Renesas Technology Corporation will strive for environmental Conservation and improvement throughout its business processes making environment activities the centerpiece of CSR.

Established four years ago, Renesas Technology Corporation entered a new growth phase in fiscal year 2006. Since the company was founded, we have promoted CSR (Corporate Social Responsibility) as a top management priority. Last October, a CSR management unit was set up and a “CSR Charter” was adopted for the purposes of complying with laws and regulations, earning public respect, practicing environmental conservation, and contributions to society. The CSR Charter declares to both inside and outside of the office that Renesas Technology Corp. will contribute to the realization of people’s safety, comfort, and aspirations by providing excellent semiconductor products and services delivered with sincerity, and will also play its part in the ongoing development of society.

Last February, the Kyoto Protocol came into effect. It is widely known that the government, local governments, industries and citizen have jointly embarked on a path to prevention of global warming. In that context, semiconductor manufacturing is regarded as an industry that has a considerable impact on the environment due to its high usage of electricity, water and chemicals in production processes.

Renesas Technology is promoting energy saving and chemical substance (eco-impact) reduction in the production process, and also miniaturizing customers’ equipment/systems and reducing power consumption through technology innovation. We believe that our company has an important role in and responsibility for reduction of environmental loads and the development of a sustainable society.

This is the third issue of our Environmental Report. We sincerely hope that it will help you to understand and appreciate the scope and depth of Renesas Group’s environmental activity, which covers product lifecycles from design through manufacturing, sale and use, to ultimate disposal. It is our expectation that this report will stimulate interactive communications between you and Renesas and thereby assist us in improving our environmental efforts.

2006 has been designated as a year for further development of environmental activity by Renesas Technology. The CSR management unit, established last October under the leadership of the Environmental Division, aims not only at environmental preservation but also at “environmental resuscitation” and will make environmental activities the centerpiece of CSR.

The Kyoto Protocol, which came into effect last February, imposes obligations on our country and other developed countries to reduce emissions of greenhouse gases, including CO2. Furthermore, the EU’s RoHS Directive, which took effect in July this year urges all nations to reduce environmental loads on a global basis. Against this backdrop, and considering our environmental activity to be our most pressing issue, we have made efforts to reduce the loads of our production processes and to provide customers with environmentally friendly semiconductor products.

Specifically, the former refers to “resources and energy savings” and “waste reduction” while the latter covers “green procurement”. In particular, we have incorporated chemical substance control in our definition of “product quality” and established a guarantee system. We hope that the report will help you understand our environmental activity, and we look forward to receiving your feedback.

Environmental Protection Action Guidelines
1. Through a concise understanding of how best to resolve environmental problems facing the world, we will work to make contributions to society through the development of highly reliable technologies and products that meet those needs.
2. We will work to reduce the negative environmental impact that our products will have throughout their entire life cycles, from the R&D and design stages, through to production, logistics, use, and disposal.
3. In addition to observing international, national and local environmental regulations, we will develop our own standards where necessary to maintain environmental conservation.
4. In addition to working towards enhancing the environmental awareness of our employees, we will focus our activities on society at large, contributing to that society through environmental preservation activities carried out from a broad perspective. 5. When environmental problems arise as a result of our business activities, we will take appropriate steps to minimize the environmental impacts, and disclose accurate information about that immediately.

Coverage for listing
- Period: April. 1, 2005 - March. 31, 2006
- Organization: Renesas Technology Corp.

Renesas Northern Japan Semiconductor Inc.
Haguro Electronics Co., Ltd.
Renesas Eastern Japan Semiconductor Inc.
Renesas High Components Inc.
Renesas Yorii Semiconductor Inc.
Renesas Nagano Semiconductor Corp.
Renesas Kyushu Semiconductor Corp.

*As of March 31, 2006

Corporate Profile
Name: Renesas Technology Corp.
Head Office: Marunouchi Bldg., 4-1, Marunouchi 2-chome, Chiyoda-ku, Tokyo, Japan
Paid-in capital: 50 billion yen (Hitachi, Ltd. 55%, Mitsubishi Electric Corporation 45%)
Established: April. 1, 2003
Business: Development, design, manufacture, sales and servicing of system LSIs, including microcomputers, logic and analog devices, discrete devices and memory products, including flash memory and SRAM.
Annual Sales: 906 billion yen in FY2005 (consolidated)
Employees: Approx. 26,200 (consolidated)*
Representatives: Chairman & CEO, Satoru Ito
Executive Director and Director in Charge of Environment
President & COO, Katsuhiro Tsukamoto
Number of subsidiaries: Domestic 19*, overseas 25*

President & COO
Katsuhiro Tsukamoto

Executive Director and Director in Charge of Environment
Chikara Ohnishi

President & CEO, Satoru Ito

*As of March 31, 2006

Basic Environmental Philosophy
Renesas Technology will provide continuous reassurance, comfort, and help people fulfill their dreams, by maintaining and promoting environmental conservation through all of our business activities and employees’ actions.

