

ENVIRONMENTAL
REPORT
2001



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Profile of the Company

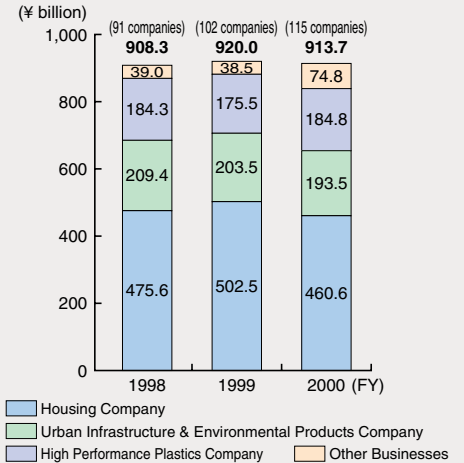
(as of March 31, 2001)

- Established on March 3, 1947
- Domestic Subsidiaries 195 companies
- Overseas Subsidiaries 26 companies
- Main Business Indices (115 companies including Sekisui Chemical Co., Ltd. consolidated in FY 2000)
 - Annual Turnover ¥913.7 billion
 - Number of Employees 19,225 (Sekisui Chemical Co., Ltd. alone in fiscal 2000)
 - Annual Turnover ¥528.3 billion
 - Capital ¥100.0 billion
 - Number of Employees 3,884

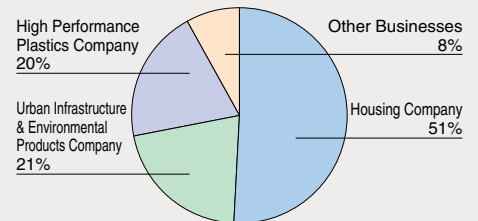
Business Areas

- **Housing Company**
Steel-structured modular house "Heim"
Wooden-structured modular house "Two-U Home"
Lot Development, Remodeling, Home Interior & Exterior Designs
- **Urban Infrastructure & Environmental Products Company**
Pipes and Ancillaries
Plastic piping systems, Lined steel pipes
Plastic valves, Plastic pits
Synthetic lumber
Building Materials
Rain gutters, Roofing tiles
Balcony floors, Bath units
Septic tanks, Electric hot water units
- **High Performance Plastics Company**
Chemicals
Interlayer film (for safety glass in automobiles and buildings), Plasticizers, Adhesives
High performance resins
Industrial Supplies
Adhesive tapes (packaging, industrial use)
Engineered fine parts, Foam polyethylene
Packaging & agricultural film
Plastic containers, Marking film
Daily Living Goods
Plastic home products for cleaning
Bathroom, toilet, kitchen and storage goods
Home chemicals (bath fragrance, soaps, deodorizers)
Medical Products
Vacuum blood tubes, Medical tapes
Diagnostics
- **Other Businesses**
New Businesses
Sound insulation and fire-proof boards
Photovoltaic / Thermal Hybrid System
Photovoltaic generation systems
Nursing rooms and facilities for the elderly
Others
Molds, Machines and equipment
Financing and leasing, Welfare services
Agricultural and building material supplies

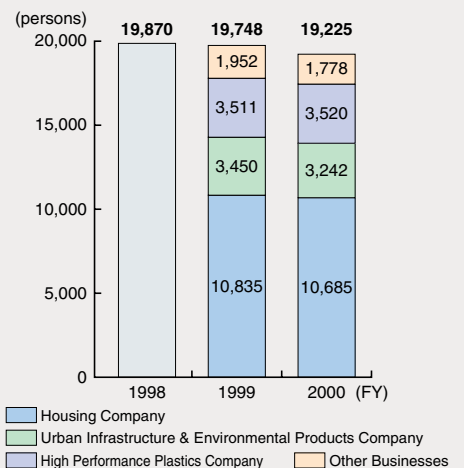
Consolidated Annual Turnover



Consolidated Turnover Ratio per Company (FY 2000, excluding internal sales)



Consolidated Number of Employees (as of fiscal year end)



The four headquarters system was introduced in March 1999, and the internal company system was introduced in March 2001. The number of employees in each company is based on the actual figures in March 2000.

Front Cover : Bring Back the Medaka

The sketches on the front cover are of Medaka, fresh water killifish, which until recently could be seen in streams everywhere in Japan. They were so familiar that they feature in a Japanese children's song. Now decreasing in number, they have been designated a "Threatened Species(Category II)" (Red Data Book on threatened species by the Japanese Environment Agency). Water quality degradation by agrochemicals and drainage from residential buildings, and a decrease in spawning areas due to concrete reinforcement of riverbanks, have been cited as causes. We are expressing our strong desire for creating an environment where Medaka can multiply and live vigorously.

Message from the President

Industrial development in the 20th century brought us, on one hand, a comfortable life style. However, on the other hand, it increased such environmental loads as global warming and waste generation. At the beginning of the 21st century, which is anticipated to be "The Century of the Environment", not only the existence of an enterprise, but that of all human life, will be exposed to danger, unless we conquer the environmental problems.

We, Sekisui Chemical Group, with houses, which are fundamental to, and plastic products, which are convenient for daily living, as our main products, have aimed at the enrichment of our society. Light, strong and low-cost plastic products have favored society, but at the same time, it is an undeniable fact that they have left us with a heavy environmental load of waste after use. Based on these facts, we have promoted our environmental conservation activities, by establishing our Corporate Policy on the Environment and Safety, for the development and manufacture of products which result in lighter environmental loads, for the recycling of used products, and for system structuring for continuous improvement.

STEP-21, our Middle Term Environmental Plan ending in fiscal 2002, has seen its first two years. This plan has been steadily producing fruits. For example, 11 of our plants have achieved zero emission, and 50 of our plants, R&D institutes and house sales companies have acquired the ISO 14001 certification. We have received a New Energy Award for our Photovoltaic/Thermal Hybrid System. We have developed a biotope with the full cooperation of a local community. Regretfully, we have not been successful in achieving our targets for the reduction of carbon dioxide emission and waste generation. In this latter half of STEP-21, besides continuing our efforts to achieve these targets, we intend to realize zero emission not only at plants but at construction sites as well, and increase the importance of LCA (life cycle assessment) at the product development stage, as part of the upgraded contents of this plan. With respect to these activities, we are disclosing information progressively and keeping close contact with society to secure its full confidence in us.

To ensure a better environment for the generations to come, a recycling-based society is being structured in all fields and in every aspect of human activity. We, Sekisui Chemical Group, not only reduce environmental load in our business activities, but manufacture products and establish systems that contribute to this recycling-based society, and carry out business operations that are in harmony with the natural environment both locally and globally. In so doing we are aiming at responding to the desires of local communities and society as a whole by being an environmentally creative organization.

We trust that this report will be a valuable means for our communication with you, and that it will give you a deep understanding of the environmental conservation activities of Sekisui Chemical Group. We look forward to receiving your comments and advice.


Naotake Okubo
President



●Our Five Stakeholders

Customer First

- To meet customers' needs at the highest level
- To supply customers with our paramount services

Coexistence with the Environment

- To manufacture environment-friendly products
- To contribute to the creation and improvement of the environments of local communities by our superior technology

Living Your Life
with Sekisui!

Shareholder Satisfaction

- Continuous growth of our share price
- Clear and timely disclosure of information

Contribution to Local Communities

- To implement business operations in harmonization with local communities
- To contribute to local communities as a good corporate citizen

Employees' Self Advancement

- To enable our employees to further their contributions to social matters as valuable members of their communities
- To establish workplaces where our employees can work confidently on their own initiatives demonstrating their capabilities to the full

Sekisui Chemical Group continues to grow as "an excellent corporate citizen", meeting with the expectations of the five stakeholders that uphold "Living Your Life with Sekisui", namely, our customers, shareholders, employees, local communities, and the global environment.

Basic Policies

We are implementing our business activities on environmental consideration, in accordance with our Corporate Policy on the Environment and Safety, and Activity Guidelines as the two main axes.

Management Policy

Corporate Policy on the Environment and Safety

Acknowledging environment and safety as paramount important issues of our corporate management, we are committed to serving the community by placing priority on the following in the management and activities of our corporation.

1. We have utmost concern for the environment and safety of all our products throughout their entire life, from the stages of research and development, through production, distribution and to disposal, and comply precisely with all and every requirement on the issue.
2. We constantly improve our operations to utilize effectively, reclaim, and reuse limited resources, thereby doing everything within our power to reduce the environmental load.
3. We not only observe laws and regulations, but set our own objectives and targets to do our utmost to ensure a better environment and improved safety.

By acknowledging the importance of and implementing the above stated policy, all our employees, including all contractors, fully meet with the confidence that society places in us.

Activity Guidelines

1. Energy/Resources Saving

Effective utilization of the limited resources/energy and introduction/development of energy saving technologies.

2. Reuse/Recycling

Reduction of waste in production processes and promotion of reuse/recycling. Efforts to collect and recycle the disposed products. Development of reusable/recyclable products.

3. Safety Assurance for Chemicals

Survey and research for effects on the environment of products and materials in use. Positive steps to ensure chemical safety and environmental safety.

4. Harmonization with the Community

Devotion to environmental conservation and human safety/health, paying attention to scientific progress and governmental concerns.

5. Education and Enlightenment

Absorption of international and national information, correct understanding of environmental effects of products and business activities and appropriate education both internally and outside.

History of Our Environmental Conservation Activities

Sep. 1972

Start of company-wide commitment to pollution control. Start of Environmental Management Dept.

Apr. 1980

Start of company-wide commitment to energy saving.

Jan. 1991

Implementation of Environmental Audit System in response to the global environmental issues. Start of Environmental Management Committee, and Environmental Management Section in the Safety & Environment Dept.

Jul. 1991

Establishment of the Basic Policies on environmental issues (3 principles and 5 activity guidelines).

Oct. 1992

Start of the Environmental Technology Project for development of recycling and energy saving technologies.

Apr. 1993

Introduction of Evaluation Systems for Environmental Impacts Associated with Products.

Oct. 1993

Implementation of Voluntary Environmental Plan.

Apr. 1995

Start of Responsible Care Activities. Joined in JRCC (The Japan Responsible Care Council.).

Apr. 1996

Announcement of Top Management Policy for Environment and Safety.

Start of ISO 14001 Certification acquisition activities.

Apr. 1998

Start of zero emission activities. Publication of the Leaflet on Environmental Affairs.

Apr. 1999

Start of Middle Term Environmental Plan, "STEP-21".

Jul. 1999

Revision of Corporate Policy on the Environment and Safety.

Publication of Environmental Report 1999.

Mar. 2000

Achievement of zero emission at 6 plants.

Jul. 2000

Publication of Environmental Report 2000. Announcement of Environmental Accounting for fiscal year 1999.

Mar. 2001

Achievement of zero emission at 5 plants.



Responsible Care

Responsible Care is the voluntary management of chemical substances through their life cycles, starting from development and continuing through manufacture, use and disposal by the manufacturers or distributors, to ensure safety and environmental conservation. Such management requires planning, annual activities, publication of results and continued efforts for improvement on the part of the participating firms.

Commitments by the Presidents of our Internal Companies

In March, 2001, Sekisui Chemical Co., Ltd. introduced an internal company system. Each company president is committed to environmental conservation activities as follows:

Housing Company



Tomohiko Yasuda
Company President

Based on our vision of "complete harmonization of human beings, housing and environment," we are aiming at the supply of housing that is friendly to the global environment and can be lived in for

more than 60 years.

"Environmental Concern" is our key phrase for the 21st century. Under this key phrase we are manufacturing housing, utilizing the maximum merits of the unit house system. By our standardizing specifications for energy saving thermal insulation and adopting the solar energy system, our houses require the lowest possible energy consumption for daily life which will reduce the life cycle cost.

To ensure comfortable and healthy living, we are adopting environment-friendly materials and measuring the performance of completed houses before delivery.

Regarding environmental conservation, all of our sales companies, following our manufacturing plants, are aiming to acquire ISO 14001 Certification in fiscal 2001. Regarding zero emission, all the plants will have achieved the targets during the first half of fiscal 2001.

And all the sales companies plan to attain the same at the construction sites in fiscal 2002, which is being achieved by active collaboration between the plants and the sites.

Long ago, human beings had their dwelling places in a healthy environment free from pollution, and they enjoyed nature's favor. Now, from the viewpoint of our whole world, we are making our utmost efforts to reduce the environmental loads placed on our modern environment in the processes from development and production to maintenance and disposal of our products, and we are dedicated to continuing such efforts so that a favorable global environment can be inherited by future generations.

Urban Infrastructure & Environmental Products Company



Toshihiko Hirai
Company President

Since its establishment, Sekisui Chemical Co., Ltd. has been involved in environmental matters, manufacturing piping systems and waste disposal containers, and such have been inherited by our company.

Our principal idea is to contribute to the creation of living environments that are friendly to human beings and the earth, through manufacturing environment-friendly products and system structures with our excellent technologies. Based on this idea, we pay utmost consideration to the environmental load of our products through their entire life, and

comply precisely with all requirements on the issue.

With respect to environmental conservation, all of our plants and our R&D Institute have acquired ISO 14001 Certification. And, all the plants will have attained the zero emission targets in fiscal 2001.

In used products recycle, we have already started the recycling system for PVC Piping, Lined Steel Pipes and FRP Baths, and this will be improved.

In creation of living environmental systems, we are deploying high-degree garbage treatment systems and sewage pipeline relining to meet strong social demand. In fiscal 2001, we have started the Environmental Frontier Project in our Kyoto Research & Development Institute, to enhance research and development of our new environmental businesses and products, such as local environmental conservation products related to water, resources recycling business, new energy business for the near future, ECO-environmental system business and others.

High Performance Plastics Company



Gen Endo
Company President

This company deals with a wide range of products, from IT related products to household goods.

In such diversified business activities, we set "the reduction of environmental load in

all and every aspect" as the guideline of our company businesses, under the principle of steady implementation of STEP-21.

For example, 13 of our workplaces, including our R&D Institute and domestic subsidiaries, have acquired ISO 14001 Certification. As to zero emission, 5 of our plants attained their targets in fiscal 2000, all earlier than the planned deadline.

Also, we have given environmental concern top priority in the development of new products.

We regard it as our task to produce a wide range of new environment-friendly products. In our existing business area, we are enhancing environment-friendliness in each product, and in our new businesses we have developed unique technology for "nano composite materials", which we are applying to environmental concerns, and supplying our customers with components that contribute to their manufacture of apparatus used for measuring and improving the environmental conditions.

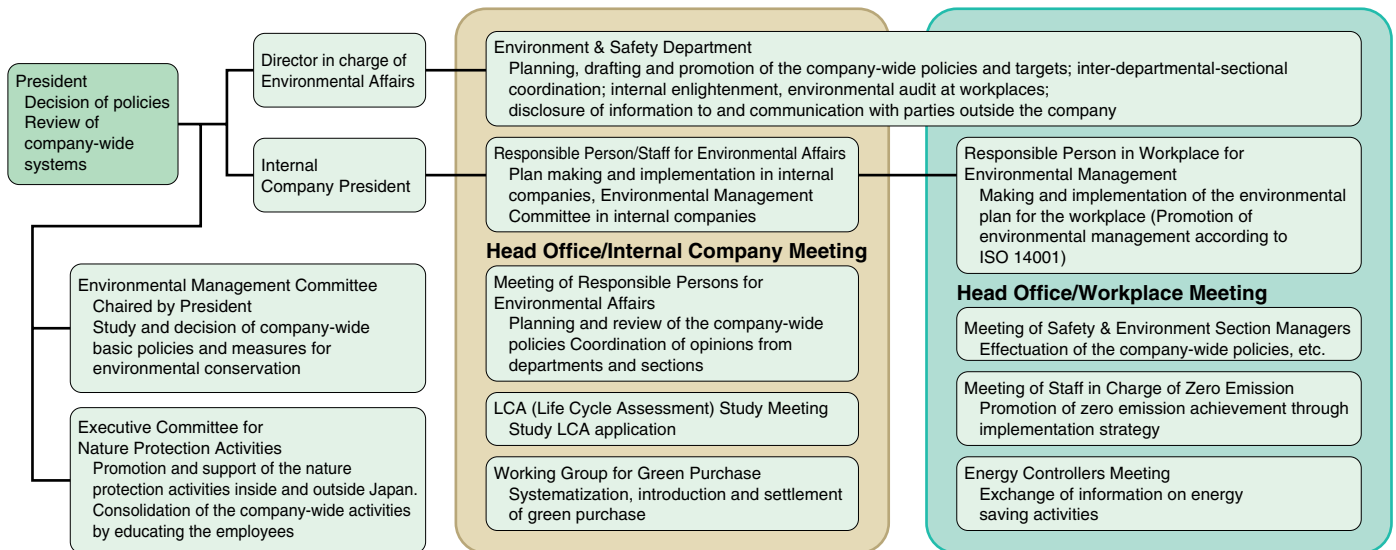
Environmental Management Systems

We introduced ISO 14001 at its initial stage, and aim at acquisition of the Certification by 82 selected workplaces before the end of fiscal 2002. The number of the certified workplaces totaled 50 (61%) in fiscal 2000.

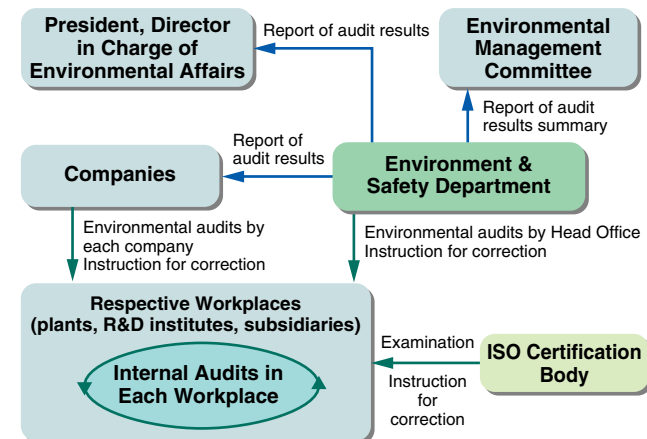
Promotion System and Roles for Environmental Conservation

The company-wide basic policies and measures for environmental conservation are studied and decided by the Environmental Management Committee chaired by the President. The policies and measures thus decided are forwarded

through respective companies to their workplaces for implementation and deployment. We also organize meetings for Head Office and internal companies, as well as those for Head Office and workplaces, to level up and speed up our activities by information exchange and horizontal deployment of activities.



System of the Environmental Audits



Environmental Audits by Head Office

In order to improve the environmental performance continually in the entire Sekisui Chemical Group, our Head Office conducts the environmental audits of 42 selected plants and R&D institutes generally on an annual basis.

The main points of the audits are:

- ① Is the management operated according to the decided procedure?
- ② Are the laws observed, including response to their revision?
- ③ Attainment rate against the target, as well as the subsequent plans.

The audit results are reported to the top management. If any inappropriate points are found, the relevant workplace is instructed and directed to affect immediate correction.

Audit Results in FY 2000

(as of March 2001)

| | | Number of cases | Correction completed | Correction in progress |
|-------------------------------------|---------------------------|-----------------|----------------------|------------------------|
| Environmental Audits by Head Office | Pointed items | 137 | 113 | 24 |
| | Demanded items | 151 | 105 | 46 |
| | Proposed items | 40 | 35 | 5 |
| | Total | 328 | 253 | 75 |
| Examination by External Parties | Not in conformity (major) | 0 | 0 | 0 |
| | Not in conformity (minor) | 110 | 100 | 10 |
| | Matters to be observed | 208 | 148 | 60 |
| | Total | 318 | 248 | 70 |
| Internal Audits in Workplaces | Not in conformity (major) | 10 | 10 | 0 |
| | Not in conformity (minor) | 400 | 388 | 12 |
| | Matters to be observed | 503 | 429 | 74 |
| | Total | 913 | 827 | 86 |

- Correction has been completed, except on such time-taking items as capital expenditure and audits conducted at the fiscal year end.
- Category of instructions issued as the result of environmental audits by Head Office
 - Pointed items: Immediate improvement required.
 - Demanded items: Improvement required to complete within 1 year.
 - Proposed items: Indication of items for which improvement is preferred, and advice.

■ Aim of Acquiring ISO 14001 Certification

In the 21st century the global environmental issues are becoming more and more serious. As to the environmental measures required of an enterprise, it is not sufficient any more to comply with the laws and regulations only. Strongly demanded of an enterprise is its autonomous and continual promotion of environmental conservation activities, based on its recognition that its business activities are associated with environmental impacts. In order to implement effectively the environmental pollution prevention and continual improvement activities, Sekisui Chemical Group is aggressive in introducing ISO 14001, the international standard for environmental management systems.

■ Objects of ISO 14001 Certification Acquisition

In acquiring ISO 14001 Certification, we started first with plants, because the level of their environmental impacts and loads to the surrounding areas were heavy. Then we extended the object to house sales companies due to their heavy environmental loads at the house construction sites. R&D institutes were also included in the object, as attention at the products development stage was essential to reduce the environmental loads of the products being developed.

■ Systems of Environmental Consideration at Products Development Stage

We have continued "Assessment of Environmental Impacts by Product" since fiscal 1993. At each step of the development planning, trial mass production and actual production, we assess the environmental impacts of our products throughout their entire life cycle from the raw material procurement to disposal, in order to reduce their environmental

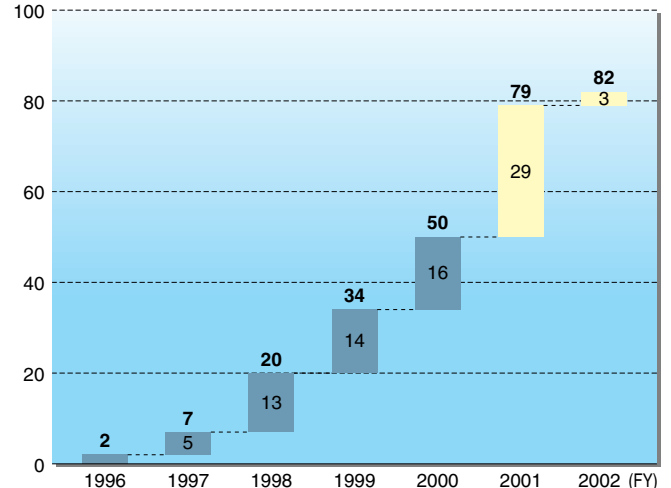
■ Progress of ISO 14001 Certification Acquisition

(Ref. P48 and P49)

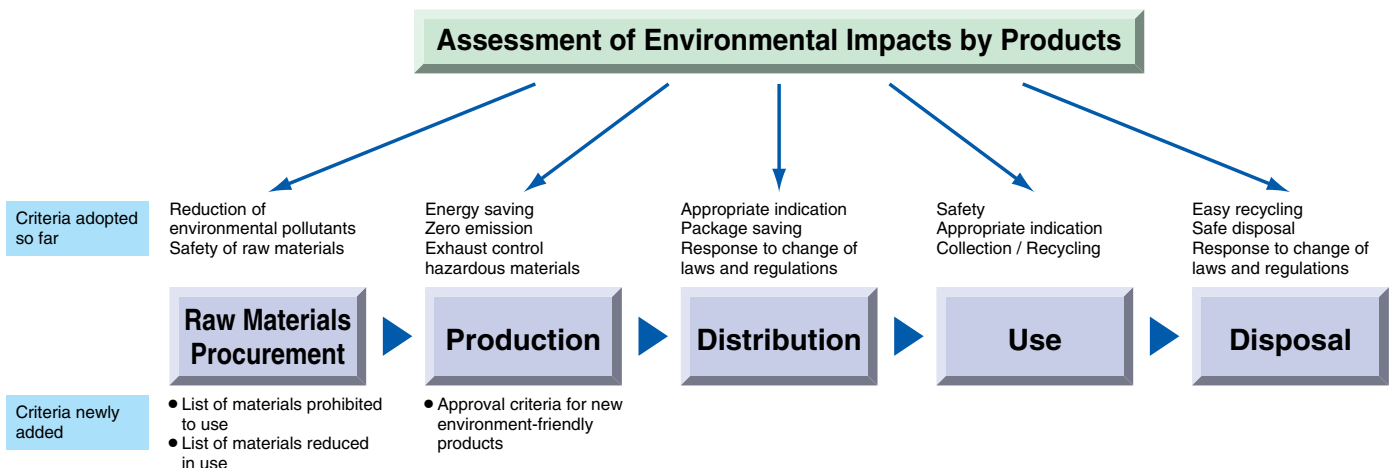
For our target that all 82 workplaces will have acquired the certification in fiscal 2002, we are promoting the activities not only in plants, but also in R&D institutes and house sales companies. 16 workplaces acquired the certification in fiscal 2000, resulting in the cumulative total of 50 against the target of 52 for that year. Only one of the selected domestic plants has yet to reach the goal. In the future, our activities will be focused on the house sales companies and also our overseas operations, in order to strengthen our management systems for further improvement of our environmental performance.

● Number of Workplaces with ISO 14001 Certification

(Cumulative number)



loads. In fiscal 2000, we added "List of Materials Prohibited or Reduced" and "Approval Criteria of Environment-friendly New Products" in order to level up our procedures. In the future, we will further add the Green Purchase Standards and LCA (Life Cycle Assessment) in order to extend the systems by which our assessment is made to a wider range and with increased strictness.



Environmental Accounting

In fiscal 2000, our Environmental Conservation Expenditure was ¥8.9 billion and the Economical Effects ¥11.3 billion. We could not meet our targeted indices with respect to CO₂ and energy, but steadily improved other subjects such as waste disposal.

■ Purpose of Environmental Accounting Introduction

Just prior to the 21st century we aimed at becoming an environment creating enterprise. To realize this, it is of utmost importance for us to grasp the cost and effect of environmental conservation activities and utilize these in our effective environmental management, as well as to obtain our stakeholders' understanding by fulfilling our accountability as an enterprise through precise disclosure of related information.

■ Environmental Accounting for fiscal 2000

Due to adoption of the internal company system in March 2001, we have summed up the figures in our environmental accounting for fiscal 2000 according to each company so that proper evaluation could be conducted for each company. Since fiscal 1999, also, we have extended the summation range and added 12 consolidated subsidiaries with heavy environmental loads.

■ Our Environmental Accounting

Our summation of expenditures and investments was conducted according to the guideline of the then Environment Agency of the Japanese Government issued in 2000. As to the economic effect, we have conducted summation by adding our own concepts to the effect items and the environmental indices in the "Environmental Accounting Guidebook II" issued in May 2001 by the Ministry of the Environment.

■ Summation of Environmental Accounting

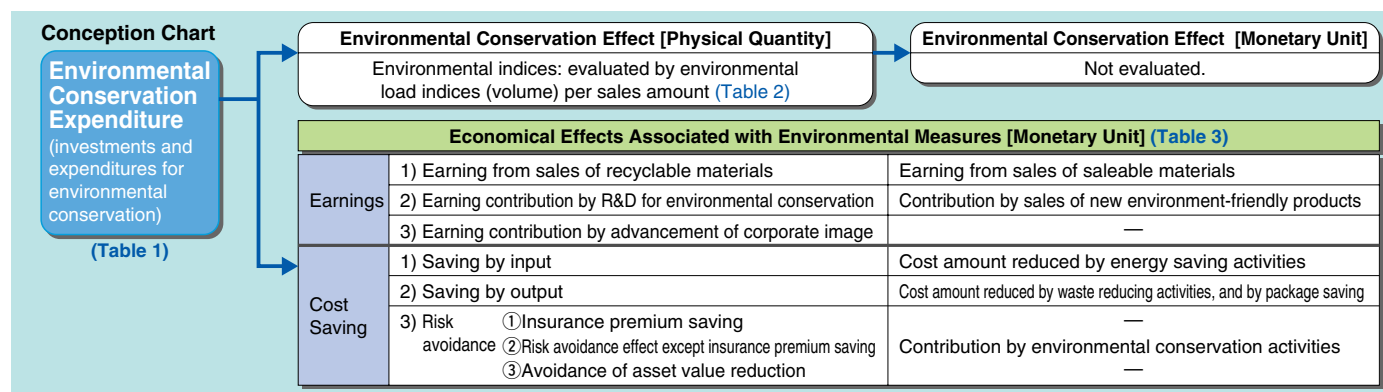
(1) Facilities for Summation:

- Housing Company
9 subsidiaries + 1 R&D institute + company head office
- Urban Infrastructure & Environmental Products Company
5 plants + 1 R&D institute + 4 subsidiaries + company head office
- High Performance Plastics Company
4 plants + 1 R&D institute + 8 subsidiaries + company head office
- Head Office
Sekisui Chemical Head Office + New Business Headquarters + others

(2) Summation Period: April 1, 2000 to March 31, 2001

(3) Principle of Summation:

- Depreciation amounts are the same as those of financial accounting.
- Investment amounts are based on approvals of budget during the fiscal period.
- Items that contain other than environmental conservation activities are pro-rata distributed by 10% increments.



