

# Environmental & Social Report 2005



# Isuzu: Working Around the World

Isuzu commercial vehicles and diesel engines are sold around the world and help support people's lives. Here is an introduction to our global network.



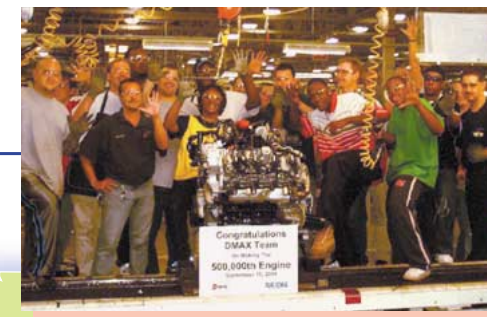
**Isuzu Motors Polska Sp. z o.o.**  
Production: 317,000 diesel engines  
Employees: 777



**Qingling Motors Co., Ltd.**  
Production: 15,000 pickup trucks  
27,000 medium- and light-duty trucks  
Employees: 3,036



**Isuzu Motors Ltd. Fujisawa Plant**  
Production: Heavy-, medium-, and light-duty trucks, engines, and parts  
Employees: 5,538



**DMAX, Ltd.**  
Production: 173,000 diesel engines  
Employees: 1,240

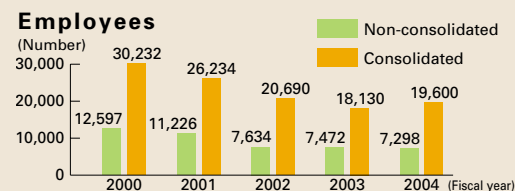
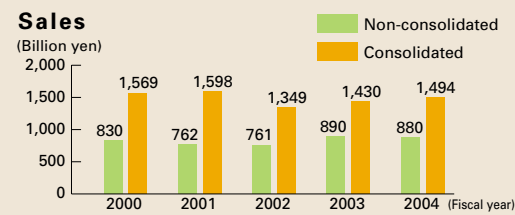


**Isuzu Engine Manufacturing Co., (Thailand) Ltd.**  
Production: 171,000 diesel engines  
Employees: 1,008

**Isuzu Motors Co., (Thailand) Ltd.**  
Production: 152,000 pickup trucks, heavy-, medium- and light-duty trucks  
Employees: 3,160

## Corporate Outline

**Company name:** Isuzu Motors Limited  
**President and Representative Director:** Yoshinori Ida  
**Headquarters address:** 6-26-1 Minami-oi, Shinagawa-ku, Tokyo 140-8722 Japan  
**Established:** April 9, 1937  
**Capital:** ¥32.6 billion (as of March 31, 2005)  
**Business operations:** Manufacture, sales and service of motor vehicles, transport machinery and tools, motors, and related parts and materials  
**Sales:** Non-consolidated, ¥880.1 billion; Consolidated, 1,493.6 billion (for the period ending March 2005)  
**Ordinary profit:** Non-consolidated, ¥53.9 billion; Consolidated, 91.6 billion (for the period ending March 2005)  
**Vehicle sales:** 219,957 (90,008 sold in Japan, 129,949 exported) (for the period ending March 2005)  
**Main products:** Heavy-, medium-, light-duty trucks, pickup trucks, utility vehicles, buses, engines and components  
**Number of employees:** Non-consolidated, 7,298; Consolidated, 19,600 (as of March 31, 2005)  
**Offices and plants:** Headquarters, Fujisawa Plant, Tochigi Plant



## Editorial Policy

This is our seventh annual environmental report. We have added new coverage for our social activities in addition to our environmental measures in an effort to fulfill our responsibility to help bring about a sustainable society. We communicated with our stakeholders in a meeting with experts, and we also featured interviews with our senior executives. This report is compiled in an easy and readable format, following the Japan Ministry of the Environment's Environmental Reporting Guidelines and GRI's\* Sustainability Reporting Guidelines.

\* GRI: The Global Reporting Initiative is an international organization with the goal of establishing guidelines for environmental, social, and economic sustainability reporting for use worldwide

## Scope of the Report

This report primarily covers Isuzu Motors Ltd.'s environmental activities, and also includes some domestic and overseas group activities.

## Period Covered

This report includes data from fiscal 2004 (April 1, 2004 - March 31, 2005), and also features some recent activities.

# Our Environmental Management Vision

At Isuzu we aim to be a Leading Global Company in every business field, including corporate management, the environment and safety.

## Aspiring to be a Leading Global Company

Isuzu achieved record high profits for two consecutive years in fiscal 2003 and 2004, so we have finally gotten back to the starting line and can now expand our business for further growth.

In April 2005, we established our mid-term business plan, with the aim of becoming a Leading Global Company. Based on this, we are now doing our best to raise our corporate value and to strengthen our competitiveness. For Isuzu, "Leading Global Company" does not refer only to profits, but also to our commitment to the environment and society. We also want to be an excellent company for which every employee takes pride in working.

## All Employees Should Have Challenges

Isuzu will always mean the best: This is our corporate vision, which connotes Isuzu's commitment to support customers and to do our best to enrich their lives. To achieve this, each individual employee must be aware of his or her responsibility within this vision, and work hard to make our company open and friendly to society. It is crucial for each of us to think about what we can do to achieve our individual objectives.

As for my own responsibility, I frequently suggest to government officials in developing countries that they should be more aggressive in environmental regulation because air pollution is a serious problem in those countries. I think Isuzu is responsible to support such countries with environmentally-friendly products that provide universal value.

I also like to exchange opinions with our younger employees. I was once asked by the personnel in charge of our Latin America sales, "Isuzu vehicles are more expensive than those of our competitors because our prices includes additional costs associated with environmental regulations. How should we market our high-priced trucks in developing countries?" I responded, "The solution is to have our customers understand our policies and products, not just our pricing, and to provide them with happier, richer, more environmentally sound lives with our high quality trucks. It won't be easy, but it's something we need to do."

## Our Contribution to Global Industries and Lifestyles

I anticipate that the basic process in vehicle production will become "base vehicle plus options." We can reduce costs, for example, by mass-producing the same vehicle bases for Australia, New Zealand, and Africa as one category. Simultaneously, we can optimize both overall and individual requirements by meeting each customer's needs by adding options to base vehicle models. I would like to strongly promote this process, balancing cost and function. Such a process can produce not only better product marketability through the addition of desired specifications or equipment, but also better

### Corporate Vision

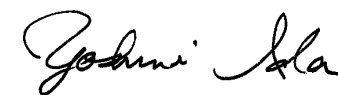
#### Isuzu will always mean the best

**We at Isuzu Motors, as professionals in the commercial vehicle and diesel engine business, as well as reliable partners, grow together with our customers, in harmony with both society and the environment, balancing the "hard" and "soft" aspects of our business.**

environmental performance.

After all, our customers ultimately determine our corporate value. Manufacturers are especially continually asked how they can effectively integrate customer requirements and assessments, while simultaneously producing products that have universal value.

We are striving to be the world number one in every business field, including management, the environment and safety, as we aim to be a Leading Global Company.



**Yoshinori Ida**  
President and Representative Director  
Isuzu Motors Limited



#### Our Ecolife

In the minus 15°C(5°F) freezing cold weather in Karuizawa, I still felt blessed by nature in the refreshing morning sunshine and snow.

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# Building a New Compliance Structure

Isuzu has established a new corporate compliance structure to raise awareness and better ensure that the actions of all Isuzu personnel – from executives to employees – are in compliance with regulations.

## An Opportunity to Improve

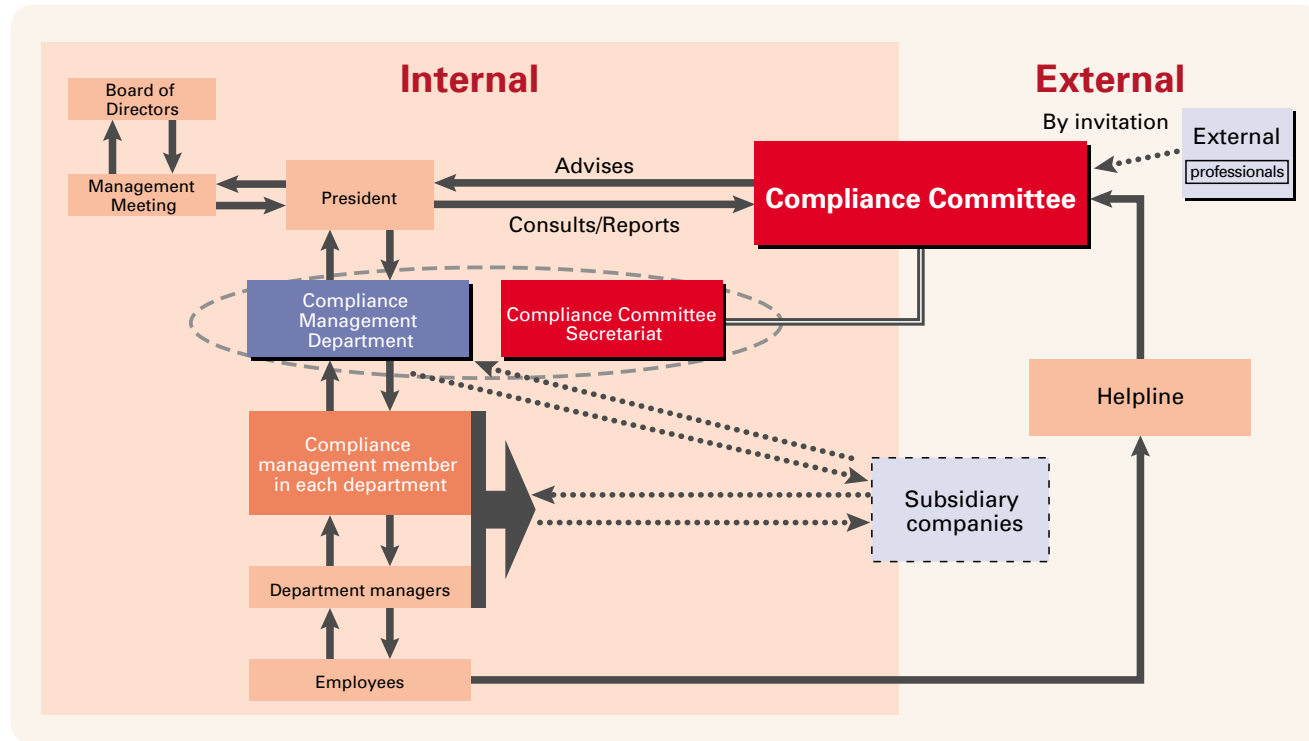
In March 2005, Isuzu received a warning from the Ministry of Land, Infrastructure and Transport for neglecting to follow the proper legal procedures when conducting vehicle tests on public roads, because one of our tested vehicles did not meet safety standards. As an automobile manufacturer, we must fully follow all related laws and regulations, and we deeply regret the loss of trust from society. We are now committed to preventing another such failure, and have since worked hard to establish a proper compliance structure.

## Building an Internal Compliance Structure

Isuzu established a Compliance Committee that includes outside professionals, and a Compliance Management Department as part of a structure for promoting compliance in April 2005 (see chart below).

We are making a great effort to ensure compliance with regulations and raise compliance awareness throughout the company as we build the compliance structure.

### Isuzu's Compliance Structure



### Efforts to Build an Internal Structure

Project	Details
Establishing a compliance structure	Compliance Committee established · Provides impartial advice, supervision, and assessment of progress and organizational structure for compliance · Four external professionals, including university professors and lawyers, the Isuzu president, and three executives · Meetings held once per month
	Setting up the Compliance Management Department · Administers and promotes compliance-related business activities · An independent body reporting directly to the President
Setting up a helpline	Establishing a Helpline Establish the capability at a law firm to report internal compliance issues externally
Compliance education	Compliance education program for all employees

## Ensuring Compliance within Isuzu

Isuzu announced its Basic Compliance Initiative in May 2005. The company is now promoting the implementation of compliance through this initiative.

### The Basic Compliance Initiative

Our corporate vision is "Isuzu will always mean the best: A leader in transportation, commercial vehicles and diesel engines, supporting our customers and respecting the environment."

In order to maintain high corporate values and fulfill this vision, it is absolutely crucial to maintain high work ethics not only to ensure compliance, but also so that all of our executives and employees conduct themselves in accordance with the highest values, so that we engender trust from society.

With complete compliance as our highest management priority, we have created the Basic Compliance Initiative for both internal and external use. Our management views leading employees in accordance with the plan to be its responsibility. Should any violations occur, management is committed to resolving these issues and investigating their causes in order to ensure that they do not recur. Management is also responsible for providing appropriate disclosure and accountability to the public.

- Gaining Customers' Trust**  
We will gain our customers' trust by providing socially valuable products and services that enrich their lives.
- Fair and Sound Activities**  
We will conduct business in the spirit of free and fair competition. Further, as private citizens committed to a healthy and fair relationship with host governments, we resolve to avoid contact with any antisocial groups or organizations.
- Disclosure of Corporate Information**  
We will disclose corporate information to both shareholders and the public in a timely, appropriate, and fair manner.
- Respecting Employees**  
We will provide a safe, comfortable working environment with respect for employees' individuality so that they can make the most of their abilities.
- Protecting the Environment**  
We will work to protect the environment as global citizens through our business activities, while also actively promoting community and regional environmental protection.
- Contributing to Society**  
We will make positive contributions to society as good corporate citizens.
- Living in Harmony with the Global and Local Communities**  
We will respect the culture and customs of different countries and regions, and work to contribute to the development of those areas through our business activities.

## The Personal Information Protection Law

The Personal Information Protection Law was enacted in April 2005 in Japan, following recent personal information leakages and increased information security problems.

Isuzu is fully aware of its important responsibility as a trusted partner to protect personal information. We established a Personal Information Protection Committee before the Law was enacted, and were already involved in strengthening our information security and raising awareness.

In March 2005, Isuzu announced its Privacy Policy for protecting personal information. We have also published a Personal

Information Protection Law Guidebook for distribution in order to raise awareness for all Isuzu dealers.

Such efforts are continuously implemented at Isuzu to ensure the protection of personal information.



Personal Information Protection Law Guidebook

# Our Stakeholders

As a manufacturer of commercial vehicles and diesel engines, Isuzu enjoys relationships with various organizations, groups, and individuals. We strive to maintain good relations with our stakeholders around the world.

## ■ Isuzu's Role as a Leading Commercial Vehicle Manufacturer

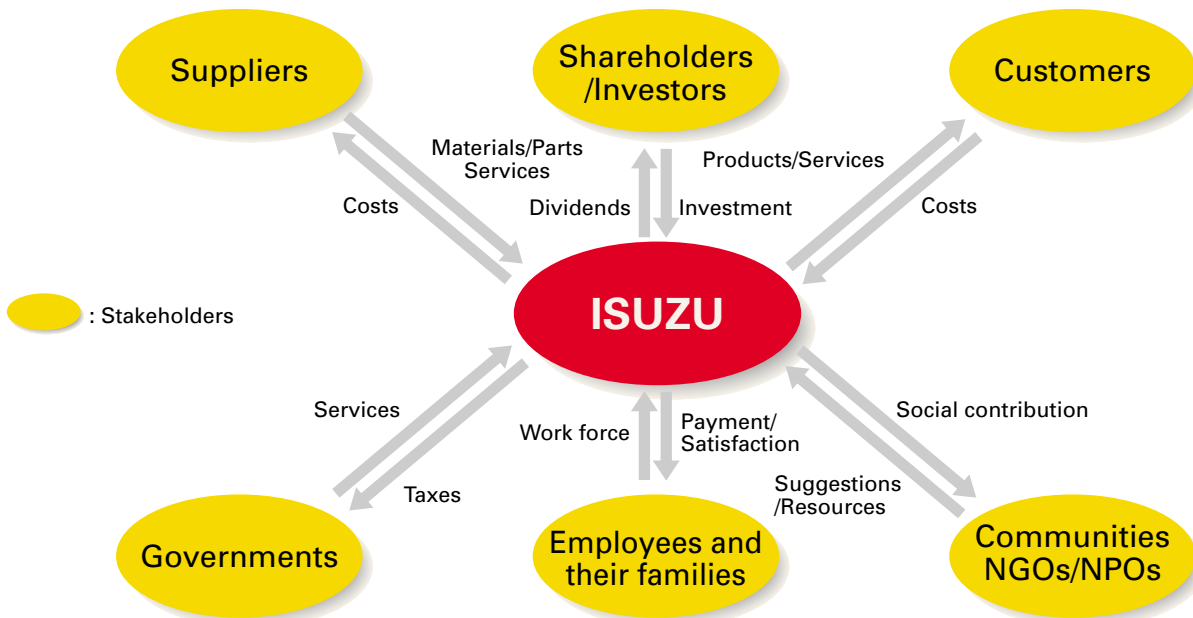
Goods are transported by commercial vehicles powered by diesel engines, and Isuzu products are indispensable for creating and maintaining better lives around the world. Our products are used not only in Japan, but also throughout the world - we presently support transportation in more than 100 countries.

Our goal is to be a company that supports sustainable societies. For this reason, we are doing our best to develop environmentally-friendly, economical, and safe vehicles that contribute to the safety of our customers and communities and protect the global environment.

## ■ Relationships with Stakeholders

Today, society's expectations of companies and the responsibilities of companies are both growing. It is quite important to understand the expectations of society and respond appropriately so we can continue to be trusted and depended upon by them.

The Isuzu group works hard to develop and maintain good relationships through communications with its various stakeholders and through beneficial partnerships.



### Suppliers

We conduct green procurement and other environmentally-conscious measures in the spirit of fair trade and cooperation with our suppliers (see pages 15-16).

### Shareholders/Investors

We promote business activities using shareholder and investor capital for optimal returns, and disclose related information appropriately.

### Customers

We provide high-quality products and services to satisfy our customers (see pages 39-40).

### Governments

We work together with governments through national and municipal tax payments and compliance with laws and initiatives, as well as in a variety of other areas.

### Employees and their families

We provide personnel and training systems under favorable working conditions that encourage our employees to pursue job satisfaction (see pages 44-45).

### Communities, NGOs/NPOs

We contribute to the richness of society by actively promoting interactive events with local communities both in Japan and abroad (see pages 41-43).

- As an example of dialogue, please see pages 8-10 for details of Isuzu's very first stakeholder meeting.
- In regards to the relationships between Isuzu and its customers, its employees and their families, and local communities, please refer to pages 39-45 in the Social Report section.



Highlights

## Stakeholder Meeting

A stakeholder meeting with the theme, “What We Hope for from Isuzu for a Sustainable Society” was held on June 29, 2005. Specialists from related fields were invited to participate in this meeting.

### Isuzu Expected to Make Public Transportation Proposals

**Makimura:** Since Isuzu makes trucks and buses, which are a means of public transportation, I hope that opinions about the future of buses are included in the environmental report. While domestic demand for buses is declining, BRTs\* and minibuses are being developed in Europe and the USA. These play an important role in public transportation and reducing environmental impact.

**Matsuda:** That would be good if you could work together with city planners. For instance, people could park their cars at the edge of the city and travel to the center of the city by bus or train with a sort of Park-and-Ride system. If manufacturers collaborated with the Government on this suggestion, it would be

easier for manufacturers to invest in bus research and development.

**Toma:** In fact, Isuzu has not worked enough with government authorities in making suggestions as an automotive manufacturer. But now we would like to take a more public leadership within the industry to help in creating a sustainable society. To that end, we should make more suggestions on governmental matters, such as the city planning idea. However, we should also be careful how we make such suggestions so that people do not assume that our objective is just to boost our own sales.

**Tsuzuku:** I would suggest that you collaborate with NGOs or citizen’s groups, and not act alone. Everyone has an idea or opinion about his or her home city and personal

quality of life. It would be more effective if the company cooperated in meeting such concrete social needs.

