

# Sustainability Report 2005



The Objectives of the SANYO Group



### **Management Philosophy**

### We are committed to becoming an indispensable element in the lives of people all over the world.

The SANYO Group wants to be a corporation that is loved and trusted by the people of the world by developing unique technologies and offering excellent products and sincere services. The Group seeks to become an indispensable element "like the Sun," for the people of the world.

The SANYO Group has been publishing an annual Environmental Report since 1998. Our Sustainability Report 2004 contained more comprehensive coverage of our social responsibility. This Sustainability Report 2005 comprises the chapter of our environmental conservation activities, "Working with the Earth" and the chapter of our responsibilities for our stakeholders, "Working with People", and is designed so that our activities are plainly understood. A questionnaire sheet is attached at the end of this report, so we appreciate it if you could submit honest feedback this report.

#### **Report Period:**

April 1, 2004 to March 31, 2005 (This report includes some past data, the latest information and forecasts.)

### Coverage:

The SANYO Group (SANYO Electric Co., Ltd and its consolidated subsidiaries both within and outside Japan). For environmental reporting, this includes those covered in principle by the Group Environmental Management System (GEMS), which includes the major SANYO Group companies in Japan. For particular kinds of data totals, specific company names are noted.

### Scope:

Environmental Performance, Social Performance, and Economic Performance

# Sustainability Report 2005 has been edited in accordance with the following guidelines:

GRI Sustainability Reporting Guideline 2002 Environmental Report Guidelines (2003 edition) of the Ministry of the Environment of Japan

### **Next Scheduled Report:**

July 2006

### Note Concerning Forward-Looking Statements, Projections, and Plans

This report not only describes past and present facts related to "SANYO Electric Co., Ltd and its related companies" (the SANYO Group), but also includes forward-looking statements, projections, and plans. Such forward-looking statements, projections, and plans are based on data that was available at the time at which the report was prepared, and therefore include a degree of uncertainty. Accordingly, future results of operating activities and other new developments may differ from the statements, projections, and plans included in this report. We ask our readers' understanding of the fact that the SANYO Group cannot be responsible for such eventualities.

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## Working with the Earth

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Special Feature

We steadily supply high-efficiency solar cells that reduce the volume of CO<sub>2</sub> emissions and save energy.

P19 Special Feature

We develop and supply automobile battery system that reduces global warming.

P21 Special Feature

We achieve products with low environmental impact by using natural CO<sub>2</sub> as a refrigerant.

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Everything begins with listening to the customer's opinions. That is the starting point for all SANYO product development.

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### **Commercial Business**

Industrial Equipment

We develop, manufacture and market commercial refrigerators and freezers, showcases, package-type air conditioners, gas-engine heat pump air conditioners, absorption chiller and heaters, computers for medical use, and other commercial, industrial and medical equipments that support various industrial businesses



### **Component Business**

Batteries, Electronic Devices

We also develop, manufacture and market various LSI devices, LCD panels, transistors, LEDs, optical pickups and other electronic components, lithium-ion batteries, nickel-cadmium batteries, nickel-metal hydride batteries, solar cells, rechargeable batteries for hybrid automobiles, and also compressors for refrigerators, freezers and air-conditioners, etc.



### Other Businesses

Leasing, Credit, Logistics, Security, Housing, etc.

We are also active in evolving and in providing solutions for a wide range of consumer and industrial businesses including those involved in credit, maintenance, information systems, logistics and housing—building and marketing individual dwellings and condominiums.



### Corporate Data (As of March 31, 2005)

Name of Company: SANYO Electric Co., Ltd. Founded / Incorporated:

February 1947 / April 1950

Capital: ¥172,242 million

Consolidated Net Sales: ¥2,484.6 billion Non-consolidated Net Sales: ¥1,458.9 billion Lines of Business:

Consumer Business. Commercial Business, Component Business, and Other Businesses

Number of Employees:

15,687 (consolidated: 96,023)

Number of Consolidated Companies:

143 (62 domestic and 81 overseas)

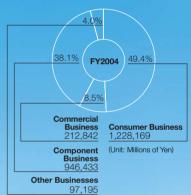
### Net Sales (Consolidated) (Millions of Yen)

2000		2,15	57,318
2001		2,024	,719
2002		2,1	82,553
2003			2,508,018
2004			2,484,639
0	1,000,000	2,000,000	3,000,000

### Net Sales (Non-consolidated) (Millions of Yen)

2000	1,24	42,857	
2001	1,088,	381	
2002	1,17	2,497	
2003	1,	377,197	
2004		1,458,981	
0	1,000,000	2,000,000	3,000,000

### Sales by Division





### We Seek to "Think GAIA" and Become a Company that Delights the World

We are committed to becoming an indispensable element in the lives of people all over the world.





In the 20th century, we all sought after convenience, efficiency and economy, and we were able to secure a pleasant lifestyle and material abundance. However, our pursuit of convenience and the superabundance of things not only failed to make us happy but also, as we came to realize, left behind a burdensome inheritance for the Earth.

Solving the various problems we face will save the life in which we all share, or rather it will gladden and quicken that life, something we are beginning to realize is of incomparably greater value than the convenience or abundance of things.

The implementation of a sustainable society has value for the whole world, and enterprises that do not take this into account will not survive. Sustainable development-that is, making our lives more convenient and pleasant in an evolutionary process that makes the world and its life vigorously healthy-is something we see as absolutely essential. We call this evolutionary path, by which we evolve in harmony with the environment of Earth, "symbiotic evolution." The question for the new products and businesses we will make is "How can SANYO best serve the Earth?" This means always keeping our minds and hearts focused on Gaia, the living organism of Earth. We have expressed this attitude as "Think GAIA" and for us this means always asking ourselves "How would this affect the Earth?" As we continually keep in mind the Earth and its organism, listening to what we learn from it, our vision and our determination is to form an enterprise with sensitive hearing and heart.

One strand of our corporate DNA is the desire to help mothers in the home and to ease their workload. This has been built into the many products and services we have developed since our foundation. We want the SANYO Group to be a company that delights the world at the same time as it pleases all the people who live in it. That means not only reducing the environmental impact of our corporate activities but also providing products and services that contribute to the solution of environmental problems and the living of healthy and enjoyable lives. This is expressed in our corporate philosophy "We are committed to becoming an indispensable element in the lives of people all over the world."



### **Providing Environmental Solutions and Continually Improving Our Effect on the Environment**

In our corporate activities (providing AV products, information and communication equipment, electrical appliances, industrial and commercial equipment, electronic devices, batteries etc., and services) we of the SANYO Group have been working to prevent pollution and reduce the environmental impact at every stage from research and development, through design, procurement of materials, manufacturing, logistics and sales, to recovery and recycling, etc. This has been our approach ever since 1970, and in 1998 we established the Group's environmental action plan. From 2000, we have been operating the Group Environmental Management System (GEMS) as the basis for corporate activities in three directions—Process, Products and Mind-aiming at continuous, ongoing improvements in our effect on the environment.

In practical terms, quantitative targets were set for reducing the volume of emissions of gases responsible for global warming, reducing the volume of wastes, reducing the discharge of chemicals that threaten the environment and abandoning their use in products, expanding the number of products that give special consideration to the environment, and for the development of environmental technologies. Three-year targets were set, and individual targets for the intervening years. These targets were largely met in 2004. Targets will be reviewed and set annually.

In order both to conserve the Earth's environment and to enhance human lifestyles, we seek not only to reduce the environmental impact of our activities but also to make more active contributions. Practical solutions are called for. We will be developing products and expanding our business, selecting and concentrating our activities, as an example of our main business domains, energy and ecology (E&E).

Consider energy, the motive power behind all activities. In this sector, the Group possesses outstanding products and technologies to generate, save and store energy, including a photovoltaic power generation system with the world's highest conversion efficiency, small rechargeable batteries which hold the world No.1 market share and batteries for hybrid automobiles. These represent significant contributions to the prevention of global warming.

Water, the source of life, is another vital theme. We are contributing to the conservation of water in the environment by our Aqua Clean System using electrolytic technology, by phosphorus and nitrogen removal equipment, and by a

device for treating silicon wastewater.

Our group is also in an advantageous position in HVAC (heating, ventilating and air-conditioning) businesses such as high-efficiency industrial freezers, refrigerators, air-conditioners, and CO2 compressors, featuring our unique technology using safe and harmless non-fluorocarbon refrigerants and other similar equipment applications.

### Our attitude To Corporate Social Responsibility (CSR)

In working to achieve a sustainable society, corporate management must now show how it carries out its social responsibilities. The corporation must discharge its responsibilities towards the environment along with other social responsibilities (including governance, compliance, ethics, and human rights) while also maintaining economic performance.

We believe that as we implement our management philosophy "...committed to becoming an indispensable element in the lives of people all over the world" and discharge our social responsibilities, this will lead to corporate sustainability and continuing progress along the path of symbiotic evolution. We set up a CSR unit in 2004, to link, advance and strengthen our activities in environmental conservation, social contributions and compliance, etc.

In addition to these activities, in 2004 we created on our sustainability report a page detailing our social activities as part of efforts to inform our stakeholders. Significant information of this kind has also been added this year.

In seeking to realize our new vision, "Think GAIA," and to become a sustainable enterprise, we have initiated the SANYO Evolution Project from July 2005. The SANYO group is taking up the challenge to "become an indispensable element" to people, society and the environment.

In this, we ask for your further understanding and support of the SANYO Group.

August 2005

Chairman and CEO Justo Toshimasa Due

President and COO

Our Group Management Philosophy Aims to Ensure the Sustainability of the Group itself by Sustaining the Peoples of the Earth and the Environment.

**Management Philosophy** 

We are committed to becoming an indispensable element in the lives of people all over the world.



**Actions Implicit in Management Philosophy** We will discharge our responsibilities to stakeholders.



The New Management Vision of the SANYO Group

### **Think GAIA**

Company that delights the Earth

**Company that** delights all the People of the Earth

In July 2005, we expressed the management vision behind our own corporate sustainability as "Think GAIA".

In terms of the practical implementation of our management philosophy, the main thrust will be to become a company that delights the Earth and life. In other words, SANYO will transform into a company that always focuses mind and heart on GAIA, the living organism of Earth, sensitive and responsive to her needs.

—Corporate Declaration—

### The SANYO EVOLUTION

Today, we embark on an evolutionary journey marked by extraordinary change and profound commitment.

Today is the day that we begin to "Think GAIA", which means becoming a company that creates solutions for a sustainable Earth.

Today, we break away from outdated beliefs, conventions and customs, and utilize our unique corporate strengths and vision towards preserving the Earth for future generations.

Today will be marked in history as one of momentous significance for SANYO. For, it is a day of rebirth, a day on which we vow to grow, expand and commit ourselves to a symbiotic evolution.