Environmental Protection Action Guidelines
1. Through a concise understanding of how best to resolve environmental problems facing the world, we will work to make contributions to society through the development of highly reliable technologies and products that meet those needs.
2. We will work to reduce the negative environmental impact that our products will have throughout their entire life cycles, from the R&D and design stages, through to production, logistics, use, and disposal.
3. In addition to observing international, national and local environmental regulations, we will develop our own standards where necessary to maintain environmental conservation.
4. In addition to working towards enhancing the environmental awareness of our employees, we will focus our activities on society at large, contributing to that society through environmental preservation activities carried out from a broad perspective.
5. When environmental problems arise as a result of our business activities, we will take appropriate steps to minimize the environmental impacts, and disclose accurate information about that immediately.

E-mail: cepo@renesas.com
We assess the environmental load and establish plans for making improvements.

Renesas procures various parts and materials, and uses energy, water resources and chemical substances to produce semiconductor products. These activities generate environmental load in various phases. We measure environmental load quantitatively and implement reduction activities according to schedule. Our environmental loads are mainly grouped into the following:

**Summary of Renesas Group’s environmental loads (in 2005)**

<table>
<thead>
<tr>
<th>Input</th>
<th>Material: silicon</th>
<th>Production process</th>
<th>Semiconductor products</th>
<th>Discharge</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Energy</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1,896 GWh</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>10,900 kiloliters</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&quot;A&quot; heavy oil</td>
<td>8,700 kiloliters</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&quot;B&quot;</td>
<td>3,580 tons</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&quot;C&quot;</td>
<td>5,850 m³</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water amount</td>
<td>71.8 million m³</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chemical substances</td>
<td>52 tons</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paper resources</td>
<td>380 tons</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wastewater</td>
<td>22.1 million m³</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CO₂ emission amount</td>
<td>700,000 tons</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Waste</td>
<td>Final disposal: 0 ton</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**We are actively working on four areas**

Our basic environmental plan has been prepared according to our "basic environmental philosophy" and our "environmental protection action guidelines". Our goals were determined on the basis of the period from 2003 (Renesas company foundation) through 2007, and each issue has been addressed. The 2006 environmental plan was drawn up with the objective of attaining the 2007 goal, based on performance from 2003 to 2005. The basic environmental plan is classified into the following four areas:

**Areas of environmental basic plan**

1. Eco-management
2. Eco-products
3. Eco-factory
4. Collaboration with stakeholders

**The 2006 environmental policy**

As demonstrated in the EU**1** RoHS Directive**, environmental laws and regulations at home and abroad are becoming ever more stringent, obliging us to strengthen our environmental management and activities. Thus, one of the most important issues for CSR is to actively reduce eco-loads throughout our business processes. We are also focusing on enhancing product environmental quality, reducing factory environmental loads, and promoting environmental activity at non-production sites.

**Achievements of main targets in fiscal year 2005, and plans for fiscal year 2006**

**Enforcing environmental management system (eco-management)**

- **Target**: Enforce environmental management system
- **Plan for 2006**: Promotes certification to be obtained by development- and design-related companies

**Intensifying product environmental quality control (eco-products)**

- **Target**: Establish product environmental quality management systems to meet customers’ expectations
- **Plan for 2006**: Established Product Environmental Quality Committee to initiate this activity

**Enhancing environmentally friendly products (eco-products)**

- **Target 1**: Promote green procurement for purchase of environmentally friendly parts
- **Achievement in 2006**: Conducted investigations into chemical substance content in major purchased parts and into the status of vendors’ environmental activities
- **Plan for 2006**: Continuation of investigations into chemical substance content and improve vendor auditing to advance green procurement activity in collaboration with vendors

**Reducing environmental loads in distribution (eco-products)**

- **Target**: Reduce environmental loads in product transportation and conserve packing materials resources
- **Achievement in 2006**: Established system to ascertain product and waste transportation performance
- **Plan for 2006**: Analysis of transportation performance to save energy and enhance packing materials recycling

**Prevention of global warming (eco-factory)**

- **Target 1**: Reduce specific energy consumption by 1% compared with the previous year
- **Achievement in 2006**: For five consecutive years, energy consumption has been decreased by 1% each year compared with the preceding year at all production sites

**Reduction of VOCs and water in production processes (eco-products)**

- **Target 2**: Reduce VOC emissions by 15% from 1995 levels, by 2007
- **Achievement in 2006**: Promoted changing from VOC-containing solvents to water-based systems
- **Plan for 2006**: Acceleration of changing from VOC-containing solvents to water-based systems.

**Reducing waste (eco-factory)**

- **Target**: Achieve zero emissions and promote recycling
- **Achievement in 2006**: Has achieved zero emissions since 2004
- **Plan for 2006**: Maintenance of zero emissions and promotions of further reductions, reuse and recycling

**Reducing chemical discharge (eco-factory)**

- **Target**: Reduce chemical discharge by 10% from 2003 levels, by 2007
- **Achievement in 2005**: Promoted reduction of fluorinated acid and pyrocatechol emission amounts
- **Plan for 2006**: Continuation of chemical substances reduction through working group activities

---

*1: European Union
*2: Restriction on use of certain Hazardous Substances in electrical and electronic equipment (2002/95/EC)
Environmental Management Meeting at center of environmental activity promotion.