### Better Informed Users Leverage the Industry

**Bessho:** My company, Sagawa Express, has participated in the World Wildlife Fund’s CO<sub>2</sub> emission reduction program since 2002, but no other Japanese companies have followed our lead. There are still so many hurdles before Japanese companies can form partnerships with NGOs and NPOs. I think the first priority is to remove those barriers.

For example, approximately 20% of CO<sub>2</sub> emissions in Japan are produced by the transportation sector, and approximately



50% of those from personal or company vehicles. Trucks from transportation companies, like ours, account for approximately 16-17% of emissions. However, many people mistakenly believe that transportation company vehicles generate a much higher share of CO2 emissions. Sharing essential information would be necessary when creating a partnership between companies and citizens.

**Matsuda:** Yes. I agree with Mr. Bessho. You would also need a coordinator who could see the picture from both the public and private perspectives. Also, companies within the same sector, such as automakers and distribution companies, should collaborate in their specialized areas.

**Tsuzuku:** I've been working with Tokyo Electric Power Company and various NGOs in collaborative projects to spread the use of natural energy sources since 1997. We realized through these projects that well-informed users leverage the industry's development. So in the case of natural energy sources, developing highly-efficient energy conversion products and other measures in advance would lead to society first using more efficient energy, and eventually shifting to using 100% natural energy sources.

**Matsuda:** The environmental report would be better if it included suggestions and complaints from users so that such data could be reflected in future projects.

**Bessho:** There may be a variety of new business opportunities arising from public-private collaborations, as well as collaborations among companies.

### Mimamori-kun Vehicle Diagnostic System and Social Infrastructure

**Tsuzuku:** There are a lot of potential opportunities for Isuzu's use of its Mimamori-kun vehicle diagnostic system. I think vehicle data such as fuel consumption and emissions gas volumes should be disclosed not only to car manufacturers and transportation companies, but also to the general public. Data can persuade people, which I found out when I developed an air pollution gauge.

**Makimura:** Car navigation systems show traffic condition information. If Mimamori-kun showed information on routes with fewer stops, drivers would be able to select more environmentally-friendly routes.

**Matsuda:** It'd be nice if you had cute character mascots like the Aichi Expo's Morizo and Kiccoro for the Mimamori-kun system.

Here's a hardware suggestion - in addition to solar panels on the tops of cars, how about installing a sort of sheet that plants can be grown on? This would be an optimal location for photosynthesis - with CO2 and sunlight.

You might think that it's a bit of a leap, but I always conceive of new environmental communication ideas this way.

### CO2 Emissions Reductions: A Global Issue

**Makimura:** Isuzu could work with the community in managing employee commuting as one way of tackling environmental issues. For example, how about encouraging the use of bicycles and public transportation, as well as staggered-hour commuting, at the Fujisawa Plant? This would boost both the corporate image and work quality. Isuzu could collaborate with private citizens and the local government in order to accomplish this.

**Matsuda:** The Mayor of Fujisawa and Fujisawa citizens would be pleased, as the city is working hard to reduce CO2 emissions.

**Toma:** That would be a good idea. It's worth examining the feasibility of such a plan.

**Matsuda:** In the 2004 issue, the first spread shows how Isuzu vehicles are being employed around the world. But there is less mention of overseas issues as the report goes on. (laughs)



### Participants



**Ken Tsuzuku**  
Chairman  
Renewable Energy Promoting  
People's Forum



**Kyoichi Bessho**  
Executive Officer  
General Manager, CSR  
Environmental Preservation  
Promotion Department  
Sagawa Express Co., Ltd.



**Kazuhiko Makimura  
Dr. Eng.**  
Director, Transport Research  
Division  
The Institute of Behavioral Sciences



**Fusako Matsuda  
Ph. D.**  
President  
Institute of Environment &  
Economics Co., Ltd.

CO2 emissions are a global concern, so I think they should be addressed from a global perspective in the report - measures to reduce CO2 emissions are being taken, particularly in the developing countries. You see a lot of Isuzu trucks on the streets of South East Asia. I think many stakeholders are interested in emissions regulations overseas.

For an automaker, it would be highly worth discussing the CO2 Life Cycle Assessment in the manufacturing, distribution, sales, and consumption processes overseas, as well as how vehicles at the end of their working lives are reused and recycled, in its Environmental Report.

### Proposing a Future Energy Society through Products

**Tsuzuku:** We need to discuss a number of issues, including fuel efficiency, as a whole in order to raise the energy efficiency of products. The name "Isuzu" prompts a "diesel" image, but

we are not even sure whether diesel fuel will be an indefinite resource in the future, which is a big issue. We request that you develop a detailed plan of how energy will be used in the future, and how Isuzu will fit into that. If Isuzu is convinced that diesel engines are more sustainable than gasoline engines, you should show this in your products.

**Yokoe:** At present, Isuzu has three steps in developing environmental products. In the short term, as diesel engines are fuel-efficient, Isuzu is working to make emissions cleaner while maintaining this advantage. In the medium term, we aim to reduce CO2 emissions by making our products more fuel efficient. Finally, in the long term, from an energy security perspective, we are starting to reduce our dependency on fossil fuels.

**Bessho:** While there has been a recent trend of a modal shift in transportation, cars will never lose their utility. We at Sagawa Express also have a commitment to reduce CO2 output

levels. For this to be realized, trucks should be manufactured in such a manner as to have far less environmental impact. We would strongly ask Isuzu to develop trucks that make less of an impact on the environment.

\* BRT: Bus Rapid Transit (a bus-based flexible circuit transportation system using bus-only traffic lanes similar to railways)

### Meeting Chairpersons' Message



**Shigeki Toma**  
Executive Vice President  
Chairperson of the  
Global Environment  
Committee  
Isuzu Motors Limited



**Kyosuke Yokoe**  
General Manager  
Program Management  
Department  
Isuzu Motors Limited

This was a valuable and informative meeting from which we learned a lot from the constructive opinions of our stakeholders. We strive to not be a company concerned with emissions just because of regulations, but rather a company that proactively develops clean vehicles for a sustainable society. While working toward that goal, we are also of course committed to generating profits. This

meeting has affirmed our appreciation that collaboration among companies, as well as among companies and citizens' groups, is very important. We remain committed to welcoming the opinions and responses of our stakeholders.

# The Future of the Environment and Safety in an Automobile Society

In addition to outside stakeholders' opinions, Isuzu top management personnel from the Engineering and Manufacturing Divisions also discussed current issues and their visions in a meeting held on July 8, 2005. They talked about environmental considerations in our product manufacturing, as well as their vision of a future automobile society.



**Takashi Urata**  
Senior Executive Officer  
Engineering Division No.2



**Naotoshi Tsutsumi**  
Director and Senior Executive Officer  
Manufacturing Division



**Katsumasa Nagai**  
Executive  
Engineering Division No.1



**What is Isuzu's environmental policy regarding its product development?**

**Urata:** The eco-friendly vehicles in Isuzu's current lineup are hybrid, and CNG (compressed natural gas)-powered vehicles. We are also developing eco-friendly engines that use DI (direct injection)-CNG and DME (dimethyl ether), all of which are diesel cycle engines,\*1 except for the Otto cycle\*2 CNG. We will soon make all of our engines diesel cycle, including the Otto cycle CNG engine.

Diesel cycle engines are theoretically the most fuel-efficient, producing the least amount of CO<sub>2</sub> emissions with a wide range of alternative fuels. Thus, Isuzu's basic policy is to improve the environment by developing diesel cycle engines. They operate efficiently using alternative fuels, and have a very bright future. However, because of a Tokyo Government campaign against diesel vehicles, diesel

engines still have a negative image among the general public. In reality, diesel has become far cleaner as a result of research and development over the past 10 years. Global demand is significantly high; for example, in Europe, nearly 50% of engines are diesel-powered. Diesel engines are expected to be as clean as gasoline engines after 2010.

**Nagai:** In particular, just over the past two or three years, diesel engines have started to be recognized as being very clean.

**Tsutsumi:** We are implementing more precise controls in order to produce a common rail\*3-type clean diesel engine, such as complete dust-control for the fuel injection system in the production process, and new engine tests for the complicated engine control systems.

Currently our global diesel engine production volume exceeds one million units annually. I believe there has been a sort of world-scale diesel engine revolution.

**Can you balance the environmental and economic factors regarding diesel engines?**

**Urata:** With the issue of fossil fuel depletion, we must improve fuel efficiency first, and then make our engines more economical with better energy recovery. Furthermore, it is critical to develop vehicles that can be powered by a larger variety of alternative fuels in the future.

Therefore, diesel and diesel-hybrid engines are optimal for balancing environmental and economic concerns. In my opinion, diesel engines will become mainstream in the industry for the next 20-30 years.

Another option is fuel cell vehicles. However, I do not think fuel cells can provide a solution at present, both because commercial vehicles need high horsepower, and because there are not yet enough hydrogen stations.

**Nagai:** Isuzu was the first manufacturer to produce light-duty trucks compliant with the new stringent Japanese diesel emissions regulations, and the market accepted our products much better than we expected, which showed that customers are highly environmentally-conscious, and would not accept products with only cosmetic changes.

**Tsutsumi:** In the Manufacturing Division, we control machinery lubricants, reducing

leakage. Furthermore, we recycle used oil ourselves and take measures to reduce waste oil.

**Back to the position that as a leading global competitor, Isuzu is now expected to take the lead in environmental considerations.**

**Tsutsumi:** When we were in a difficult management environment, our public transportation R&D stagnated, including the Dial-a-Bus,\*4 which we had supported before. Essentially a company can only contribute to society if it achieves an adequate profit. Even more important is to be a company with an ethical sense.

There was a TV program focusing on Isuzu's financial recovery that showed that Isuzu stayed in Thailand during the 1997 currency crisis, when many other automakers withdrew from the country. We supported the Thai people even in their economic crisis; this was one of our social contributions. Also, we are very proud that the new D-MAX pickup truck manufactured in Thailand has achieved a more than 10% improvement in fuel efficiency. This is highly recognized as a contribution to the environment.

**Urata:** Our urgent task in engine development is achieving cleaner exhaust emissions and greater fuel efficiency through CO<sub>2</sub> reductions.

Developing engines that can be suited to various alternative fuels, even CNG, DME,

GTL\*5, and bio fuels, are also a crucial issue in view of fossil fuel depletion. Although there are some infrastructure issues, Isuzu is also taking the lead in this area.

**Pursuit of better safety is also an issue for Isuzu, as well as environmental performance.**

**Nagai:** Safety is of course essential for automobiles. In the past, the concept of driver protection in the event of a crash was considered critical. However, this has now changed to protecting the other party in an accident, or even preventing accidents. As commercial vehicles are very heavy, any accident will cause a lot of damage. Thus, we are developing damage reduction brakes and other technologies.

Damage reduction brakes are already in use in some luxury passenger cars, but application to trucks is more difficult.

First of all, trucks are extraordinarily heavy, and they are also carrying customers' valuable merchandise. Accordingly, trucks require more precise control technology than passenger cars. As Isuzu states in its corporate vision, "Isuzu will always mean the best," we must balance both transportation efficiency and safety.

**Do you have any vision for the future of the automobile society, such as a certain type of truck or transportation system?**

**Tsutsumi:** In my own vision, I would like to see drivers on the highway take their hands off the steering wheel and drink coffee, or even catch a quick nap. I also have a dream that factory equipment would only operate

during actual manufacturing operations. In fact, 60% of total operating energy is consumed during breaks from manufacturing operations. I hope to reduce that ratio.

**Nagai:** From a safety perspective, I think automatic operation vehicles are the vision of the future. And as Japan is an aging society, I would like to see the elderly able to drive trucks and buses safely. I would also like to see driving from both the front and back of trucks become safer, even on the highway. I think we can improve safety by combining a variety of ideas and methods.

**Urata:** Developing diesel vehicles that can use biomass and other new fuels is another of our efforts. I would like to develop the ultimate eco-friendly engine, based upon the diesel cycle, that can be powered by a variety of fuels and achieve dramatic reductions in fuel usage and exhaust emissions. I think this would be a contribution to both the earth and to our descendents. We still have so many challenges.

\*1 Diesel cycle: Theoretical compression ignition engine (diesel engine) cycle

\*2 Otto cycle: Theoretical spark ignition engine (gasoline engine) cycle

\*3 Common rail: A type of super high-pressure fuel injection system

\*4 Dial-a-Bus: An on-demand bus system in which a bus is dispatched to a user's location in response to a call

\*5 GTL: Gas to Liquid. Liquidified fuel made from natural gas





# Isuzu's Environmental Impact and Activities

From materials procurement to the recycling and disposal stages, we are measuring and reducing environmental impact throughout the vehicle life cycle, placing a priority on the areas of greatest impact.

## Environmental Impact per Vehicle, and Our Impact Reduction Efforts

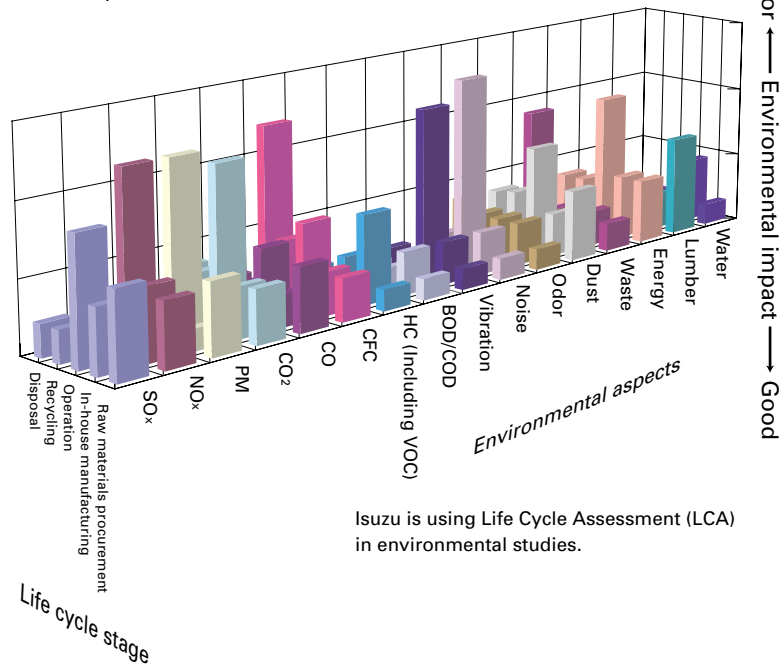
Most of the environmental impact created by automobiles occurs during their use, and most of that impact consists of exhaust emissions such as PM, NOx and CO<sub>2</sub>.

We spare no efforts to reduce emissions and improve fuel economy in order to reduce CO<sub>2</sub>, and are making improvements in both the hard and soft aspects of our operations.

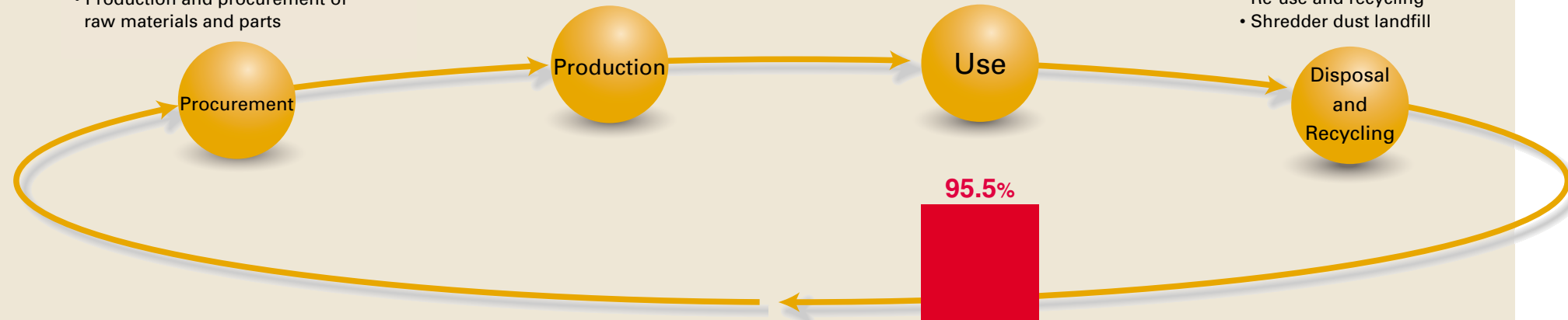
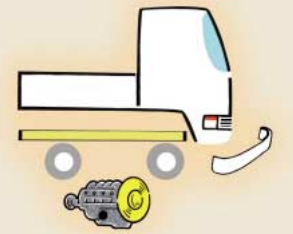
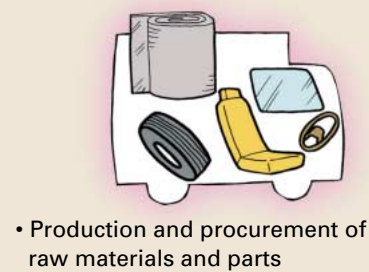
The "hard" aspect is developing clean diesel engines (see pages 21-27), while the "soft" aspect includes driver education programs on fuel-efficient driving (see page 28).

These pages outline our efforts to reduce environmental impact at each stage of a vehicle's life cycle. Page 14 describes our activities.

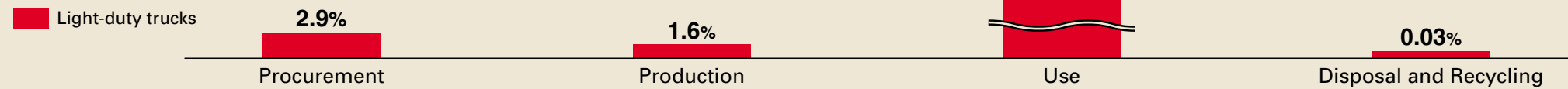
### Example of an LCA Vehicle Assessment



## The Life Cycle of Isuzu Products



### Ratio of CO<sub>2</sub> Emissions



### Main factors impacting the environment

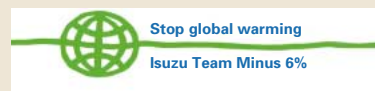
- Procurement:**
  - Consumption of resources and energy
  - Industrial waste emissions
  - Discharges into air and water (NO<sub>x</sub>, soot, dust, etc.)
  - Use of substances that impact the environment
- Production:**
  - Consumption of resources and energy
  - Industrial waste emissions
  - Discharge into air and water (NO<sub>x</sub>, soot, dust, etc.)
  - Use of substances that impact the environment
- Use:**
  - CO<sub>2</sub> emissions
  - Exhaust emissions (PM, NO<sub>x</sub>)
  - Noise
  - Packaging waste
- Disposal and Recycling:**
  - Shredder dust emissions
  - Industrial waste emissions
  - Emissions of substances that impact the environment

## Isuzu's Major Initiatives

- Procurement:**
  - Tie-ups with suppliers → pages 15, 17
  - Promoting green procurement → page 16
  - Introducing and operating a chemical substance management system → page 33
- Production:**
  - Preventing global warming → page 31
  - Reducing industrial waste → page 32
  - Managing and reducing environmental-impacting substances → page 33
  - Preventing air and water pollution → page 34
  - Efficient resource usage → page 34
- Use:**
  - Improving fuel efficiency and reducing CO<sub>2</sub> → page 22
  - Cleaner emissions → page 22
  - Developing clean energy vehicles → pages 21, 23
  - Reducing external noise → page 23
  - Mimamori-kun vehicle diagnostic system to improve driving skills → page 28
- Disposal and Recycling:**
  - Active recycling efforts → pages 29, 30
    - Improving vehicle disassembly and waste separation
    - Re-use of recycled materials and parts
    - Waste reduction
  - Proper disposal of substances that impact the environment → pages 29, 30

### "Team Minus 6%"

Isuzu joined Team Minus 6%, becoming a member of this Government-sponsored initiative that was launched on June 20, 2005. The Government's Global Environment Committee, as the main sponsor, along with the environmental committees of member companies, implements initiative policies. Workplace air conditioners are set at 28°C or above, and workers are encouraged not to wear neckties or jackets at work during the summer months from June through September. Employees are also encouraged to set and achieve CO<sub>2</sub> reduction targets at home.