**Tomoyo Nonaka** 

Toshimasa lue

Toskinson One

Working with the Earth —P.13





Working with People (P.57)



Customers →P.61



### **Principles of Conduct**

Established in 1985 and revised in 2001, our Principles of Conduct stipulate the guidelines that all directors, officers and employees of the SANYO Group must observe while performing their business activities. Every director, officer and employee observes the rules defined in this Code, thinking and acting globally and conducting their business activities in a sound law-abiding manner.

**Principles of Conduct** 

### Quality Work to be Proud of the World Over

- 1. Integrity...We work with integrity.
  - (1) Pride and courage
  - (2) Respect for rules and fair competition (3) World view

### 2. Customer Oriented

- ...We anticipate what will satisfy our customers
- (1) Work that meets expectations (2) High-quality work
- (3) Work that meets our customers' trust
- **3. Creativity**···We single-handedly open up new eras.
  - (1) Creating markets (2) Aiming for the top
  - (3) Innovation

### 4. Mutual Trust

- ...We create a workplace permeated with an aura of freedom and candid exchange of views.
- (1) A fresh and open working environment
- (2) An encouraging workplace (3) Performing our duties

### 5. Social Commitment

- ...We maximize efficiency in business management and distribute profits on the basis of fairness and equity.
- (1) Strong presence in society (2) Openness
- (3) Harmony with the earth's environment

### **Our Efforts in CSR**

To achieve a sustainable society is not just a matter of economics. Corporate management must consider the environment and uphold social justice. Corporate social responsibility (CSR) is vital in both of these aspects—environmental and social.

Underpinning our group management philosophy is our determination to be of value to the full range of our various stakeholders; shareholders and investors, customers, business partners, employees, local communities, and to the environment.

Implementing this management philosophy and our new "Think GAIA" vision will fulfill our social responsibilities. We must listen to the voices of our stakeholders, and be aware of the needs of the environment, as we advance CSR.

### Creating the Organization to Do the Job

In April 2004, SANYO established a specialized unit to advance the range of CSR-related activities.

In 2004, CSR-RM Meeting was formed with members largely drawn from each Head Office unit for CSR and risk management. This encouraged the pooling of information on CSR and concentrated on identifying issues in the disclosure of SANYO's own information. These activities led, in 2005, to enhanced efforts to improve the disclosure of such information.



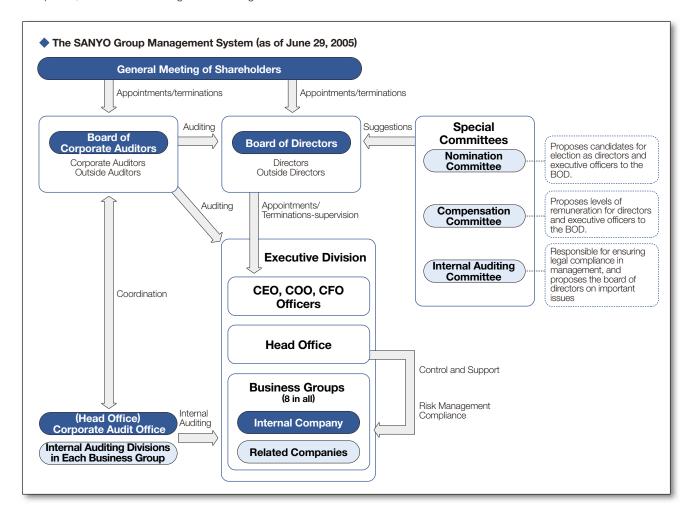
### Group Management Has Been Prepared and Strengthened So That the Entire Group Can Discharge Its Social Responsibilities.

### **Corporate Governance**

In the interests of all stakeholders, SANYO seeks to increase its corporate worth. In order to do so, it is essential not only to achieve management targets but also to maintain a sound management system and, by making appropriate disclosures at the right time, to ensure management transparency, while setting up adequate internal controls.

Aware of this need, SANYO introduced the so-called internal "company" system of corporate governance in April 1999, appointing outside directors and introducing an officer system. In April 2003, SANYO adopted a business group organization that controlled the management of internal companies, and reformed the organization along functional lines into business units for products and businesses across the organization of the SANYO Group. This and other means of strengthening management reflect our determination to build a sound management structure that gives precedence to transparency and rapid decision-making in our efforts to configure the system of corporate governance.

From April 2005, the organization was further modified to enhance its functionality by redrawing the previous business groups into eight business groups. Our efforts to strengthen corporate governance will continue with this new management system as we seek sustainable development.



### Strengthening Supervisory and **Monitoring Functions**

In order to separate supervisory and monitoring functions from business executive functions, and to increase the transparency of management, SANYO has appointed half of its directors (five out of ten as of June 2005) without concurrent executive responsibilities so that they can concentrate on supervision, while the remaining five will hold concurrent executive responsibilities. The five without concurrent executive responsibilities include two outside directors, and will oversee

the other directors, and executive officers appointed by the board of directors, in the performance of their duties.

In order to strengthen audit functions, two additional auditors have been appointed from fiscal 2005. Currently, the board of corporate auditors consists of six auditors; three of them are outside auditors. It oversees the performance of directors, and its members attend meetings of the board of directors and all other important meetings, and it audits performance and assets.

### Completing and Strengthening Internal Controls

In order to complete and strengthen the system of internal controls for working procedures, financial reporting and compliance, we have established internal auditing departments in the head office, internal companies, and major subsidiaries. All such departments share a common awareness of the issues and themes to be addressed in internal audits, and they are working to ensure sound and efficient working procedures by issuing any necessary instructions for improvement to the departments they audit. Further, the internal auditing departments exchange their audit reports and other information with corporate auditors, seeking to maintain and improve the consistency and the quality of audits by performing effective and efficient evaluations.

### **Special Committees Advising and Proposing to the Board of Directors**

At SANYO, under the management system whereby corporate auditors exercise supervision and monitoring, sound management is further encouraged by the establishment of three special committees of the board of directors. These are the Nomination Committee, the Compensation Committee and the Internal Auditing Committee. These committees are formed of directors, officers and corporate auditors, with participation by external experts, who combine to make proposals to the board of directors in line with their special functions.

### **Compliance**

The SANYO Group, in order to fulfill its responsibilities to society in line with our management philosophy (See P1), as defined compliance with a wider scope that includes not only laws and our internal rules but also corporate ethics and social norm, and is carrying out compliance management throughout the SANYO Group.

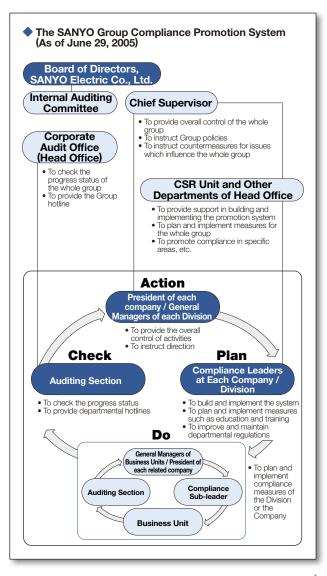
### **The Compliance Promotion System**

To increase the effectiveness of our commitment to compliance throughout the group, compliance promotion system has been established under the overall responsibility of CEO, with compliance leaders designated by each company's president to assume actual promotion of compliance within the group. In April 2001 a specialized department was established to ensure thorough compliance (now CSR Unit), and since then through the PDCA cycle\* (plan, do, check and action) continuous enforcement to our compliance has been executed within our compliance promotion system.

\* One of the management cycles which aims to improve the current status on a continual basis by implementing the processes of Plan, Do, Check, and Action in sequence and in a cyclical manner.

### **Internal Auditing Committee**

The Internal Auditing Committee has been established under the board of directors to carry the responsibility for compliance management throughout the group. It monitors the awareness of compliance issues possessed by officers and those responsible for managing related companies, and assumes a role in reporting and proposing to the board of directors concerning important issues. The chairman of this committee is a director without concurrent executive function, with external and regular auditors attending as advisors.



### **Compliance**

### The SANYO Group Compliance Guidelines

The group's compliance guidelines were enacted in January 2002. They express the principles of compliance for directors and employees who are acting in accordance with the group's

Principles of Conduct (see P8), identifying issues that require particular attention from a compliance point of view. The guidelines have been printed as a booklet and issued to directors and employees.



The Front Cover of the Compliance

### **Compliance Leaders Ensure Shared Awareness**

Compliance leader have been appointed within the head office and each internal company in order to ensure that the different divisions within the SANYO Group all pursue practical measures. The Compliance Leader plays a central role within each company in heightening employee awareness of compliance issues and preventing problems, by carrying out in-house training along with the nature of company business and proposing and implementing other measures to be taken.

### **Compliance Efforts**

### (1) Compliance Hotline

In January 2002, Compliance Hotlines were installed as consultation channels and reception desks for compliance related issues in order to detect problems as early as possible. The reception desks of the Hotlines are installed both in the head office and the internal companies. Any employee of the SANYO Group can use any of the reception desks. The operation of the desks, including the duty to preserve the confidentiality of the consultations and protect the users, is clearly stated in the corporate rules and made known to employees of the SANYO Group.

#### (2) Compliance Training Session for the Management

Since fiscal 2001, the Internal Auditing Committee has sponsored annual compliance training sessions for the management (directors, officers and corporate auditors), inviting external experts.

In fiscal 2004, the fifth such training was held, with the theme "CSR Management and Compliance." It was attended by about a hundred participants, including Compliance Leaders and the presidents of related companies. The training included lectures on how to ensure that CSR management and compliance could be well known to everyone in the SANYO Group, and effective measures to be taken.



Compliance training session for the management

### (3) Employee Training Sessions

In order to heighten employee awareness of compliance issues and encourage appropriate actions, the opportunities are taken to give trainings to new employees and newly appointed managers of the company before they take up their appointments. From fiscal 2004, mid-carrier employees also receive training when they take up employment.

### (4) Compliance Awareness Questionnaire

Questionnaires are used to check the actual situation with regard to employee awareness of compliance issues to perform our ongoing improvement activities.

### (5) The Situation Overseas

As part of the commitment to ensuring full compliance management in group companies overseas, the first North American Compliance Promotion Meeting was held in January 2005 at San Diego, California.

This meeting was attended by top management of all group companies headquartered in the United States and, from Japan, the chairman and members of the Internal Auditing Committee. The meeting presented the results of a compliance questionnaire survey of top management in the local companies, detailed current approaches to compliance issues, and legal issues requiring specially careful handling in the North American context, encouraging exchanges of information on these and other topics. This not only heightened top management awareness but also sought to achieve a throughgoing in-house consensus on the responsibilities of management for compliance.

Similar meetings are planned outside North America.



North American Compliance Promotion Meeting

### **Personal Information Protection**

In order to appropriately handle the personal information obtained from our customers, we observe the following practices.