■ Table 1 Environmental Conservation Expenditure

(Unit: ¥1 Mil.)

| Category | Items | Housing Company | | Urban Infrastructure & Environmental Products Company | | High Performance Plastics Company | | Entire Company (Note:1) | |
|--|---|-----------------|---|---|-----------------------------------|-----------------------------------|-------------------------|-------------------------|------------|
| | | Expenditure | Investment | Expenditure | Investment | Expenditure | Investment | Expenditure | Investment |
| 1) Within workplaces | Prevention of air pollution, water contamination, noise | 229 | 142 | 393 | 99 | 351 | 503 | 980 | 746 |
| | Prevention of global warming (energy saving), etc. | 35 | 122 | 24 | 69 | 90 | 74 | 150 | 266 |
| | Waste reduction, recycling, disposal treatment, etc. | 382 | 98 | 327 | 77 | 393 | 52 | 1,106 | 226 |
| 2) Up/downstream | Reduction of environmental load in containers and packaging. Payment difference by green purchase, etc. | 1 | 0 | 112 | 6 | 36 | 0 | 154 | 6 |
| 3) Management activities | Environmental education, ISO maintenance, environmental organizations maintenance, etc. | 153 | 0 | 338 | 0 | 307 | 1 | 941 | 1 |
| 4) R&D | Research and development | 251 | 73 | 1,185 | 195 | 880 | 397 | 2,544 | 845 |
| 5) Social activities | Contribution to society and disclosure of information | 43 | 4 | 135 | 0 | 35 | 0 | 883 | 53 |
| 6) Environmental damages | Response to oil leakage in plants | 5 | 0 | 0 | 0 | 0 | 0 | 5 | 0 |
| Total | | 1,099 | 439 | 2,514 | 446 | 2,092 | 1,027 | 6,763 | 2,143 |
| Items | Housing Company | | Urban Infrastructure & Environmental Products Company | | High Performance Plastics Company | | Entire Company (Note:1) | | |
| | R&D cost | Investment | R&D cost | Investment | R&D cost | Investment | R&D cost | Investment | |
| Total amount of R&D costs and investments in the fiscal period (in ¥1 Mil.) (Note:2) | | | | | | | | | |
| Ratio of amount related to environmental conservation activities to the total (%) | | | | | | | | | |
| | | 3.6 | 7.3 | 16.2 | 10.4 | 10.8 | 13.4 | 10.2 | 10.1 |

(Note 1) Total of 3 companies and Head Office (Note 2) R&D cost is the total of all consolidated companies; investments are calculated within the summation range.

Table 2 Environmental Conservation Effects [Physical Quantity]

| Environmental Conservation Effect | Environmental Load Indices (Total Volume) | | | | | | Environmental Indices/Comparative Indices (per sales amount) | | | | Self-evaluation | |
|--|---|--------|--------|--------------------|---|-----------------------------------|---|-------------------|----------------|---------|-----------------|---------|
| | Category of Effect | Items | Units | Results in FY 2000 | | | | Items | Units | FY 1999 | | FY 2000 |
| | | | | Housing Company | Urban Infrastructure & Environmental Products Company | High Performance Plastics Company | Entire Company (Note 1) | | | | | |
| Effect within the premises of workplaces | CO ₂ generation in production | K tons | 42 | 70 | 162 | 307 | CO ₂ generation (production + incineration) (Note 3) | Tons/¥1 Mil. | 0.662 (Note 4) | 0.680 | × | |
| | CO ₂ generation in incineration | K tons | 8 | 2 | 7 | 17 | | | | | | |
| | Power consumption | K Mwh | 71 | 160 | 148 | 389 | Energy consumption (power + fuel) (Note 5) | KI/¥1 Mil. | 0.353 | 0.364 | × | |
| | Fuel consumption | K Kl | 6 | 17 | 28 | 52 | | | | | | |
| | Generated waste | K tons | 32 | 17 | 20 | 70 | Waste total volume | Tons/¥1 Mil. | 0.154 | 0.147 | ○ | |
| | Outside treatment | K tons | 2 | 5 | 1 | 8 | Outside treatment | Tons/¥1 Mil. | 0.041 | 0.017 | ○ | |
| Up/downstream effect | Pollutant emission (Note 6) | Tons | 52 | 361 | 2,187 | 2,615 | Pollutant emission | Tons/¥1 Mil. | 0.0063 | 0.0058 | ○ | |
| Other environmental conservation effects | CO ₂ reduction by photo-voltaic generation | Tons | 15,469 | — | — | 15,469 | CO ₂ reduction by photo voltaic generation | Tons | 5,370 | 15,469 | ○ | |
| | ISO 14001 Certification | Number | 11 | 2 | 3 | 16 | ISO 14001 Certification | Cumulative number | 34 | 50 | ○ | |
| | Zero emission attained | Number | 3 | 0 | 2 | 5 | Zero emission attained | Cumulative number | 6 | 11 | ○ | |

(Note 3) Coefficients officially announced by the Ministry of the Environment applied in CO₂ conversion.

(Note 4) Calculated by applying coefficients as of fiscal 2000.

(Note 5) Coefficients officially announced by Ministry of Economy, Trade and Industry applied in crude oil conversion.

(Note 6) Targeted materials in accordance with standards specified by PRTR and Japan Chemical Industry Association.

Table 3 Economical Effects Associated with Environmental Measures [Monetary Unit]

(Unit: ¥1 Mil.)

| Category of Effect | Economical Part of Environmental Conservation Effects | | | | Sources |
|--|---|---|-----------------------------------|-------------------------|---------------------------------------|
| | Housing Company | Urban Infrastructure & Environmental Products Company | High Performance Plastics Company | Entire Company (Note 1) | |
| Earning from sales of valuable materials | 4 | 7 | 52 | 64 | Segregation and recycling of waste |
| Cost amount reduced by package saving | 14 | 164 | 35 | 213 | |
| Cost amount reduced by energy saving activities | 5 | 260 | 367 | 632 | |
| Cost amount reduced by waste reducing activities | 23 | 27 | 1,386 | 1,436 | Including resources saving activities |
| Sub-total (actual effect) | 46 | 458 | 1,840 | 2,345 | |
| Contribution portion of environmental conservation activities | 566 | 3,031 | 2,121 | 5,718 | Added value of facilities (Note 7) |
| Contribution portion of R & D of environment-friendly new products | 2,448 | 429 | 416 | 3,293 | (Note 8) |
| Sub-total (estimated effect) | 3,014 | 3,460 | 2,537 | 9,011 | |
| Total | 3,060 | 3,918 | 4,377 | 11,356 | |

(Note 7) Environment-friendly new products expected.

(Note 8) Environment-friendly new product sales x ratio of environmental R&D expenditure to total R&D expenditure.

Evaluation Indices of Environmental Conservation Effects

As the items by which environmental conservation effects are evaluated in fiscal 2000, we have selected the following main projects in STEP-21, our middle term environmental plan; CO₂ generation, energy use, waste (volume generated and volume treated outside), pollutants emission, acquisition of ISO 14001 Certification and the number of zero emission attaining facilities. As to environmental load reduction of our products, we have calculated CO₂ reduction effected by photovoltaic generation by the houses we sold. To express the effect within the premises of workplaces, which relates to increase/decrease of production, we adopt as index the used volume per ex-godown Unit.

Effects of Our Activities in fiscal 2000

- 1) Our environment conservation cost in fiscal 2000 was ¥6.8 billion in expenditure and ¥2.1 billion in investment, totaling ¥8.9 billion. The economical effects were ¥11.3 billion, consisting of ¥2.3 billion actual effects and ¥9.0 billion estimated effects. So, taking the estimated effects into account, we are of the opinion that our cost has been well compensated.
- 2) With respect to environmental conservation effects in terms of volume, CO₂ generation and energy use have exceeded those in fiscal 1999. This was caused by the increase of production that required more energy despite the result of our reduction activities and the fall in products unit price. On all other items we have steadily achieved improvement.

Future Proceedings

- 1) With the consolidated basis, we will extend and enhance the summation range centering on our facilities with heavy environmental loads.
- 2) We will continue to review the calculation method of the monetary unit of economical effects related to environmental conservation measures.

Summary of Our Environmental Conservation Activities

Sekisui Chemical Group's involvement in environmental matters, and our main activities in fiscal 2000 are summarized as below:

■ Involvement of our Conservation Activities in the Environment per each Business Process

Environmental conservation activities of Sekisui Chemical Group are summarized in matrices of each business process and involvement in the environment.

The framework of this Environmental Report 2001 is based on these matrices.

The underlined words and phrases indicate the matters that are reported first in this issue, or explained more concretely than in our Environmental Report 2000.

| Business Step Environment | Research & Development | Production | Sales · Distribution | Social Activities, etc. |
|--|---|--|---|--|
| Within Workplaces | Green purchase (*P20) Evaluation of environmental impacts of product (P5) | Emergency response (P21) <u>Soil contamination survey (P21)</u> | Package saving (P21) | Education of employees (P22) Education on environmental conservation Acquisition of official qualifications <u>Sekisui Chemical's Nature Study Course (P23)</u> |
| Local Environment and Community | <u>Development of environment-friendly products (P24)</u> Development of environment conserving and recycling technologies (P30) | <u>Zero emission (P12)</u> <u>Reduction of waste generation (P14)</u> Pollutants management (P31) Prevention of air and water pollution (P32) | Collection and recycling of used products (P34) Product information supply (P33) Countermeasures against sick house syndrome (P33) | Nature protection activities at each workplace (P38) <u>Biotope at workplace (P36)</u> <u>Communication (P33)</u> |
| Observance of laws and regulations, response to accidents and complaints (P32) | | | | |
| Global Environment | <u>Development of environment-friendly products (P24)</u> | CO ₂ reduction (P40) Energy saving (P41) Total abolishment of substitute flon (HCFC) (P40) | Sale of houses equipped with photovoltaic generation systems (P42) Energy saving (P42) Introduction of environment-friendly cars (P42) <u>Green distribution (P42)</u> | Support of nature protection activities outside Japan (P43) |

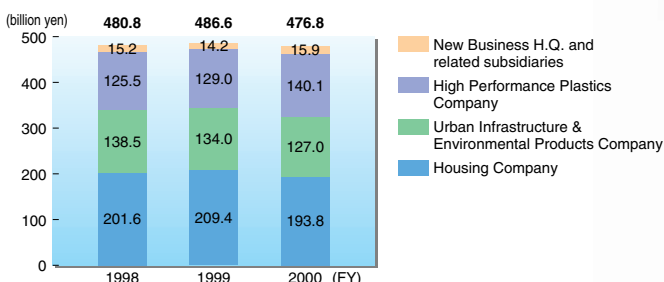
■ Main Relevant Laws and Regulations

- Related to prevention of pollution:
Air Pollution Control Law, Water Pollution Control Law, Offensive Odor Control Law, Noise Regulation Law, Vibration Regulation Law, Sewerage Law, Law Concerning Special Measures against Dioxins, Seto Inland Sea Conservation Law, etc.
- Related to waste disposal and recycling:
Wastes Disposal and Public Cleansing Law, Container Packaging Recycling Law, Building Materials Recycling Law, etc.
- Related to chemical materials:
Pollutants Release and Transfer Register (PRTR) Law, Ozone Layer Protection Law, etc.
- Related to energy:
Energy Saving Law, etc.
- Others:
Rules and regulations of local governments, agreements, etc.

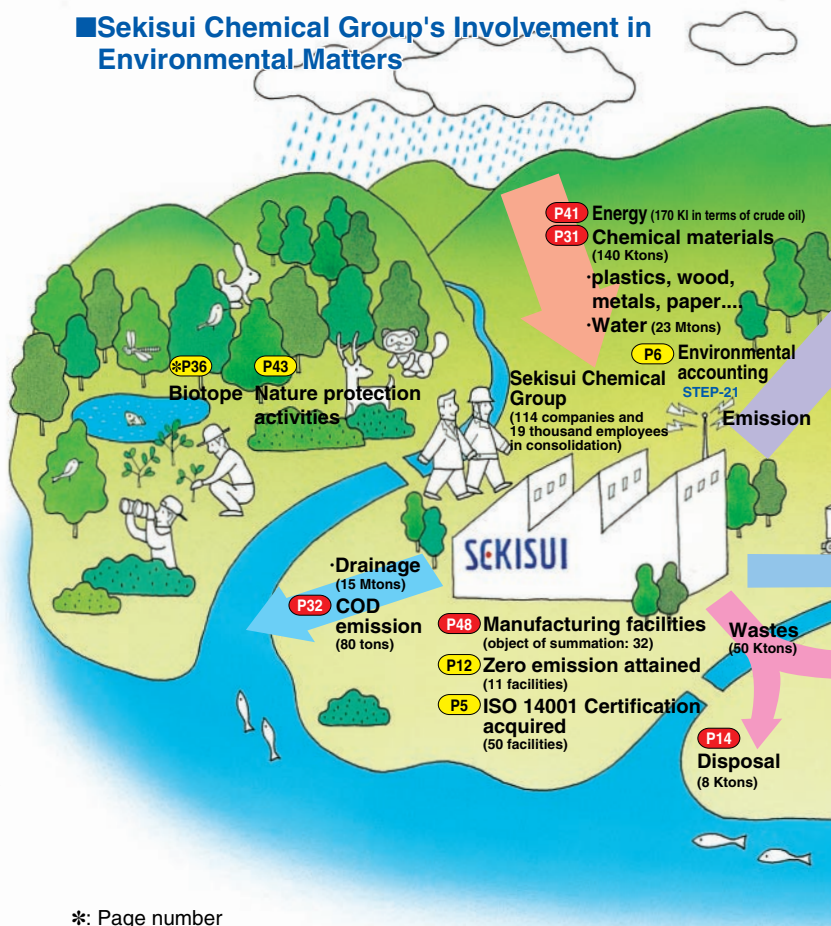
■ Produced Sales Amount of Companies

(Ex-godown basis)

These figures are the denominators to calculate the effects per ex-godown Unit.



■ Sekisui Chemical Group's Involvement in Environmental Matters



*: Page number

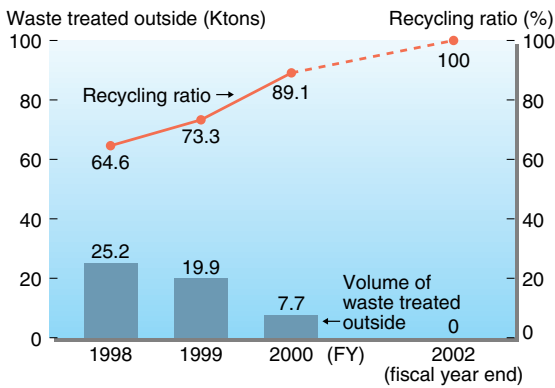
■Results of our Main Activities in fiscal 2000

●11 plants in total attained zero emission (P12)

Since 1998 we have tackled zero emission activities "to recycle all and every kind of waste generated in our workplaces". In fiscal 2000, 5 of our plants attained zero emission, bringing the total number to 11.

We also started in fiscal 2000 our internal certification system to award a certificate signed by our President to the successful workplaces.

●Transition of waste treated outside and recycling ratio

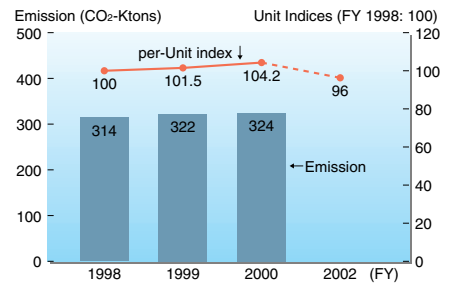


●Most challenging CO₂ reduction activities (P40)

By our energy saving and related activities, we managed to reduce CO₂ emission by 7,700 tons approx., but could not prevent the increase in total volume.

Compared to fiscal 1998, CO₂ emission increased by 3.4% in emitted volume and 4.2% per ex-godown Unit.

●Transition of CO₂ emission volume and unit



●Biotope developed jointly with local communities (P36)

We are planning to make biotopes on our premises. In fiscal 2000, we selected Kyushu Sekisui Industry Co., Ltd. as our model facility. Minimizing the use of construction machines, our employees managed to construct a biotope mostly by hand, jointly with the local people. As to tree species, we received valuable advice from the Wild Bird Society of Japan. The biotope was inaugurated in April, 2001 and opened to the public.



●Development of environment-friendly new products (P24) (New Energy Award received)

We place priority on development of environment-friendly products for energy saving, resources saving and use of recycled materials. We put 35 of such products on the market in fiscal 2000. We received the New Energy Award from the Minister of Economy, Trade and Industry for our "Photo Voltaic/Thermal Hybrid System for Household Use".



●Summation range of our environmental accounting extended (P6)

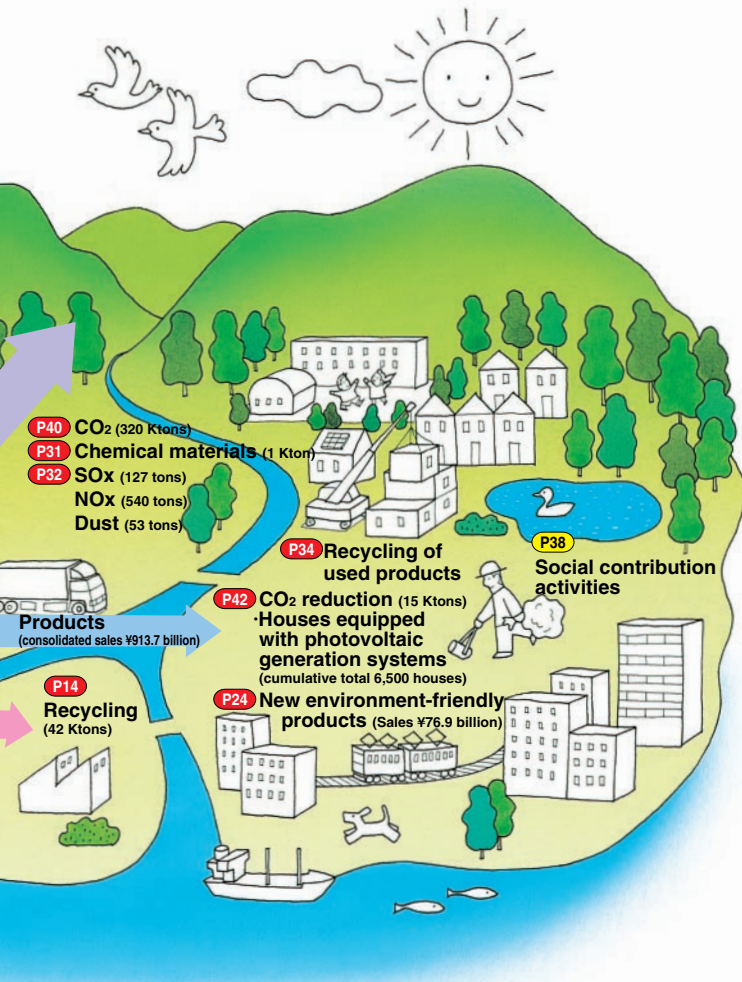
In fiscal 2000, we conducted summation according to each of the three companies. We also extended the objects of summation, designating all the objects of our environmental report as the objects of our environmental accounting.

1. Environmental Conservation Expenditure

| Category | Expenditures (¥1 billion) | Investments (¥1 billion) |
|-----------------------|---------------------------|--------------------------|
| Within workplaces | 2.24 | 1.24 |
| Up/downstream | 0.15 | 0.01 |
| Management activities | 0.94 | 0.00 |
| R & D | 2.54 | 0.84 |
| Social activities | 0.88 | 0.05 |
| Environmental damage | 0.01 | 0.00 |
| Total | 6.76 | 2.14 |

2. Economical Effects

| Sources | Amount of Effects (¥1 billion) |
|---|--------------------------------|
| Earnings from sales of saleable materials | 0.06 |
| Package saving | 0.21 |
| Energy saving | 0.63 |
| Waste reduction | 1.44 |
| Actual effects sub-total | 2.34 |
| Estimated effects | 9.01 |
| Total | 11.35 |



Our Middle Term Environmental Plan "STEP-21" and its Progress Status

In fiscal 2000, we achieved success in 24 out of 28 targets. In fiscal 2001, we added 8 more targets to further our activities.

Sekisui Chemical Group has been promoting its environmental conservation activities since fiscal 1999, when our middle term environmental plan "STEP-21" was established specifying the targets in detail. Our targets and results in fiscal 2000 are indicated in the table below. We achieved excellent results in zero

emission, EMS structuring, environment-friendly new products and biotope construction on our premises. However, we could not attain our targets regards waste and CO₂ emission. The reason is that the indices adopted for calculation are the units per sales amounts that were largely affected by the severe econom-

Progress Status of Our Middle Term Environmental Plan "STEP-21" (FY 1999~FY 2000)

| Policy | Items | Targets for fiscal 2000 | | |
|--|--|---|--|---|
| POLICY 1 Environmental Conservation | ①Promotion of zero emission | Plants | Attainment of zero emission in 3 model plants | |
| | | New house building sites (Waste from new house construction) | — | |
| | ②EMS structuring (Acquisition of ISO 14001 Certification) | Waste reduction | Minimum 13% reduction of waste per ex-godown Unit against fiscal 1998 | |
| | | ③Introduction of green purchase | Acquisition by 52 workplaces in cumulative total | |
| POLICY 2 Creation of Good Environment | ①Promotion of main products collection and recycling | System structuring | Completion of system structuring in model districts and nation-wide Targeted products: PVC Pipe & Fittings, LP Pipe, FRP Bathtubs, Rain Gutters, PE Film for agricultural use | |
| | | Elevation of recycling ratio | — | |
| | ②System structuring for collection and recycling of waste from residential buildings | — | | |
| | ③Development of environment-friendly new products | — | Minimum 80 items in cumulative total under the new approval criteria to be put on the market | |
| | | — | Environment-friendly new products to be 15% minimum of the total sales of new products | |
| | ④Development of environment conserving and recycling technologies | — | | |
| ⑤Introduction of LCA (Life Cycle Assessment) | — | | | |
| POLICY 3 Information Disclosure | ①Response to environmental subjects | 1) Reduction of CO ₂ emission | Minimum 2% reduction of CO ₂ emission per ex-godown Unit against fiscal 1998 | |
| | | 2) Promotion of green distribution | — | |
| | | 3) Promotion of energy saving | Plants | Minimum 2% reduction per ex-godown Unit against fiscal 1998 |
| | | | Head Office | Head Office : minimum 1% reduction of power consumption against the previous year |
| | | | R&D Institutes | Minimum 2% reduction of electric power at the model institute against fiscal 1998 |
| | | 4) Increased use of environment-friendly cars | Promotion of the use of energy saving cars and low polluting cars | |
| | | 5) System structuring for pollutants management, and reduction of their release | Minimum 15% reduction per ex-godown Unit of release/transfer of materials specified in the pilot business plan of the Environment Agency against fiscal 1998 | |
| | | 6) Promotion of package saving | Minimum 10% reduction per variable cost Unit on the specified products against fiscal 1998 | |
| | | 7) Countermeasures against sick house syndrome | Measurement of formaldehyde concentration before hand-over to customers | |
| | | 8) Total abolishment of substitute flon (HCFC) | Completion of technological survey | |
| | 9) Total abolishment of dichloromethane for washing use | Minimum 50% reduction against fiscal 1998 | | |
| | 10) Survey of soil contamination | — | | |
| | ②Nature protection activities | 1) Support of nature protection activities outside Japan | Support in cooperation with Keidanren Nature Conservation Fund | |
| | | 2) Nature protection activities in local communities | Minimum 5 Activity Points for conservation at main plants Attainment of 50% employees' participation | |
| 3) Education of activity leaders on Sekisui Chemical's Nature Study Course | | Education of 200 activity leaders in cumulative total | | |
| 4) Biotope construction at our workplaces | | Completion of basic construction at the model workplace | | |
| ③Information disclosure | 1) Practice of environmental accounting | Annual publication | | |
| | 2) Publication of environmental report | Annual publication and opening to the public on our website | | |

ic conditions during the year. The level of environmental conservation activities requested of enterprises is becoming stricter year by year. Entering the second half of STEP-21 in fiscal 2001, we are promoting our middle term plan as Version 2001 with more cases and higher targets.



Ryuaki Nasu
Director in charge of
Environmental Affairs

"STEP-21" Version 2001 (FY 2001~FY 2002)

| Actual Results in fiscal 2000 | Evaluation | Page |
|--|------------|------|
| Attained by 11 plants including 3 models | ◎ | 12 |
| (Completed recycling procedures at the model districts in Tokyo and Osaka) | — | 34 |
| 1.0% increase | × | 14 |
| Acquired by cumulative total of 50 plants, R&D institutes and house sales companies | ○ | 5 |
| Actual Results in fiscal 2000 | ○ | 20 |
| Completion of preliminary survey on suppliers, raw materials, parts and components | ○ | 20 |
| PVC Pipe & Fittings, LP Pipe: nation-wide system structured (1999) | ◎ | 34 |
| FRP Bathtubs: system in the Kinki district structured | ◎ | |
| Rain Gutters: study of model system in the Ibaraki district | ○ | |
| PE Film for agricultural use: participated in The Conference for Appropriate Treatment of Waste Plastics | ○ | |
| (PVC Pipe & Fittings: recycling ratio 44%) | — | 34 |
| (LP Pipe: recycling ratio 10%) | — | 34 |
| — | — | 34 |
| 108 product items in cumulative total | ◎ | 24 |
| 47% | ◎ | |
| (Progress of inorganic polymer and aggregate-making technologies from waste plastics) | — | 30 |
| — | — | — |
| 4.2% increase | × | 40 |
| — | — | 42 |
| 6.1% increase | × | 41 |
| 1.6% reduction | ○ | 42 |
| 7.8% reduction (Kyoto Research & Development Institute) | ◎ | 42 |
| 181 cars purchased, representing 20% of the total car renewal and registration | ○ | 42 |
| 12% reduction of emission per Unit (¥1 Mil. produced sales) | ○ | 31 |
| 3.6% reduction (Housing Company), 0.4% increase (other internal companies) | × | 21 |
| Measurement implementation ratio at the time of handover: 77% | ○ | 33 |
| Technological survey completed on solvent blowing and water blowing | ○ | 40 |
| 47% reduction | ○ | 31 |
| (Survey completed on chemical materials usage) | — | 21 |
| Support of 9 projects outside Japan | ○ | 43 |
| 1 plant with less than 5 points; 29 plants with 10 or more points | ○ | 38 |
| 73% participation ratio | ◎ | |
| 181 leaders educated | ○ | 23 |
| Basic construction finished, and subsequent works started with the local community | ◎ | 36 |
| Publicized in our Environmental Report 2000 | ○ | 6 |
| Environmental Report 2000 published in July, 2000 Revision of our website in August 2000 | ○ | — |

| Targets in fiscal 2002 |
|---|
| Attainment of zero emission at 34 plants |
| Attainment of zero emission at construction sites throughout Japan |
| Minimum 25% reduction of waste per ex-godown Unit at plants against fiscal 1998 |
| Acquisition by 76 domestic plants, R&D institutes and house sales companies, and 6 overseas plants in cumulative total |
| Continued into fiscal 2002 |
| Continuation of operation for raw materials, parts and components as started in fiscal 2001 |
| System structuring nation-wide and the model districts completed Targeted products: FRP Bathtubs, Rain Gutters, Roofing Tiles, "Hanayaka" PE Film for agricultural use |
| PVC Pipe & Fittings: minimum 80% of materials recycling (fiscal 2005) LP Pipe: minimum 30% of materials recycling (fiscal 2002) |
| Completion of recycling system throughout Japan based on "Building Materials Recycling Law" |
| Minimum 100 product items in cumulative total to be put on the market |
| Environment-friendly new products to be minimum 30% of the total sales of new products |
| Completion of 10 environment conserving and recycling technologies |
| Implementation by each internal company and New Business H.Q. |
| Minimum 4% reduction of CO ₂ emission per ex-godown Unit against fiscal 1998 |
| Completion of model systems |
| Minimum 4% reduction per ex-godown Unit against fiscal 1998 |
| Head Office: minimum 4% reduction of power consumption against fiscal 1998 Tokyo Head Office: minimum 2% reduction of power consumption against fiscal 2000 |
| Other offices: minimum 4% reduction of power consumption against fiscal 1998 |
| Minimum 50% of the renewed or registered company cars leased from Sekisui Lease Co., Ltd. |
| Minimum 30% reduction per ex-godown Unit of the chemical materials specified as Class 1 in PRTR Law against fiscal 1998 |
| Minimum 20% reduction of per variable cost Unit of the targeted products against fiscal 1998 |
| Achievement of lower toluene and xylene concentration than the guideline specification at the time of handover to customers |
| Aiming at total abolishment by the end of fiscal 2005 |
| Total abolishment of use for washing purpose |
| Planned implementation of soil contamination survey of plant premises |
| Support in cooperation with Keidanren Nature Conservation Fund |
| Achievement of minimum 10 Activity Points at main plants |
| Achievement of 100% employee participation |
| Education of cumulative total of 250 activity leaders |
| Completion of the first biotope with the local community |
| Annual publication |
| Annual publication, publication on our website, disclosure of information |

Note: Evaluation standards ◎...Target well achieved ○...Target mostly achieved ×...Target not achieved

Toward the target achievement by all 34 plants in fiscal 2002, we are promoting activities for zero emission in addition to industrial waste disposal. In fiscal 2000, 5 plants achieved their targets, ahead of schedule, bringing the total to 11.