# Environmental Management System

To tackle global environmental issues throughout the Isuzu group, we have initiated a Consolidated Environmental Management System to regulate the activities of both domestic and overseas manufacturers.

## Environmental Management

Isuzu has established an environmental management system to continually reduce the environmental impact caused by its corporate activities and to strengthen the company's environmental controls. We are distributing our Isuzu Charter on the Global Environment, which promotes Consolidated Environmental Management to reduce our environmental impact, to our group companies around the world to ensure the spread of our activities globally. We have launched these activities in eight domestic and six overseas manufacturing companies, as well as at 40 domestic dealers. The member companies are listed on pages 17 and 18.

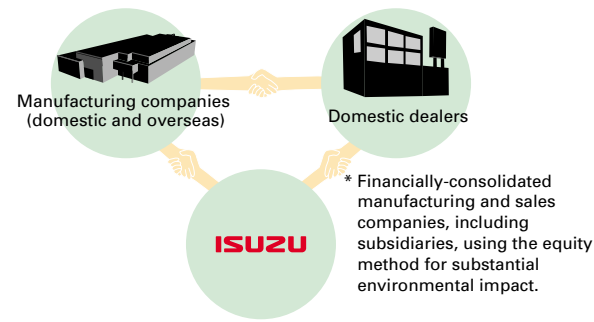
In view of their importance, we plan to expand these environmental management activities to include our subsidiaries and affiliates.

### Global Environment Committee

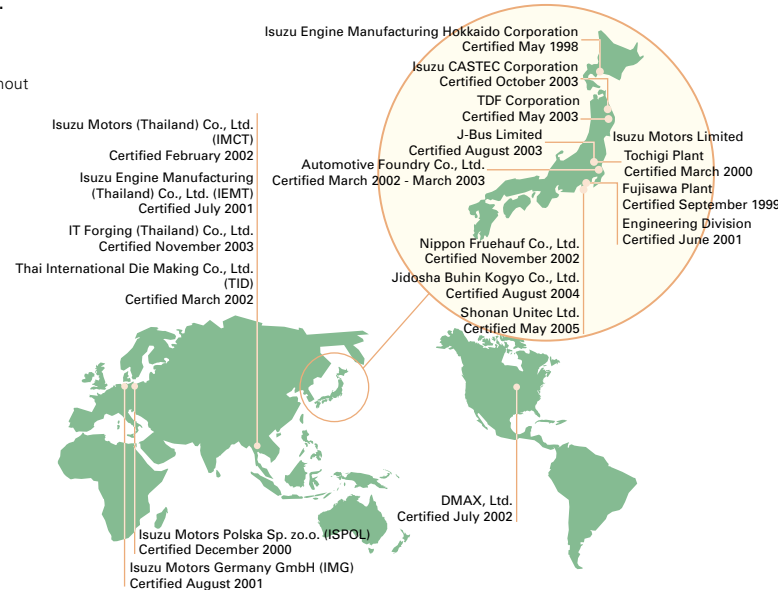
The Global Environment Committee promotes environmental efforts throughout the company.



### Scope of Consolidated Environmental Management System\*



### ISO14001-Certified Worksites



## Promoting Environmental Audits

Isuzu conducts annual audits to ensure that the Environmental Management System is implemented appropriately and achieving improvement. These audits are used to address and resolve issues and improve our system and its performance.

The environmental audits consist of internal environmental audits conducted once or twice annually, and monitoring and renewal reviews by external third-party certifying organizations. In fiscal 2004, all domestic plants and the Engineering Division underwent monitoring. No problems were indicated.

In order to improve our environmental audits, we are training personnel to conduct preliminary internal environmental audits, as well as offering refresher training for already certified internal environmental auditors.

We have corrected our manuals and standards in compliance with the fiscal 2004 revision of ISO14001 standards. These revisions have been thoroughly explained to all related departments and internal auditors.

As for the Kawasaki Plant that was closed in 2004, we have transferred its operations and equipment to the Fujisawa and Tochigi plants, and have accordingly returned the Kawasaki Plant's ISO14001 certification to the accrediting authority.



Internal auditor training session

## Green Procurement

Isuzu actively promotes green procurement by establishing its own purchasing guidelines and asking the cooperation of suppliers.

Our green procurement efforts are promoted across the company with the cooperation of our Engineering, Sales and Marketing, and Manufacturing divisions.

Our fiscal 2004 efforts included a Purchasing Guidelines Meeting in April, a Green Procurement Workshop in May, and an IMDS\*1 Introduction Workshop in June. We are also continuing with the following activities:

- 1) Building an Environmental Management System
- 2) Promoting the staged reduction of environment-impacting substances as outlined under the EU-ELV\*2 directive
- 3) Introducing IMDS
- 4) Promoting VOC\*3 reduction

### Purchasing Guidelines: Encouraging Green Procurement

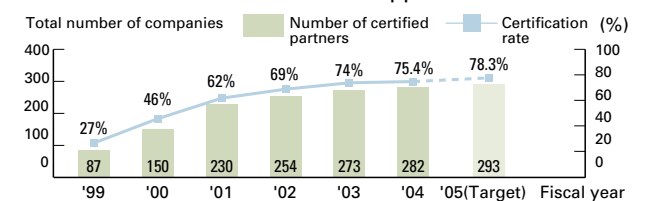
- ① Strengthening our Environmental Management System
- ② Reducing our use of substances that impact the environment




A green procurement meeting

\*1 IMDS: International Material Data System  
 \*2 EU-ELV: European Directive on End-of-Life Vehicles  
 \*3 VOC: Volatile Organic Compounds

### ISO14001 Certification of Isuzu Suppliers





### The Isuzu Charter on the Global Environment (established in May 1992)

#### Policies in Coping with the Global Environment

1. Throughout the life of a vehicle, from production to usage to disposal, we will cope proactively with the conservation of the environment.
2. In order to leave a beautiful earth to our descendants, not only through our business activities, but also as citizens of the earth, we will cope proactively with environmental conservation activities of localities and society.

#### Action Directives

1. We will minimize consumption of energy and emissions during our vehicle production processes, thus conserving the environment.
2. With regard to the exhaust gas, noise, etc. that are generated in the process of using vehicles, we will reduce them throughout the development and production of vehicles. Also, we will develop rational logistics systems and thus conserve the environment.
3. Realizing that resources are finite, we will aim to provide vehicles that are loved by customers for a long time, and we will thoroughly consider recycling, in order to make our vehicles recyclable during the disposal process.

Isuzu believes that preserving the global environment is our most important management theme. We are also actively working to achieve harmony between the development of the world economy and environmental preservation. To this end, the Isuzu Global Environment Committee was established in August 1990. In May 1992, we then established the Isuzu Charter on the Global Environment with our special environmental logo that includes the slogan "FOR THE FUTURE OF MANKIND AND THE EARTH."

## Complying with Environmental Laws and Regulations

At Isuzu, we are working to reduce the environmental impacts arising from our business operations. We not only comply with national and local regulations, we also set our own stricter standards. The environmental committee of each plant meets regularly to confirm compliance with legal requirements and evaluate day-to-day maintenance of standards. All legal requirements are currently fulfilled.

## Environment-related Product Recalls and Lawsuits

There were two environment-related product recalls in fiscal 2004, for the ELF and the FORWARD, for noise-related and exhaust pipe defects; corrective measures were taken and completed in both cases.

A decision was handed down for the first trial of the First Tokyo Air Pollution Lawsuit regarding health effects of automobile emission gases on October 29, 2002, and an appeal is currently underway. Arguments are now being heard in trials for the second Tokyo Air Pollution Lawsuit and beyond.

# Consolidated Environmental Management

After an initial introduction in fiscal 2004, the Isuzu Consolidated Environmental Management System is steadily being implemented in group companies.

## Consolidated Environmental Management at Manufacturing Companies

### Group Plant Environmental Meetings and Goals

Isuzu and its eight domestic group companies have implemented an Environmental Measures Plan. The Plan was created based upon the Environmental Measures Guidelines, and it respects the independence of individual group companies. A group goal has been set for fiscal 2010, with fiscal 2004 as the base year, and efforts to reduce environmental impacts in the three areas have begun.

The six overseas group companies were invited to the First Global Plant Environmental Meeting held in Thailand in fiscal 2005 to aggressively promote our Environmental Measures. A summary of domestic group fiscal 2004 achievements and fiscal 2010 goals are on page 37.



Global Plant Environmental Meeting

### Achieving ISO14001 Certification

With the certification of two domestic group companies in May 2005, all eight domestic group companies are now ISO14001 certified. All six overseas group companies had achieved certification as of November 2003.

### Expanding Group Sharing Activities

Plant Environmental Meetings are held in rotation at different plants, as they offer opportunities to highlight each plant's environmental efforts and accomplishments. The meetings also provide chances for the plants to learn from other plants' efforts and notable achievements, so that they can share them and rise to each other's levels.



A plant inspection

## Environmental Partnership with Dealers

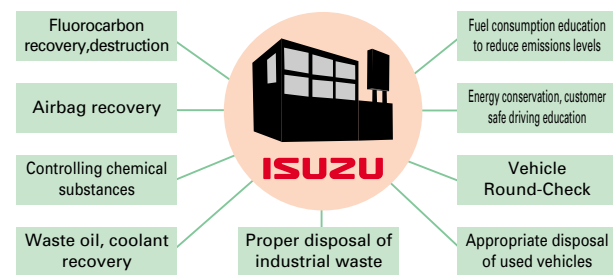
### Domestic Dealers and Environmental Conservation

Isuzu domestic dealers are concerned with environmental laws and regulations significantly related to business activities, such as vehicle sales and service maintenance. Isuzu tracks the skills and knowledge of every employee to fully comply with laws and regulations such as the End-of-Life Vehicle Recycling Law enacted in January 2005, and the Personal Information Protection Law.



Our recycling guidelines

### Environment-related Efforts with Sales Companies



### Introducing The Environmental Management System

Isuzu issued its own Environmental Measures Guidelines that describe environmental issues for domestic dealers prior to the introduction of the Environmental Management System.

All the dealers had established their own internal structures and organizations in advance and then appointed persons in charge of environmental and promotion issues by April 2005.



Environmental Measures Guidelines



Environmental Measures Guideline Workshops were held at 10 sites around the country with 40 companies in attendance.

## A Domestic Group Company: Jidosha Buhin Kogyo Co., Ltd.



### Minoru Matsushima

President  
Jidosha Buhin Kogyo Co., Ltd.

Became JBK president after managing Isuzu's North American operations

### Promoting Environmental Improvement Activities

Our company develops, processes, and assembles industrial diesel engines and components for various kinds of vehicles. Our headquarters and Ebina Plant are in Kanagawa Prefecture along the Sagami River, and we also have a plant in an industrial zone in Mo-oka, Tochigi Prefecture, along the Kinugawa River.

In August 2004, both our plants obtained ISO14001 certification, following ISO9001 certifications. We are promoting environmental efforts among all employees with a concept of greater efficiency and risk avoidance.

We were engaged in two major environmental measures in fiscal 2004. First, we successfully reduced electricity use by 1.4% from

fiscal 2003 through company-wide energy conservation measures, including applying original energy-saving methods to production machinery. Another measure was an efficient waste separation program that enabled us to reduce industrial waste destined for reclaimed land by 12% over fiscal 2003 levels.

As part of our efforts to improve the local environment, we also participated in the Sagami River Clean-up Campaign.

We are looking forward to further promoting our environmental activities by launching our Environmental Management System and achieving its targets.



Headquarters & Ebina Plant  
Jidosha Buhin Kogyo Co., Ltd.



ISO14001 Certificate

## An Overseas Group Company: Isuzu Engine Manufacturing (Thailand) Co., Ltd.



### Masato Tanaka

President  
Isuzu Engine Manufacturing (Thailand) Co., Ltd.

Engaged mainly in powertrain production during his career.

### Building an Environmentally-friendly Engine Plant

Founded in 1987, we manufacture diesel engines for Isuzu D-MAX pickup trucks. In 2004, we started to produce a new fuel-efficient 4J diesel engine that can cover the roughly 1,700 kilometers all the way from Chiang Mai, Thailand, to Malaysia without refueling.

With ISO14001 certification having been attained in July 2001, we are now working with a commitment to preserve the global environment.

In Thailand, electricity shortage is a chronic problem, so we are committed to finding ways to conserve electricity. We have reduced electricity consumption by achieving a 10% improvement in our electrical furnace efficiency and are also implementing measures such as shutting off lights and air conditioners, as well as halting

machinery and air supply on the production line during lunch breaks to save electricity. We are continuously improving efficiency while cutting energy use on the production line.

Most of the industrial waste at our plant is recycled, except for some garbage, sludge, and polishing dust. Waste liquids are separated into water, oil, and sludge. Water is discharged as effluent, while oil is recycled as fuel. At present, 85% of our total plant waste is recycled.

We will keep improving our plant to become a more energy-efficient facility, just like our fuel-efficient 4J diesel engine, and look forward to further contributing to the environment.



Isuzu Engine Manufacturing (Thailand) Co., Ltd.



ISO14001 Certificate

# Environmental Goals and Achievements/ Environmental Accounting

A report of our environmental activities' goals, achievements, and environmental accounting in fiscal 2004.

## Environmental Goals and Achievements

### Producing Environmentally-sound Products

FY2004 environmental goals	FY2004 achievements	Self-evaluation	FY2005 goals	Mid-and long-term objectives	Reference page
Improve fuel efficiency to prevent global warming • Introduce new products with improved fuel efficiency	• Improved fuel efficiency by 5% in the FORWARD medium-duty truck by improving engine (released June 2005) • Improved fuel efficiency by 35% in the light-duty truck ELF HYBRID by installing an idling stop-and-start system and Smoother-E automatic transmission (M15 Mode, in comparison with diesel vehicle) (released April 2005)	○	• Continuous development of fuel-efficient products	• Attain best fuel efficiency in class	P22,P25 P26,P27
Promote cleaner emissions • Early launch of low-emission vehicles	Promoted clean exhaust emissions in all our vehicles by improving engines and engine control technologies and installing DPD/PM catalytic converters. • Adapted FORWARD medium-duty truck to be compliant with the 2005 New Long-term Emissions Regulations (released June 2005) • Adapted GIGA heavy-duty truck to be compliant with the 2003 New Short-term Emissions Regulations and Ultra-low Particulate Matter Emissions Certified Vehicle certification requirements (released May 2005) • Adapted ERGA heavy-duty route bus, GALA mio medium-duty sight-seeing/tour bus, and JOURNEY light-duty sight-seeing/tour bus to be compliant with the 2003 New Short-term Emissions Regulations, and certified all of them as ultra-low PM emissions diesel vehicles.	○	• Early launch of low emission vehicles	• Develop next-generation after-treatment equipment	P22,P27
Reduce external noise • Develop low noise technology • Develop noise tone improvement technology	• Researched optimal sound insulation structure through engine/operation noise analysis and noise reduction, and promote R&D for high-function sound dampening • Reduced ERGA mio medium-duty non-step bus (launched August 2004) idling noise by 5.5 dB • Reduced ERGA heavy-duty non-step bus (launched December 2004) idling noise by 1.0 dB	○	• Develop external noise reduction technology • Develop noise tone improvement technology	• Reduce external idling noise	P23
Develop clean energy vehicles • Develop hybrid vehicles • Improve CNG vehicles	• Launched ELF HYBRID light-duty truck (April 2005), and adapted it to be compliant with both the 2003 New Short-term Emissions Regulations, and the combined ultra-low PM emissions diesel vehicle certification requirements. • Launched ELF CNG-MPI light-duty truck (April 2005), with improved fuel injection (MPI: Multi-Point Injection) and combustion control systems for cleaner emissions. ELF is also compliant with the 2005 New Long-term Emissions Regulations (first in class).	○	• Develop new technologies and vehicle applications	• Develop next-generation clean energy vehicles	P21,P23 P25,P26
Promote vehicle recycling • Comply with Japanese Automobile Recycling Law and EU directives • Increase use of IMDS database • Improve awareness through education	• Established internal structure, offered legal compliance guidance to sales companies, instructed customers and disclosed recycling fees in preparation for the implementation of the Automobile Recycling Law • Responded to implementation of the Automobile Recycling Law • Promoted recycling education in concerned departments	○	• Concrete response to Automobile Recycling Law • Improve IMDS database • Improve awareness through education • Research & Development of uses for recycled materials • Wider use of EU free scrap car collection system	• Recycling rate of 95% or more for used automobiles by 2015	P29,P30
Reduce environment-impacting substances • Reduce use of lead, mercury, cadmium, and hexavalent chromium	• Convert parts in order to achieve goals (large parts nearly complete; currently converting smaller parts)	○	• Reduce use of lead, mercury, cadmium, and hexavalent chromium	• Lead (from 2006) to below 1/10 of 1996 levels (below 1/4 for heavy-duty commercial vehicles) • Cadmium (beginning in January 2007) • Hexavalent chromium (ban from January 2008)	P23,P30
Reduce vehicle interior VOC	• Developed VOC reduction technology (established VOC assessment and analysis technology for vehicles and components) • Promoted change to low VOC materials, components	○	• Establish VOC measurement method for trucks, buses	Develop low-VOC vehicles	P23

### Building Environmentally-friendly Plants

FY2004 environmental goals	FY2004 achievements	Self-evaluation	FY2005 goals	Mid-and long-term objectives	Reference page
Preventing global warming by reducing CO <sub>2</sub> emissions • Reduce CO <sub>2</sub> emissions volumes by 30% or more from 1990 levels by 2010 • Improve energy efficiency (reduce by 1% per unit/year)	• Reduced CO <sub>2</sub> emissions by 53% over 1990 levels • Increased CO <sub>2</sub> emissions per unit by 4.2% over FY 2003	△	Reduce by more than 30% over 1990 levels Reduce by 1% or more per average unit	• Reduce CO <sub>2</sub> emissions by 8% or more per unit from 2004 levels by 2010	P31
Reduce waste products • Further boost zero emissions measures	• Landfill waste disposed of: 157 tons (56% decrease year-on-year) - Goal: 176 tons or less	○	76.8 tons or less	• 1 ton or less per month per plant (24 tons/year)	P32
Management, reduction of substances with environmental impact • VOC emissions (paint) to less than 45 g/m <sup>2</sup> by end-FY 2005	• VOC emissions volume: 17.3g/m <sup>2</sup> (down 28% year-on-year)	○	45g/m <sup>2</sup> or less	• Further reductions with active voluntary measures	P33
Logistics • Improve vehicle delivery mode (reduce percentage of vehicle transport delivery to 20% or less) • Boost efficiency of delivery vehicles (to 70% or more direct deliveries)	• Vehicle transport delivery: 20% (down 5% year-on-year) • Direct delivery: 70% (down 16% year-on-year)	○	Continuous improvements	• Improve logistics efficiency	P38

△: Though CO<sub>2</sub> total volume was reduced, per unit figures increased temporarily (due to the closure of the Kawasaki Plant)

### Environmental Management

FY2004 environmental goals	FY2004 achievements	Self-evaluation	FY2005 goals	Mid-and long-term goals	Reference page
Environmental Management • Continuous improvement efforts in ISO 14001 Environmental Management System • Promote consolidation among Group companies	• Continuous certification renewal at all manufacturing sites • Promoted consolidation of environmental activities at eight domestic manufacturers (during 2004, and set 2005 long-term goals), and prepared activities for six overseas manufacturers • Planned for introduction of Environmental Management System at all 40 dealers, prepared guidelines, and launched 2005 activities	○	Promote consolidation of environmental measures at domestic and overseas manufacturers and sales companies	• Promote consolidation of Isuzu Group Environmental Management • Achieve long-term Group targets	P15-P18 P37
Promote Green Procurement • Promote Green Procurement of materials and components • Promote ISO14001 certification among suppliers (certification rate of 80% or more)	• Set Green Procurement Guidelines, hold seminars on purchasing policy and Green Procurement, and request reduction in use of substances that impact the environment • Certification rate: 75.4% (up 2% year-on-year)	△	• Promote Green Procurement of materials, components • Promote introduction of Environmental Management System in supplier companies during fiscal 2005 (target 78% or more)	• Reduce use of substances with significant environmental impact • Promote introduction of Environmental Management System in supplier companies	P16

△ : Certification rate increased, although objective was not met. Promoted certification assistance activities

### Social Report

FY 2004 environmental goals	FY 2004 achievements	Self-evaluation	FY 2005 goals	Mid-and long-term goals	Reference page
Environmental communications • Issued Environmental Reports: Japanese (Sept. 2004); English (Nov. 2004) • Participation in eco exhibitions, events • Social contribution activities	• Published Environmental Reports: Japanese (Sept. 2004); English (Nov. 2004) • Actively participated in Eco-Products 2004, Eco-Car World, Infrastructure and Traffic Safety Day, Fujisawa Environment Fair, and other events • Provided a member and technical support to the Japanese Antarctic Research Expedition, worked to clean up communities near plants, and participated in local community activities • Contributions to overseas regions through events and communications activities in conjunction with overseas dealers and distributors	○	• Issuing annual Environmental & Social Reports • Participation in events and exhibits and social contribution activities	• Social contribution activities, environmental communications efforts	P39-P45

\* ○ : in Self-evaluation column indicates achievement of goal

## Environmental Accounting

### FY2004 Environmental Accounting

Environmental accounting based on the assessment of environment-related costs and results is a principal indicator for improving and sustaining environmental protection and business activities. Isuzu uses this information to assist in making management decisions related to environmental protection, and shares it with customers, shareholders, and other stakeholders through our Environmental Report. We are always improving our environmental accounting accuracy and expanding coverage in cost and effect calculations.