The “hub” of environmental activity promotion within Renesas Technology Corp. has been the Environmental Management Meeting, a top management group comprising the Chairman & CEO, President & COO, and Director in Charge of Environment. This meeting deliberates on and determines environmental measures, policies and plans for the whole group. To achieve the plans, we have established the Environmental Promotion Meeting, Environmental Expert Group Meeting and Product Environmental Quality Committee, which develop and review specifications.

Environmental Promotion Meeting

The Environmental Promotion Meeting, comprising environmentally responsible persons from development sites, production sites and associated companies, monitors the thoroughness of policy, follows up on implementation of planned activity, and discusses goals and policies. Meetings were held in September 2005 and February 2006 in domestic and associated companies.

Environmental Expert Group Meeting

The Environmental Expert Group Meeting involves three groups, Eco-products Group Meeting, Eco-factory Group Meeting and Eco-management Group Meeting, and addresses solutions to company-wide environmental issues, such as waste reduction. To promote effective eco-load reduction activity within these three groups, additional “working groups” are established and charged with developing plans to address each issue.

Product Environmental Quality Committee

Established to improve Renesas’ product environmental responsibility, this committee is at the center of Renesas’ green procurement activity and in-product chemical substance content control. It also responds to customers’ enquiries concerning in-product chemical substance content by providing full and frank answers.

We are aiming to enhance our environmental management through the use of an environmental audit.

In addition to internal audits by ISO 14001 and compliance inspections by external institutions, our in-house expert group periodically audits the plants.

ISO14001 certification acquisition

Renesas Technology’s headquarters district (Headquarters/Nippon Building Office) obtained ISO14001 certification in February 2006. Since then, all divisions of Renesas Technology have obtained such certification. The headquarters district is working on the important theme, “Identify environmentally favorable aspects in business processes and promote them”, in addition to general activity to “reduce rubbish and use less paper and electricity” carried out by offices and branches.

We are encouraging ISO14001 certificate acquisition by both domestic and offshore operations.

Environmental audit

On-site Checks

Management status of environment-related facilities, chemical substances and waste storage sites
Wastewater treatment facilities
Emergency drainage tanks
Electrical equipment (air conditioner, etc.)

Performance Checks

Status of progress in implementing Renesas basic environmental plan and policy
Prevention of global warming
Energy saving, FPC gas emissions reduction, etc.
Waste reduction
Chemical discharge reduction
Green procurement
Environmental investment, etc.

Compliance Check

(1) Collecting knowledge on environmental laws and regulations, transmission of such information to persons concerned, and reporting to authorities
(2) Compliance with laws and regulations
Air pollution control law
Water pollution prevention control law
Noise regulation law
Vibration regulation law
Eddy current regulation law
Energy use streamlining law
Waste disposal and cleaning law

We are aiming to enhance our environmental management through the use of an environmental audit.

In addition to internal audits by ISO 14001 and compliance inspections by external institutions, our in-house expert group periodically audits the plants.

Environmental audit

On-site Checks

Management status of environment-related facilities, chemical substances and waste storage sites
Wastewater treatment facilities
Emergency drainage tanks
Disposal method for chemical spills

Performance Checks

Status of progress in implementing Renesas basic environmental plan and policy
Prevention of global warming
Energy saving, FPC gas emissions reduction, etc.
Waste reduction
Chemical discharge reduction
Green procurement
Environmental investment, etc.

Compliance Check

(1) Collecting knowledge on environmental laws and regulations, transmission of such information to persons concerned, and reporting to authorities
(2) Compliance with laws and regulations
Air pollution control law
Water pollution prevention control law
Noise regulation law
Vibration regulation law
Eddy current regulation law
Energy use streamlining law
Waste disposal and cleaning law

We are aiming to enhance our environmental management through the use of an environmental audit.

In addition to internal audits by ISO 14001 and compliance inspections by external institutions, our in-house expert group periodically audits the plants.

Environmental audit

On-site Checks

Management status of environment-related facilities, chemical substances and waste storage sites
Wastewater treatment facilities
Emergency drainage tanks
Disposal method for chemical spills

Performance Checks

Status of progress in implementing Renesas basic environmental plan and policy
Prevention of global warming
Energy saving, FPC gas emissions reduction, etc.
Waste reduction
Chemical discharge reduction
Green procurement
Environmental investment, etc.

Compliance Check

(1) Collecting knowledge on environmental laws and regulations, transmission of such information to persons concerned, and reporting to authorities
(2) Compliance with laws and regulations
Air pollution control law
Water pollution prevention control law
Noise regulation law
Vibration regulation law
Eddy current regulation law
Energy use streamlining law
Waste disposal and cleaning law
We have a clear and accurate understanding of the cost-effect relationship for efficient environmental management.