◆ **Involvement of the entire Sekisui Chemical Group**

Naturally our planet comprises various fundamental recycling actions. Plants obtain nourishment from the soil, and become provisions for animals. And, then, with the help of microscopic organisms, animals return to the soil in the course of time.

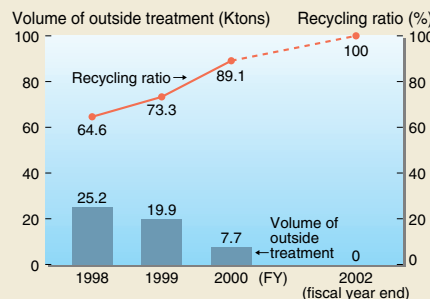
Water, the source of all life, provides our planet with favor and benefaction by constantly recycling its form as sea, vapor and rain. However, the life style of human beings does not accord with the cycle of nature. Excessive industrial activities cause extensive damage to the planet by generating large quantities of extraneous material and giving heavy loads to our environment.

Since its early stage, Sekisui Chemical Co., Ltd. has rendered serious consideration to the waste disposal issue, and eagerly promoted waste reduction activities. In 1979, we established a heat recycling center (HRC) in our Shiga-Minakuchi Plant, for the purpose of reducing outside treatment as well as promoting thermal recovery. In 1991 through 1993, we deployed a program named "Waste 50 Operation" which reduced the volume of outside treatment by more than 50%.

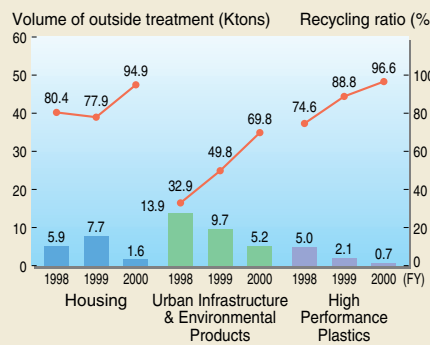
In order to further develop this activity, our Environmental Management Committee, comprising the top management, decided to implement zero emis-

sion activities in Sekisui Chemical Group in 1998, and started action immediately. Since then, we have promoted these activities progressively, not by Sekisui Chemical Co., Ltd. alone but by our entire group. It is our target that a total of 34 plants of our group (9 Sekisui Chemical Co., Ltd. plants and 25 subsidiary plants) will have all the waste sent off their premises recycled by the end of fiscal 2002.

● **Transition of outside treatment volume and recycling ratio of wastes**



● **Transition of outside treatment volume and recycling ratio per company**



◆ **11 Plants Achieved Zero Emission 1 - 2 Years ahead of Schedule**

Sekisui Chemical Co., Ltd. comprises three internal companies, namely, Housing, Urban Infrastructure & Environmental Products, and High Performance Plastics, engaged in diversified business areas from housing, plastic molded products to chemicals and medical supplies. Therefore, types and kinds of raw materials used also cover a very wide range, resulting in the generation of various and diversified waste.

In order to realize zero emission efficiently and speedily, we considered that the effective means were to designate trial plants at first and deploy the promotion activities to other facilities horizontally. Categorizing the targeted plants in three groups, we set up the schedule for Group 1 to achieve zero emission by the end of fiscal 2000, Group 2 by the end of fiscal 2001 and Group 3 by the end of fiscal 2002.

By the end of fiscal 1999, Shiga-Minakuchi Plant, Kyushu Sekisui Industry Co., Ltd., Sekisui Film Nishinohon Co., Ltd. (Taga Plant) and Sekisui Board Co., Ltd. (Minakuchi Plant) in Group 1 achieved zero emission one year ahead of the planned schedule. Musashi Plant and Nishinohon Sekisui Industry Co., Ltd. in Group 2 achieved the target two years early. By the hori-

● **Sekisui Chemical Group Schedule for Zero Emission**

| Group | 1998 | 1999 | 2000 | 2001 | 2002 (FY) | Targeted Plants |
|-------------------------|------|-------------------|-------------------|------|-----------|---|
| Group 1 model plants | | | 4 plants achieved | | | Shiga-Minakuchi Plant, Sekisui Board Co., Ltd. (Minakuchi Plant), Kyushu Sekisui Industry Co., Ltd., Sekisui Film Nishinohon Co., Ltd. (Taga Plant) |
| Group 2 Plants | | 2 plants achieved | 5 plants achieved | | | Shiga-Ritto Plant, Gunma Plant, Nara Plant, Tokyo Plant, Nitta Plant, Amagasaki Plant, Musashi Plant, Sakai Plant, Okayama Sekisui Industry Co., Ltd., Kitanihon Sekisui Industry Co., Ltd., Higashinohon Sekisui Industry Co., Ltd., Kanto Sekisui Industry Co., Ltd., Tokyo Sekisui Industry Co., Ltd., Chubu Sekisui Industry Co., Ltd., Kansai Sekisui Industry Co., Ltd., Chugoku Sekisui Industry Co., Ltd., Nishinohon Sekisui Industry Co., Ltd., Sekisui Board Co., Ltd. (Gunma Plant) |
| Group 3 Plants | | | | | | Hokkaido Sekisui Industry Co., Ltd., Toto Sekisui Industry Co., Ltd., Sekisui Techno Seikei Higashinohon Co., Ltd., Sekisui Techno Seikei Co., Ltd., Tokuyama Sekisui Industry Co., Ltd., Shikoku Sekisui Industry Co., Ltd., Sekisui Film Hokkaido Co., Ltd., Sekisui Film Higashinohon Co., Ltd., Sekisui Film Kyushu Co., Ltd., Sekisui Kako Co., Ltd., Sekisui Kako Co., Ltd. (SOF Business Facility), Vantec Co., Ltd. |

■ Facilities : Achieved in fiscal 1999
- - - : Plans
■ Facilities : Achieved in fiscal 2000
— : Results
■ Facilities : Started in April, 2001

MISSION

zonal deployment of their activities to the other plants, five more plants in Group 2 achieved the target one year early by the end of fiscal 2000.

In fiscal 2001, we aim at the achievement by all the rest of plants in Group 2, and promote aggressive zero emission activities in Group 3 including the newly targeted plants.

◆ Our Philosophy: "Every Little Thing Counts".

The concept "zero emission" was advocated in 1994 by Mr. Gunter Pauli, then advisor to the president of the United Nations University, headquartered in Tokyo. He called for the establishment of a society with zero waste generation and total resources recycling, to deal with the 20th century society that was based on mass production, mass consumption and mass waste. This zero waste policy has been aggressively elaborated mainly by private industries from the production process through the recycling of generated waste. Upon starting our zero emission activities, we decided to target not only industrial waste generated in the production processes, but also all waste generated in our offices, welfare facilities, etc., including paper scraps, paper cups, cigarette butts, and so forth.

We define our zero emission as "the total recycling of all the waste generated in our workplaces". Based on this we are promoting zero incineration without thermal recycling, and no landfill inside or outside of our premises.

● Zero Emission Achievement Criteria

- ① Contracted incineration must involve thermal recycling only, not landfill inside or outside of facilities. (Recycling ratio: 100%)
- ② Contractors must be specified and recycling methods be made precise.



Exhibition of zero emission activities (Sekisui Film Nishinohon, Taga Plant)



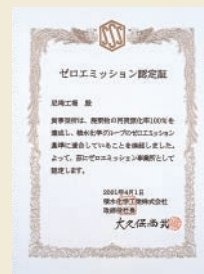
Segregated waste collection station (Musashi Plant)

◆ Zero Emission Certification System based on strict Evaluation Criteria

Waste management at a higher level is necessary to maintain the zero emission condition after it has been achieved. In fiscal 2000 we newly started a system for internal examination and certification by uniform evaluation criteria named "The Zero Emission Achievement Evaluation List."

This list comprises 25 items including, ① compliance with the zero emission achievement criteria set as the minimum condition, ② strict observance of related laws and regulations, ③ complete rules and systems for waste segregation as well as clearly legible signs, ④ adequate facilities for waste treatment, and ⑤ planning and control for waste reduction. Based on this list, a team, comprising members from Head Office, internal companies and the target-achieved plants, examines the performance on each item in a 1 to 3 ranking evaluation system, and certifies the plant has achieved zero emission if its rank is 2 or 3 in all items. The successful plant receives the certificate from the President.

Those certified plants are continuing their activities to elevate their ranking to 3 in all items. Our plants aim at leveling up from "zero emission achieved plants" to plants where our zero emission activities are clearly visible to all visitors, and are capable of transmitting information to the outside as leaders in their local communities and business circles.



ZERO EMISSION CERTIFICATE

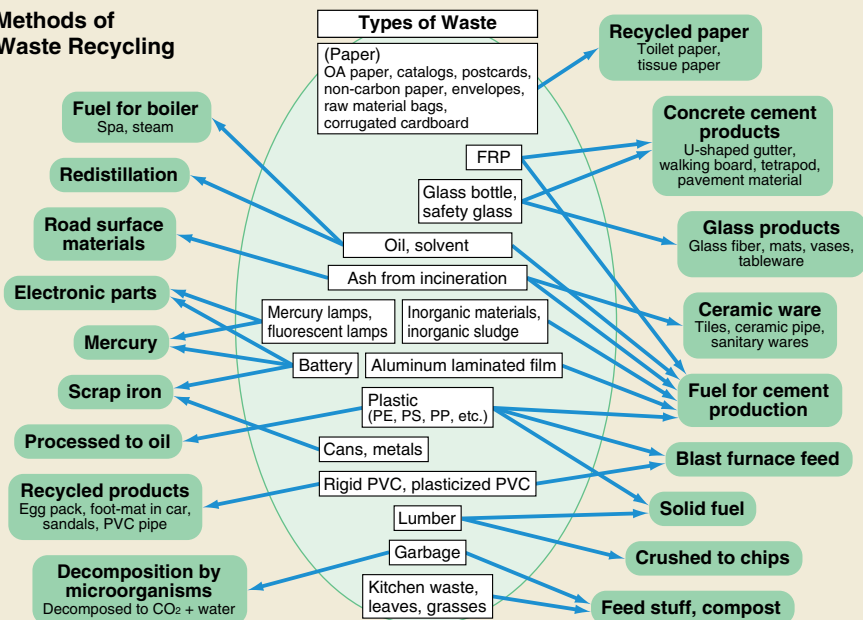
Amagasaki Plant

This is to confirm that you have achieved one hundred percent (100%) recycling of waste, thereby complying with the Zero Emission Standards of Sekisui Chemical Group. It is hereby certified that you are designated as a "Zero Emission Plant".

April 1st, 2001
Sekisui Chemical Co., Ltd.
(Signed and sealed) **Naotake Okubo**
President & Representative Director

(Translation)

● Methods of Waste Recycling



FEATURE I (cont.)

We are continuing our activities for the target of waste reduction by 25% per ex-godown Unit in fiscal 2002 against fiscal 1998. Despite a 1% per Unit increase in fiscal 2000, we reduced the total waste volume.

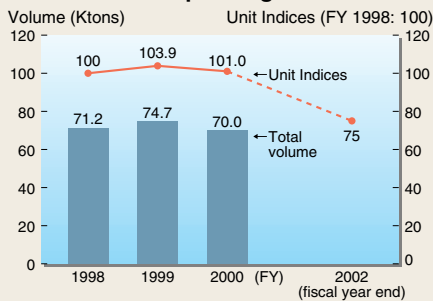
◆ Our Efforts for Waste Reduction

The objective of zero emission activities is to totally nullify such waste that was previously destined for landfill or incineration. Our understanding of zero emission achievement is to return to zero in order to start over. Zero emission is achieved not only by means of recycling but also by waste reduction and reuse. In our middle term environment plan "STEP-21", our target by the end of fiscal 2002 is a minimum reduction of 25% per ex-godown Unit against fiscal 1998. Despite our various efforts, reduction per Unit progressed nearly on the same level in fiscal 2000. In the future we will further endeavor for reduction of waste volume.

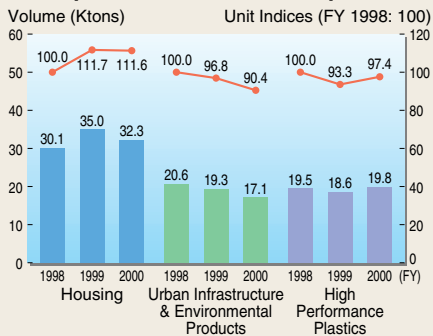
● Effective Efforts to reduce Waste in Volume and per Unit

| | Effective efforts |
|---|--|
| Housing Company | Sand blast abolished by changing paints Edge part of external wall material utilized as vibration control weight Package saving for delivered parts Drainage equipment replaced by a type that does not require use of activated charcoal Silica sand abolished by changing adhesives Amount of PP strapping reduced Washing frequency and amount of disposed paint reduced by increase of tanks |
| Urban Infrastructure & Environmental Products Company | Recycling of disposed PVC materials and cuttings (used for making pipes) Recycling of product edge parts (used as production starting material) |
| High Performance Plastics Company | In-line recovery rate improved Reuse of cuttings by pelletizing Reuse of crushed edge parts to make other products |

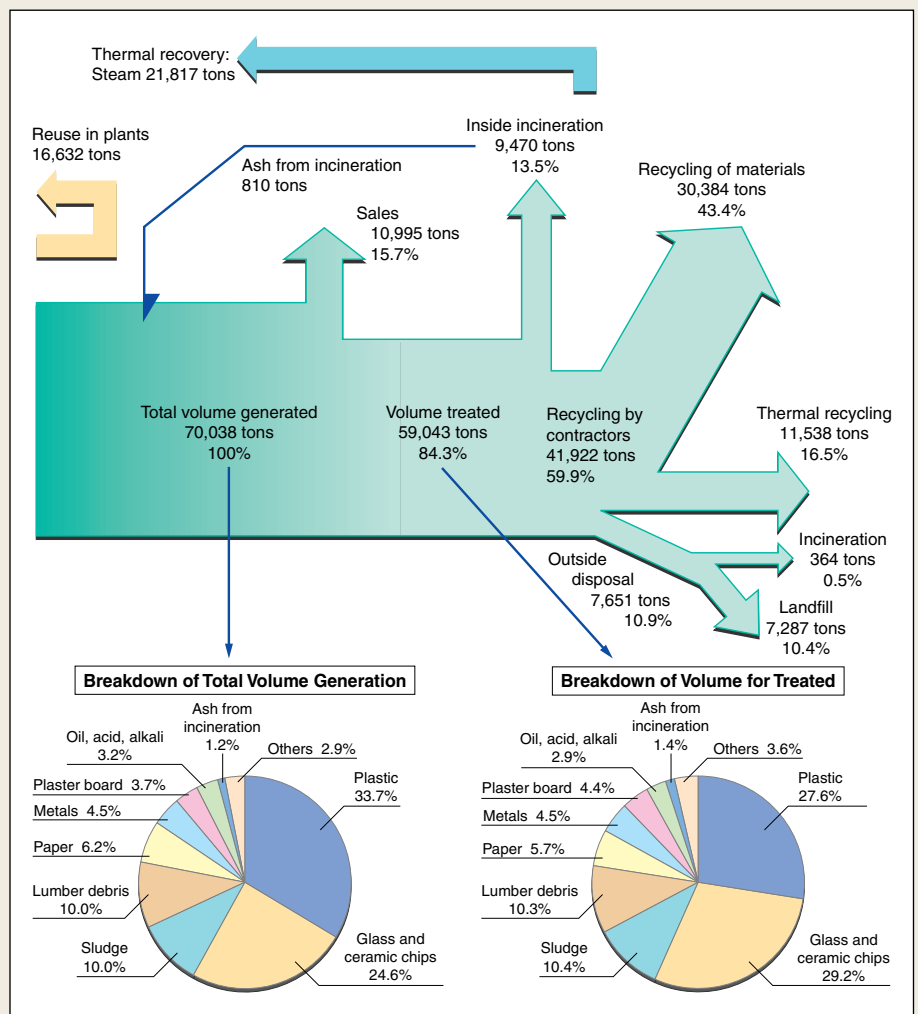
● Transition of total waste generation in volume and per ex-godown Unit



● Transition of total waste in volume and per Unit of internal companies



● Status of Waste Generation and Treatment



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We are developing our unique technologies to make practical use of waste.

◆ New Technologies to make practical Use of Waste

The essence of zero emission is to promote its continuation and upgrade it for constant improvement of the environment.

We are structuring a system for continual realization of zero emission, not only by activities at the zero emission achieved plants, but by the recycling of collected waste as well as the development of applications and technologies to use it as raw material. One example is "Synthelite" that is the external wall material for our houses. Edge parts are separated into wood chips and cement to be reused as raw material for "Synthelite".

Having set up their recycling centers, the Gunma and Minakuchi plants of Sekisui Board Co., Ltd. are promoting zero emission activities and contributing to effective use of resources.

We are also developing recycling technology to make aggregate for concrete out of PVC and other plastic waste. The characteristic point of this technology is to apply special coating to the surface of crushed plastic waste in sizes of max. 5mm, in order to strengthen their adhesion to concrete cement. At present, this technology is in the evaluation process of practical application as soundproof walls for highways, water penetration pavement materials and others.

Outline of Our Technology to make Aggregate for Concrete from Plastic Waste

- 1. Purpose** ①Zero emission of waste that is difficult to be recycled
②Establishment of collection and recycling technology

2. Capital Expenditure ¥190 million

<Profile of equipment> ●Building 7mX40m

●Treatment capacity 600 kg/hour

Completed at the end of March 2001. Located in Shiga-Ritto Plant

3. Project to Make Aggregate from Plastic Wastes

▶ Equipment Introduction, Evaluation, Development of Applications

4. Development of Applications

| | |
|--------------------------|--|
| Precast Concrete Cement | Parts for exterior structure of houses |
| | Soundproof barriers for roads |
| Water Penetration Blocks | Light-weight water penetration paving blocks |
| | Water penetration pavements |
| Paving Materials | Water penetration resin pavements |

5. Results up to the Present

Evaluation of Aggregate Physical Properties :

conformity with JIS related to aggregate verified.

Evaluation of Molded Substance :

concrete cement compression strength: evaluation started at the end of January 2001 and completed in early March.

Experimental Installation :

light-weight water penetration paving blocks
(Picture 1) at Shiga-Ritto Plant

water penetration resin pavement
(Picture 2) at Shiga-Ritto Plant

now under
▶ long-term
evaluation



Light-weight water penetration paving blocks
(Picture 1)



Water penetration resin pavement
(Picture 2)

Our Plants which achieved Zero Emission in fiscal 2000

ZERO EMISSION

① Amagasaki Plant



Main Products : Adhesive tapes, foam products, medical tapes, house exterior walls.
Waste Generation : Approx. 2,000 tons per year
Main Waste : Plastic 64%, sludge 4%, paper 3%, lumber debris 1%

Recycling Examples of Waste
 · **Plastic** Fuel for power generation
 · **Plaster board** Fuel for cement production
 · **Sludge from paints** Fuel for cement production



Eiji Morinaga
 Assistant Manager
 Safety & Environment Section

In our promotion of zero emission, we had difficulty to secure a contractor for low cost treatment of the waste generated by our plant, such as plaster board, and sludge from cleaning work in the production process of house external walls. As we had not laid down waste segregation rules, it took us a long time to implement segregation indication and compliance. Aiming at a situation where our zero emission activities are clearly visible to all visitors, we are increasing our efforts even more.

② Sakai Plant



Main Products : Plasticizers, adhesives, modified silicone
Waste Generation : Approx. 800 tons per year
Main Waste : Sludge 57%, plastic 12%, paper 8%, ash from incineration 7%

Recycling Examples of Waste
 · **Ash from sludge incineration** Road surface material
 · **Alkali** Auxiliary fuel for cement production
 · **Plastic** Fuel for thermal power generation, Fuel for cement production
 · **Pallets** Compressed board, fuel



Nobuo Fujita
 Chief, Safety & Environment Group
 Planning & Control Department

We have promoted our activities aiming at the achievement one year earlier than the targeted schedule. To start with, we listed the volume and treatment method of waste generated by each section. We proceeded to set up a segregation and indication method, and collection station. Our activities are characterized by low cost activities such as utilization of the accommodation and space of our conventional collection site, promotion of return of collection containers from contractors, and utilizing a number of contractors for each waste item. We will continue to tackle cost reduction of waste treatment.

③ Chubu Sekisui Industry Co., Ltd.



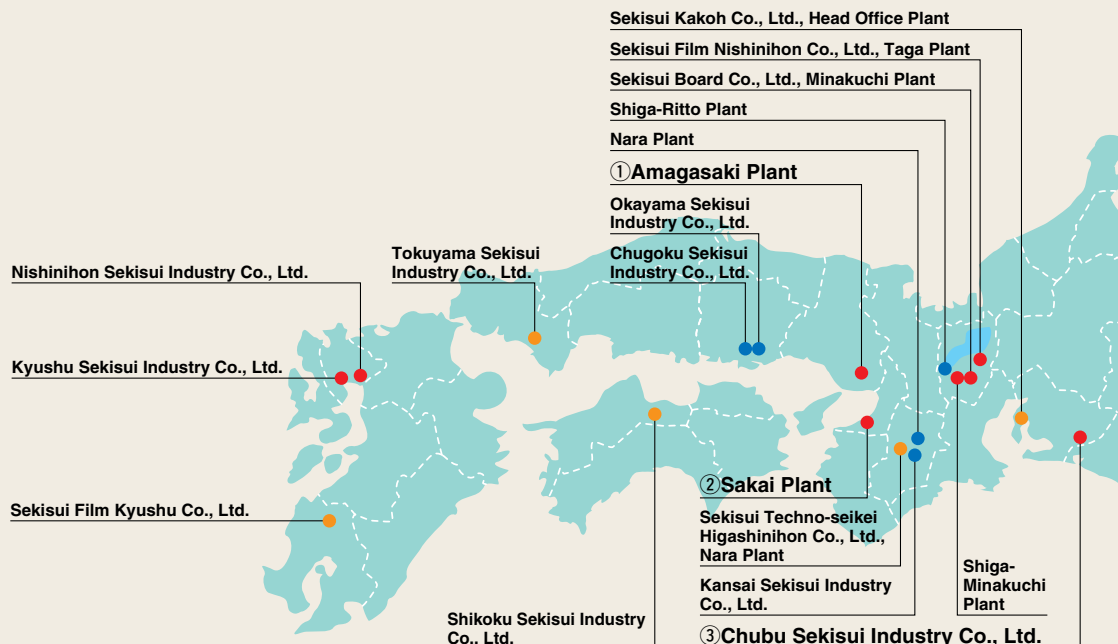
Products : Sekisui Heim, Sekisui Two-U Home
Waste Generation : Approx. 2,700 tons per year
Main Waste : Lumber debris 44%, external walls 18%, plaster board 15%, paper 5%, ash from incineration 4%, plastic 2%

Recycling Examples of Waste
 · **Lumber debris** Raw material for particle board
 · **Plaster board** Raw material for plaster board
 · **Ash from incineration** Road surface material
 · **External walls** Separated in the factory into wood and cement. Wood reused for external walls and cement reused



Michihiro Kato
 Head, Environment & Safety Group
 Environment & Safety Department

We promoted our activities for thorough segregation and 100% recycling of waste by all employees' participation both in the manufacturing and the clerical sections. Our last bottleneck was ash from incineration. Collaborating with a contractor at the end of fiscal 2000, we secured a means to recycle the ash for road surface material by fusing it at 1,500°C and then solidifying it, resulting in our achievement of the zero emission target. In fiscal 2001, we aim at a 33% reduction of total waste volume against fiscal 2000 by practicing the 4R's, namely reduction, recovery, reuse and recycling.



MISSION

④Tokyo Sekisui Industry Co., Ltd.



Products : Sekisui Heim,
Sekisui Two-U Home,
aluminum exterior walls for Heim

Waste Generation : Approx. 5,600 tons per year

Main Waste : Lumber debris 32%,
plastic 19%,
plaster board and paper 14%,
ferrous materials 10%

Recycling Examples of Waste

- Lumber debris Raw material for particle board
- Plastic Fused to make vibration control blocks
- Sawdust Floor covering for cow and pig farms
- Ash from incineration
Solidified for road surface material



Hiroshi Totsuka

Manager
Safety & Environment Department

We have promoted our zero emission activities based on materials recycling, and reduction and segregation of waste. We also tackled various kinds of recycling. In fiscal 2000 we succeeded in reducing canteen waste sludge and waste from the parts' warehouse that had previously not been dealt with. Thereby we achieved recycling of all waste. We will continue our activities aiming at reducing the total amount of waste and cost of waste treatment supported by better control.

⑤Kitanihon Sekisui Industry Co., Ltd.



Products : Sekisui Heim,
Sekisui Two-U Home

Waste Generation : Approx. 370 tons per year

Main Waste : Lumber debris 35%,
plastic 24%, plaster board 24%,
paper 5%

Recycling Examples of Waste

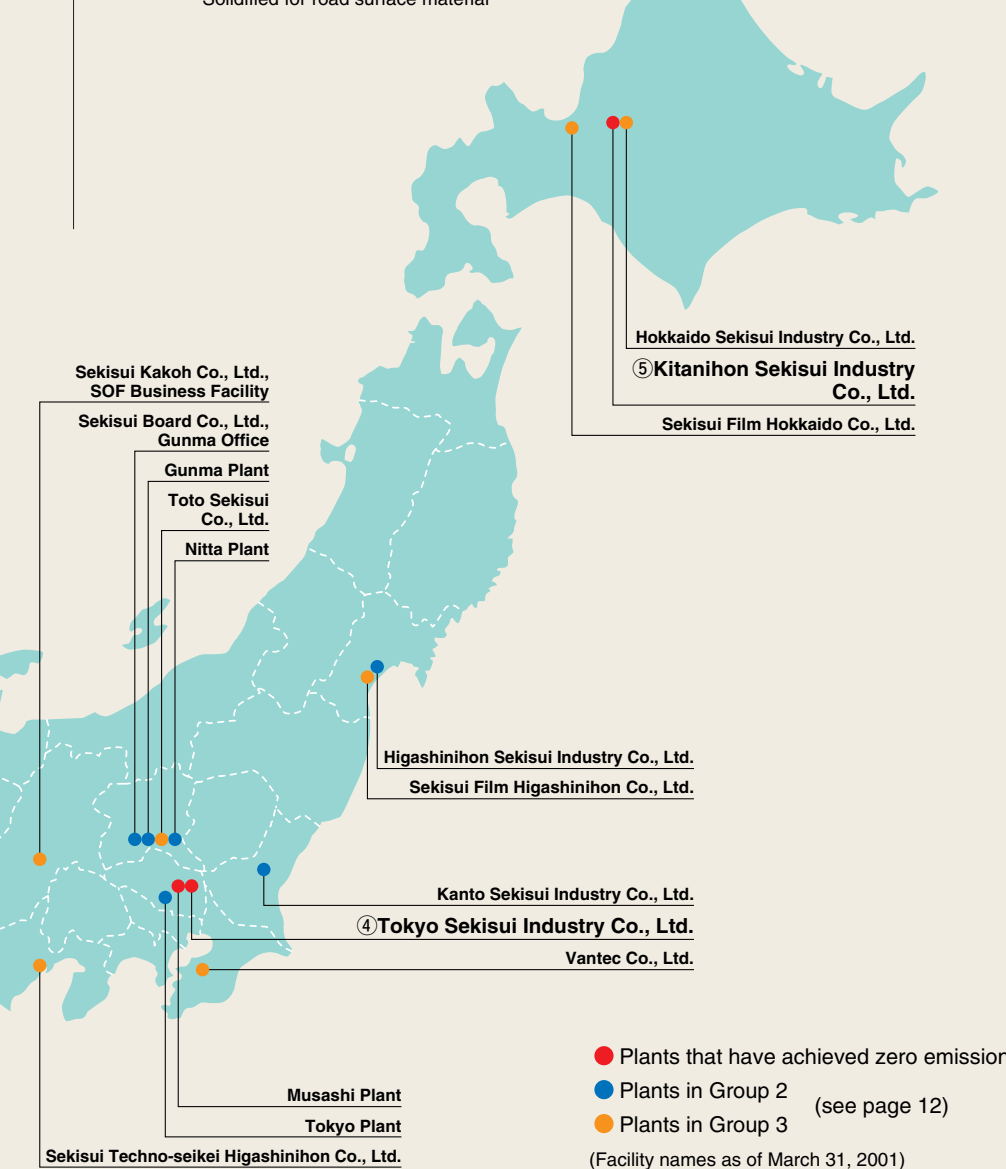
- Lumber debris Raw material for particle board
- Plastic Thermal recycling and fuel for cement production
- Paper Recycled paper such as toilet paper



Akihiro Narita

Leader, Planning, Environment
& Safety Group
Planning & Control Department

Having no waste treatment facility on our premises, it is necessary for us to entrust treatment of our entire waste to contractors for recycling. In each section of our plant we segregate waste, which is then transferred to several collection stations located on our premises, and then periodically transported to the contractors. Establishing severe segregation standards to be observed by all employees was our top priority in achieving zero emission. As a result, we achieved our target 8 months earlier than the initial schedule.