### Environmental Protection Costs

Isuzu's fiscal 2004 environmental protection costs totaled ¥28.2 billion. Of this, ¥25.7 billion was for research and development, including measures to meet the New Long-term Emissions Regulation measures. In calculating these costs, we referred to the Environmental Reporting Guidelines issued by the Japan Ministry of the Environment. Composite cost calculations, including costs for purposes other than environmental protection, have been made on a proportional basis.

### Environmental Protection Results

As a result of research and development, we succeeded in achieving substantial environmental protection through improvements in product performance, as indicated in the table on the left. In addition, we reduced landfill waste substantially through incineration ash recycling.

### Environmental Protection Costs (April 1, 2004 ~ March 31, 2005)

(Units: million yen)

Environmental protection costs		Major initiatives	Amount
1	Environmental protection costs to control environmental impacts in the areas of major business operations (operational costs)	—	571
Breakdown	① Pollution prevention measures costs	Wastewater treatment, maintenance of pollution prevention equipment	231
	② Global environmental protection costs	Improvement of energy efficiency	26
	③ Resource circulation costs: industrial waste processing costs (including landfills)	Waste reduction activities	314
2	Upstream/downstream costs	Engine/transmission rebuilding costs, returnable rack purchases, Green Procurement activities, etc.	766
3	Environmental management activities costs	Measures to comply with Automobile Recycling Law (internal/external), ISO14001 improvement activities, etc.	1,064
4	Environmental protection R&D costs	Efforts to meet exhaust emissions regulations in Japan and abroad, development of products with reduced environmental impact, etc.	25,702
5	Social activity costs	Social contribution activities, environmental protection-related activities	55
6	Environmental damage costs	Pollution penalties, litigation costs, etc.	89
7	Other environmental protection costs	—	0
Total			28,247

### Environmental Protection Effects

#### Cost Reduction Effects (Units: million yen)

Cost reduction from energy conservation	398
Cost reduction from reduced waste disposal	-11 (increase)
Cost reduction from tap and industrial water conservation	6
Total	393

#### Reduction Volume

CO <sub>2</sub> emissions volume	12,000 tons
Disposed waste landfill volume	199 tons
Water consumption	40,000m <sup>3</sup> (Increase)

\* Does not include Isuzu Engine Manufacturing Hokkaido Corporation data after FY 2004

# Making Environmentally-friendly Products

Isuzu offers products with new values that balance low environmental impact with safety and economy.

## “See” Technology

Isuzu’s development policy is “In pursuit of customers’ trust,” reflecting our commitment to gaining the trust of our stakeholders. We have designated Safety, Economical, and Environmental technologies as three areas on which to focus; we abbreviate this as “See” Technology, and it is our basic development concept.

We develop our products based upon the base concept and our policies, and offer products with new value that balance low environmental impact with safety and economy. To develop environmentally-friendly vehicles, Isuzu defined the eight important issues in the vehicle life cycle that are related to environmental impact. We are committed to finding technologies that minimize environmental impact.



## Developing Clean Energy Vehicles

As the majority of current commercial vehicles are diesel-powered, our number one priority is to develop cleaner diesel engines, which are known for their excellent fuel efficiency. As the demand grows for commercial vehicles to become both cleaner and more fuel efficient in various different circumstances and usages, Isuzu is also developing more eco-friendly vehicles and released three new reference models at the 2004 Tokyo Motor Show. Two of the three, the ELF CNG-MPI and the ELF HYBRID, were later launched in the domestic market in 2005.

### ELF CNG-MPI

This clean, powerful, and low-noise compressed natural gas (CNG) vehicle employs the multipoint injection (MPI) system for fuel injection, and meets the New Long-term Emissions Regulations due to its more precise electronic controls (see pages 25-26).

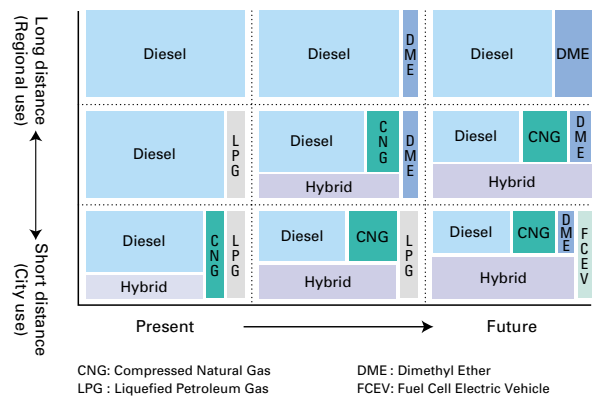
### ELF HYBRID

The Elf HYBRID features the Smoother-E Autoshift system, which incorporates the advantages of both manual and automatic transmissions, as well as our original hybrid system. The vehicle boasts both cleaner emissions as well as lower fuel consumption in city operations. The quieter start and acceleration reduce driving fatigue, and highly reliable systems contribute to lower maintenance costs (see pages 25-26).

### ELF DME (Dimethyl Ether) - Under development

The dimethyl ether (DME) vehicle is the next-generation clean energy truck. DME is a fuel that is synthesized from natural gas and biomass. Even without after-treatment devices such as DPDs (diesel particulate defusers), the ELF DME emits no black smoke, and its PM and NOx emissions are also extremely low.

## The Development of Clean Energy Vehicles



\* Both the hybrid and DME engines employ diesel cycle combustion methods and are based on diesel engines

# Eight Key Issues in Developing Our Products

Isuzu has designated eight key issues related to environmental impact that arise over a vehicle's life cycle while working on technologies that will minimize such environmental impacts.

## 1 Improving Fuel Efficiency and Reducing CO<sub>2</sub>

Diesel engines emit 20 to 40% less CO<sub>2</sub> than gasoline engines, which helps curb global warming. For future CO<sub>2</sub> reductions, we have improved the total fuel efficiency of the engine and vehicle, which has already achieved an improvement in fuel efficiency of approximately 40% over the past 10 years.

One example is the Smoother-G transmission, which is used in the GIGA heavy-duty truck series. In its Eco-Mode, the Smoother-G transmission automatically shifts the engine into the most fuel-efficient mode.

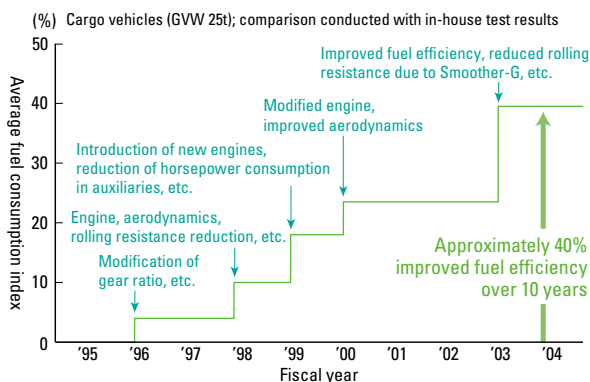
We have developed more fuel-efficient products in the past year. We were able to adapt the ERGA heavy-duty route bus to meet the New Short-term Emissions Regulations, while also improving its energy efficiency by 5%. We also made the GIGA heavy-duty truck more economical to operate by improving the performance of the Smoother-G transmission and using the idling stop-and-start technique.

The FORWARD medium-duty truck met the 2005 New Long-term Emissions Regulations, while also raising its fuel efficiency by 5%.

Isuzu is also improving the fuel efficiency of our light commercial vehicles (LCVs) for overseas market. The D-MAX pickups won awards for Best Fuel-efficiency Pickup, Best Double Cab 2WD Pickup, and Best-selling Pickup Truck at the 2004 Car of the Year show in Thailand.

Furthermore, the new D-MAX unveiled in Thailand in Autumn 2004 had improved fuel efficiency of more than 15% for the 2.5 liter model, and more than 10% for the 3 liter model, as compared to previous models (in-house test data). Isuzu is thus contributing to reducing global CO<sub>2</sub> emissions.

### Heavy-duty Truck Fuel Efficiency



## 2 Cleaner Emissions

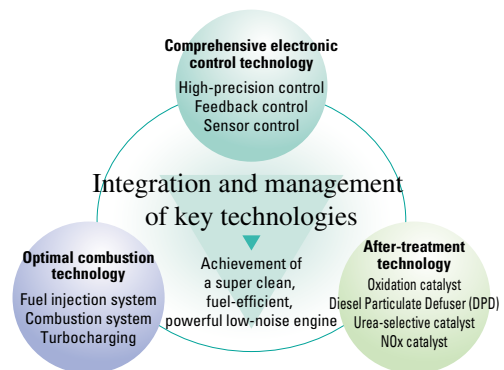
Diesel engines are economical and help curb greenhouse warming, but they are also a generator of NO<sub>x</sub> (nitrogen oxide) and PM (particulate matter), which are regarded as major causes of pollution in urban areas.

Isuzu is working hard to maximize the advantages of diesel engines, while also improving their disadvantages.

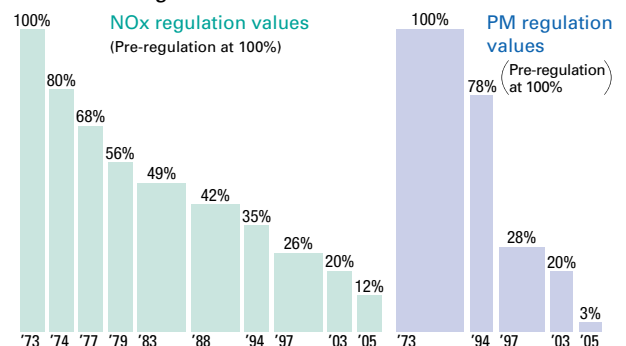
The FORWARD medium-duty truck became the first of its class to meet the New Long-term Emissions Regulations in June 2005. This was achieved by the Isuzu Clean Air Solutions system referred to as I-CAS.

By combining and integrating three technologies — optimal combustion technology, after-treatment technology, and comprehensive electronic control technology — we are improving them in our quest to make a cleaner, more fuel efficient, more powerful, and quieter engine.

### Three Key Technologies of I-CAS



### Emissions Regulation Values

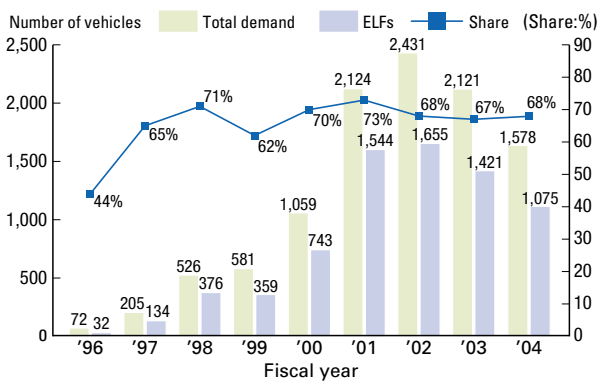


## Making Environmentally-friendly Products

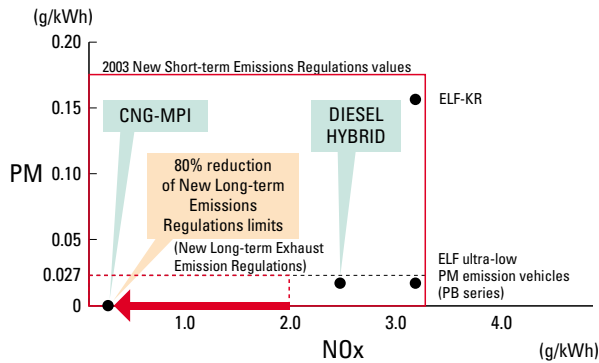
### 3 Developing Clean Energy Vehicles

In addition to the ELF CNG vehicles, which enjoy high popularity in the domestic market, we also launched the ELF DIESEL HYBRID in 2005. We are also striving to develop clean energy vehicles with even higher performance.

#### CNG-powered ELF Registration



#### Emissions Performance Comparison



### 4 Reducing External Noise

Isuzu is not only meeting the world's most stringent noise regulations in Japan, but also working to reduce idling noise and improve unpleasant diesel noise. Our major efforts involve reducing noise from the engine and drive-train, analyzing the transmission route of combustion noise, and developing sound insulation and damper materials. As a result, the idling volume of the 2004 ELF had been reduced by 4dB from that of the 1999 model.

### 5 Reducing the Use of Environment-impacting Substances

We have developed a set of guidelines regarding the use

of four heavy metals to meet the European Union's End-of-Life (EU-ELV) Directive and the Japan Automobile Manufacturers Association voluntary standards. We are working with the help of our suppliers to meet voluntary reduction goals set for each vehicle model and type of equipment in fiscal 2001.

Lead	Reduce lead to less than 1/10 (1/4 for heavy-duty commercial vehicles) of 1996 levels beginning in 2006.
Hexavalent chromium	Gradually phase out the use of hexavalent chromium in new vehicles from 2003 to 2008.
Cadmium	Gradually phase out the use of cadmium in new vehicles from 2003 to 2007.
Mercury	Ban the use of mercury in new vehicles beginning in January 2005 (except in some lights and indicator devices) in accordance with the Automobile Recycling Law.

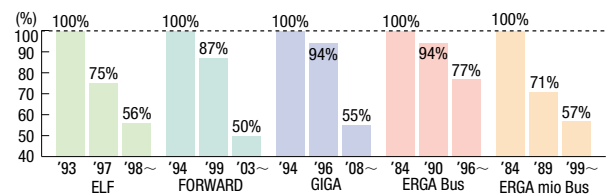
### 6 Improving Recyclability

Isuzu is actively working to increase the recyclability of our products and reduce our use of substances with significant environmental impact in all stages of our vehicles' life cycles. For more details, please refer to "Reuse and Recycling" on pages 29-30.

### 7 Reducing the Use of Refrigerants in Air Conditioners

As HFC134a (used as a CFC substitute) is also a greenhouse gas, Isuzu is working to reduce its usage by 10% over 1995 levels. We achieved a reduction of more than 20% for all vehicle models. At the same time, we are also developing air conditioning systems using other refrigerants such as CO<sub>2</sub>.

#### Reduction of Refrigerant Amount per Isuzu Vehicle



### 8 Reducing VOCs in Vehicle Cabins

Isuzu is working to reduce the amounts of 13 VOCs\* designated by the Ministry of Health, Labour and Welfare used in the interior cabins of its vehicles, in accordance with the Japan Automobile Manufacturers Association's voluntary plan.

\* VOC: Volatile organic compounds, such as formaldehyde and toluene

## Features: Producing Vehicles that Contribute to Society

Isuzu wants to help provide more job opportunities and increased mobility to everyone. As a manufacturer of commercial vehicles, as well as public transportation vehicles, Isuzu's vision is to produce products that deliver

new value to society, while also placing a high priority on safety, environmental friendliness, and efficiency. In order to realize this vision, Isuzu works day and night to develop its engineering capabilities.

### Wheelchair Barrier-free Vehicles (Reference Model)

The GIGA tractor, specifically designed for people confined to wheelchairs, is equipped with the Smoother-G transmission, which does not require clutch operation, as standard equipment. A lift system on the passenger side allows barrier-free access to the cabin.

\* Reference models were presented at the 2004 Tokyo Motor Show.



### ERGA Heavy-duty Route Bus

ERGA, a standard-type bus with multiple functions, features the latest ultra-low PM emission diesel engine that meets the Standard Non-step Bus Authorization Regulations that are designed to promote safe and convenient non-step buses with a universal design.



### GALA Heavy-duty Hi-Decker Sight-seeing Bus with a Wheelchair Lift

To enrich lives in aging and welfare societies, Isuzu designed this sightseeing bus for all people who want to enjoy travel, including the elderly and physically challenged. The GALA Hi-Decker Sight-seeing Bus has a door in the middle of the bus equipped with a lift system for the wheelchair-bound.

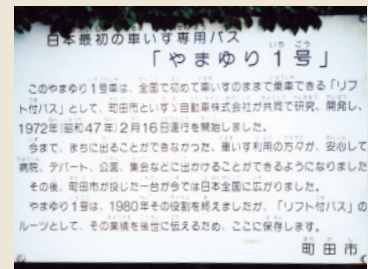


### YAMAYURI No.1: Japan's First Wheelchair-accessible Bus

In 1972, the city of Machida in Tokyo teamed up with Isuzu to develop the first bus accessible to wheelchair users. The result was Japan's first wheelchair lift-equipped bus, the YAMAYURI No.1. It was based on Isuzu's revolutionary walk-through bus, the Isuzu High-Roof. This is the beginning of the use of universal design vehicles in the design process, and shows Isuzu's commitment to developing universal design products.



YAMAYURI No.1



The YAMAYURI No.1 explanatory board



# New Environmentally-Friendly Products

Isuzu is actively developing clean energy vehicles with lower environmental impact and better fuel economy, and meeting emissions regulations.

## Themes in Developing Clean Energy Vehicles

CNG vehicles are far superior in terms of reduction of emissions such as NOx, and PM to other clean energy vehicles currently in production. NOx and PM are major contributors to urban air pollution. CNG vehicles are expected to become alternatives to fossil fuel vehicles.

Diesel hybrid vehicles are highly fuel-efficient and emit low levels of CO<sub>2</sub>, a cause of global warming, and are regarded as practical clean energy vehicles with no facilities constraints.

Isuzu is hoping to expand these two types of clean energy vehicles more throughout the marketplace.

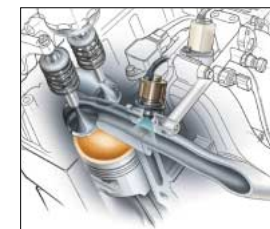
## ELF CNG-MPI

Launched in April 2005, the ELF CNG-MPI is the latest model of Japan's best-selling CNG vehicle. More than 7,000 total ELF CNG vehicles have been put into the market.