Renesas’ 2005 environmental accounting shows the results: Environmental protection cost is 1.36 billion yen in investment and 5.57 billion yen in expenditures while the economic effect is 2.18 billion yen.

### Basic points of environmental accounting:

2. Coverage: 24 divisions including Renesas Technology and domestic associated companies
3. Costs include development costs and depreciation allowance
4. Calculation method is in accordance with the Environment Ministry’s “Environmental Accounting Guidelines 2005 Version”

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Environmental protection cost (unit: million yen)</th>
</tr>
</thead>
<tbody>
<tr>
<td>In-plant area costs</td>
<td>Radiation prevention: Air pollution prevention, water contamination prevention, etc.</td>
<td>317</td>
</tr>
<tr>
<td></td>
<td>Global environmental protection: Energy saving measures, global warming prevention, etc.</td>
<td>941</td>
</tr>
<tr>
<td></td>
<td>Resource circulation: Effective use of resources, such as waste reduction &amp; disposal, waste saving, recycling, etc.</td>
<td>114</td>
</tr>
<tr>
<td>Operation and maintenance</td>
<td>Operation and maintenance of environmental management systems, education, etc.</td>
<td>19</td>
</tr>
<tr>
<td>Environmental damage costs</td>
<td>Dioxide procurement, product assessment, testing equipment collection and recycling, etc.</td>
<td>937</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>1,356</td>
</tr>
</tbody>
</table>

**Environmental protection costs**

**Cost saving breakdown**

- Energy reduction: 68.8 GWh
- PFC gas reduction: 68,000 tons

**Revenue**

- Valuable-resource sales revenue involved in recycling: 806 million yen
- Waste management, etc.: 3,174 million yen
- Total cost saving: 3,180 million yen

**Environmental management information system**

- We are promoting the buildup and integration of systems in order to centralize a variety of environmental information and loads data collected from Renesas production sites and to make these resources accessible to all sites.
- In 2005, the “waste control outsourcing database system” started operation, “waste management system” operability was improved, and specifications of the “chemical substance control system” were determined and adopted.
- In 2006, we will refine the “waste control system” for dissemination to all production sites and begin full-scale operation of the “chemical substance control system” in order to monitor the quantity of chemical substances used and transferred.

**Example of chemical substance control**

- Investment in 2005, a total of 1.36 billion yen was invested, mainly on global environmental protection measures. This comprised 640 million yen for energy saving and 200 million yen for PFC gas reduction.

**Effect**

- The total economic effect same to 2.18 billion yen, comprising 810 billion yen from the sale of valuable recycled resources and 1.37 billion yen from cost savings.
- The environmental conservation effect can be seen in the marked decrease in electricity use (down by 68.8 MWh due to energy saving) and the decrease in PFC gas emissions (down by the equivalent of 68,000 tons of CO₂). The economic effects listed do not include any projected effects.

We will raise employees’ environmental awareness through environmental education.

- We provide environmental training and education for new recruits and employees through our environmental enlightenment
- Through environmental education.

We will also review the specifications of the “Integrated environmental information system”, which is intended to start operating in 2007, so that production sites can mutually access data on environmental protection performance (energy, water, paper resources), waste discharge amounts, and the quantity of chemical substances used and transferred.

We have a clear and accurate understanding of the cost-effect relationship for efficient environmental management.
We have adopted system to prevent mixing of restricted chemical substances into products.

Customer demand for products that are free of hazardous chemical substances is becoming stronger year by year as a result of heightened requirements under the EU’s RoHS Directive and WEEE Directive*, which restrict chemical substance content in products.

Renesas regards chemical substance content as a quality issue and operates controls on product environmental quality. Specifically, we have adopted a system to prevent the mixing of restricted chemical substances into products in each process from design through receipt inspections of components and materials to manufacturing, in collaboration with individual divisions.

---

**Laws and Regulations**

- RoHS Directive
- WEEE Directive
- ELV Directive*
- Others

**Renesas Technology**

- Demand for zero content of restricted substances
- Receipt of Components and Materials
  - Green procurement (Material Purchasing Division)
  - Receipt Inspection (Quality Assurance Division)
- Manufacturing
  - Manufacturing management (Manufacturing Division)

---

We are actively promoting green procurement.

The contents of components and materials are inspected in line with “Renesas Restricted Substances” and RoHS Directive restricted substances to ensure that there is no inclusion. Results of these examinations are entered into a database and utilized for product environmental loads reduction.

---

We are addressing environmentally friendly products from the design stage.

These nine items are further divided into 26 points. For this purpose, we use a Product Environmental Assessment Sheet, which describes the assessment methods and evaluation criteria for each item, and new products are compared against reference products. The results of comparisons are evaluated quantitatively, the ratio of comprehensive improvement is calculated, and then the improvement ratio of each category is represented on a radar chart. Changes in environmental effective rate (Factor X) in terms of energy saving, resource saving, and chemical substance content are represented on the assessment sheet.

