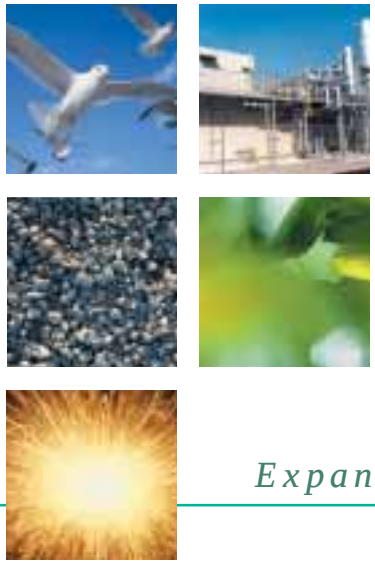
DENSO

DENSO CORPORATION
Environmental Report 2001

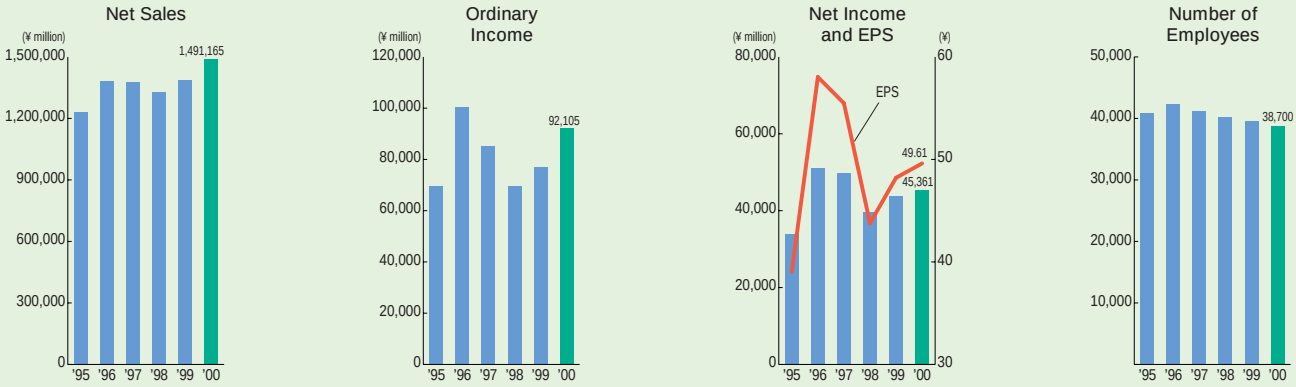


Expanding the Horizons of Responsibility

Corporate Profile/Editorial Policies/Contents

Corporate Name: DENSO CORPORATION
Date of Establishment: December 16, 1949
Capitalization: ¥173.0 billion

Primary Businesses: Power train devices, electrical device, electronic devices, heating devices, motors, communications devices, industrial devices
Group: Subsidiaries—58 domestic companies, 84 overseas companies
Affiliates—13 domestic companies, 9 overseas companies



Editorial Policies

● Period Covered

This environmental report was created based upon results achieved by DENSO CORPORATION for fiscal 2000. (Fiscal 2000 covers the period from April 1, 2000 to March 31, 2001. This report also includes some results from April 1, 2001 and later, as well as predictions for the future.)

● Reference Guidelines

This environmental report employs the Environmental Reporting Guidelines issued by the Ministry of the Environment in February 2000 and incorporates some of the ideas expressed in the Sustainability Reporting Guidelines prepared by the Global Reporting Initiative (GRI). Every effort has been made to make the information contained in this report as useful as possible, but not all of the activities of all DENSO Group companies are covered. In the future, we will continue to expand the scope of this report and work to make the information presented even more useful. Additionally, in adopting the sustainable reporting perspective, we have reported some of the social and economic aspects of our environmental protection activities. Taking a positive approach, we will consider how to address these kinds of issues in our future activities.

● Classifications and Focal Points

The structure of this environmental report is based on the action plan items described in DENSO EcoVision 2005, which DENSO created in June 2000. DENSO EcoVision 2005 embodies the DENSO Group's environmental management policies and environmental action plan. It is, therefore, suggested that readers compare the contents of this report to those of the DENSO EcoVision 2005 document.

We focused on providing ordinary readers with easy-to-understand explanations of the special characteristics of the automobile components manufacturing industry as well as the special characteristics of the environmental considerations being made in business activities that accompany the manufacture of automobile components. Accordingly, we have developed separate pages to explain the relationships between our businesses and the environment as well as product development and design.

● Next Scheduled Issuance Date

August 2002

● Additions and Improvements Included in the *DENSO CORPORATION Environmental Report 2001*

1. ASMO Co., Ltd. added to the scope of the report
2. Environmental impact input and output data for the DENSO Group added—P14–15, 26
3. Easy-to-understand explanation of the environmental impact of DENSO businesses—P2–5
4. Enhanced environmental accounting information (including deemed effects and segment accounting information)—P12–13
5. Explanation of development and design initiatives in terms of their relationships to product EMS—P16–25
6. Addition of initiatives concerning soil and groundwater pollution—P31
7. Inclusion of social contributions (for the 2000 report this was limited to social contributions related to the environment) and occupational safety activities—P36–38

● How to Obtain Information on DENSO CORPORATION and Its Business Performance

For an overview of DENSO CORPORATION business and financial information, please refer to the *Corporate Guide* or the Company's homepage.

Please direct inquiries to: DENSO CORPORATION Corporate Communications Department
URL: http://www.globaldenso.com/
e-mail: kouho@she.denso.co.jp

● Companies Covered by This Report

DENSO CORPORATION, ASMO Co., Ltd.

Contents

A Message from the President

Japan's population of about 127 million now owns approximately 73 million automobiles. Numbers like these show how indispensable automobiles have become to our day-to-day lives. The situation in Europe and America is quite similar, with conditions in the latter especially well-known. DENSO CORPORATION, through the supply of numerous functional parts used in automobiles, is supporting this automobile society not only in the domestic arena but also globally.

With global environmental protection, however, now an issue of concern to people throughout the world, improvements are being demanded to control both the amount of resources consumed by automobiles and their impact on the environment. Ongoing efforts are required to make progress in a variety of areas: the performance and construction of automobile parts and the materials used to make them, fuel efficiency and exhaust gas purification, and- with the disposal of some 5 million a year in Japan alone- the recycling of automobiles that are no longer needed. As one of the world's largest automobile parts manufacturers, we bear a particular responsibility to use products and technology backed by solid results in order to make significant contributions to reducing the environmental impact of automobiles. By providing ITS (Intelligent Traffic System)-related products born of its own in-house electronics technology, DENSO can be expected to continue leading the way in solving the environmental problems of the automobile society.

For companies like ours, it goes unsaid that the promotion of environmental protection activities is a responsibility that we bear as a corporate citizen. Now, however, these activities have become necessary to the very growth of the company. It is not an exaggeration to say that environmental ratings are becoming a normal practice in Europe and America, and ecofunds, which include consideration of the environment among the yardsticks they use for making investment decisions, now comprise an enormous market. We are at the beginning of an age in which a company's environmental activities sway the decisions of investors and other stakeholders, and DENSO, which pursues business activities throughout the world, is already being subjected to such evaluations. One could say that as we enter the 21st century and adopt consolidated management practices based on new accounting standards, the age of environmental management has also begun in earnest.

In June 2000, DENSO completely revised its Environmental Charter and Environmental Action Plan and created DENSO EcoVision 2005 in the process. The goal of DENSO EcoVision 2005 is to create a solid environmental management foundation for the DENSO Group by strengthening environmental management in a way that is compatible with consolidated management, creating systems for the production of world-leading products in an environmentally friendly manner, and enhancing information disclosure to include measures that strengthen cooperation with outside parties and incorporate environmental accounting. Toward that end, we have established specific targets for reducing the environmental impact of our business activities and are working day by day to achieve them. We at DENSO are proud to say that this kind of activity is just one manifestation of the kind of bold actions in anticipation of change that our company was founded to undertake, and we are confident that these actions will contribute to the prosperity and happiness of every member of the automobile society.

It is with that thought that we issue the *DENSO CORPORATION Environmental Report 2001,* which, as the third such report, focuses on DENSO's environmental activities for fiscal 2000. We are pleased to have you review the progress we have made in pursuing DENSO EcoVision 2005, the details of our environmental protection philosophy and activities, and the results we have achieved. And, with an eye toward improvement, we welcome your candid opinions.

Hiromu Okabe

Hiromu Okabe, President

1 DENSO's Approach

DENSO Group Businesses

Management Principles

Specific Business

DENSO's Fundamental Principles

"Treat nature with great care and exist in harmony with society." Regarding this fundamental principle as one of our management policies, DENSO promotes business activities that take full consideration of the environment as it strives to be a company that has earned the trust and understanding of society. "Satisfy customers with attractive products." In line with this additional management policy, we work to give our customers what they want by providing them with products that excel not only in terms of quality, functionality, and cost performance but also the degree to which they incorporate environmental considerations.

The DENSO Philosophy

Mission

Contributing to a better world by creating value together with a vision for the future

Management Principles

1. Customer satisfaction through quality products and services
2. Global growth through anticipation of change
3. Environmental preservation and harmony with society
4. Corporate vitality and respect for individuality

Individual Spirit

1. To be creative in thought and steady in action
2. To be cooperative and pioneering
3. To be trustworthy by improving ourselves

DENSO Vision 2005

In 1997, we formulated DENSO's long-term management policies. DENSO VISION 2005, which is based on DENSO's Fundamental Principles and functions as a compass setting the direction for all of our employees' activities, describes the kind of company that DENSO should be at the beginning of the 21st century. Based on the bold actions in anticipation of change DENSO was founded to undertake, we will open the door to possibilities. In other words, by bringing to life dreams that were thought impossible, we aim to fulfill our mission of contributing to the happiness of humankind through the creation of value.

Production of World-Leading Products

DENSO is currently the world's fourth leading automobile parts manufacturer in terms of sales- only Delphi, Visteon, and Bosch have

DENSO VISION 2005
Opening the Door to Possibilities

First, DENSO will open the door to possibilities for society.

In the coming new century, major problems, such as food and energy price increases and global environmental deterioration, are likely to surface. We will take actions in society that respond to these problems. Specifically, we can realize a better environment by reducing exhaust gas emissions and improving energy efficiency. As well, we can encourage enriched interaction between people by various means, including automobiles and information and telecommunication systems. DENSO seeks to become a company that realizes a better environment and enriched interaction of people to help solve global problems.

Second, DENSO will open the door to possibilities for customers.

DENSO wishes to become a company that truly serves and pleases its customers, offering new value to help them achieve their dreams, thereby contributing to their general well-being.

Third, DENSO will open the door to possibilities for DENSO associates.

We wish to remain a company that treasures every single associate and assists each one in full self-realization, along with making it evident that associates' personal growth leads to company growth, in turn leading to societal progress.

greater sales. With our product development capability, which produces high-quality products without ever losing sight of environmental issues, and through the strengthening of our manufacturing capability we have secured world-class competitiveness in the automobile parts industry.

Toward that end, we are first of all using our technical capability to increase the number of our products that lead the world in market share, and secondly creating a system that can supply our products to manufacturers in every region of the world.

DENSO has long been the world's leading provider of 14 products, including car air conditioners, starters, alternators, meters, and VVTs. Our goal for 2005 is to bring the number of world-leading products to 22 by adding such items as exhaust gas sensors, ignition coils, radiators, and navigation systems.

Strategies

Future Social Considerations

DENSO Automobile Products

Environment

1. Electronic fuel injection system
   Electronic control unit
   Air flow meter
   Variable cam timing
   Oxygen sensor
   Air / fuel ratio sensor
   Manifold absolute pressure sensor
   Electronic throttle body
   Idle speed control valve
   Fuel injector
   Fuel pump
   Exhaust gas recirculation valve
   Electronically controlled diesel system
   Electronic control unit
   Supply pump
   Injector
   Common rail
   Diesel fuel injector pump
2. Radiator
3. Oil cooler
4. Intercooler
5. Air cleaner
6. Oil filter
7. Fuel filter
8. Starter
9. Alternator
10. Distributorless ignition system
    Igniter
11. Spark plug
12. Knock control system
    Air pump
13. Monolithic substrate
    Charcoal canister

Safety

14. Windshield wiper
    Rain sensor
15. Rear windshield wiper
16. IC flasher
17. Horn
    Electrically operated antenna
18. Window regulator motor
19. Power seat motor
    Relays
20. Airbag sensing system
21. Wireless door lock control
22. Headlight controller
23. Corner detecting and ranging system
24. Suspension control
    Antilock braking system
    Traction control system
25. Vehicle stability control system
    Power steering system
26. Instrument cluster
    Heads-up display

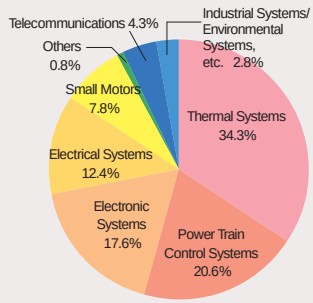
Comfort

27. Air conditioning system
    Control panel
    Compressor with magnetic clutch
    Condenser
    Evaporator
    Heater core
    Blower unit
    Sensors
28. Air purifier
    Car heater
29. Rear cooling unit
    Cool & hot box
    Bus air conditioner
    Truck refrigeration unit
    Cruise control system

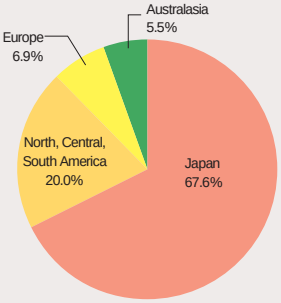
Telecommunications

30. Car navigation system
31. Emergency notification system (Mayday)
32. Electronic toll collection system
    Advanced vehicle operation system
    Multiplexing systems

Sales by Product



Sales by Region



New Environmental Managment and the Triple Bottom Line

DENSO has shifted its environmental management from its prior primary focus on the environmental impact of its manufacturing operations to the Life Cycle Assessment (LCA)* approach. This approach takes into consideration the environmental impact of products as they are used and after they are disposed of. Reflecting this change, DENSO formulated in June 2000 DENSO EcoVision 2005, its basic policy on environmental issues (refer to pg. 6). Because both our customers and society at large have become even more concerned about environmental issues, and because we are entering an era in which companies are evaluated on their environmental activities, DENSO EcoVision 2005 includes the strengthening of cooperation with outside parties on environmental issues and the enhancement of information disclosure as elements of its action plan. Additionally, as mentioned in Editorial Policies, in preparing this report, we have given serious consideration to what form a report that addresses sustainability should ideally take and have partially incorporated the idea of the triple bottom line (economy, environment, society) advocated by the GRI.

* Examines, analyzes, and evaluates environmental impacts throughout the entire product life cycle, from the gathering of resources through to disposal

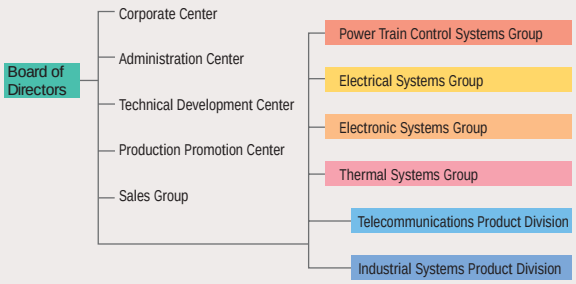
DENSO VISION 2005 Logo

DENSO VISION

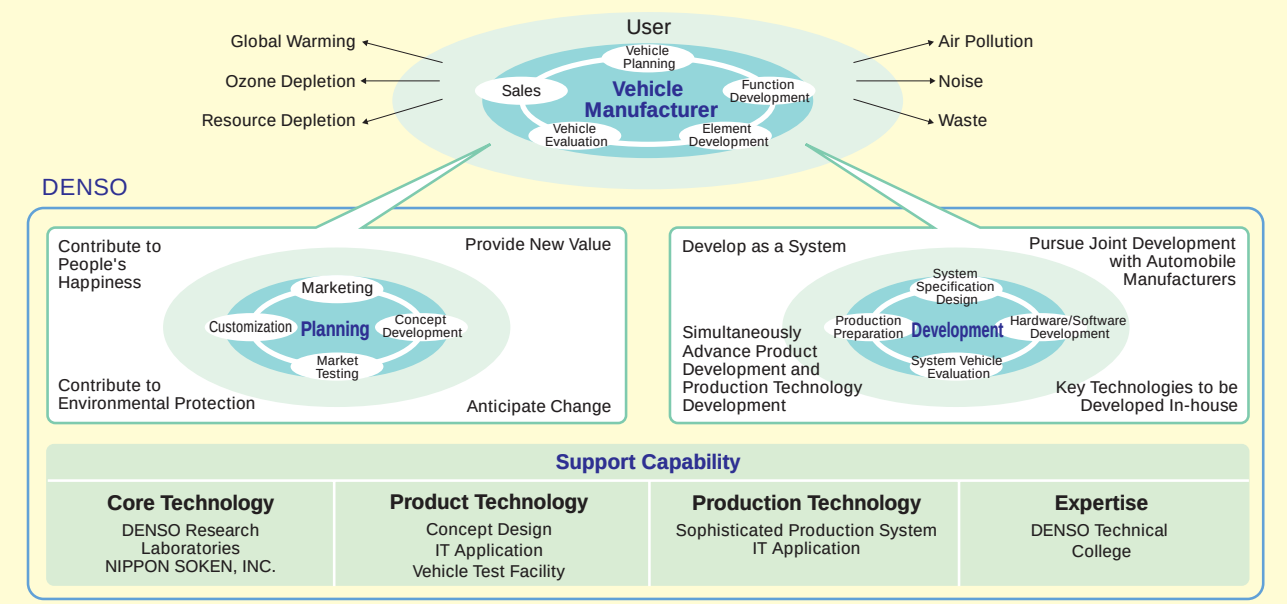
DENSO Environmental Symbol Mark

Our Earth · Our Future

Company Structure



Environmental Impact of Using and Disposing of Automobile Parts, and DENSO's Contributions



DENSO's Businesses and the Environment

Because automobiles consume fossil fuels when they are used, they emit into the atmosphere CO_2, nitrogen oxides (NOx), hydrocarbons (HC), and other substances that negatively impact the environment. And discarding automobiles produces a significant amount of waste material. Automobiles, therefore, are intimately tied to environmental problems, including global warming, air pollution, noise, resource depletion, and waste disposal.

DENSO supplies most of its products to automobile manufacturers (sales to automobile manufacturers account for 92.8% of total sales), so its products, as parts for automobiles, impact the environment. Consequently, DENSO's relationship to the environment is not limited to the manufacturing process, an obvious connection, but extends to when its products are installed in automobiles and used, and to when those automobiles are disposed of. DENSO's relationship to the environment in fact becomes clearer in these latter two stages.

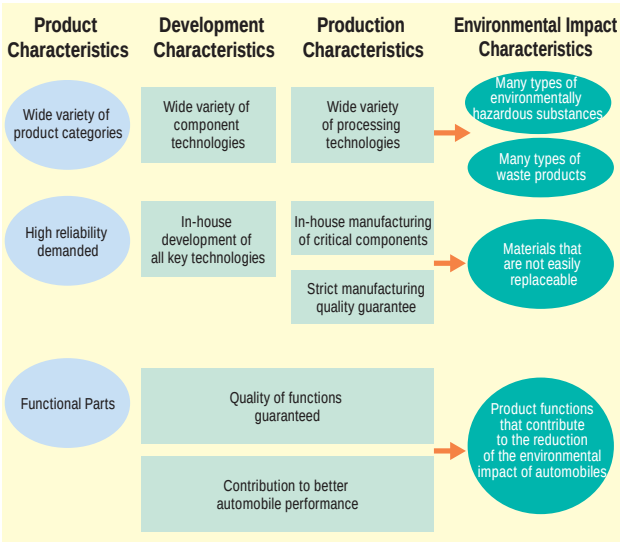
DENSO Products and Their Development and Production Characteristics

Automobiles are used even in regions with severe climates- from the frigid to the desert-like- so a high degree of reliability is required of functional parts, which are intimately related to an automobile and its basic performance.

DENSO products span a wide range of functions, performing important functions in cooling, fuel injection, and electrical charging systems, to name a few, so a high degree of reliability is demanded of them.

Therefore, for automobile parts that it decides to commercialize, DENSO includes in its development work painstaking tests that allow it to guarantee not only durability but also the quality of a variety of other functions. This means that our R&D spending is relatively high (DENSO R&D expenses are typically 10.3% of sales, while R&D expenses at companies in general stand at 3.06% and in the automobile industry at 4.17%). Furthermore, to ensure both a high degree of reliability and competitiveness, we develop key technologies for everything from materials and processing methods to commercialization in-house. We also manufacture critical components in-house.

DENSO Products and Their Development and Production Characteristics



DENSO's Environmental Impact

● Product-Based Environmental Management

To what degree can the environmental impact of automobiles be minimized? In addition to technologies, such as those for cleaning engine exhaust gases, and products, like control systems that contribute to high-efficiency fuel consumption, DENSO works to develop products that are highly recyclable, all in order to lessen the environmental impact caused by automobiles. Also, as a manufacturer of car electronics spanning a wide variety of technologies and product areas, we support electric, hybrid, and other types of clean-energy cars.

DENSO pays particular attention to product usage and disposal, stages at which its own relationship to the environment is most notable, and places environmental management that is strongly cognizant of product life cycles at the core of its environmental activities. We look at every stage of a product's life, from development and design to usage and disposal, in fully considering our impact on the environment.

DENSO products born of this approach help to lessen the environmental impact of automobiles.

● Development of Various Types of Environmentally Hazardous Substances and Materials

DENSO makes a wide variety of products, ranging from car air conditioners to electronic components, and the range of environmentally hazardous substances used by DENSO Group companies is equally wide. Based on our desire to make high-quality products, it is our policy to manufacture critical components in-house. DENSO therefore performs many different manufacturing processes, such as molding, cutting, pressing, die casting, forging, surface finishing, and assembly. Various types of waste products then result from these processes.

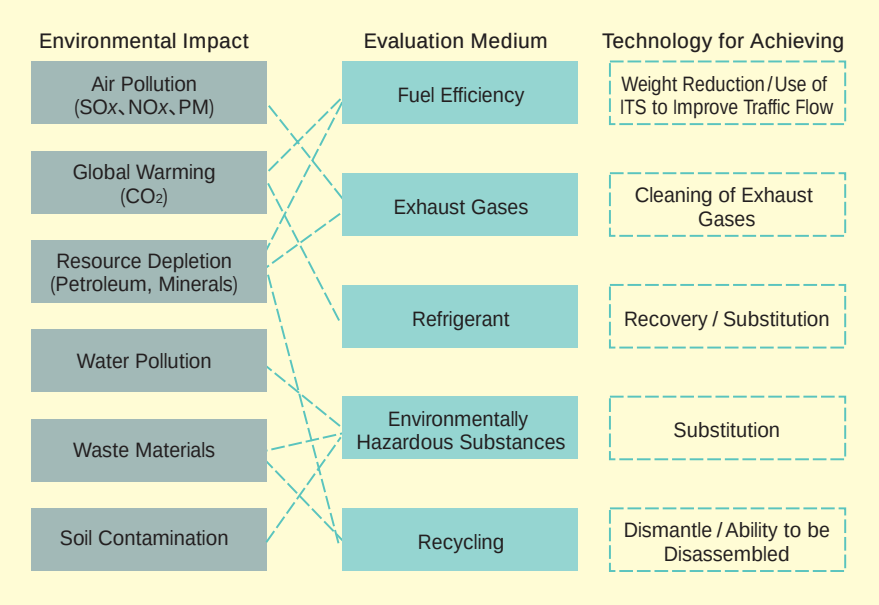
Additionally, DENSO uses materials that other industries have replaced with substitutes. We continue to use these materials for the greater reliability that they afford.

● DENSO's Environmental Standards

DENSO takes specific actions to reduce the environmental impact of its products to try to attain the quantitative standards shown below.

DENSO's Environmental Standards

	Environmental Standard/Initiative	Target
Products	Fuel efficiency, exhaust gas, refrigerant, environmentally hazardous substances/Recycle	Set ahead of time for new products
	% Recyclable (per vehicle)	2005 target: 95%
Manufacturing	CO_2 emissions	2010 level compared to 1990: 10%
	Concentration of water-polluting substances Organic substances Others	 1/5 of regulatory standard 1/2 of regulatory standard
	PRTR emissions	By 2005, 30% reduction compared to 1998
	% Recyclable	By 2003, eliminate all waste materials that would enter a landfill
Distribution	CO_2 emissions associated with distribution	By 2005, stabilize at below 1990 level
Environmental Cost / Effect		-



SOx: Sulfur oxide
NOx: Nitrogen oxide
PM: Particulate Matter (Soot and unburned hydrocarbons)

History of DENSO's Environmental Protection Activities

DENSO was founded in 1949 and has long considered the needs of the environment in developing its operations. In particular, we have since the 1960s strictly heeded environmental standards and taken into account the feelings of local populations as we have implemented wastewater treatment and other environmental policies, both at home and abroad.

DENSO, of course, has implemented policies called for in the Basic Law for Environmental Pollution Control (1967), and continues to manufacture products that bring automobiles into compliance with exhaust gas regulations, regulations that are constantly being tightened.

In 1992, when attention to environmental issues finally became a topic of discussion at the global level, we established our own internal Environment Committee and created the DENSO Environmental Action Plan, and, in 1993, we established the DENSO Environmental Charter as a more comprehensive set of directions to pursue. Since 1996, we have been working to implement our Second Environmental Action Plan, taking environmental protection steps from a global perspective.

DENSO EcoVision 2005

By fiscal 1999, we achieved nearly all of the goals we set out in our Second Environmental Action Plan, so we created DENSO EcoVision 2005 in June 2000. Under DENSO EcoVision 2005, we will create a new style of business activity suited to the 21st century- the century of the environment. And to remain a leading company when it comes to environmental protection, we revised and strengthened our Environmental Policies, which we originally set forth in 1993.

DENSO EcoVision 2005 is composed of four sections, Commitment, Basic Policies, Action Plan, and the Third Environmental Action Plan.

● Commitment

This section of DENSO EcoVision 2005 makes clear our commitment to work toward the realization of a recycling society, R&D that aims for harmony with the environment, and sustainable environmental protection.