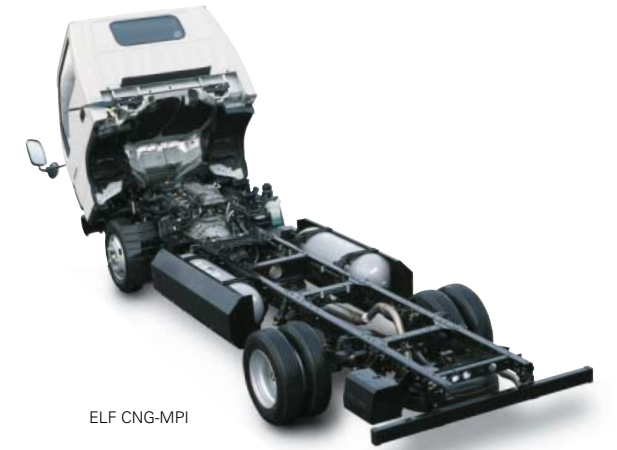
Multipoint Injection (MPI) is a new adaptation to the CNG fuel injection system. The new ELF CNG-MPI, with its more precise electronic controls, became the first vehicle in Japan to meet the "CNG vehicle emissions standards" of the New long-term Emissions Regulations. This model achieved the cleanest exhaust emissions of any clean energy vehicle.

With a large CNG tank capacity and a new engine with superior fuel efficiency, the ELF CNG-MPI's travel range on a tank of fuel has increased significantly.

With its clean, powerful, and low noise performance, the ELF CNG-MPI is the best vehicle for early-morning and late-evening deliveries in urban areas.



Multipoint Injection System



ELF CNG-MPI

Shikauchi: This was the first vehicle we designed to meet the New Long-term Emissions Regulations that mandate higher fuel efficiency and power output. We are very proud of this product, and are sure that customers will be able to use it for a long time to come. Our goal is to see many more CNG vehicles both in Japan and overseas in the future.

Mori: We faced so many challenges during development, but we have been rewarded with this truly environmentally-friendly product, which has been enhanced in all aspects. I would like to see many of our customers ride in this vehicle.



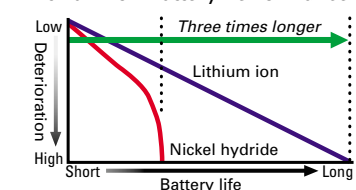
Kazunori Shikauchi Takashi Mori  
Engineers

## ELF HYBRID

The ELF HYBRID features the newest diesel engine and a hybrid system optimal for light-duty vehicles. Assisted by an electronic motor, it is highly efficient to operate. As a result, its fuel consumption, CO<sub>2</sub> reduction, and other exhaust emission performance figures have been improved significantly. In the M15 mode, generally used for hybrid vehicle fuel consumption evaluations, fuel consumption has decreased by 35%, and CO<sub>2</sub> emissions have declined by 25%. Furthermore, PMs have declined by 85% and NOx by more than 25% compared to the 2003 emissions regulations.

Isuzu adopted its original PTO parallel driving system, lithium ion battery, and Smoother-E Autoshift technologies in order to both improve economic performance, and ensure the durability and safety of its commercial vehicles.

### Lithium Ion Battery Performance



ELF HYBRID

Kurita: Even during our financially tough period, we never gave up on a hybrid vehicle, because we are committed to the "environment". Using our existing DPD and Smoother technologies as the basis for development, we have completed a hybrid truck that is optimal for commercial use.

Ogushi: With our original technology, we were able to develop a hybrid truck with the best fuel efficiency in its class. We are convinced that this will make a contribution to the global environment.



Akihide Ogushi Shigeaki Kurita  
Engineers

### ELF CNG-MPI A low-emission performance and alternative energy vehicle



### ELF HYBRID A practical clean energy vehicle with no facilities constraints



Uses natural gas, which emits less CO<sub>2</sub>, by adopting an MPI system

7-17% Reduction

Compared to current New Short-term Emissions Regulations (in-house test data)

Per-unit CO<sub>2</sub> emissions for natural gas are lower than for diesel oil; thus, CO<sub>2</sub> emissions are reduced by approximately 7-17%

CO<sub>2</sub>

Uses hybrid system for improvement over diesel vehicles, which have excellent CO<sub>2</sub> emission reduction performance

9-17% Reduction

Compared to current New Short-term Emissions Regulations (in-house test data)

Approximately 10-20% better fuel efficiency than current diesel models in general city mileage. CO<sub>2</sub> emissions reduced by approximately 9-17%.

New diesel long-term emissions regulatory limits

NOx reduced by approximately 80% to meet the 2005 emissions regulations. Virtually no PM or black smoke emissions. These levels are sufficient to meet the proposed new diesel long-term regulations.

NOx: Nitrogen oxides  
80% Reduction

HC: Hydrocarbons\*  
30% Reduction

PM: Particulate matter, black smoke  
100% Reduction

\* For CNG vehicles, NMHC: Non-methane hydrocarbons (Figures reported to the Ministry of Land, Infrastructure and Transport)

Exhaust emissions

Reduced PM by 85% and NOx by 25% in accordance with the 2003 Emissions Regulations



New Short-term Emissions Regulation values

NOx: Nitrogen oxides  
25% Reduction

PM: Particulate matter  
85% Reduction

Percent reduction below each substance's 2003 regulatory limit

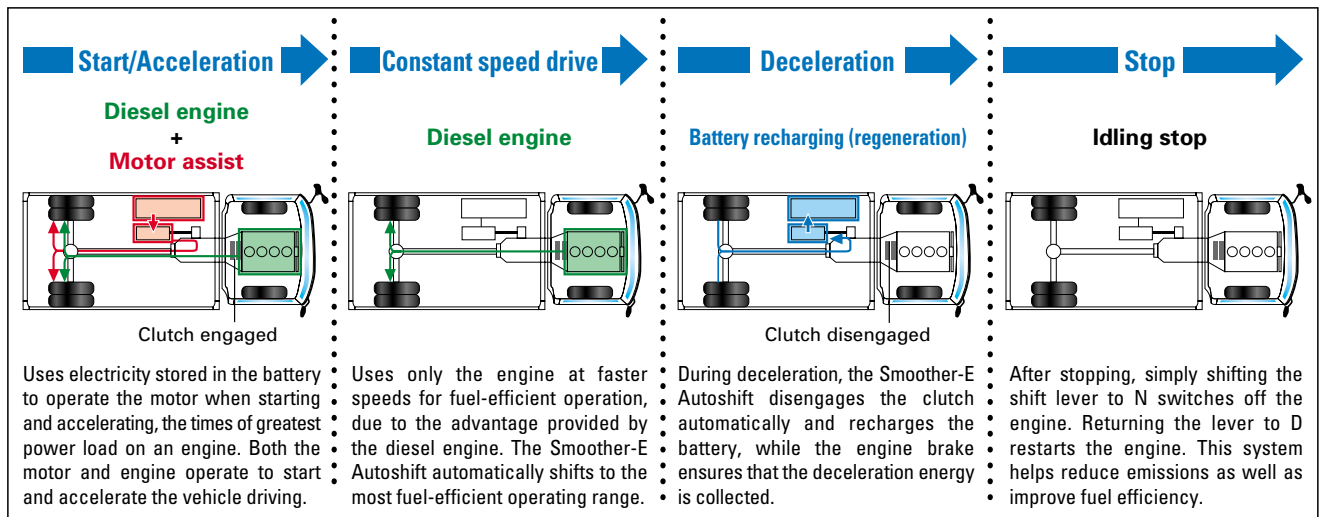
There are approximately 270 CNG stations in Japan (as of the end of March 2005)

Facilities

Existing diesel refueling facilities available nationwide

## Making Environmentally-friendly Products

### ELF HYBRID System

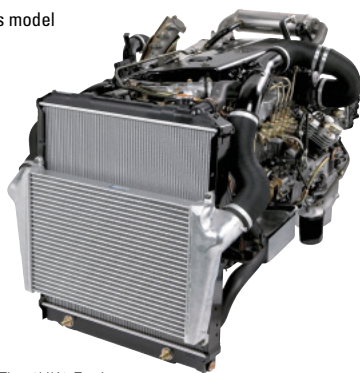


## FORWARD

The FORWARD was the first medium-duty truck to meet the 2005 New Long-term Emissions Regulations, making it a vehicle that helps to curb global warming and urban air pollution. Developed to be both economical and environmentally- and socially-friendly, the FORWARD was launched in June 2005.

The FORWARD features the new 4HK1 diesel engine, which employs Isuzu's original electronic control technology, common rail fuel injection system and VGS turbo-charger. It has met the newest emissions regulations for better environmental performance, with fuel efficiency improved by approximately 5%\* and weight decreased by 50kg.

\* Compared to the previous model



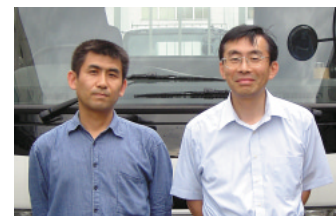
The 4HK1 Engine



The FORWARD

**Honkawa:** We were able to develop the new FORWARD, the first of its class to pass the New Long-term Emissions Regulations, in a rather short period. I can proudly recommend this truck, which is excellent in both emissions performance and fuel efficiency. This is truly a contributor to the global environment.

**Tsunoda:** Isuzu proved that it has excellent diesel engine technologies, by achieving fuel efficiency, quietness and high driving performance, as well as clean emissions that meet the standards set by the New Long-term Emissions Regulations.



Takao Tsunoda Masakazu Honkawa  
Engineers

# “Mimamori-kun” Vehicle Diagnostic System: Reducing the Environmental Impact of Truck Transportation

“Mimamori-kun” continually analyzes operating data and makes suggestions for more fuel-efficient and safer driving to vehicle drivers and operators. Isuzu is expanding the system’s data applications in response to customer requests.

## Mimamori-kun Online Service: Contributing to the Preservation of the Global Environment

### What is Mimamori-kun?

Mimamori-kun Online Service is a commercial vehicle telematics\* system that transmits data in real time on vehicle operation, fuel consumption, engine use, and speed to an operator. The system uses this data to analyze a driver’s operational performance, and then offers advice on more efficient driving. The system helps curb global warming by cutting fuel usage and emissions, while also reducing fuel costs and improving driving habits.

\* Links to vehicle’s communications system and transmits information in real time

### Expanding Mimamori-kun Applications to Medium- and Light-duty Trucks

Mimamori-kun operations started with GIGA heavy-duty trucks in Japan in February 2004. Beginning in February 2005, system operations were expanded to include ELF light-duty trucks and FORWARD medium-duty trucks. As of June 2005, the number of vehicles using the system had risen to 2,500 as a result of better publicity and more affordable pricing.

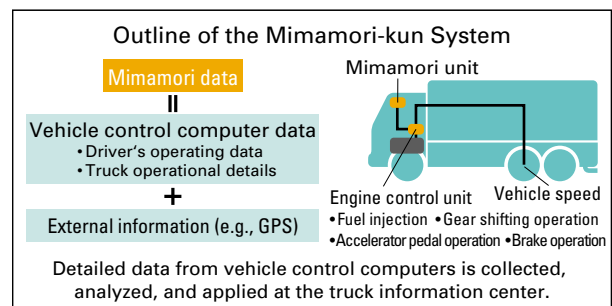
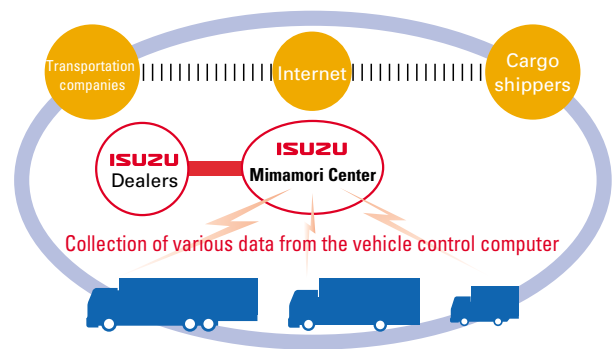
In route-deliveries, light- and medium-duty trucks must concern themselves not only with fuel efficiency, but also tight timelines and temperature controls. To address these concerns, Isuzu added optional new features to the system beginning in February 2005 that allow system operators to constantly track arrival times and cargo temperature data.

Isuzu has been holding fuel-economy workshops on cost reduction and safe driving techniques for years. In fiscal 2004, the most recent year in our long-running series of workshops, we held nine

such meetings with a total of 400 participants.

Isuzu is continuing to develop more such telematics systems that benefit a larger segment of society by promptly responding to customer requirements.

### Outline of the Mimamori-kun Online Service



## Always Responding to Customers’ Needs

**Harano:** Although we develop various systems for both commercial and in-house use, we always pay closer attention to the quality and year-round reliability of our Mimamori-kun systems that will be used by our valued customers. We also assign a high priority to user-friendliness when developing systems for our customers.

Isuzu never stops responding to customers’ needs and is always improving. In just the past one and a half years, 10 new system versions have been released. System development is really tough, but we are happy that we have received no serious customer complaints, and that our contracts are visibly increasing.

Accordingly, it is clear that customers have high expectations for this system, which makes us happy. We are very proud to work on Mimamori-kun, which is very useful and helpful to customers.



**Noboru Maesono:** left  
In charge of system planning

**Yoichi Harano:** right  
In charge of system engineering

# Reuse and Recycling

To help create a sustainable society and reduce impact on the environment, Isuzu is bolstering its reusing and recycling efforts at all stages, from production through disposal, of the vehicle life cycle.

## Reducing Environmental Impact at All Stages of the Vehicle Life Cycle

In October 2000, the European Union issued the EU End-of-Life Vehicles Directive, mandating that automobile manufacturers and importers be responsible for the recycling of used cars and trucks and placing restrictions on the use of environment-impacting substances.

In Japan, the Automobile Recycling Law went into effect on January 1, 2005.

Under these laws and regulations for sustainable societies, automobile manufacturers are required to make greater recycling efforts both domestically and overseas to better coexist with the global environment. We are collaborating from a global perspective with environmentally-related industries and groups in order to reduce the environmental impact of our products throughout their lifecycles from production through use and disposal.

## Implementing the 4Rs Throughout the Vehicle Life-cycle

As part of our responsibility as a global company, we are actively working to reduce the environmental impact of our products. The "4R" words below are the basis of our efforts to create a sustainable society:

- (1) **Refuse** to use substances with environmental impacts in new products or manufacturing processes
- (2) **Reduce** the use of substances with environmental impacts in existing products or manufacturing processes
- (3) **Reuse** vehicle parts and components
- (4) **Recycle** used materials such as shredder dust

We are promoting recycling in all four stages of our vehicles' lives — the research and development, design and manufacturing, usage, and post-usage stages — and actively trying to make further improvements, based on these 4Rs.

## Response to the Automobile Recycling Law

We launched the Isuzu Recycling System in collaboration with the Japan Automobile Recycling Promotion Center, deploying four of our employees to related corporations and the ART\*1. They contribute to the operation of the entire system and efficiently manage two million Isuzu vehicles in the domestic market, as well as recycling ASR\*2 and airbags. Isuzu's recycling rates significantly exceeded standard values in the January – March quarter of 2005.

Item	Recycling rate*3	Standard values*4
ASR	67.0%	30% + (FY2005 – 2009)
Airbags	91.9%	85% +

\*1 ART: Automobile Shredder Residue Recycling Promotion Team. This team, composed of employees from Isuzu and 10 other companies, recycles shredder dust properly, smoothly, and efficiently.

\*2 ASR: Automobile Shredder Residue

\*3 Recycling rate: The ratio of material recycled as thermal or material goods. For further details, see the ART and Japan Auto Recycling Partnership websites.

\*4 Standard values: Values set by the Automobile Recycling Law

## Recycling Vehicle Bodies and Reducing Environmental Impact

The Japan Auto-Body Industries Association and Japan Automobile Manufacturers Association (JAMA) have collaborated to provide recycling company information to users, businesses, and governments, so that they can appropriately recycle commercial vehicle bodies. Isuzu, as a JAMA member, contributed to the development of the system.

Isuzu is also promoting recycling by labeling material and manufacturer names on vehicle bodies. As part of our efforts to reduce impact on the environment, we are also reducing our usage of four substances (lead, mercury, hexavalent chromium, and cadmium) in vehicle bodies.



Vehicle body label



Vehicle body material label

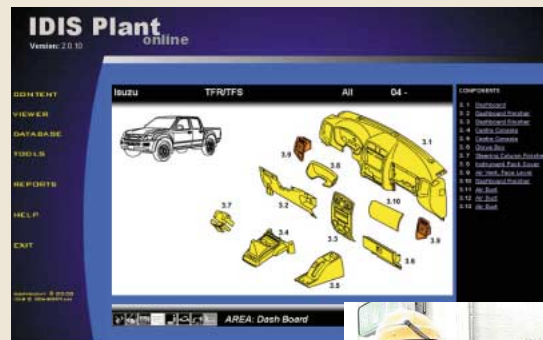
## Efforts to Reduce Environmental Impact

### Research and Development

- **Developing technology to recycle waste parts**
  - Development of technology to reuse collected resin part materials
  - Collecting glass, and promoting experimental research into recycling methods
- **Protecting scarce resources**
  - Development of alternative technology for the use of plantation timber (see photo)
  - Development of carbon neutral technology (including bioplastics)
- **Development of technology to substitute/reduce environmentally-impacting substances**
  - Development of substitution technology
- **Improvement of chemical substance management system operation**
  - Integration and simplification of IMDS input conditions

### Design and Manufacturing

- Preliminary assessment of vehicle disassembly
- Label material substances for easy material separation
- Develop manual for efficient disassembly (see below Disassembly Manual)
- Promotion of Green Purchasing



Disassembly manual



Change from South Sea timber to plantation timber



Glass collection for recycling

### During Use

- **Utilizing re-manufacturing parts**
  - Re-use of engines, starters, and generators
- **Customer Education on reducing environmental impact**
  - Extending the life of vehicles and parts through training on how to conduct daily inspections
- **Reduction of waste and the use of environmentally-impacting substances**
  - Recycling LLC
  - Use of Biodegradable grease
  - Appropriate handling of lubricant additives

### Re-manufacturing

Isuzu has developed a re-manufactured parts network linking all our dealers in order to promote the recycling of used vehicle parts and better respond to customer needs. The network shares information on the availability of engines and other parts. It helped increase the number of engines being re-manufactured by 30% in the second half of fiscal 2004.

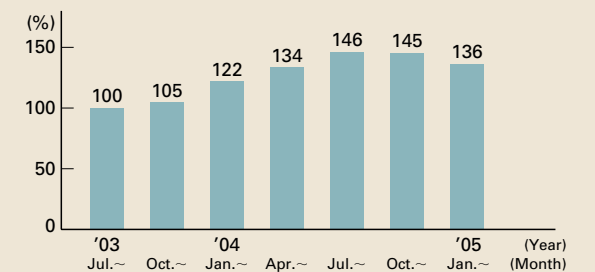
### Glass Recycling

Isuzu, together with disassemblers and glass manufacturers, has been examining technologies to reuse approximately 10% of ASR glass components. As a result, we now salvage windshields and side windows from vehicles before they are crushed and shredded. This reclaimed glass is then re-fired and remanufactured (approximately 80 tons of glass in fiscal 2004).