This assessment sheet was first used by the ICs and Discrete Product Design Division in 2005. Some 200 products were evaluated. The results show that about 60% of products satisfied energy saving criteria while about 70% of products met resource saving criteria. In 2006, designs other than ICs and discrete products, such as SIP (System in Package), memory module, and HPA (High Power Amplifier), etc., will be evaluated.

---

*1 Indices of comparisons between reference products and tested products in terms of energy saving, resource saving, and chemical substance content. The larger the value, the smaller the environmental impact.

---

**Example of a radar chart comparing reference product with new product, showing the improvement ratio by evaluation items**

**Example of Factor X**

[Environmental loads reduction in major items]

- Resource saving 0.16
- Energy saving 0.22
- Chemical substances 0.68

\[
\text{Factor X} = \frac{1}{1.732} \times \frac{0.84 + 0.70 + 0.32}{1.190} = 1.456
\]

*Environmental effective rate is represented by a reciprocal number of environmental load.
Lead-free products have been realized in all products.

Renesas set a target date of end-December 2005 for production of lead-free products, in accordance with the EU RoHS Directive. As a result, a total switch to RoHS-designated lead-free products*1 was accomplished*2 and these have since been provided to customers.

Currently, we are addressing RoHS non-designated lead-free products, such as those for vehicles, to meet Customers’ requirements.

*1: Lead contained in packages, such as sealed glass or part of die bonding materials (RoHS exempt), is still being used at this stage.

*2: These products have sufficient heat-resistance to allow them to be mounted with lead-free soldering. In general, surface mount packages*3 having heat-resistance (package surface) can withstand temperatures up to 260°C, while some large packages can withstand temperatures up to 285°C. In this case, because the terminals can withstand up to 260°C, it is possible for them to be mounted using lead-free soldering.

Response to the RoHS Directive

In addition to lead, the RoHS Directive also restricts substances such as mercury, cadmium, hexavalent chromium, PBB*3 and PBDE*4. These are not used in any of our products. For detailed product information, contact our Product Sales Division.

*3: Polybrominated Biphenyl

*4: Polybrominated Diphenyl Ether

We are also working on material resources saving through packing specifications improvement. One approach is to use more recycled material for plastic trays. In collaboration with packing materials makers, we have changed to recycled-material-mixed trays of the same type as this year. Now, disfigured trays are used as recycling material instead of being scrapped.

As of 2005, through ongoing efforts, about 50% of our trays contain recycled material. Moreover, the trays have been redesigned so that they can hold more products and the number of trays needed can be reduced.

Improvements in logistics for Renesas Group products

In 2005, Renesas Group addressed logistics improvements in cooperation with distribution companies and our sales and production companies. We achieved more effective operation of warehouses and reduced sorting work.

Previously, we used both cartons (corrugated boxes) and plastic containers to transport devices from production sites to warehouse. However, since January 2006, plastic containers have been used as returnable boxes, reducing usage of corrugated boxes.

Transportation energy reduction

In response to consignees’ energy saving obligations as stipulated by the revised Energy Saving Law, we established a mechanism for ascertaining product transportation volumes in 2005. In 2006, we will analyze our performance in transportation volume in order to promote energy saving.

We are addressing environmental loads reduction using LCA.

LCA*5 is a method of evaluating the entire lifecycle of products comprehensively, scientifically, quantitatively and objectively. Products are evaluated at every stage from materials procurement through manufacturing, distribution and disposal to recycling, in terms of environmental loads or influences, such as energy or resources consumption and discharge of contaminants or waste. The manufacturing process is also evaluated.

Renesas collects environmental impact data using various kinds of LCA software. We use SimaPro® to quantitatively ascertain "environmental loads imposed by both entire production site and products". Impacts are compared among production sites and the causes are identified for utilization in further improvement activities.

*5: Life Cycle Assessment denotes evaluation of the product lifecycle from “materialisk” through “disposal”.

*SimaPro® is a registered trademark of a private company in the Netherlands.

We are working on packing materials reduction and efficiency improvement in logistics.

Reuse of packing material

We are actively working on reuse of plastic trays used for product shipments. The 2005 reuse rate improved to 48%, as against 46% for the previous year. This resulted from effective recovery of trays through exchange of information between our company and companies involved in packing material collection and companies involved in reuse, and from greater utilization of used trays by increasing tray-washing capacity, as well as from tray quality enforcement. We will continue this effort in 2006 in order to further increase the reuse proportion.

Resource saving through packing specifications improvement

We are also working on material resources saving through packing specifications improvement. One approach is to use more recycled material for plastic trays. In collaboration with packing materials makers, we have changed to recycled-material-mixed trays of the same type as this year. Now, disfigured trays are used as recycling material instead of being scrapped.

As of 2005, through ongoing efforts, about 50% of our trays contain recycled material. Moreover, the trays have been redesigned so that they can hold more products and the number of trays needed can be reduced.