● Basic Policies

The Basic Policies section emphasizes that DENSO will approach environmental issues from both a global and a total product life cycle perspective and clearly states that we will actively communicate with all DENSO stakeholders*.

* Those whose interests are tied to those of a company. In addition to customers, shareholders, suppliers, and employees, stakeholders include those who live in areas where the Company has operations. In regard to environmental issues, it is possible that people other than these will be affected, so the scope of stakeholders is even broader.

● Action Plan

The Action Plan is composed of four principles. The most important of these is the strengthening of environmental management in a way that is compatible with consolidated management, which in more concrete terms means striving toward more robust environmental initiatives at all levels of the DENSO Group. The other three principles describe the pursuit of environmental activities from manifold perspectives and are based on environmentally friendly R&D, the realization of environmentally friendly manufacturing plants through greater reduction of environmental impact, and enhanced information disclosure coupled with greater cooperation with outside parties in regard to environmental activities.

All DENSO Group companies prepare Environmental Action Plans, based on the Commitment, Basic Policies, and Action Plan sections of DENSO EcoVision 2005 and according to the format and scale of their operations. The result is the orchestration of the overall capabilities of the DENSO Group to push forward with environmental activities in a comprehensive fashion.

DENSO EcoVision 2005

History of Activities

Environmental Management Activities	2000	Created DENSO EcoVision 2005
	2000	Formulated DENSO Group Green Procurement Guidelines
	2000	Achieved zero emissions (Anjo and Kitakyushu Plants)
	1999	Issued Environmental Report
	1998	Established Product Recycling Subcommittee
	1998	The DENSO Environmental Exhibition
	1998	Finished obtaining ISO 14001 certification for all domestic plants
	1996	Began seeking ISO 14001 certification
Global Environmental Initiatives	1996	Revised "Everyone's Ecology," an environmental pamphlet
	1996	Formulated the Second Environmental Action Plan
	1995	Created the Environmental Symbol Mark
	1995	Halted use of ozone-depleting substances (except for substitute freon)
	1994	Issued "Everyone's Ecology," an environmental pamphlet
	1993	Established the Resource Saving / Recycling Subcommittee
	1993	Formulated the DENSO Environmental Charter and Environmental Action Plan
	1992	Created the Environment Committee

DENSO EcoVision 2005

1. Commitment

At DENSO CORPORATION, we hereby declare that we will focus the efforts of the DENSO Group on two objectives which will enable us to continue as an environmental leader in the effort to make an increasingly active recycling economy a reality, and these objectives shall be the pursuit of research and development to ensure harmony with the environment and the pursuit of sustainable environmental conservation. Furthermore, this decision has been made in accordance with our perception that environmentally friendly corporate management will create a new corporate standard in the 21st century. Both DENSO EcoVision 2005 and the Third Environmental Action Plan are to be developed as five-year plans, effective through fiscal 2005.

2. Fundamental Principles

1. We undertake to focus the efforts of the DENSO Group on strengthening environmental management from a global perspective.
2. We undertake to pursue environmentally friendly development, design, and production activities from a comprehensive viewpoint, encompassing every stage in a product's life cycle, including production, use in the marketplace, and eventual disposal.
3. We undertake to vigorously create alliances outside the framework of our particular fields of business, to disseminate information, and to work toward a higher degree of communication with stakeholders.

3. Action Guidelines

3.1 Strengthening of environmental management that supports consolidated management

1) Reinforcement of the DENSO Group's efforts to deal with environmental issues
To ensure successful reinforcement of the DENSO Group's efforts to deal with environmental issues, fundamental principles and action guidelines are to be shared equally and developed jointly by all of the companies in the DENSO Group.

2) Expansion of the environmental management system
To further strengthen our environmental management system and make ourselves more externally accountable, we have made every effort to receive confirmation of compliance with ISO 14001, the international standard for environmental management systems. We shall, in addition, continue to ensure that each company in the DENSO Group achieves ISO 14001 certification as part of our effort to further strengthen the foundations of our consolidated management structure.

3) Optimization of the organization for promotion
Environmental issues shall be assigned with maximum priority in terms of management issues, and to provide full support for this approach, the Environmental Committee organization shall be optimized and this committee shall be effectively operated, thus providing a mechanism for consolidated and unified discussion and decision making.

3.2 Environmentally friendly development and design

1) Perfection of environmentally friendly design
We undertake to both construct and promote a design review system which- during a product's development and design stages- shall carry out prior evaluation of the environmental impact of such factors as fuel economy, exhaust-gas discharge, recycling, and substances which adversely affect the environment.

2) Promotion of environmentally friendly procurement
As a means of reducing the overall load that a product exerts on the environment, including all of the materials and parts which are purchased for its manufacture, we undertake to create an environmentally friendly corporate structure through partnerships with suppliers and, in this, to promote a green (or environmentally friendly) procurement system which allows the purchase of materials and parts with lower environmental loads.

3.3 Clean factories through reduced environmental load

1) We undertake to further reduce the load exerted on the environment by implementing production activities focused on the conservation of raw materials and energy.
2) We undertake to establish a system which both allows the setting of management targets which are more independent in nature and also enables continual reductions in environmental load. Through said efforts, we shall endeavor to make the clean factory a reality.

3.4 Promotion of environment-related external links and the dissemination of information

1) We undertake to work toward the establishment of additional alliances with academic societies and administrative bodies beyond our conventional business framework. Furthermore, we shall endeavor to make valuable contributions to society through environmentally conscious production and business operation.
2) We undertake to work vigorously to both realize efficient communication of environmental information to all stakeholders and strengthen communications with local communities.

	1991	Cogeneration implementation (Nishio Plant)
	1991	Recycling Committee established
	1990	Special Committee on Resources and Energy established
	1988	Specialist Committee in Response to Restrictions on Freon established
	1986	Sectional Committee for the Reduction of Chlorinated Solvent Usage established
	1982	System for the prior evaluation of materials to be newly used constructed
	1980	Progressed with the closing off of plating processes
Pollution Prevention	1979	Energy Subcommittee established
	1974	Management Resources Application Council (for the promotion of waste reduction and energy efficiency) established
	1971	Safety, Health, and Pollution Department renamed the Safety, Health, and Environment Department
	1970	Discontinued cadmium plating processes
	1970	Safety, Health, and Pollution Department established
	1970	Formulated Safety, Health, and Environment Standards (DAS)

Third Environmental Action Plan and Progress to Date

Third Environmental Action Plan

One of the items comprising DENSO EcoVision 2005 is the Third Environmental Action Plan, which is based on the Action Plan and sets forth specific initiatives and goals to be achieved between fiscal 2001 and 2005. In other words, the Third Environmental Action Plan lays out the practical goals of DENSO EcoVision 2005. Its key elements are as follows:

- Acquisition of ISO 14001 certification by all consolidated subsidiaries by fiscal 2002
- Construction of management systems that evaluate environmental impact at the development and design stages
- Request that suppliers of parts and materials install environmental management systems by fiscal 2003 in promotion of green procurement
- Cooperate with automobile manufacturers to develop technologies and products that contribute to the reduction of CO_2
- Develop new technologies and products to help make ITSs (Intelligent Traffic Systems) a reality
- Boost the recyclability of products to 95%, by fiscal 2005 (toward the goal of end-of-life car recycling at an effective rate of 95% by 2015)
- Implement the Chemical Substance Information Management System in fiscal 2001 and reduce both chemical substances that are used and those that are produced as waste material
- Achieve zero emissions at all plants
- Promote efforts to make production facilities into "Perfect Energy Factories"
- Enhance information disclosure and strengthen relationships with local communities

Activities and Results for Fiscal 2000

Activities for fiscal 2000 consisted mainly of the formulation of Environmental Action Plans by each of the DENSO Group companies and, on the part of DENSO CORPORATION, the certification of the environmental management system for its development and design department, the reduction of chemical substances used in products and produced by plants as waste material, the formulation of Green Procurement Guidelines, and requests for cooperation to suppliers. Additional notable results for fiscal 2001 include the achievement of 92.6% recyclability for our products, the establishment of a new company for the reuse of products, and the achievement of zero emissions at two plants. Overall results for the year are given in the chart to the right. Detailed information is provided in the order shown at right, beginning on page 16.

The Third Environmental Action Plan and Results for Fiscal 2000

Initiative	Actions Taken under the Third Environmental Action Plan
1. Reinforcing Environmental Management That Is Compatible with Consolidated Management	(1) Strengthened actions taken as a Group (2) Expansion of the Environmental Management System (3) Enhancement of the promotional organization
	(4) Enhancement of environmental management tools
2. Environmentally Friendly Development and Design	(1) Enhancement of environmental evaluations at the development and design stages
	(2) Strengthening of connections with suppliers
	(3) Improved fuel efficiency
	(4) Cleanup of exhaust gases
	(5) Improved recyclability
	(6) Management and reduction of environmentally hazardous substances
	(7) Global-warming measures with regard to car air conditioners
3. Realization of a Clean Factory Through Further Reduction in Environmental Load	(1) Advancements on the resource efficiency and zero emissions fronts
	(2) Stronger measures to manage and reduce environmentally hazardous substances
	(3) Energy efficiency
	(4) Advances in distribution rationalization
4. Promotion of External Environmental-Action Alliances and Reinforcement of Information Dissemination	(1) Progress in the creation of connections to external parties for the realization of a recycling society
	(2) Enhancement of information disclosure
	(3) Strengthened relationships with local areas

Initiative/Target	FY2000 Targets & Results: FY2000 Initiatives/Targets	FY2000 Targets & Results: Fiscal 2000 Results	Page
1. Formulation and implementation of the Environmental Action Plan 2. Acquisition of ISO 14001 certification by FY2002 3. Enhancement of the Environmental Committees of domestic Group companies 4. Establishment and operation of Environmental Committees in overseas regions	1. Creation of Environmental Action Plans for all Group companies subject to consolidated management 2. Systematic acquisition and development of acquisition plans for new companies 3. Strengthening of management of domestic Environmental Committees 4. Establishment of Environmental Committees for separate overseas regions	• Established same environmental policies across 78 domestic and overseas Group companies and formulated Environmental Action Plan (March 2001) • Certification acquired by 78 domestic and overseas Group companies • Established contact organization for frontline employees; will meet 2 times each year • Established and brought to order Environmental Committees for 4 overseas regions	p10, 11, 35
1. Creation of internal environmental accounting standards 2. Disclosure of environmental costs and effects	1. Greater reporting of deemed and incidental effects in environmental accounting 2. Implementation of segment environmental accounting	• Some deemed effects accounted for • Began zero emissions and other types of segment environmental accounting	p12, 13
1. Implementation of prior environmental evaluations for products • Establishment of targets for reducing environmental impacts in terms of fuel consumption, exhaust gases, refrigerant, environmentally hazardous materials, and recycling 2. Provision of environmental information on products to customers	1. Construction of a prior evaluation system for products 2. LCA research	• Implemented environmental management systems, including prior evaluation of products, and gained expanded ISO 14001 certification (October 2000)	p16
1. Formulation of Procurement Guidelines and implementation with focus on suppliers • Requests to suppliers to construct Environmental Management Systems by FY2003 • Management and reduction of environmentally hazardous substances through Chemical Substance Information Management Systems 2. Promotion of green purchasing	1. Implementation of green procurement 2. Construction of Chemical Substance Information Management System 3. Implementation of green purchasing	• Created Green Procurement Guidelines and held explanation sessions for 669 suppliers (September 2000) • Developed Chemical Substance Information System (went online April 2001) • Created EcoProducts Catalog and began using internally	p25
1. Promotion of fuel consumption regulations as well as development of new technologies and products 2. Promotion of efforts to lessen the weight of auto parts 3. Promotion of development of new technologies and products for making ITSs a reality	1. Product development that is environmentally friendly 2. Development of technologies to meet fuel consumption regulations in 2008 and beyond	• Progressed with improvements in gasoline direct injection components	p17, 18
1. Promotion of development of new technologies and products that meet exhaust gas regulations and self-imposed standards	1. Development of technologies to meet 2005 emissions regulations for gasoline-powered cars 2. Development of technologies to meet 2005 emissions regulations for diesel-powered cars	• Pushed forward with product development as planned	p18, 19
1. Increase in the recyclability of auto parts with the goal of reaching an effective recycling rate of 95% for end-of-life cars by FY2015 2. Increase in the ability to dismantle / disassemble cars and easily use recycled materials; standardization of materials 3. Advances in materials recycling technologies	1. Development of easily recyclable products • Improvement of recyclability of used automobile parts, with target of 92.5% • Develop resin-recycling technology 2. Improvement of effective recycling percentage of used automobile parts	• Achieved 92.6% recyclability target	p22
1. Expansion of list of substances requiring management and strengthening of monitoring systems to satisfy domestic and overseas regulations and suppliers' standards 2. Active approaches to self-management standards and substitute technologies	1. Reduction of use of environmentally hazardous substances • Implementation of substitution technologies for highest-priority substances	• As planned, made progress in implementation of substitute technologies	p21
1. Development of air conditioners that use new refrigerants in place of HFCs	1. Freon usage reduced • Commercialize world's leading CO_2 system 2. Promotion of freon recovery and destruction	• Now developing CO_2 system components for passenger cars • In accordance with reduced automobile industry organization, established a system for the recovery and destruction of CFCs (May 2001)	p20, 22
1. Zero emissions • Reduction of landfill waste products to zero at all plants by FY2003 2. Development of materials usage and resource reuse management systems to reduce waste and recyclable products emerging from production processes 3. Progress toward paperless workflows through effective application of Internal Information Network Systems	1. Zero emissions • Zero Emissions Declaration (April 2000) (Zero emissions at all plants by FY2003) 2. Promotion of paper recycling	• Achieved zero emissions in two plants—Kitakyushu Plant (December 2000) and Anjo Plant (March 2001) • Currently developing Overall Emissions Management System to lower overall emissions • Reduced paper usage (32% below 1999 level)	p26, 27
1. Strict PRTR management • Reduction of targeted emissions to 70% of FY1998 level by FY2005 2. VOC emission reduction • Reduction of toluene and xylene emissions to 50% of FY1998 level by FY2005	1. Reduction of environmental impact of manufacturing plants • Reconstruction of chemical substances management system	• Formulated emission reduction plans for top-priority substances, VOCs (toluene, xylene), etc.	p32
1. Reduction of manufacturing plant CO_2 emissions to 90% of 1990 level by FY2010 2. Promotion of creation of Perfect Energy Factories, which aim to minimize energy losses	1. CO_2 reduction • For FY2000, stabilization of CO_2 source units* at 1990 level *Physical measure of CO_2 emissions per unit of production value 2. 2010 CO_2 reduction measures • Reduction of CO_2 emissions to 90% of 1990 level by FY2010	• CO_2 source units: 87.0 (Target: 100 (1990 level) or less). Achieved target for FY2000 • Identified reduction measures for achieving FY2005 CO_2 targets in each business group	p28
1. Stabilization of CO_2 emissions associated with distribution to below 1990 level by FY2005 2. Reduction of packaging material usage to 80% of FY1995 level by FY2005	—	• Nearly stabilized CO_2 emissions associated with distribution at 1990 levels • Reduced use of packaging material to 81% of FY1995 level	p28, 34
1. Establishment of company for reusing used parts (FY2000) 2. Promotion of parts recycling technology 3. Examination of automobile parts recycling system	—	• Established company for reusing DENSO products (June 2000)	p22, 23
1. Environmental report • Expansion of scope of covered companies to include all consolidated domestic and overseas subsidiaries by FY2003	—	• Added ASMO Co., Ltd. to scope of Environmental Report	—
1. Sponsorship of environmental exhibitions at individual plants 2. Holding of local discussion meetings on the environment	• Sponsorship of environmental exhibitions at all plants —	• Held environmental exhibitions at 6 domestic plants • Began studying plans for local discussion meetings on the environment	p31, 39

2 Environmental Management

Concepts and Implementation Systems

Basic Concepts of Environmental Management

To firmly position DENSO's fundamental principles (refer to pg. 2) as the basis for all action plans and bring to life the essence of DENSO for a new age as we enter the 21st century, we set out long-term management policies in a document called DENSO Vision 2005 (refer to pg. 2). This document expresses DENSO's visions for the future and itself. These basic concepts guide DENSO and its employees in management decision making and daily business activities. And while they also address the environment, DENSO EcoVision 2005 explains our ideas concerning the environment in even more specific terms and describes our brand of environmental management in concrete language (refer to pg. 6).

Carrying through with its fundamental principles and based on DENSO VISION 2005 and DENSO EcoVision 2005, DENSO will continue to strengthen environmental management. We will assemble the organization necessary to do this and, focusing on environmental management for individual products, we will proceed to fully implement our Third Environmental Action Plan, which lays out goals and actions in even greater detail.

Environmental Management Organization

To make it possible to address environmental problems, considering the significance of issues ranging from the local to the global level, we have created the DENSO Environmental Committee. The president of DENSO CORPORATION heads this committee, which discusses and makes decisions on environmental protection policies, goals, and measures to be adopted by all DENSO Group companies.

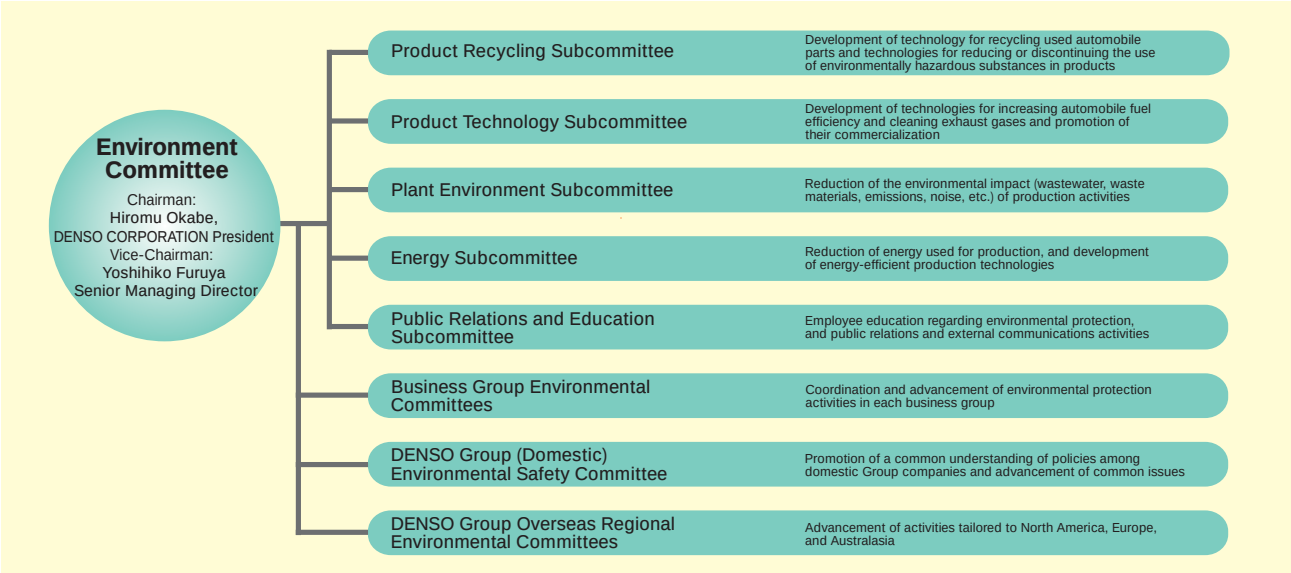
Below the DENSO Environmental Committee are five subcommittees that are responsible for seeing that environmental activities achieve progress. Two of these subcommittees deal directly with product issues. Furthermore, under the subcommittees are eleven sectional and research committees, including the Design Section Committee and the Energy-Efficient Processing Research Committee, which work to implement environmental activities that reflect the highly specialized nature of each area of DENSO's operations.

Additional aspects of the organization underlying the DENSO Environmental Committee include the DENSO Group (Domestic) Environmental Safety Committee, which is charged with the task of improving environmental management in a way that is compatible with consolidated management, and holding meetings at the sectional and research committee level to exchange information. The first of these meetings was held in June 2001. For regions overseas, DENSO Group Overseas Regional Environmental Committees were established in fiscal 2000.

Respect for Environmental Laws and Regulations

Environmental laws and regulations that apply to DENSO business activities as of March 2001 are shown below. DENSO is in compliance with all of these laws and regulations.

Plant Location Law, Air Pollution Control Law, Water Pollution Control Law, Waste Disposal Law, pollution control ordinances in the prefectures where plants are located, Noise Regulation Law, Vibration Regulation Law, Law Concerning Rational Use of Energy, PRTR Law, Sewer Law, Industrial Water Use Law, laws promoting the use of recycled resources, Cleaning Tank Law, Special Dioxin Measures Law, laws regarding the establishment of pollution control organizations in particular plants, Container and Packaging Recycling Law, and others.



Wider Acquisition of ISO 14001 Certification

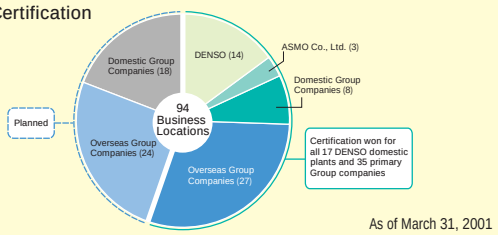
DENSO is aggressively moving to acquire ISO 14001 certifications, which will also serve to increase transparency to external parties regarding its environmental management.

By fiscal 1998, all 17 domestic plants had won certification, and by fiscal 2000, seven domestic and 28 overseas Group companies had also done so.

For its part, DENSO CORPORATION finished gaining certifications for all of its departments, adding its development and design department to the ranks of the certified in October 2000.

DENSO EcoVision 2005, based on the idea that all DENSO Group companies should share the same Basic Policies and Action Plan and that environmental management should be strengthened in a manner compatible with consolidated management, sets out the goal of obtaining ISO 14001 certification for all consolidated subsidiaries by fiscal 2002.

ISO 14001 Certification



As of March 31, 2001

Environmental Audit

The purposes and goals set out in DENSO EcoVision 2005 are incorporated in the environmental policies of each business location. Each business location reflects its environmental policies in its annual action plan, and the PDCA*1 cycle is steadfastly pursued in search of continuous improvement.

In internal audits, teams composed of DENSO internal environmental auditors (270 qualified personnel*2 and other staff use a check sheet with 660 items to examine and evaluate each business location in 24 different categories. If any deficiencies are noted, corrective measures are immediately taken as part of a system of continuous improvement in environmental management.

In its fiscal 2000 outside audit, DENSO was judged on an overall basis to be properly and efficiently operating its environmental management systems and achieving continuous improvement, even though some deficiencies were noted in a few business locations.

We are enhancing our internal audit capabilities to evaluate improvements in our environmental performance.

We are also working to manage risks by regularly engaging in training to handle accidents that result in pollution, though they are highly unlikely.

*1. PDCA: Plan-Do-Check-Action

*2. Qualified: Internal auditors who have undergone outside training

Primary Items Noted in External Inspection and Remedial Measures Taken

Items	Remedial Measures
Discrepancy in administration of Action Plan, Documentation discrepancy (2 items)	Specific Action Plan proposals and more thorough management
Manual and documentation (4 items)	Revision of text based on headquarters manual deficiencies and addition of interpretations
Revision of specific ideas / standards from environmental perspective (3 items)	Improvement of regular, irregular, and emergency classifications and point-scale classification

Environmental Education

At DENSO, employees are encouraged to develop specialized knowledge concerning the environment and earn environment-related qualifications through educational programs, including required training tailored to the various job levels, courses for earning qualifications, and lectures.

The furthering of environmental management absolutely requires that individuals from new recruits to executives sharpen their environmental awareness. DENSO devotes significant effort to these educational activities to encourage employees to become individually more aware of environmental issues, to heighten employee recognition of issues that should be addressed, and to have all of our employees engage in environmental protection activities as a unified whole. In fiscal 2000, 2,790 employees participated in the 2,050 hours of required training that DENSO had established. Additional voluntary and regular training based on annual plans is carried out at each workplace, and the company newsletter, magazine, and intranet environmental homepage are used as supplementary resources for educating employees and providing them with the latest information on the environment.

Environmental Education and Number of Employees Participating

Targeted Employees	Number
New recruits	248
Technical and mid-level employees	320
Assistant managers, group leaders	1,472
Section, department, plant, and other managerial employees	300
Managers of technical sections	450

Environmental Accounting

The Significance of Environmental Accounting

DENSO regards environmental accounting as a tool for accomplishing the following three purposes.

(1) Identify costs and benefits in quantitative terms, so that future environmental protection activities can be more effective and management decision-making can be improved

(2) Boost the motivation of employees to pursue environmental activities

(3) Broadly disclose information to stakeholders, so that shareholders and suppliers, in particular, can develop a clearer understanding of DENSO management

DENSO's environmental accounting categories, considering the need for both continuity and comparability, are consistent with the environmental accounting guidelines* established by the Ministry of the Environment, which are currently the most widely accepted. Additionally, to increase the effectiveness of environmental accounting as a management decision-making tool, we created our own internal environmental accounting guidelines, adding some deemed effects to our accounting categories. These changes are effective as of fiscal 2000.

* For the establishment of environmental accounting systems (reports for 2000)

Characteristics of Environmental Protection Costs

In using automobile parts and products as conduits for contributing to the reduction of the environmental impacts of automobiles, DENSO believes that it is effective to consider the life cycle of an automobile, particularly the stage during which it is used and the stage at which it is disposed of, when improving and designing parts. We therefore devote significant R&D resources to such areas as the improvement of fuel efficiency and the cleaning of exhaust gases.

As a result, our environmental accounting results show R&D Costs to be relatively high.

We also spend a great deal on energy-efficient facilities and equipment, which is one of the types of investment captured under Business Facility Costs. Also, at DENSO, costs for facilities and equipment are not depreciation but the actual amount of investment for the year under review.