- (1) We appoint executive officers whose specific responsibility is to exercise overall control of personal information. Through locating individuals and secretariats responsible for personal information both in head office and in each business groups, we are completing a whole-company system to protect such personal information.
- (2) After completing our policy and internal rules on protecting personal information, we have publicized them over the corporate intranet to the SANYO Group, and while working to ensure that all officers and employees observe the law and our internal rules, we inform them of the importance of protecting personal information.
- (3) We have prepared cards showing our personal information protection policy, the influence of leaks of personal information, and the points requiring special attention in everyday work. These cards have been issued to employees in the SANYO Group to ensure the necessary awareness of how to handle personal information.
- (4) We give training to administrators for personal information in every division on how such information should be handled. In fiscal 2004, this approach was extended throughout

the SANYO Group, and scope of system for protecting personal information was expanded in group companies, with education and training being given to enhance awareness in each company in turn.

In fiscal 2005, based on the system for securing personal information protection, the entire group inaugurated a PDCA cycle, with ongoing education and training to enhance awareness.

#### ▶ The SANYO Group Guidelines for Personal Information Protection

Believing that protection of personal information in business activities is a duty of every corporation, the SANYO Group seeks to protect personal information according to the principles described below.

#### 1. Appropriate handling of personal information

In order to protect personal information, the SANYO Group has not only established a management system, it also collects, utilizes and provides information that is suitable in extent by appropriate methods according to corporate rules and other standards.

#### 2. Measures to ensure accuracy and safety

By executing measures to ensure accuracy and safety about personal information, the SANYO Group intends to avoid illegal access to personal information, and prevents its loss, destruction, alteration or leakage.

#### 3. Observance of laws, regulations and codes

In handling personal information, the SANYO Group strictly observes the laws, regulations and other rules related to personal information protection.

### 4. Continued personal information protection efforts

The SANYO Group continuously updates, upgrades and improves its efforts for personal information protection.

### Risk Management

### **Coping With and Managing Risks**

Based on the regulations for risk management established for the SANYO Group, we identify and assess the risks that must be faced so that responsible departments could control and reduce them appropriately.

With respect to proposed business plans and the introduction of new products to the market, the responsible departments must investigate the attendant risks and the appropriate means to minimize them, evaluating the results form a comprehensive viewpoint before reaching a decision or seeking approval.

Then, the regulations for risk management are the primary means of dealing with conceivable emergencies and securing a rapid resumption of normal operations so as to maintain the functions of the organization and the trust of society. At the same time, we are seeking to improve the system for risk management by deciding the measures to be taken for the main emergencies envisaged, so that the system could function practically.

Further, the SANYO Group suffered damage to a subsidiary manufacturing semiconductor devices struck by the Niigata-Chuetsu Earthquake in October 2004, but we formed the emergency headquarters at the head office and the site, in

accordance with this rule. It enabled us to take possible quick measures for gathering information and supporting the employees affected.

### Damage to Niigata SANYO Electronics Caused by the Niigata-Chuetsu Earthquake

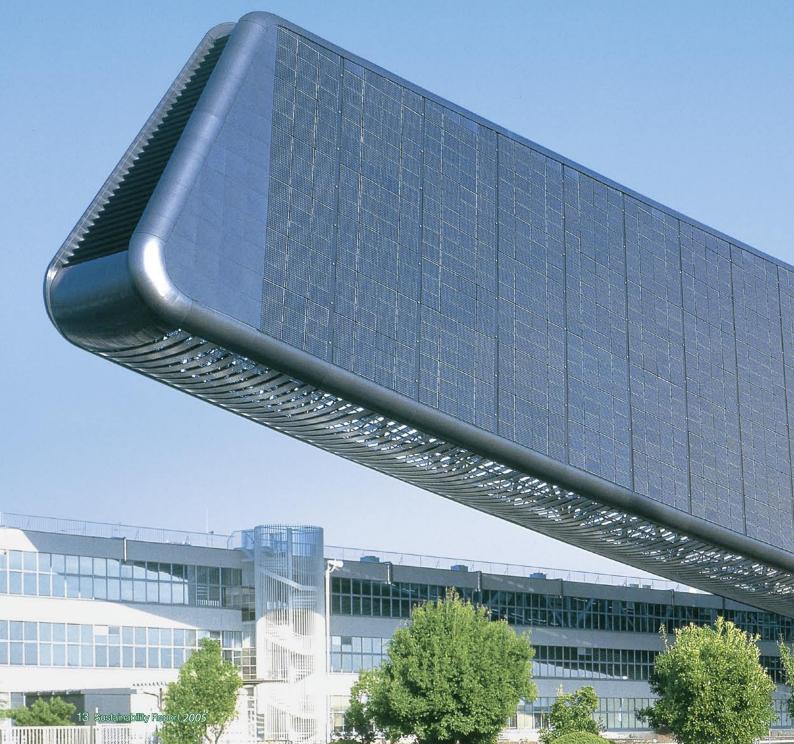
On 23 October 2004, an earthquake of magnitude 6.8 struck the Niigata-Chuetsu region. Niigata SANYO Electronics Co., Ltd. was near the epicenter in Ojiya City and suffered damage to its equipment and inventories that amount to 42.3 billion yen including their restoration cost (fortunately there was very little human injury). We put the highest priority on employee safety, and as soon as we had checked the state of gas leaks and damage to underground waste-water tanks, we informed the authorities concerned (local government, the public health centers, and the city hall) and took the necessary countermeasures. We also reassured local residents that there was no threat to their safety due to these material damage, and thereafter we repeated confirmations of the influence on the environment around the company, and reported the results to the authorities.

A report on the safety and health of employees concerned is given on Page 72.

# Working wi



The SANYO Group has long sought to reduce the environmental impact at every stage of its corporate activities, and has implemented environmental conservation by developing solar cells, rechargeable batteries, and CO2 compressors, etc., the first products and technologies of this kind in the world and/or in Japan. As we move into the future, we are committed to developing new technologies and products under the theme Energy & Ecology that will make the best use of the riches of Nature in a symbiotic relationship with the environment. By providing such products and technologies we intend to become a company that delights the world.



# th the Earth

### Energy & Ecology

Energy & Ecology (E&E) is a major business domain for our group, and at the same time a distinctive theme of our environmental conservation activities. Around the E&E core, we will continue to develop products and technologies that meet the requirements of energy saving and environmental conservation-products like solar cells, rechargeable batteries for hybrid automobiles, and air conditioners—and seek for sustainability in markets, society and the Earth.

Reducing the environmental impact of products.

Reducing the environmental impact of our corporate activities.

Facilitating communications.

We steadily supply high-efficiency solar cells that reduce the volume of CO2 emissions and save energy. Supplying our unique solar cells.

Special Feature 2 ......p19

We develop and supply automobile battery system that reduces global

Developing of battery systems for HEVs.

Special Feature 3 ............P21

We achieve products with low environmental impact by using natural CO2 as a refrigerant.

Developing compressors using natural refrigerant introduced a unique two-stage compression technology.









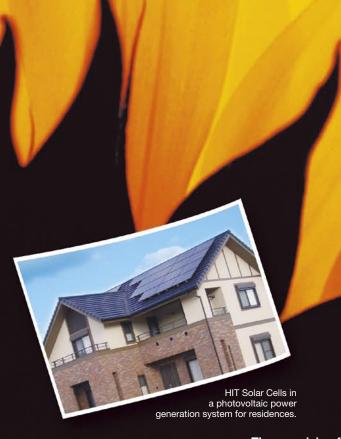
### Working with the Earth

Energy & Ecology Special Feature 1

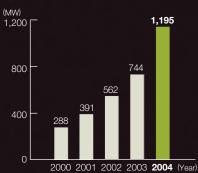
# We steadily supply high-efficiency solar cells that reduce the volume of CO<sub>2</sub> emissions and save energy.

As a clean form of energy that neither discharges CO2, implicated in global warming, nor depends upon non-replenishable fossil fuels, much is expected of solar power generation. In order to address humankind's common problem of global warming, SANYO has devoted major efforts on developing a key device for photovoltaic power generation systems, the solar cell.\* These efforts endeavor to improve generating performance by raising the efficiency of energy conversion while also reducing the environmental impact of the materials and processes used in solar cells' manufacture.

\* These devices absorb sunlight and convert it directly into electricity, they do not store electrical energy.



### Global Production of Solar Cells



\* Source: US PV NEWS

### The promising future for widespread use of photovoltaic power generation systems.

Solar power generation uses the photovoltaic effect of silicon ser the phenomenon in which light strikes the silicon or certain other electrons are ejected, and electricity is generated). The technology directly converts the energy of sunlight into electricity. Its history began in 1954, with the invention of the single crystalline silicon solar cell. In 1958, it was used as the source of electrical power in the US artificial satellite Vanguard. Worldwide interest turned to solar power generation in 1973, on the occasion of the first oil shock, as a next-generation source of energy independent of fossil fuels. In 1974, almost simultaneous initiat were taken in Japan, the United States and Europe to form national projects, and development work continued to address the technical problems of combining multiple solar cells into solar-cell modules that could be used to supply power in dwellings or other buildings within practical solar power generation systems. In Japan, in 1994, The Ministry of International Trade and Industry (now the Ministry of Economy, Trade and Industry) initiated a system of subsidizing the monitoring of domestic photovoltaic power generation systems, and at a time when people's interest in saving energy was growing, this stimulated a significant increase in the number of installations. Currently, in preparation for even more widespread installation, the need is growing for photovoltaic power generation systems with higher efficiencies that can contribute to lower environmental impact

### **Supplying Our Unique Solar Cells**

# HIT solar cells: product of a quarter-century of technology development combined with original concepts

In 1980, SANYO was the first company in the world to successfully industrialize the production of amorphous silicon solar cells. At the time, the mainstream of solar cells used single crystalline silicon. In comparison, non-crystalline (amorphous) silicon was characterized by slightly lower conversion efficiencies but its outstanding absorption of light enabled it to generate electricity in low-intensity ambient

lighting, and it could be manufactured fairly simply by a low-temperature process, this has generated a very large demand for use in small-size equipment such as pocket calculators, etc.

Based on this technology, from 1990 SANYO has started to develop a new type of solar cell that would be more efficient but impose a lower environmental impact. The aim was to achieve the development of a new structure that would combine high conversion efficiency of single crystalline silicon and the low energy requirements of

amorphous silicon production with high manufacturing productivity. After much trial and error, a solar cell was developed in 1997 in which a thin-layer of intrinsic amorphous silicon production with high manufacturing productivity. After much trial and error, a solar cell was developed in 1997 in which a thin-layer of intrinsic amorphous silicon was deposited on a single crystalline silicon base to form a heterojunction structure. This is the HIT (heterojunction with intrinsic thin-layer) solar cell used in large numbers in SANYO's photovoltaic power generation systems.