Solder balls

Making terminals lead-free

Surface finish of lead

* Lead-free pamphlet (PDF) of our product information can be obtained at the following URL: http://documentation.renesas.com/eng/products/others/rej01k0001_leadfree.pdf

Brochure for customers describing our product compliance with RoHS

We are working on packing materials reduction and efficiency improvement in logistics.

Reuse of packing material

We are actively working on reuse of plastic trays used for product shipments. The 2005 reuse rate improved to 48%, as against 46% for the previous year. This resulted from effective recovery of trays through exchange of information between our company and companies involved in packing material collection and companies involved in reuse, and from greater utilization of used trays by increasing tray-washing capacity, as well as from tray quality enforcement. We will continue this effort in 2006 in order to further increase the reuse proportion.

Resource saving through packing specifications improvement

We are also working on material resources saving through packing specifications improvement. One approach is to use more recycled material for plastic trays. In collaboration with packing materials makers, we have changed to recycled-material-mixed trays of the same type as this year. Now, disfigured trays are used as recycling material instead of being scrapped.

As of 2005, through ongoing efforts, about 50% of our trays contain recycled material. Moreover, the trays have been redesigned so that they can hold more products and the number of trays needed can be reduced.

Improvements in logistics for Renesas Group products

In 2005, Renesas Group addressed logistics improvements in cooperation with distribution companies and our sales and production companies. We achieved more effective operation of warehouses and reduced sorting work.

Previously, we used both cartons (corrugated boxes) and plastic containers to transport devices from production sites to warehouse. However, since January 2006, plastic containers have been used as returnable boxes, reducing usage of corrugated boxes.

Transportation energy reduction

In response to consignees’ energy saving obligations as stipulated by the revised Energy Saving Law, we established a mechanism for ascertaining product transportation volumes in 2005. In 2006, we will analyze our performance in transportation volume in order to promote energy saving.

We are working on packing materials reduction and efficiency improvement in logistics.

Reuse of packing material

We are actively working on reuse of plastic trays used for product shipments. The 2005 reuse rate improved to 48%, as against 46% for the previous year. This resulted from effective recovery of trays through exchange of information between our company and companies involved in packing material collection and companies involved in reuse, and from greater utilization of used trays by increasing tray-washing capacity, as well as from tray quality enforcement. We will continue this effort in 2006 in order to further increase the reuse proportion.

Resource saving through packing specifications improvement

We are also working on material resources saving through packing specifications improvement. One approach is to use more recycled material for plastic trays. In collaboration with packing materials makers, we have changed to recycled-material-mixed trays of the same type as this year. Now, disfigured trays are used as recycling material instead of being scrapped.

As of 2005, through ongoing efforts, about 50% of our trays contain recycled material. Moreover, the trays have been redesigned so that they can hold more products and the number of trays needed can be reduced.

Improvements in logistics for Renesas Group products

In 2005, Renesas Group addressed logistics improvements in cooperation with distribution companies and our sales and production companies. We achieved more effective operation of warehouses and reduced sorting work.

Previously, we used both cartons (corrugated boxes) and plastic containers to transport devices from production sites to warehouse. However, since January 2006, plastic containers have been used as returnable boxes, reducing usage of corrugated boxes.

Transportation energy reduction

In response to consignees’ energy saving obligations as stipulated by the revised Energy Saving Law, we established a mechanism for ascertaining product transportation volumes in 2005. In 2006, we will analyze our performance in transportation volume in order to promote energy saving.
We will accelerate reduction in greenhouse gas emissions ahead of schedule.

Renesas is working on greenhouse gas reduction with the aim of decreasing emissions of PFC gas, for which the global warming potential (GWP) is about 5,000 to 20,000 times greater than that of CO2. In 2005, we introduced PFC abatement systems and changed to gas with a lower GWP value, achieving 9% gas emissions reduction compared with the reference year, 1995. We will continue this effort to achieve by 2007, three years ahead of the 2010 schedule, the semiconductor industry’s common goal of “more than 10% reduction from 1995 levels”. 

**PFC emissions reduction plan**

![Graph showing PFC emissions ratio (%)]

**PFC and coefficient (CFC) of CO2**

<table>
<thead>
<tr>
<th>Substance</th>
<th>CO2 Equiv. (GWP)</th>
<th>PFC purchased amount</th>
<th>PFC emissions ratio (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CF4</td>
<td>5,700</td>
<td>11,900</td>
<td>99%</td>
</tr>
<tr>
<td>CF2</td>
<td>12,000</td>
<td>22,200</td>
<td>88%</td>
</tr>
<tr>
<td>C2F6</td>
<td>10,000</td>
<td>18,000</td>
<td>77%</td>
</tr>
<tr>
<td>C3F8</td>
<td>Non-applicable</td>
<td>18,000</td>
<td>77%</td>
</tr>
<tr>
<td>C4F8</td>
<td>Non-applicable</td>
<td>18,000</td>
<td>77%</td>
</tr>
</tbody>
</table>

We are promoting further reductions in energy consumption.

