  - Sales and Service
  - Recycling End of Life Vehicles (ELV)
- 4 Management
  - Environmental Philosophy, Policies, and Organization
  - Environmental Management
  - Nissan Green Program 2005
- Environmental Data: Business Activities
- Scope of the Report

**Q3**

From which standpoint did you read this report?

- Customer
- Shareholder or financial institution
- Resident of community where Nissan plant or office is located
- NPO or NGO
- Governmental institution
- Media
- Research institution
- Educational institution
- CSR or environmental representative from another company or organization
- Nissan business partner
- Nissan or Nissan Group employee or family member
- Other( )

**Q4**

(Optional) Please provide the following information:

Name :	
Address :	
Occupation ( Place of Employment, School Name, etc.) :	
Sex : Male   Female	TEL :
Age :	E-mail :

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**Thank you for your cooperation.**