Fiscal 2000 Environment-Related Costs

(Unit: ¥100 million)

Account Items				Investment (¥100 million)	Expense (¥100 million)
Environmental Protection Costs	1. Business Facility Costs	Costs incurred to control environmental impact of production	Costs of purchasing / maintaining facilities and equipment for preventing air, water, or other types of pollution	29.9 (30.9)	10.8 (25.2)
			Costs for energy-efficient facilities and equipment and other global environmental protection costs		
			Costs for recycling, waste processing, etc.		
	2. Upstream/Downstream Costs	Environment-related costs arising from activities upstream or downstream from production	Selected new capital investment for environmental protection Cost of establishing reuse company	16.2 (20.8)	— (—)
	3. Management Activities Costs	Costs of environmental management activities	Expenses for employee education and EMS certification maintenance Payments to certification institutions and expenses for environmental impact monitoring and measuring Internal audit personnel expense	— (—)	14.6 (13.7)
			Personnel expense for environmental protection activities and management		
	4. R&D Costs	Costs of R&D for reducing environmental impact	Development expense for environmentally friendly products	— (—)	89.3 (67.6)
			R&D expense for controlling environmental impact		
	5. Social Activities Costs	Costs of environment-related public relations activities	Costs for conservation, beautification, supporting environmental activities of local residents, contributions to and support of environmental organizations, and publication of environmental information	— (—)	0.7 (0.3)
	6. Environmental Damage Costs	Costs of environmental damage	Expenses for soil cleanup, environmental restoration, etc.	3.0 (—)	1.7 (—)
	Total			49.1 (51.7)	117.1 (106.8)

* Excluding the effect of ASMO Co., Ltd., the figure for DENSO CORPORATION alone is ¥15.85 billion.
* Figures in ( ) are for fiscal 1999.

Overall Total: 166.2 (158.5)

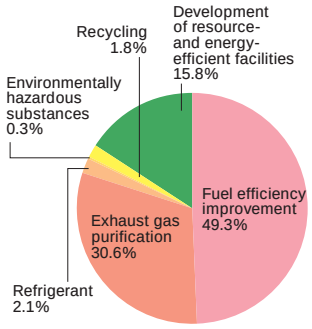
Account Items		Investment (Units/year)	Expense (¥100 million)
Actual Effect	Energy reduction effect (reduction of electricity, fuel, etc. used, and use of waste heat, self-generated electricity, etc.)	7,844 tons (metric)	10.0 (10.0)
	Sale value of recyclable materials (ferrous metals, non-ferrous metals, plastic, oil, etc.)	64,379 tons	13.6 (15.0)
	Waste reduction (resource conservation: reduction in use of raw materials, copier paper, etc.)	5,200 tons	3.8 (3.0)
	Effect of reduced use of environmentally hazardous materials (reduced use of VOC / chrome-less processing)	43.6 tons	0.7 (-)
	Reduced costs for environmental protection activities (internal training of auditors, reuse of exhibition materials)	-	0.1 (-)
Deemed Effect/ Incident Effect	Added-value contribution, increased awareness, advertising / PR effects	-	1.3 (-)
	Avoidance of legal risks	Not calculated for this report edition	
	Avoidance of remediation, avoidance of lawsuits, etc.		
Total			29.5 (28.0)

* Figures in ( ) are for fiscal 1999.

Fiscal 2000 Environmental Protection Costs

In fiscal 2000, greater costs were incurred to develop products for ITSs, which will help to lessen traffic congestion, and for R&D, fuel efficiency improvements, and exhaust gas purification. The total of ¥8.93 billion exceeded the total for fiscal 1999 by ¥2.17 billion. Included in R&D costs were ¥4.4 billion for fuel efficiency improvements, ¥2.73 billion for exhaust gas purification, ¥1.9 billion related to refrigerants, ¥30 million related to environmentally hazardous substances, ¥160 million related to recycling (refer to pg. 16 for further information on these five items), and ¥1.41 billion for development and design of resource- and energy-efficient facilities and equipment. ITS-related R&D costs are included among costs for fuel-efficiency improvements.

R&D Cost Breakdown



Completion of portions of the work to introduce cogeneration to DENSO manufacturing plants caused capital investment in fiscal 2000 to decline to ¥4.07 billion, from ¥5.61 billion in fiscal 1999.

Remediation and cleanup costs for soil and groundwater contamination resulted in Environmental Damage Costs of ¥470 million.

Fiscal 2000 Environmental Effects

In recording the effects of increased awareness and advertising and PR activities as deemed effects for the first time in fiscal 2000, total deemed effects reached ¥2.95 billion, surpassing the figure for fiscal 1999 by ¥210 million. For fiscal 2000, no figures were included for possible effects arising from avoiding the risk of penalties that could accompany violations of laws or the risk of losses from a suspension of operations, nor for possible effects from avoiding lawsuits or payments of reparations. Our internal Environmental Accounting Working Group continues to examine and research methods of calculating the related sums with the goal of incorporating them in the fiscal 2001 environmental report.

Approach to Segment Environmental Accounting

DENSO's segment environmental accounting totals the costs and effects of environmental protection projects at each of its business locations. As an initial attempt at a segment environmental accounting report, the fiscal 2000 environmental report includes figures on zero emissions activities at the Anjo Plant and the implementation of cogeneration to save energy at the Takatana Plant.

As nonrecurring, initial costs (personnel expenses) of zero emissions were recorded in fiscal 2000, costs exceeded effects; however, for next year and the years beyond it is expected that effects will exceed costs. DENSO will attempt to expand its use of segment environmental accounting and believes that it will be useful for making investment decisions on new projects.

Zero Emissions- Zero Emissions Activities at the Anjo Plant

Costs			Effects		
Item		Amount (Unit: ¥10,000)	Item		Amount (Unit: ¥10,000)
Investment	Measuring devices, compressors, etc. Capital investment (straight-line depreciation amount) (7-year life)	296	Actual Effect	Reduced waste-disposal expense	3,231
				Reduced paper-procurement expense	250
Expense	On-site collection and separation	1,888		Sale of materials	33
	Disposal	1,287		Operational efficiencies gained	88
	Project activities expenses (personnel expenses)	4,744*	Deemed Effect	Value added, increased awareness, advertising / PR, etc.	1,579
Total		8,215	Total		5,181

* Project activities expenses will not be incurred in the years beyond fiscal 2000.

Energy Efficiency- Cogeneration Implementation at the Takatana Plant

Costs			Effects		
Item		Amount (Unit: ¥10,000)	Item		Amount (Unit: ¥10,000)
Investment	Cogeneration equipment and related equipment Capital investment (straight-line depreciation amount) (7-year life)	9,286	Actual Effect	Reduction in electricity usage Reduction in steam usage	52,000
Expense	Fuel Operating and maintenance expenses	36,000	Deemed Effect	Value added (CO_2 reduction)	942
Total		45,286	Total		52,942

Flow of Environmental Impact

DENSO's Businesses and Their Environmental Impact

DENSO works to make it possible to correctly identify the input and output associated with its business operations and assemble overall, effective methods for reducing their environmental impact.

Input includes such items as electricity and other kinds of energy; water; materials for making products; and cleaners and paints used in manufacturing; in addition to such items as packaging materials and truck fuel used in distribution; and paper used in administrative work. All items such as these include environmentally hazardous substances, and have some kind of impact on the earth's resources.

Output includes such items as finished products, CO_2 that results from the use of energy, waste gases and wastewater resulting from production processes, and other industrial and ordinary waste materials. Environmentally hazardous substances enter products through the materials used to make those products and are in the waste gases, wastewater, and waste materials produced by manufacturing plants.

In fiscal 2000, the primary inputs used in DENSO's business activities included 351,000 tons of raw materials, 1.1 billion kWh of electricity, energy equal to 124,000 kl of crude oil, and 8.52 million m^3 of water. Primary outputs included 184,000 tons-c of CO_2 and 6,900 tons of industrial waste material. Further details are presented in the diagram below.

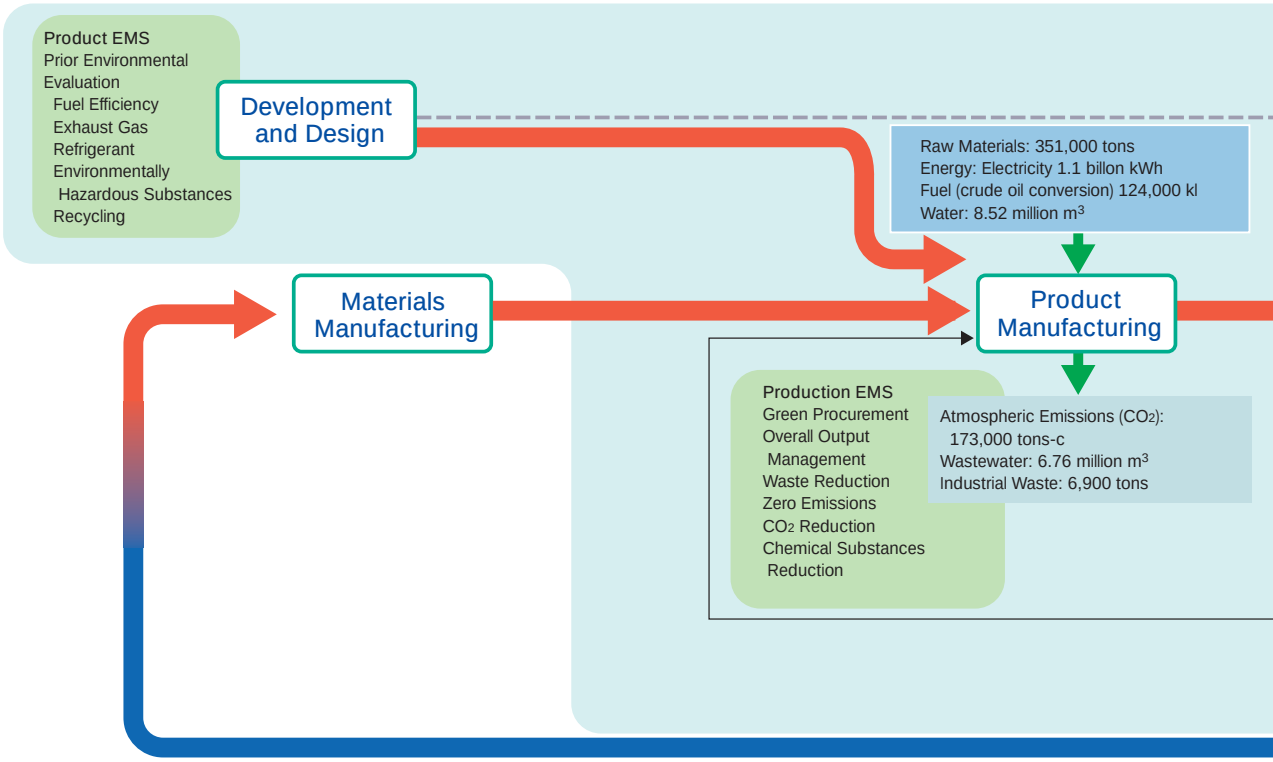
Toward the Construction of an Automobile Parts LCA System

We have already touched on the fact that when DENSO's products are used in automobiles, they are closely related to the amount of environmentally hazardous substances included in exhaust gases. We have also mentioned that it is possible for environmentally hazardous substances included in our products to be discharged into the environment when cars reach the end of their lives. There are significant issues involved in the reduction of the environmental impact of DENSO products at their use and disposal stages. Nevertheless, it is ineffective to deal with only these two stages.

In general, most products, from the stage at which the resources necessary to make them are gathered to the stage at which they are disposed of, have an impact on the environment. However, measures designed to be effective during only one stage of a product's life may worsen environmental impact at another stage. As an approach that takes a comprehensive look at the effect of an environmental protection measure, life cycle assessment (LCA) is quite appealing and is being studied throughout the world.

Because LCA examines the entirety of a product's life cycle, quantitatively identifies the resource and energy input as well as the output at each stage, and quantitatively analyzes and evaluates the environmental impact and the resource and energy depletion impact of each input and output, it can be useful in reducing overall environmental impact.

Overall Flow of Environmental Impact



DENSO has been pushing forward with research and system construction since the mid-1990s to put in place the best LCA regime while considering the various unique characteristics of automobile parts.

Environmentally Friendly Development and Design

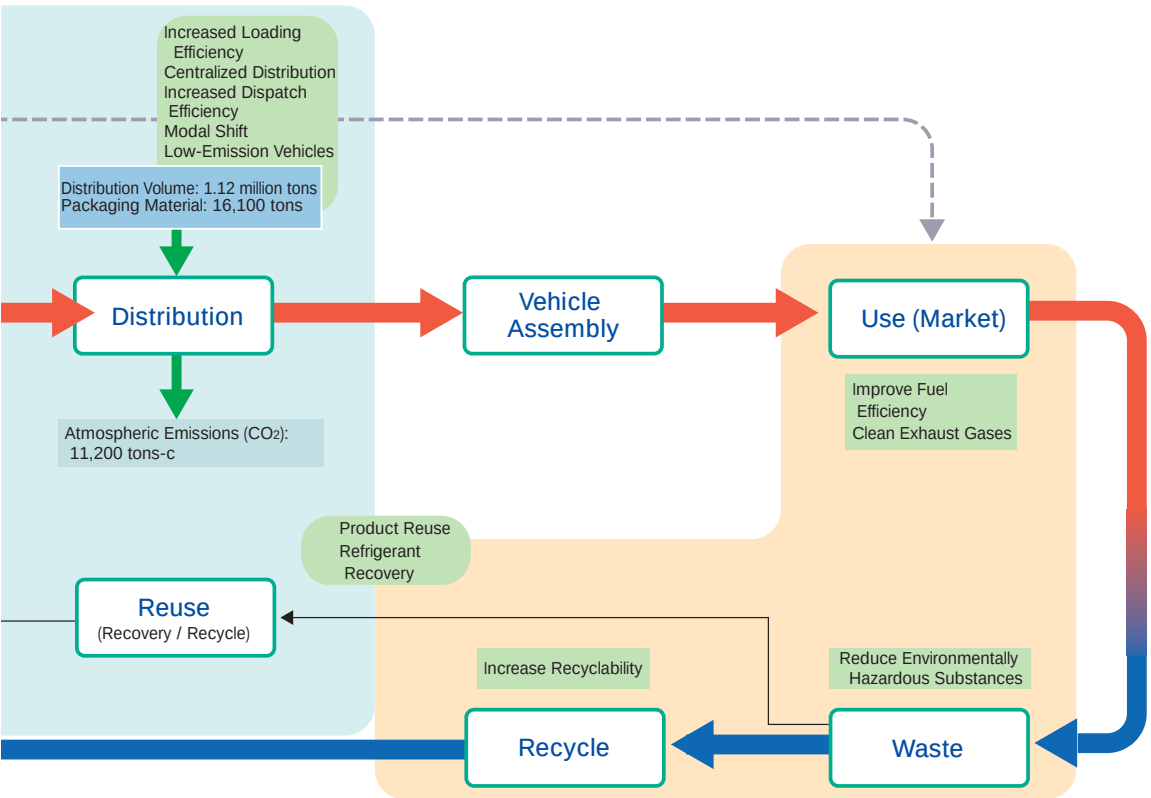
Based on DENSO EcoVision 2005, DENSO is pursuing, in an ongoing fashion, the challenge of Cleaner Product Manufacturing.

To minimize the environmental impact of its products, DENSO put together an environmental management system that considers the needs of the environment beginning at the development and design stages, and won ISO certification for this system in fiscal 2000. We also stepped up our efforts to reduce the amount of environmentally hazardous substances in our products; our efforts to implement green procurement, which contributes to the reduction of environmentally hazardous substances in our products; and our efforts to reduce (through improved fuel efficiency, by cleaning exhaust gases, and by taking measures regarding car air conditioner refrigerant) the environmental impact of our products when they are used. Furthermore, to prevent the discharge of environmentally hazardous substances from vehicles at the end of their lives and use resources effectively, we expanded our recycling / reuse framework through advances in efforts to manufacture products that are highly recyclable or reusable.

Toward the Realization of Environmentally Friendly Manufacturing Plants

In its efforts to reduce the environmental impact of its manufacturing processes, DENSO, in line with DENSO EcoVision 2005, continues its pursuit of the ideal environmentally friendly manufacturing plant.

Having taken aggressive action to reduce waste materials, we succeeded in creating a zero-emission manufacturing plant in fiscal 2000. Additionally, we are devoting significant attention to energy efficiency and, through initiatives ranging from the level of the daily activities of individuals to the implementation of large-scale systems on the order of cogeneration plants, we are aiming to maximize energy efficiency in the form of a Perfect Energy Factory (PEF). Through other initiatives for addressing soil contamination and air and water pollution, we have improved our management of chemical substances used in our manufacturing processes and have reduced both the quantity of these substances used and the quantity produced as waste material.



3 Development and Design in Line with *Product EMS*

Definition of Product EMS at DENSO

As a leading manufacturer of automobile parts, Denso supplies automakers with many products to support automotive functions.

To minimize impact on the environment at every stage of the product life cycle, from procurement through to manufacture, use, disposal, and recycling, DENSO believes it is important to tackle this question at the product planning, development, and design stages. We felt a system that would enable us to evaluate environmental compatibility at the product planning, development, and design stages would be crucial, because it is at these stages that the degree of a product's environmental impact is largely determined. Accordingly, in order to accelerate and increase the effectiveness of our activities in this area, we created a product EMS (Environment Management System) in April 2000, and in November of the same year we obtained ISO 14001 certification for the development and design sectors.

Product Planning—Establishing a Medium-to-Long-Term Road Map

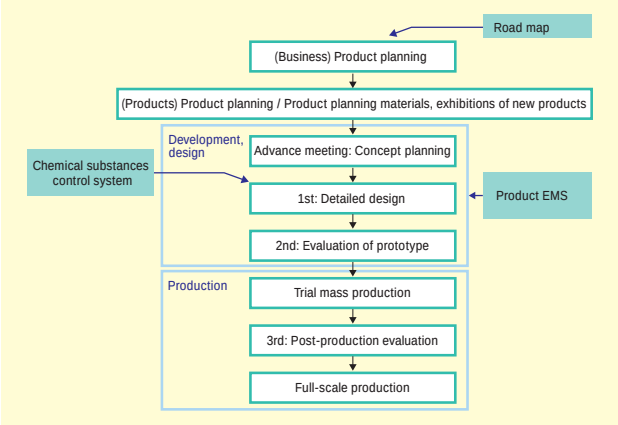
As a part of its business strategy, DENSO draws up a medium-to-long-term road map in order to show, at the product planning stage, precisely what kinds of functional products will be created and for how long. On this basis, we then offer proposals for new products to automakers. Once an automaker has decided to make use of a new product, we begin the design process and determine the functions and quality targets of the product. After preparatory, initial, and secondary quality assurance meetings, we conduct a prior evaluation to ensure that the target levels have been met.

The Development and Design Phases: Implementing Product EMS

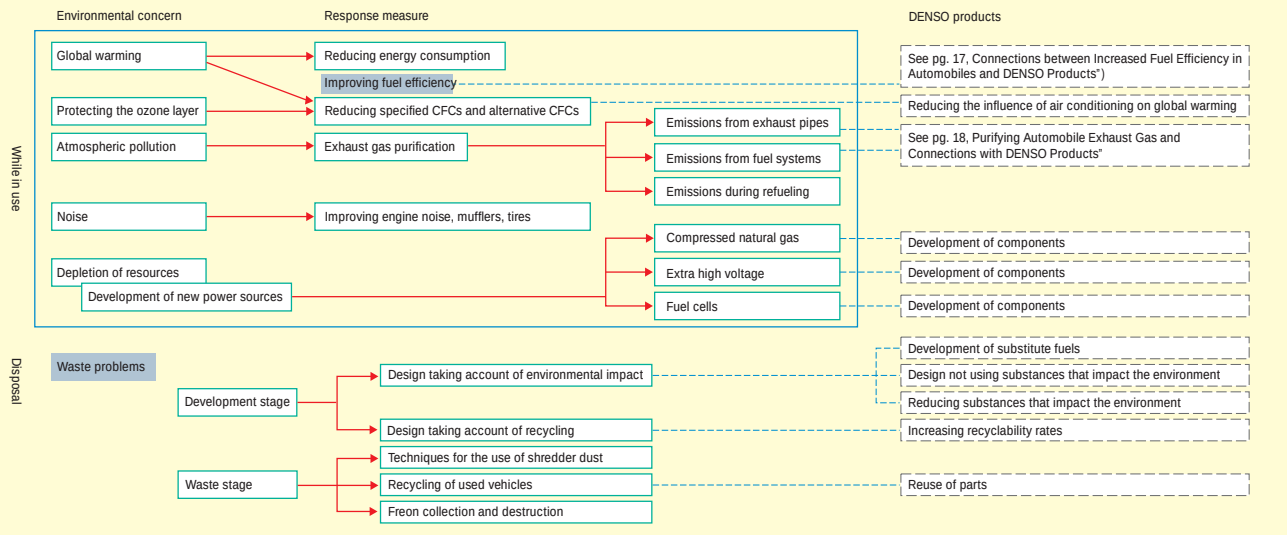
In April 2000, we added "environmental compatibility" to the previous criteria of design, function, quality, and price, and we have now created an EMS for evaluating in advance the environmental compatibility specified beforehand for each individual product being developed. The workflow has been incorporated into company regulations under the title of "Regulations for Initial Flow Control" and now constitutes a system for enabling continuous improvements to be made just as they are in connection with the other categories.

Because DENSO products are connected with automobile parts, it can be expected that they will have an effect on the environment in forms such as global warming caused by CO_2 emitted from cars as well as atmospheric pollution caused by nitrogen oxide (NOx) and soil pollution caused by harmful substances and waste products. We have stipulated five items as criteria for the advance evaluation of environmental compatibility, namely improvements in fuel efficiency, exhaust gas purification, decreasing and finding substitutes for the use of refrigerants (sealed quantities), reducing substances that impact the environment, and improving recyclability.

Product Development Process



Automobiles, Environmental Impact, and DENSO Products



Fuel Efficiency Improvements

Improving Fuel Efficiency

Japan's target for reducing emissions of carbon dioxide was set at 6% by COP3 (the Kyoto Protocol) in December 1997. Fuel efficiency standards (diesel vehicles in 2005, gasoline vehicles in 2010) will be implemented in order to achieve this target.

From the standpoint of an automobile parts manufacturer, DENSO is developing new technology and products in response to new fuel efficiency standards and the self-imposed standards of the automakers.

DENSO Eco-Vision 2005 lists three issues that we must tackle:

1. Promoting the development of new technology and products in response to fuel efficiency demands and the self-imposed standards of the automakers
2. Further reducing the weight of automobile parts
3. Promoting the new technology and products needed for realizing the ITS high-speed road information system

Approach to Enhanced Fuel Efficiency

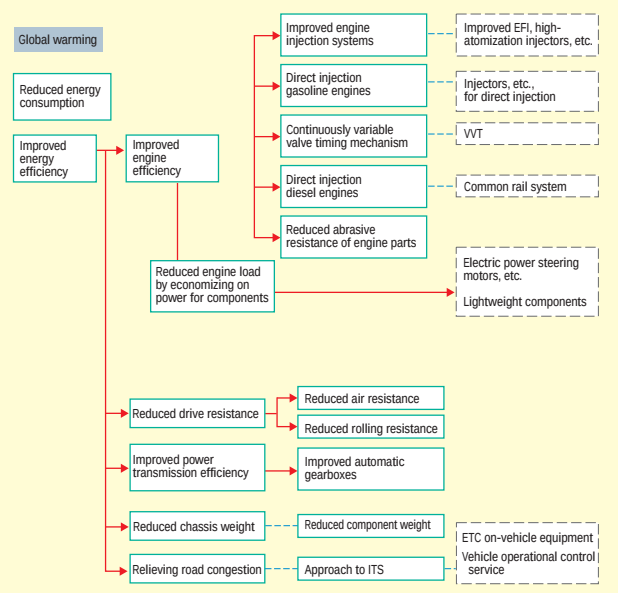
(1) Improving the fuel efficiency of automobiles

We offer a wide range of products based on an approach to improving the fuel efficiency of automobiles that involves increasing the efficiency of engines, reducing drive resistance, improving power transmission efficiency, and reducing the weight of automobiles.

(2) Support for the development of clean energy

We are working on the development of technology for application to products to be incorporated into the next generation of automobiles using new forms of power, such as hybrid sources and fuel cells.

Connections between Improving Fuel Efficiency in Automobiles and DENSO Products



(3) Approach to ITS

Our development of ITS-related equipment, such as ETC (Electronic Toll Collection), will contribute to increased fuel efficiency by relieving traffic congestion and enabling cars to travel more smoothly.

Improving Fuel Efficiency: Products and Achievements

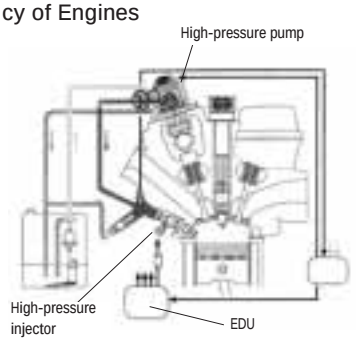
Let's take a look at some of DENSO's main achievements in fiscal 2000 in the field of products contributing to increased fuel efficiency.

● Improving the Fuel Efficiency of Engines

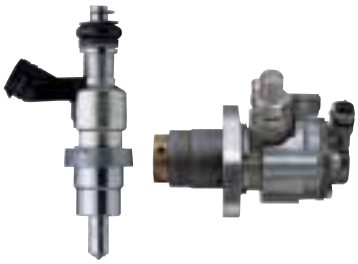
Gasoline direct injection components

In contrast to conventional engines that supply fuel by injecting gasoline into intake ports, direct injection engines supply gasoline by injecting it directly into the fuel chamber. This permits strato-combustion (lean burning) over a wide driving range and raises fuel efficiency.

DENSO's high-pressure injectors, high-pressure pumps, and EDU are incorporated into the engine management system of Toyota's D-4 gasoline direct injection engine. The number of models in which these components are used increased in 2000 to five, including models such as the "Opa."



Gasoline direct injection components


High-pressure injector (left) and high-pressure pump (right)

Stick coils

Stick coils are slim, cylindrical ignition coils mounted in spark plug holes. Incorporating advanced electronics, stick coils are compact and provide high-performance ignition to improve the efficiency of combustion in gasoline engines.


Stick coil

● Decreasing the Environmental Impact of Engines by Economizing the Power of Components

Electric power steering motors

Electric power steering is directly connected to human operational capacity. Power steering operated by power corresponding to the load on the axle increases fuel efficiency by between 2 and 5 percent over hydraulic power steering, which constantly requires hydraulic pump drive.