- Plants that have achieved zero emission
- Plants in Group 2 (see page 12)
- Plants in Group 3

(Facility names as of March 31, 2001)

FOCUS on: Efforts of Gunma Plant of Sekisui Board Co., Ltd. for Attainment of Zero Emission

Many workplaces in Sekisui Chemical Group are targeting zero emission. Among them, Gunma Plant of Sekisui Board Co., Ltd. is about to reach the goal, as is reported here:



Segregated waste station at the production line where clear plastic bags are provided to make distinction easy.

101 Kinds of Waste under 50 Categories according to the Treatment Method

Gunma Plant, which mainly produces exterior wall panels for Sekisui Heim, disposed of about 4,000 tons of waste in fiscal 1997 to landfill or incineration. But in fiscal 1998 the plant decided to aim at zero emission and started to reduce the amount of waste leaving the plant and to segregate and recycle all waste. A detailed segregation system was designed and implemented in April 1999, and today the waste is segregated into 101 kinds under 50 categories according to the treatment method.

Regards the recycling of rejected Synthelite wall panels, their composite bodies are separated from their steel frames at the Synthelite Recycling Center, and then crushed, separated into wood chips and cement and prepared for reuse in the production line. The steel frames are sent to contractors for recycling. In January 2001, the separating equipment was upgraded to double the capacity.

While the plant stopped incinerating waste on the premises in April 2000, the survey to find suitable contrac-



tors for external recycling has been continued. So far, 70% of the combustible waste that was incinerated previously is now recycled to paper, wood chips or heat energy.

Establishing practical Rules for Employees

According to the definition of zero emission by Sekisui Chemical Group, all waste of a plant is targeted, including not only industrial waste from the production line but also all waste from the offices and the leisure and welfare facilities. As a result, the segregation of waste is very complex involving many categories, which was at first problematic. Waste was often misplaced or mixed with other kinds and there was some confusion among the employees. Guidance meetings were held for supervisors who were responsible for the proper practice of segrega-

tion and at the same time their opinions were integrated in the segregation rules.

Many efforts to achieve satisfactory segregation were made, e.g. guidance meetings for employees were held, documents to explain the rules were distributed, signs on the waste bins were made more understandable by posting photos or samples on the bins, or having the signs written in the appropriate languages for all employees, and the working environment became easier for correct disposal. There is a duty rotation system for weekly transport of segregated waste from the segregation stations on the production floor to the collection point. Monthly meetings of responsible persons are held and the results of their patrols are reported.

Contribution to Environmental Conservation

Total zero emission, including the segregated disposal of waste, can only be attained by the cooperation of all employees. At the beginning it was a burden for employees, but now they understand the full meaning of zero emission. The target date of attainment is set for September 2001, however, this is only one of the goals of our environmental conservation activities. We are considering targeting the following goals as our next step: reduction of total waste generation, commercial utilization of reclaimed board material and increase of material recycling (decrease of thermal recycling) by more efficient waste segregation and closer collaboration with contractors.



Seizo Tatsuuma

Technical Manager, Gunma Plant, Sekisui Board Co., Ltd.

Activities within Workplaces

Environmental Conservation Activities within our Workplaces

Development:

- Green Procurement

Production:

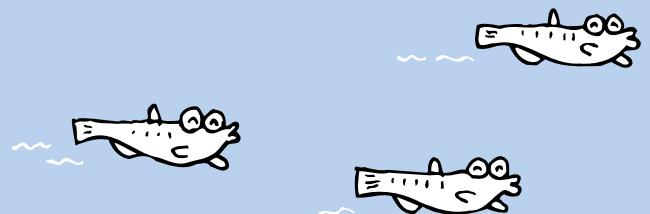
- Emergency Control
- Surveys of Soil Contamination

Distribution:

- Simplified Packaging

Educational Activities for Environmental Conservation

- Leadership Training for Nature Protection



Development: Green Procurement

Green Procurement System for material purchasing will be introduced in the process of product development. (Green Purchase of office supplies has been effected since fiscal 2000.)

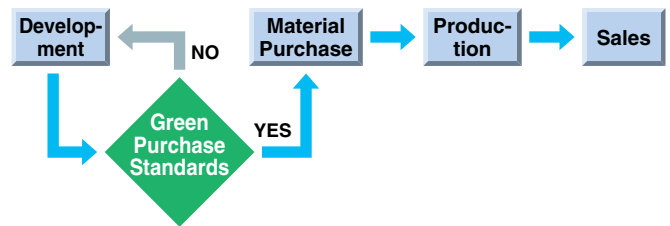
■ Purpose of Introduction of Green Procurement System

Since 1995, Sekisui has conducted "Product Assessment for Environmental Effects" at the time of development, to check raw materials in order to reduce the environmental loads of the products. However environmental assessment of suppliers was not carried out.

We decided to adopt the Green Procurement System in "Product Assessment for Environmental Effects," by which low environmental load materials are purchased from low environmental load suppliers. This will enable us to totally reduce the environmental loads by paying high level atten-

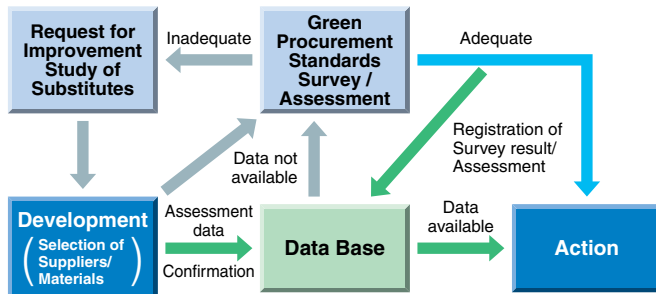
tion to environmental consideration at the material procurement stage.

● Environmental Consideration at the time of Material Procurement



■ Attention to Raw Materials, Packaging Materials and Equipment

During one year, mainly fiscal 2000, we prepared our Procurement Standards and Practice Standards and Methods which are necessary for the implementation of the Green Procurement System. We also conducted surveys on our main suppliers and their products in accordance with the prepared Standards. The System will be applied in the latter half of fiscal 2001, taking the survey results into account.



● Outline of Green Procurement Standards

| Supplier Standards | | Merchandise Standards | |
|----------------------------|--|---|--|
| Certification of ISO 14001 | | Product assessment | 3 criteria, e.g. assessment in the stage of product development |
| Organization | 5 criteria, e.g. appointment of environmental control person | Performance in use/disposal | 9 criteria, e.g. longer life cycle than conventional products |
| Law abidance | 5 criteria, e.g. awareness of environmental laws in relation to business | Design/structure for recycling | 5 criteria, e.g. use of recyclable materials |
| Control system | 5 criteria, e.g. internal auditing | Information disclosure | 2 criteria, e.g. availability of information/precautions regarding environmental consideration |
| Voluntary activities | 8 criteria, e.g. proposals accepted for environmental load reduction | Packaging | 8 criteria, e.g. reduced packaging material compared to conventional method. |
| Information disclosure | Disclosure of environmental conservation information of the company | | |
| | Scope of application of Green Procurement Standards | Exemption from Green Procurement Standards | |
| Procuring sections | Head Office + Divisions, plants (including subsidiaries) | Sales subsidiaries, construction subsidiaries and offices | |
| Suppliers | <ul style="list-style-type: none"> Material/parts suppliers, trading companies, importers and production consignees Equipment manufacturers (including installation contractors) | <ul style="list-style-type: none"> Service industry, e.g. office supply, software supply, printing co., etc. Consignees to whom Sekisui supplies or specifies all the new materials | |

■ Work on Office Supplies and Equipment

Green Purchase of office supplies and equipment is being carried out by each section individually. Sekisui Chemical Group set up "Green Purchase Standards" and implemented them in the latter half of fiscal 2000. Amounts in the latter half of fiscal 2000 of green purchase of stationary was unified by a purchasing system called "Pla-pla Net" introduced on our intranet. This sys-

tem started in our Head Office and will be extended to other offices in due time.

● Amount purchased by Sekisui Chemical Group (Oct. 1, 2000 to March 31, 2001)

| Purchased Item | Amount |
|----------------------|-----------------------|
| Copy paper | ¥20 million (approx.) |
| Stationary/equipment | ¥93 million (approx.) |

Production and Distribution

Environmental conservation and safety procurement are focused on at these stages, e.g. complete risk avoidance and simplified packaging. Soil contamination surveys are being systematically conducted in fiscal 2001.

Emergency Control

For prevention of environmental contamination and its expansion in cases of accident and natural disaster, each plant and office gives employees a training opportunity for proper response and communication, at least once a year. The number of training sessions held in fiscal 2000 are shown below.

Imagined state of emergency and response training

| Imagined state of emergency | Number of training sessions |
|--------------------------------|-----------------------------|
| Leak/outflow of oil, etc. | 45 |
| Solvent emission to atmosphere | 6 |
| Fire | 78 |

Training examples



Kyushu Sekisui Ind., Co., Ltd.
Sand bag piling to minimize expansion of contamination

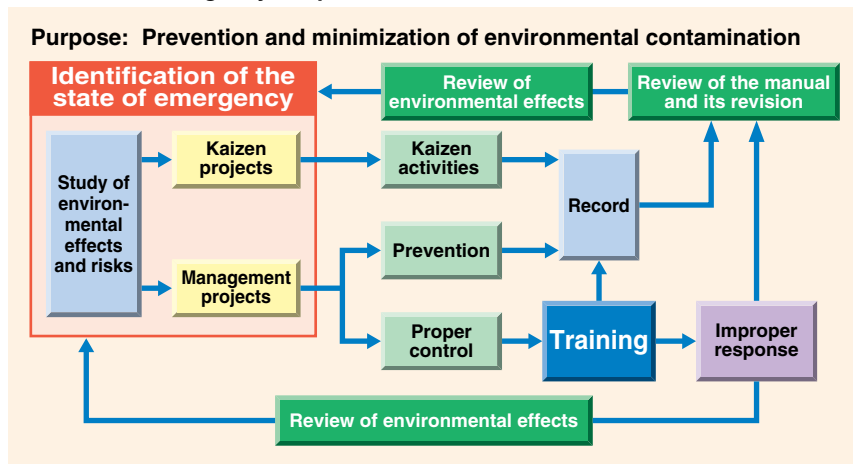


Sakai Plant
Joint training with the city fire department.



Tsukuba R&D Institute
Prevention of outflow of alkaline solution at the time of disposal

Scheme of Emergency Response



Surveys of Soil Contamination

In fiscal 2001, we are conducting surveys of soil contamination in all plants where the chemicals specified in "Guidance to Prevent Soil and Ground Water Contamination" were handled in the past or are handled now. The surveys are being conducted systematically according to the guidance. The table shows the sites to be surveyed.

Sites of Surveys

| Housing Company | Urban Infrastructure & Environmental Products Company | High Performance Plastics Company | Head Office |
|--|---|-----------------------------------|----------------------------------|
| Higashinohon Sekisui Ind., Co., Ltd. | Shiga-Ritto Plant | Amagasaki Plant | Tokuyama Sekisui Ind., Co., Ltd. |
| Kansai Sekisui Ind., Co., Ltd. | Gunma Plant | Musashi Plant | |
| Chugoku Sekisui Ind., Co., Ltd. | Tokyo Plant | Shiga-Minakuchi Plant | |
| Nishinohon Sekisui Ind., Co., Ltd. | Sekisui Kagaku | Sakai Plant | |
| Gunma Plant of Sekisui Board Co., Ltd. | Hokkaido Co., Ltd. | Minase R&D Institute | |
| | Toto Sekisui Ind., Co., Ltd. | Sekisui Techno-seikei | |
| | Vantech, Co., Ltd. | Higashinohon Co., Ltd. | |
| | Okayama Sekisui Ind., Co., Ltd. | Shikoku Sekisui Ind., Co., Ltd. | |
| | | Sekisui Film Kyushu Co., Ltd. | |

Simplified Packaging

We are simplifying the packaging of our products aiming at a 20% reduction from the 1998 cost of packaging per variable cost Unit by fiscal 2002.

In fiscal 2000, the packaging cost increased by 4.5% in our Urban Infrastructure & Environmental Products Company and decreased by 4.3% in our High Performance Plastics Company, resulting in an increase of 1.4% overall. Our goal was not reached.

The houses we sell are 80% completed in the plant and basically require almost no packaging materials. In turn, our Housing Company is trying to reduce packaging materials of the parts they purchase. In fiscal 2000, they attained a 3.6% reduction. Records of the reductions are shown in the table.

We are paying our best efforts to attain the goals set for fiscal 2002.

Records & Targets of Simplified Packaging

Indices (FY 1998: 100)

| | Target (fiscal 2002) | Record | |
|--|-------------------------|-------------|-------------|
| | | fiscal 1999 | fiscal 2000 |
| Urban Infrastructure & Envir. Products Company | 80 | 102.0 | 104.5 |
| High Performance Plastics Company | 80 | 97.6 | 95.7 |
| Total | 80 | 99.8 | 100.4 |
| Housing Company | 80 | 97.0 | 96.4 |

Educational Activities for Environmental Conservation

Environmental education is available to all employees.

Various educational activities are available to all employees in order to promote the environmental conservation effectively.

For example, the Basic Training in Environmental Technology course is available to engineers early in their careers, so that they will pay attention to the environment during the

course of development work. The EMS Internal Auditor Training course is available to responsible persons of environmental control at individual facilities or offices. In addition, information is distributed to the whole of Sekisui Chemical Group on the intranet and utilized by every workplace for its own environmental education programs.

Training of New Employees: to know the importance of environmental conservation and the intention of the company.

Basic Training in Environmental Technology: for young engineers to know the relevant laws, the intention of the company and to understand the importance of environmental issues in product development.

EMS Internal Auditor Training: to fully understand the Environment Management System (EMS) so as to be able to train responsible persons to internally audit their own EMS.

EMS Structuralist Training: to train leaders for structuring EMS in accordance with ISO14001.



Nature Protection Leader Training

Company Journal Lectures/Seminars
Kaizen Reporting Conference for Safety and Environment
 (where each workplace reports the results of Kaizen activities for safety and the environment and exchanges technical information to mutually upgrade their activities.)

Education conducted in fiscal 2000

| Name of educational course | Available to: | | | Frequency | Number of attendants | Accumulated number | Remarks |
|--|---------------|--------------|------------|-----------|----------------------|--------------------|----------------------|
| | New employees | Intermediate | Management | | | | |
| New Employee Training | ◎ | | | 1 (May) | 20 | 78 | Started in 1997 |
| Basic Training in Environmental Technology | ◎ | ◎ | ◎ | 2 | 20 | 52 | Started in 1999 |
| EMS Internal Auditor Training, in-company | | ◎ | ◎ | 7 | 324 | 489 | Started in 1997 |
| EMS Internal Auditor Training, ex-company | | ◎ | ◎ | As needed | 20 | 113 | Cont. for over 5 yrs |
| EMS Structuralist Training, in-company | | ◎ | ◎ | 5 | 216 | 280 | Started in 1996 |
| EMS Structuralist Training, ex-company | | ◎ | ◎ | As needed | 3 | 24 | Cont. for over 5 yrs |
| Nature Study Course | | ◎ | ◎ | 3 | 87 | 181 | Started in 1997 |
| Company Journal, Lectures/Seminars | ◎ | ◎ | ◎ | As needed | Open to all | Open to all | Quarterly Journal |
| Kaizen Reporting Conference for Safety and Environment | ◎ | ◎ | | 1 | 50 | 300 | Started in 1995 |

Publicly Certified Specialists (March 31, 2001)

| Field | | Staff certified in 2000 | Total certified staff |
|---|--------------------|-------------------------|-----------------------|
| CEAR* Registered Examiner | Chief Examiner | 1 | 4 |
| | Examiner | 0 | 3 |
| | Assistant Examiner | 2 | 5 |
| Air Pollution Controller, Class 1 to 4 | | 2 | 52 |
| Water Pollution Controller, Class 1 to 4 | | 0 | 118 |
| Noise Controller | | 1 | 60 |
| Vibration Controller | | 0 | 24 |
| Environmental Surveyor | | 0 | 2 |
| Energy Controller (Heat, Power) | | 12 | 54 |
| High Pressure Gas Safety Controller, Class 1 to 3 | | 5 | 224 |



EMS Internal Auditor Training



Company Journal "Sekisui"

*Center of Environmental Auditors Registration (CEAR) in Japan Environmental Management Association for Industry (JEMAI)

Leadership Training for Nature Protection.

"Sekisui Chemical's Nature Study Course" provides close contact with nature to teach the importance of conservation.

In order to implement promotion of nature protection in local areas by our employees, we train leaders to have strong dedication to conservation and ample knowledge of nature. To increase such leaders, Sekisui Chemical periodically offers, since 1997, a unique training course called "Sekisui Chemical's Nature Study Course," in cooperation with the Wild Bird Society of Japan, to interested employees. This 2-day-1-night course to learn basic knowledge of environmental problems and examples of promoting actions of private companies, gives opportunities of bird watching, insect observation and other outdoor observation, whereby the attending employees, enjoying nature, realize the



need for conservation. So far, 181 employees have joined the training to learn about nature and the importance of its protection.

Participants experience the splendor of nature with children.

The course, previously consisting of beginner classes to attract interest in nature and its protection, this year started to offer advanced classes, in order that our employees will be able to participate in nature protection with their local communities. The program contains training to make nesting boxes for birds in a mini-sanctuary, to learn how to guide children in nature protection and to observe nature with them in a biotope. We plan to train a total of 250 leaders by the end of fiscal 2002.



Junko Okano

Chu-Shikoku Sales Headquarters
Urban Infrastructure &
Environmental Product Company
Sekisui Chemical Co., Ltd.

I attended the Nature Study Course held by Kyushu Sekisui Industry Co., Ltd. and participated in tree planting in the biotope. I felt much interest in the biotope intended to recreate lost nature where much more abundant fauna and flora existed than now. I am expecting much success from this project.



Takao Saino

Administration Department
Higashinohon Sekisui Ind. Co., Ltd.

The field study of wild birds, the forest keeping work in suburban areas and the biological observation in the biotope, experienced on Sekisui Chemical's Nature Study Course, led me to recognize the importance of "love of nature", "knowledge of nature" and "protection of nature". With this precious experience, I wish to contribute to the "environmental management" and the "protection of nature" programs in our company.

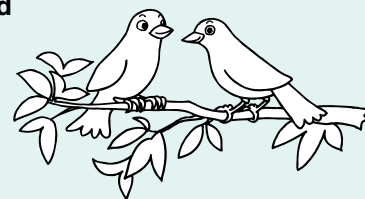
■Ecological order altered by hands of man

Imported species are now giving serious influence to native species and their ecological order. Famous among them is the large mouthed bass (*Micropterus salmoides*) that was transplanted in 1925 from North America. In the seventies and thereafter, the distribution was quickly expanded nation-wide in conjunction with the boom of lure fishing, resulting in a threat to other species in rivers and lakes. In Lake Biwa, the home ground of fresh water fishes of Japan, they increased rapidly to occupy the key position in the whole lake, resulting in the decrease of minnows (e.g. *Gnathopogon caeruleus*), chubs (e.g. *Carassius grandoculis*), killifish (e.g. *Oryzias latipes*) and other small species of fish.



■Lessons from bird watching

Birds do not live only in the countryside. For example, buntings can be seen in the parks of urban areas. They feed off the seeds of grasses



and their habitat is in the bushes and shrubs that grow in open spaces. In fact, it is said that deforestation has actually increased the number of these birds and they now pervade in over 70% of urban and residential areas throughout Japan. This high percentage teaches us that deforestation for development purposes has greatly increased recently, which, although beneficial to buntings, is detrimental to the environment in the long term.

We are dedicated to developing technology and products that have minimum environmental load. A total of 108 environment-friendly new products were put on the market in fiscal 1999/2000, which equals 47% of our total new product sales in fiscal 2000. Furthermore our target for fiscal 2002 has already been achieved.

Development Scheme of Environment-friendly new Products

A target to introduce a total of 100 environment-friendly new products by our three internal companies to the market, equal to 30% or more of new product sales, was set for the four years of fiscal 1999 through fiscal 2002. Products we introduce to the market announced as "environment-friendly" must be approved in the "Design Review Conference" of each internal company, which verifies products according to "Product Assessment of Environmental Effects" and our own "Approval Criteria of Environment-friendly Products" at each stage of development, trial production and production. Each internal company is dedicated to the development and production of products that have minimum environmental load. We plan to incorporate Green Procurement and LCA (Life Cycle Assessment) in the Product Assessment of Environmental Effects, to intensify both diversification of products and strictness of control.

The tables below show the outline of our development scheme, approval criteria and our environment-friendly new products introduced in fiscal 2000.

Development Scheme of Environment-friendly new Products



Approval Criteria for and Examples of our Environment-friendly new Products introduced in fiscal 2000

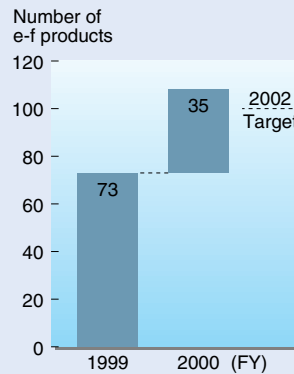
| Classification | Approval criteria | | Standard value | Environment-friendly new products | | | |
|--|---|-----------------------------------|--|-----------------------------------|------------------------------------|---|---------------------------------------|
| | | | | Housing Co. | U.I. & E.P. Co.*1 | H.P.P. Co.*2 | New Business HQ |
| Products to achieve or support reduction of environmental load, effective utilization of resources and contribution to a healthy environment | Promotion of resource conservation, utilization of recycled materials, reduction of environmental load, improvement of waste disposal and recycling | | — | | Omega Liner (pipe relining system) | | |
| Products approved or registered as environment-friendly by independent institutions | Registered products of ECO mark. Commended products of energy saving. Products approved by relevant NGO's or consumer associations | | — | | | | |
| Products contributing to landscape conservation and a green environment | Contribution to conservation or improvement of landscape or green scenery | | — | | | | |
| Products that meet more requirements than conventional similar products | Attention to product design | Saving of resources | Composed of less material 3 other criteria | Savings of 30% or more | | | |
| | | Utilization of recycled materials | Addition of recycled materials 3 other criteria | 50% or more | | 3-layer foamed core PVC pipe | Ecorapack Recycled Kraft Tape #500 RC |
| | Attention to use | Reduction of environmental load | Less energy consumption 5 other criteria | Savings of 20% or more | | CO ₂ Heat Pump Hot Water Unit | |
| | | Utilization of natural energy | Utilization of clean energy Another criterion | In standard specifications | Domani, New Miore | Hybrid Solar Cell/Electric Hot Water Unit | Photovoltaic / Thermal Hybrid System |
| | Attention to disposal | Easy treatment and disposal | Use of biodegradable materials 4 other criteria | 100% of main materials | | | Peter Rabbit Soap Gift Assortment |
| | | Easy recycling | Fewer composite materials 5 other criteria | 50% adoption or less | | Bath Core NP Series | DST III (page 27) |

*1 Urban Infrastructure & Environmental Products Company

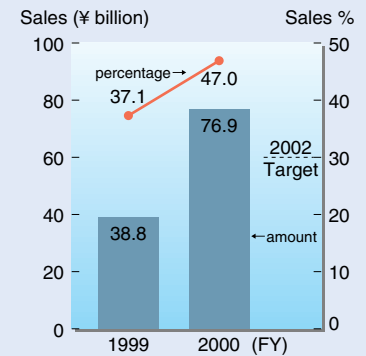
*2 High Performance Plastics Company

Record of Introduction of Environment-friendly (e-f) Products

Number of e-f new products



Sales and percentage of e-f products against all new products



Percentage of sales of environment-friendly new products in fiscal 2000

$$= \frac{\text{Sales environment-friendly new products in fiscal 2000}}{\text{Sales in fiscal 2000 of all new products introduced in fiscal 1999} + \text{sales in fiscal 2000 of all new products introduced in fiscal 2000}}$$

$$\text{Sales of environment-friendly new products in fiscal 2000} = \text{Sales in fiscal 2000 of environment-friendly new products introduced in fiscal 1999} + \text{sales in fiscal 2000 of environment-friendly new products introduced in fiscal 2000}$$

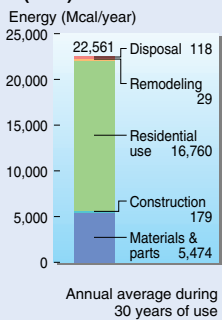
PRODUCTS

HOUSING COMPANY

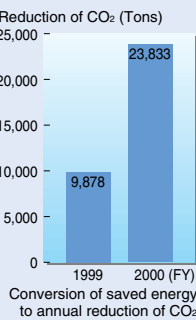
● Consideration for entire Life Cycle of Housing

It is necessary to pay environmental consideration not only to the construction stage of a house but also to its entire life span, which may be up to 60 years. A house consumes a great deal of energy and resources in all stages from construction to demolition, e.g., materials for construction and maintenance, disposal of waste at demolition, energy for construction and the daily life of the residents. The emission of carbon dioxide in each instance would have a great effect on the environment. Our Housing Company pays full attention to "resource saving", "waste disposal" and "energy saving" when developing new housing.

● Life Cycle Energy (LCE) of one house



● Reduction of Carbon Dioxide



● Resource Saving and Waste Reduction

Traditional Japanese houses had an expected life span of 30 years. We are building houses with an anticipated life span of 60 years.

Although such houses require somewhat more resources to construct, they eventually result in resource saving as demolition and rebuilding are decreased. Furthermore we are developing parts and construction systems for easy maintenance.

So far we have succeeded in developing long life exterior walls and roofs, which can be commonly used for various house structures and can accommodate any changes in the life style of the residents and any interior renovations.

Developed long-life parts:

Structural frame: Zn-Al-Mg alloy coated steel
Exterior walls: tile wall & Durastone Wall
Roofing: stainless steel

● Energy Saving

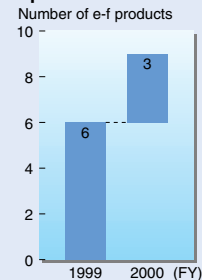
Consumption of life cycle energy is mainly for living purposes. Needless to say, reduction of energy in air conditioning, water heating and use of appliances will help environmental conservation. Our Housing Company has developed houses that save energy by adopting, for example, housing insulation specifications, ventilated air conditioning, ventilation windows and solar energy systems. In fiscal 2000 these features enabled a reduction of 24,000 tons of carbon dioxide emission against the amount of carbon dioxide generally emitted by houses without these features. This amount is equivalent to the amount of carbon dioxide absorbed by 26 km² of standard forest. (These figures are based on houses constructed in fiscal 1999 and 2000.)

Conversion factors: 0.44 kg CO₂ = 1KWh,
1 kg CO₂ = 1.1 m² forest)

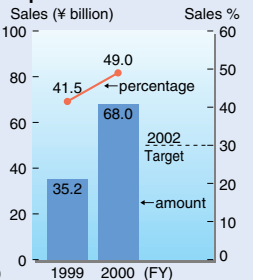
● Further Development of Environment-friendly Housing

By conducting detailed analysis of the environmental load through the entire life cycle of houses, we will continue to develop housing in which resource and energy saving, waste and carbon dioxide emission reduction, as well as environmental ill effects elimination, such as air and water pollution, and ill effects on the human body, are prioritized.

● Number of environment-friendly (e-f) new products



● Sales and percentage of e-f new products against all new products



"Domani"
With exterior tile walls and a Photovoltaic/Thermal Hybrid System



"New Miore"
With a Photovoltaic/Thermal Hybrid System and heat retaining flooring

| Mode of Saving | Category | | | Technical Method | Design & Engineering |
|---------------------------------|-----------|---------------|------------|---|--|
| | Air cond. | Water heating | Appliances | | |
| Reduction of energy consumption | ○ | | | Insulation Air-tightness | Our specifications based on the Energy Conservation Law |
| Efficient operation | ○ | ○ | | Higher efficiency of equipment | Air-Conditioning with high-energy-efficient ventilation (Hot Water Unit with CO ₂ Heat Pump :Pa 2001) |
| Utilization of natural energy | ○ | | | Utilization of natural air flow | Ventilation windows (Window System-Pa 2001) |
| | | | ○ | Photovoltaic generation | Solar energy system |
| | | ○ | ○ | Direct thermal conversion & photovoltaic generation | Photovoltaic / Thermal Hybrid System |

URBAN INFRASTRUCTURE & ENVIRONMENTAL PRODUCTS COMPANY

Contribution to Environmental Conservation by Environment-oriented Business Development

Our company holds the basic concept of "Contribution to creating a healthy living environment through environment-friendly products with our advanced technological systems". We pay much attention to the

environment-friendliness of our products through their life cycle from designing to disposal, and we sell environment-friendly products, as shown below, that contribute to environmental conservation. Our Subcommittee for the Development of Environment-friendly Products (Environment Committee) analyses the demands of society, decides on projects for new products and collects marketing and sales data, in order to expand the business of our environment-friendly products.