In 2005, Renesas’ energy consumption in crude oil equivalent was 20,000 kiloliters for all electricity, kerosene, heavy oil, liquefied propane gas and steam, a decrease of 1.5% on 2004 usage, due to energy savings by individual production sites. Averaged over five years, this represents a 1% decrease in specific consumption across all factories. Going forward, we will utilize ESCO* to promote energy saving activities.

*1: World Semiconductor Council

**Applicable Gas**

<table>
<thead>
<tr>
<th>Gas</th>
<th>Main source</th>
<th>GWP</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO2</td>
<td>Fossil fuel</td>
<td>1</td>
</tr>
<tr>
<td>NOx</td>
<td>Energy source</td>
<td>50</td>
</tr>
<tr>
<td>SOx</td>
<td>Fossil fuel</td>
<td>1</td>
</tr>
<tr>
<td>HFCs</td>
<td>Hydrofluorocarbon</td>
<td>Non-applicable</td>
</tr>
<tr>
<td>PFCs</td>
<td>Perfluorocarbon</td>
<td>Non-applicable</td>
</tr>
<tr>
<td>SF6</td>
<td>Sulphur hexafluoride</td>
<td>Non-applicable</td>
</tr>
</tbody>
</table>

**Examples of Energy Saving Measures**

1. **Achievements in Energy Consumption**

2. **Examples of Energy Saving Measures**
   - **Equipment**: Energy saving pumps adopted
   - **Process**: Air conditioning systems retrofitted into freonless systems
   - **Material**: Changes to high efficiency transformers

3. **Ozone layer protection**
   - We are working on greenhouse gas reduction with the aim of decreasing emissions of PFC gas, for which the global warming potential (GWP) is about 5,000 to 20,000 times greater than that of CO2.

4. **We have carried out ongoing zero emissions activity since fiscal year 2004.**
   - Renesas did away with the use of Class I ODS*2, which includes CFC*3 in the Montreal Protocol, in the manufacturing process of every plant in April 1993. We will also actively implement the Montreal Protocol plan to do away with the use of Class II ODS (HCFC*4). Since 2004, we have achieved this goal for two years running in the targeted 24 factories.

5. **Transition in waste and valuable resources discharge amount**
   - Direct recycled amount
   - Intermediate treatment amount
   - Direct final disposal amount

6. **We are aiming for the total elimination of ozone depleting substances.**
   - Renesas did away with the use of Class I ODS*2, which includes CFC*3, covered by the Montreal Protocol, in the manufacturing process of every plant in April 1993. We will also actively implement the Montreal Protocol plan to do away with the use of Class II ODS (HCFC*4) by 2020.

*1: Refuse Paper & Plastic Fuel

*2: Intergovernmental Panel on Climate Change

*3: Energy Service Company

*4: World Semiconductor Council

We have carried out ongoing zero emissions activity since fiscal year 2004.

Renesas is addressing "continuous zero emissions" and "waste amount reduction" through waste reduction measures. Zero emissions is defined as "reducing the final disposal ratio to less than 1% of the total discharge amount, which consists of industry and general business wastes and valuable resources". Since 2004, we have achieved this goal for two years running in the targeted 24 factories. Examples of major recycling activities include: Making sludge into cement, making waste plastic into RPF*1 fuel, metal recovery from rolled gold, separation and recovery of iso-propylene alcohol detachment wastewater, recycling of quartz chips, etc. In respect of waste amount reduction, we set a goal of 5% reduction by 2005, compared with 1998 levels, and have achieved this objective in 20 factories out of 24.

**Montreal Protocol Schedule for Class I and Class II ODS reduction**

- **Class I**: Total elimination of CFC, etc.
- **Class II**: Total elimination of HCFC, etc.

**Ozone layer protection**

- **Reduction targets in the Montreal Protocol**
- **Renesas reduction targets**
We are striving for emissions reduction by setting chemical substance control standards.

Recently, public anxiety about chemical substances has risen and people have focused on the use of chemical substances and discharges into the environment by factories in disregard of potential harm to human health or compliance with relevant laws.

In 2003, Renesas set chemical substance control standards for (1) Prohibition, (2) Reduction, (3) Control, and (4) Constituents and promoted working group activity. In 2005, we disclosed our technology for reduction of fluorinated acid and pyrocatechol emissions across production sites. This activity contributed to a 22% reduction compared with the reference year, 2003 (the year in which Renesas was founded). We will maintain this type of working group activity in 2006.

Management of equipment that uses PCB

Under the Special Measures Law for Promoting Proper Disposal of Polychlorinated Biphenyl Waste (promulgated in 2003), Renesas will properly dispose of stored PCB waste by 2016. Renesas Group possesses 30 high-voltage capacitor units with high PCB content (more than tens of ppm); accordingly, we promptly applied to JESCO for disposal registration in 2005. These units will be disposed of progressively in accordance with JESCO directions.

We are actively promoting water recycling.

Renesas used 31.8 million m³ of water in 2005. We are reducing water uptake through recycling measures. From 2003 to 2005 the volume of water supply and the recycling rate remained unchanged.

We have adopted a multi-pronged approach to the promotion of pollution prevention.