Power steering motor

● Lighter Components

New starter

We've developed a new starter that is 22% lighter than previous types. It was incorporated into Toyota's "Ipsum" in May 2001.

New compressor

As an essential part of a car air conditioning system, the compressor compresses a cold medium using the engine's torque. The SCSA06 compressor is 17% lighter than the conventional type of scroll compressor. It was incorporated into Toyota's "Corolla" models in August 2000.

New aluminum radiator

Our new aluminum radiator is approximately 10% lighter than previous radiators. It was incorporated into Toyota's "Vista" models in May 2000 and later into nearly all other Toyota models.

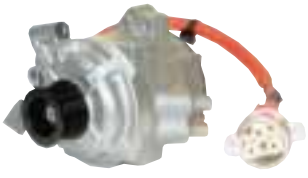
● Support with Development of Clean Energy Vehicles

EHV components

DENSO's battery ECU (electronic control unit), DC-DC converter, and other products are now being used in the control system of Toyota's hybrid vehicle "Prius."

An integrated starter generator (ISG) combining a starter and an alternator was adopted for the new "Estima" hybrid vehicle in June 2001 as well.

The "Estima" hybrid has enabled substantial improvements in fuel economy through not only the efficient use of driving force of a combustion engine and a motor but also the engine idle stop function that comes into play when the vehicle is stationary. An ISG restarts the engine instantaneously when the vehicle is ready to move from a stationary position and acts as a generator when the vehicle is in motion.



● Approach to ITS

It has been provisionally calculated that the effects on the environment in 30 years' time of the introduction of ITS will include a reduction of around 15% in fuel consumption and carbon dioxide emissions and a reduction of around 30% in NOx emissions in urban areas. DENSO is developing on-vehicle equipment that utilizes various communications media.

ETC on-vehicle equipment

ETC is a system that makes it possible for motorists on toll roads to pay without having to stop at tollbooths. It contributes to fuel efficiency by relieving traffic congestion and making driving smoother.

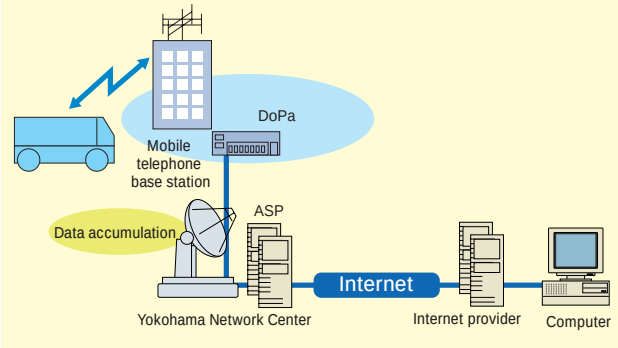
DENSO released ETC on-vehicle equipment in March 2000 in coordination with the start of services in Tokyo and Okinawa.

Vehicle operational control service

The vehicle operational control service PATRACS uses NTT DoCoMo's packet communications DoPa. Services began in February 2001.

PATRACS is the first operational control service for commercial vehicles to offer ASP (application service provider) services. Users are able to check on the position of company vehicles and obtain real-time information from computers in their offices using the Internet. This contributes to the efficiency of allocation, loading, and distribution.

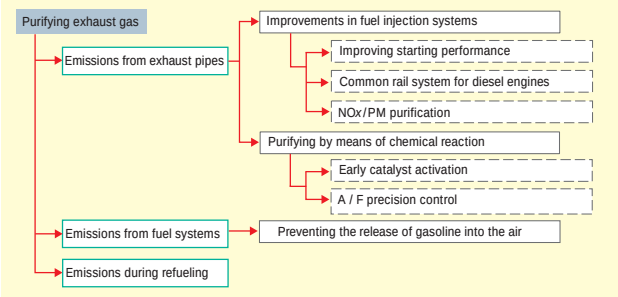
PATRACS



Approach to Exhaust Gas Purification

In DENSO Eco-Vision 2005, one of our stated aims was to "develop technology likely to be useful in ensuring cleaner exhaust gas and in creating related products." In line with product EMS, we are working hard on the development and release of products that will reduce environmentally harmful substances in exhaust gas.

Purifying Automobile Exhaust Gas and Connections with DENSO Products



Approach to Purifying Exhaust Gas

Hydrocarbon (HC), nitrogen oxides (NOx), carbon monoxide (CO), particulate matter (PM) and other gases emitted from automobiles are harmful to the environment.

The sources of these gases can be divided into the categories of tail pipe emissions, emissions from fuel systems, and vapor arising during refueling.

DENSO is engaged in improving fuel injection systems and cleaning by means of chemical reaction, especially in connection with the cleaning of gases emitted from exhaust pipes, and we offer a wide range of products in this area.

Exhaust Gas Purification: Products and Achievements

Let's take a look at our main achievements in fiscal 2000.

Improvements in fuel injection systems

● Improving Starting Performance

TGV (Tumble Generator Valve)

(Used in Fuji Heavy Industries' "Impreza")

The tumble generator valve is installed on the engine intake manifold and sends a strong vertical swirl of intake air into the cylinder to improve engine performance, particularly during ignition and starting. In addition, it provides a stable, lean burn even at engine start, thereby significantly reducing hydrocarbon emissions immediately after engine start.

● Common Rail System for Diesel Engines

The common rail system for diesel engines is not affected by engine speed and incorporates electronically controlled high-pressure fuel injection. The system thus enables optimum fuel injection and substantially reduces the black smoke contained in exhaust gas in comparison with conventional fuel injection pump systems.

This system was newly adopted in 2000 for use in Toyota's "Hilux Sarf" and "Land Cruiser Prado" models.

● NOx/PM Purification

Exhaust gas temperature sensor (used in the "Peugeot 607")

Using our unique ceramics technology, DENSO has developed an oxide semiconductor stable at high temperature ranges of up to 1,000ºC. The sensor can be used to control the purification of NOx catalysts for direct injection gasoline engines and to control the DPF system that collects particulate matter emitted by diesel engines.

Purifying by means of chemical reaction

● Early Catalyst Activation

Ultra-thin walled monolith carrier (used in Toyota's "Prius" and "Celsior" models)

The NOx, HC, and CO contained in the exhaust gas of engines comes into contact with catalysts inside the cell when it passes through a monolith carrier consisting of around 10,000 cell holes separated by a ceramic wall. This results in a chemical change that causes cleansing to occur. DENSO has developed an ultra-thin walled monolith carrier with cell walls no thicker than a hair and is now supplying this product to automakers. Ventilation resistance is reduced when exhaust gas passes through the carrier, resulting in improved fuel efficiency. The small size of this product increases the warming properties of the catalyst and enhances cleaning efficiency.

Laminated 0_2 sensor

In comparison with previous types, the laminated 0_2 sensor reaches the required temperature range more rapidly after the engine has been started. This enables rapid activation and is useful for controlling maintenance of the air / fuel ratio that enables a high cleaning rate.

Electric air pump

DENSO's electric air pump reduces harmful gases emitted immediately after engine ignition. The non-combustion gas emitted just after ignition is oxidized by outer air sent under pressure from a pump, and the catalysts are rapidly activated through use of the reaction heat, thereby reducing the emission of harmful exhaust gas.

● A / F Precision Control

Laminated A / F sensor (used in Toyota's "Highlander" model)

As with the 0_2 sensor, the laminated A / F sensor reaches the required temperature range soon after the engine has started. This enables rapid activation and promptly stimulates control functions toward the air / fuel ratio at which a high cleaning rate can be obtained.

Preventing the release of gasoline into the air

Fuel vent module (used in Honda's "Civic" model)

The fuel vent module is installed between the gasoline tank and the charcoal canister. It prevents the generation of gasoline vapor absorbed by the canister and ensures that gasoline is not released into the air. Small and lightweight, it forms part of a single unit with the valve that checks for leaks in the tank and piping system.

Total Abolition of the Use of Specified CFC Refrigerants

As one of the leading manufacturers of car air conditioners with a 22% share of the world market, DENSO has adopted a responsible stance to dealing with Freon throughout Japan. We intend to lead the industry in this respect while providing active support for measures implemented by the administrative sector.

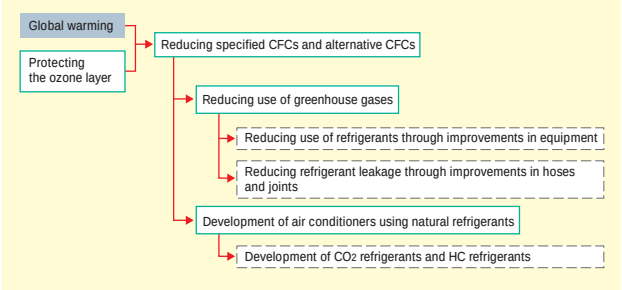
CFC (chlorofluorocarbon), known also as specified CFC, became subject to international restrictions under the Montreal Protocol in July 1989 as a substance that destroys the ozone layer in the stratosphere. It was decided that consumption would be reduced in stages until production was terminated altogether by the end of 1995. No production has occurred since then.

Before these international restrictions came into effect, DENSO had already in 1988 set up a Specialist Committee in Response to Restrictions on Freon. We then began to reduce the amount of specified CFCs we used not only for cooling purposes in car air conditioners but also in the cleaning of electronic components in plants and the processing of mechanical parts. We succeeded thereby in completing the changeover to the HFC-134a alternative CFC for use in car air conditioner refrigerants by the end of 1995. Use of specified CFCs in the production process was fully abolished in August 1995.

During air conditioner repairs made in 1994, we replaced some of the parts employed in conventional air conditioners and established a system to enable kits compatible with alternative refrigerants to be compatible with all car models. We were the first company in the industry to release a refrigerant recovery and recycling device. Around 13,000 units were sent to car dealers and service plants, thereby contributing to the effective use of CFC-12 and to prevention of emissions into the air. Our activities in this area met with high praise, and in fiscal 2000 we were awarded the Prize of the Minister of International Trade and Industry in the system of Awards for Protection of the Ozone Layer organized by the *Nikkan Kogyo Shimbun* Newspaper Company with support from the Ministry of Economics and Industry and the Ministry of the Environment.

Nikkan Kogyo Shimbun (September 14, 2000)

Reducing the Effects of Air Conditioners on Global Warming



Approach to Reducing the Effect on the Environment of Refrigerants

DENSO Eco-Vision 2005 refers to "the development of air conditioners compatible with new refrigerants to take the place of HFC (hydrofluorocarbon) from the standpoint of preventing global warming." Although HFC- the refrigerant used in today's car air conditioners- does not destroy the ozone layer, it is nevertheless a gas with a high greenhouse effect (infrared ray absorption rate) and one that exacerbates global warming when released into the atmosphere.

In order to restrict the effects of refrigerants on warming to a minimum, DENSO is making mechanical improvements to reduce the use of these substances and is attempting to reduce leakage by improving hose joints. At the same time, we are developing air conditioning systems using natural refrigerants, such as CO_2 and HC (hydrocarbon), which have little effect on global warming. We are also supplying refrigerant recovery and recycling equipment compatible with HCFC.

Comparison of Global Warming Indices and Japan's Reduction Targets

	Specified CFCs		Alternative CFCs	Non-Freon
Alternative substance	CFC	HCFC	HFC	CO_2
Global warming index	8,100	1,500	1,300	1
Applications	Refrigerant: Cars, refrigerators Coolers Air conditioners	Coolers Air conditioners	Refrigerant: Cars, refrigerators Coolers Air conditioners	Study examples: Car air conditioners Hot water supply unit Coolers Air conditioners
Japan's reduction targets	Montreal Protocol		Kyoto Protocol	
	Total abolition by end of 1995	Stepwise reduction aiming at total abolition by 2020	Reduction by 6% from 1990 quantity until 2010	Not specified

Source: *Kankyo Soran* (Environmental Overview)

Reducing the Effects of Refrigerants on the Environment: Products and Achievements

● Reducing Refrigerant Quantities

DENSO aimed to reduce by 15% over the previous year the quantities of refrigerant used in the 2000 models of car air conditioners. We actually achieved a reduction of 20% in comparison with 1999 models.

● Natural Refrigerant Air Conditioners

Toyota has developed an air conditioning system of the motorized heat pump type using the natural refrigerant CO_2 for use with the FCHV-4 Fuel Cell Hybrid Vehicle on which road tests were begun in June 2001. Prototypes have already been supplied. Air conditioning systems using CO_2 as the coolant are well suited to introduction in such special vehicles as FCHV, but they still have problems to surmount in terms of reliability and safety. There are still considerable technical hurdles to be cleared before these systems can be incorporated into gasoline-engine vehicles and other ordinary vehicles, and we are therefore working on how to solve these problems.

Reducing Environmentally Hazardous Substances

Reducing Environmentally Hazardous Substances

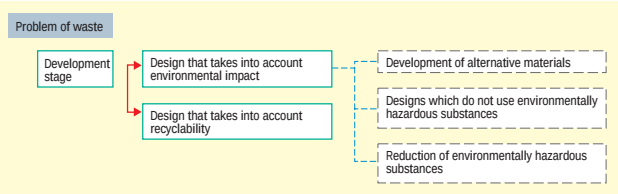
● Basic Policy

Chemical substances that may well harm the human body, the biosphere, and other aspects of the environment include lead, hexavalent chromium, mercury, cadmium, and so on. DENSO's basic policy is to avoid the use of such substances in its products. There are all kinds of environmentally hazardous substances, but DENSO is working on decreasing not only the use of those subject to legal restrictions in Japan and overseas but, from a comprehensive standpoint including design and materials, any other substances that our customers and the industry in general are themselves taking the initiative to restrict. With regard to environmentally hazardous substances related to our own products, in 1999 we stipulated two groups of materials that we intend to control and reduce systematically on the levels of planning and materials. The first of these priority groups consists of 26 substances that we aim to reduce and abolish, and the second group consists of 60 substances whose use is to be strictly controlled.

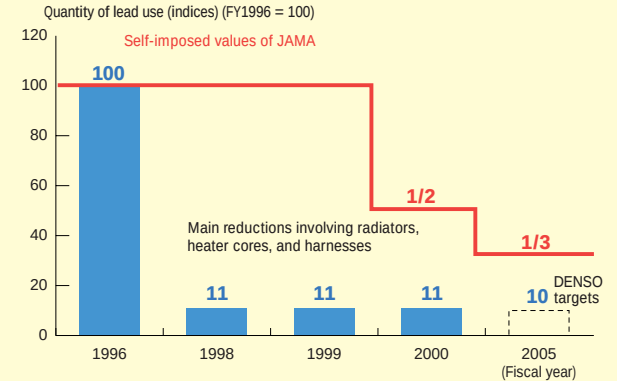
● Approach to Reducing Environmentally Hazardous Substances

The first priority group whose use we intend to reduce and eventually eliminate includes such substances as lead, hexavalent chromium, mercury, and cadmium. Lead is used in many products and materials and, due to functional considerations, it is sometimes difficult to envision how use of this substance could be phased out. But DENSO is developing alternative technologies for specific products and materials, and we have already succeeded in abandoning the use of lead in many products, including radiator solders and coating resin for wire harnesses. We are now developing alternative technology for the remaining products and materials. Hexavalent chromium is used in many products, especially for treating surfaces for corrosion protection, but in 2000 we completed the development of an alternative technology for application to aluminum surface treatment and to plated components in order to reduce our use of this substance.

Approach to Reducing Environmentally Harmful Substances



Self-Imposed Industry Targets and DENSO's Reduction in the Use of Lead



● Control of Chemical Substances

As typified by the recent problem of endocrine-disrupting substances, among the innumerable quantity of chemical substances, there are many whose effects on the environment have been unknown but have now come to light as exerting a harmful influence on the environment. Accordingly, in order to reduce environmentally harmful substances present within products, we need to get a clear idea of which among the vast quantity of chemical substances do harm to the environment and of the products and materials that contain them. To this end, DENSO has developed and introduced a Material Chemical Assessment System (MaCAS) intended to control comprehensively and efficiently the materials found in products, along with information on their composition. Application of this system will enable us to control and reduce environmentally hazardous substances on an ongoing basis.

● Future Actions

We intend to continue reducing the use of lead, cadmium, hexavalent chromium, and mercury. In order to be prepared for new information coming to light on the environmentally hazardous properties of other materials, we are keeping a close watch on how we are using chemical substances and are attempting to remain one step ahead of legal restrictions in this area.

Progress in Development of Technology for Replacement of Environmentally Hazardous Substances

	Material	Product	FY1996	FY1998	FY2000
Lead	Solder	Copper radiators	In use	Completely eliminated	Completely eliminated
		Copper heater cores	In use	Completely eliminated	Completely eliminated
		Electrical components	In use	Technology being developed	Being converted
		Circuit boards	In use	Technology being developed	Technology being developed
	Electrodeposition paint	Coated components	In use	Technology being developed	Being converted
	Ferrous and non-ferrous metals	Machining steel Aluminum alloys	In use	In use	Technology being developed
	Plating steel	Solder plate steel	In use	In use	Technology being developed
	Sliding materials	Axle bearings	In use	In use	Technology being developed
	PVC	Wire harness	In use	Completely eliminated	Completely eliminated
	Rubber	Rubber components	In use	In use	Technology being developed
	Glass	Plugs	In use	In use	Technology being developed
	Ceramics	Piezoelectric elements	In use	In use	Being converted
	Contact materials	Contact components	In use	Being converted	Being converted
Cadmium	Glass paste	Ceramic boards	In use	Being converted	Being converted
Hexavalent chromium	Surface finishing	Plated components	In use	In use	Technology being developed
Mercury	—	Fluorescent tubes	In use	In use	Technology being developed

Product Recycling

In 1999, DENSO established its own product recyclability appraisal method, which reflects the targets set down in the Ministry of International Trade and Industry's end-of-life vehicle recycling initiative (1997) and the voluntary action plan adopted by the Japan Automobile Manufacturers Association (JAMA) in 1998. The method was designed from the perspective of automobile manufacturers and is helping to improve automobile recycling rates.

Outline of Numerical Targets Set under the Ministry of International Trade and Industry's Recycling Initiative

Recycling Rate	After 2002	After 2015
End-of-life vehicles (by weight)	A recyclability rate of at least 85%	A recyclability rate of at least 95%
Landfill disposal volume (by volume)	Three-fifths of 1996 level or lower	One-fifth of 1996 level or lower
New model vehicles	A recyclability rate of at least 90%	-

Hazardous Substances	By the End of 2000	By the End of 2005
Use of lead (by weight, excluding batteries)	One-half of 1996 level or lower	One-third of 1996 level or lower

Improving the Recyclability of DENSO Products

Goal

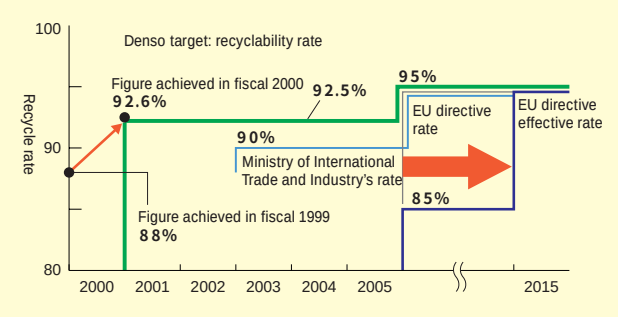
DENSO has set the following three goals for product recyclability under DENSO Ecovision 2005.

1. A recyclability rate of at least 95% (weighted average for DENSO products) for vehicle parts (by fiscal 2005), leading to the achievement of a recyclability rate of at least 95% for end-of-life vehicles by 2015
2. Measures based on future improvements in recycling technology, including the improvement of disassembly and separability characteristics, the use of highly recyclable materials, and the use of uniform materials
3. The advancement of material recycling technology

Progress as of Fiscal 2000

1. A recyclability rate of 92.6% was achieved in fiscal 2000, compared with a target rate of 92.5%.
2. While plastics are generally more difficult to recycle than metals, polypropylene is highly recyclable. In the past, DENSO used various grades of polypropylene, but several grades have been unified. The integration of grades will continue.
   *SRS: Supplemental Restraint System
3. As stated in the environmental report for fiscal 1999, DENSO has developed material recycling technology for polypropylene, which is the most commonly used plastic material. In fiscal 2000, it commenced development of material recycling technologies for other types of plastic materials.

Recyclability Rates for DENSO Products



Reuse and Recycling of End-of-Life DENSO Products

DENSO has set the following three goals for the reuse and recycling of end-of-life DENSO products under DENSO Ecovision 2005.

Goal

1. The establishment of a reuse company to expand reuse of end-of-life DENSO products (fiscal 2000)
2. The development of parts recycling technology in step with the automobile industry's efforts to verify technology to support 95% recycling
3. Increased cooperation with those with an interest in end-of-life vehicles and studies relating to a recycling system concept for automobile parts

Progress as of Fiscal 2000

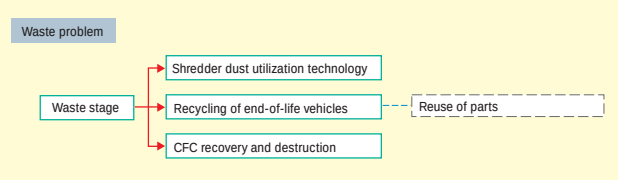
1. A wholly owned subsidiary, DENSO Remani Corporation, was established at the Anjo Plant in June 2000.
2. DENSO exchanges information on recycling with automobile manufacturers. With the cooperation of recycling companies and manufacturers of recycling equipment, the Company has examined the recyclability of various DENSO products, including plastic parts with inserts and motors.
3. The Industrial Structure Council of the Ministry of Economy, Trade and Industry is currently examining automobile recycling systems in preparation for the implementation of the Automobile Recycling Law. Among such systems, DENSO is contributing to the establishment and operation of a CFC recovery and destruction system through the activities of JAMA and the Japan Auto Parts Industry Association.
4. In fiscal 2000, DENSO developed a prototype air bag expansion device under contract to the Japan Auto Parts Industries Association. The purpose of this work was to improve the recyclability of SRS air bags, which have caused safety issues when vehicles are dismantled. DENSO is currently developing an air bag expansion device that will be cheaper and easier to use.

Product Reuse

DENSO repairs and reconditions failed parts at its 800 service stations throughout Japan. Normally, failed parts are initially taken for repair at vehicle dealerships or repair shops, from where they are brought to DENSO service stations. The service stations replace parts that have failed through wear or other factors with DENSO replacement parts, but most other parts are reconditioned and reused. Reuse rates for parts that are reused in large quantities, such as starters, alternators, and compressors, are as high as 80% to 95% (by weight). The cost to users is substantially lower than the cost of replacement with new parts. The environmental benefits include resource conservation and the reduction of waste.

However, the growing need for recycling and the tendency to use vehicles longer have led to an increase in the range of parts that require repairs, and there are some items that cannot be accommodated adequately in the repair systems of service stations. In fiscal 2000 DENSO responded to this problem by establishing a wholly owned subsidiary, DENSO Remani Corporation, in addition to its existing rebuilding operation. Based in Anjo City, Aichi Prefecture, DENSO Remani will supplement the activities of service stations by operating an intensive reconditioning system. It has already commenced this activity, which involves the recovery and dismantling of starters and alternators from end-of-life vehicles. Worn or broken parts are replaced or processed and repaired, and every item is inspected to ensure quality. The reconditioned items are then supplied to service stations as replacement parts. The company commenced operations in October 2000. It plans to achieve a total annual output of 50,000 starters and alternators by fiscal 2002.

Reusing Automobile Parts



Overseas Reuse Operations

Denso is developing reuse operations in the United States and Europe. In the United States, American Industrial Manufacturing Services Inc. (AIMS) reconditioned and sold a total of 400,000 starters, alternators, and compressors in fiscal 2000. In Europe, a total of 150,000 starters and alternators were reconditioned and sold by DENSO Manufacturing Midland (DMML) in the United Kingdom, and DENSO Europe (DNEU), which is DENSO's coordination center based in the Netherlands. The DENSO Group will continue to expand its global reuse network with DENSO Remani as the hub.

CFC Recovery and Destruction

DENSO's preparations for the introduction of the CFC Recovery Law in fiscal 2002 include the development of a CFC recovery system for vehicle air conditioners. Approximately 13,000 recovery systems for specified CFCs and 5,000 dual-purpose systems capable of recovering both specified CFCs and alternative CFCs, which do not damage the ozone layer but do have a greenhouse effect, have been distributed to DENSO service stations and automobile dealerships. DENSO also transfers CFCs into larger containers so that CFC destruction facilities can operate efficiently*. Between January 1998 and the end of fiscal 2000, CFCs were transferred from approximately 110,000 one-liter canisters at three plants. In the summer of 2001, DENSO completed a destruction system for alternative CFCs.

* DENSO service stations and automobile dealerships recover CFCs in one-liter canisters. The gas is then transferred into larger canisters.

DENSO Remani

Recovering CFCs

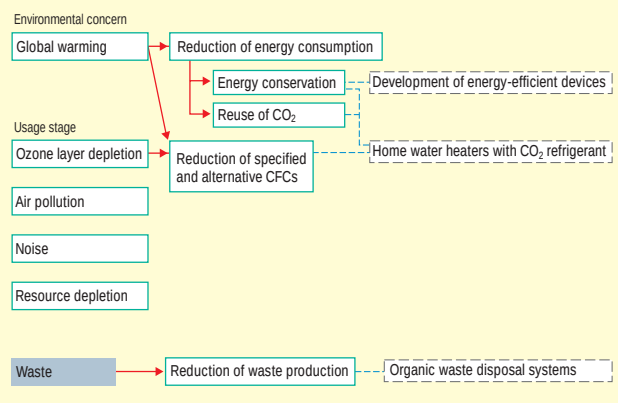
Non-Automotive Products

The automobile sector accounts for 92.8% of DENSO's sales. Sales from new businesses make up the remaining 7.2% of sales, which amounted to ¥ 144.5 billion in fiscal 2000. DENSO applies technology developed through its involvement in automobile parts to the production of mobile telephones and other communications equipment, industrial machinery, including industrial robots and bar code readers, and environmental equipment, such as air conditioners.

With products for the automobile industry, it is necessary to consider environmental factors, such as the reduction of carbon dioxide emissions through exhaust cleaning systems and the improvement of fuel efficiency. These requirements do not apply to non-automotive products, which have a relatively small impact on the environment while they are in use.