Major Fields of Environmental Conservation & Environment-friendly Products

- ① Highly efficient waste treatment systems
Garbage disposal & treatment systems, sewage & waste water septic tanks, vacuum sewer systems
- ② Resource recycling systems
Recycled PVC pipe, pit cover made from recycled PET, segregated waste bins, products from recycled synthetic wood
- ③ Resources, energy and water saving
Pipe relining systems (e.g. SPR System), rainwater collection system, KOPF'S System (rice paddy irrigation control), synthetic wood
- ④ Miscellaneous (reduction of hazardous materials usage, landscape protection, disaster prevention)
Underground power cable conduits, thrust panels, rainwater permeation systems

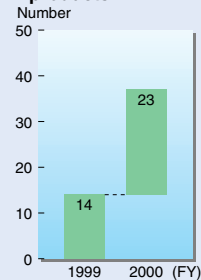
Search for Environment-oriented new Businesses

The "Environment Frontier Project" has been created for this purpose in our Kyoto R&D Institute.

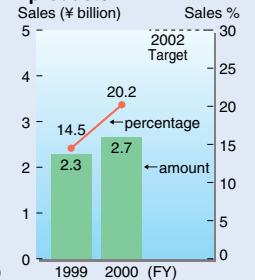
Areas of research:

- ① Environmental conservation products for water control:
rainwater permeation, cleaning of rivers/lakes/ponds, rooftop gardens, soundproofed piping and many others
- ② Recycling of resources:
Recycled products from building demolition and construction and many others
- ③ Energy related business
- ④ ECO-environmental systems

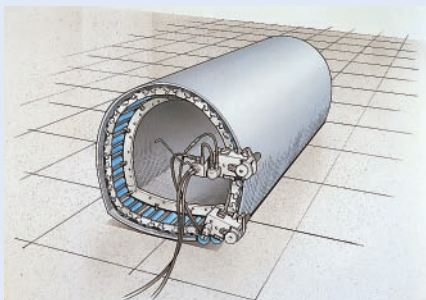
Number of environment-friendly (e-f) new products



Sales and percentage of e-f new products against all new products



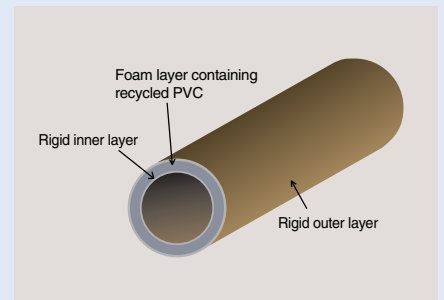
New Products on the Market in fiscal 2000



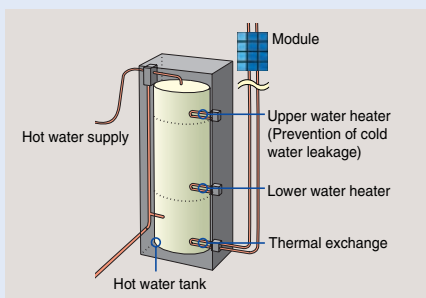
SPR System for irrigation piping
(Renewal of aged pipes, resource saving)



Omega Liner Relining Pipe
(Renewal of small diameter sewer lines, resource saving)



Three layer foamed core PVC DWV pipe
(Recycled PVC in foam layer, resource saving)



Hybrid Solar Cell/Electric Hot Water Unit
(Combination of solar energy and electric heater)



Hot Water Unit with CO₂ Heat Pump
(No chlorofluorocarbon media, less emission of carbon dioxide than electric hot water unit or gas hot water unit)



Bath Core NP Series
(PET or PP clad steel panel instead of PVC clad, for easy recycling)

PRODUCTS

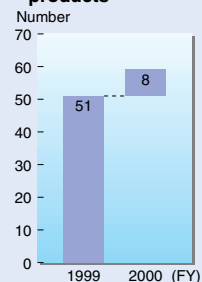
HIGH PERFORMANCE PLASTICS COMPANY

● Wide Spectrum of Environment-oriented Product Development

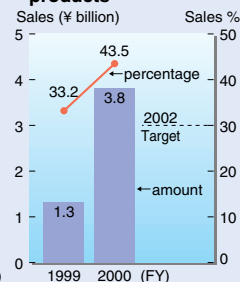
Our company deals with a wide variety of products ranging from industrial materials to consumer products. We have established R&D guidelines (see below) for our environment-friendly products, which will reduce their environmental load throughout their entire life cycle. For example, in the designing and production of consumer products

or finished products for industries, we aim for utilization of recycled materials, reduction of environmental contamination at the time of disposal and biodegradability. Furthermore, we supply key functional parts and materials to the manufacturers of instruments to measure environmental indicators and information technology equipment. In so doing, we play our role in this environmentally creative organization.

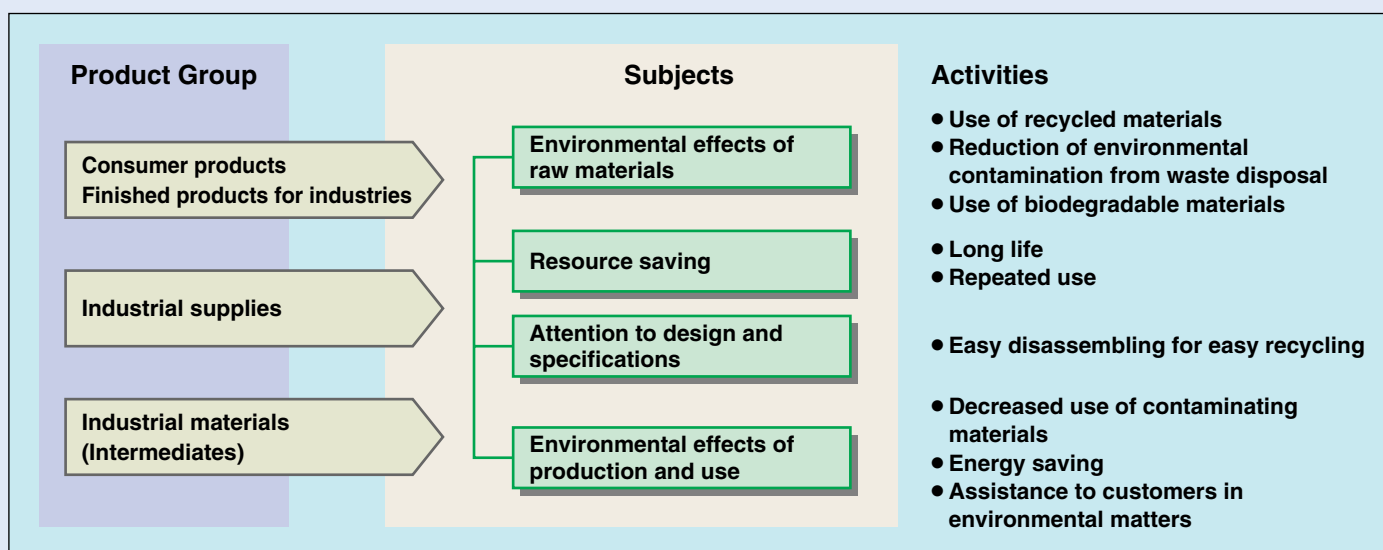
● Number of environment-friendly (e-f) new products



● Sales and percentage of e-f new products against all new products



Our R&D Guidelines



New products on the market in fiscal 2000



Ecorapack Recycle Kraft Tape No.500RC
Adoption of substrate without polyethylene lamination. Adoption of water-soluble adhesive; Carton boxes are recycled with this tape adhered to them.



DST III
Skin-body laminated molding of car ceiling eliminates skin pasting process. Polyolefin only composition, which is unique in the trade, gives high recyclability.



Peter Rabbit Soaps
This product is 99% biodegradable as a non-ionic surface active agent made from vegetable oil as the main component.

PRODUCTS

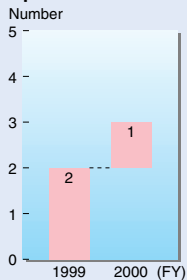
NEW BUSINESS HEADQUARTERS

• Aiming at the harmonious Coexistence of Nature and People

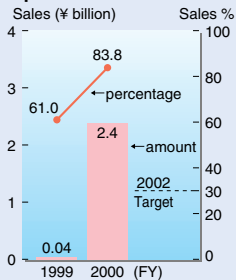
Our headquarters consist of 4 business departments and Tsukuba R&D Institute. We are dedicating great effort to develop environment-friendly products with light environmental loads which will contribute to environmental conservation. For this purpose, environmental impact assessments are conducted at each developmental stage.

The Clean Energy Systems Business Department develops products with low environmental loads such as our photovoltaic generation systems. Now that global warming is evident, the development of clean energy is essential. We are now pursuing this as a top level objective.

• Number of environment-friendly (e-f) new products



• Sales and percentage of e-f new products against all new products



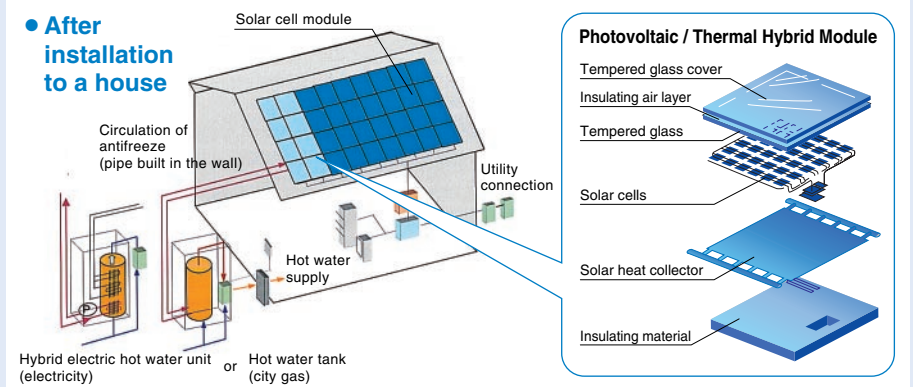
• Development of Clean Energy as the main Objective

Our Clean Energy Systems Business Department developed the photovoltaic power generating system for household use in 1998 and our Photovoltaic/Thermal Hybrid System in 1999, which supplies both electric power and hot water. This system uses natural energy and contributes to saving energy and, consequently, to the reduction of carbon dioxide, which is a cause of global warming. Now the department is trying to improve the Photovoltaic/Thermal Hybrid System so that it can be used as a heating system as well, and another project of developing the fuel cell system is in progress.

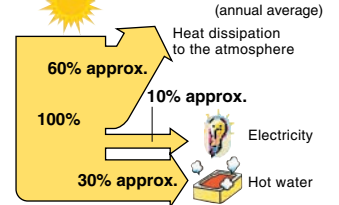
• An Example of Innovative Products [Photovoltaic/Thermal Hybrid System for Household Use]

Our Photovoltaic/Thermal Hybrid System provides power and hot water at the same time by combining the photovoltaic power generating system and the heat collector. This system is highly advanced equipment, which significantly contributes to environmental conservation. We have succeeded in commercializing the first hybrid module that generates both electric power and heat. The system converts about 10% of the solar energy into electricity and about 30% into hot water on an annual average. This means a substantial reduction of carbon dioxide emission.

• After installation to a house



• Efficient Utilization of Solar Energy



• Development Schedule of Clean Energy Systems

| | '98 | '99 | '00 | '01 | '02 | '03 | '04 (FY) |
|--|-----|-----|--|---|-----|-----|----------|
| • Photovoltaic Generation Systems | | | Increased applications and improved appearance | | | | |
| • Photovoltaic/Thermal Hybrid System | | | | Improvement in performance, application to room heating | | | |
| • Systems applicable to exclusively electrified housing | | | | | | | |

• New Energy Award



Our hybrid system received the New Energy Award in 2000 from the Japanese Minister of Economy, Trade and Industry, for its technical, environmental and economical advantages.

Activities for Local Environment and Community

Environmental Conservation Activities related to Local Communities

Development:

- Environmental Conservation and Recycle Technology of By-products

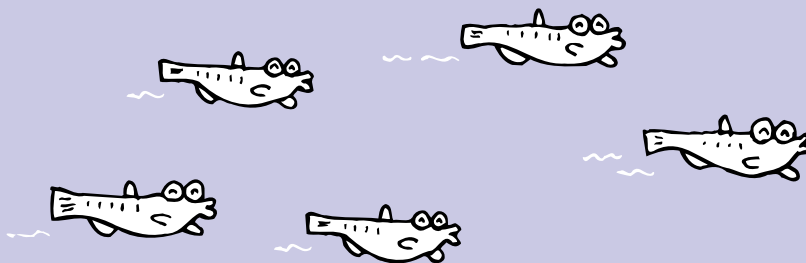
Production:

- Reduction of Pollutants
- Pollution Prevention Activities
 - Air Pollution Control
 - Water Pollution Control
- Environment-related Mishaps and Complaints
- Abolition of Incinerators
- Use and Storage of Apparatus containing PCB

Sales & Distribution:

- Countermeasures against Sick House Syndrome
- Collection and Recycling System of Disposed Products

Lines of Communication



Development : Environmental Conservation and Recycle Technology of By-products

We actively develop unique technology to contribute to environmental load reduction. We pay effort to attain effective use of resources and to realize a recycling-based society.

Environmental Conservation and Recycle Technology

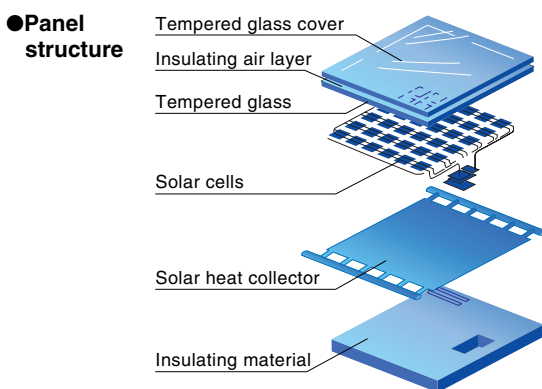
We have succeeded in technological development of water resource conservation, such as purification of plant effluent and domestic sewage water. However, in recent years, other environmental problems such as global warming and waste disposal have become serious.

Now we are developing new technologies to help solve these problems and create a better environment, utilizing and upgrading our basic molding and composite technologies. The target for fiscal 2001 to 2002 is to develop 10 technologies.

Examples of the technologies developed in fiscal 2000 are shown below:

Photovoltaic / Thermal Hybrid System

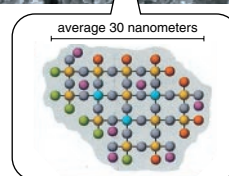
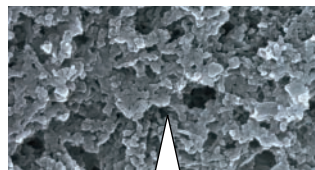
A solar heat collector is placed below the solar cell modules in this system whereby solar energy is effectively used. This system, first in the trade, utilizes 40% approx. of solar energy.



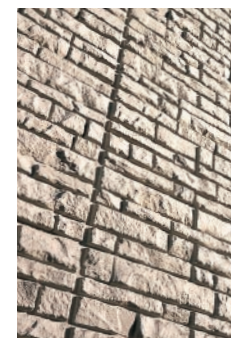
Inorganic Polymer Technology (House exterior walls of inorganic material that require no paint)

A composite of natural kaolin and special binder has a rigid, minute and stable structure of 100% polymerized inorganic material. This technology enabled the development of walls that, unlike concrete walls, require no paint.

Image of molecular structure



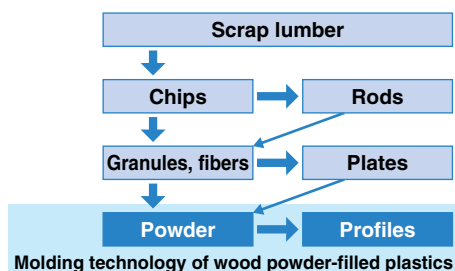
Inorganic exterior wall 'Durastone'



Utilization of scrap lumber

Scrap lumber from sawmills and demolished buildings is crushed into chips, granules or powder, each of which is recycled by a suitable method. We are aiming at developing technology that achieves 100% recycling of scrap lumber. In fiscal 2000, we completed the molding technology for plastics with a high content of wood powder.

Technology for recycling scrap lumber



Facility to convert waste plastics to aggregate is completed

A pilot plant to make aggregate for concrete from any waste plastics has been constructed at Shiga Ritto Plant, completed in March 2001. The pilot plant will enable the development of mass production technology for aggregate and of further applications of plastic aggregate.

The merits are:

- Good adhesion of aggregate to cement
- Much lighter than conventional sand/gravel concrete
- Less brittle (more flexible) than conventional sand/gravel concrete



Production: Reduction of Pollutants

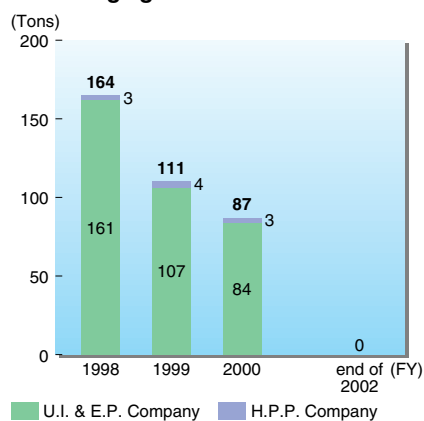
We reduced release and transfer of targeted pollutants by 165 tons in fiscal 2000 compared to fiscal 1998, which was a 12% reduction in terms of ex-godown Unit. Also reduced was consumption of dichloromethane, a cleaning solvent, by 47% (77 tons). We will continue our efforts for further reduction.

Reduction of Release and Transfer of Pollutants

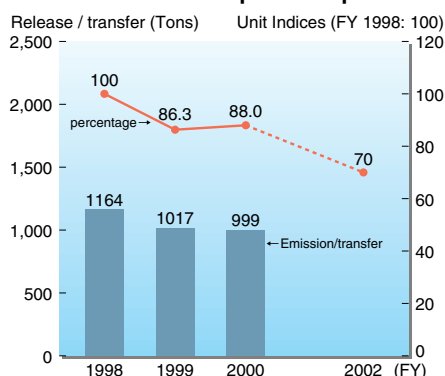
We have achieved the abolition of asbestos and the specified flons (chlorofluorocarbon), and the reduction of the environmental loads attributed to chemicals such as chlorinated organic solvents. We reduced the use of dichloromethane for cleaning by 47% (77 tons) in fiscal 2000 aiming at the goal of complete abolition in fiscal 2002. Since fiscal 1999 Sekisui has set a target of a 30% reduction (from the 1998 figure) in ex-godown Unit, of the substances targeted by the pilot survey carried out by the then Environment Agency of the Japanese government. The result of fiscal 2000 was

165 tons reduction of release/transfer and 12% reduction in Unit, the details of which are shown below. We will, from now on, extend the category of pollutant to all the Class I Designated Chemical Substances of the Japanese PRTR Law, and attain a 30% reduction (from the 1998 figure) by fiscal 2002. In fiscal 2000 Sekisui Chemical Group handled a total of 200,000 tons of 30 kinds of the Class I Designated Chemical Substances of which 1,116 tons were released to the atmosphere, 3 tons to public waterways, none to the soil, and 224 tons were transferred as waste (72 tons for disposal and 152 tons for recycling).

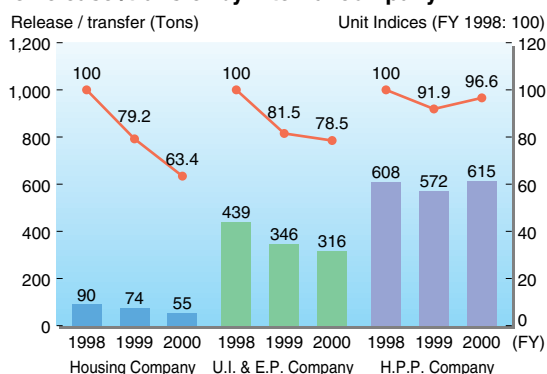
Volume of dichloromethane used as washing agent



Release/transfer of pollutant per Unit



Release /transfer by internal company



Result of Release/Transfer in fiscal 2000 (Total of 32 plants) (Tons)

| Chemical Substance | Used volume (Produced volume)* | Release | | | Transfer (recycling excluded) | Total | Innocuous treatment/recycling | |
|--|--------------------------------|---------------|----------|---------|-------------------------------|-------|-------------------------------|----------|
| | | To atmosphere | To water | To soil | | | Internal | External |
| Zinc compounds | 167.9 | 0 | 0 | 0 | 3.8 | 3.8 | 0 | 12.6 |
| Barium compounds | 6.0 | 0 | 0 | 0 | 0.02 | 0.02 | 0.2 | 0 |
| Chlorine | 3,688.0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Methylene-bis (4,1-phenylene) diisocyanate | 38.7 | 0 | 0 | 0 | 0 | 0 | 1.7 | 0 |
| Fluorine compounds | 3.4 | 0 | 0 | 0 | 0 | 0 | 0 | 0.4 |
| Aluminum compounds (soluble salts) | 13.7 | 0 | 0 | 0 | 0 | 0 | 5.5 | 8.7 |
| 2,6-Di-t-butyl-4-methylphenol | 27.6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Dimethyl phthalate | 30.3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Tetrahydrofuran | 163.7 | 2.3 | 0 | 0 | 0 | 2.3 | 0 | 0 |
| Acrylamide | 0.6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Acrylic acid monomer | 106.4 | 0.001 | 0 | 0 | 0 | 0.001 | 0 | 5.8 |
| Ethyl acrylate monomer | 9.0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Acetaldehyde | 271.0 | 0.2 | 0 | 0 | 0 | 0.2 | 0 | 0 |
| Antimony & its compounds | 20.1 | 0 | 0 | 0 | 0 | 0 | 0 | 2.4 |
| Vinyl chloride monomer | 121,901.0 | 13.8 | 0 | 0 | 0 | 13.8 | 0 | 0 |
| Xylene | 118.3 | 71.5 | 2.1 | 0 | 0.3 | 73.9 | 2.8 | 5.1 |
| Trivalent chrome | 3.1 | 0 | 0 | 0 | 1.0 | 1.0 | 0 | 0 |
| Cobalt compounds | 1.6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4,4'-Methylenedianiline | 0.2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Dichloromethane | 689.4 | 86.0 | 0 | 0 | 0 | 86.0 | 0 | 13.0 |
| N,N-Dimethylformamide | 3.0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Styrene monomer | 3,767.1 | 62.5 | 1.0 | 0 | 8.8 | 72.3 | 0 | 1.9 |
| Copper compounds | 0.1 | 0 | 0 | 0 | 0 | 0 | 0 | 0.01 |
| Toluene | 3,044.3 | 730.3 | 0 | 0 | 2.8 | 733.1 | 803.5 | 107.7 |
| Lead compounds | 806.1 | 0 | 0.002 | 0 | 5.8 | 5.8 | 2.2 | 7.8 |
| Bis-2-ethylhexyl phthalate | 64.0 (41,844.1)* | 1.6 | 0 | 0 | 4.0 | 5.6 | 0 | 0.3 |
| Formaldehyde | 11.7 | 0 | 0 | 0 | 0 | 0 | 5.0 | 0 |
| Bis-2-ethylhexyl adipate | 8.4 | 0 | 0 | 0 | 0.01 | 0.01 | 0 | 0 |
| Vinyl acetate | 3,639.7 | 1.6 | 0 | 0 | 0 | 1.6 | 0 | 0 |
| Di-n-butyl phthalate | 266.1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 180,714.6 | 969.8 | 3.1 | 0 | 26.5 | 999.4 | 820.9 | 165.8 |

Examples of activity

Improvements achieved in fiscal 2000 are listed below.

| Chemicals | Method of improvement | Plants |
|------------------------|--|---|
| Vinyl chloride monomer | Improvement of operational conditions of monomer extraction equipment | Tokuyama Sekisui Industry Co., Ltd. |
| Toluene | Reduction of stain-proof coking putty on exterior walls by using stainless steel nails | Higashinihon Sekisui Industry Co., Ltd. |
| Zinc compound | Recycling of material | Chubu Sekisui Industry Co., Ltd. |

Production: Pollution Prevention Activity

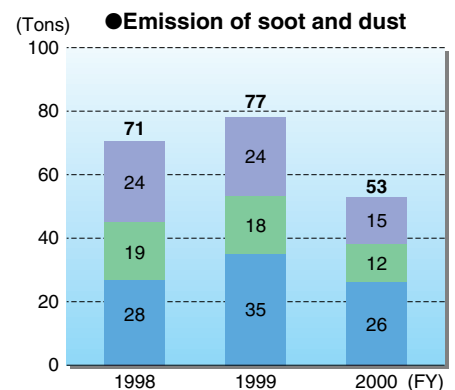
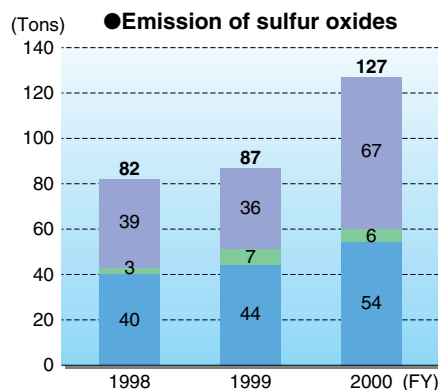
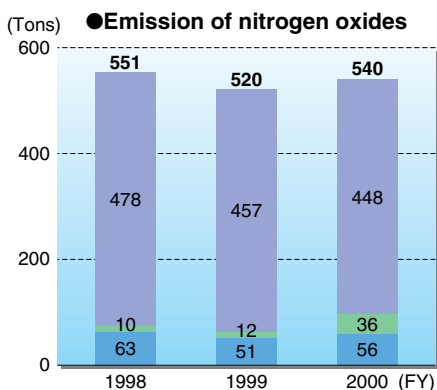
We set our own control limits stricter than the official requirements.

Aim of Pollution Prevention Activities

To promote our activities to reduce environmental loads, we strictly control air and water pollution and all other sources of environmental loads. Prevention of mishaps is essential. Each plant monitors the pollutant emission to air and water with the aim of improvement, e.g. seeking for cleaner fuel.

Air Pollution Control

We are steadily meeting all legal requirements for air pollution control by our proper maintenance of every facility and periodical checking. However, in fiscal 2000, a case of soot and dust emission above the maximum level was reported (see P46). An immediate correction of the maintenance and operating conditions normalized the situation. One other reported case was of an increased sulfur oxides emission attributed to the fluctuation (within the specified range for purchase) of sulfur content in fuel oil.

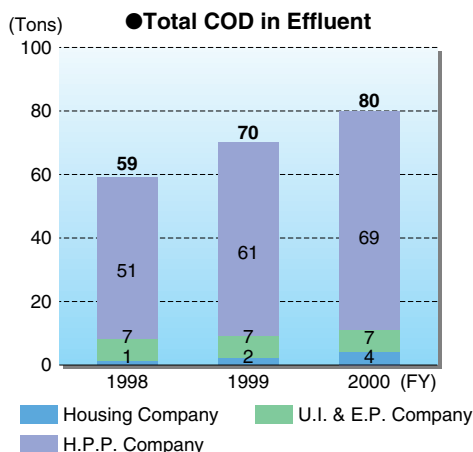


■ Housing Company ■ U.I. & E.P. Company ■ H.P.P. Company

Water Pollution Control

We have installed equipment to eliminate pollutants in effluent and to prevent pollution. However, in fiscal 2000, three plants reported incidents of pollutant emission above the maximum limits (see P46 & P47). Immediate action solved the problems. We are installing improved treatment equipment to prevent recurrence.

The below reported increase of COD was attributed to an increase in effluent amount due to an increase in production.



■ Housing Company ■ U.I. & E.P. Company ■ H.P.P. Company

Environment-related Mishaps and Complaints

There were 3 minor cases of accidental leakage:

- Hydraulic oil leaked to a drain channel,
- ABS resin powder stuck on the wall of a neighboring residential house,
- Cement flowed out to a ditch beside a city road.

In all cases we took actions immediately and informed the relevant authorities.

Complaints brought to our plants and Customer Information and Consulting Services of Head Office totaled 12, including 5 related to noise. We responded to all the complaints cordially and solved the problems.

Abolition of Incinerators

7 plants abolished incineration of waste on their premises by the end of March 2001. 10 additional plants will abolish such incineration by the end of 2002, leaving 4 plants still operating incinerators. The volume of waste incinerated on our premises in fiscal 2000 was 2,500 tons approx. (21%) less than that of fiscal 1998.

Use and Storage of Apparatus containing PCB

There is apparatus containing PCB stored in 15 of our plants, e.g. transformers, and 3 plants use fluorescent lamp stabilizers, all of which we strictly control. We will continue to keep them under strict guard and seek for proper disposal methods as soon as possible.

Sales and Distribution: Countermeasures against Sick House Syndrome

We set our own strict standards for indoor VOC concentration. Regards formaldehyde, our houses meet the requirement of Class 4 Materials of the "Promotion of Residential House Quality Assurance Law" in Japan.

Countermeasures against Sick House Syndrome

We set the maximum allowable indoor concentration of formaldehyde at 0.08 ppm at 23°C and we actually measure the concentration before handing houses over to our customers to show them that our housing meets this criterion. The measured value of all the houses tested showed lower figures than this maximum. In order to establish healthy criteria for other VOC and to show measured values to customers, we now try to lower the vapor concentration emitted from interior furnishing materials. So far, we set forth criteria for toluene and xylene vapor and have switched the flooring paints to water-based, solvent-free paints since 2000.