In a typical production method for conventional single crystalline silicon solar cells, the photovoltaic function can only be secured by processes running at high temperatures above 900°C, and the production process itself is complex. In addition, there is also the problem that in the boundary regions between semiconductors, two different kinds of

impurity are diffused alternately, making it difficult to form a good interface. At that time, heterojunction structures in which thin films of amorphous silicon were formed on a single crystalline silicon base had already been developed, but they had proven unable to exceed the performance of single crystalline silicon solar cells, and a breakthrough was necessary. Here, SANYO was able to use its thin-film forming technology acquired in the production of amorphous silicon solar cells to form a thin-film of amorphous silicon free of impurities at temperatures below 200°C, and to develop a novel structure in which this film was injected between the

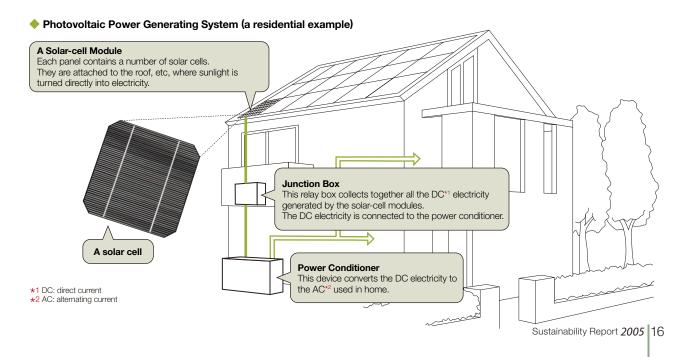
single crystalline silicon and the amorphous silicon. This innovative concept enabled SANYO to achieve significantly improved solar cell electrical performance while at the same time reducing the energy used in production.

### The World's Number One in Power Per Unit Area

HIT 200W modules have the world's highest conversion efficiency at 17%\*1 (other methods produce an average of about 14%). They also

have outstanding temperature characteristics, and are characterized by output powers that drop less at high summer temperatures, a problem with conventional solar cells. This outstanding conversion efficiency and the advantage in power-per-unit-area in the summer, gives HIT solar cells a 16 to 27% advantage in efficiency\*2 over typical solar cells with the same area. Given these performances HIT solar cells have achieved the number one\*3 position in output power per unit area in the world.

- \*1 This is the parameter that shows what proportion of the solar energy striking a solar cell is converted into electrical energy.
- \*2 Under otherwise similar conditions, the comparison is made between the electric power generated by each company's standard module per unit area (PTC rating). (This value has been registered with the California Energy Commission.) PTC in this case are defined as 1,000W/m² plane-of-allay irradiance at an ambient temperature of 20°C, and a wind speed of 1m/s.
- \*3 SANYO survey, for mass-produced products, as of October 1, 2004.



HIT solar-cell modules installed on the roof of the City Gymnasium in



### The Manufacture of HIT Solar Cells Has **Little Environmental Impact**

A high conversion efficiency means that the size of the solar cells needed to generate a given amount of electricity can be smaller than they would be with other types, which means that less material resources are used.

The methods and materials used to manufacture HIT solar cells, and the amount of inputs, make them a product that has little impact on the environment. The temperature of the processes by which the base plate and thin films of silicon are formed has been kept under 200°C, and this reduces the amount of fuel and electricity consumed in their manufacture. The silicon film is only 200µm thick (previously, the single crystalline silicon used was 350µm thick), and this again reduces the amount of raw materials used. Furthermore, the silicon material used by SANYO is easily extracted from sand and stone, resources that are extremely plentiful in nature, very different from the compound semiconductors used in other solar cells.

Currently, in order to reduce the volume of CO2 emissions resulting from manufacturing solar cells, SANYO is reducing the number of layers of silicon and the thickness of the films, and is working to increase the throughput of the film-forming process (further reducing energy consumption). Also, to prevent soil and water pollution when products come to the end of their useful lives, over half of our currently shipping products are lead free, and from July 2005, plans call for all products shipping within Japan to be lead free.

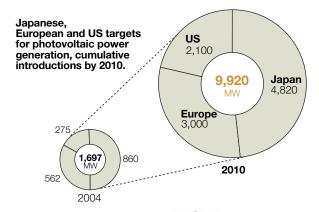
### The Effectiveness of Photovoltaic Power Generation in Reducing CO<sub>2</sub> Emissions

It is generally estimated that a photovoltaic power generation system with a capacity of 1kW will, in comparison with other forms of generation, reduce CO2 emissions by 90kg per year.\* Also, since solar cells have a normal operating life of over ten years, and the energy required to manufacture transport and dispose of a photovoltaic power generation system can be recovered within two years, this means that for the remaining eight years, more energy can be generated without imposing any further impact on the environment.

In 2004, photovoltaic power generation systems with a total capacity of approximately 1.2GW were manufactured worldwide. This is equivalent to the generating capacity of two typical thermal power stations. Of this, SANYO's manufacturing capacity is 153MWs in 2005 and is planned to reach 1GW in 2010.

Through the supply of outstanding solar cells and encouraging the spread of photovoltaic power generation systems, we will not only contribute to the prevention of global warming, but also generate an unmistakable economic effect as each home is able to sell excess electrical energy generated. This will lead to increased human consciousness of the environment... With the confidence that comes from the results we have already achieved, we are committed to further research in the future.

★ Reducing CO₂ emissions by 90kg a year: 1kWh is the equivalent of 90g of CO<sub>2</sub>, multiplied by the annual generation of approximately 1,000kWh.





Solar Cells that Use Less Energy, Fewer Resources, and Show Greater Concern for the Environment.

Eiji Maruyama, Solar Cell Research Department, Advanced Energy Research Laboratory, R&D Division.

As research engineers, our attitude is that in making devices like solar cells, which have an enormous positive effect in reducing environmental impacts, we should aim for products that achieve the greatest result for the least possible expenditure of energy and materials. In our commitment to our daily work we feel that without this attitude we would have no right to be working on solar cells. There are many problems to overcome, but it is a worthwhile challenge, and there is no greater satisfaction for an engineer than to achieve the targeted result/aim/goal.



### Clean Energy For The World

### The SANYO Group Devotes Our Efforts On Production and Supply Of Solar Cell Modules In Three Centers Around The World.

The SANYO Group, faithful to the new management vision "Think Gaia," has established production and distribution centers for solar cell modules in Japan, Europe (Hungary) and Central America (Mexico), to advance the further spread of these modules on a global basis.

In 2004, worldwide production of solar cells amounted to 1,195MW\*, a 57% increase over the year before, and it seems certain that demand in Japan, Europe and the US, indeed globally, will continue to grow. Our group, in order to respond to this demand, built the Nishiki-no-Hama factory for HIT solar cell production at Kaizuka, Osaka, which went into operation in January 2004. We are actively expanding production with plans calling for a system with 153MW total capacity for HIT solar cells.

Currently, production of HIT solar cells in Japan is at two locations: Nishiki-no-Hama (with 103MW annual capacity) and the Shimane SANYO Industrial Co., Ltd. (at Unnan in

Shimane Prefecture, with 50MW capacity). Japanese production of HIT solar cell modules takes place at three locations; the Tokonabe Factory (annual production capacity 30MW at Kasai, Hyogo Prefecture), the Nishiki-no-Hama Factory (capacity 33MW) and the Tokyo Plant (capacity 40MW at Oizumi, Gumma Prefecture). Since 2003, HIT solar cell modules for the North American market have been produced at the Monterey Factory in Mexico (annual capacity 10MW). In July 2005, our Hungarian Factory (with a capacity of 50MW) was opened at Dogro in the Republic of

In the future, these production and distribution centers for solar cell modules will power our drive to spread clean energy globally, achieve energy saving and control global warming.

According to a survey published in the April 2004 edition of PV News (US).



### Working with the Earth

**Energy & Ecology** Special Feature 2

# We develop and supply automobile battery system that reduces global warming.

In preventing global warming, reducing the amount of CO2 emissions in automobile exhaust gases is a major issue. Cars driven by electric motors are therefore attracting attention as a means of reducing fuel consumption. In recent years, hybrid electric vehicles (HEVs), which use a combination of conventional engines and electric motors, are gradually coming into use.

Future hopes are pinned on electric vehicles (EVs) —automobiles driven only by electric motors—and the advent of cars powered by fuel cells using hydrogen as their fuel. SANYO is one of the very few manufacturers in the world to develop and produce battery systems for HEVs, and we have taken up the challenge of R&D for outstanding car battery systems.



#### Characteristics of Various "Ecological" Cars

	Natural gas Vehicle	Methanol Vehicle	Electric Vehicle (EV)	Hybrid Electric Vehicle (HEV)
Performance	Mini ~ Compact, short and medium distances	Light trucks, etc., long distances	Compacts ~ Buses, short distances	Compacts ~ Buses, long distances
Energy saving	Approx. 10%	7%	Approx. 40%	Approx. 40%
2010 Target	About 1.0 million	About 220,000	About 410,000	About 1.8 million
Main issues	Price, Cruising Distance, Fuel Supply System	Price	Price, Cruising Distance, Fuel Supply System	Price

<sup>\*</sup> Source: Material of New and Renewable Energy Subcommittee, Advisory Committee for Natural Resources and Energy, METI (2001)

#### Infrastructure and Batteries: Support for the Eco-Car

An HEV uses its conventional engine and its electric motor according to driving conditions, and achieves very high fuel efficiencies. For example, the Ford "Escape" with a 2.3-liter engine has a fuel economy of 9.4km/L (in town), but when the same 2.3L engine is used in parallel with the SANYO HEV battery system, the "Escape Hybrid" achieves a far superior fuel economy of 15.3km/L. Because less fuel is used for driving, the amount of exhaust gas emissions is reduced, and this reduces the amount of CO2 emissions.

EVs, which do not use gasoline, and fuel cell vehicles that use hydrogen, do not emit any CO2 at all. To encourage the spread of these cars, generally called "eco-cars," the necessary infrastructure of recharging stands and hydrogen-gas stations is gradually being established. As a result, the battery systems that power these "eco-cars' will become even more important in the future.

### **Developing Battery Systems for HEVs**

### Development started in 1997, the year the Kyoto protocols were adopted.

In 1997, the year when Kyoto protocols setting targets for percentage reductions in greenhouse gases like CO2 were adopted (ratified in 2005) and also the year when Toyota Motor Corporation became the first to market an HEV, Prius, SANYO started to develop nickel-metal hydride batteries for HEVs. Behind this decision lay a long history of technological excellence and a track record that began with the development of a nickel-cadmium battery in 1964, continued with nickel-metal hydride batteries, lithium-ion batteries, and lithium-polymer batteries, whose successive development and marketing made us the leading supplier of consumer

secondary cells (rechargeable batteries). Today, SANYO has taken up a new challenge: developing battery systems for HEVs that will match expanding demand.