Because non-automotive products supplied by DENSO use energy in such forms as electricity or kerosene, DENSO puts particular emphasis on energy conservation at the product development stage because of the implications for global warming. As with products for the automobile sector, DENSO is continually working to reduce environmental impact through product EMS.

Environmental Considerations for DENSO's Non-Automotive Products



Results of Activities

● Development of Hot Water Supply System Using Natural Gas as a Refrigerant

In January 2000, a joint development project involving DENSO, Tokyo Electric Power, and the Central Research Institute of Electric Power Industry resulted in the development of a water heater that uses CO_2, a natural refrigerant that does not contribute greatly to the greenhouse effect, as the refrigerant for the cooling-heating cycle. During this project, DENSO applied technology resources derived from its involvement in the development of vehicle air conditioners. In May 2001, it began to supply the water heaters on an OEM basis to housing and kitchen manufacturers and other users.

CO_2 is a refrigerant that occurs in nature. It is neither toxic nor flammable and does not damage the ozone layer. Its use as a refrigerant also limits greenhouse gas emissions, because it is possible to reuse CO_2 gas generated by industrial manufacturing processes.

Home water heater using CO_2

CO_2 also has an excellent heating capacity, which means that water heated to approximately 90°C can be supplied even during cold weather. The water heater's coefficient of performance (COP*) is extremely high, at over 3.0. Power consumption is just one-third that required for conventional electric water heaters. The system is also ideal for household use and will contribute to a significant reduction in household energy use, thanks to features that include high-pressure operation, full automation, and intelligent controls.

* Coefficient of performance (COP): This is a measure of cooling or heating capacity per unit of electric power used. It is calculated as the ratio of cooling or heating effect to the thermal value of the energy supplied to a refrigerator or heat pump.

● Coolant-Free Cooler for High-Performance, High-Voltage Power Control panels

DENSO has developed an environment-friendly device that cools the air inside high-voltage control panels without coolant. Its cooling efficiency is 40% better than conventional devices. In 2000, the product was adopted as an industrial cooling device in the United States.

Coolant-free cooler for high-voltage power control panels

Green Procurement

DENSO's Green Procurement System

DENSO procures a variety of parts and materials, including subsidiary materials, from numerous suppliers for use in manufacturing operations. It is working to reduce environmental impact at all stages of its business activities, which requires not only improvements to DENSO's own operations but also the procurement of environment-friendly parts and materials from environmentally aware suppliers. DENSO is working to achieve this goal under its Green Procurement policy.

Green Procurement Guidelines

Under DENSO's Green Procurement Guidelines, suppliers are required to meet the following two conditions.

- The establishment of an environmental management system based on the achievement of external accreditation under the ISO 14001 standard by fiscal 2003, as a framework for the management and continual improvement of environmental protection activities at the organizational level
- The reporting of all (100%) chemical substances, including parts and materials, and the quantities used to allow numerical monitoring of substances that place a burden on the environment

Environmental Management by Suppliers

When the Guidelines were announced in September 2000, 26% of DENSO's approximately 650 suppliers had already achieved ISO 14001 accreditation. Another 41% were in the accreditation process, while 33% had no plans to seek accreditation.

If any supplier fails to achieve accreditation by fiscal 2003, DENSO will require that company to conduct annual appraisals under the DENSO Environmental Management Checklist and to report the results. ASMO Co., Ltd. conducted a briefing for suppliers in November, 2000.

A briefing for suppliers

Managing and Reducing Environmentally Harmful Substances

As part of its efforts to reduce the amount of environmentally harmful substances in its products, DENSO has developed the MaCAS database, which is used to store and retrieve information about chemical substances in parts and materials, as reported by suppliers. The system became fully operational in April 2001. The MaCAS system was designed to allow DENSO to respond immediately to requests from government agencies or customers for the disclosure of product specifications and composition, including chemical substances.

Green Procurement Promotion System

DENSO has long encouraged its staff to purchase environment-friendly office products, including recycled paper. Under its Green Procurement policy, it is now working to implement an expanded green procurement program. Specific activities will include the improvement of information resources, including the discovery and cataloging of additional environment-friendly office products, and the provision of information about environment-friendly products via the intranet. DENSO has created infrastructure to promote the procurement of environment-friendly products. For example, office workers have been able to view a catalog* of such products on their PCs since March 2001.

Purchase requests for office products and other items from each department are centralized in the Procurement Planning Department. If there are orders for products that are not environment-friendly and alternatives are available, the department encourages the department that made the request to buy the environment-friendly product instead.

In addition, DENSO is progressively introducing procurement monitoring to record progress toward the use of environment-friendly products in each product category. The figures show a steady rise in the percentage of environment-friendly products used. For example, the ratio for writing equipment rose from 60.7% in March 2001 to 80.3% in April and 86.5% in May. DENSO will continue to expand its purchasing of environment-friendly products as they become available on the market.

* The catalog lists eco-mark products approved by the Japan Environment Association (JEA) and items listed in the Environment Data Book published by the Green Procurement Network.

4 Achieving "Clean" Manufacturing Plants

Our Approach to Achieving "Clean" Manufacturing Plants / Reducing Waste

Achieving "Clean" Manufacturing Plants

● Our Approach to Achieving "Clean" Manufacturing Plants

Under DENSO EcoVision 2005, DENSO advocates the achievement of "clean" manufacturing plants through intensified reductions in environmental impact. Based on this vision of the proper nature of manufacturing plants, reductions in waste generation, thoroughgoing efforts to conserve resources and energy, measures to prevent pollution of the atmosphere, water, the soil, and groundwater, and appropriate management of chemical substances are in place to minimize the environmental impact of production activities. Various steps have also been taken to reduce hazardous substances emitted by trucks during the process of shipping products from factories (distribution). Two of the major outcomes of fiscal 2000 were the achievement of zero landfill at two plants and of CO_2 reduction targets.

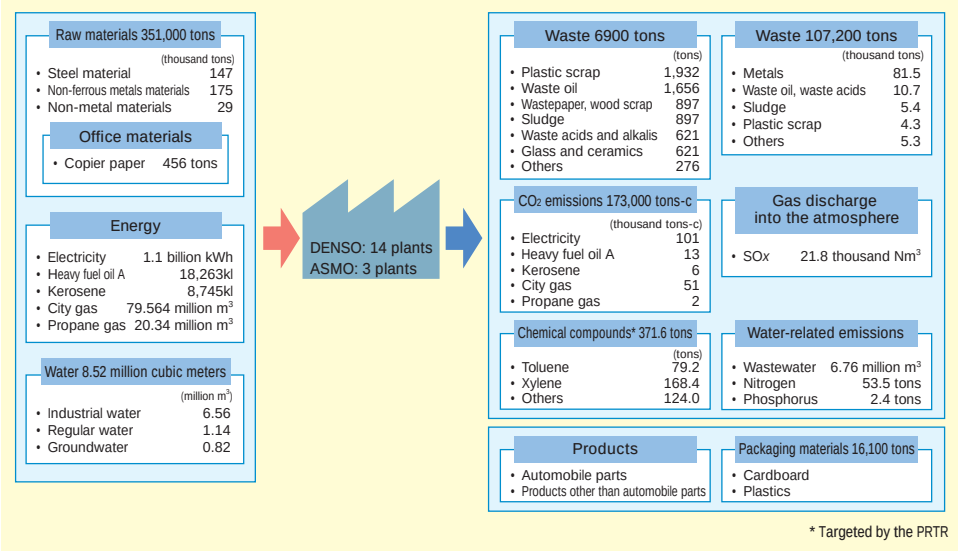
In another new endeavor, DENSO moved ahead with the development of a system to control the total volumes of waste and reusable resources.

It is also working on the construction of the "Perfect Energy Factory" (PEF), which is designed to achieve extremely high levels of energy conservation and energy efficiency, and measures against environmental pollution.

Amidst growing social interest in the management of chemical substances, DENSO has moved ahead with proper controls of facilities that generate dioxin and, drawing on the experience gained in a pilot scheme initiated in 1997, has strengthened its chemical substances management system with a view to promoting an adequate response to the PRTR system (the Pollutant Release and Transfer Register).

Looking ahead, DENSO will continue to work towards the realization of cleaner manufacturing plants as it maintains its basic stance of preserving the environment from a global perspective, not only complying with laws and ordinances but also engaging in voluntary activities of various kinds.

The Environmental Impact Flow at Production Plants



* Targeted by the PRTR

Reducing Companywide Waste

From the standpoint of contributing to the establishment of a recycling-oriented society that is capable of sustained development by circulating resources and producing no waste, DENSO is working aggressively to promote the reduction of companywide waste. The production processes used by DENSO generate various kinds of waste including plastic scrap, waste oil, wastepaper and waste wood. To reduce these waste products to even lower levels, the Company is aggressively implementing its 3R Action Plan to reduce, reuse, and recycle, as it works towards the achievement of zero landfill.

DENSO EcoVision 2005 lays down three concrete objectives:

1. Achieve zero landfill at all fourteen domestic factories by fiscal 2003
2. Develop a system for controlling the total volumes of materials used and reusable resources in order to reduce the volumes of waste and reusable resources generated by production processes
3. Reduce paper usage through effective use of the in-house information network system

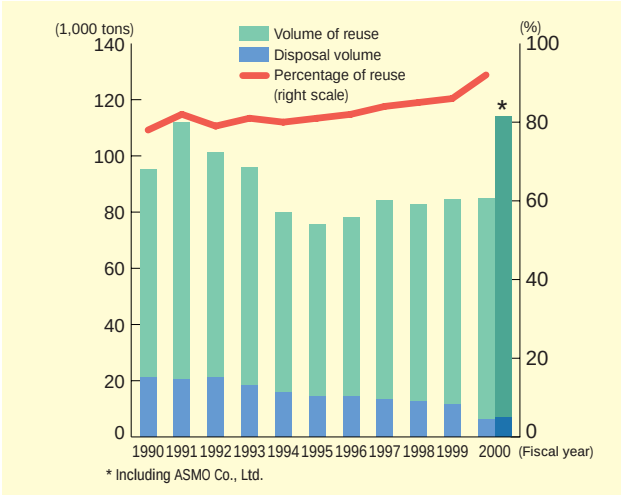
Achievements in Fiscal 2000

In the area of the three objectives mentioned above, DENSO achieved the following results during fiscal 2000.

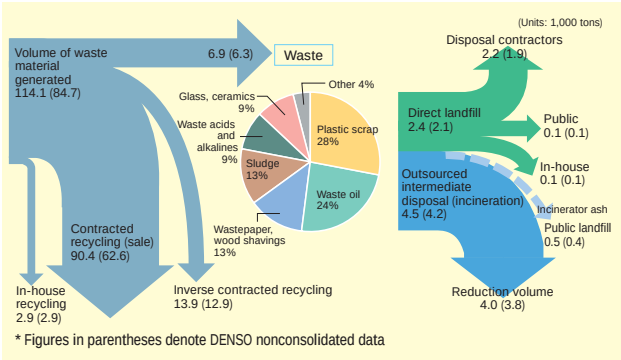
1. It achieved zero landfill at its Anjo and Kitakyushu plants.
2. It initiated the creation of its RrECS (Resource Recycle Communication System) for controlling the use of materials and reusable resources. RrECS comprises a system for measuring and analyzing total volumes generated and for monitoring proper disposal. System development was completed in fiscal 2000 and test operations commenced at the Anjo Plant in August 2001. Coding of materials and parts will make it possible to grasp not only the total volumes generated but also the volumes generated by product and by product line.
3. Progress in computerizing documents and internal authorizations has meant that the volume of paper bought by the company as a whole in fiscal 2000 fell by approximately 32%, to 102 million sheets (on an A4 conversion basis).

Taking these results into consideration, the volume of waste generated by DENSO stood at 6,300 tons in fiscal 2000, a 70 percent reduction on the figure for fiscal 1990. Likewise, the volume of waste generated by ASMO Co., Ltd. came to 600 tons, a 75 percent reduction compared with fiscal 1990. The total volumes of waste and reusable resources reached 84,700 tons in fiscal 2000, and the reuse rate rose by 6 percent compared with fiscal 1999, to 92 percent.

Amount of Waste Generated and Percentage of Reuse



Progress in Waste Product Processing (Fiscal 2000)



Anjo and Kitakyushu Plants Achieve Zero Landfill

The Anjo Plant, which had been selected as a zero landfill disposal model facility, achieved its target of zero landfill in March 2001, one year early.

The Anjo Plant is one of the largest plants in the world producing automobile starters and alternators, and boasts an integrated production line that handles everything from materials processing through to assembly.

It also uses various kinds of materials, including 90 types of resin and 400 types of metal.

DENSO launched a zero landfill project team in March 2000 and moved ahead on reducing or converting into reusable resources the waste generated in all workplaces from production processes through to offices.

On the basis of thoroughgoing efforts to separate waste and with the full cooperation of all employees, DENSO endeavored to prolong the useful life of cutting oil, reduce paint consumption by reusing waste paint, and even included light bulbs, used work gloves, and wastepaper.

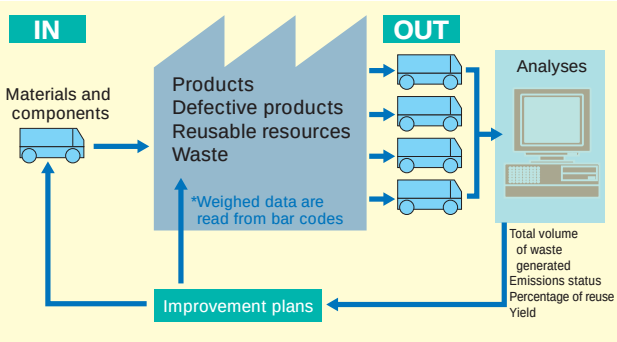
One of the most important aspects of attempts to reduce waste to zero is the development of recycling applications. DENSO’s efforts in this area bore fruit when it became possible to recycle insulator resins. Today, plant waste is recycled as roadbed for footpaths, railings, and so on.


Recycled footpaths (Anjo Plant)

Meanwhile, the Kitakyushu plant achieved zero landfill in December 2000. This plant, which manufactures automobile air conditioners, set a target of curbing its thermal recycling rate, the rate at which waste is recycled by burning to produce energy through electric power generation, to less than 5%. As a result, material recycling, whereby waste is reused as material for products, reached a rate of over 95%.

* DENSO’s definition of zero landfill: The definition of zero emissions differs from company to company. For DENSO, zero emissions means zero landfill applied to industrial and general waste. In this case, “landfill” includes both direct landfill and indirect landfill (landfill after intermediate treatments, such as incineration).

RrECS (Resource Recycle Communication System) for Controlling the Use of Materials and Reusable Resources



Tackling Energy Conservation

As part of its response to the increasingly serious problem of global warming, DENSO is engaged in various energy conservation activities designed to produce CO_2 emissions.

In 1994, DENSO established an energy strategy targeting 2000 and tackling the issue of cutting CO_2 with a view to protecting the global environmental, securing stable energy supplies, and reducing energy costs. This energy strategy drew up energy consumption structural reform scenarios to promote cutbacks in CO_2 emissions, encouraging the selection of clean energy and the more effective use of energy.

More specifically, on the energy supply side, DENSO has been pushing ahead in a planned manner with cogeneration*1, which offers high-energy efficiency and greatly reduces CO_2 emission levels. By 2000, it had introduced eight cogeneration systems.

Cogeneration at Takatana Plant

In the area of production processes, DENSO has been tackling the realization of "low-energy processes" that allow efficient production with low energy consumption. It has reduced compressed air consumption*2, and developed and put into practical use an "energy conservation controller" which minimizes the energy consumed when production lines are at rest. Its success in achieving energy conservation improvements were recognized in February 2001 when the ECO Team, Gasoline Injection Manufacturing Department, Nishio Plant won the Minister of Economy, Trade and Industry Prize for Energy Conservation at the Fiscal 2000 national convention for successful cases of energy conservation.

Minister of Economy, Trade and Industry Prize for Energy Conservation

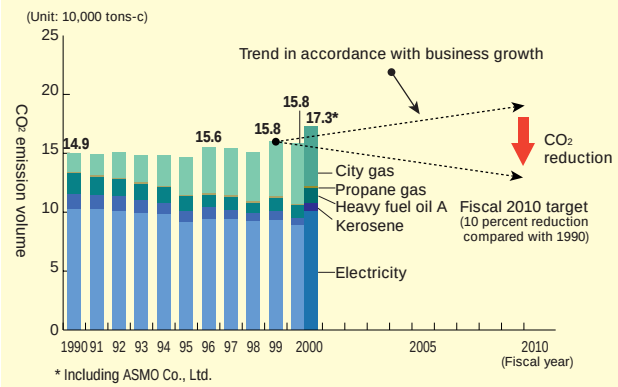
*1. Cogeneration systems offer excellent overall efficiency because they allow the waste heat created during electricity generation to be used for processing steam, air conditioning and heating, and hot water supplies.

*2. Compressed air is used throughout the production process in powering the cylinders, the drive facilities, and removing water after washing.

Numerical Targets for CO_2 Reductions

In its Second Environmental Action Plan, DENSO undertook to reduce CO_2 unit energy consumption through energy conservation and maintain use at 1990 levels in fiscal 2000. In fiscal 2000, the CO_2 unit energy consumption target was achieved with a 13 percent improvement compared with fiscal 1990.

Trends in CO_2 Emission Volumes at Manufacturing Plants and Targets for Fiscal 2010



Looking ahead, DENSO EcoVision 2005 has set two targets for reducing CO_2 emission volumes further:

1. By fiscal 2010, reduce CO_2 emissions from manufacturing plants by 10 percent compared with 1990
2. Make progress in building the Perfect Energy Factory (PEF) with a view to achieving minimum energy loss

With regard to targets for reducing CO_2 emission volumes, the Third Conference of Parties to the United Nations Framework Convention on Climatic Change (COP) held in Kyoto in 1977 and independent action plans of various industries have resulted in a switch from conventional unit targets to absolute targets. In light of the need for even more intensive efforts to achieve these targets, the Energy Conservation Process Research Council pushed ahead with the development of energy conservation technologies for production processes. At the same time, the production and facilities divisions established a plan to reduce CO_2 by fiscal 2005 and are working on medium-to-long-term CO_2 reductions.

● Towards the Realization of the Perfect Energy Factory (PEF)

Fundamentally, the PEF concept is designed to achieve the CO_2 emissions reduction targets set for fiscal 2010, which means realizing minimum energy loss throughout the entire production plant. More specifically, these efforts aim to lead in testing and developing technologies that will help minimize processing loss in cutting, heat treatment, and cold forging. Moreover, they involve thoroughgoing controls of energy consumption measurements on each line and full-scale shop floor improvements to reduce leakage of compressed air. DENSO's plans also aim to further CO_2 reduction over the medium-to-long term using heat cascades to minimize loss of waste heat and encompass new forms of energy that use natural energy sources. Seven model plants have been engaged in these activities since fiscal 2001 and DENSO intends to minimize the energy loss by introducing the results of these activities gradually into its other factories.

Water Quality Control

Reducing Pollutants from Production Processes

DENSO has worked hard to reduce the impact of factory wastewater on the environment. DENSO EcoVision 2005 also calls for a reinforcement of appropriate management and voluntary reductions of chemical materials used in manufacturing processes.

Efforts to Date and Their Results

Under DENSO's Second Environmental Action Plant initiated in 1996, the Company focused on measures to deal with sources of pollution using alternative materials, closed* wastewater systems, and voluntary control parameters for wastewater quality that are more stringent than those mandated by law.

* The systems use facilities established to recover environmental pollutants from wastewater to allow it to be reused without letting it flow into rivers, etc.

● Use of Alternative Materials and the Advent of Closed Wastewater Systems

Because nitrogen and phosphorus cause eutrophication*, DENSO works to reduce the use of chemicals that contain them or find substitutes for them.

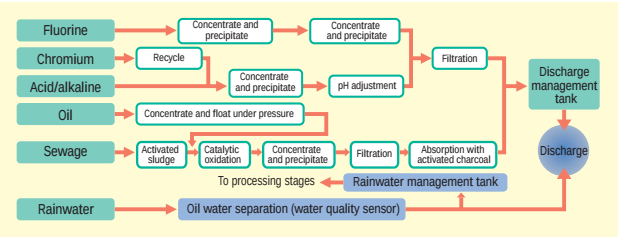
Likewise, DENSO is working to find a substitute for the nitric acid used in the cleaning of aluminum parts. DENSO reduced the concentration of ammonia in the aqueous ammonia used in the semiconductor manufacturing process.

In addition, with the intention of further reducing the quantities of nitrogen and phosphorus in wastewater, DENSO has installed denitrifying and dephosphorizing wastewater treatment facilities. These facilities can also remove nitrogen from waste with a high nitrogen content for later disposal by means of a condenser.

At plants that use cyanide and chromium for plating and other applications, DENSO has moved ahead with the use of substitutes. It also moved to a closed system for the effluent containing chromium generated in the underground coating treatment process.

*Eutrophication is the phenomenon that occurs when the nutritive salts of nitrogen and phosphorous flowing into closed bodies of water, such as lakes, marshes, and inland seas, enrich the water. Phytoplankton and water grass propagate abnormally and, in the process of rotting, consume massive volumes of water-borne oxygen, annihilating aquatic life forms and causing other damage.

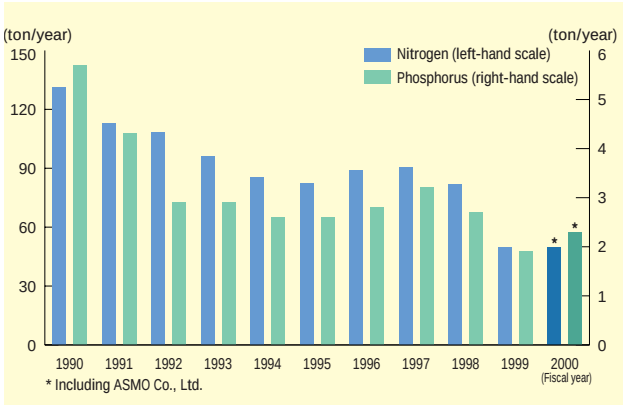
Wastewater Treatment Flow



● Voluntary Control Standards Relating to Water Quality

The quality of the wastewater generated by DENSO meets voluntary standards established by the Company that are stricter than those mandated by law. DENSO's basic policy when establishing voluntary control standards for harmful substances designated by the Water Pollution Control Law was to use: a numerical value one-fifth of that stipulated by law or local ordinance; a numerical value for other substances one-half of that stipulated by law or local ordinance; or whichever standards are more stringent—those under agreements with local communities or guidelines by government bodies.

Nitrogen and Phosphorus Emission Volumes



Thoroughgoing Water Quality Control

DENSO treats wastewater appropriately according to the wastewater systems involved.

It also uses its own discharge management systems to prevent the discharge of wastewater containing environmental pollutants.

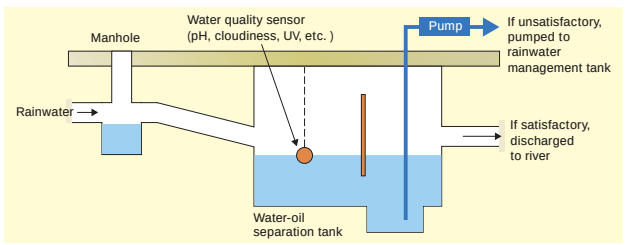
● Discharge Management System

DENSO has installed discharge management systems at all its plants. It collects wastewater that has been cleaned at the wastewater treatment plant in a series of discharge storage tanks, and releases the water only after it has been thoroughly checked. By sequentially changing the functions of the three tanks, it is possible to treat wastewater continuously. Should water quality be unsatisfactory, the system is designed to allow wastewater to be returned to the treatment plant for further processing.

● Rainwater Management System

DENSO has installed its own original rainwater management systems for rain discharge. Rain falling within the premises is collected and any oil is removed in a water-oil separating tank, which is constantly monitored by water quality sensors. If an oil membrane or something similar is detected, the water is automatically sent to the wastewater treatment plant for cleaning.

Rainwater Management System



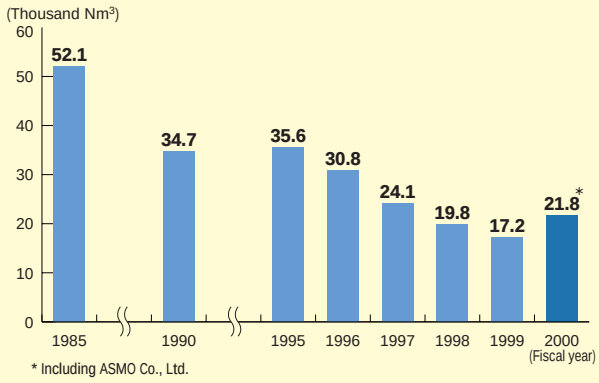
Thoroughgoing Control of Atmospheric Pollution

DENSO is doing everything in its power to reduce the pollutants contained in plant emissions as part of its thoroughgoing program for controlling atmospheric pollution. Its principal measures include replacing the sources of this pollution with alternative, less-polluting materials, reducing the volumes of materials used, improving the collection capacity of filters, etc., and working to ensure that pollutants are not released into the atmosphere.

● Reductions in SOx Emissions

For many years, DENSO has worked to reduce atmospheric pollutants emitted from its boilers and furnaces, such as sulfur oxide (SOx) and soot particles. More specifically, it has installed dust-collecting devices and switched from heavy oil to city gas or low-sulfur fuels. During fiscal 2000, its sulfur dioxide emissions increased compared with fiscal 1999 as a result of higher production levels.

SOx Emissions



● Reducing Emissions of Volatile Organic Compounds (VOCs)

DENSO is striving to reduce its emissions of volatile organic compounds, such as toluene and xylene. The substances are among the causes of photochemical smog and are targeted by the PRTR. Not only are they subject to stringent controls but DENSO also aims to achieve the clear reduction targets set by DENSO EcoVision 2005 (please see page 32).