Targeted Chemicals and Countermeasures

| Chemicals | Countermeasures for improvement |
|----------------|--|
| Formaldehyde | ○Employ Class 4 Materials only (Zero Fc. And Zero E) |
| Toluene/xylene | ○Water-based, solvent-free paints for flooring ○Improvement of wallpaper and room fittings Water-based, solvent-free paints Water-based ink for printing Modified silicone adhesives |

Lines of Communication

We communicate with the public about environmental conservation matters. Our activities in fiscal 2000:

Guided Plant Tours

We invited people on tours at many plants:
 Zero emission presentations 9 cases, 276 persons
 Plant tours for school students 17 cases, 789 persons
 Environmental activity presentations to local enterprises and local government staff 7 cases, 281 persons

Environmental Interchange with Local Communities

Interchange sessions & participation in events....14 cases,
 (e.g. street distribution of "Do Not Litter!" leaflets with municipal staff of Asaka, Saitama Prefecture.)

Lecture Meetings

We held the following lecture meetings:
 Environmental activities of Sekisui Chemical, by Head Office (Environment & Safety Dept.)
 Zero emission lectures, at Musashi Plant, Shiga Minakuchi Plant, Kyushu Sekisui Ind., Taga Plant of Sekisui Film Nishinihon Co. and Kanto Sekisui Ind.
 Case study report of Responsible Care activities, by Amagasaki Plant
 Lectures on clean energy for residential houses, 6 cases by New Business HQ

Exhibitions

We exhibited panels and products at WESTECH 2000, ECO-PRODUCTS 2000, Matsuri Tosu (Tosu Festival), Shiga Environmental Messe, and others.

Publications

"ECO-Life Calendar", "Environmental Report 2000", "Report 2000 on Environment", and "Environment and Housing"

Product Information Presentation

- MSDS (Material Safety Data Sheet)
 This paper explains the hazards and toxicity of products and handling precautions. 1209 MSDS's were newly issued or revised according to the revised laws.
- Yellow Card
 This paper describes emergency measures for accidents during transportation of hazardous products and is handed to truck drivers at the time of shipping.



Street distribution of "Do Not Litter!" leaflets by Tokyo Plant employees, with municipal staff of Asaka, Saitama Pref.



Zero emission lecture at Ashikaga Chamber of Commerce, by Musashi Plant and our Environment & Safety Dept.



ECO-Life Calendar
 (by Tokyo Sekisui Heim Co., Ltd.)



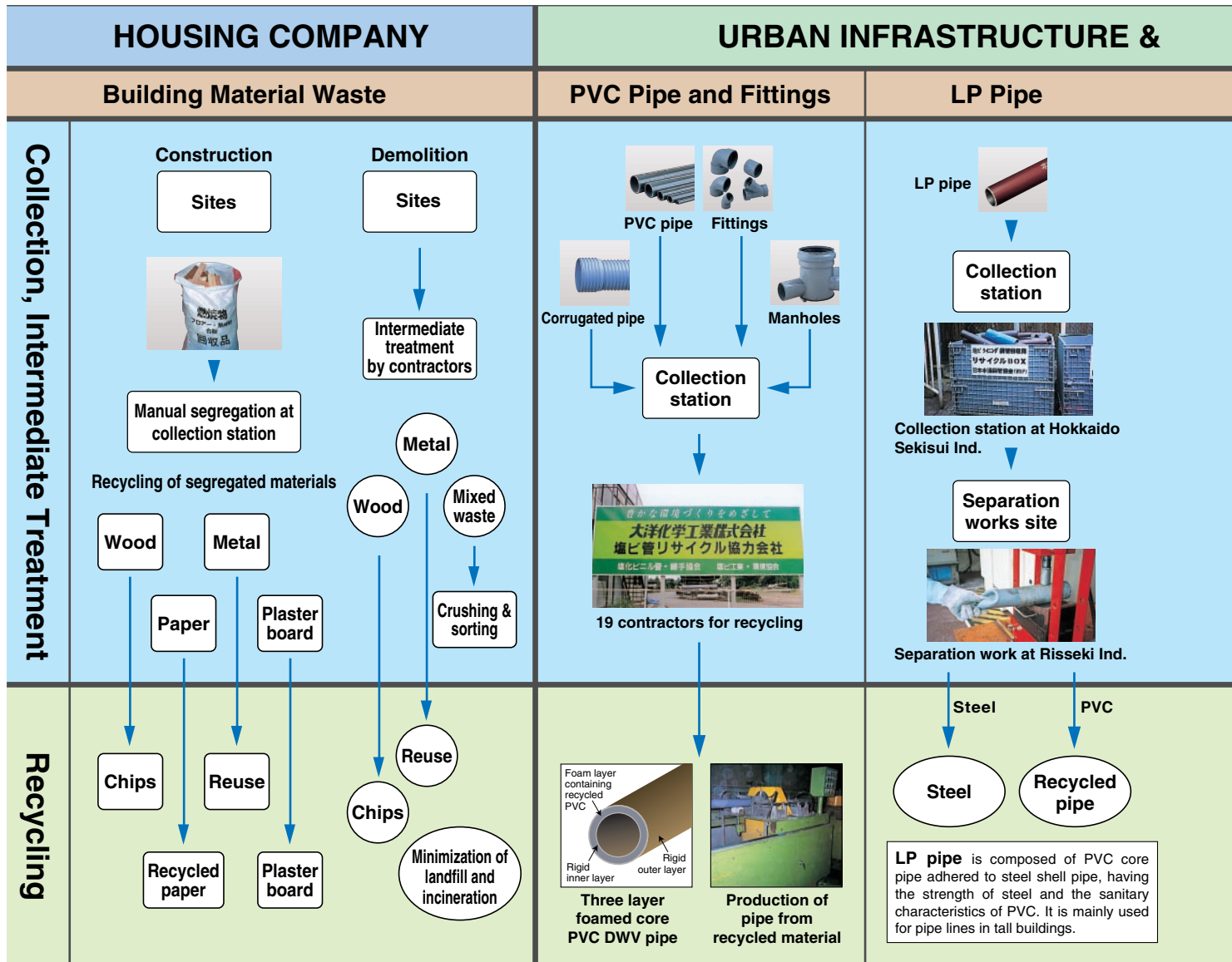
"Environment and Housing"
 1999 issue.

Sales and Distribution: Collection and Recycling Systems for Disposed Products

It is our responsibility, as a manufacturer, to provide collection and recycling systems after disposal for the products that we have marketed.

In fiscal 1999, we paid efforts to establish collection/recycling systems for our 6 main products as shown below, either by ourselves or in cooperation with other manufacturers in the same trade. In fiscal 2000, we continued our efforts to provide collection stations, to conduct recycling tests for

the verification of the practicability of the systems and to increase the collection percentage. Efforts are summarized in the chart below. In fiscal 2001, we continue to improve the systems and expand the areas of implementation. Roofing tiles and agricultural polyethylene film "Hanayaka" are



●Building Material Waste

In fiscal 2000, the systems were substantially implemented in our model areas in Tokyo and Osaka. The system for waste from construction sites was completed by joint efforts with the plants by applying the principle of minimum waste and recycling. The system for waste from demolition sites is being extended nation-wide. Activities of the housing sales companies to obtain ISO 14001 certification will boost this system.

●PVC Pipe and Fittings

We completed a nation-wide recycling system in December 1998 in conjunction with the Japan PVC Pipe and Fittings Association and attained 44% recycling in fiscal 2000. We also began selling recycled DWV pipes and three layer foamed core pipe. Collection stations are substantially increased in number and are being provided in every prefecture. In this way, we are establishing an epoch-making system.

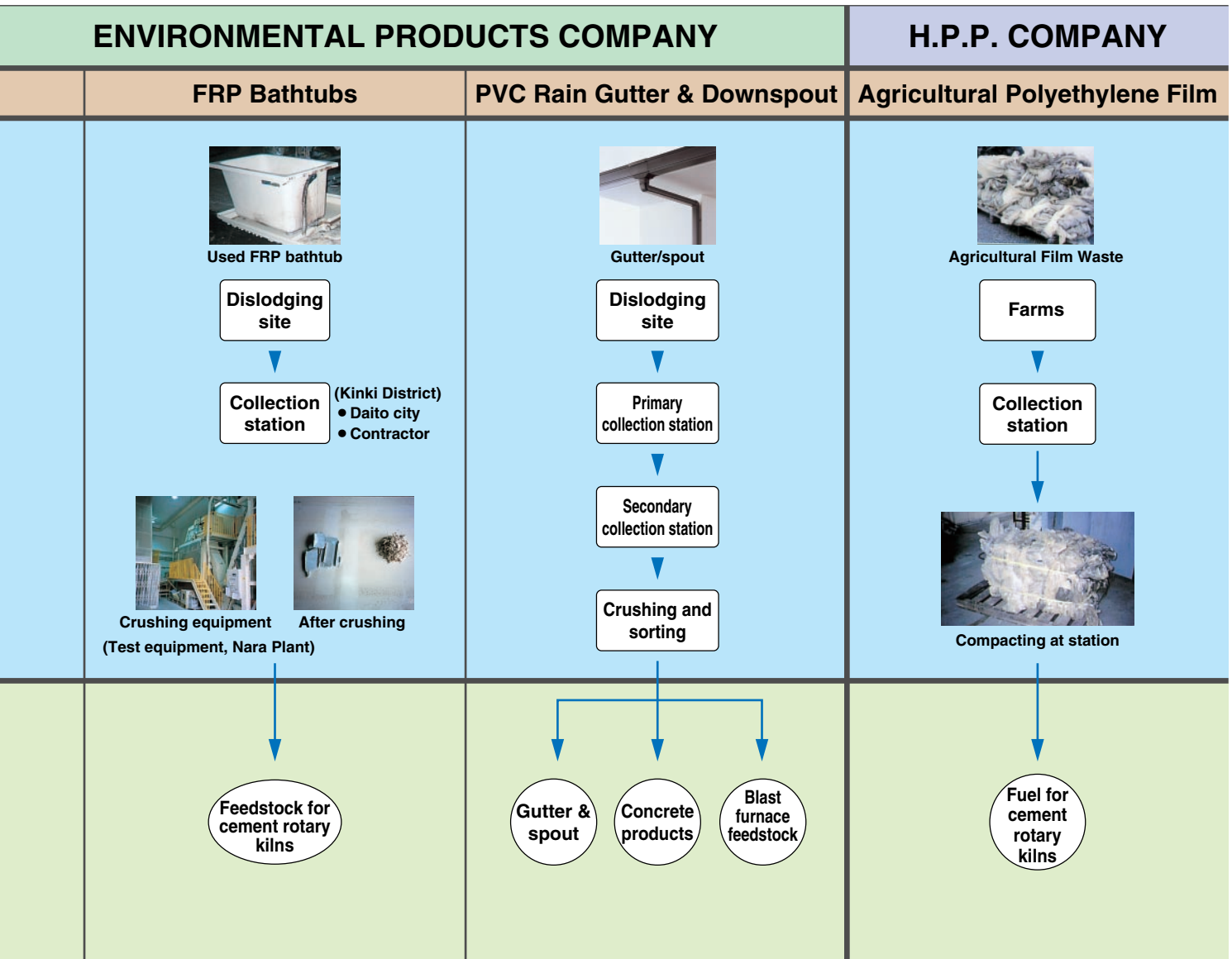
●LP Pipe

We completed a nation-wide recycling system in October 1999 in conjunction with The Japan Water Steel Pipe Association. We cooperate by not only providing manpower and funds but also by the participation of Hokkaido Sekisui Ind. and Shikoku Sekisui Ind. in collection operations and of Risseki Ind. in separation. The recycling percentage of fiscal 2000 was 10% approx.

being added to the targeted products and a model area will be specified to operate the systems.

●Newly targeted products

| Target | Schedule |
|------------------------------|---|
| Roofing tiles | Complete the system in the model areas by fiscal 2002 |
| Agricultural film "Hanayaka" | Complete the system in the model areas by fiscal 2002 |



●FRP Bathtubs

In March 2000, we started the collection and recycling in the Osaka area and expanded it to the southern Hyogo and Wakayama areas. We plan to further expand it to the Kyoto, Shiga and Chubu areas and intensify our utilization of the contract in order to develop a recycling center. (Intermediate Treatment Permission has been granted). In the Kanto area, we are constructing a similar system in conjunction with The Japan Reinforced Plastic Association.

●PVC Rain Gutter and Downspout

In fiscal 2000, we commenced a project to recycle waste from construction sites to gutter and spout and to construct a model system in the Ibaraki area, in cooperation with the PVC Rain Gutter Association. We continue these efforts, especially the trial of recycling of odd pieces of new gutter and feeding of used gutter/spout to blast furnaces.

●Agricultural Polyethylene Film

In fiscal 2000, we continued to be a manufacturer member of Shiga Prefectural Conference for Disposal of Waste Plastics, to develop the model system for agricultural film. 13 of the 22 districts collected film waste for the trial at a cement plant. It was found that supply from one prefecture will not be a steady, ample source of fuel for a cement manufacturer and the contamination of film by soil will increase the manufacturing cost of cement. We continue trials to establish a recycling system.

Nearness to nature inspires conservation activities. A handmade biotope is now open on the premises of Kyushu Sekisui Industry Co., Ltd. as a result of the cooperation between the local community and our employees.

We contribute to society through our nature protection activities for the future of the earth.

The company requires the dedication and cooperation of individual employees to support the environmental systems we structure, no matter how complete the systems appear on paper. We also believe that the participation of local communities is essential for better conservation activities. The company aims to enhance employees' awareness of conservation matters, and promotes such awareness among local communities in order to gain their support and cooperation in our conservation activities. One of such activities resulted in the opening of a biotope in April 2001 on the premises of Kyushu Sekisui Ind. which was handmade by our employees, with the collaboration of the local community. It covers an area of 7,000 square meters approx.



Aerial view of the biotope

Bringing back peaceful scenery that was once commonplace everywhere

Kyushu Sekisui Ind. is located in the midst of calm rural scenery in Chiyoda-cho, Saga Prefecture. One might assume that it is a totally natural environment, full of greenery. However, in reality, it is an area of heavily cultivated rice paddies with concrete irrigation channels which benefit the rice production, but does not necessarily benefit the natural environment. Such rice paddies do not provide a comfortable living environment for small creatures such as butterflies and drag-



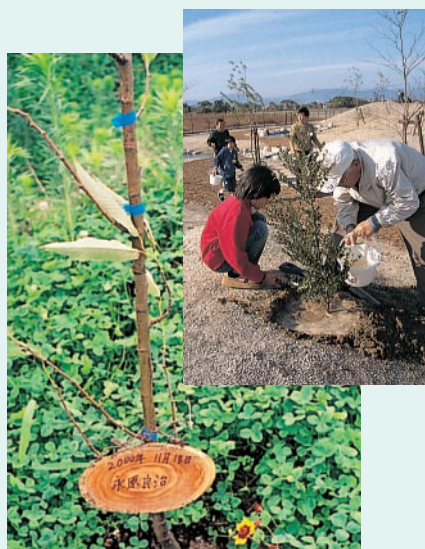
A section of the biotope

onflies, due to the lack of tree shade and grass thickets where they fly around when feeding.

At the time of the biotope construction, it was decided to pay consideration to the well-being of all living creatures and to protect their diversity. The original local flora was studied at libraries so as to exclude non-native species and cultivated species. The intention was to reproduce the exact native flora of Saga Prefecture which could once be seen everywhere in the prefecture.

Careful Research for Biotope Planning

The Biotope Committee was made up of employees of Kyushu Sekisui Ind. As it was their first experience in this field, they lacked knowledge to design proper contours and configurations, and now the biotope is gradually being improved according to advice from experts. For example, the divide of land and water was too sharp and lacked a swampy border, and trees of the same species were planted in one place, lacking diversity. The Wild Bird



Construction and the opening day of the biotope



ope



Scenes from the biotope

that, as years go by, it will be a natural breeding ground for living creatures. It is open to all members of the public, free of charge.

Society of Japan has been contacted for their advice on tree selection, such as oaks (*Quercus sessilifolia* and *Cas-tanopsis cuspidata* var. *seiboldii*) and *Machilus thunbergii* of the cinnamon family. Also the society has advised on the cutting of weeds and preparation

of soil for deciduous trees and the planting of grasses for insects. The improvement work is on-going making good use of manual techniques.

A natural Wonderland for Children

The biotope of Kyushu Sekisui Ind. is planned as a place where children can come to experience the joys of nature as it used to be in the past. The Opening Ceremony was held on April 14, 2001, i.e. the 220th day after the ground breaking. This was just a milestone in the development of the biotope, and we will continue our efforts to perfect it. Although it was artificially created, it provides a natural environment for the flora and diverse creatures living there. We anticipate



Mayor's message on the opening of the biotope

Noriyuki Shigematsu
Mayor of Chiyoda-cho

Our town is the birthplace of Kojin Shimomura, the author of "Jiro's Story" and has beautiful fertile fields with plenty of nature and streams full of water. However in recent years, progress of rice paddy realignment and concrete reinforcement of riverbanks has decreased the number of spots for children to play in a natural environment, e.g. waterfront spaces, shrine woods and grass fields.

The newly opened biotope offers an opportunity for children to experience nature. The "Survey Report of Experience Activities for Children" of the Ministry of Education and Science indicates that experiencing nature helps to instill a sense of morals and justice in children. The town cordially thanks you for providing such a wonderful place.



What is a "biotope"?

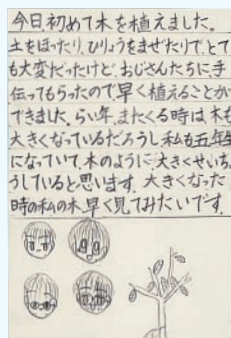
Mutsuko Nakajima
Saga Branch Chief,
Wild Bird Society of Japan

It is a place where diverse living creatures live and interact. It is a place which is constructed and then maintained by environmentally aware persons and sustained by the creatures living there. As such it is beneficial for both the natural living creatures and their human neighbors.

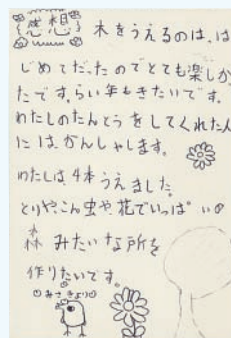
We can watch fireflies flying on summer evenings, see red dragonflies in autumn and watch kingfishers aiming at the fish in the stream. Children will be delighted with such things. The pleasure of waiting for the cycle of the seasons is now made vivid. May many creatures find homes here and may we protect the biotope with mutual care.

Smiling children sent messages to us.

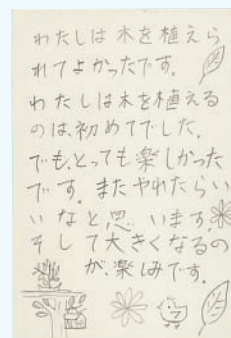
At the opening of the biotope many participants gathered at the site and helped to plant trees. Those children from nearby Chiyoda East Elementary School and Chiyoda Central Elementary School, who helped in the event, sent many messages to us. Here are a few of them.



Yuka Imamura
Chiyoda East Elementary School



Misaki Baba
Chiyoda East Elementary School



Megumi Hatada
Chiyoda East Elementary School



Yuka Ota
Chiyoda Central Elementary School



Yuki Nakamura
Chiyoda Central Elementary School

FEATURE III (cont.)

Cleansing our local surroundings is an important contribution to society.



Sakai Plant: Izumi Cleanup Campaign

Every individual should have the spirit of being a good global citizen.

Local workplaces of Sekisui Chemical Group are taking part in social activities for nature protection, in addition to our biotope, in conjunction with local communities. In fiscal 2000, various activities under the leadership of employees were conducted, such as local cleansing operations, forest conservation and the cleansing of rivers and streams, participants thereby learning the importance of nature and the spirit of volunteerism. We are continuing these activities and by fiscal 2002 all our plants will be involved. We have a system of ranking whereby points are awarded to plants on the quality of their activities. For the 4 years from 1999 to 2002, we set a target of attaining 100% participation at plants and a minimum of 10 activity points to be achieved.

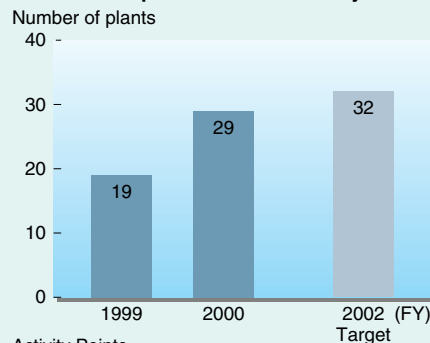


Nara Plant: The Suzaku Gate Trash 530 Campaign

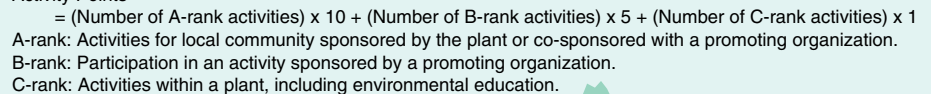


Tokuyama Sekisui Industry Co., Ltd.: Woodland rented and cared for by Sekisui

●Number of plants with 10 Activity Points



●Participation Rate



Activity Points = (Number of A-rank activities) x 10 + (Number of B-rank activities) x 5 + (Number of C-rank activities) x 1

A-rank: Activities for local community sponsored by the plant or co-sponsored with a promoting organization.

B-rank: Participation in an activity sponsored by a promoting organization.

C-rank: Activities within a plant, including environmental education.

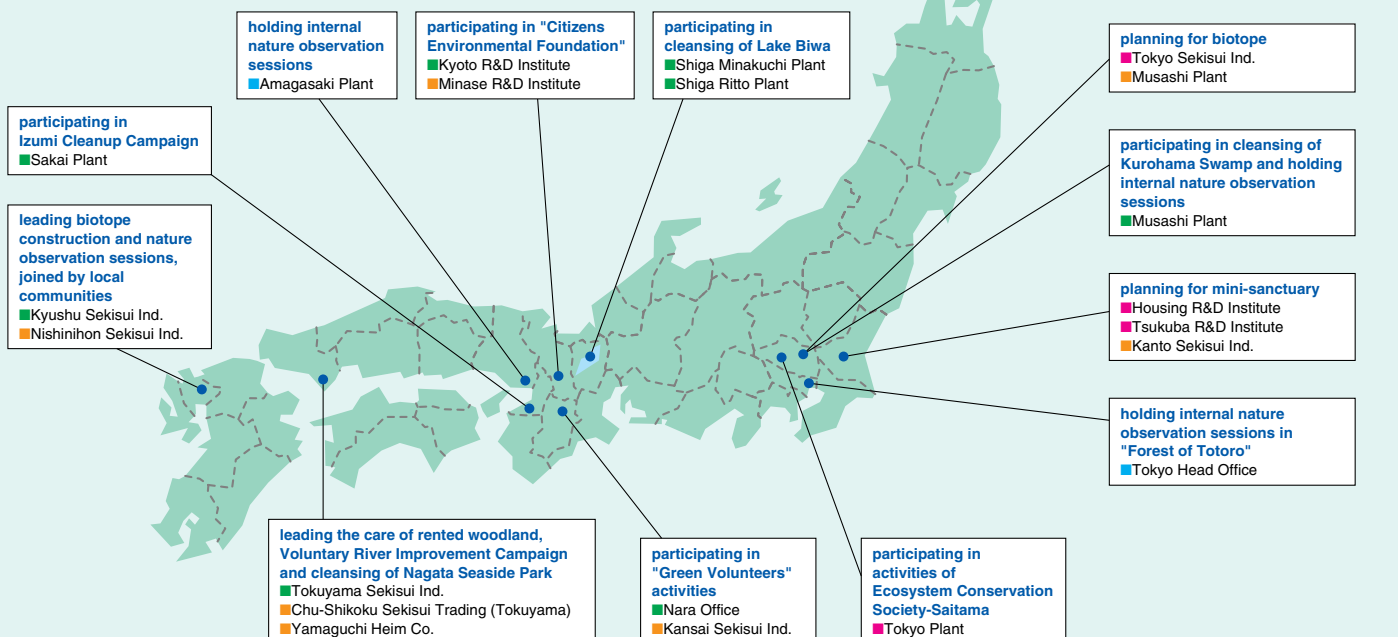
■Nature Protection Activities of Workplaces (April 2001)

BASIC CONCEPT

- Nature protection activities shall be developed at all workplaces, including branch offices, plants and R&D institutes.
- Nature protection activities shall be implemented along with zero emission activities and in conjunction with local communities.

- In progress
- In preparation
- Planning
- Supporting workplaces

Sekisui's staff and their families living in each area participate in these activities.



Activities for Global Environment

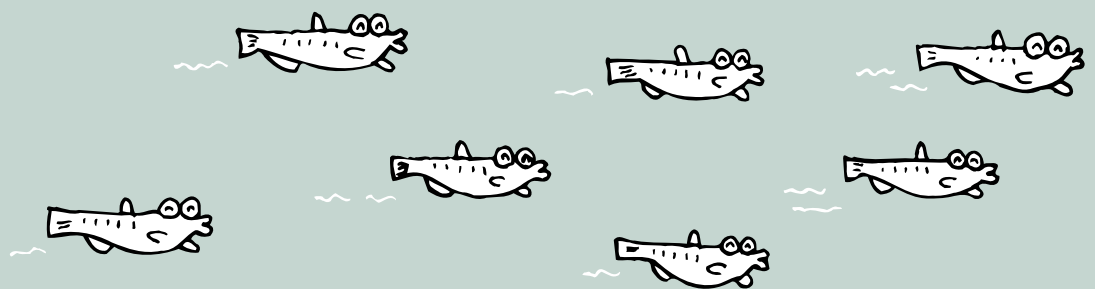
Environmental Conservation Activities from the Macroscopic Viewpoint

Production:

- Our Activities for Reduction of Carbon Dioxide Emission
 - Reduction of Carbon Dioxide Emission
 - Total Elimination of Substitute Flon (HCFC)
 - Energy Saving Activities (Plants)

Sales & Distribution:

- Energy Saving Activities (Work Areas other than Plants)
- Support for NGOs' Nature Protection Activities**



Production: Our Activities for Reduction of Carbon Dioxide Emission

We are promoting a variety of activities to limit global warming. In fiscal 2000 we reduced our carbon dioxide emission by 7,700 tons compared with that in the previous year but could not attain the middle term plan.

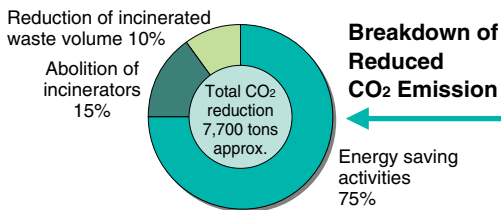
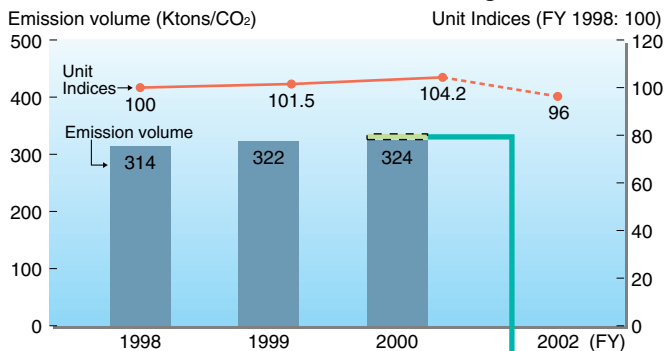
Reduction of Carbon Dioxide Emission

Efforts have been made internationally to reduce the greenhouse gases since the adoption of the "United Nations Framework Convention on Climate Change" in 1992 to regulate emission of such greenhouse gases as carbon dioxide (carbonic acid gas). We also have promoted our activities to save energy in all of our plants, and to reduce the emission of carbon dioxide generated in incinerating waste. We have also actively tackled the reduction of carbon dioxide emission through our development work and sales activities, for example in our development of houses equipped with photovoltaic generation systems and a more efficient Photovoltaic / Thermal Hybrid System and so forth.

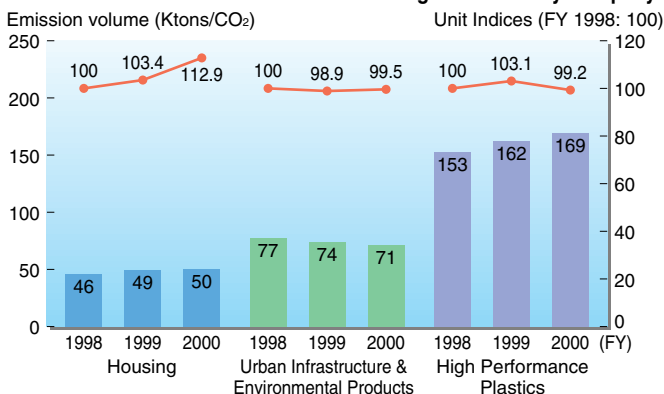
Results in fiscal 2000

Each plant promoted the reduction of incinerated waste volume and elimination of incinerators through our zero emission activities, and reduced carbon dioxide emission by 7,700 tons (approx.) in total. However, due to the increase of more energy consuming products, the emission quantity increased by 3.4%. In addition, mainly because of the decrease in sales unit prices, the emission per ex-godown Unit increased by 4.2% as compared with fiscal 1998. We will make efforts to attain our target by reinforcing our activities further.