The development theme was to exploit the ability of nickel-metal hydride batteries to supply a lot of power over long periods of time, while securing the high output power needed for good starting and acceleration performance, and achieving a long working life. Success followed, and in 1999 at the 33rd Tokyo Motor Show, we displayed our HEV battery system. Later, we entered

agreements with the Ford Motor Corporation and Honda Motor Co., Ltd. and in 2004 we mass-produced HEV battery systems for Ford's Escape Hybrid and for Honda's Accord Hybrid. The Escape Hybrid was not only Ford's first hybrid car but also the world's first hybrid SUV, achieving outstanding fuel economy.

### The HEV Battery System: Born of SANYO's All-round Strengths

The battery systems supplied to Ford use 250 1.2V D-type nickel-metal hydride batteries connected in series to form a high-voltage battery pack, and are packaged with a cooling fan to keep the batteries cool and an electronic control unit to monitor battery condition. Various divisions of SANYO contributed the sophisticated technologies that made this package possible.

For example, because battery performance is greatly influenced by changes in temperature, in order to ensure that all 250 batteries were cooled evenly, we used air-conditioning

technology and computer-aided engineering support for the design in order to develop the optimum cooling structure. In order to achieve the high outputs required for starting and acceleration without compromising useful service life, the software for the electronic control unit controlling the batteries was developed by a team drawn from various software departments.

In this way, various technologies were combined to give a great battery performance required for HEVs while at the same time provide a useful working life comparable with that of a conventional car engine (10 years and 150,000 miles). We also developed technologies to prevent electrical discharge and the leakage of electrolyte in the unlikely event of an accident, not only increasing collision safety

performance under impact essential in automobile applications but also achieving weather resistance that will withstand a very wide range of climatic conditions. The Escape Hybrid in particular, which must satisfy the harsh driving conditions required of SUVs, has a battery system that operates consistently over a very wide range of temperatures from +50°C down to -40°C.

# Creating HEV Battery Systems with Higher Performance and Lower Cost

Battery systems for HEVs currently use mainly nickel-metal hydride batteries, but SANYO is also working on the parallel development of lithium-ion batteries. We are exploring the possibilities of each type of battery in creating even better battery systems.

SANYO is also committed to reducing the costs of battery systems by optimizing designs and production processes, and is holding discussions with major automobile manufacturers in each country on the development of new HEVs. In the future, based on our track record of development for HEVs, we will devote our efforts on battery systems for EVs and fuel cell cars.

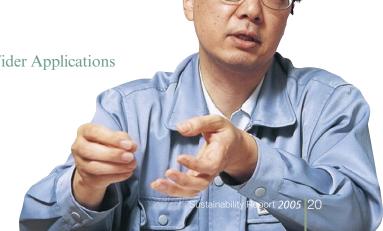
In order to contribute to the realization of cars that have lower impact on the environment, SANYO will continue to take up the challenges involved.



Aiming to Create Battery Systems with Even Wider Applications

**Fumio Yasutomi,** Controller Development Group, Engineering Department, HEV Business Unit, Mobile Energy Company.

At the moment, we develop battery systems for a particular model car. However, in the future, our dream is to create general-purpose battery systems that, like tires and car navigation systems, can be used in any model of any manufacturer's cars. If we succeed, then we will have played our part in the spread of HEVs that are environmentally friendly.



### orking with the Earth Energy & Ecology Special Feature 3

# We achieve products with low environmental impact by using natural CO2 as a refrigerant.

In order to prevent global warming, the use of fluorocarbons is being abandoned on a global scale. In the leading industrialized nations, designated CFCs\*1 have not been manufactured since 1995, and although the HCFCs\*2 that replaced them have a smaller effect on the ozone layer, it has been decided that they, too, should be phased out by 2010.

One of the main applications for these fluorocarbons is as the refrigerants that form the essential medium for heat transfer in air-conditioners and refrigerators, etc. Industry needs new refrigerants to replace fluorocarbons, and research has been proceeding into natural refrigerants that have little impact on the environment. This led SANYO to develop a CO2 compressor that would use naturally occurring CO2.

We have already combined this compressor with a heat pump to create a water heater using natural refrigerant, and in future we intend to extend the applications to refrigeration equipment.

\*1 These are chlorofluorocarbons subject to international regulation under the Montreal protocols adopted in 1987 to prevent destruction of the ozone layer (CFC-11, CFC-12, CFC-113, CFC-114, and CFC-115, etc).

\*2 These are hydrochlorofluorocarbons subject to international regulation under the Montreal protocols adopted in 1987 to prevent destruction of the ozone

layer (HCFC-22, HCFC-123, and HCFC-141b, etc).

### Types of Refrigerant and their Characteristics

	Refrigerant		ODP*1	GWP*2	Flammability	Toxicity
Desi	gnated	CFC12	1	10600	None	Low
fluor	ocarbons	HCFC22	0.05	1700	None	Low
New		HFC410A	HFC410A 0 1975 None		None	Low
Next generation		HFC32	0	550	Slight	Low
		Ammonia	0	0	Slight	High
Natural	Propane	0	3	High	Low	
		CO <sub>2</sub>	0	1	None	Low

★1 Ozone depletion potential (ratio to that caused by the equivalent amount of CFC11).

\*2 Global warming potential (from 3rd IPCC Assessment Report)

### **Refrigerants and Compressors in Equipment** for Heating and Cooling

When a liquid changes into a gas (evaporating or vaporizing), it draws heat from its surroundings, and in reverse, when a gas changes into a liquid (condensing) heat is released to its surroundings. A refrigerant uses this principle to provide the heat-transfer function in air-conditioning and refrigerating equipment. The refrigerant circulates within the equipment, repeatedly vaporizing and condensing, thus cooling its surroundings by drawing heat from them when it vaporizes and heating them when it

Once the refrigerant has vaporized, the gas can be re-condensed by applying pressure, which is where the compressor is used, and extracting heat. Fluorocarbons have been widely used as refrigerants because they can be readily vaporized and condensed, liquefying at low pressures.

### **Developing compressors using natural refrigerant** introduced a unique two-stage compression technology.

### CO2: A safe natural refrigerant that neither depletes the ozone layer nor contributes to global warming

Among natural refrigerants attracting attention as a replacement for fluorocarbons are CO2, ammonia, and air. Of these, SANYO selected CO2 in 1998 and began development of a CO<sub>2</sub> compressor.

Among substances that possess refrigerant properties, CO<sub>2</sub> has particularly outstanding properties from the point of view of imposing lower impacts on the environment. Not only it is free from the ozone depletion caused by CFCs but it also has a small GWP only 1/120th to 1/3,800th that of HCFCs. What is more, it is free of the flammability and toxicity of

ammonia and other alternatives, and can be safely used as a refrigerant.

Not only that, but the CO2 used is generated within the factory as a byproduct, so absolutely no additional CO2 is generated for refrigerant use, and there is no fear of accelerating global warming.

### Achievement of high-efficiency and high-reliability by unique two-stage compression technology

refrigerants, it does have one major disadvantage; it is difficult to compress. In order to liquefy CO<sub>2</sub>, pressures three or four times those needed for fluorocarbons are required. This means that the compressors must achieve and control high pressures. Higher pressures generally mean larger and more costly pressure vessels, and the applications of CO2 compressors have usually been limited to large-scale installations on ships, etc. in order for them to find applications in individual dwellings or apartment blocks, the problems of high-pressure operation must be solved and the

compressor reduced to a comparable size with those used in home air-conditioners

SANYO, by adopting the highly reliable twin rotary structure developed for our air-conditioner compressors, was able to develop unique technology for two-stage compression of CO<sub>2</sub>. In 1999, SANYO developed the world's first compact sealed CO2 compressor, the two-stage compression of which readily achieves the high pressures needed, while at the same time providing high efficiency, low vibration, low noise, and high reliability. In addition to these outstanding characteristics, the loads imposed on the compressor during compression are low enough to achieve longer operating life.

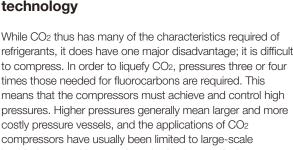
### High expectations for the CO<sub>2</sub> compressors within the context of abandoning fluorocarbons

With the gathering momentum of the worldwide trend to abandon HCFCs and replace them with CO2 as a natural refrigerant, SANYO is using CO2 compressors in many heat-pump\* type water heaters under the "Eco-Cute" brand name. They are also used in automatic dispensing machines. For example, automatic dispensing machines of

this type were installed at the Athens Olympic Games in

In the future, SANYO is looking to expand the range of applications to heating, driers for bathrooms, and other equipment, and eventually to freezers and refrigerators. We are committed to reducing their size and cost because this will both contribute to their widespread adoption and reduce the resources used in their production.

\* Eco-Cute is the name under which an electric power utility company and water-heater manufacturer sells heat-pump water heaters using natural refrigerants. SANYO uses its CO2 compressors in its own products, and supplies them for the heat-pump type water heaters produced by other companies.



### Our responsibility and our approach

### Making people's lives more comfortable as we reduce the environmental impact

Hiroshi Mukaiyama, NR Project, R&D Headquarters

With compressors that use fluorocarbon refrigerants, attention must be paid to recover and not release the refrigerant when disassembling or processing them during repair work and disposal. This is unnecessary with CO2 compressors. And since the CO<sub>2</sub> used is a factory byproduct, this also reduces environmental impact. What is more, because little electricity is consumed, running costs are low and they also run quietly. We are working to ensure that as many people as possible can experience for themselves the practical advantages of Eco-Cute products.



### **Environmental Policy and Action Plan**

The SANYO Group, as a manufacturer, approaches environmental issues from three directions, namely, Process, Products, and Mind, as a corporate citizen, and we are proceeding with our environmental conservation efforts according to the SANYO Group Environmental Policy and Guiding Principles for Ecological Activities.

### SANYO Electric Group Environmental Policies

SANYO Electric Group's corporate vision is "Think GAIA" and based on this we aim to become "a company that delights the Earth." With "Sustainability" as our keyword, we will pursue "Symbiotic Evolution" to simultaneously realize global environmental conservation and a comfortable and prosperous society.

For this purpose we will focus on the approaches described below in all stages (research/development design material procurement, manufacturing, distribution/sales, usage, and finally, disposal/recycling) related to SANYO Electric Group's business activities (offering of products and services in fields such as audio-visual & information communications equipment, home appliances, industrial/commercial equipment, electronic devices, and batteries).