For the most part, VOCs are included in paints and volatilize into the atmosphere during the painting process. One example of measures to reduce emissions is afforded by the painting process for motorcycle radiators. DENSO eliminated polyester paints containing VOCs and developed and switched to a new painting method using VOC-free acryl powder paints. As a result, VOC emissions in December 2000 were zero. In another example, the process for painting meter components was performed by a robot, which used to use 6.7 tons of VOCs each year. As a result of efforts to improve the robot, paint adhesion efficiency was raised from 20 percent to 40 percent and VOC consumption was reduced to 5.7 tons on an annualized basis during fiscal 2000.

In the case of desiccants used to coat printed circuit boards in order to prevent condensation, xylene is used as a diluent. Xylene volatilizes from the dip tanks containing the desiccants and is replaced every time the viscosity of the desiccant is adjusted. However, following a switch to a spray application method in fiscal 2000, xylene consumption was reduced by 60 percent.

● Other Endeavors

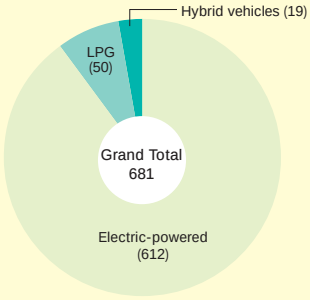
In fiscal 2000, the white smoke emitted from all 54 air discharge outlets at the Nishio plant was completely eliminated by improvements in the filters. Although there are no environmental standards for the oil mist that constitutes one of the constituents of white smoke, this resulted from DENSO's attempt to realize a cleaner plant.

Use of ozone-depleting substances in production processes was completely halted in fiscal 1999.

Introduction of clean Energy Vehicles

For its company cars and special business vehicles, DENSO is moving to switch to clean energy vehicles. They include electric vehicles, hybrid vehicles, and vehicles fueled by natural gas and LPG. As of June 2000, DENSO had a total of 1,086 vehicles, including special vehicles. 662 of its forklifts were clean energy vehicles (612 driven by electricity and 50 driven by LPG). It has also taken delivery of 14 hybrid cars and five hybrid microbuses.

Analysis of Clean Energy Vehicle Fleet



Initiatives for Soil and Groundwater Pollution

In the past, DENSO used two types of organochlorine solvent- trichloroethylene and 1,1,1-trichloroethane- for cleaning products. After carrying out a voluntary investigation of soil and groundwater pollution attributable to them from 1995, it confirmed that levels of trichloroethylene, etc.*1 exceeded environmental standards in the soil and groundwater within four of its 13 plants. It thus adopted measures to prevent discharges into the areas surrounding the plants.

After the Japanese government specified trichloroethylene as a harmful substance in 1989, DENSO completely phased out its use by November of the same year. Because 1,1,1-trichloroethane contributes to the depletion of the ozone layer, DENSO also completely phased out its use in August 1995.

Cleanup Activities and Prevention of Discharges Outside Plant Sites

- Soil cleaning

In 1995, DENSO carried out topsoil gas surveys at the eight plants that had a history of using organochlorine solvents, a total of 1,456 locations. Contamination was confirmed at 81 locations within four plants. The gas aspiration cleaning method*2 was used to clean the soil, and the process was completed by March 2001.

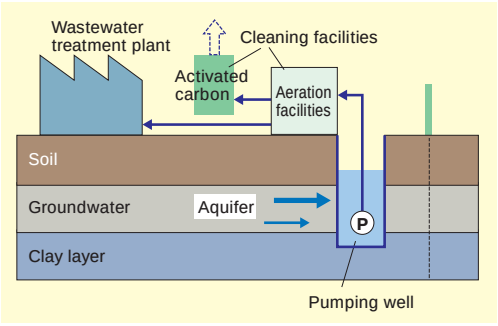
- Prevention of Discharge Outside Plant Sites and Cleaning of Groundwater

In 1995, DENSO dug exploratory wells and surveyed the concentration and directional flow of groundwater at 154 locations. Based on its findings, it installed pumping wells (barrier wells) using the pumping aeration method*3 in order to prevent discharge outside the plant sites (barrier measures) and clean the groundwater. DENSO has been pumping up the groundwater and subjecting it to cleaning treatment since 1997.

DENSO has now completed its discharge prevention measures around the boundaries of its plant sites. By the end of 2000, it had also spent some ¥2 billion on measures to clean soil and groundwater.

Cleaning facilities (left)

Conceptual Drawing: Groundwater Cleaning Measures (below)



Current Status

According to DENSO's latest surveys, the highest concentrations of trichloroethylene are 2.647mg/L at headquarters, 1.915mg/L at the Ikeda Plant, 3.653mg/L at the Anjo Plant, and 0.530mg/L at the Nishio Plant.

The effects of the cleaning measures are emerging as concentrations at all four plants are falling.

Voluntary Disclosure of Information

In April 1998, DENSO voluntarily disclosed the status of its cleanup program to the authorities and has continued to submit regular reports ever since.

In April 2001, it initiated "Regional Gatherings" to promote communications with the members of the communities in the vicinity of its plants. One of its activities is to report on the status of its efforts to clean up the soil and groundwater. DENSO intends to continue holding these gatherings and explaining its cleanup measures.

Future Measures

DENSO remains committed to continuing and strengthening its current efforts to clean up groundwater and prevent discharge outside its plant sites. Furthermore, with administrative guidance, it will look into introducing new technologies for promoting the cleanup activities, and intends to complete it over the next five years.

*1. Trichloroethylene, etc.: Refers to trichloroethylene and its degradation product cis-1,2-dichloroethylene.

*2. Gas aspiration cleaning method: Refers to a method whereby the gas from the organochlorine solvents in the polluted soil is sucked up and removed through absorption by activated carbon.

*3. Pumping aeration method: Refers to a method whereby groundwater is pumped up and atomized. Air is blown from underneath to vaporize and separate the organochlorine solvents, which are then removed through absorption by activated carbon.

Fiscal 2000 Trichloroethylene Measurement Data

Plant	Usage record	Concentration in plant site groundwater (mg/l)	Current status
Headquarters	O	Less than 0.002-2.647	Cleaning in progress
Ikeda Plant	O	Less than 0.002-1.915	Cleaning in progress
Anjo Plant	O	Less than 0.002-3.653	Cleaning in progress
Nishio Plant	O	Less than 0.002-0.530	Cleaning in progress
Takatana Plant	O	Not detected	No contamination
Daian Plant	O	Not detected	No contamination
Kota Plant	-	Not detected	No contamination
Toyohashi Plant	-	Not detected	No contamination
Agui Plant	-	Not detected	No contamination
Zenmyo Plant	-	Not detected	No contamination
Hiroshima Plant	-	Not detected	No contamination
Kitakyushu Plant	-	Not detected	No contamination
DENSO Research Laboratories	-	Not detected	No contamination
Environmental standard value		0. 03	

Proper Management and Reduction of Chemical Substances

DENSO's production plants handle a diverse range of chemical substances, including those contained in components and materials used in products. Chemical substances are also contained in secondary products (cleansing materials) used in the production process. Because many of these chemical substances place a burden on the environment, DENSO carries out thorough management and control of these substances and is making progress in reducing their use and emission volumes at its production plants.

Up to the present, when using new components, materials, and secondary materials and when introducing new facilities and upgrading existing facilities, we have asked our suppliers to submit material safety data sheets (MSDS) and implemented preassessments from the perspective of the environment, safety, and disaster prevention. In fiscal 2000, we carried out 1,400 preassessments for chemical substances and 3,300 preassessments for facilities. Also, by developing an MaCAS database in fiscal 2000, we are better able to correctly ascertain the volume of chemical substances handled and emitted. This, in turn, enables even more proper management of these substances and faster, more accurate formulation of plans for reducing the use of these chemical substances.

Approach That Considers PRTR System

In advance of the full-scale adoption of the Pollutant Release and Transfer Register (PRTR) system in April 2001, DENSO began publicizing PRTR data for relevant chemical substances. Also, under Denso Ecovision 2005, we established two voluntary reduction targets for chemical substances covered by the PRTR system and have achieved steady progress toward attaining these targets in fiscal 2000.

1. We are firmly operating the PRTR system and have set a target of achieving a 30% reduction in total emissions of chemical substances covered by the PRTR by fiscal 2005 compared with fiscal 1998. In fiscal 2000, we achieved a 16% reduction in total emissions of chemical substances compared with fiscal 1998.
2. We are progressing with a reduction in the volume of volatile organic compound (VOC) emissions and have set a target of achieving a 50% reduction in total emissions of toulene and xylenes by fiscal 2005. In fiscal 2000, we achieved a 20% reduction in total emissions of these substances compared with fiscal 1998.

Among the 354 substances covered by the PRTR system, DENSO has formulated a scenario for each department that uses chemical substances and aims to reduce emissions of these substances by fiscal 2005. This includes the rapid and total elimination of the use of five highly toxic substances that we have designated as top-priority substances for reduction.

Companywide PRTR Data

Tons/year

Substance	Volume handled	Volume of emissions and movement				Volume recycled	Volume processed and removed	Volume consumed	Product volume
		Emitted into the environment	Emitted into water basins	Emitted into soil	Waste materials				
Zinc water-soluble compounds	1.4	-	-	-	-	1.4	-	-	-
2 amino ethano	22.8	-	1.0	-	1.4	-	20.4	-	-
Antimony and other compounds	6.3	-	-	-	-	-	-	-	6.3
Polymer of 4,4-isopropylidenediphenol and 1-chloro-2,3-epoxypropane (liquid type)	68.1	-	-	-	0.9	0.5	-	-	66.7
Ethyl benzene	20.0	0.9	-	-	-	-	-	19.0	-
Ethylene glycol	2.0	-	-	-	2.0	-	-	-	-
Ethylene glycol monoethyl ether	27.4	27.4	-	-	-	-	-	-	-
2,3-epoxypropanol = phenyl ether	70.4	-	-	-	-	-	-	-	70.4
Xylenes	375.8	168.4	-	-	13.2	-	-	194.2	-
Silver and other water soluble compounds	6.3	-	-	-	-	0.2	-	-	6.1
Chromium and chromium (III) compounds	25.4	-	-	-	25.4	-	-	-	-
Hexavalent chromium compounds	25.5	-	-	-	-	-	25.4	-	0.1
Phthalic acid (2-ethoxyethylene)	27.1	27.1	-	-	-	-	-	-	-
Inorganic cyan compounds	1.1	-	-	-	-	-	1.1	-	-
Decabromodiphenyl ether	8.1	-	-	-	-	-	-	-	8.1
Hexamethyl 1,3,5,7-tetraazatricyclo [3,3,1,13,7] decane	140.8	-	-	-	-	13.3	-	-	127.5
1,3,5-trimethylbenzene	65.7	-	-	-	-	-	-	65.7	-
Toulene	218.5	79.2	-	-	-	-	-	139.3	-
Lead and other compounds	141.1	-	-	-	10.4	2.9	-	-	127.8
Nickel	1.0	-	-	-	0.8	-	-	-	0.2
Nickel compounds	7.1	-	-	-	0.7	-	-	-	6.4
Pyrocatechol	1.8	-	-	-	-	1.8	-	-	-
Phenol	1.8	-	-	-	-	-	0.9	-	0.9
Bis (2-ethylhexyl) phthalate	1.8	1.8	-	-	-	-	-	-	-
Hydrogen fluorides	62.7	-	0.6	-	-	-	62.0	-	-
Fluorine compounds and other water-soluble chlorides	6.3	-	-	-	-	-	-	6.3	-
Boron and boron compounds	2.0	-	0.6	-	1.4	-	-	-	-
Poly (oxyethylene) = n-nonyl acetate	2.5	-	-	-	-	-	2.4	-	0.1
Methacrylic acid	1.7	-	1.7	-	-	-	-	-	-
Molybdenum and other compounds	5.2	-	-	-	4.5	0.4	-	-	0.3
Others	3.5	1.3	0.2	-	0.5	1.5	-	-	-
Total	1,351.1	306.1	4.1	-	61.2	22.0	112.2	424.6	420.9

As part of efforts to promote smooth communication between our production facilities and the surrounding local communities, we held an observation tour of the production plant and water treatment facilities at our Takatana Plant. This tour was acclaimed by local residents. As of July 2001, seven of nine DENSO production plants had set up forums for discussion with members of the local communities.

*1 Pollutant Release and Transfer Register: A system for registering the emissions and movement of environmental pollutants according to country. This is not a restriction on the use of chemical substances.

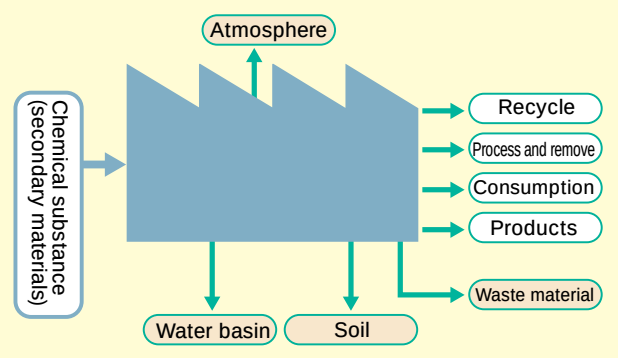
● Reducing Dioxin Emissions

DENSO operates four incinerators to reduce the volume of the sludge generated along with the treatment of wastewater. However, DENSO plans to discontinue the use of these incinerators by December 2002.

Sludge generated through the treatment of wastewater contains almost no chloride, which is a principal cause of the formation of dioxins during the sludge incineration process. In addition, to restrict emissions of dioxins, DENSO carries out proper operation of incinerators, maintaining incineration temperatures at above 800 degrees C.

Regarding the measurement of dioxin densities in fiscal 2000, density levels of emissions by DENSO were 0.27ng-TEQ/Nm^3, significantly less than the national dioxin emission standards of 10ng-TEQ/Nm^3. However, in view of society’s rising concern about dioxins, we have decided to completely discontinue the use of sludge incinerators.

The Flow of PRTR Substances Accompanying Production Activities



On the other hand, DENSO operates 10 aluminum-melting furnaces. Aluminum melted at these furnaces contains little chloride, which leads to the formation of dioxin. Looking at the measurement of dioxin levels at aluminum melting furnaces in fiscal 2000, dioxin emissions amounted to 0.035ng-TEQ/Nm^3, less that 1/100th of the national dioxin emission standards of 5ng-TEQ. Because of this, we plan to continue the use of these incinerators.

* NG (nanogram) is one billionth of a gram.

● Storing PCB

DENSO stores 36,426 units of PCB (polychlorinated biphenyl). Because PCB has excellent insulation properties, it was previously used in transformers and stabilizers in fluorescent lights. However, production of PCB was discontinued and the storing of PCB became mandatory as a result of the Law Related to Restrictions on Manufacturing and Investigation of Chemical Substances implemented in 1974. In preparation for the unlikely occurrence of leakage, we are carrying out proper storage that includes installing spillage collectors.

DENSO's Distribution System

Each year, approximately 4.5 million m^2 (fiscal 2000 figures) of DENSO products are transported by truck, rail, or ship. DENSO EcoVision 2005 lays out two objectives related to distribution activities that we advanced toward during fiscal 2000.

1. By raising transport efficiency, DENSO aims to stabilize its carbon dioxide emissions at levels that are below those of fiscal 1990 by fiscal 2005. In fiscal 2000, based on an index that assigned a value of 100 to fiscal 1990 emission volumes, the Company nearly achieved its goal for fiscal 2005. Load sizes will increase in the coming years, requiring vigilant efforts in this area to maintain emission volumes that are below fiscal 1990 levels.
2. Looking at our goal of reducing the volume of packaging materials by 20% of fiscal 1990 levels by fiscal 2005, in fiscal 2000, we succeeded in making a reduction of 19% of fiscal 1995 levels.

Our Approach to Achieving Our Objectives

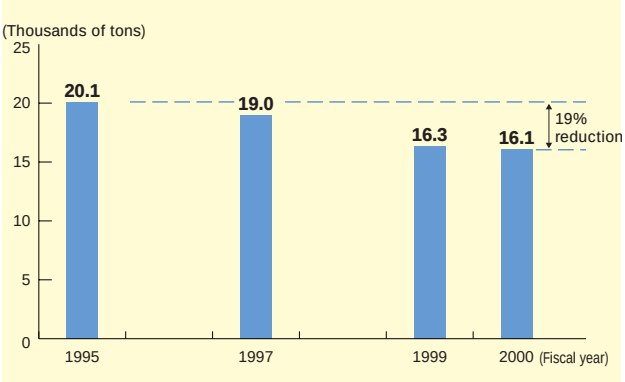
Nearly 97% of the reduction in the volume of DENSO's carbon dioxide emissions stemmed from an improvement in truck loading efficiency and the promotion of shared transport. In addition to these measures, we worked at realizing a modal shift from trucks to JR Freight and ships for long-distance transport. Based on an index of 100 assigned to fiscal 1998 load volume and truck deliveries, fiscal 2000 load volume was 115 while truck deliveries were contained to 107.

Packaging reductions were concentrated in cardboard use, which accounted for approximately 80% of the decrease, while the remainder was attributable to the promotion of simple packaging and returnable packaging. Packaging materials used in fiscal 2000 amounted to approximately 16,000 tons, down from 20,000 tons in fiscal 1995.

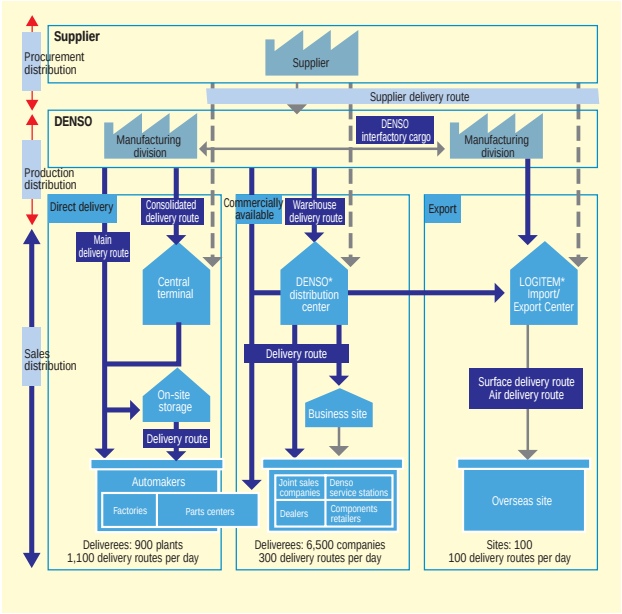
● Rationalization of Truck Transport

DENSO is currently undertaking efforts to raise the efficiency of truck transport, which has followed a process of gathering a number of products at each plant and then separating, loading, and shipping them according to customers' needs. In April 2001, we expanded the size of each of our terminals to enable us to stock more items. An example of a positive result of this change is that instead of 19 vehicles and over 20 delivery routes per day for delivery from one terminal to three customers, six vehicles and over 11 routes are used, a reduction aided by the transition to trucks with increased loading capacity.

Trend of the Volume of Packaging Materials



DENSO's Distribution System



● Independent Development of Plastic Pallets

DENSO has independently developed plastic pallets for recycled products to replace wooden ones. In doing so, DENSO improved plastic pallets, which currently have only a 10% market share and come with a number of drawbacks. We overcame the problem of load slippage by applying tape to the pallets and created numerous openings in the upper and lower surfaces of the pallets to reduce their weight to 14kg each, an 11kg improvement over conventional plastic pallets, and 4kg less than wooden pallets. The new pallets are strong, able to withstand weights of up to 800kg, compared with 600kg for wooden pallets and 1,000kg for conventional plastic pallets.

Furthermore, although most conventional pallets can only be lifted by forklifts and handlifts from two sides, the new pallet developed by DENSO can be lifted from any of its four sides. This feature also increases flexibility in how trucks are loaded, allowing an additional four pallets to be loaded onto an 11-ton truck, raising loading efficiency 14% and decreasing the number of delivery vehicles by the same percentage. DENSO's pallets have a lifetime of eight to ten years, over two times that of wooden pallets, and when discarded, they can be recycled as a material for the construction of new pallets. Use of the new pallets will save 1,850 tons of lumber yearly, the equivalent of 5,600 trees. In fiscal 2000, DENSO replaced approximately 60,000 of its 200,000 wooden pallets with its independently developed plastic pallets and expects to complete the transition to plastic pallets in all deliveries to automakers by fiscal 2002.

Plastic pallet

Activities of Group Companies

DENSO Group Companies and EcoVision 2005

In accordance with its policy of "strengthening environmental management in its consolidated operations," DENSO is working to bolster its approach to environment protection as an entire group. In line with its DENSO EcoVision 2005 basic policy, action guidelines are being shared throughout the whole DENSO Group and various environmental action plans are being formulated in accordance with the situation at each Group company.

Among these measures, we have selected seven categories for addressing environmental problems in step with the entire Group, and have established the new DENSO Group Overseas Regional Environmental Committee, which features the participation of persons responsible for coordinating environmental activities in North America, Europe, ASEAN, and Oceania.

Environmental Committee by Geographic Region

Region		Japan (DENSO Group)	Europe	Oceania/Asia		North America
				ASEAN	Oceania	
First Meeting		1994/4	2000/11	2001/2	2000/12	2000/11
Composition	Participating production bases	16 companies	7 companies	5 companies	3 companies	11 companies
	Sponsoring company	DENSO	DNEU	DISP	DIAU	DIAM
	Chairman	Vice President Furuya	Executive Director Fukuzaki	President Murodono	President Goto	President Takeuchi
Supervisor's Liaison Committee		2000/5	2000/12	2000/12	2000/12	1996/4
Frequency of meetings		Twice annually				
Role		Formulate and implement environmental action guidelines for each geographic region Carry out surveys on and respond to legal restrictions and trends among chassis manufacturers Progress with efforts to address common regional issues				

Common Environmental Protection Targets of DENSO and DENSO Group Companies

Category	Domestic manufacturing company	Overseas manufacturing company	DENSO
Build environment management system	Obtain ISO 14001 certification (2002)	←	ISO 14001 certification obtained (1998)
Implement environmental product preassessments	Formulate and implement assessment standards for each product	←	Implement product EMS
Carry out green procurement	Implement the DENSO Group Green Procurement Guidelines	Carry out green procurement in accordance with the guidelines for each region	Carry out green procurement
Reduce waste materials	Achieve zero emissions (2005)	Carry out efforts to reduce waste in accordance with the guidelines for each region	Achieve zero emissions (2003)
Reduce substances at each production plant that place a burden on the environment	• Reduce PRTR substances 30% • Reduce VOC 50% (Paint) (2005)	Reduce VOC 50% (Paint) (2005)	Reduce PRTR 30% Reduce VOC 50% (2005)
Prevent global warming	Reduce the volume of CO_2 emissions (Establish independent targets)	Carry out reduction measures in accordance with the guidelines for each region	Reduce CO_2 10% (2010)
Rationalize distribution	• Improve transportation efficiency • Reduce packaging materials (Independently established target)	Carry out measures in accordance with the guidelines for each region	Stabilize CO_2 Reduce packaging materials 20% (2005)

Activities of Group Companies

● Reuse of Rainwater (DENSO Manufacturing UK Ltd.)

DENSO Manufacturing UK in Britain uses underground tanks to collect and treat the rainwater that falls on the roof of its production plant. This water is then reused in the production process at the plant. Through these efforts, DENSO Manufacturing UK reduced its consumption of water resources by 11,000m^3 in fiscal 2000.

Reusing rainwater

● Recycling Used Wooden Boxes into Housing Materials (DENSO do Brasil Ltda.)

DENSO do Brasil Ltda. accumulates a large volume of wooden boxes that are returned after delivery of components. In conjunction with the Curitiba office, DENSO Brasil dismantles these boxes for reuse as materials for building single-person dwellings.

● Reusing Waste Materials from Desks (DENSO Haryana Pvt. Ltd.)

Employees at India-based DENSO Haryana, which commenced operations in February 2000, are using such scrapped materials as packaging materials for facilities and components to build handmade desks and work benches, bookshelves, and bulletin boards.

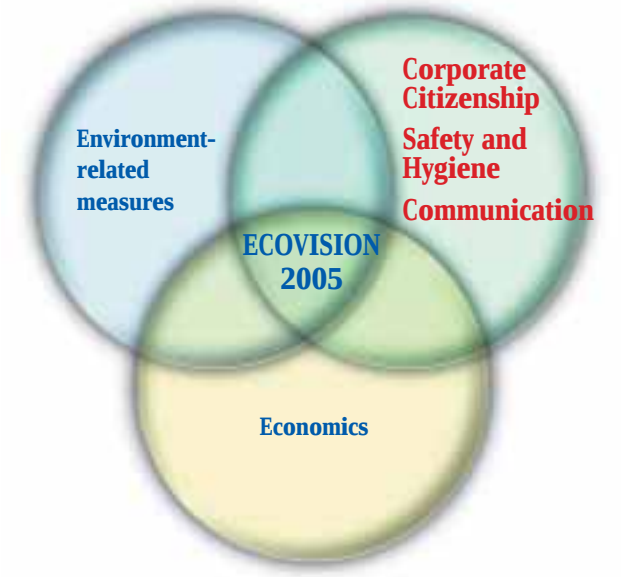
5 Interaction and Communication with Society

Corporate Citizenship

Making Contributions to Society a Greater Priority

A company's ability to survive in the 21st Century will depend not only on the effective utilization of management resources but also on whether management makes efforts to resolve environmental and social problems. Such thinking, which predominates in the United States, Canada, and Europe, concludes that the result would be the realization of highly efficient management, the minimization of future risks, and the achievement of superior earnings performance. The three key concepts of economic efficiency, environmental consideration, and social awareness form the foundation for corporate survival are thought to be the "Triple Bottom Line."

As part of the Company's efforts to proactively embrace external partnerships and information exchanges- fundamental principles outlined in DENSO EcoVision 2005- DENSO has introduced a portion of the Triple Bottom Line into its fiscal 2001 environmental report. The Company has decided to make social concerns a greater priority. Herein we explain DENSO's social and environment-related communication activities as well as measures to ensure a safe and hygienic work environment for our employees.



As a Corporate Citizen, Helping to Create an Affluent Society

DENSO has clarified its position as a corporate citizen in its mission statement, indicated in the DENSO philosophy: "To contribute to a better world by creating value together with a vision for the future."
To accomplish this, we are not only promoting environmental conservation but also actively introducing a broad range of measures to improve the safety and comfort of our employees. Furthermore, DENSO welcomes suggestions from all related individuals. The Company's intention is that its corporate activities contribute to making a better world. The Company does not limit its focus to its business operations but strives to address a broad variety of social issues and participate, as a good corporate citizen, in the creation of an affluent society.