Trend of Carbon Dioxide Emission and ex-godown Unit



Trend of Carbon Dioxide Emission and ex-godown Unit by Company



Future Countermeasures

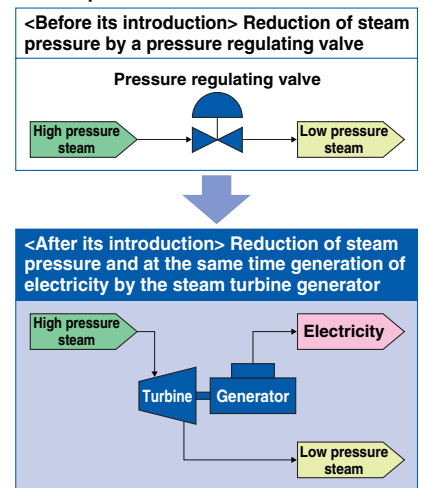
It will be necessary to take drastic countermeasures to achieve our middle term plan of carbon dioxide reduction. At present some of our plants are studying the possibility of deploying a co-generation system.

An Example of Carbon Dioxide Reduction Activities

Deployment of a Steam Turbine Generator (Tokuyama Sekisui Industry Co., Ltd.)

Tokuyama Sekisui Industry Co., Ltd. introduced a steam turbine generator in October 2000. Previously a valve reduced steam pressure, but this steam turbine generator utilizes the extra pressure to generate electricity. Thus we could reduce carbon dioxide emission by more than 1000 tons a year.

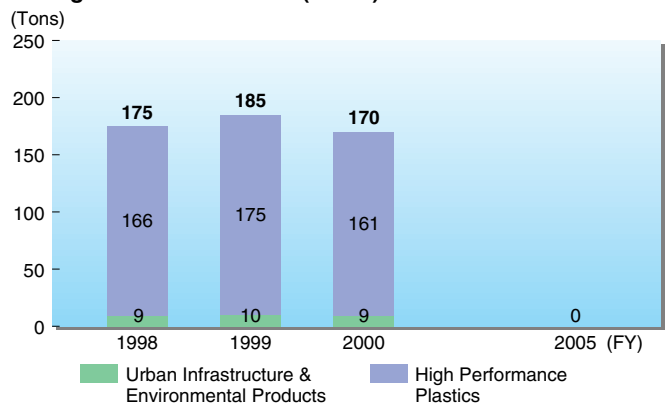
Principle of the Steam Turbine Generator



Total Elimination of Substitute Flon (HCFC)

Sekisui Chemical Group quickly switched from the specific flon (CFC) that damages the ozone layer to the substitute flon with a smaller ozone layer damage factor, and in 1995 all of our plants stopped using the CFC in their production processes. HCFC currently used as foaming agent or cleanser shall be totally eliminated by 2005. In fiscal 2000 we reduced its use by 8.1% compared with fiscal 1999. We are at present developing technology to eliminate the need for HCFC and switching to substitute solvent and water.

Usage of Substitute Flon (HCFC)



Production: Energy Saving Activities (Plants)

Our energy consumption and the ex-godown Unit increased in spite of our energy saving activities. We will achieve our target by enforcing drastic countermeasures.

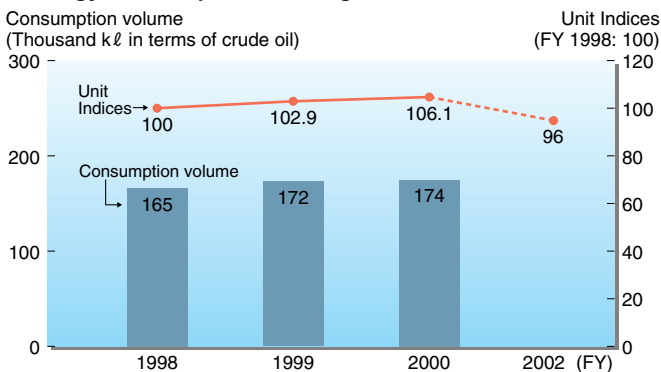
Energy Saving at our Plants

In every production process in our plants energy is consumed and carbon dioxide is generated. The most effective method to reduce carbon dioxide emission is to reinforce our activities to reduce energy consumption, and in Sekisui Chemical Group, such plants that generate high environmental loads take a leading part in the energy saving activities.

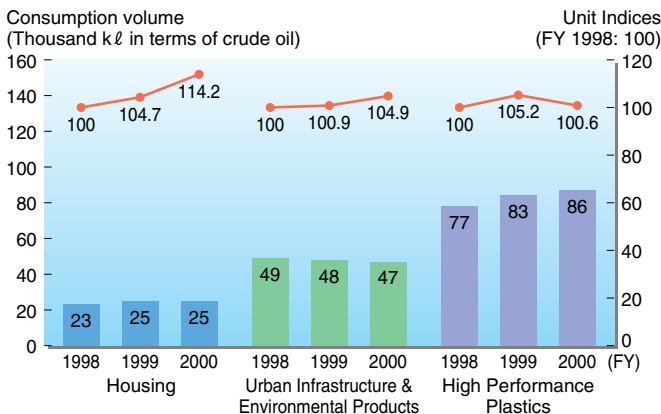
Results in fiscal 2000

We saved our energy use equal to 3,400 kiloliters in terms of crude oil through our energy saving activities in each plant, but mainly due to an increase in the production of items requiring more energy for production, our energy consumption increased by 5.3% and the ex-godown Unit increased by 6.1% compared with fiscal 1998. We will make every effort to attain our target by reinforcing our energy saving activities.

Energy Consumption and ex-godown Unit



Energy Consumption and ex-godown Unit by Company



Future Countermeasures

In addition to such countermeasures as the introduction of co-generation systems, we will take measures for equipment such as installing inverters on electric motors. We are also paying attention to minimizing any steam or air leakage and to collect emitted energy, and thus diligently minimizing all loss.

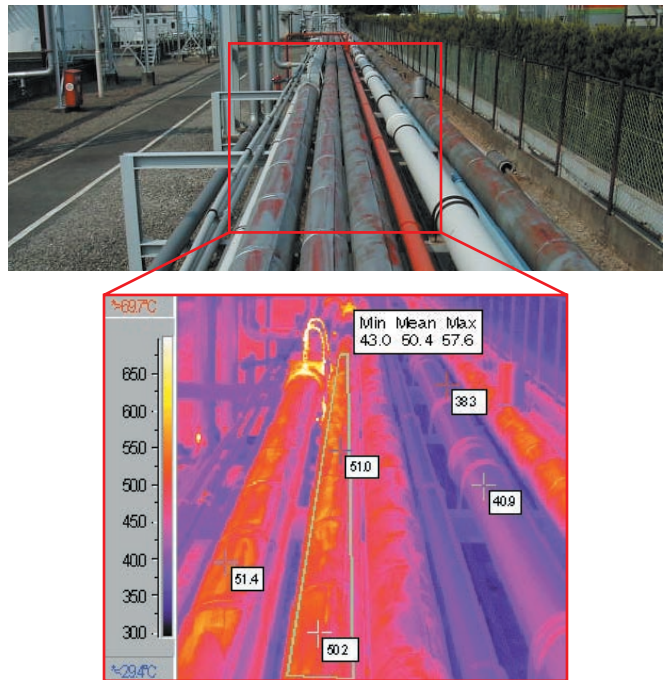
Examples of Energy Saving Activities

We promote various energy saving activities at each plant. Some of these activities are introduced below.

Diagnoses of Energy Losses and Countermeasures

We are making a variety of energy saving diagnoses in cooperation with equipment manufacturers and devoting efforts to seek for new energy saving themes for improvement. Through this activity we are paying attention to any small energy loss that may have been overlooked previously.

An example of the thermal emission diagnosis by Thermo-Vision (Sakai Plant)



An example of air leakage detection for repair by ultrasonic diagnosis equipment (Tokuyama Sekisui Industry Co., Ltd.)



Publication of "Examples of Improvements for Energy Saving"

In fiscal 2000, we published our booklet "Examples of Improvements for Energy Saving" (in Japanese language only), which presented the examples of energy saving activities carried out at each of our plants in fiscal 1999. We extend the successful ideas and measures for energy saving taken in any one plant to all other plants of Sekisui Chemical Group. Selected information is conveyed to interested parties outside Sekisui Chemical Group through The Osaka Industrial Association.

Sales/Distribution: Energy Saving Activities (Work Areas other than Plants)

Energy saving activities in our offices and our cars have obtained good results. Photovoltaic generation systems in the houses that we sold in fiscal 1999 and 2000 are reducing carbon dioxide emission by over 15,000 tons a year.

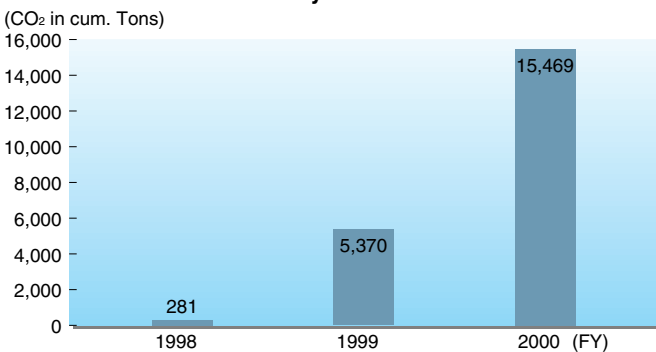
Energy Saving Activities in Work Areas other than Plants

Carbon dioxide is generated not only in manufacturing processes but also by the use of OA equipment, lights and air conditioning in offices. Therefore we keenly promote energy saving activities in sales and distribution. We further promote energy saving activities in our R&D institutes and head offices.

Extension of Activities to Products (e.g. Houses)

Carbon dioxide emission by our houses equipped with photovoltaic generation systems is about half the quantity specified by previous standards for energy saving houses. During fiscal 1999 to 2000 Sekisui Chemical Co., Ltd. led the market in the number of sales of houses equipped with photovoltaic generation systems, which will contribute to the reduction of carbon dioxide emission by over 15,000 tons a year.

Reduction of CO₂ Emission by Houses equipped with Photovoltaic Generation Systems



Extension of Activities to Head Offices and R&D Institutes

We promote energy saving activities not only in our plants but also in our head offices and R&D institutes in order to reduce electricity consumption. In our Head Office (Osaka), we started our activities in fiscal 2000 and achieved a 1.6% reduction against fiscal 1999. In our Kyoto R&D Institute we started our activities in 1999 and achieved a 7.8% reduction against 1998.

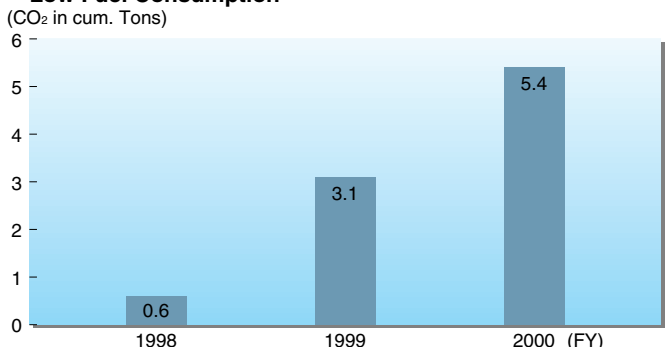


Leaflets presenting our energy saving activities to our employees

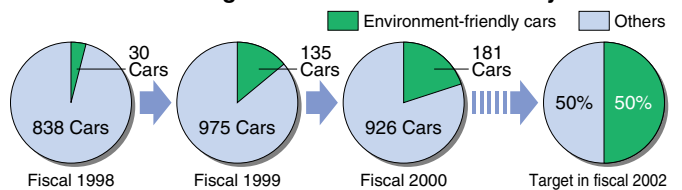
Extension of Activities to Company and Salesmen's Cars

We use as many cars with low fuel consumption and cars with low level exhaust emission as possible. During fiscal 1998 through 2000 we introduced in total 346 cars including hybrid cars to our fleet, which are reducing our carbon dioxide emission by 5.4 tons approx. a year.

Reduction of CO₂ Emission by Introduction of Cars with Low Fuel Consumption



The Ratio of Changeover to Environment-friendly Cars



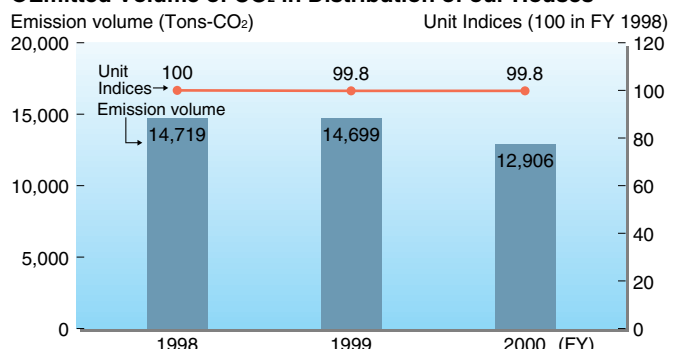
Definition of environment-friendly cars:

- Low polluting cars such as electric cars, natural gas cars
- Low fuel consuming cars such as hybrid cars, direct-injection engine cars
- Low level exhaust emission cars (LEV) admitted as such by the Ministry of Land, Infrastructure and Transport

Green Distribution Activities

Rather than improving loading efficiency from only the economic viewpoint as in the past, from fiscal 2001 we have been putting emphasis on the environmental aspects, especially with regard to carbon dioxide emission. We have decided to tackle this problem from the environmental aspects to curtail carbon dioxide emission from fiscal 2001 in addition to the economic aspects. We have started our activities aiming at the completion of a model system for fiscal 2002, deciding indices, summation methods and so forth. Our preliminary calculation results of carbon dioxide emission in distribution of our house units (plants to construction sites) are shown below.

Emitted Volume of CO₂ in Distribution of our Houses



Support for NGOs' Nature Protection Activities

We have continued supporting international nature protection activities implemented by the environmental NGOs since 1997, when we commemorated the 50th anniversary of the company.

●We support NGOs' nature protection activities outside Japan

In commemoration of the company's 50th anniversary in 1997, we placed our nature protection activities as the main pillar of our social contribution activities. We organized an "Executive Committee for Nature Conservation Activities" in the company, which has been aggressively promoting the nature protection activities. Outside Japan we support, in cooperation with Keidanren Nature Conservation Fund (a charitable trust), the Asian nature protection activities implemented by the environmental NGOs.

In fiscal 2000 we made financial contributions to a marine conservation activity in Indonesia, a reforestation project, as well as seven other projects. (See table above). In order to replenish our support further we hold conferences to hear from the NGO representatives the progress reports of their activities. We also successively report the progress status of such projects in our company publications to enhance employees' consciousness in nature protection. One of our employees has been assigned to work full time with Keidanren Nature Conservation Fund, supporting their activities and obtaining know-how for making our activities most fruitful.

<Keidanren Nature Conservation Fund>

Keidanren Nature Conservation Fund was admitted as a charitable trust, and has been actively operating since April 2000. With regard to their fund raising activities, Keidanren Nature Conservation Council is in charge, which is a special committee of Keidanren.

●Overseas Projects we supported in fiscal 2000

| Region | Project Name | Operating Organization |
|------------------|--|---|
| Indonesia | Establishment of the Coastal and Marine Conservation Center in Bali | The Nature Conservancy (TNC) |
| East Asia | Survey of Biological Diversity and Proposal to establish a Nature Sanctuary | Wild Bird Society of Japan |
| Fiji | Support of Afforestation Project in the Western Part of Fiji | OISCA-International |
| China | Afforestation and Enlightenment Activities in upstream Areas of the Chang-jian River | International Good Neighborhood Association |
| Fiji | Eco-tourism for Protection of Diverse Creatures | Japan National Committee for Pacific Economic Cooperation |
| Japan | Survey of the Migratory Patterns of Middendorfbear Geese | Network Fukushimaagata |
| Asia | Status Survey of Asian Elephants and Planning for Their Protection Measures | Japan Wildlife Research Center |
| Thailand | Mangrove Reforestation in the Coastal Area of Tran District | TUMREC (Thailand) |
| Papua New Guinea | Construction Project of the Eco-Tec Promotion Center | OISCA-International |



●Ms. Rili Djohani, Director, TNC, Bali, Indonesia, sent us a letter.

My heartfelt thanks to Sekisui and Keidanren for their continuous support to the Komodo Project and the establishment of the Coastal and Marine Conservation Center in Bali. The funding from Sekisui and Keidanren have been instrumental for the birth and growth of the two projects. Great accomplishments have been achieved in Komodo National Park in the past five years where we support park planning and evaluation, coral, fish and cetacean monitoring and training, alternative livelihood programs for local communities, awareness and education programs as well as the production of a range of materials such as the coral flip chart. A dream came true when the Coastal and Marine Conservation Center was recently opened in Sanur with funding from Sekisui and Keidanren. An important milestone from which we can further develop a center of excellence for coastal and marine conservation in Indonesia and the Asia-Pacific. Situated in the bull's eye of marine biodiversity, it is an exciting prospect to develop and leverage more innovative strategies to support effective marine protected areas management and build up the capacity in the region which have really an impact on the protection of biodiversity. My sincere gratitude to Sekisui and Keidanren who made these initiatives possible and it is my hope that Sekisui and Keidanren will continue to support the growth of this Center and perhaps even consider it for adoption. Thank you so much. Warm regards,

Rili Djohani
Director, Coastal and Marine Conservation Program Indonesia
The Nature Conservancy
Bali, Indonesia



A Third Party Examination Report

In order to secure the reliability and transparency of this environmental report, we underwent an examination by a third party and received the following report.

Third Party Examination Report on the Environmental Report 2001 of Sekisui Chemical Co., Ltd.

July 12, 2001

Mr. Naotake Okubo
Representative Director and President
Sekisui Chemical Co., Ltd.

(Signed and sealed) **Yasuo Kurihara**
Representative Director
Shinnihon Environmental Quality Research Institute

1. Purpose and Scope of Examination

This institute has conducted an examination on "Environmental Report 2001 of Sekisui Chemical Co., Ltd.", which was prepared under the responsibility of the company, under the conditions and procedures mutually agreed. The purpose of the examination by this institute was to express an independent opinion on the conformity of the environmental performance figures (amounts), the collection procedures and summation methods of environmental expenditure and its effect, and other numerical information and its base and related data of Sekisui Chemical Co., Ltd. and its main subsidiary companies that appear in this report.

The examination procedure employed by this institute was different from that of auditing, and therefore this is not to express an audit opinion on the accuracy and the comprehensiveness with regard to the environmental performance figures (amounts), nor the environmental expenditure and its effect stated in the report.

2. Examination Procedure

This institute employed the following procedure of examination that was in agreement with the company.

- (1) Confirmation of the collection processes and summation methods of the environmental performance figures (amounts), the environmental expenditure and its effect that appear in the report.
- (2) Verification of the accuracy, by inspection, of calculation of the base and related data with regard to the environmental performance figures (amounts), the environmental expenditure and its effect that appear in the report.
- (3) Confirmation of the correspondence between other numerical information that appear in the report and its base and related data.
- (4) Questions to company staff responsible for this report by visiting their facilities and affiliated companies as occasion calls, inspection of actual sites to comprehend situations, and comparative studies of the related documents for approval, etc.

3. Results of Examination

This institute expresses its opinion below as the results of the examination.

- (1) The information of the environmental performance figures (amounts), the environmental expenditure and its effect that appears in the report has been properly collected, summed and disclosed in accordance with the company's policy and no significant revision is required.
- (2) The other numerical information that appears in the report has been properly collected, summed and disclosed in accordance with the company's policy and no significant revision is required.

(Translated from the Japanese original)

Assessment by External Organizations

Assessment by External Organizations

Official Commendations and Prizes

The environmental conservation activities and products of Sekisui Chemical Group won the following official commendations, prizes and so forth.

Fiscal 2000 Osaka Environment Prize Grand Prize.....Sekisui Chemical Co., Ltd.

Fiscal 2000 New Energy Award, Minister of Economy, Trade and Industry Award

.....Photovoltaic/Thermal Hybrid System for Housing

Fiscal 2000 Recycle Promotion Commendation for valuable Activities

Commendation by Recycle Promotion Council Chairman

.....Musashi Plant

.....Shiga-Minakuchi Plant

.....Kyushu Sekisui Industry Co., Ltd.

.....Nishinohon Sekisui Industry Co., Ltd.

Recognition of Eco-Office Recommendation (The Municipal Office of Tosu City).....Nishinohon Sekisui Industry Co., Ltd.



Assessment of Environmental Report 2000 (Answers to Questionnaire)

We received the following assessment and opinions from those who read our Environmental Report 2000. (34 answers received)

Q1 Was there anything specially impressive or that you were pleased to know?

- Reduction of waste and zero emission activities.....21
- Development of recycling technology.....11

Q2 Are there any subjects on which you would have liked to have had more information?

- Reduction of waste and zero emission activities.....5
- Collection and recycle of used products.....4
- Control of environmental pollutants.....4

Q3 How did you evaluate the environmental activities of Sekisui Chemical Group?

- Highly.....25
- Fairly.....8
- No answer.....1

Q4 What do you expect from Sekisui Chemical Group with regard to its activities on environmental problems?

- To develop environment-friendly products.....6
- To be a pioneer enterprise in environmental measures.....5
- To pay full efforts to the recycle of building materials.....4

Q5 Were the contents and descriptions in this Environmental Report easy to understand?

- Very easy to understand.....10
- Easy to understand.....15
- Rather difficult to understand.....4

Reasons for difficulty in understanding:

- It would be better to give more actual examples.
- The products that are collected/recycled seem to be limited.
- Insufficient detailed information.
- Targets, results and reasons for failure to reach targets are not sufficiently clarified.
- Insufficient quantitative descriptions.

Based on these valuable opinions as mentioned above, we made efforts to improve the contents and descriptions in this year's report.

Editorial Policy of Environmental Report 2001

1. We have made efforts to disclose as much information as possible referring to the following materials.
 - "Guidelines for Environmental Reports (Fiscal 2000 Edition)" of the Ministry of the Environment
 - "Sustainability Reporting Guidelines" by GRI (Global Reporting Initiative)(There may still be items that are insufficiently presented but we will improve our disclosure in future reports).
2. The object period of this report is from April 1, 2000 to March 31, 2001. With regard to the targeted workplaces, refer to P48 and P49.
3. The business processes and the environmental activities of Sekisui Chemical Group are classified and summarized in accordance with the ways in which we are involved in environmental matters (see Table P8). This report is based on areas of our involvement. (Global Environment, Environment in Local Community, and so forth).
4. In compliance with the introduction of our internal company system, we collected and summed data by each internal company.
5. In response to requests received through the questionnaire on our 2000 Report, we have given more precise information on our zero emission activities.

Supplementary Explanation

1. The data shown in our report are in principle from the fiscal year 1998, because prior to 1997, data were collected and summed by each plant of Sekisui Chemical Co., Ltd. at that time, and due to the subsequent separations of business units, the data control between the workplaces of Sekisui Chemical Group has become more complex. Refer to our reports in past years for data prior to 1997. (These are available on our website).
2. With regard to the figures on the reduction of carbon dioxide emission from houses, only the effect by photovoltaic generation systems was calculated for the figures given in the graph on P42, and the figures in the graph on P25 include additionally the effect from better air tightness and heat insulation.
3. Some of our subsidiaries mentioned in this report sell some products under their own brand names, the data of which are not included in the internal companies' data. Therefore, there may be cases where the total summation of the whole company do not match the summations of the internal companies.
4. Due to separation of and addition of business units, the number of workplaces may be different from that in our Environmental Report 2000.

Measurement Results of the Items regulated by the Laws and Regulations on Air and Water Quality

We disclose the status of our observance of the laws and regulations on air and water quality at each plant. At four plants we found excesses over the limits. Appropriate countermeasures were immediately taken and are being maintained.

① Due to limited space, only the representative items are listed. There is no excess over the regulated values in items that are not listed here.

② In case that there are multiple facilities which are objects of regulation, the following values are listed.

Emitted gases: The value in the facility that emitted most. Emitted water: The highest measured value. In case that the regulated values for these facilities are different, the measured values that are closest to the regulated values are listed.

| Items | | Unit | Shiga-Ritto Plant | | Gunma Plant | | Nara Plant | | Tokyo Plant | | Nitta Plant | | Amagasaki Plant | | Musashi Plant | | | |
|-----------------------|-------------------|------------------------|------------------------|---------|-------------|---------|------------|-------|-------------|-------|-------------|---------|-----------------|--------------|---------------|---------|--------------|--------------|
| | | | Reg.V. | Msd.V | Reg.V. | Msd.V | Reg.V. | Msd.V | Reg.V. | Msd.V | Reg.V. | Msd.V | Reg.V. | Msd.V | Reg.V. | Msd.V | | |
| Emitted Gases | Boiler, etc. | SOx | K value | 8.76 | 0.1 | — | — | — | — | — | — | — | — | — | — | — | | |
| | | | Nm ³ /hr | — | — | — | — | 3 | 0.04 | — | — | 0.53 | 0.023 | 11t/Y | 0t/Y | 5.625 | 0 | |
| | | NOx | ppm | 150 | 36 | — | — | — | — | — | — | — | — | 15.95t/Y | 6t/Y | 70 | 60 | |
| | Soot & Dust | g/Nm ³ | 0.1 | <0.02 | — | — | — | — | — | — | — | — | — | — | 0.05 | 0.004 | | |
| | Incinerator | SOx | K value | 8.76 | 2 | — | — | — | — | — | — | — | — | — | — | — | | |
| | | | Nm ³ /hr | — | — | 1.198 | 0.072 | — | — | — | — | — | — | — | — | — | | |
| | | NOx | ppm | 250 | 13.1 | 180 | 18 | — | — | — | — | — | — | — | — | — | | |
| | | Soot & Dust | g/Nm ³ | 0.5 | 0.11 | — | — | — | — | — | — | — | — | — | — | — | | |
| | | HCl | mg/Nm ³ | 700 | 608 | — | — | — | — | — | — | — | — | — | — | — | | |
| | Dioxins | ng-TEQ/Nm ³ | 80 | 5.1 | 80 | 2.6 | — | — | — | — | — | — | — | — | — | | | |
| Drained Water Quality | Public Water Area | pH | — | 6.0-8.0 | 6.7-7.0 | 6.5-8.5 | 6.6-7.6 | — | — | — | — | 5.8-8.6 | 6.2-7.2 | — | — | 6.5-8.5 | 8.0 | |
| | | BOD | mg/l | 15 | 2.5 | 10 | 2 | — | — | — | — | 60 | 4 | — | — | 5 | 4 | |
| | | COD | mg/l | 15 | 3.8 | — | — | — | — | — | — | — | — | — | — | — | — | |
| | | SS | mg/l | 20 | 7.2 | 10 | <1 | — | — | — | — | 50 | 29 | — | — | 50 | 3 | |
| | | n-hexane extract | Mineral oil | mg/l | 3 | 0.6 | 3 | <0.5 | — | — | — | — | 30 | Not Detected | — | — | Not Detected | Not Detected |
| | | | Animal & vegetable oil | mg/l | | | | | | | | | | | | | | |
| | | Nitrogen content | mg/l | 8 | 2.7 | — | — | — | — | — | — | 120 | 1.82 | — | — | 18 | 4.5 | |
| | | Phosphorus content | mg/l | 0.5 | <0.1 | — | — | — | — | — | — | 16 | 0.32 | — | — | 1.5 | 0.3 | |
| | | Coliform group number | Pcs/cm ³ | — | — | — | — | — | — | — | — | — | — | — | — | 3000 | 100 | |
| | | Dioxins | pg-TEQ/l | — | — | — | — | — | — | — | — | — | — | — | — | — | — | |
| | Sewerage | pH | — | 5.0-9.0 | 6.9-6.2 | — | — | — | — | — | — | — | — | 5.7-8.7 | 7.8 | 5.0-9.0 | 8.0 | |
| | | BOD | mg/l | 600 | 290 | — | — | — | — | — | — | — | — | 300 | 119 | 600 | 420 | |
| | | SS | mg/l | 600 | 120 | — | — | — | — | — | — | — | — | 300 | 47 | 600 | 41 | |
| | | n-hexane extract | Mineral oil | mg/l | 5 | 0.8 | — | — | — | — | — | — | — | — | 5 | <2 | 5 | 1 |
| | | | Animal & vegetable oil | mg/l | 30 | 4.7 | — | — | — | — | — | — | — | — | | | 30 | 4 |
| | | Nitrogen content | mg/l | 60 | 35 | — | — | — | — | — | — | — | — | — | — | 120 | 24 | |
| Phosphorus content | mg/l | 10 | 4.1 | — | — | — | — | — | — | — | — | — | — | 16 | 5 | | | |

Note 1: Since decomposition equipment for oil in kitchen drain water was installed, the measured value has been kept less than 11ppm. Note 2: Mixture of sand and dirt into rainwater caused Note 4: Upon finding the irregularity, rectifying countermeasures were taken. After rectification BOD is 3.8, number of coliform group is 320, and SS is 3.