- 1. We will establish and maintain an environmental management system. With the objective of pollution prevention, we will examine environmental issues from the global level down to those specific to corporate management. To address them we will work to continually improve our environmental management system. Further, we will periodically audit our system to confirm its effectiveness.
- 2. In addition to adhering to environment-related laws/regulations and all other requirements that SANYO Electric Group acknowledges, we will establish our own standards when necessary and work to reduce environmental risk.
- 3. In the field of product design, to contribute to the formation of a sustainable society, we will focus on reduction of energy consumption, effective utilization of recycled materials, improvement in durability and recyclability, and reduced use of chemical substances harmful to the environment. In this way we will strive to develop and promote diffusion of "environmentally conscious products" with minimal environmental impact
- 4. In our business activities, in addition to reducing energy consumption and material input through improving process efficiency and effectively using renewable energy and recycled materials, we will strive to reduce emission of chemical substances harmful to the environment, prevent global warming, conserve exhaustible resources, reduce waste, and prevent pollution.
- 5. In order to strengthen our efforts described above, SANYO Electric Group will put together the "Environmental Action Plan" to outline the objectives and
  - targets. This plan will be periodically reexamined as we work to improve the quality of our environmental management. (1) "SANYO Product Circulation Program: Realize zero-emission, 100% recycling and a detoxified product life cycle" Activities include reduction of greenhouse gas emission, waste reduction, increasing reuse of end-of-life products and parts, increase in recycling, reduction of chemical substance emission, improved management of chemical substances in products, reduction of chemical substances in products, and improved environmental quality of products.
  - (2) "SANYO Blue Planet Program: Tackle global environmental problems," "SANYO Genesis III Program: Pioneer the expansion of a sustainable and clean energy society," and "SANYO Harmonious Society Program: Create a compassionate and prosperous society We will develop technologies and products to promote environmentally conscious products and environmental technologies
- 6. We will engage in environmental education and enlightenment activities to improve the environmental consciousness of all members of SANYO Electric Group, including employees, and those who perform work commissioned by SANYO Electric Group.
- 7. To facilitate good communication with every stakeholder, including customers, business partners, shareholders, and local communities, and to create an environment in which we work together for a better future, we will seize every opportunity to actively share information and engage in proactive dialogue with them. Further, we will positively incorporate their opinions to improve the quality of our environmental management.
- 8. As a means of achieving the above, SANYO Electric Group will maintain applicable certifications related to environmental management systems, such as ISO14001, and also obtain new certifications covering new areas

Executive Director and President, SANYO Electric Co., Ltd.

### **Guiding Principles for Ecological Activities**

Let's conduct business and lives in an environmentally-sound manner.

1. Treasure... Nature · Objects 2. Save... Resources · Energy 3. Use... Recycled resources · Recycled products -Clean energy

4. Reduce... Garbage · Wastewater · Exhaust gas

5. Participate in... International cooperation  $\cdot$  Local community · Environmental

### **Environmental Action Plan**

The SANYO Group established the "Environment Voluntary Plan" in 1993 to promote environmental conservation activities.

In February 1998, in response to The 3rd Session of the Conference of the Parties to the United Nations Framework Convention on Climate Change (COP.III), held in the previous year, we established the Group Environmental Action Plan, the "Action E21." This plan aims to continuously reduce the environmental impact from three aspects of "Process," "Products" and "Mind" based on the environmental management system.

This stance is based on our recognition of the importance to reduce the environmental impact from "Process," which is the business activities to produce and sell products and from "Products" including services that are used by our customers, as well as the importance to transform people's "Mind" to promote environmental conservation activities.



### Environmental Action Plan Targets and Achievements

### ♦ Targets for Environmental Action Plan (FY2005 to FY2007)

Environmental objectives and targets	Target for FY2005	Target for FY2006	Target for FY2007
Activities that aim for realiz     "SANYO Product Circulatio	ation of "Zero Emission, Complete Re n Program."	cycling, and Detoxified Product Lifecy	cle" as part of the
	Reduction in CO <sub>2</sub> emission (sales unit volume) *1. Reduction of 5% or more compared to FY1999	Reduction in CO <sub>2</sub> emission (sales unit volume) Reduction of 10% or more compared to FY1999	Reduction in CO <sub>2</sub> emission (sales unit volume) Reduction of 15% or more compared to FY1999
Reduction of greenhouse gas emissions	Implementation of energy saving measures Implementation of measures that are expected to bring energy-saving effect, equivalent to 0.8% of the energy consumption in 2004.	Implementation of energy saving measures Implementation of measures that are expected to bring energy-saving effect, equivalent to 2% of the FY2004 energy consumption.	Implementation of energy saving measures Implementation of measures that are expected to bring energy-saving effect, equivalent to 4% of the energy consumption in FY2004.
Reduction of industrial waste	Final disposal ratio GEMS average of 0.3% or less 1% or below at 85% or more sub-sites	Final disposal ratio GEMS average of 0.3% or less 1% or below at 90% or more of sub-sites	Final disposal ratio GEMS average of 0.3% or less 1% or below at all sub-sites
Promotion of reuse and recycling of used products and parts, promotion of recycling	Reuse or recycle of used components Trial with 1 component or more	Reuse or recycle of used components Trial with multiple number of components	Reuse or recycle of used components at all major manufacturing sub-sites
Reduction of chemical substance emissions	Emission of chemical substances subject to PRTR Reduction of 86% or more compared to FY1999	Emission of chemical substances subject to PRTR Reduction of 88% or more compared to FY1999	Emission of chemical substances subject to PRTR Reduction of 90% or more compared to FY1999
Promotion of management of chemical substances contained in the products	Progress ratio of green procurement survey - 50% or more	Progress ratio of green procurement survey - 70% or more	Progress ratio of green procurement survey - 80% or more
Reduction of the specified	Database construction to calculate the usage ratio of green materials	Usage rate of green materials - 50% or more	Usage rate of green materials - 60% or more
chemical substances contained in the products	Usage rate of lead solder (1) 25% or less by June (2) 0% after July	Full phase-out	Full phase-out
Promotion of ensuring environmental quality of products	Ratio of products that satisfy the environmental quality standard 70% or more (according to FY2005 evaluation index)	Ratio of products that satisfy the environmental quality standard - 80% or more	Ratio of products that satisfy the environmental quality standard - 90% or more
development of technologic	O Blue Planet," "SANYO Genesis III," es to contribute to the "Challenge of the and "Creation of a Compassionate and "Creation of the Compassionate and "Creation"	ne Global Environmental Issues," "Dev	
Expansion of environmentally-friendly quality products	Ratio of environmentally-friendly quality products*2 30% or more	Ratio of environmentally-friendly quality products - 35% or more	Ratio of environmentally-friendly quality products - 40% or more
Promotion of environmental technology	Development of 36 or more items in total since FY2000	Development of 39 or more items in total since FY2000	Development of 42 or more items in total since FY2000

<sup>\*1</sup> In the plans for FY2005 to FY2007, the value of the basic year and the target value have been revised due to the changes in the scope of GEMS and in the sales plan. \*2 The target value was reset since FY2005 along with the tightening of the registration criteria.

### ♦ Achievements for Environmental Action Plan in FY2004

Environmental objectives and targets	Target in FY2004	FY2004 achievements (actual results)	Self evaluation*
Expansion of environmentally-friendly products	Ratio of E21 products - 25% or more	41.7%	0
Promotion of environmentally-friendly design	100% or more of the Standard for environmentally- friendly products achievement standard	100.1%	0
Expansion and promotion of green procurement	Domestically produced products, survey progress ratio - 30% or more	57.6%	0
Research & development that harmonizes the environment and the economy	Transfer of environmental technology to manufacturing divisions – 3 businesses or more (33 businesses or more in total since FY2000)	3 transfers (33 transfers or more in total since FY2000)	0
Reduced use of HCFC as a refrigerant or heat insulator	10% or less	12.4%	×
Reduced use of lead solder in products	50% or less	36.0%	0
Reduction of CO <sub>2</sub> emissions (sales unit volume)	Reduction of 20% or more compared to FY1999	18.8%	×
Waste reduction	Final disposal ratio - 0.5% or less	0.2%	0
Reduction of chemical substance emissions subject to PRTR	Reduction of 79% or more compared to FY1999	86.2%	0

<sup>\*</sup> Self evaluation standard: 

....... Excellent: 

....... Good: 

...... Good: 

...... A condition of the standard: 

...... Foor 

...... Excellent: 

...... Excellent: 

...... Target achieved as scheduled. 

..... Poor: 

..... Target not achieved as scheduled. 

..... Target

### **Environmental Management**

The SANYO Group introduced the environmental management system (EMS) in the 1990s. In 2001, the group environmental management system (GEMS) was established, and we are making our efforts as a Group to continuously improve environmental activities.

### History of Environmental Management System Establishment

### Establishment of EMS at Manufacturing Facilities (from the mid-1990's)

In 1994, the SANYO Group implemented environmental auditing to examine the implementation and management of environmental actions at each manufacturing facilities. No specific problems were found in achieving the target or in compliance with environmental regulations. However, in order to continuously implement and improve the environmental activities for the global and local environment, a need was recognized to establish the EMS and to operate the system continuously to verify the appropriateness of the evaluation of environmental impact and the target. Hence in 1995, the SANYO Group formulated the First EMS Establishment Guidelines for manufacturing facilities, including subsidiaries in Japan and overseas. The major manufacturing sites worldwide endeavored to establish EMS according to this Guideline, and by March 1998, all these sites obtained the ISO14001 certification.

In April 1998, we developed the Second EMS Establishment Guidelines that involve an expanded scope for establishing EMS, covering not only SANYO manufacturing facilities, but also the head office, and research, service and logistics sections. Since then, we have been promoting environmental management activities according to these guidelines.

In establishing EMS, our manufacturing facilities were grouped by geographical area as one site, such as those in Daito (Osaka), Gifu, and Shiga, or Sumoto factory and Tokushima factory to obtain ISO14001 certification. With regards to subsidiaries and affiliated companies, the certification was obtained for each company.

Operating EMS by geographical areas in this manner made it possible to reduce the environmental impact in accordance with the local regulations and bylaws. However, as environmental objectives and targets had to be set separately by each site, their position in relation to the overall group target values in the Environmental Action Plan tended to be obscure, and the environmental investment as the Group became dispersed. Another issue was that the environmental impact by product was difficult to grasp. As more businesses within a site were spun off into separate companies, which made it more difficult to make unified decision at the site.

### Unification and Restructuring towards GEMS Structure (2000s -)

Hence, the Group opted for a consistent environmental management that could be promoted efficiently within the SANYO Group. In November 2000, 24 major sites (domestic internal companies, divisions, facilities, related companies) that had already acquired the ISO14001 certification were unified into one site and the previous sites were redefined as

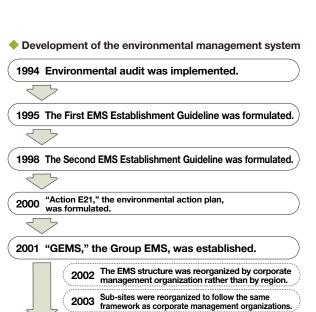
At the same time, we defined "Action E21," our group

environmental action plan, in accordance with the group environmental policy set by the top management of the SANYO Group (President of SANYO Electric Co., Ltd). The system was completed, where each sub-site operates towards each objective and target, based on the group environmental action plan, and the SANYO Group endeavors to reduce any impact on the environment within a single organization. In March 2001, the integrated certification for the group was obtained for the 24 sites which had been integrally operated as one site. This is how the Group Environmental Management System (GEMS) was developed where regional activities are managed as overall group activities to reduce any impact on the environment, including measures for global warming prevention, waste reduction, reduction in chemical substance emissions, etc.