The DENSO Philosophy for Corporate Philanthropy

DENSO holds to the belief that by striving to become a more responsible corporate citizen in tune with the needs and goals of local communities, it will enrich the lives of those who live in the communities and be better understood by them, thus "contributing to a better world."

Basic Goals

- To gain recognition in local communities as a good corporate citizen
- To help local communities create a brighter future
- To work in harmony with local communities

Focus

● Welfare of People with Disabilities: Removing Barriers to Full Participation in Society

Many things that a person without disabilities takes for granted pose a barrier to the disabled, preventing them from fully participating in society. We are making efforts to create an environment that will allow for full participation for everyone.

In Fiscal 2000, we supported the activities of the nonprofit organization Wheelchairs and Friendship Center of Asia (WAFCA) and undertook a project in Thailand to help the disabled participate more actively in society.

● The Nurturing of Our Youth: Fostering the Next Generation Amid Internationalization and Declining Birthrates

We are doing everything within our ability to support young people, with their great energy and unlimited, yet hidden, potential. They are the leaders of tomorrow.

In Fiscal 2000, we undertook the planning and promotion of our "Making Things and Creativity Program" to deepen young people's understanding of how things are made.

● Protection of the Environment: Striving to Ensure an Abundant and Lush Natural Environment and Create a Comfortable, Safe Society

We believe that our task is to raise awareness of what a beautiful world we live in. To this end, we are implementing regional cleanup activities, nature conservation programs, and other environmental conservation activities outside the scope of our usual business activities.

In Fiscal 2000, we planned and promoted an environmental education program targeting children in local areas.

Update on Activities

WELFARE OF PEOPLE WITH DISABILITIES

Support for Wheel Chairs and Friendship Center of Asia (WAFCA)

More Wheelchairs for Asian Countries

In 1999, DENSO set up its corporate nonprofit organization WAFCA to commemorate the Company's 50th anniversary.

While various Asian countries have been successfully achieving rapid economic growth, they have also been accumulating numerous social problems. In the area of welfare for the disabled, these countries lag far behind in making wheelchairs publicly available. Consequently, it is extremely difficult for the disabled to achieve social and economic autonomy.

The objective of the WAFCA is to promote the spread of wheelchairs in Asia, support social independence for the handicapped, and through sports and educational exchanges contribute to the realization of a "barrier-free society." Thailand is the primary base for the organization's activities, and a local chapter, Wheelchairs & Friendship Center of Asia Thailand (WAFCAT), has been established.

WAFCA and WAFCAT have supported Thailand's wheelchair production plants and have overseen their manufacturing technologies. In fiscal 2000, the groups sponsored Japan-Thai wheelchair basketball tournaments. The first was held in July 2000 in Kariya, Aichi Prefecture, followed by a second match in February 2001 in Bangkok, Thailand. Other projects include the construction of a model school with access for the physically disabled and the donation of lavatories with access ramps in January 2001 to a Bangkok school. Also, these organizations annually donate 200 wheelchairs to the disabled in Thailand.

NURTURING OUR YOUTH

Support for the Young Inventors Club

Unlocking the Potential of Young People

In association with the Young Inventors' Club of Nishio, Aichi Prefecture, in November 2000 DENSO sponsored its first original lecture, titled "How to Make an Electronic Keyboard- Welcome to the World of Sound and Electronics." On the day of the lecture, the city's elementary school children received instruction on the creation of electronic keyboards from members of DENSO's Engineering Society, company employees volunteering their time, and Inventors' Club instructors.

Using oscilloscopes to view a sound's ripples, the children studied the difference in the ripples of the high and low frequencies of their own voices. The children received an assembly kit containing a soldering iron, pliers, and other tools, and had the opportunity to experience the pleasure of creating something for themselves.

Headquartered in Kariya, DENSO has long been sponsoring original programs for the Kariya Young Inventors' Club, which has approximately 1,600 members and has achieved top-class results at the national level. DENSO intends to continue expanding the scope of its local activities. By providing children with the opportunity to enjoy the study of science and the process of making things, DENSO hopes to foster their creativity and help to make the fields of engineering and the sciences more attractive to young people. Through our program, we endeavor to nurture the seeds that will fuel Japan's future technological development.

PROTECTION OF THE ENVIRONMENT

DENSO's Environmental Education Program- "Eco Ranger 21"

A New Environmental Education Program

In March 2001, DENSO launched "Eco Ranger 21," a new hands-on environmental education program for local children aged 9 to 12. With "Greenery, Water, and the Atmosphere" as its theme, the program aims to further the children's understanding of the importance of environmental conservation in an enjoyable manner through natural surroundings.

Specific activities include the creation of an expedition map of Kitakko-no-Mori (Northern Children's Forest) in the city of Kariya. Participants are taught about the periodic thinning of bamboo groves and how to make bamboo handicrafts. They learn about the relationship between forests and the organisms that live along beaches. Children deepen their knowledge about solar power by making a solar-powered car. They also try their hand at outdoor cooking, using ingredients taken from their natural surroundings.

At DENSO, we are confident that "Eco Ranger 21" provides meaningful opportunities for today's children to have hands-on experiences that will be treasured by them, and plan to continue an expansion of this program.

Fundamental Philosophy and Policy

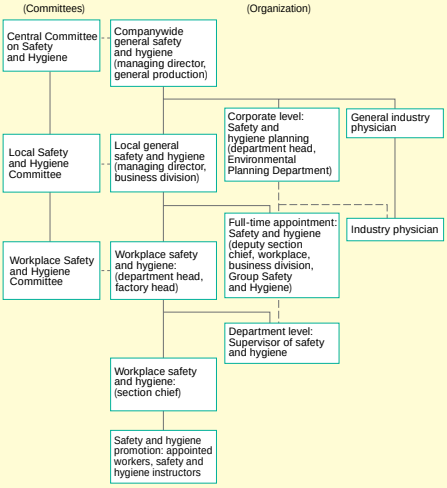
Our priorities are to ensure the safety and health of our employees and create a dynamic company in which they can work with enthusiasm. With the cooperation of the entire staff, we are implementing various disaster- and accident-prevention measures.

Basic Philosophy

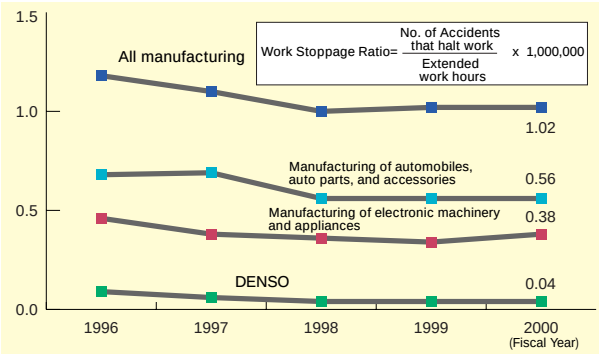
The lives, health, and physical well-being of all people must be preserved.

1. In the creation of a safe working environment, we will implement the best policies to realize high productivity while simultaneously respecting human rights.
2. In all DENSO's domestic and overseas activities, we give consideration to global environment protection, the ecosystem, and the conservation of resources. Through these efforts to protect the environment, we strive to live in symbiosis with the global community.
3. With respect to these various activities, not only managers of safety, hygiene, and pollution prevention but all managers and each individual employee will apply their ingenuity and resourcefulness in a collective effort to realize our target of zero accidents.

Safety and Hygiene Promotion System



Incidence Rate of Work-Related Accidents (Work Stoppage Ratio)



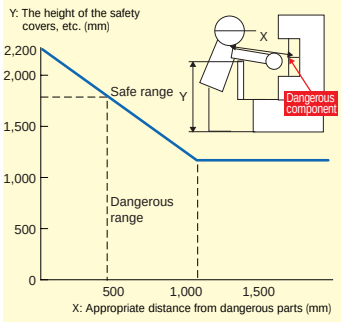
DENSO Safety and Hygiene Environmental Standards

Based on the regulations adopted in 1970, the Company issued a compilation of basic safety and hygiene rules- the DENSO Safety and Hygiene Environmental Standards (DAS). This compilation includes disaster-prevention know-how for each item of equipment and every operation. The Company understands that any failure to comply with these rules jeopardizes the safety of all employees, and thus upholds the DAS rules as a type of constitution governing safety.

DAS is revised following any legal revisions or changes in production processes. Furthermore, lessons learned from disasters and accidents are added. Our aim is to improve these standards, which currently number 570, in terms of both quality and quantity.

General Rules	72
Safety Rules	122
Hygiene Rules	48
Environmental Rules	82
Rules on Work Procedures	246
Total	570 standards

The Height of the Safety Cover and the Appropriate Distance to be Maintained



The equipment safety standards, operating on the premise that everyone makes mistakes, specifies that covers and intra-locks must be used as countermeasures so that accidents may be avoided.

Creating a Pleasant Working Environment

With the aim of preventing occupational illnesses resulting from the handling of hazardous chemical substances and the removal or substitution of energy, legal regulations require that the concentrations of harmful substances be strictly controlled- diluted to one-fifth their original concentration. The Company uses material safety data sheets (MSDS) to notify workers of the harmful nature of the substances being handled. We are also making efforts to improve the physical work environment. Referring to engineering evaluations, we have devised measures to reduce heat, noise, and work loads. Furthermore, we have made improvements to lounges and locker rooms with the aim of providing a healthier work environment for employees. We are also implementing measures for hygiene management.

Heat countermeasure: line-flow air conditioning (above)
Air-conditioned, separated smoking lounge (right)

Communication

Enhancing Communication

DENSO is striving to make available to all stakeholders environment-related information. Among the fundamental principles outlined in DENSO EcoVision 2005 is "the proactive formation of external partnerships and the expansion of information exchanged." Along these lines, we are sponsoring environmental exhibitions to increase communication with local communities and hosting roundtable discussions, with the environment as the main theme.

The DENSO Environmental Exhibition

In the first two months of 2001, the Company held the 2nd DENSO Environment Exhibition. This event, first held in 1998, was staged at six DENSO facilities, including the headquarters. The environment-related activities being undertaken by each facility were displayed on a total of 86 panels. In one corner was a special exhibit, titled "The Challenge of Realizing Zero Emissions." Among the visitors to the exhibition were employees of DENSO and Group companies as well as the individuals who had benefited from DENSO's environmental and philanthropic activities. The number of visitors, at 3,200, far exceeded the 1,700 that had attended the previous show.

Participating in Exhibitions

To raise awareness among the general public of DENSO's environment-related activities, the Company actively participates in externally organized exhibitions that have the environment as their theme. In Fiscal 2000, DENSO took part in the "People and Automobile Technology Show 2000," held in Tokyo in May; the 34th Tokyo Motor Show, held in Tokyo in November; and "Eco Products 2000," held in Tokyo in December. The Company explained to the public how DENSO products contribute to environmental conservation. Like all other exhibiting companies, DENSO used environment-friendly materials, such as reusable and recycled materials, in its booth, giving priority to design and construction that allow for the reduction of waste and pose a minimal burden to the environment.

Eco Products 2000

Offering Tours of the Kariya Plant

In September 2000, DENSO and six Toyota Motor Corp. affiliates sponsored factory tours as part of the events commemorating the 50th anniversary of the founding of Kariya, an industrial city with a high concentration of automobile manufacturing facilities. While DENSO has long offered company tours, this specific tour was developed following the realization that the general public had no knowledge of the products actually being produced at each factory.

Environment-Related Factory Tours

We welcomed representatives from the Kariya Rotary Club, the United Nations Regional Development Center, and 18 other organizations for environment-related factory tours in Fiscal 2000.

"Environment-Friendly" Development (Abashiri Testing Center)

We constructed the Abashiri Testing Center in Abashiri, Hokkaido, in June 1998 to conduct comprehensive test drives to further the development of increasingly sophisticated automotive equipment. We are reducing the surface area of deforestation in accordance with our environmental assessment and proceeding with the afforestation of 200 hectares and the planting of broad-leaved trees. In this way, we are giving consideration to the environment as we undertake development. We take into account the opinions of local scholars, experienced individuals, and nature conservation groups in the development planning stage. In the event of construction, we take measures to prevent soil erosion due to rain and protect the water quality of rivers feeding into Lake Notoro.

Responses from Our Readers

We would like to share some of the responses to last year's questionnaire regarding the *DENSO CORPORATION Environmental Report 2000*.

- A bit more consideration should be given to animals and plants. I am grateful for the city of Nishio's Heigen Genjibotaru no Sato project, a breeding area for the rare Genji firefly. (Male, 45)
- The Company's creation and operation of an environmental management system are described in detail. (Male, 55)
- I would like to see further efforts regarding the control of hazardous chemical substances. (Male, 49)
- Please introduce some of the activities being undertaken jointly with affiliated companies. (Male, 52)
- The report is easy to read and has a friendly tone. (Male, 58)
- There are not enough numerical values and environmental performance indicators. Need more details regarding DENSO's partnership with non-governmental organizations. (Male from Sapporo)

Main Sites and Affiliates / Awards

DENSO CORPORATION

Site	Location	Products/Operations	Site Area (10,000m²)	Building Floor Space (10,000m²)	Number of Employees
Headquarters	1-1, Showa-cho, Kariya, Aichi 448-8661	Monolithic carriers, IC wafers, and applied electronic products	25.8	35.4	10,300
Ikeda Plant	5-1, Ikeda-cho, Kariya, Aichi 448-0044	Radiators and oil coolers	10.3	8.4	800
Anjo Plant	2-1, Nagane, Sato-cho, Anjo, Aichi 466-8511	Starters and alternators	40.7	24	2,700
Nishio Plant	1, Sumisaki, Shimohasumi-cho, Nishio, Aichi 445-8502	Air conditioners and heaters, radiators, fuel injection pumps, and electronic fuel injection components	126.7	56.6	7,700
Takatana Plant	1, Shinmichi, Takatana-cho, Anjo, Aichi 446-8507	Meters, oil filters, cellular phones, and display devices	36.3	23.2	2,800
Daian Plant	1530, Monzen, Daian-cho, Inabe-gun, Mie 511-0296	Ignition devices, safety-related equipment, oxygen sensors, actuators, sensors, and hydraulic solenoids	74.1	31.9	4,100
Kota Plant	5, Maruyama, Ashinoya, Kota-cho, Nukata-gun, Aichi 444-0193	Integrated circuits and electronic control components	28.3	21.8	4,000
Toyohashi Plant	3-23, Akemi-cho, Toyohashi, Aichi 444-8074	Air conditioner compressors, magnetic clutches, and car heater blowers	17.4	14.1	1,200
Agui Plant	1, Yoshiike, Kusaki, Agui-cho, Chita-gun, Aichi 470-2298	Machinery, tools, and robots	28.3	6.6	940
Kitakyushu Plant	5-4-1, Honjo Nishi-ku, Yahata, Kitakyushu, Fukuoka 807-0801	Automobile air conditioners	15.6	2.2	170
Zenmyo Plant	100, Ipponmatsu, Zenmyo-cho, Nishio, Aichi 445-0034	Electronically controlled injection pumps (ECD-V4, ECD-U2P) and IC cards	32	7.7	270
Hiroshima Plant	2-5-1, Kamiseinominami, Aki-ku, Hiroshima 739-0302	Radiators and radiator fans	3.3	1.4	150
Nukata Testing Center	1-2, Obou, Kiriyama, Nukata-cho, Nukata-gun, Aichi 444-3431	Performance evaluations of vehicle components	100.4	3	36
DENSO Research Laboratories	500-1, Minamiyama, Komenoki-cho, Nisshin, Aichi 470-0111	Semiconductors, information and communication systems, and research for micromachining	8.1	4.3	300

ASMO Co., Ltd.

Site	Location	Products/Operations	Site Area (10,000m²)	Building Floor Space (10,000m²)	Number of Employees
Headquarters	390, Umeda, Kosai-shi, Shizuoka 431-0493	Wiper motors, washer motors, power window motors	37	26	4,000
Toyohashi Plant	1-323, Nanzan, Ichihara, Toyohashi, Aichi 441-3111	Electic fan motors, blower motors	18	5	690
Hiroshima Plant	1-15-1, Happonmatsu, Iida, Hiroshima, Hiroshima 739-0146	Washer tanks, pump, wiper links	2	0.7	140

Awards (1996- 2000)

● Japan

Date of Award	Name of Recipient	Name of Award	Conferring Body
February 2001	Nishio Plant	Minister of Economy, Trade and Industry Prize for Energy Conservation	Ministry of Economy, Trade and Industry (METI)
February 2001	Toyohashi Plant	Award for Factory Energy Management Excellence (Electrical Division) from the Director of the Agency of Natural Resources and Energy	METI
February 2001	Ikeda Plant	Award for Factory Energy Management Excellence (Electrical Division) from the Director of the Chubu Regional Bureau of METI	METI
September 2000	DENSO	Award for Protection of the Ozone Layer	*Nikkan Kogyo Shimbun*
February 2000	Daian Plant	Award for Factory Energy Management Excellence (Heating Division) from the Director of the Agency of Natural Resources and Energy	Ministry of International Trade and Industry (MITI)
April 1999	DENSO	Technology Prize (for the common rail diesel fuel-injection system)	The Japan Society ofMechanical Engineers
February 1999	Nishio Plant	Award for Factory Energy Management Excellence (Electrical Division) from the Director of the Agency of Natural Resources and Energy	MITI
February 1998	Daian Plant	Award for Factory Energy Management Excellence (Electrical Division) from the Director of the Agency of Natural Resources and Energy	MITI
February 1997	DENSO	Prize for Energy Conservation Excellence (for a heater/cooler system using an economical kerosene heat pump)	The Japan Machinery Federation
February 1997	Anjo Plant	Award for Factory Energy Management Excellence (Heating Division)	MITI
February 1997	Takatana Plant	Award for Factory Energy Management Excellence (Electrical Division) from the Director of the Chubu Regional Bureau	MITI
April 1996	DENSO	Technology Prize (for a machine that recovers refrigerants for reuse)	The Japan Society of Mechanical Engineers
February 1996	Takatana Plant	Award for Factory Energy Management Excellence (Heating Division) from the Director of the Agency of Natural Resources and Energy	MITI
February 1996	Nishio Plant	Award for Factory Energy Management Excellence (Electrical Division) from the Director of the Chubu Regional Bureau of MITI	MITI

● Overseas

Date of Award	Name of Recipient and Country	Name of Award	Conferring Body
November 1999	DENSO Manufacturing UK Ltd. (United Kingdom)	Energy Efficiency Accreditation Award	British government
June 1999	DENSO Manufacturing Australia Pty. Ltd. (Australia)	Environmental Protection Authority (EPA) Cleaner Production Award	Australian EPA
1994–1999 (six consecutive years)	DENSO Manufacturing Tennessee, Inc. (United States)	Kentucky-Tennessee Water Environment Association Pretreatment Excellence Award	Kentucky-Tennessee Water Environment Association
December 1998	DENSO Manufacturing Michigan, Inc. (United States)	C3 (Clean Corporate Citizen) Award	State of Michigan
July 1998	Australian Automotive Air Pty. Ltd. (Australia)	EPA Cleaner Production Award	Australian EPA
February 1997	American Industrial Manufacturing Services, Inc. (United States)	California Water Environment Association Award	Association for the Protection of Water Quality, State of California

Environmental Data by Plant (Results for fiscal 2000)

Water Pollution Data

Water quality and air pollution data are provided for each operating facility. (There are slight differences among items due to variations in materials used in production processes at different facilities.)

Plant	Indicator/ Substance*1	Control Value*2	Actual Measurement*3		
			Maximum	Minimum	Average
DENSO Headquarters	pH	5.8-8.6	8.0	6.0	7.0
	BOD (mg/l)	12.5	6.4	0.7	3.6
	COD (mg/l)	15	7.5	1.8	4.5
	SS (mg/l)	15	6.2	ND	1.3
	Oil (mg/l)	2.5	ND	ND	ND
	Phenol (mg/l)	1	0.01	ND	0.01
	Copper (mg/l)	0.5	0.05	0.01	0.03
	Zinc (mg/l)	2.5	0.28	ND	0.06
	Soluble iron (mg/l)	2.5	0.1	ND	0.1
	Soluble manganese (mg/l)	2.5	ND	ND	ND
	Chromium (mg/l)	1	ND	ND	ND
	Fluorine (mg/l)	7.5	2.9	ND	1.0
	Colon bacillus (#/cm^3)	1,500	18	0	3
	Total nitrogen (mg/l)	15	11.4	2.1	7.4
	Total phosphorus (mg/l)	2	1.74	0.10	0.82
	Cyanide (mg/l)	0.2	ND	ND	ND
	Hexavalent chromium (mg/l)	0.1	ND	ND	ND
Ikeda Plant	pH	5.8-8.6	8.1	6.8	7.3
	BOD (mg/l)	12.5	3.7	0.5	2.3
	COD (mg/l)	15	9.6	0.0	2.9
	SS (mg/l)	15	6.7	ND	1.3
	Oil (mg/l)	2.5	ND	ND	ND
	Phenol (mg/l)	1	0.01	ND	0.01
	Copper (mg/l)	0.5	0.05	ND	0.02
	Zinc (mg/l)	2.5	0.58	ND	0.06
	Soluble iron (mg/l)	2.5	0.2	ND	0.1
	Soluble manganese (mg/l)	2.5	ND	ND	ND
	Chromium (mg/l)	1	ND	ND	ND
	Fluorine (mg/l)	7.5	1.4	0.2	0.6
	Colon bacillus (#/cm^3)	1,500	7	0	0
	Total nitrogen (mg/l)	15	4.1	0.3	2.7
	Total phosphorus (mg/l)	2	0.25	ND	0.02
Anjo Plant (Anjo No. 1)	pH	6.0-8.5	7.1	6.2	6.7
	BOD (mg/l)	12.5	3.3	ND	1.8
	COD (mg/l)	15	12.7	0.0	5.8
	SS (mg/l)	15	2.6	ND	1.4
	Oil (mg/l)	2.5	ND	ND	ND
	Phenol (mg/l)	1	ND	ND	ND
	Copper (mg/l)	0.5	0.16	0.01	0.08
	Zinc (mg/l)	2.5	0.68	0.05	0.38
	Soluble iron (mg/l)	2.5	ND	ND	ND
	Soluble manganese (mg/l)	2.5	ND	ND	ND
	Chromium (mg/l)	1	ND	ND	ND
	Fluorine (mg/l)	7.5	0.2	ND	0.1
	Colon bacillus (#/cm^3)	300	4	0	0
	Total nitrogen (mg/l)	15	7.7	4.1	6.3
	Total phosphorus (mg/l)	2	0.05	ND	0.03
	Cyanide (mg/l)	0.2	ND	ND	ND
	Hexavalent chromium (mg/l)	0.1	ND	ND	ND
Anjo Plant (Anjo No. 2)	pH	6.0-8.5	7.2	6.5	6.8
	BOD (mg/l)	10	5.3	ND	1.7
	COD (mg/l)	10	7.2	1.0	3.2
	SS (mg/l)	10	2.2	ND	0.5
	Oil (mg/l)	2	ND	ND	ND
	Phenol (mg/l)	0.2	0.02	ND	0.01
	Copper (mg/l)	0.2	0.02	ND	0.01
	Zinc (mg/l)	2	0.56	0.01	0.35
	Soluble iron (mg/l)	2	0.1	ND	0.1
	Soluble manganese (mg/l)	2	ND	ND	ND
	Chromium (mg/l)	0.2	ND	ND	ND
	Fluorine (mg/l)	2	0.1	ND	0.1
	Colon bacillus (#/cm^3)	300	11	0	3
	Total nitrogen (mg/l)	15	11.6	7.1	9.1
	Total phosphorus (mg/l)	2	0.60	0.21	0.47

Plant	Indicator/ Substance*1	Control Value*2	Actual Measurement*3		
			Maximum	Minimum	Average
Nishio Plant	pH	5.8-8.3	8.0	6.3	7.1
	BOD (mg/l)	10	5.2	0.1	0.8
	COD (mg/l)	10	9.6	2.3	5.6
	SS (mg/l)	10	6.1	0.1	0.7
	Oil (mg/l)	2	ND	ND	ND
	Phenol (mg/l)	0.5	0.01	ND	0.01
	Copper (mg/l)	0.5	0.02	ND	0.01
	Zinc (mg/l)	1	0.27	0.02	0.09
	Soluble iron (mg/l)	3	0.1	ND	0.03
	Soluble manganese (mg/l)	3	0.3	ND	0.1
	Chromium (mg/l)	0.1	ND	ND	ND
	Fluorine (mg/l)	3	1.6	0.1	0.4
	Colon bacillus (#/cm^3)	300	246	0	6
	Total nitrogen (mg/l)	15	14.2	4.7	7.4
	Total phosphorus (mg/l)	2	0.46	0.09	0.16
	Hexavalent chromium (mg/l)	0.05	ND	ND	ND
Takatana Plant	pH	6.5-8.5	8.0	6.5	7.2
	BOD (mg/l)	10	2.7	ND	1.0
	COD (mg/l)	10	7.4	1.4	3.0
	SS (mg/l)	10	3.4	ND	1.3
	Oil (mg/l)	2	ND	ND	ND
	Phenol (mg/l)	0.2	ND	ND	ND
	Copper (mg/l)	0.2	0.02	ND	0.01
	Zinc (mg/l)	2	0.26	0.03	0.13
	Soluble iron (mg/l)	2	0.1	ND	0.1
	Soluble manganese (mg/l)	2	ND	ND	ND
	Chromium (mg/l)	0.2	ND	ND	ND
	Fluorine (mg/l)	2	0.4	ND	0.1
	Colon bacillus (#/cm^3)	300	2	0	0
	Total nitrogen (mg/l)	15	11.1	4.1	6.7
	Total phosphorus (mg/l)	2	0.10	ND	0.02
	Hexavalent chromium (mg/l)	0.05	ND	ND	ND
Daian Plant	pH	5.8-8.6	7.9	6.1	6.7
	BOD (mg/l)	10	5.4	ND	1.1
	COD (mg/l)	15	7.6	0.0	5.3
	SS (mg/l)	10	2.5	ND	1.4
	Oil (mg/l)	2	1.8	ND	1.1
	Phenol (mg/l)	0.2	0.09	ND	0.01
	Copper (mg/l)	0.2	ND	ND	ND
	Zinc (mg/l)	2	0.14	ND	0.04
	Soluble iron (mg/l)	2	ND	ND	ND
	Soluble manganese (mg/l)	2	ND	ND	ND
	Chromium (mg/l)	0.4	0.05	ND	0.01
	Fluorine (mg/l)	3	2.6	ND	1.1
	Colon bacillus (#/cm^3)	300	5	0	1
	Total nitrogen (mg/l)	60	9.5	6.3	7.9
	Total phosphorus (mg/l)	8	0.34	ND	0.12
Kota Plant	pH	5.8-8.3	8.2	7.1	7.5
	BOD (mg/l)	10	1.8	ND	0.7
	COD (mg/l)	10	2.6	0.2	2.4
	SS (mg/l)	10	4.3	ND	1.2
	Oil (mg/l)	1	ND	ND	ND
	Phenol (mg/l)	0.25	0.01	ND	0.01
	Copper (mg/l)	0.5	0.02	ND	0.01
	Zinc (mg/l)	1	0.60	0.01	0.06
	Soluble iron (mg/l)	2.5	0.1	ND	0.1
	Soluble manganese (mg/l)	2.5	ND	ND	ND
	Chromium (mg/l)	0.1	ND	ND	ND
	Fluorine (mg/l)	5	4.2	0.4	1.1
	Colon bacillus (#/cm^3)	300	0	0	0
	Total nitrogen (mg/l)	15	5.7	2.6	4.4
	Total phosphorus (mg/l)	2	0.10	ND	0.05
Toyohashi Plant	pH	6.0-8.5	7.9	6.7	7.3
	BOD (mg/l)	10	5.5	0.1	0.6