| Items | | Unit | Chugoku Sekisui Industry | | Nishinohon Sekisui Industry | | Sekisui Board | | | | Hokkaido Sekisui Industry | | Toto Sekisui | | Okayama Sekisui Industry | | | |
|-----------------------|-------------------|------------------------|--------------------------|---------|-----------------------------|-------|-----------------|---------|-------------|---------|---------------------------|-------|--------------|---------|--------------------------|---------|---------|-----|
| | | | Reg.V. | Msd.V | Reg.V. | Msd.V | Minakuchi Plant | | Gunma Plant | | Reg.V. | Msd.V | Reg.V. | Msd.V | Reg.V. | Msd.V | | |
| Emitted Gases | Boiler, etc. | SOx | K value | — | — | — | — | — | — | — | — | — | — | — | — | | | |
| | | | Nm ³ /hr | 1.09 | 0.019 | — | — | — | — | 2.23 | 1.126 | 1 | 0.15 | — | — | 2.2 | 0.077 | |
| | | NOx | ppm | 150 | 52 | — | — | 150 | 43.8 | 175 | 90 | 180 | 63 | — | — | 180 | 45 | |
| | Soot & Dust | g/Nm ³ | 0.25 | 0.054 | — | — | 0.1 | <0.01 | 0.15 | 0.043 | 0.3 | <0.01 | — | — | 0.3 | 0.021 | | |
| | Incinerator | SOx | K value | — | — | — | — | — | — | — | — | — | — | — | — | — | | |
| | | | Nm ³ /hr | 1.567 | 0.24 | — | — | — | — | — | — | — | — | — | — | 1.0 | <0.1 | |
| | | NOx | ppm | 250 | 100 | — | — | — | — | — | — | — | — | — | — | 250 | 120 | |
| | | Soot & Dust | g/Nm ³ | 0.25 | 0.037 | — | — | — | — | — | — | — | — | — | — | 0.5 | 0.036 | |
| | | HCl | mg/Nm ³ | 700 | 42 | — | — | — | — | — | — | — | — | — | — | 700 | <140 | |
| | Dioxins | ng-TEQ/Nm ³ | 80 | 3.6 | — | — | — | — | — | — | — | — | — | 80 | 23 | 80 | 0.65 | |
| Drained Water Quality | Public Water Area | pH | — | 5.8-8.6 | 7.0 | — | — | — | — | 6.5-8.5 | 6.8-7.8 | — | — | 5.8-8.6 | 7.7 | 5.8-8.6 | 7.3-8.6 | |
| | | BOD | mg/l | 60 | 13.5 | — | — | — | — | 10 | 9 | — | — | 25 | 1.2 | 60 | 3.2 | |
| | | COD | mg/l | — | — | — | — | — | — | — | — | — | — | 25 | 2.1 | 60 | 7.8 | |
| | | SS | mg/l | 90 | 16.5 | — | — | — | — | 10 | 10 | — | — | 50 | 2 | 90 | 9 | |
| | | n-hexane extract | Mineral oil | mg/l | 5 | — | — | — | — | 3 | Not Detected | — | — | — | 5 | 1 | 5 | 1.6 |
| | | | Animal & vegetable oil | mg/l | | | | | | | | | | | | | | |
| | | Nitrogen content | mg/l | — | — | — | — | — | — | — | — | — | — | — | — | — | — | |
| | | Phosphorus content | mg/l | — | — | — | — | — | — | — | — | — | — | — | — | — | — | |
| | | Coliform group number | Pcs/cm ³ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | |
| | | Dioxins | pg-TEQ/l | — | — | — | — | — | — | — | — | — | — | — | — | — | — | |
| | Sewerage | pH | — | — | — | — | 5.0-9.0 | 7.1-7.0 | — | — | — | — | — | — | — | 5.8-8.6 | 6.4-7.7 | |
| | | BOD | mg/l | — | — | — | — | 600 | 141 | — | — | — | — | — | — | 20 | 9.3 | |
| | | SS | mg/l | — | — | — | — | 600 | 185 | — | — | — | — | — | — | — | — | |
| | | n-hexane extract | Mineral oil | mg/l | — | — | — | — | 5 | 1.8 | — | — | — | — | — | — | — | |
| | | | Animal & vegetable oil | mg/l | — | — | — | — | 30 | 2.7 | — | — | — | — | — | — | — | |
| | | Nitrogen content | mg/l | — | — | — | — | 60 | 15 | — | — | — | — | — | — | — | — | |
| Phosphorus content | mg/l | — | — | — | — | 10 | 1.7 | — | — | — | — | — | — | — | — | | | |

③The mark "—" shows that there is no regulated value or there is no object facility.

④Abbreviations stand for the following: SOx: Sulfur oxides concentration, NOx: Nitrogen oxides concentration, HCL: Hydrogen chloride concentration, pH: Hydrogen ion concentration, BOD: Biochemical oxygen demand, COD: Chemical oxygen demand, SS: Concentration of suspended substance in water

| Shiga-Minakuchi Plant | | Sakai Plant | | Kyoto R&D Institute | | Minase R&D Institute | | Tukuba R&D Inst./ Housing R&D Institute | | Kitanihon Sekisui Industry | | Higashinihon Sekisui Industry | | Kanto Sekisui Industry | | Tokyo Sekisui Industry | | Chubu Sekisui Industry | | Kansai Sekisui Industry | |
|-----------------------|---------|-------------|---------|---------------------|----------------|----------------------|---------|---|----------------|----------------------------|--------------|-------------------------------|-------|------------------------|-------------------|------------------------|-------|------------------------|-------------------|-------------------------|--------------|
| Reg.V. | Msd.V | Reg.V. | Msd.V | Reg.V. | Msd.V | Reg.V. | Msd.V | Reg.V. | Msd.V | Reg.V. | Msd.V | Reg.V. | Msd.V | Reg.V. | Msd.V | Reg.V. | Msd.V | Reg.V. | Msd.V | Reg.V. | Msd.V |
| — | — | — | — | — | — | 1.75 | 0.07 | — | — | — | — | — | — | — | — | — | — | 2.34 | 0.4 | — | — |
| 28.5 | 0.55 | — | — | — | — | — | — | — | — | 3.3 | 0.16 | 0.65 | 0.1 | 7 | 0.018 | 1.452 | 0.032 | — | — | — | — |
| 950 | 776 | — | — | 1000 | 65 | 150 | 38 | 180 | 72 | 180 | 42 | 180 | 74 | 180 | 77 | 230 | 37 | 100 | 80 | — | — |
| 0.1 | 0.014 | — | — | 0.05 | <0.002 | 0.1 | 0.003 | 0.3 | <0.005 | 0.3 | <0.01 | — | — | 0.3 | 0.875 (Note 3) | 0.35 | 0.011 | 0.15 | 0.003 | — | — |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 2.34 | 0.1 | — | — |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | 5.2 | <0.147 | 7.992 | 0.304 | — | — | 9.81 | Not Detected |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | 250 | 67 | 250 | 25 | 250 | 120 | — | — |
| — | — | 0.25 | 0.0023 | — | — | — | — | — | — | — | — | — | — | 0.25 | 0.105 | 0.25 | 0.065 | 0.25 | 0.0086 | 0.25 | 0.016 |
| — | — | 126 | 8 | — | — | — | — | — | — | — | — | — | — | 700 | 42 | 700 | 130 | 100 | 58 | 700 | 88 |
| 80 | 1.6 | 80 | 21 | — | — | — | — | — | — | — | — | 80 | 2.5 | 80 | 0.013 | 80 | 2.2 | 80 | 1.4 | 80 | 1.0 |
| 6.5-8.5 | 7.1-7.7 | 5.8-8.5 | 6.5-8.0 | — | — | 5.8-8.6 | 7.4-7.9 | 5.8-8.6 | 6.6-6.9 | — | — | 5.8-8.6 | 7.3 | — | — | 5.8-8.6 | 6.9 | 6.0-8.5 | 7.1-8.2 | 5.6-8.6 | 7.3 |
| 20 | 14.6 | — | — | — | — | 50 | 27 | 10 | 0.6 | — | — | 20 | 8.9 | — | — | 25 | 6.3 | 10 | 18 (Note 4) | 70 | 7.3 |
| 20 | 19.5 | 25 | 9.1 | — | — | 50 | 10 | 10 | 1.8 | — | — | — | — | — | — | — | — | 10 | 9 | — | — |
| 70 | 18.3 | 25 | 7.5 | — | — | 90 | 6 | 15 | 33 (Note 2) | — | — | 25 | 24 | — | — | 60 | 6 | 10 | 12 (Note 4) | 100 | 21.4 |
| 5 | <0.5 | — | — | — | — | 5 | — | 5 | <0.1 | — | — | — | — | — | — | — | — | — | — | — | — |
| 20 | <0.5 | 3 | 1.8 | — | — | 20 | 0.9 | 3 | <0.1 | — | — | — | — | — | — | 5 | 1 | 1 | 0.5 | 5.6 | 0.5 |
| 8 | 0.9 | 120 | 20 | — | — | 60 | 8.7 | — | — | — | — | — | — | — | — | 60 | 1.2 | 120 | 4.8 | — | — |
| 1 | 0.1 | 16 | 1.2 | — | — | 8 | 6.3 | — | — | — | — | — | — | — | — | 8 | 0.5 | 16 | 0.04 | — | — |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 1,500 | 3,300 (Note 4) | — | — |
| 50 | 2.6 | 50 | 0.042 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 5.0-9.0 | 6.8-7.2 | — | — | 5< | 7.0-8.4 | — | — | 6.0-8.5 | 7.0-8.2 | 5.0-9.0 | 7.6 | — | — | — | — | 5.0-9.0 | 8.2 | — | — | — | — |
| 600 | 222 | — | — | — | — | — | — | 300 | 180 | 600 | 4.9 | — | — | — | — | 600 | 180 | — | — | 1,500 | 203.3 |
| 600 | 206 | — | — | 600 | 8 | — | — | 300 | 79 | 600 | 19 | — | — | — | — | 600 | 210 | — | — | 1,500 | 110 |
| 5.0 | 1.9 | — | — | 5 | <0.5 | — | — | 3 | <1.0 | 5 | Not Detected | — | — | — | — | 30 | 15 | — | — | — | — |
| 30 | 2.8 | — | — | 30 | 67 (Note 1) | — | — | 25 | 17 | — | — | — | — | — | — | 150 | 54.8 | — | — | — | — |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 20 | 6.66 | — | — | — | — |

this problem during construction, which is to be rectified in fiscal 2001. Note 3: After maintenance and adjustment of the equipment it has been kept below the regulated value (0.014g/ Nm³).

| Tokuyama Sekisui Industry | | Shikoku Sekisui Industry | | Kyushu Sekisui Industry | | Sekisui Techno-seikei Higashinihon Head Office Plant | | Sekisui Techno-seikei Higashinihon Nara Plant | | Sekisui Film Hokkaido | | Sekisui Film Higshinihon | | Sekisui Film Nishinihon | | Sekisui Film Kyushu | | Sekisui Kako | |
|---------------------------|-------|--------------------------|-------|-------------------------|---------|--|-------|---|-------|-----------------------|-------|--------------------------|-------|-------------------------|---------|---------------------|-------|--------------|---------|
| Reg.V. | Msd.V | Reg.V. | Msd.V | Reg.V. | Msd.V | Reg.V. | Msd.V | Reg.V. | Msd.V | Reg.V. | Msd.V | Reg.V. | Msd.V | Reg.V. | Msd.V | Reg.V. | Msd.V | Reg.V. | Msd.V |
| — | — | 3.5 | 0.15 | — | — | — | — | — | — | — | — | 17.5 | 2.5 | — | — | — | — | 1.75 | 1.01 |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| — | — | 180 | 43 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 180 | 76 |
| — | — | 0.3 | <0.01 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 0.3 | 0.002 |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 1.5 | 0.087 |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 250 | 100 |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 0.4 | 0.064 |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 700 | 13 |
| 80 | 9.5 | 80 | 4.9 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 80 | 4.8 |
| 5.8-8.6 | 7.8 | 5.8-8.6 | 7.0 | 5.8-8.6 | 8.0-8.1 | — | — | — | — | — | — | — | — | — | — | 3.8-8.6 | 7.4 | 5.8-8.6 | 7.3-7.9 |
| — | — | 160 | 1.4 | 120 | 1.3 | — | — | — | — | — | — | 20 | 3.9 | — | — | 160 | 1.9 | 25 | 9.5 |
| 7.0 | 6.0 | 160 | 2.5 | — | — | — | — | — | — | — | — | — | — | — | — | 160 | 1.4 | 25 | 6 |
| 10.0 | 4.5 | 200 | 1 | 150 | 10.0 | — | — | — | — | — | — | 25 | 3.4 | — | — | 200 | 2.2 | 30 | 7 |
| — | — | 5 | 0.5 | 5 | 0.7 | — | — | — | — | — | — | — | — | — | — | 5 | <0.5 | — | — |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 30 | <0.5 | — | — |
| 1.0 | 0.5 | 120 | 4.5 | 60 | 1.03 | — | — | — | — | — | — | — | — | — | — | 120 | 3.4 | — | — |
| 0.4 | 0.16 | 16 | 0.1 | 8 | 1.23 | — | — | — | — | — | — | — | — | — | — | 16 | 0.25 | — | — |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 3,000 | 83 |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| — | — | — | — | — | — | — | — | — | — | — | — | 5.7-8.7 | 7.0 | 5.0-9.0 | 7.2-8.8 | — | — | — | — |
| — | — | — | — | — | — | — | — | — | — | — | — | 300 | 35 | 600 | 46 | — | — | — | — |
| — | — | — | — | — | — | — | — | — | — | — | — | 300 | 40 | 600 | 30 | — | — | — | — |
| — | — | — | — | — | — | — | — | — | — | — | — | 5 | 0.7 | 5 | 0.5 | — | — | — | — |
| — | — | — | — | — | — | — | — | — | — | — | — | 20 | 0.98 | 60 | 12 | — | — | — | — |
| — | — | — | — | — | — | — | — | — | — | — | — | 30 | 8.1 | 10 | 0.74 | — | — | — | — |

Object Facilities of this Environmental Report (Facility Names as of March 31, 2001)

(Main production items, date of acquisition or target schedule of acquisition of the ISO 14001 certification)

Housing Company

FY 2001 ◎Housing Research & Development Institute*
32 Wadai, Tsukuba-shi, Ibaraki-ken

Sekisui Heim/Two-U-Home Manufacturers :

Sept. 1998 ○Kitanihon Sekisui Industry Co., Ltd.*
4-144-1 Higashicho 2-jo, Iwamizawa-shi, Hokkaido

July 1998 ○Higashinihon Sekisui Industry Co., Ltd.*
55 Aza Dannokoshi, Okumatazawa, Watari-cho
Watari-gun, Miyagi-ken

Oct. 1998 ○Kanto Sekisui Industry Co., Ltd.*
287 Kitayoshihara, Kasama-shi, Ibaraki-ken

Nov. 1997 ○Tokyo Sekisui Industry Co., Ltd.*
3535 Oaza Kurohama, Hasuda-shi, Saitama-ken

June 1998 ○Chubu Sekisui Industry Co., Ltd.*
3-22 Akemicho, Toyohashi-shi, Aichi-ken

Nov. 1997 ○Kansai Sekisui Industry Co., Ltd.*
4-3-1 Nishikujocho, Nara-shi, Nara-ken

Aug. 1998 ○Chugoku Sekisui Industry Co., Ltd.*
189 Kozujuku, Okayama-shi, Okayama-ken

June 1998 ○Nishinihon Sekisui Industry Co., Ltd.*
1760 Todorokimachi, Tosu-shi, Saga-ken

Exterior Wall Manufacturers :

Oct. 1997 ◎Amagasaki Plant*<Note 3>
5-8-6 Shioe, Amagasaki-shi, Hyogo-ken

Mar. 1998 ○Sekisui Board Co., Ltd., Minakuchi Plant*
<Note 1> 1259 Izumi, Minakuchi-cho, Koga-gun, Shiga-ken

Mar. 1999 ○Sekisui Board Co., Ltd., Gunma Plant*
Oct. 2000 54 Shimofuchina, Sakaimachi, Sawa-gun, Gunma-ken
<Note 2>

Sales Companies :

Mar. 1999 ○Tokyo Sekisui Heim Co., Ltd. ○Chiba Sekisui Heim Co., Ltd.
(4 Companies Jointly) ○Kanagawa Sekisui Heim Co., Ltd. ○Saitama Sekisui Heim Co., Ltd.
Mar. 2001 ○Gunma Sekisui Heim Co., Ltd. ○Hanna Sekisui Heim Co., Ltd.
(10 Companies) ○Nagoya Sekisui Heim Co., Ltd. ○Okayama Sekisui Heim Co., Ltd.
○Mie Sekisui Heim Co., Ltd. ○Shikoku Sekisui Heim Co., Ltd.
○Osaka Sekisui Heim Co., Ltd. ○Kyuseki Sekisui Heim Co., Ltd.
○Keiji Sekisui Heim Co., Ltd. ○Nagasaki Sekisui Heim Co., Ltd.

FY 2001 ○Hokkaido Sekisui Heim Co., Ltd. ○Sekisui Two-U-Home Osaka Co., Ltd.
(27 Companies) ○Fukushima Sekisui Heim Co., Ltd. ●Sekisui Heim Sanyo Co., Ltd.
○Kumamoto Sekisui Heim Co., Ltd. ○Hiroshima Sekisui Heim Co., Ltd.
●Ibaraki Sekisui Heim Co., Ltd. ○Yamaguchi Sekisui Heim Co., Ltd.
○Gifu Sekisui Heim Co., Ltd. ○Sanin Sekisui Heim Co., Ltd.
○Kitakinki Sekisui Heim Co., Ltd. ○Kagoshima Sekisui Heim Co., Ltd.
○Wakayama Sekisui Heim Co., Ltd.

○Kitanihon Sekisui Heim Co., Ltd. ●Sekisui Heim Tokai Co., Ltd.
○Sekisui Heim Nishi Tohoku Co., Ltd. ○Hokuriku Sekisui Heim Co., Ltd.
○Tohoku Sekisui Heim Co., Ltd. Tokushima Sekisui Heim Co., Ltd.
●Sekisui Heim Shinshu Co., Ltd. Kagawa Sekisui Heim Co., Ltd.
○Niigata Sekisui Heim Co., Ltd. Kochi Sekisui Heim Co., Ltd.
●Tochigi Sekisui Heim Co., Ltd. ○Fukuoka Sekisui Heim Co., Ltd.
○Sekisui Two-U-Home Tokyo Co., Ltd. ○Oita Sekisui Heim Co., Ltd.

Urban Infrastructure & Environmental Products Company

Oct. 1998 ◎Shiga-Ritto Plant*
75 Nojiri, Ritto-shi, Shiga-ken
(PVC Pipe, LP Pipe, Synthetic Wood,
Deck Material)

Mar. 1999 ◎Gunma Plant*
54 Shimofuchina, Sakai-machi
Sawa-gun, Gunma-ken
(PVC Pipe, PE Pipe)

Dec. 1998 ◎Nara Plant*<Note 4>
4-1-1 Sanjoohji, Nara-shi, Nara-ken
(Bath Units,
Electric Water Heater)

Oct. 1998 ◎Tokyo Plant*
3-15-1 Negishidai, Asaka-shi
Saitama-ken
(Plastic Valves/Fittings,
Drainage Chamber Manhole,
Rain Gutters)

Oct. 1999 ◎Nitta Plant*<Note 5>
280-1 Oaza Ichinokura
Nitta-cho, Nitta-gun, Gunma-ken
(Roofing Tiles)

Jan. 2000 ◎Kyoto R&D Institute*
2-2 Kamichoshicho
Kamitoba, Minami-ku
Kyoto-shi, Kyoto-fu

Apr. 2000 ○Toto Sekisui Co., Ltd., Ota Plant*
231 Oaza Kanai, Nitta-cho
Nitta-gun, Gunma-ken
(PVC Pipe & Fittings, PE Pipe,
Deck Material,
Interior Parts for Housing)

Feb. 2000 ○Hokkaido Sekisui Industry
Co., Ltd.*<Note 6>
4-142-4 Higashicho 2-jo
Iwamizawa-shi, Hokkaido
(PVC Pipe & Fittings,
Plastic Window Frames)

Apr. 1999 ○Okayama Sekisui Industry Co., Ltd.*
210 Kozujuku, Okayama-shi
Okayama-ken
(Bath Room Units, Roofing Tiles,
Fire-Proof Interior Housing Materials)

June 1999 ○Shikoku Sekisui Industry Co., Ltd.*
880 Himiotsu, Saijo-shi, Ehime-ken
(PVC Pipe, Flooring Material,
Synthetic Wood)

Mar. 2000 ◎Kyushu Sekisui Industry Co., Ltd.*
225-1 Oaza Yanagishima
Chiyoda-cho, Kanzaki-gun
Saga-ken
(PVC Pipe, Septic Tank)

Oct. 2000 ○Vantech Co., Ltd. Chiba Plant*
2082 Uruido, Ichihara-shi, Chiba-ken
(PVC Pipe,
Containers for Clean Rooms)

July 2000 Shizuoka Sekisui Panel Tank Co., Ltd.*
77 Kamionogo, Iwata-shi
Shizuoka-ken
(FRP Water Supply Tank,
Ice Storage Tank,
Hot Water Storage Tank)

June 1998 ○Eslon B.V.
Metaalweg 7, 6045 JB, Roermond
The Netherlands
TEL +31-475-322851

FY 2002 ○Kleerdex Company
Bloomsburg Plant
6685 Low Street, Bloomsburg
PA 17815, U.S.A.
TEL +1-570-387-6997

High Performance Plastics Company


| | | | | | |
|-------------------|--|-------------------|---|------------------|--|
| July 1997 | ◎ Musashi Plant* 3535 Oaza Kurohama, Hasuda-shi Saitama-ken (Adhesive Tapes for industrial and packaging use, PE Foam) | Sept. 1999 | ○ Sekisui Techno-seikei Higashinohon Co., Ltd. Head Office Plant* 333 Mizumori, Fujieda-shi Shizuoka-ken (Injection Molded Parts for OA equipment, electrical appliances, office equipment, vehicles) | Oct. 1999 | ○ Sekisui Film Kyushu Co., Ltd.* 485 Kamichishikicho, Izumi-shi Kagoshima-ken (Polyolefin Plastic Films for packaging and agricultural use) |
| Oct. 1997 | ◎ Amagasaki Plant* 5-8-6 Shioe, Amagasaki-shi, Hyogo-ken (Adhesive Tapes, Medical Tapes, PE Foam) | Dec. 2000 | ○ Sekisui Techno-seikei Higashinohon Co., Ltd. Nara Plant* 1135-5 Oaza Kubota, Ando-cho Ikoma-gun, Nara-ken (Injection Molded products: containers for industrial use, vehicle parts) | Dec. 1999 | ○ Sekisui Kako Co., Ltd. Head Office Plant* 2-2 Aza Ichiubara, Ogawa, Higashiura-cho Chita-gun, Aichi-ken (Laminated Products, Sanitary Film, Interior Material for Vehicles) |
| Mar. 1998 | ◎ Shiga-Minakuchi Plant* 1259 Izumi, Minakuchi-cho Koga-gun, Shiga-ken (Interlayer Film for Laminated Glass, Adhesives, Functional Resin, Fine Chemical Products) | June 1999 | ○ Shikoku Sekisui Industry Co., Ltd.* 880 Himiotsu, Saijo-shi, Ehime-ken (PE Foam, Plastic Household Goods) | Dec. 2000 | ○ Sekisui Kako Co., Ltd. SOF Business Facility 2435-50 Oaza Kamiyamada Takato-machi, Kamiina-gun, Nagano-ken (Laminated Non-woven Fabric with fibers in two or three directions) |
| Sept. 1998 | ◎ Sakai Plant* 3-5-1 Chikuko Shinmachi Sakai-shi, Osaka-fu (Adhesives, Sealing Material, Plasticizers) | FY 2002 | ○ Sekisui Film Hokkaido Co., Ltd.* 1-706-9 Shinkonishi, Ishikari-shi Hokkaido (Polyolefin Plastic Films for agricultural and packaging use) | July 1996 | ○ Sekisui-Alveo B.V. Montageweg 6, 6045 JA Roermond, The Netherlands TEL +31-475-354354 |
| Dec. 1998 | ◎ Nara Plant* <Note 4> 4-1-1 Sanjoohji, Nara-shi Nara-ken (Plastic Household Goods) | Mar. 2001 | ○ Sekisui Film Higashinohon Co., Ltd. Sendai Plant* 1-1 Aza Tanako, Okumakoya Watari-cho, Watari-gun, Miyagi-ken (Polyolefin Plastic Films for agricultural and packaging use) | Jan. 1997 | ○ Sekisui (U.K.) Ltd. Merthyr Plant Unit 19, Merthyr Tydfil Industrial Park, Cardiff Road Troedyrhiw, Merthyr Tydfil South Wales, CF 48 4DR, U.K. TEL +44-1443-690940 |
| Mar. 2000 | ◎ Minase R&D Institute* 2-1 Hyakuyama, Shimamoto-cho Mishima-gun, Osaka-fu | Dec. 1999 | ○ Sekisui Film Nishinohon Co., Ltd. Taga Plant* 510-5 Aza Suwa, Oaza Shide Taga-cho, Inukami-gun, Shiga-ken (Polyolefin Plastic Films for packaging and sanitary use) | FY 2001 | ○ Sekisui America Corp. [Voltek Division] Lawrence Plant 100 Shepard Street, Lawrence MA 01843, U.S.A. TEL +1-978-685-2557 |
| Mar. 2000 | ○ Tokuyama Sekisui Industry Co., Ltd.* 4560 Kaiseicho, Shinnanyo-shi Yamaguchi-ken (Vacuum Blood Collection Tubes, Medical Treatment and Examination Equipment, PVC Resin, Functional Polymers) | | | FY 2002 | ○ Sekisui America Corp. [Voltek Division] Coldwater Plant 17 Allen Avenue, Coldwater MI 49036, U.S.A. TEL +1-517-279-7587 |


New Business Headquarters


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|------------------|--|
| Mar. 2000 | ◎ Tsukuba Research & Development Institute* 32 Wadai, Tsukuba-shi, Ibaraki-ken Photovoltaic generation systems are produced at Tokyo Plant and sound proof flooring material and fire proof sheets are produced at Musashi Plant. |
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Blue Letters : The object workplaces for summation of environmental performance data in this report.

* Workplaces given internal environmental audit by Head Office.

 : Acquisition date of ISO 14001 certification in fiscal 2000

 : Acquisition date of ISO 14001 certification prior to 2000

 : Estimated time of acquisition of ISO 14001 certification

◎ Sekisui Chemical's plants/R&D institutes ○ Consolidated subsidiaries

● Subsidiaries to which the equity method was applied in consolidation.

Regarding Acquisition of ISO 14001 Certification

<Note 1> Minakuchi Plant of Sekisui Board Co., Ltd. acquired ISO 14001 certification jointly with Shiga-Minakuchi Plant.

<Note 2> After Gunma Plant of Sekisui Board Co., Ltd. had acquired ISO 14001 certification jointly with Gunma Plant, it independently acquired the certification in October 2000.

Regarding workplace names and production items

<Note 3> Amagasaki Plant ended its production of exterior walls at the end of May 2001, after transferring it to Tokyo Sekisui Industry Co., Ltd.

<Note 4> Nara Plant transferred its production departments to two new companies as of April 1, 2001 and now undertakes the administrative work for the new companies under the name of Nara Business Center.

<Note 5> Nitta Plant has transferred its production of roofing tiles to Okayama Sekisui Industry Co., Ltd. and stopped production at the end of June 2001.

<Note 6> Hokkaido Sekisui Industry Co., Ltd. was renamed as Sekisui Chemical Hokkaido Co., Ltd. on April 1, 2001.

Basis for Selection of Object Workplaces

1. Basis for selection :
From the viewpoint of the scale of environmental loads on and concern for local communities, mainly plants of Sekisui Chemical Co., Ltd. and its subsidiaries were chosen as object workplaces for our environmental management.
2. Object workplaces for summation of environmental performance data in this report :
We chose as object workplaces for summation such plants as are nominated in our middle term environmental plan, "STEP-21", for improvement of their environmental performance. Voltek Co., Ltd. and SOF Business Facility of Sekisui Kako Co., Ltd. are to be included in our report in fiscal 2002.
3. Object workplaces for Head Office audit :
Mainly plants are the object workplaces for Head Office audit but such R&D institutes that should pay attention to environmental loads in their product development activities are also included.
4. Object workplaces acquiring ISO 14001 certification :
ISO 14001 certification acquisition started at our plants, but we have extended it to our R&D institutes due to the necessity of environmental concern in their development work, and also to house sales companies due to the necessity for environmental attention in their design/construction of houses. Outside Japan the certification acquisition has been promoted mainly by our plants.

SEKISUI CHEMICAL CO.,LTD.

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Printed in Japan with soy ink on 100% recycled paper.

Published in English : October 2001
Annual Publication.
Next Publication : October 2002