Furthermore, the "GEMS" was restructured by corporate management organization rather than by region in April 2002, and new targets were set for environmental activities. This is because of the importance recognized in having the environmental management centered on products as the development of environmentally-friendly products such as energy-saving equipments will become more important.

In April 2003, the structure of sub-sites was revised to form a similar framework as new management organization, "business unit system". This structure is current as of today.

The EMS by management organization sometimes includes cases where a multiple number of facilities make up one sub-site, or cases where a large scale facility includes more than one sub-site. The SANYO Group has a regional council in place by geographical area to ensure achievement in these cases, and efforts are made to take consistent actions under instruction of the person responsible of the regional council to address issues which are specific to the area. For example, facilities or factories in the area take charge of compliance with local regulations.



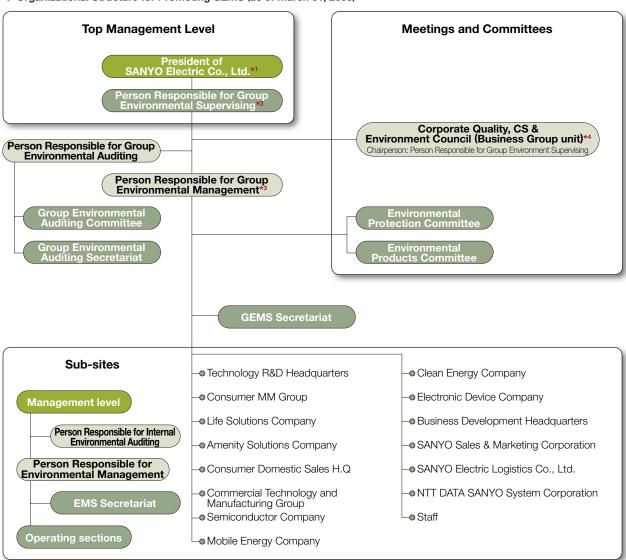
### Organizational Structure for Promoting the Group Environmental Management System (GEMS)



The SANYO Group unified the 24 domestic sites in November 2000, which had already acquired ISO14001 certification separately, in order to promote environmental management as a Group in an integrated manner, and based on this unified foundation, the Group Environmental Management System (GEMS) was established.

This united organization acquired the group ISO14001 certification in March 2001, and we are striving to ensure Group environmental policy, prompt decision making, and promote the Group environmental action plan. In April 2003, sub-sites were reorganized along with the introduction of the business unit system.

### Organizational Structure for Promoting GEMS (as of March 31, 2005)



- The person has the highest responsibility and authority in GEMS (1) To formulate SANYO Group environmental policy.
  (2) To authorize Action E21 environmental action plan.
- \*2 The person has the responsibility and authority for control of GEMS. (1) To control the SANYO Group's environmental activities according to the environmental management measures decided by the Corporate Quality. CS
  - & Environment Council. (2) To authorize SANYO Group annual environmental action plans.
- \*3 The person has the responsibility and authority for establishing, implementing and maintaining GEMS.
- \*4 Person Responsible for Group Environment Supervising acts as the chairperson to determine the direction of the environmental management of Business groups. Since April 2005 after the organizational changes, the "Corporate Quality, CS &Environment Council" changed its name to the "Corporate Environmental Council." The name of the unit which promotes GEMS changed from "Corporate Quality, CS & Environmental Unit" to "Environmental Promotion Center.

Please see our Web site for the "Map of SANYO facilities in Japan and GEMS sub-sites in FY2004," the "List of GEMS sub-sites in FY2004" and the "Performance by site and by facilities."



#### FY2004 GFMS

http://www.sanyo.co.jp/Environment/sanyo\_e/

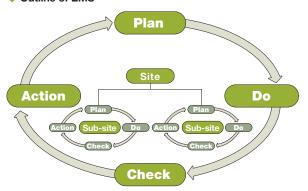
### Examples of GEMS Practice

### Status of ISO14001 Certification

As of the end of March 2005, the number of ISO14001 acquired within the Group is 78. (Please see the end of this book for the list of acquired certifications.)

Please note that the form of certification varies. For example, 41 related companies and main facilities of SANYO Electric Co., Ltd. together are registered as 1 site. Likewise, more than one company is registered as one site for certification in some cases. In other cases, one facility of a company is registered as one site on its own, so the number of registered certifications does not match the number of companies.

### Outline of EMS



### About Environmental Policy

At the top management level of GEMS, the President of SANYO Electric Co., Ltd. sets the SANYO Group Environmental Policy, and instructs all the employees of the SANYO Group to promote environmental protection activities.

Accordingly, the management of each sub-site formulates its own Sub-site Environmental Policy while considering the business activities, products and services specific to that sub-site, and clarifies the important issues for its environmental protection activities.

To ensure that the environmental policies of sub-sites are consistent with the Group Environmental Policy, Person Responsible for Group Environmental Management verifies the policies of sub-sites using a checklist.







### Identification of Significant Environmental Aspects and Development of Objectives and Targets

Once a year, potential and actual environmental aspects are identified in business activities, products and services at every level, from divisions and sub-sites to the entire GEMS. Among the selected impacts, significant environmental aspects, such as energy consumption and waste generation, are identified.

### Significant Environmental Aspects for

In order to continuously improve our environmental performance for the significant environmental aspects we have identified, the President of SANYO Electric Co., Ltd. develops medium-term (three-year) targets for the SANYO Group and the specific environmental action plan to achieve these targets. Based on this plan, Person Responsible for Group Environmental Supervising formulates and manages the targets and the plan for the current fiscal year.

Once the objectives, targets and the plan are determined, Person Responsible for Group Environmental Management provides each sub-site with specifically tailored targets so that all sub-sites proceed as one entity with activities to achieve the objectives and targets of the SANYO Group.

Those significant environmental aspects not included in the Group Environmental Action Plan are dealt with in objectives and targets of the sub-sites. Environmental aspects for which environmental performance have been improved to a high level may be reclassified as items to be maintained at that level, rather than as targets.

The GEMS Secretariat monitors and measures the status of progress of the Group Environmental Action Plan once a month, and reports the status of progress to Person Responsible for Group Environmental Management. This officer summarizes the status of progress every three months, and reports this to Person Responsible for Group Environmental Supervising.

### Significant Environmental Aspects for the GEMS

Use of energy (electricity, natural gas, etc.) Use of lubricants, etc. in processes Use of chemical substances (sodium hydroxide, etc.) in processes Hazardous chemical substances (lead, lead compounds, etc.) in products Generation of industrial wastes (metal scrap, waste plastic, etc.) Generation of specially controlled industrial wastes (waste oil, waste acid, etc.) Emission of PRTR substances into the atmosphere Research and development on themes important to the environment

### Status of Observance of Environmental Laws and Regulations

The SANYO Group companies and sub-sites, in order to grasp the laws and regulations relevant to their business activities, products and services, have developed frameworks to ensure that information on all new environmental laws and regulations, as well as amendments to existing ones, are obtained and communicated without omission within the organization, and efforts are made to comply with them by monitoring and measuring observance situation on a regular basis. In addition, the SANYO Group endeavors to observe other requirements to which the Group consented, such as agreement amongst industry groups.

With regards to environmental standards which are specific to regions, the Group not only complies with various bylaws, but also sets its voluntary standards higher than those of bylaws to ensure prevention of violation.

Since GEMS was established, there were no particular problems concerning compliance with environmental laws and regulations between FY2001 and FY2003.

In FY2004, the voluntary standard was exceeded at some sub-sites concerning water or noise pollution, but the situation was rectified promptly by taking appropriate measures. There has been no serious breach of laws and regulations, with no guidance, recommendation, orders and reprimand issued by the regulatory authority. Hence neither



fines nor penalties were charged on the SANYO Group.

List of Legal and Other Requirements

### The Mechanism for Continuous **Improvement**

In case of nonconformity with environmental regulations or voluntary standards, we have a mechanism to investigate the causes and impacts of the nonconformity, to implement appropriate corrective and preventive actions and to verify their effects, in order to prevent the occurrence of nonconformity and to ensure continuous improvement in operating and managing GEMS.

When achievements of environmental performance exceed the group environmental action plan or objectives and targets provided in sub-sites action plans, then the management reviews the plan and upwardly revises the target for the following fiscal year in order to continue with our environmental activities with high aims.

### **Education and Training**

General education sessions are provided on a regular basis at each sub-site for all employees including subcontractors within the scope of GEMS including subcontractors (approx. 30,000 people) in order to raise awareness of environmental conservation.

In general education sessions, explanation of the group environmental policy and environmental target of each division are provided for 30 minutes to 1 hour based on the materials common throughout the SANYO Group, to ensure that every person is well informed and to raise their awareness.

Person Responsible for Group Environmental Management provides education to Person Responsible for Environmental Management at each site and the EMS Secretariat concerning the operational policy and the direction of GEMS in order to maintain the unitary level of awareness among the sub-sites.

In addition, it is planned to provide environmental e-learning program for those who play the role as lecturers in the company, such as the GEMS secretariat, Person Responsible for Environmental Management, EMS Secretariat, environmental managers and environmental promoters, to unify knowledge and awareness at a high level. Based on the result, preparation will be made to implement environmental education across the company by improving the educational system to make it easier to participate.

In the Sales division, every person therein is informed. through education and training, that the most important environmental measures for manufacturers are to expand the sales of environmentally-friendly products, such as energy saving air conditioners, fluorocarbon-free energy saving refrigerators, EcoCute (heat exchange hot water system), and photovoltaic power generation systems.

In the Service division, the combined use of "on-site training" at service stations or spots by skilled engineers, and "e-lecturers" where participants can learn repair method remotely via e-learning are encouraged in order to continuously improve the service technology level. This will lead to a higher rate of completing the on-site repair on the first visit, reducing the burden and wasted effort, hence contributing to the environmental measures.

In the Management division, each person is made aware that each environmental action, such as collection, management, and reporting of the environmental information, green purchase, energy saving, reduced usage of paper and waste recycling as well as compliance with the environmental regulations will accumulate and lead to conservation of the environment and help form a recyclingoriented society.

As for the employees involved in operations which may have significant impacts on the environment, such as boilers, incineration systems, chemicals, and for those involved in operations handling the environmental laws and regulations, special education and training are provided to prevent accidents from occurring.