### Post-use

- **Response to Automobile Recycling Law**
  - Establishing a company structure for appropriate handling
  - Compliance education for dealers
  - Customer education
- **Recycling and appropriate disposal of commercial vehicle bodies with the Japan Auto-Body Industries Association and JAMA**
- **Re-manufactured parts network**
  - Active utilization of re-manufactured parts

Re-manufactured Engines Shipment (versus July – September 2003 figures as 100%)



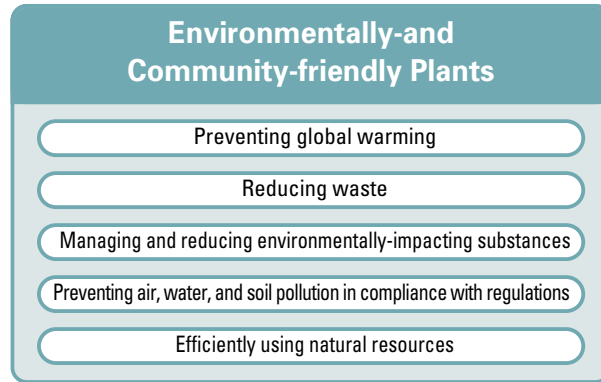
# Building Environmentally-friendly Plants

Five key issues for building environmentally-sound plants.

## Isuzu's Approach to Building Environmentally-friendly Plants

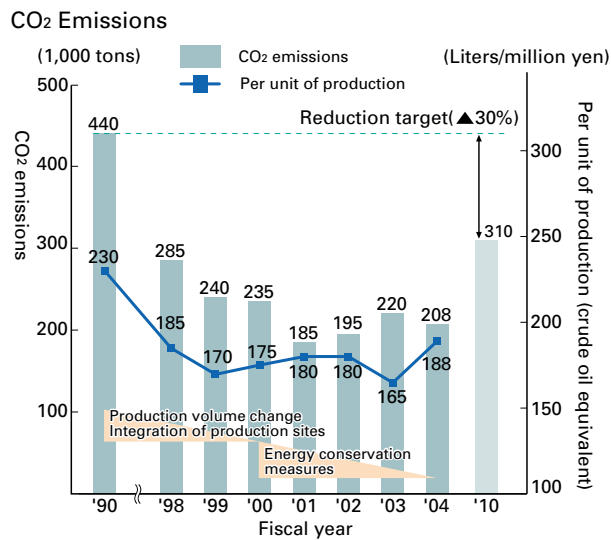
Vehicle production impacts the environment across a wide geographical range, from local communities to the entire earth. Our plant management philosophy is "Think Globally, Act Locally." The Environment Committees of each plant drive their plants' efforts to prevent global warming, reduce waste, and manage and eliminate the use of environmentally-impacting substances.

We also want to make our plants friendly to everyone, so that we can work better with domestic and overseas business partners and suppliers, and also maintain good communications with local communities.



## Preventing Global Warming

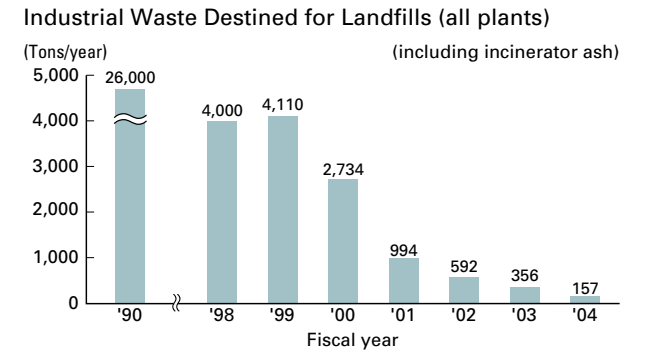
To reduce its CO<sub>2</sub> emissions by 30% from fiscal 1990 levels by fiscal 2010, Isuzu is committed to conserving energy through two different approaches: taking measures on a daily basis to avoid air leakages, and the drastic measure of integrating our production lines. Each plant has an Energy Conservation Committee that drives that plant's efforts. The committee members have taken the lead and successfully located and resolved problems by monitoring energy-conservation systems and activities throughout our plants. In fiscal 2004, Isuzu plants exhausted 208,000 tons of CO<sub>2</sub> emissions. Although our target was a reduction of 30%, we actually achieved a reduction of more than 50%. Per unit of production, those figures were higher than the fiscal 2003 figures, but they were caused by one-time factors such as the closing of the Kawasaki Plant.



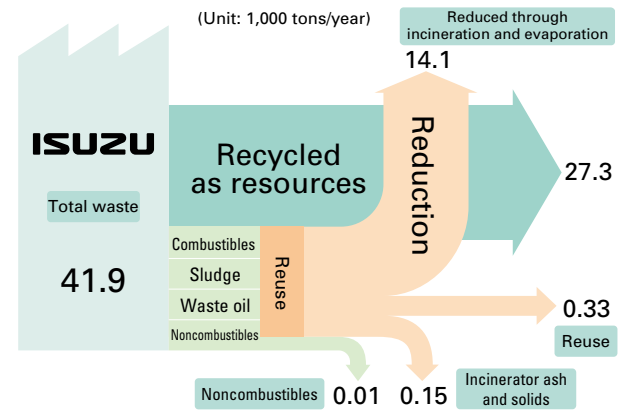
## Waste Reduction

Isuzu has set a target of "zero emissions," defined as reducing landfill disposal of industrial waste by 95 % of fiscal 1995 levels (excluding incinerator ash) by fiscal 2001. We have already achieved that target, with a 97.6 % reduction in fiscal 2001. We have therefore updated our target taking cost reductions into account. The new target is to reduce landfill disposal to one ton or less per month per plant (including incinerator ash) by the end of 2005.

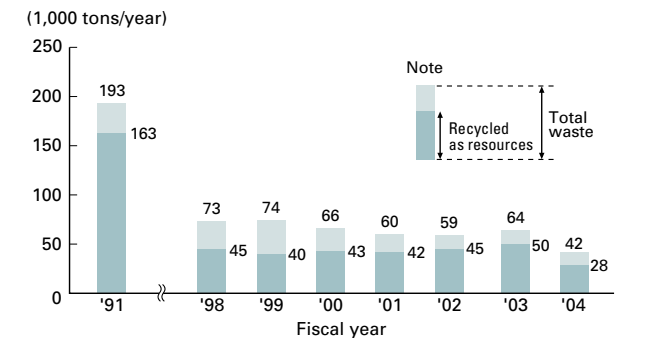
In fiscal 2004, as a result of continuous incinerator ash recycling, we have successfully reduced the total amount of industrial waste destined for landfills to 157 tons. Total industrial waste in fiscal 2004 was 41,900 tons, of which 27,700 tons was recycled.



## Waste Treatment and Disposal for FY2004



## Industrial Waste and Recycling Resources



## Major Efforts

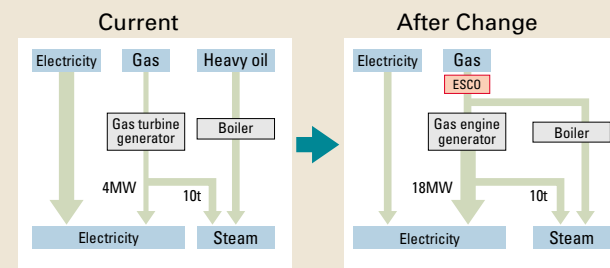
- Recycling by enforcing waste separation and disassembly
- Reducing waste, incineration, and packaging materials
- Recycling incinerator ash
- External collaboration: Environmental joint declaration with waste contractors, Zero Emissions Network, etc

## Preventing Global Warming through Renewal of a Plant Cogeneration System

A cogeneration system\*<sup>1</sup> powered by a gas turbine was first introduced at the Fujisawa Plant in 1991. As the time to replace the system neared, a new power generation and boiler system was constructed with the cooperation of ESCO.\*<sup>2</sup> With this new system, we achieved both reduced environmental impacts as well as energy cost savings.

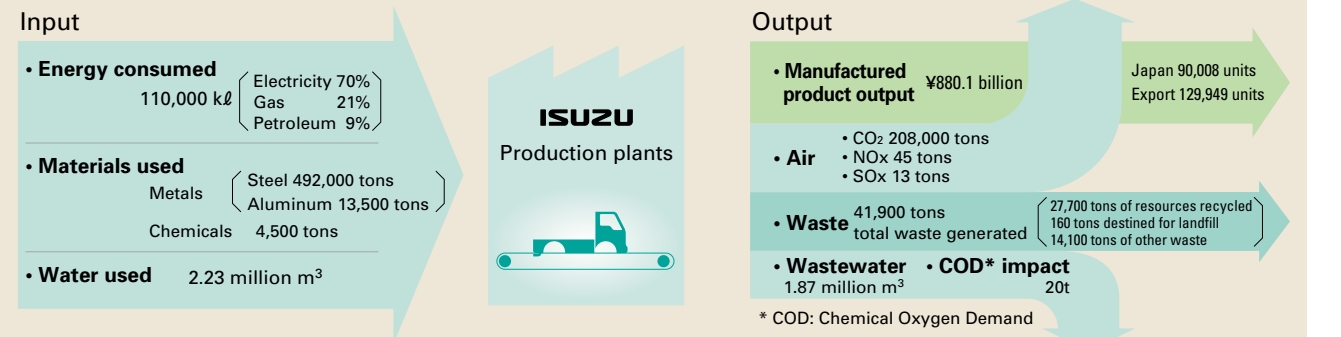
We adopted a large-capacity gas-powered engine that wastes less heat than the old system, as there was less demand for steam at the Fujisawa Plant, at the same time achieving 18MW of output from the same gas-powered boiler, a 450% increase in generated power over the previous engine-boiler combination.

### Co-generation System Chart



\*<sup>1</sup> A system that can utilize steam to both generate electricity and re-use waste heat  
\*<sup>2</sup> Energy Service Company

## The Production Plant Balance: Resource Input and Emissions Output



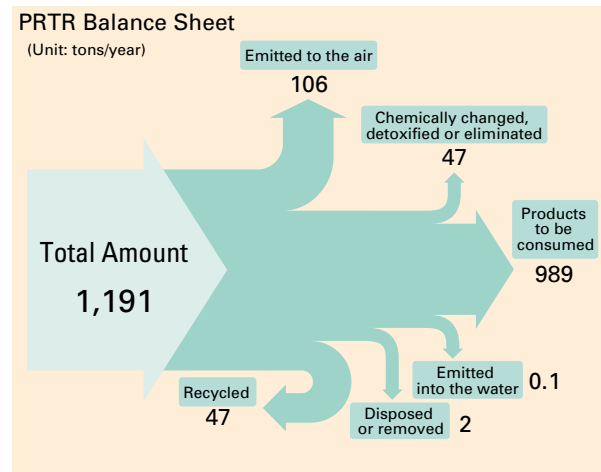
### Managing and Reducing Environmental-impacting Substances

Though environmentally-impacting substances can contribute to improving our production engineering processes and materials, they are also potential risk factors to cause damage to the environment that could affect all living beings. Isuzu has classified these substances into three categories: banned; conditional usage approved; and usage approved with caution, in addition to following legal regulations, and has undertaken proper reduction management efforts under our Environmental Management System.

We have also established the PRTR\* compliance system, which links purchasing management system information and the PRTR management system. This will help to manage and reduce regulated compounds.

PRTR compound emissions at Isuzu in fiscal 2004 totaled 108 tons, a 55% reduction year-on-year. Of this, air emissions, including toluene and xylene, accounted for the majority at 106 tons.

\* PRTR (Pollution Release and Transfer Register): Law promoting the management of emissions volumes of particular chemical substances into the environment



### Preventing Air, Water, and Soil Pollution and Regulatory Compliance

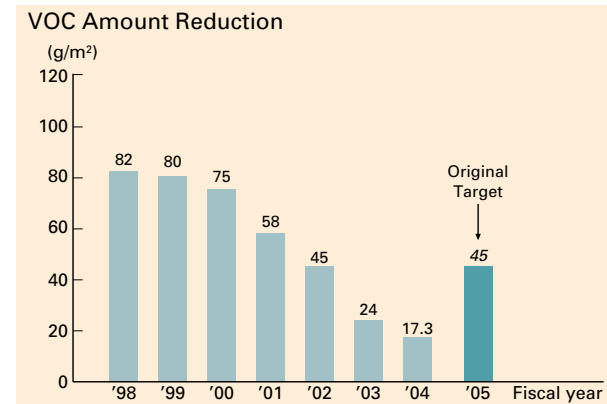
#### Reducing Volatile Organic Compounds

VOC,\* used primarily in the vehicle painting process, is one of the causes of photochemistry oxidants. Emissions will be regulated in accordance with the revision of the Air Pollution Control Law scheduled to be implemented in 2006.

Even before the new law takes effect, Isuzu is working to reduce the use of organic solvents in the painting process. In order to meet the European regulatory limit of 45g/m<sup>2</sup> per year, Isuzu is already working to reduce paint solvents, reclaim cleaning thinners, and use advanced paint application equipment and dry furnaces with exhaust gas combustion equipment. In fiscal 2004, these measures resulted in a volume of 17.3g/m<sup>2</sup>, achieving our goal ahead of schedule.

We will continue with our various efforts to achieve further reductions.

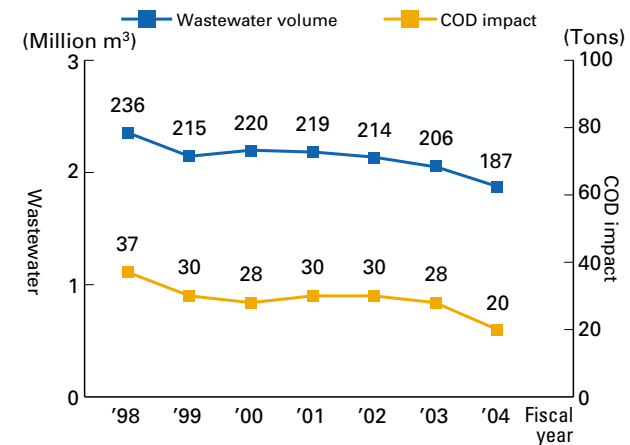
\* VOC: Volatile Organic Compounds



### Preventing Air and Water Pollution

We are committed to preventing air and water pollution, as it is the first step in environmental protection. Isuzu voluntarily enforces internal regulations that are stricter than governmental regulations, and we are constantly monitoring drainage and air emissions. We also appropriately control wastewater and air emissions in accordance with the Isuzu Environmental Management System; our management and compliance progress are reported to the Plant Environment Committees. We remain committed to reducing air and water pollutants in all of our operations.

#### Wastewater and COD Impact



### Reducing Dioxin Emissions

Isuzu used to operate three incinerators in its plants, but the operations of two, except the Fujisawa Plant incinerator, were discontinued in 2002. While continuing to reduce industrial wastes, we have outsourced waste treatment to contractors.

The dioxin released by our Fujisawa incinerator is 0.81ng-TEQ/m<sup>3</sup>, well within the emissions gas density regulatory limit of 10ng-TEQ/m<sup>3</sup>. We will continue our efforts to control emissions volume by managing incineration and reducing incineration volume.

\* ng = nanograms. The nano-prefix denotes a unit of one one-billionth (10<sup>-9</sup>)

TEQ: Toxic Equivalents Quantity. Expressed as a conversion against the most toxic of the dioxins, 2, 3, 7, 8 -TCDD (tetrachloride dibenzoyl paradiioxin)

### Preventing Soil and Groundwater Pollution

Of the various chlorine organic solvents viewed as a cause of soil and groundwater pollution, Isuzu had used three\* in the past but suspended its use of all.

From 1996, Isuzu has voluntarily assessed our impact on the soil and groundwater within our sites. We have found that some of our worksites contain contaminated areas from which pollutants leak. We have launched cleanup efforts in those areas, and are reporting on those efforts and their results to public administrators.

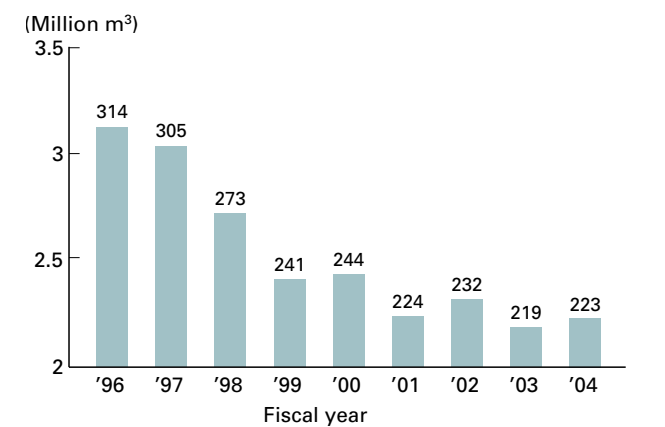
\* The three solvents: trichloroethylene, 1-1-1 trichloroethane, and dichloromethane

### Efficient Resource Usage

Cutting oil used as a coolant in the machining process accounts for a large portion of all waste. To reduce this, in fiscal 2003, we implemented a dry cut process, which does not use cutting oil. This process is now used in 35 machines, and as a result we have achieved a 40% reduction in our use of cutting oil.

We are also working to reduce the amount of water we waste.

#### Change in Total Water Usage



### Other Efforts

- Using highly recyclable oil
- Preventing oil leakage and recollecting used oil for recycling

# The Isuzu Tochigi Plant

In both domestic and overseas Isuzu plants, numerous environmental protection projects are underway. Below we introduce one of these production sites, the Isuzu Tochigi Plant, which handles machining and engine assembly.



## Masanori Ota Tochigi Plant Executive

• Since joining Isuzu, he has been primarily involved in forging production, and has various other job experience, including engine design and corporate administration. He has had one overseas work assignment, and has held his current position since April 2005.

## Plant Policy

Our key words are Efficiency and Flexibility— we create products that contribute to the global environment throughout the world, in harmony with society and the environment, while using the SQCD\* production and environmental protection techniques.

\* SQCD stands for Safety, Quality, Cost, and Delivery

## Environmental Protection Activities Acceptable to Local Communities

The Tochigi Plant plays a significant role for Isuzu, as we forge and manufacture commercial vehicle engines and axles for all of our line-ups. Surrounded by nature and residential areas, the Tochigi Plant takes environmental efforts very seriously. In our efforts to build an environmentally-friendly plant, we have promulgated and are concentrating on the following three plans:

1. Further promoting “Zero Emissions” (reducing waste and materials spoilage)
2. Energy conservation activities and CO<sub>2</sub> reduction (reducing electricity and fuel usage)
3. Reducing usage of regulated substances



The Tochigi Plant

## The Challenge of Combining Environmental Performance and Quality Manufacturing

Isuzu has finally completed relocating its production bases, a process that took several years, and which designed integration, efficiency, and flexibility into its facilities. The relocation facilitated the integration of the processing and assembly lines for both heavy and medium-size engines, as well as an energy-conserving production line. Presently, we are returning to our production basics based on a “Production Step Zero” (Review and recreating all our production methods and procedures from a “zero” basis). We are also using new worksite management methods based

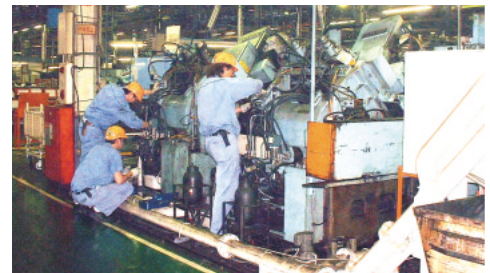


A highly fuel-efficient compressor

on “Decontamination and Disposition (D&D)” that improve built-in quality and efficiency while reducing environmental impact.

As part of these efforts, we are constantly reducing waste and conserving energy. For example, we want to reduce failed resources, so we use form processing methods that foresee heat treatment deformations. All employees work together to manage and improve the new worksites, which led to a drastic reduction in machining defects. We have also succeeded in creating the most energy-efficient line operation and production methods in our forging shop. Furthermore, we have also been carrying out oil and air leakage checks as part of our TPM activities.