Plant	Indicator/ Substance*1	Control Value*2	Actual Measurement*3		
			Maximum	Minimum	Average
Toyohashi Plant	COD (mg/l)	10	8.3	3.7	5.3
	SS (mg/l)	10	2.0	0.1	0.3
	Oil (mg/l)	1	ND	ND	ND
	Phenol (mg/l)	0.25	0.01	ND	0.01
	Copper (mg/l)	0.5	0.02	ND	0.01
	Zinc (mg/l)	2.5	0.58	0.03	0.19
	Soluble iron (mg/l)	2.5	0.1	ND	0.04
	Soluble manganese (mg/l)	2.5	0.1	ND	0.02
	Chromium (mg/l)	1	ND	ND	ND
	Fluorine (mg/l)	7	2.8	0.1	0.9
	Colon bacillus (#/cm^3)	1,500	3	0	0
	Total nitrogen (mg/l)	15	10.5	4.7	7.7
	Total phosphorus (mg/l)	2	1.00	ND	0.23
Agui Plant	pH	5.8-8.6	8.0	6.2	7.2
	BOD (mg/l)	12.5	6.1	ND	1.2
	COD (mg/l)	15	4.3	0.9	2.6
	SS (mg/l)	15	7.0	ND	2.5
	Oil (mg/l)	1	ND	ND	ND
	Phenol (mg/l)	0.5	ND	ND	ND
	Copper (mg/l)	0.5	0.01	ND	ND
	Zinc (mg/l)	2.5	0.40	ND	0.09
	Soluble iron (mg/l)	2.5	ND	ND	ND
	Soluble manganese (mg/l)	2.5	ND	ND	ND
	Chromium (mg/l)	1	ND	ND	ND
	Fluorine (mg/l)	7.5	ND	ND	ND
	Colon bacillus (#/cm^3)	1,500	22	0	3
	Total nitrogen (mg/l)	30	15.4	5.1	7.5
	Total phosphorus (mg/l)	3	0.06	ND	0.03
Kitakyushu Plant	pH	5.8-8.6	8.2	7.0	7.7
	BOD (mg/l)	70	4.2	0.5	1.3
	COD (mg/l)	70	7.2	1.0	3.7
	SS (mg/l)	20	8.0	1.0	3.0
	Oil (mg/l)	2.5	ND	ND	ND
	Zinc (mg/l)	2.5	0.27	0.01	0.09
	Soluble iron (mg/l)	5	0.07	0.01	0.03
Zenmyo Plant	pH	5.8-8.3	7.8	6.6	7.2
	BOD (mg/l)	10	6.0	0.1	0.5
	COD (mg/l)	10	4.8	1.0	2.5
	SS (mg/l)	10	1.8	0.1	0.2
	Oil (mg/l)	1	ND	ND	ND
	Phenol (mg/l)	0.25	ND	ND	ND
	Copper (mg/l)	0.5	0.01	ND	0.01
	Zinc (mg/l)	1	0.56	0.05	0.20
	Soluble iron (mg/l)	2.5	0.1	ND	0.01
	Soluble manganese (mg/l)	2.5	0.1	ND	0.02
	Chromium (mg/l)	0.1	ND	ND	ND
	Fluorine (mg/l)	7.5	0.1	ND	0.1
	Colon bacillus (#/cm^3)	300	2	0	0
	Total nitrogen (mg/l)	10	5.5	1.5	3.2
	Total phosphorus (mg/l)	1	0.08	ND	0.03
Hiroshima Plant	pH	5.8-8.6	8.3	6.3	7.2
	COD (mg/l)	15	6.1	0.7	2.8
	SS (mg/l)	15	4.9	ND	1.6
	Oil (mg/l)	2.5	1.6	ND	1.2
	Phenol (mg/l)	1	ND	ND	ND
	Copper (mg/l)	1	0.01	ND	0.01
	Zinc (mg/l)	2.5	0.23	0.02	0.09
	Soluble iron (mg/l)	2.5	ND	ND	ND
	Soluble manganese (mg/l)	2.5	ND	ND	ND
	Chromium (mg/l)	1	ND	ND	ND
	Fluorine (mg/l)	7.5	0.3	0.2	0.2
	Colon bacillus (#/cm^3)	1,500	28	1	16
	Total nitrogen (mg/l)	60	3.7	0.9	2.3
	Total phosphorus (mg/l)	8	0.12	0.03	0.09

Plant	Indicator/ Substance*1	Control Value*2	Actual Measurement*3		
			Maximum	Minimum	Average
Nukata Testing Center	pH	6.5-8.5	7.7	6.6	6.6
	BOD (mg/l)	12.5	4.5	ND	1.1
	COD (mg/l)	20	4.9	0.9	2.1
	SS (mg/l)	20	8.0	ND	3.1
	Colon bacillus (#/cm^3)	100	60	0	8
	Total nitrogen (mg/l)	1	0.6	ND	0.4
	Total phosphorus (mg/l)	3	0.05	ND	0.03
DENSO Research Laboratories	pH	5.8-8.6	8.5	6.2	7.0
	BOD (mg/l)	12.5	6.0	ND	2.0
	COD (mg/l)	15	7.4	0.6	2.0
	SS (mg/l)	15	3.7	ND	1.4
	Oil (mg/l)	1	ND	ND	ND
	Phenol (mg/l)	0.5	0.02	ND	0.01
	Copper (mg/l)	0.5	0.08	ND	0.02
	Zinc (mg/l)	2.5	0.06	ND	0.02
	Soluble iron (mg/l)	2.5	ND	ND	ND
	Soluble manganese (mg/l)	2.5	ND	ND	ND
	Chromium (mg/l)	1	ND	ND	ND
	Fluorine (mg/l)	7.5	7.1	ND	2.5
	Colon bacillus (#/cm^3)	1,500	264	0	18
	Total nitrogen (mg/l)	20	10.8	3.4	6.6
	Total phosphorus (mg/l)	3	0.07	ND	0.04
ASMO Headquarters	pH	6.0-8.4	7.5	7.2	7.4
	BOD (mg/l)	10	5.5	0.7	2.1
	COD (mg/l)	10	6.7	4.1	4.8
	SS (mg/l)	10	1.8	ND	1.0
	Oil (mg/l)	1.5	ND	ND	ND
	Phenol (mg/l)	0.15	ND	ND	ND
	Copper (mg/l)	0.4	0.03	ND	0.01
	Zinc (mg/l)	0.4	0.13	0.04	0.07
	Soluble iron (mg/l)	4	ND	ND	ND
	Soluble manganese (mg/l)	5	ND	ND	ND
	Chromium (mg/l)	0.08	ND	ND	ND
	Fluorine (mg/l)	4	ND	ND	ND
	Colon bacillus (#/cm^3)	300	6	0	3
	Total nitrogen (mg/l)	25	13.9	5.9	8.9
	Total phosphorus (mg/l)	2	0.23	0.10	0.18
	Hexavalent chromium (mg/l)	0.05	ND	ND	ND
ASMO Toyohashi Plant	pH	6.0-8.4	7.5	6.8	7.0
	BOD (mg/l)	10	2.1	ND	0.9
	COD (mg/l)	12	6.3	3.7	4.7
	SS (mg/l)	12	1.6	ND	1.0
	Oil (mg/l)	1.5	ND	ND	ND
	Phenol (mg/l)	0.3	0.02	ND	0.01
	Copper (mg/l)	0.4	ND	ND	ND
	Zinc (mg/l)	2	0.08	0.01	0.03
	Soluble iron (mg/l)	4	0.1	ND	0.1
	Soluble manganese (mg/l)	5	ND	ND	ND
	Chromium (mg/l)	1	ND	ND	ND
	Fluorine (mg/l)	7	0.2	ND	0.1
	Colon bacillus (#/cm^3)	150	4	ND	1
	Total nitrogen (mg/l)	15	13.7	4.4	7.3
	Total phosphorus (mg/l)	1.5	0.07	0.02	0.03
	Hexavalent chromium (mg/l)	0.05	ND	ND	ND

*1 pH: Hydrogen ion concentration
BOD: Biochemical oxygen demand
COD: Chemical oxygen demand
SS: Concentration of suspended solids in water

*2 Control parameters are established by DENSO and are more stringent than those mandated by law.

*3 ND: Not detected (below detection limit)

Air Pollution Data

Plant	Equipment	Substance*1	Control Value	Actual Measurement (maximum)*2
DENSO Headquarters	Boiler	P.M. (g/Nm³)	0.1	0.073
		NOx (ppm)	120	56
		SOx (-) (K value)	1.75	0
	Gas turbine	P.M. (g/Nm³)	0.05	0.002
		NOx (ppm)	50	17
		SOx (-) (K value)	1.75	0
Ikeda Plant	Boiler	P.M. (g/Nm³)	0.1	0.005
		NOx (ppm)	230	74
		SOx (-) (K value)	1.75	0.02
	Thermal grease remover	P.M. (g/Nm³)	0.2	0.030
		NOx (ppm)	250	18
		SOx (-) (K value)	1.75	0
Anjo Plant	Boiler	P.M. (g/Nm³)	0.3	0.015
		NOx (ppm)	230	159
		SOx (-) (K value)	17.5	0.19
	Melting furnace	P.M. (g/Nm³)	0.2	0.007
		NOx (ppm)	190	36
		SOx (-) (K value)	4.67	0
		Total dioxins (ng-TEQ/Nm³)	20	0.035
	Incinerator	P.M. (g/Nm³)	0.5	0.214
		NOx (ppm)	230	47
		SOx (-) (K value)	17.5	0.01
		HCl (mg/Nm³)	700	13.8
		Total dioxins (ng-TEQ/Nm³)	80	0.000089
	Gas turbine	P.M. (g/Nm³)	0.05	0.003
		NOx (ppm)	50	41
		SOx (-) (K value)	17.5	0
Nishio Plant	Boiler	P.M. (g/Nm³)	0.25	0.088
		NOx (ppm)	210	114
		SOx (-) (K value)	17.5	4.54
	Melting furnace	P.M. (g/Nm³)	0.2	0.001
		NOx (ppm)	170	18
		SOx (-) (K value)	17.5	0
		Total dioxins (ng-TEQ/Nm³)	20	0.00071
	Ash immersion furnace	P.M. (g/Nm³)	0.2	0.0006
		NOx (ppm)	150	45
		SOx (-) (K value)	17.5	0
	Gas turbine	P.M. (g/Nm³)	0.05	0.002
		NOx (ppm)	50	30
		SOx (-) (K value)	17.5	0
	Annealing furnace	P.M. (g/Nm³)	0.2	0.001
		NOx (ppm)	140	18
		SOx (-) (K value)	17.5	0
Takatana Plant	Boiler	P.M. (g/Nm³)	0.1	0.020
		NOx (ppm)	210	95
		SOx (-) (K value)	2.92	0.06
	Gas turbine	P.M. (g/Nm³)	0.05	ND
		NOx (ppm)	50	16
		SOx (-) (K value)	2.92	0
Daian Plant	Boiler	P.M. (g/Nm³)	0.1	0.049
		NOx (ppm)	110	67
		SOx (-) (K value)	17.5	3.06
	Melting furnace	P.M. (g/Nm³)	0.2	0.030
		NOx (ppm)	100	60
		SOx (-) (K value)	17.5	0
		Total dioxins (ng-TEQ/Nm³)	20	0.043
	Incinerator	P.M. (g/Nm³)	0.25	0.230
		NOx (ppm)	250	121
		SOx (-) (K value)	17.5	0.44
		HCl (mg/Nm³)	700	288
		Total dioxins (ng-TEQ/Nm³)	80	0.00012

Plant	Equipment	Substance*1	Control Value	Actual Measurement (maximum)*2
Daian Plant	Kiln	P.M. (g/Nm³)	0.25	0.090
		NOx (ppm)	180	76
		SOx (-) (K value)	17.5	0
	Gas turbine	P.M. (g/Nm³)	0.05	0.013
		NOx (ppm)	70	40
		SOx (-) (K value)	17.5	0
Kota Plant	Boiler	P.M. (g/Nm³)	0.05	0
		NOx (ppm)	140	92
		SOx (-) (K value)	5	0.27
	Gas turbine	P.M. (g/Nm³)	0.04	0
		NOx (ppm)	50	31
		SOx (-) (K value)	5	0
	Small incinerator	Total dioxins (ng-TEQ/Nm³)	80	0.091
Toyohashi Plant	Boiler	P.M. (g/Nm³)	0.15	0.007
		NOx (ppm)	140	118
		SOx (-) (K value)	2.34	0.93
	Ash immersion furnace	P.M. (g/Nm³)	0.1	0.01
		NOx (ppm)	100	ND
		SOx (-) (K value)	2.34	ND
	Small incinerator	Total dioxins (ng-TEQ/Nm³)	80	0.065
Agui Plant	Boiler	P.M. (g/Nm³)	0.05	0.002
		NOx (ppm)	140	71
		SOx (-) (K value)	1.75	0
	Drying furnace	P.M. (g/Nm³)	0.05	0.002
		NOx (ppm)	140	81
		SOx (-) (K value)	1.75	0
Kitakyushu Plant	Boiler	P.M. (g/Nm³)	0.05	ND
		NOx (ppm)	120	35
		SOx (-) (K value)	3.5	0
Zenmyo Plant	Boiler	P.M. (g/Nm³)	0.05	0.021
		NOx (ppm)	104	103
		SOx (-) (K value)	3	0.31
	Gas turbine	P.M. (g/Nm³)	0.05	0.003
		NOx (ppm)	35	28
		SOx (-) (K value)	3	0
Hiroshima Plant	Boiler	P.M. (g/Nm³)	0.3	ND
		NOx (ppm)	250	104
		SOx (-) (K value)	7	0.02
Nukata Testing Center	Boiler	P.M. (g/Nm³)	0.3	0.124
		NOx (ppm)	140	83
		SOx (-) (K value)	7	0.65
DENSO Research Laboratories	Boiler	P.M. (g/Nm³)	0.05	0.016
		NOx (ppm)	120	43
		SOx (-) (K value)	3	0
ASMO Headquarters	Boiler	P.M. (g/Nm³)	0.1	0.013
		NOx (ppm)	130	94
		SOx (-) (K value)	7.0	0.46
ASMO Toyohashi Plant	Boiler	P.M. (g/Nm³)	0.05	ND
		NOx (ppm)	120	83
		SOx (-) (K value)	2.34	0.00019

*1 P.M.: Particulate matter
NO*x*: Nitrogen oxide
SO*x*: Sulphur oxide
K value: An index established through local ordinances for limiting the volume of SO*x* emissions. K values are lower (more stringent) in regions in which there is concern over the possibility of high concentrations of SO*x*.

*2 The actual measurements shown refer to maximum values with respect to the control values for each particular piece of target equipment.
N.D.: Not detected (below detection limit)

PRTR Data

(unit: tons/year)

Plant	Name of Substance	Volume Handled	Amount Discharged and Transferred				Volume Recycled	Volume Treated*1	Volume Consumed*2 (in Products etc.)	Volume Produced
			Discharge into Atmosphere	Discharge into Water	Discharge into Soil	Waste				
DENSO Headquarters	Ethylbenzene	6.1	0.1	—	—	—	—	—	6.0	—
	Xylenes	52.0	6.8	—	—	13.2	—	—	32.0	—
	Hexavalent chromium compounds	0.6	—	—	—	—	—	0.6	—	—
	Phthalic acid (2-ethoxyethylene)	4.3	4.3	—	—	—	—	—	—	—
	1,3,5-trimethylbenzene	1.2	—	—	—	—	—	—	1.2	—
	Toulene	44.2	0.2	—	—	—	—	—	44.0	—
	Lead and other compounds	1.1	—	—	—	—	—	—	—	1.1
	Nickel compounds	2.6	—	—	—	—	—	—	—	2.3
	Pyrocatechol	1.8	—	—	—	—	1.8	—	—	—
	Fluorine compounds and other water soluble chlorides	5.0	—	—	—	—	—	4.9	—	—
	Benzene*3	2.0	—	—	—	—	—	—	2.0	—
Ikeda Plant	Ethylbenzene	1.0	—	—	—	—	—	—	1.0	—
	Xylenes	10.0	0.1	—	—	—	—	—	9.9	—
	1,3,5-trimethylbenzene	3.2	—	—	—	—	—	—	3.2	—
	Toulene	7.7	0.2	—	—	—	—	—	7.5	—
Anjo Plant	Ethylbenzene	2.7	0.1	—	—	—	—	—	2.6	—
	Ethylene glycol monoethyl ether	9.3	9.3	—	—	—	—	—	—	—
	Xylenes	82.9	11.4	—	—	—	—	—	71.4	—
	Phthalic acid (2-ethoxyethylene)	1.6	1.6	—	—	—	—	—	—	—
	Inorganic cyan compounds	1.1	—	—	—	—	—	1.1	—	—
	1,3,5-trimethylbenzene	37.4	—	—	—	—	—	—	37.4	—
	Toulene	28.0	8.6	—	—	—	—	—	19.4	—
	Lead and other compounds	9.4	—	—	—	—	0.2	—	—	9.2
	Benzene*3*	0.9	—	—	—	—	—	—	0.9	—
	Molybdenum and other compounds	4.5	—	—	—	4.5	—	—	—	—
Nishio Plant	2-aminoethanethiol	2.9	—	—	—	0.4	—	2.4	—	—
	Polymer of 4,4-isopropylidenediphenol and 1-chloro-2,3-epoxypropane (liquid type)	37.9	—	—	—	—	0.4	—	—	37.5
	Ethyl benzene	6.5	—	—	—	—	—	—	6.5	—
	Xylenes	84.6	49.0	—	—	—	—	—	35.6	—
	Chromium and Chromium (III) compounds	24.0	—	—	—	24.0	—	—	—	—
	Hexavalent chromium compounds	24.1	—	—	—	—	—	24.0	—	0.1
	1,3,5-trimethylbenzene	3.0	—	—	—	—	—	—	3.0	—
	Toulene	55.8	8.4	—	—	—	—	—	47.4	—
	Lead and other compounds	41.4	—	—	—	—	0.8	—	—	40.6
	Benzene*3	2.2	—	—	—	—	—	—	2.2	—
Takatana Plant	Antimony and other compounds	1.3	—	—	—	—	—	—	—	1.3
	Ethyl benzene	1.2	—	—	—	—	—	—	1.2	—
	Xylenes	50.6	15.1	—	—	—	—	—	35.5	—
	Hexavalent chromium compounds	0.6	—	—	—	—	—	0.6	—	—
	Phthalic acid (2-ethoxyethylene)	1.0	1.0	—	—	—	—	—	—	—
	1,3,5-trimethylbenzene	18.9	—	—	—	—	—	—	18.9	—
	Toulene	44.6	35.8	—	—	—	—	—	8.8	—
	Lead and other compounds	8.8	—	—	—	—	0.2	—	—	8.6
	Nickel	1.0	—	—	—	0.8	—	—	—	0.2
Daian Plant	2-aminoethanethiol	1.4	—	—	—	0.1	—	1.2	—	—
	Antimony and other compounds	4.9	—	—	—	—	—	—	—	4.9
	Xylenes	9.7	2.7	—	—	—	—	—	7.0	—
	Silver and other water soluble compounds	6.2	—	—	—	—	0.1	—	—	6.1
	Decabromodiphenyl ether	8.1	—	—	—	—	—	—	—	8.1
	1,3,5-trimethylbenzene	1.9	—	—	—	—	—	—	1.9	—
	Toulene	7.4	1.3	—	—	—	—	—	6.1	—
	Lead and other compounds	24.4	—	—	—	10.4	0.2	—	—	13.8
	Nickel compounds	4.3	—	—	—	0.3	—	—	—	4.1
	Phthalic acid (2-ethoxyethylene)	1.8	1.8	—	—	—	—	—	—	—
	Fluorine compounds and other water soluble chlorides	42.0	—	0.4	—	—	—	41.6	—	—
	Boron and boron compounds	1.5	—	0.5	—	1.0	—	—	—	—

Plant	Name of Substance	Volume Handled	Amount Discharged and Transferred				Volume Recycled	Volume Treated*1	Volume Consumed*2 (in Products etc.)	Volume Produced
			Discharge into Atmosphere	Discharge into Water	Discharge into Soil	Waste				
Kota Plant	2-aminoethanethiol	14.8	—	0.6	—	—	—	14.2	—	—
	Polymer of 4,4-isopropylidenziphenol and 1-chloro-2,3 epoxypropane (liquid type)	11.6	—	—	—	—	0.1	—	—	11.5
	Xylenes	48.0	45.7	—	—	—	—	—	2.3	—
	Toulene	14.9	11.5	—	—	—	—	—	3.4	—
	Lead and other compounds	44.6	—	—	—	—	—	—	—	43.7
	Fluorine compounds and other water soluble chlorides	15.1	—	0.1	—	—	0.9	15.0	—	—
	Poly (oxyethylene) = *n*-nonyl acetate	1.4	—	—	—	—	—	1.3	—	—
Toyohashi Plant	2-aminoethanethiol	2.1	—	—	—	0.5	—	1.5	—	—
	Ethylbenzene	1.2	0.8	—	—	—	—	—	0.4	—
	Ethylene glycol monoethyl ether	6.8	6.8	—	—	—	—	—	—	—
	2,3- Epoxy propanol = phenyl ether	70.4	—	—	—	—	—	—	—	70.4
	Xylenes	21.7	19.9	—	—	—	—	—	1.8	—
	Toulene	3.6	1.0	—	—	—	—	—	2.6	—
	Phenol	1.8	—	—	—	—	—	0.9	—	0.9
Agui Plant	—	—	—	—	—	—	—	—	—	—
Kitakyushu Plant	—	—	—	—	—	—	—	—	—	—
Zenmyo Plant	Lead and other compounds	1.1	—	—	—	—	—	—	—	1.1
Hiroshima Plant	—	—	—	—	—	—	—	—	—	—
ASMO Headquarters	Polymer of 4,4-isopropylidenediphenol and 1-chloro-2,3-epoxypropane (liquid type)	7.5	—	—	—	0.4	—	—	—	7.1
	Ethylene glycol	2.0	—	—	—	2.0	—	—	—	—
	Ethylene glycol monoethyl ether	1.4	1.4	—	—	—	—	—	—	—
	Xylenes	2.4	2.4	—	—	—	—	—	—	—
	Phthalic acid (2-ethoxyethylene)	4.1	4.1	—	—	—	—	—	—	—
	Hexamethyl 1,3,5,7-tetraazatricyclo [3,3,1,13,7] decane	119.1	—	—	—	—	11.1	—	—	108.0
	Toulene	3.4	3.4	—	—	—	—	—	—	—
	Lead	10.2	—	—	—	—	0.5	—	—	9.7
ASMO Toyohashi Plant	Polymer of 4,4-isopropylidenediphenol and 1-chloro-2,3-epoxypropane (liquid type)	10.2	—	—	—	0.5	—	—	—	9.7
	Ethylene glycol monoethyl ether	9.8	9.8	—	—	—	—	—	—	—
	Xylenes	15.3	15.3	—	—	—	—	—	—	—
	Phthalic acid (2-ethoxyethylene)	15.8	15.8	—	—	—	—	—	—	—
	Hexamethyl 1,3,5,7-tetraazatricyclo [3,3,1,13,7] decane	21.7	—	—	—	—	2.2	—	—	19.5
	Toulene	8.9	8.9	—	—	—	—	—	—	—

* The ASMO Hiroshima Plant, Nukata Testing Center, and DENSO Research Laboratories will begin participation in the PRTR project from fiscal 2001.

*1 Volume treated refers to the on-site treatment of substances targeted by the PRTR. By neutralization, decomposition, or chemical reaction they are turned into substances that fall outside the scope of the PRTR.

*2 Volume consumed is the amount of substances targeted by the PRTR that is consumed as chemical reaction substances or included in or added to products and removed from facility premises.

*3 Contained in automobile gasoline

●About the DENSO Environmental Symbol Mark

This environmental symbol was developed in July 1995 and is used on pamphlets and during exhibitions and events to promote DENSO's environmental activities.

The design was created by an in-house designer and expresses the idea that the earth has a heart and lives with vitality and vibrancy in harmony with humankind and nature.

DENSO CORPORATION

Published by: DENSO CORPORATION

Environment Planning Department

For further information, please contact:

Facsimile: 81-566-25-4525

Published: October 2001 (based on the Japanese version issued in August 2001)

Next scheduled report: August 2002

You can download this report in .pdf format at the DENSO Web site.
http://www.globaldenso.com/ENVIRONMENT/

This report was printed on recycled paper (100% used paper content) and printed with ink made from soybean oil.

900109-006

Printed in Japan
1A-25A