Ongoing in-house voluntary checks

Every Renesas factory regularly conducts voluntary checks of premises and production equipment in respect of safety and environmental protection considerations. These are carried out once a year in accordance with the company standard. Furthermore, the Environmental Promotion Office has organized an in-house environmental audit team to patrol each factory on a regular basis. By objectively monitoring a site from another division’s perspective, the audit team can identify potential environmental accident signals and contribute to standardization of measures.

Use of asbestos and elimination measures

It has been verified that Renesas products do not contain any asbestos. When Renesas factories were inspected, one was found to have asbestos in part of the old building, production equipment and piping. However, further investigation indicated no damage to employees’ health. Remaining asbestos is being eliminated or enclosed in accordance with the Waste Disposal and Cleaning Law and the Air Pollution Prevention Law, even though there is no concern about adverse effects on the health of neighboring residents.

Soil and groundwater contamination

A voluntary groundwater investigation in 2004 found that one factory was contaminated with fluorinated acid, the content being two to three times greater than the environmental standard. We organized a meeting with the local community to explain the details; this area is now being cleaned in accordance with the community’s input. Critical inspection items in the in-house environmental audits include piping, pits, tanks and wastewater disposal equipment.

Investment in pollution prevention

We continue to invest in water pollution prevention and air pollution prevention measures. In 2005 we reinforced water contamination monitoring, took measures against wastewater tank leakage, and refurbished equipment to lower wastewater concentration. We are also taking measures for hazardous-substance supply cut-off and reinforcement of hazardous substance facilities anchoring as a precaution against possible major earthquakes.

We were awarded the Director’s Prize by the Economy, Trade and Industry Bureau.

Renesas also received awards from government and municipal offices for environmental preservation. We will continue our efforts to live up to these accolades.

Kochi Factory was awarded the Director’s Prize by the Shikoku Economy, Trade and Industry Bureau, as an excellent energy control factory (Thermal Division). This represents the factory’s second consecutive award, following last year’s winning of the Resource and Energy Secretary’s Prize (Electricity Division).

Naka Factory was awarded the Director’s Prize by the Kanto Economy, Trade and Industry Bureau, as an energy control factory (Electricity Division). This follows the winning of the 2002 Director’s Prize of the Kanto Economy, Trade and Industry Bureau, in the Thermal Division.

Outside commendations

<table>
<thead>
<tr>
<th>Description</th>
<th>Winner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Director’s Prize, Shikoku Economy, Trade and Industry Bureau, for Excellent Energy Control (Thermal Division)</td>
<td>Renesas Technology Corp. Kochi Factory</td>
</tr>
<tr>
<td>Director’s Prize, Kanto Economy, Trade and Industry Bureau, for Excellent Energy Control Factory (Electricity Division)</td>
<td>Renesas Technology Corp. Naka Factory</td>
</tr>
<tr>
<td>First Prize, Kanto Region Electricity Use Streamlining Activity</td>
<td>Renesas Technology Corp. Akwai Factory</td>
</tr>
</tbody>
</table>
**Environmental communication**

We are participating in various exchange activities and making presentations.

- **Presentation of our waste management systems at the Takasaki District Industrial Environment Preservation Association Conference**
  Renesas electronically processes the industrial waste manifests that are issued when waste disposal is outsourced. We introduced this system at the Takasaki District Industrial Environment Preservation Association Conference in December 2005, to an audience of around 40 representatives of industry and the City Office Environmental Department.

- **Presentation of our energy saving examples at Energy Saving Month Commemoration sponsored by Aomori Prefecture Electricity Usage Association**
  Renesas High Components, Inc. presented examples entitled “Energy saving activity in IC manufacturing factories” at the Energy Saving Month Commemoration in February 2006. This activity had received an award from the Tohoku Region Seven Prefectural Electric Power Usage Promotion Committee for excellent energy control factory 2004. About 100 representatives of the prefectural government, industries and the local community participated.

- **Presentation of our waste zero emissions activity at Lovable Ibaraki Prefecture Festival**
  Naka Factory, which was accredited as the “2004 Excellent Ibaraki Prefecture Recycling Factory” for its waste reduction activity, exhibited panels illustrating the plant’s activities at the Lovable Ibaraki Prefecture Festival held in November 2005.

**We are always conscious of the need to provide easily viewable and understandable information.**

Renesas encourages interactive communication with customers, vendors and stakeholders through the Environmental Report, websites and other channels.

**Environmental report**

Renesas has issued its annual Environmental Report since 2004 in order to publicize the group’s environmental activities. An English-language version is also available for international reference.

**Websites**

Our websites also publicize the Environmental Report and information on Renesas Group members’ ISO14001 certification acquisition, etc.

- **In English**: [http://www.renesas.com/eng/eco](http://www.renesas.com/eng/eco)

**For details of the Environmental Report/Website, please contact**

Renesas Technology Corp. Corporate Environment and Safety Strategic Planning Office, CSR Management Unit

E-mail: cepo@renesas.com