\* TPM: Total Productive Maintenance



TPM activity includes checking for oil leakage

## A Community-friendly Plant

The Tochigi Plant is striving to be a plant that is friendly to both the environment and the local community. We continue to be involved in volunteer services, such as visits to nearby welfare homes (see p. 41) and plant area cleanups.

We are promoting our SQCD initiative based on our environmental protection activities in collaboration with society and the local community.



Participating in a community cleanup campaign

# Site Data

The following are Isuzu's main PRTR\*, air and water quality indicators for emissions and discharges at our Fujisawa and Tochigi Plants. The figures for The Kawasaki Plant and The Isuzu Engine Manufacturing Hokkaido Corporation (IEMH) are not shown here. The Kawasaki Plant was closed in May 2004, and IEMH is treated as a domestic consolidated company.

\* PRTR: Pollutant Release and Transfer Register

## Fujisawa Plant Address: 8 Tsuchidana, Fujisawa-shi, Kanagawa

### PRTR

(Unit: kg)

Number	Chemical substance	Amount handled	Emissions volume					Amount transferred Waste
			Airborne emissions	Discharged into public waters	Discharged into soil	Landfill sites	Total	
1	Zinc water-soluble substances	1,300		51	—	—	51	330
40	Ethylbenzene	49,000	20,000	—	—	—	20,000	13
43	Ethylene glycol	1,000,000	—	—	—	—	—	960
63	Xylene	80,000	55,000	—	—	—	55,000	49
176	Organic compounds	4,900	—	—	—	—	—	190
224	1, 3, 5 - trimethyl benzene	4,200	3,200	—	—	—	3,200	1
227	Toluene	18,000	11,000	—	—	—	11,000	47
233	Nitritotriacetic acid	1,800	—	—	—	—	—	—
311	Manganese and its compounds	1,100	—	46	—	—	46	400
179	Dioxin	—	*47	—	—	—	—	*6600

\* mg-TEQ

### Air Quality

Item	Equipment	Regulatory value	Measured value	
			Maximum	Average
NOx (ppm)	Boiler	125	120	100
	Cogeneration System	50	27	26
	Incinerator	150	73	71
	Aluminum melting furnace	200	62	47
	Paint, drying furnace	230	29	23
Soot and dust (g/Nm <sup>3</sup> )	Boiler	0.1	0.003	0.0025
	Cogeneration System	0.05	0.001	0.001
	Incinerator	0.1	0.1	0.09
	Aluminum melting furnace	0.2	0.009	0.008
	Paint, drying furnace	0.1	0.002	0.002
SOx (Nm <sup>3</sup> /h)		21.82	1.62	1.18

\* Regulation figures are the stricter of the Air Pollution Control Law and prefectural regulations figures

### Water Quality

(Discharge point: Hikichi River)

Item	Regulatory value	Measured value		
		Maximum	Minimum	Average
pH	5.8 – 8.6	7.9	7.5	7.7
COD mg/l	60	14	5	10.7
BOD mg/l	60	10	5	7.3
SS mg/l	90	5	5	5
Oil content mg/l	5	2.2	1	1.3

\* Regulation figures are the stricter of the Air Pollution Control Law and prefectural regulations figures

- No environmental accidents
- One environmental-related complaint

There was one complaint of rainwater running into a residential area near the plant's east gate on October 12, 2004. The complaint was resolved by clearing out fallen leaves in the drain and adding a new ditch, which was completed by October 31, 2004

## Tochigi Plant Address: 2691, Oh-aza Hakuchu, Ohira-machi, Shimotsuga-gun, Tochigi

### PRTR

(Unit: kg)

Number	Chemical substance	Amount handled	Emissions volume					Amount transferred Waste
			Airborne emissions	Discharged into public waters	Discharged into soil	Landfill sites	Total	
40	Ethylbenzene	7,700	7,700	—	—	—	7,700	—
43	Ethylene glycol	2,800	200	—	—	—	200	—
63	Xylen	17,000	6,400	—	—	—	6,400	—
227	Toluene	2,300	2,300	—	—	—	2,300	—
309	Polynonyl phenyl ether	1,400	100	—	—	—	100	—

### Air Quality

Item	Equipment	Regulatory value	Measured value	
			Maximum	Average
NOx (ppm)	Boiler	250 or below	99	67
	Metal furnace	180 or below	120	56
Soot and dust (g/Nm <sup>3</sup> )	Boiler	0.3 or below	0.013	0.003
	Metal heating furnace	0.25 or below	0.005	0.002
SOx (Nm <sup>3</sup> /h)	Total volume regulations	17.5	0.81	0.127

\* Regulation figures are the stricter of the Air Pollution Control Law and prefectural regulations figures

- No environmental accidents
- One environmental-related complaint

There was a complaint about noise from a cutting chip disposer on August 26, 2004. The complaint was resolved by greasing the equipment and changing the ball bearings, which was accomplished by September 10, 2004

- Notes: 1. Fiscal 2004 (April 2004 - March 2005) measurement data  
 2. Regulation figures are the strictest of environmental law and ordinance or pollution control agreement figures  
 3. COD: Chemical Oxygen Demand; BOD: Biochemical Oxygen Demand; SS: Suspended Solids in water

### Water Quality

(Discharge point: Nagano River)

Item	Regulatory value	Measured value		
		Maximum	Minimum	Average
pH	5.8 – 8.6	7.5	6.4	6.9
COD mg/l	20	17.9	6.8	10.8
BOD mg/l	20	15.7	0.7	5.3
SS mg/l	40	7	1	3.4
Oil content mg/l	5	0.7	0	0.39

\* Regulation figures are the stricter of the Air Pollution Control Law and prefectural regulations figures



# Domestic Group Company Activities

Isuzu's domestic consolidated companies are also engaged in environmental protection activities. Here is an outline of their efforts.

## Domestic Group Consolidated Environmental Management Companies

Isuzu works together with its eight domestic consolidated companies in environmental protection activities.

The companies are targeting three key areas: preventing global warming, reducing waste, and reducing harmful substances. These activities were launched in fiscal 2004 with a target year of fiscal 2010.

\* The eight companies are: Isuzu CASTEC Corporation, Jidosha Buhin Kogyo Co., Ltd., Automobile Foundry Co., Ltd., Nippon Fruehauf Co., Ltd., TDF Corporation, Shonan Unitec Ltd., J-Bus Ltd., and Isuzu Engine Manufacturing Hokkaido Corporation.

### 1 CO<sub>2</sub> Emissions Volume (Unit: 1,000 tons)

Fiscal year	2003	2004	FY2005 Target	FY2010 Target
Isuzu	202	207	200	190
Total for eight consolidated companies	125	134	137	128
Total for all nine companies	327	341	337	318*

\* Estimate: More than 35% reduction from 1990 level

### 2 Waste destined for landfills (Unit: tons)

Fiscal year	2003	2004	FY2005 Target	FY2010 Target
Isuzu	349	157	129	24
Total for eight consolidated companies	8,639	9,231	6,609	4,743
Total for all nine companies	8,988	9,388	6,738	4,767*

\* More than 50% reduction estimated from 2004 level

### 3 PRTR Emissions (Unit: tons)

Fiscal year	2003	2004	FY2005 Target	FY2010 Target
Isuzu	239	108	108	100
Total for eight consolidated companies	258	258	251	245
Total for all nine companies	497	366	359	345*

\* More than 50% reduction estimated from 2000 level

## Isuzu Engine Manufacturing Hokkaido Wins Top Award

Eight companies in Tomakomai, Hokkaido together formed the Tomakomai Zero Emissions Network\*<sup>1</sup> and made a case study presentation at the Ninth Resource Recycling Production System Symposium in Nagoya in September 2004. Isuzu Engine Manufacturing Hokkaido Corporation received the top award.

The judges praised Isuzu's efforts to recycle polishing refuse from their engine parts manufacturing process. Using our *dokan press*\*<sup>2</sup> machine, which was manufactured in-house, we are able to first remove the excess liquid from the refuse, and then re-use it in the manufacture of steel bars.



Yasuhisa Anezaki, Manager (second from left), and Kohei Taniguchi, Assistant Manager (second from right), Environment & Power Unit Maintenance Section, Isuzu Engine Manufacturing Hokkaido Corporation



Dokan press

\*<sup>1</sup> The Tomakomai Zero Emissions Network is a group of companies in different industries working together to reduce waste products through activities such as information exchange

\*<sup>2</sup> The "dokan press" is a hand-made press machine combining a clay pipe and cylinder

## Environmentally-friendly Plant Disassembly at our Kawasaki Plant

The Kawasaki Plant had been Isuzu's main truck-assembly plant for more than 60 years, but to better integrate Isuzu's production bases, the plant's functions were consolidated and moved to the Tochigi and Fujisawa plants. Following the closure, the Kawasaki plant has been disassembled in an environmentally-friendly manner in consonance with the following four themes:

- 1) Communications with the local community: Holding meetings with local residents prior to the start of the disassembly project to discuss measures to reduce dust, noise and vibration.
- 2) Preventing global warming: Reclaiming SF<sub>6</sub> gas used in electrical transmission and transformation equipment insulation, and recycling it as fluorite.
- 3) Proper disposal of regulated substances: Appropriate handling, management, and disposal of these substances in accordance with the law.

- 4) Recycling construction waste: Targeting 98% or more re-use of steel and concrete resources, and reducing the amount of waste destined for landfills.



Recycling crushed concrete

# Green Logistics

Isuzu group company logistics are also environmentally-friendly, having increased the use of returnable cases and boosted transportation efficiency in three areas: manufactured vehicle logistics, in-house manufactured parts logistics, and parts procurement.

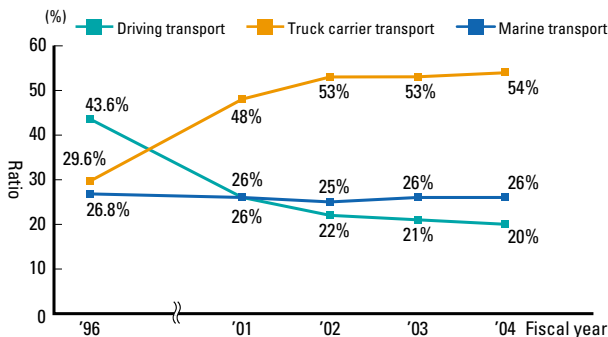
## Integrating Vehicle Logistics

Isuzu is reducing CO<sub>2</sub> emissions produced and energy consumed by the vehicle transportation process by shifting away from driving deliveries. Instead, we are using truck carriers and ships for transportation. In fiscal 2004, we were able to reduce the percentage of driving deliveries from 46% in fiscal 1996 to 20%.

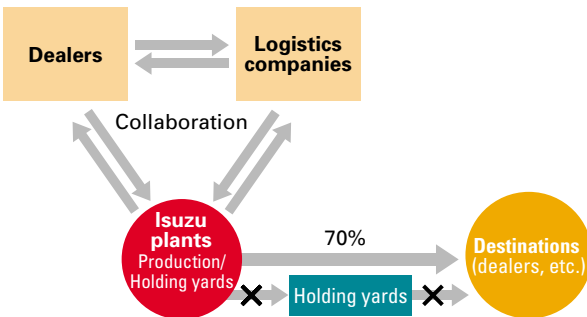
Isuzu and our group companies are also reducing CO<sub>2</sub> emissions by delivering vehicles directly from our plants to dealers and sites specified by customers. The percentage of such deliveries decreased in fiscal 2004 due to an increase in inventory, but we are once again aiming for a target of 80% or more in fiscal 2005.

Isuzu provides information on production to group members and assigns car pools for temporary use in our plants. Group companies have taken responsibility to support these deliveries by sharing information. We hope that such collaboration among dealers, logistic companies, and plants will result in better integration of vehicle logistics for the global environment.

Vehicle Deliveries: Isuzu Transportation Modes in Japan



Improving the Efficiency of Vehicle Deliveries: Collaboration with Dealers and Logistics Companies

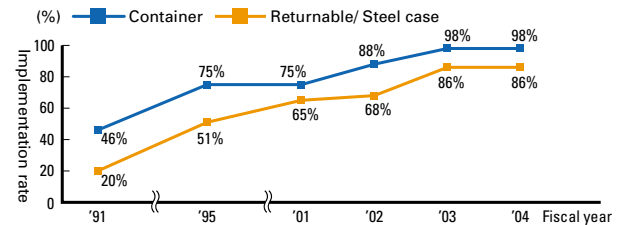


## Integrating Component Logistics

Isuzu exports parts and components from its knockdown plants to 97 countries for local production. We are making efforts to reduce the use of wood and paper products in packaging materials by using containers for shipping, and replacing wooden boxes with returnable and steel cases. In fiscal 2004, we replaced 98% of our packing materials with containers, and 86% with returnable and steel cases, in all major countries, which was the same implementation rate we achieved in fiscal 2003.

\* Knockdown refers to the local assembly of imported main parts manufactured abroad

Use of Containers and Returnable Cases in KD Packaging



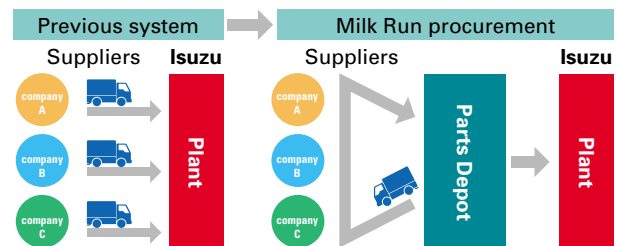
## Integrating Procurement Logistics

In 1995, Isuzu became Japan's first automobile manufacturer to introduce the Milk Run system\* for procurement. The system improves loading efficiency for better control of the number of delivery vehicles so that CO<sub>2</sub> emissions and energy consumption are significantly reduced.

When the system was first introduced in fiscal 1995, it was used for just 18% of parts procurement. By fiscal 2004, the system was in use with 82% of Kanto Region suppliers. We will continue to further raise our operating efficiency and meet changes in the production environment, including production models and volume output.

\* Milk Run system: A parts collection system in which Isuzu as a purchaser goes to suppliers and picks up parts, rather than awaiting delivery from the suppliers

Isuzu's Milk Run Procurement System



# Customer Relations

Isuzu welcomes various feedback from its customers through our Customer Center and other communication channels. Customer information is shared in our group companies and then reflected in our products and services.

## ■ Establishment of Customer-responsive Structures

Customers' comments and requests are highly valued and shared throughout our group companies; they are then reflected in the products and services we offer. We are especially concerned with customer complaints. After identifying the causes of problems, proper structures and measures are established and taken to ensure that they do not recur.

We are resolved to responding to our customers promptly to improve our own business development, and to using the most recent information to leverage our networks.



Vehicle check

## ■ Quality Assurance System and After-care Service

Trust and Safety; these two values are the most important for commercial vehicles. To guarantee them to customers, Isuzu prioritizes quality above all. We are continuously improving our product quality by first assuring quality before delivery, and then also responding quickly if problems occur in the market.

To ensure quality of products before they leave the production line, we continuously control quality through strictly ensuring that our standards are met at each stage of development, production, and sales.

Should any problems occur on the road, we respond to customers as quickly as possible in order to keep their vehicles operating. Engineers from our Engineering and Manufacturing divisions may check problems first hand, and specialists from various sections assess the causes of problems thoroughly to ensure that we take the appropriate measures. If a product recall should become necessary, we also cope with it as quickly as possible.

Isuzu shares all quality-related information throughout the company, from top management to dealers. We are committed to having a company-wide attitude that our customers' comments are continuously reflected in our improving quality. We are constantly striving to offer quality products and services so that the Isuzu brand can ensure complete satisfaction and peace-of-mind for our customers.

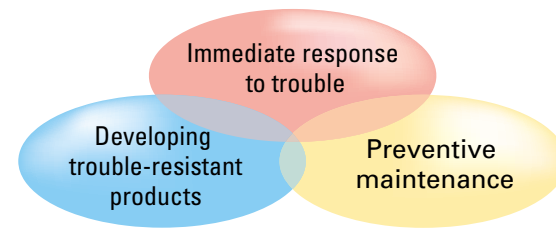
dealership service shops for maintenance.

In addition, should road trouble occur, the Ohayaku Center\* contacts the nearest dealership for round-the-clock services such as emergency repairs or having a tow truck move a car. The service personnel later explain the details of the problem to the customer and suggest additional repairs if necessary. Information about these problems is then reflected in our future product development.

Isuzu is committed to enhancing our after-sale services in order to better support our customers' transportation needs and become a trusted partner of our customers.

\* The Ohayaku Center is our customer support center open 24 hours per day-365 days per year. Operators respond to emergency calls about road trouble or traffic accidents (weekday daytime callers may be referred to the caller's nearest dealership).

Three concepts for "Zero Road Trouble"



The "Zero Road Trouble Campaign" symbol



A snail is used as a character mascot to symbolize "Don't Rush, Drive Slowly." The shell represents both cargo and a tire.

## ■ Eradicating Road Trouble

Isuzu offers the "Zero Road Accident" Campaign as one of our after-care programs for our customers that are carried out in our domestic dealerships. This is a campaign to promote free-of-charge vehicle checks as preventive inspection and maintenance measures designed to prevent road trouble in advance. Vehicles are assessed, primarily in the areas that may lead to road trouble, when they are brought into

## ■ Isuzu Customer Center

The Customer Center has been set up to accept inquiries, comments and suggestions regarding Isuzu's products and services by toll-free call or e-mail. We received nearly 13,000 comments in fiscal 2004. Customer opinions and questions are shared throughout the Isuzu group, and then reflected in the future development of our products and services.

Over the past few years, customers in Japan have been frequently asking us about exhaust emissions regulations, especially the complexity of the national and regional regulation systems, and whether their vehicles are in compliance with the regulations. We have been sincerely answering their questions, and in April 2004, we further enhanced our regulations-related customer consultation service by setting up a Consultation Center for the NOx/PM Regulations. The center offers more detailed information and advice, and has been received well by customers. Frequently asked questions are also posted on our website for customer convenience. Thus, we continue to respond to customer comments quickly and properly.

## ■ Responding to Overseas Customers

At Isuzu, we have good communications with countries and local communities overseas. We want our customers to use our vehicles as long as possible, safely and with a sense of trust. For this purpose, we are continuing to conduct communications activities and events. Herein follows some examples:

### Service Clinics

Isuzu holds Overseas Service Clinics that offer free inspections. We also provide proper maintenance and answer their questions. In fiscal 2004, such events were held in Thailand, Indonesia, Malaysia, and Honduras.



Clinic in Honduras

### Service Mechanic Training

To improve the skills of overseas mechanics, Isuzu is committed to raising the skill level of local service instructors through training at the Isuzu Training Center in Japan, as well as at the local dealerships, and to providing workshops by outsourcing instructors.



Training in Dubai, U.A.E.

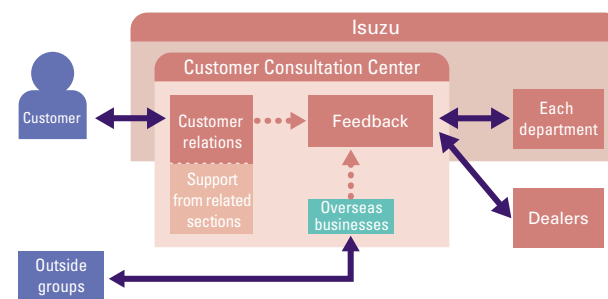
### Developing Genuine Parts and Lubricants

Isuzu offers genuine parts in the countries where Isuzu vehicles and engines are sold, in order to service the vehicles responsibly. We also offer workshops for our customers to ensure they know how to perform appropriate maintenance. As for lubricants, Isuzu provides technical guidance to local petroleum makers so that they manufacture and sell only genuine products. Customers are pleased with such Isuzu initiatives, as they help to ensure long vehicle life.

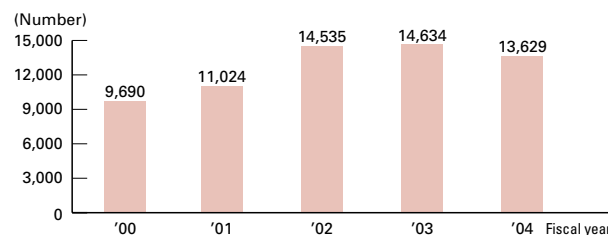


Workshop in Guangzhou, China

### Customer Consultation Flowchart



### Number of inquiries



# Local Community Relations

Isuzu, as a Leading Global Company, is committed to maintaining good communications with local communities not only in Japan, but also in overseas countries.

## Environmental Communications at the Domestic Plants

Isuzu is aiming to build community-friendly plants to help maintain good relations with local communities while we strive to make our plants environmentally-friendly.

Some of the efforts of our plants are listed below.

### Active Participation in Community Environmental Events

Isuzu Fujisawa Plant has been participating in the city's Environmental Fair from the very beginning, and has used the event to highlight the company's environmental efforts, exhibiting both low-pollution vehicles and explanatory displays. At first, only limited numbers of volunteers participated in the event, but now it is one of the most important activities of the plant's community relations efforts.



The Fujisawa Environmental Fair (July 2004)

### Cooperation with Welfare Facilities

Isuzu's Tochigi Plant has been collecting and providing empty cans to the physically challenged for seven years to help them make money for their rehabilitation.



Working for welfare homes

We are expanding those types of cooperative efforts to include welfare homes. For example, we allow them to clean safety shoes and uniforms used by temporary workers for re-use. Isuzu will continue these activities in the future.

### Isuzu Dealer Activities

At East-Hokkaido Isuzu Motors Co. Ltd., the Isuzu Obihiro Retirees Club is active in Satsunaigawa River cleanup activities.

During the April 2005 cleanup efforts, they collected aluminum cans, cigarette butts, and used tires. The Club plans to continue these types of projects.



River cleanup

## Communicating with Local Communities Overseas

Isuzu is contributing to countries and local communities overseas through communications and event sponsorship, and developing strong ties with them by working together with local dealers and distributors, not just by producing and selling our products.

### Safe and Fuel Efficient Driving Workshops

Isuzu has sponsored initiatives to raise awareness for safe and fuel-efficient driving in Thailand, Indonesia, the Philippines, and Australia, in order to promote safety, resource conservation, and environmental protection. We also produce and distribute brochures on fuel-efficient driving, sponsor campaigns, and hold related workshops.



A fuel efficiency driving brochure for Thailand



A fuel efficiency workshop in the Philippines

In developing our workshop program, we try to make the contents challenging and original for each market. For example, following the fuel efficiency workshop, participants practice their newly-acquired skills on a driving course and compete to be rated as the most fuel-efficient driver.

In Indonesia, we have supported the government's vehicle maintenance and held driver workshops in January 2004.



Practicing fuel-efficient driving in Thailand



Fuel efficiency workshop in Thailand

### Picture Contest in Thailand

In Thailand, Isuzu has sponsored an annual picture contest for junior and high school students as part of its Youth Assistance Project since 1992. The 12 winners are invited to Japan to experience Japan and its culture firsthand.

The contest is strongly supported by Thai Government agencies, including the Ministry of Education, and is well-known and highly regarded throughout Thailand.



2004 picture contest

### Donating a Public High School Building in the Philippines

Isuzu Philippines Corporation (IPC), in commemoration of the company's seventh anniversary, donated a two-classroom school building to President Arroyo's program promoting education. On July 30, 2004, a ceremony was held with the attendance of the executives of involved parties. It was a great contribution to promoting education in the country.



A school donation



The Minister of Labor of the Philippines (second from left) and IPC executives

### Relief Support for the Sumatra Earthquake

Isuzu and its group companies contributed approximately ¥30 million to the Japanese Red Cross Society to assist in relief efforts for the Sumatra Earthquake and subsequent Indian Ocean tsunami in December 2004. In addition, Isuzu's Thai subsidiaries donated about ¥11 million to the King of Thailand Foundation, for a total Isuzu-related contribution of ¥41 million.

Isuzu is also supporting local recovery efforts by offering a vehicle repair services caravan for vehicles damaged by the tsunami.



Donation to the Sumatra Earthquake



The Tsunami Service Caravan team

### Relief Support Activities for the Niigata-Chuetsu Earthquake

On October 23, 2004, a magnitude 6.8 earthquake struck Niigata on Japan's northwestern coast, causing widespread damage. Isuzu set up a taskforce team immediately after the quake at the instruction of the President, to support customers, dealers, and suppliers in the devastated area. The company contributed ¥5 million, along with an additional ¥3 million from Isuzu's labor union, and also supplied water and food to the area.



Goods donated for earthquake victims

# Communications with Society

As corporate citizens, we are committed to active communications with society and to promoting social contributions.

## ■ Citizens of the Earth

The Isuzu Charter on the Global Environment declares, "In order to leave a beautiful earth to our descendants, not only through our business activities, but also as citizens of the earth, we will adopt a positive stance toward the environmental conservation activities of both localities and society" (see p. 15). We are committed to fulfilling the words of our Charter through communications with both our customers and society, as well as through active contributions to society.

## ■ Participation in Events and Exhibitions Contribution to Promoting Clean Energy Vehicles

Sponsored by the Japan Gas Association, the test-drive and demonstration sessions for the latest CNG vehicles were held at ten locations in Japan. Isuzu provided vehicles for use in the sessions, presenting new products that have met the 2005 New Long-term Emissions Regulations, and demonstrating the excellent emissions performance and utility of those products to the more than 600 attendees.



CNG vehicle presentation

## ■ Participation in Eco-Products 2004

Isuzu has continued to participate in Eco-Products events since the beginning of 1999. Last year, we used the opportunity to exhibit our ELF CNG-MPI, DPD (Diesel Particulate Diffuser), and Mimamori-kun



Eco-Products 2004

vehicle diagnostic system. Visitors — mostly in the transportation business, but also housewives and elementary and junior high school students — asked many questions about emissions performance.

May 2004	Automotive Engineering Exposition 2004 (Sponsored by the Society of Automotive Engineers of Japan, Inc.)
June	Eco-Car World 2004 (Sponsored by the Ministry of Environment, etc.)
July	Fujisawa Environmental Fair 2004 (Sponsored by Fujisawa City) Infrastructure and Traffic Safety Day (Sponsored by the Land, Infrastructure, and Transport Ministry of Japan)
December	Eco-Products 2004 (Sponsored by the Japan Environmental Management Association for Industry)

## ■ Examples of Our Social Contribution Activities

### Providing Engineers and Technical Support to Antarctic Research Expeditions

Isuzu has been dispatching company engineers to the base construction machinery section of national monitoring missions in Antarctica from the very first expedition through the 45th in 2004. These missions analyze environmental phenomena such as ozone layer depletion and global warming, and Isuzu vehicles and engines powering snowmobile and electric generators contribute to the mission operations.



Reaching Fuji Dome Base Camp

### Participating in the 45th Antarctic Monitoring Mission — Tomoyasu Iizumi, Mission team member —

I am most proud of successfully completing all of the machinery service missions, including the traveling by snowmobiles between the Showa Base Camp and the Dome Camp, and the setup and removal of the machinery at the Dome Base Camp.

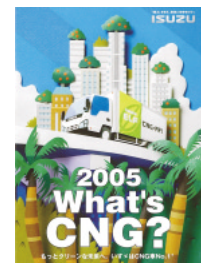
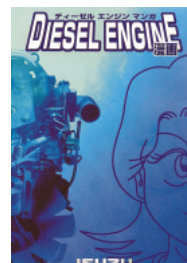
The Dome Camp is approximately 1,000 kilometers inland from Showa Base Camp, and we moved on snowmobiles across the white-out terrain for one month. As soon as we arrived at the Dome after the grueling travel, we had to work on a 24-hour routine. It took three or four days to heat up the interior and ignite the electric generators. It was really tough, but we managed all the jobs well with the help of staff personnel.



Snowmobile repair at Cape Totsuki

## ■ Environmental Publications

Isuzu creates and distributes various publications to foster a better understanding of diesel engines.



# Employee Relations

We are creating a healthy work environment for our employees, our most valuable resource.

## ■ Creating Safe and Comfortable Workplaces

Isuzu strives to create safe, accident-free, and pleasant workplaces, based on our safety and health concept that "Safety results from cooperation on everyone's part." We continue to implement efforts to prevent accidents; our specific themes are Preventing Industrial, Traffic, and Fire Accidents, Improving the Workplace Environment, and Promoting Health (see below table).

We also remain committed to meeting safety and compliance goals and improving the safety of our facilities in order to ensure that our employees enjoy a safe and healthy workplace.

### Key Issues and Initiatives

Key issues	Initiatives
Preventing industrial accidents	<ul style="list-style-type: none"> <li>• Training for management supervisors</li> <li>• Ensuring safety for new employees (workplace training and verifying training)</li> <li>• Ensuring compliance through the implementation of safety assessments</li> <li>• Continued approach to preventing similar accidents</li> </ul>
Improving workplace environments	<ul style="list-style-type: none"> <li>• Ongoing environmental evaluation during safety assessments</li> <li>• Promoting comfortable workplace environments</li> </ul>
Promoting health	<ul style="list-style-type: none"> <li>• Medical checks, health guidance, continuous follow-up</li> <li>• Reinforcing mental health</li> <li>• Training healthcare leaders</li> </ul>
Preventing traffic accidents	<ul style="list-style-type: none"> <li>• Preventing motorcycle commuting accidents</li> <li>• Improving traffic safety education</li> <li>• Ensuring company traffic rules for vehicles in plant sites</li> </ul>
Preventing fires	<ul style="list-style-type: none"> <li>• Appropriate management and operation of facilities and equipment that use inflammable substances</li> <li>• Pinpointing and removing potential causes of fires</li> </ul>

## ■ Voluntary Activities by Employees: USE21

USE21 consists of voluntary activities by individual working groups that are organized by the employees of the Engineering Division, with the aim of preventing fire, industrial, traffic, and other accidents; they are active in ensuring a safe and pleasant workplace; training younger employees; and improving product quality and technical skills.

The Safety Group implements emergency rescue lectures, workplace safety patrols, and compound traffic speed controls by classroom and practical training. They are the real contributors to preventing workplace accidents in Isuzu. In fiscal 2004, the group participated in external events such as earthquake

experience sessions, fire extinguishing, and escaping from a smoke-filled environment, at the disaster management center in Atsugi in Kanagawa.



Experiencing a big earthquake

## ■ Promoting Total Health

Isuzu is also committed to encouraging the healthy and happy lives of our employees and their families by promoting total health, both mentally and physically. For example, we offer a 24-hour telephone health consultation service, as well as mental health consultations with outside staff. We also sponsor family hiking events 10 times per year, as well as preventative health events, such as early screening self-examinations for breast cancer. The number of participants in these activities continues to grow every year.

We also hold life-planning workshops for couples embarking on their second lives after their retirements. In fiscal 2004, a total of 243 participants attended these workshops.

### Health Promotion Center Activities

Promoting total health		Details
Preventing lifestyle-related diseases	Workshops	Osteoporosis, obesity prevention, high blood pressure, hyperlipemia/diabetes (once per year)
Lifestyle improvement	"Challenge" programs	Quitting smoking, exercise, diet change, and alcohol-free days (once per year)
Life plan	Workshops	"Retired life" plan
Mental health	Counseling, etc.	Year-round program
Recreational activities	Hiking	Roughly once per month/10 times annually



Hiking activities

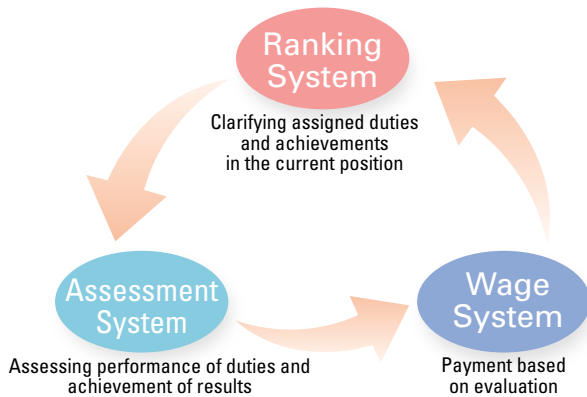
### ■ A New Personnel System

In this era of increasing global competition, Isuzu believes that all employees must perform at their best, with strong motivation and passion for Isuzu's future growth. In order to achieve this, we have been creating a new personnel system that encourages our staff to achieve job satisfaction and a sense of fulfillment.

We prepared the new system in fiscal 2004, and introduced it in April 2005. We re-assessed three previous issues: Clarifying evaluation standards; Evaluating appropriately; and Paying appropriately, and then re-structured our ranking, evaluation, and payment systems accordingly.

In clarifying our evaluation standards, we are encouraging employees to think, work and challenge themselves, to increase their motivation for change, and to perform to the best of their abilities.

#### Key Points of the New Personnel System



### ■ Equal Employment Opportunity Law and Employment of Disabled Personnel

Isuzu ensures gender equality from hiring opportunity to payment, while the company has been working hard to re-organize and operate its personnel system in line with the revised Equal Employment Opportunity Law. We are actively recruiting female personnel with the passion and ability to work in a global society, and are introducing more opportunities for women to take on management roles and overseas positions.

We are also committed to hiring handicapped staff, and supporting both disabled and non-disabled personnel in living richer lives. In fiscal 2004, our employment rate for handicapped personnel was 2.03%, continuing a five-year trend of exceeding both the legally-mandated disabled hiring rate, and the average rate among private companies.

### ■ Personnel Development

Isuzu recognizes that increasing individual's abilities is linked to raising the total of individual's and Isuzu's achievements. Thus, we reviewed the training system when we introduced our new personnel system in April 2005.

For example, we clarified the types of personnel we seek, and defined the skills sought for those role classifications in order to help us more effectively recruit such personnel. We are also now developing the necessary training programs.

We plan to offer several different kinds of training, including compulsory and optional internationalization, specialty, self-awareness, and departmental training.

#### Fiscal 2004 Personnel Development Results

Key issues	Initiatives	Hours conducted	Total participants
Training for young employees	Individual capacity building is based on self-education, so we will offer business skills and independent thinking training starting during an employee's informal appointment period, and then on through the fifth year of employment, in order to develop effective learning habits among younger workers.	8,240	84
Self-driven personnel training	Offering opportunities to consider one's own career path in order to develop independent employees	736	92
Position-specific training	Supporting skills training for DJT managers and management supervisors, etc., as required for their individual roles and circumstances. In fiscal 2004, training was provided for 797 employees, primarily on the new personnel evaluation system.	8,465	809
Training for global personnel	Providing English writing and conversation training opportunities, in order to better respond to business globalization	6,400	64
Raising self-awareness	Supporting self-education opportunities in order to improve individual employees' skills (e.g., Correspondence courses, English conversation training)	—	—

### ■ Employee Satisfaction Survey

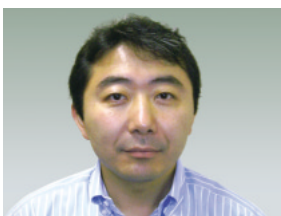
In December 2004, Isuzu carried out an Employee Satisfaction Survey in order to collect data to improve the workplace environment and to determine new measures to take. We wanted to gauge how employee motivation had changed since the previous survey in 2002.

Overall, judging from improved business performance, it appears that employee motivation has improved somewhat. The main factor behind this improved motivation was cited as our prioritizing employee relationships first, and performance of duties second. On the other hand, many personnel had requests regarding our compensation system.

The new personnel system was designed to evaluate achievements resulting from motivation, and this will be reflected in our pay structure.

## Messages from Our Readers

Here are some opinions on the Isuzu Environmental Report from independent third parties. Isuzu values such opinions and will act on them in our future business activities to build a sustainable society.



**Jiro Adachi**

Executive Director  
Japan Center for a Sustainable  
Environment and Society  
Non-Governmental Organization

I was impressed that Isuzu has stepped forward and is now achieving results in their vehicle manufacturing process, such as improvements in fuel efficiency, cleaner emissions and noise reduction, as well as in building environmentally-friendly plants that produce less waste. Launching Consolidated Environmental Management activities throughout the Group is another achievement. The 2005 report was very interesting and contained new ideas, especially the description of their new stakeholder meetings.

I have several requests as I look forward to your company's increasing growth, and further efforts to protect the environment.

First, I hope that Isuzu will clearly show its resolution to remain a leader in the environmental area by enhancing its ongoing efforts to improve fuel efficiency and reduce plant waste.

Second, I hope Isuzu continues to keep the public informed in detail about its efforts to develop next-generation technologies such as bio-fuel vehicles, as we must continue to reduce CO<sub>2</sub> emissions in the mid- and long-term in order to prevent global warming.

Third, I hope that Isuzu continues to develop its alliances with local communities, including NGOs, by demonstrating that these alliances are not just for show; it is crucial that these alliances produce real initiatives. To build environmentally-friendly transportation systems promoting public transportation, we require not only initiatives from vehicle users and consumers, but also the establishment of policies and social systems, such as tax reform for subsidies and environmental taxes, as well as appropriate urban planning that, through financial incentives, encourages people and companies to positively engage in environmental activities.



**Eiko Kamoshida**

Committee Chairperson  
East Japan Chapter Operations  
Nippon Association of  
Consumer Specialists (NACS)  
Representative  
CS Management Office

The 2005 edition of the Isuzu Environmental & Social Report displays a stronger emphasis on the company's "social friendliness," which pleased me as a consumer. I feel this is a very progressive effort by the company toward local communities, as it not only explains their relationship with stakeholders in an easy-to-understand "communications" method, but also employs stakeholder meetings to solicit various opinions directly from customers.

Isuzu is closely involved in community building through its role as a provider of public infrastructure through the vehicles it manufactures, and its environmental efforts that tackle energy issues. Isuzu can show its corporate value through the way it is building partnerships with authorities and residents, while undertaking initiatives that meet their own particular needs in each local community under regional-oriented management, due to Japan's decentralized governmental structure. Isuzu's contribution to society is assuming responsibilities itself, and ensuring that individual employees act upon those responsibilities as their own, based on business practices incorporating the perspective of consumers.

The words on page 9, "Better Informed Users Leverage the Industry," are especially impressive. To help support an environmental society, I think it is essential that companies establish relationships with users on an equal basis that encourage them to develop interest in each other, to share information, and to involve everyone as central players. I think new corporate value will be raised not only by meeting legal compliance, but by achieving wide-ranging social responsibilities, and ultimately fostering their employees' motivation and happiness.

### ■ Responding to Our Readers' Messages

To develop our concepts for this year's report, we reviewed Mr. Adachi's comment "taking aggressive steps... toward realistic visions for the future," and Ms. Kamoshida's comment about disseminating information that allows consumers to participate in environmental protection issues in the 2004 edition. These were reflected in the "Stakeholder Meeting" and "The Future of the Environment and Safety in an Automobile Society" sections of this year's report.

We are pleased that Mr. Adachi and Ms. Kamoshida valued

our progress in regard to their suggestions, and we have implemented the Isuzu Consolidated Environmental Management System.

We appreciate the serious expectations shown toward us by them, that we should be a leader in the environmental area and build equal partnerships with society. Isuzu, as an automobile manufacturer, seriously recognizes our responsibilities and is resolved to respond sincerely to our stakeholders.





**ISUZU**

**Cover message:** This report cover features a theme for our business activities, Mankind Living in Harmony with the Earth. As we have expanded the scope of our annual Environmental Report to be an Environmental & Social Report starting with this year's report, this report design features society more prominently. The more active, fresh image reflects the energy and enthusiasm of our environmental and social activities.

## **Environmental & Social Report 2005**

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