### **Examples of GEMS implementations**

### Internal Environmental Audits

Every sub-site within GEMS performs internal environmental audits on a regular basis in accordance with the requirements of ISO14001 and our own standards. Any nonconformity is rectified, and the audit result is reflected in the review of the environmental policy, objective, targets and the management system by the management level.

The Group holds the "Group Environmental Audit" every year, where the group environmental auditors selected from sub-sites, audits other sub-sites than they belong to and Person Responsible for Group Environmental Management in accordance with the requirements stipulated in ISO14001 and the Group Environmental Manual. In these audits, they check the progress of continuous environmental management, the observance of environmental laws and regulations, and the effectiveness of internal environmental audits. The Group environmental audit enables each subsite to share distinguished activities and achievements within the Group, which contributes to improve the operation of GEMS.

There was no significant nonconformity identified in the Group Environmental Audit in FY2004. However, 15 cases of "minor nonconformity" and 43 cases for "observation" were pointed out. In the internal audit of each sub-site, 8 cases of significant nonconformity, 162 cases of minor nonconformity, and 361 cases for observation (total of 531 cases) were identified, but corrective measures have been promptly implemented by each sub-site.

### Measuring of Environmental Management Levels

The SANYO Group has been measuring environmental management levels in order to verify GEMS activities and achievements. In FY2004, we have introduced a more objective external assessment system by using environmental management assessment service of Nikkei Research Inc., to replace our own assessment system.

In the latest assessment, it was characteristic that the non-manufacturing sites, which operate the environmental management system at the same level as the manufacturing facilities, received relatively higher assessment results. For example, a sub-site which has administrative staff received the assessment result equivalent to the first or the second in the category of communication services and non-manufacturing in the 8th environmental management survey by the Nihon Keizai Shimbun, Inc. Our analysis of this result is that the GEMS is contributing to the promotion of environmental management.

### Environmental Risk Management

A range of measures and countermeasures are planned and implemented in order to deal with possible environmental risk in the future at each sub-site including facilities and factories. The importance of these measures (the magnitude of their environmental impacts) is assessed, and important items are included in the objectives and targets in the annual plan and measures for these targets are implemented steadily.

The major environmental risk areas identified for the entire GEMS are described below.

### Countermeasures for Major Identified Environmental Risks

Promotion of green procurement

Measures to prevent soil and ground water pollution

Target setting and promotion of CO<sub>2</sub> emission reduction

Target setting and promotion of PRTR substance emissions reduction

Improvement in the methods to measure the environmental management level

For the items that have achieved the targets, higher targets are set. For the items where no future effectiveness is expected by pursuing numerical targets, targets are set from a new angle, while maintaining the current situation. In FY2005, waste materials and the basic unit for CO2 emission will be looked at.

With regards to measure of the environmental management level, an external assessment service was introduced in FY2004 to ensure more objective assessment.

In addition, training (simulation) is carried out in December every year, in cooperation with subsites, to ensure sufficient management by the GEMS Secretariat. Participation by Person Responsible for Group Environmental Supervising is planned in the future.

As a result of these activities, 7 items out of 9 achieved the target in the environmental risk reduction measures which were specified in FY2004. The 2 items which did not reach the target were the reduction in designated fluorocarbons HCFC and reduction in CO2 emissions which is a countermeasure against global warming. The HCFC reduction target could not be reached in FY2004, but the use of HCFC has been totally phased out since April in FY2005. As for the CO<sub>2</sub> emissions reduction, the target was reviewed for FY2005 and efforts are made to achieve them.

The emergency measures are reported in the item after the next, and the countermeasures against ground pollution are reported in the section, "Countermeasures against soil and groundwater issues (see page 52)" in detail.

### Effects of the Environmental Risk on the **Economic Aspects**

The SANYO Group assumes two major environmental risks, mainly, the "Possibility of physical impact on the global environment" and the "Possibility of economic losses incurred to the Company concerning the environment." Concerning the latter, there are direct monetary losses and immaterial damage of the corporate image which may lead to the monetary losses in the future. The followings are assumed in particular.

- 1. The possibility of impacts occurring on the global environment, including natural disasters, accidents at facilities, and environmental pollution, and the possibility of economic losses of the Company caused by the above
  - Possibility of soil pollution by toxic substances in the coating material.
- 2. The economic damage to the Company in case of a negative impact on the global environment. The possibility of losing the sales opportunity in the case a product contains a chemical substance which has a high environmental impact.
- 3. The possibility of economic damage to the Company caused by requirements concerning social environment including environmental regulations. The possibility of objections and demands from the local
  - residents arising as a result of insufficient explanation of the construction works, etc.
- 4. The possibility of economic damage caused to the Company as a result of the actions of others which have negative effects on the global environment. The possibility of the brand value decreasing, caused by the illegal dumping of our refrigerators and its reporting.

### **Emergency Relief Measures**

Emergency situations are defined as unexpected events when a severe impact, including pollution, is caused to the environment outside the control range or boundaries of a sub-site due to a natural disaster or accident.

Each sub-site, based on the result of environmental impact assessment, has identified potential emergency situations such as severe leakage of gas or chemical substances. To cope with such emergency situations, protective and preventive facilities and equipment are in place, as well as emergency procedures which are set assuming the occurrence of such situations. The emergency procedures are tested regularly, and any inadequacies are revised and rectified.

In GEMS, the substances which are stored in large quantities and have a significant environmental impact in the case of leakage are identified as potential environmental aspects requiring emergency relief. The following are the major environmental aspects identified.

### Major Environmental Aspects Identified as **Emergency Situations**

Storage of sodium hydroxide Storage of cadmium and its compounds Storage of waste alkalis Storage of waste oil Hazardous materials storerooms

Person Responsible for Group Environmental Management and the GEMS Secretariat, with the cooperation of each sub-site, assume an emergency situation at a sub-site, and conduct an annual emergency training which simulates the emergency procedures of the SANYO Group, in accordance with the manual, such as reporting to the top management and communicating instructions. There was an incident at a facility in December 2004 when the waste rinse water of water-based coatings ran into the rain water drainage accidentally. However, it was caught early and the soil water was quickly recovered by damming the stream.

The incident was promptly reported to the administrative agency concerned, and efforts are being made to prevent a similar incident from occurring by reviewing the procedure manual.



**Emergency training** 

### **Summary of the Environmental Accounting**

The SANYO Group introduced the environmental accounting in FY1998.

In the aggregated Group result in FY2004, the environmental conservation cost was ¥32,498 million in total, where investment was ¥5,832 million and expenses were ¥26,666 million. The environmental conservation effect was ¥69,130 million in total, where the direct effect was ¥6,617 million and indirect effect was ¥62,513 million.

### Calculation Method for Fiscal 2004

1. Environmental conservation costs (based on the Environmental Accounting Guidelines by the Ministry of the Environment).

Investment amount: expenditures intended for environmental conservation.

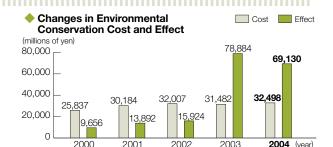
Expenses: costs of labor intended for environmental conservation, and depreciation expenses related to investments in environmental conservation.

2. Environmental conservation effects (calculated according to SANYO's own criteria).

Direct effects: the effects which have direct impact on the environment and which can be converted directly into a monetary sum.

Indirect effects: effects that have indirect contribution to the environmental conservation activities, such as environmental education within the company and effects of environmental risk avoidance.

- 3. Environmental conservation indicators: calculation of environmental conservation achievements that are thought to have significant effect on the environment.
- 4. Period of survey: April 2004 to March 2005
- 5. Scope of survey: 157 domestic and overseas facilities with ISO14001 certification.

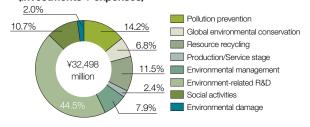


### **Environmental Conservation Cost**

With regard to the environmental conservation cost, investment decreased by 6% year-on-year to ¥5,832 million, while the expenses rose by 5% year-on-year to ¥26,666 million.

In the investment, the social activity cost increased by ¥1,238 million and the global environmental conservation cost decreased by ¥783 million. The social activity cost increased mainly due to the occurrence of capital investment related to Solar Ark.

#### Breakdown of Environmental Conservation Costs (investments + expenses)



### Environmental Conservation Cost

(Unit: ¥1 million)

			FY2004				FY2003			
Item	Main activities	Investment	Expenses		Ratio to the total cost			Expenses Degraciation		Ratio to the total cost
				Depreciation	(%)	previous year			Depreciation	(%)
1. Pollution prevention	Double lining of the acid waste water tank	895	3,724	1,070	14.2%	(494)	1,447	3,665	1,360	16.2%
Global environmental conservation	Introduction of photovoltaic power generation system, and installation of invertors	910	1,314	635	6.8%	(1,446)	1,693	1,977	1,315	11.7%
3. Resource recycling	Expansion of steam boiler facility, waste disposal	587	3,144	419	11.5%	(164)	695	3,201	475	12.4%
Production/Service stage	Outsourcing recycling of containers and packaging	60	729	106	2.4%	(257)	600	447	76	3.3%
Environmental management	Maintenance and operation of environmental management systems	34	2,527	16	7.9%	(498)	45	3,014	21	9.7%
6. Environment-related R&D	Research and development of solar cells	1,986	12,478	1,432	44.5%	2,730	1,603	10,130	1,312	37.3%
7. Social activities	Greening of the site, and works related to Solar Ark	1,276	2,186	449	10.7%	2,164	38	1,260	84	4.1%
Environmental damage	Soil improvement	84	565	197	2.0%	(1,018)	73	1,593	256	5.3%
Total	Total		26,666	4,322	100%	1,016	6,193	25,289	4,899	100%
Total environmental conservation cost			32,498					31,482		

Note: Due to rounding of the fractions, total numbers may not always be consistent.

### **Environmental Conservation Effects**

The environmental conservation effects were ¥69,130 million in total, where direct effects decreased by 18% year-on-year to ¥6,617 million and the indirect effects also decreased by 12% year-on-year to ¥62,513 million.

The ratio of the environmental conservation effects to the environmental conservation cost (investment + expenses) was 213%, where the direct effects accounted for 20% and the indirect effects 192%. A large proportion of the direct effects was accounted for by the profit on selling of valuables concerning waste disposal and recycling.

In addition, the SANYO Group contributes to environmental conservation by providing customers with the E21 products (please see page 35).

The development expenses of E21 products are recorded as the research and development cost in the environmental conservation cost, and its effect will appear eventually as energy saving when customers use our products, or reduction of harmful chemical substances in the products. From the viewpoint that these efforts contribute to the society as a result, these are evaluated as indirect effects in the environmental accounting, and calculated quantitatively as an indicator to measure the contribution to the environment. The result of the effects in FY2004 was ¥4,216 million in effects on energy saving and resource saving, and ¥55,919 million in effects on reducing the chemical substances with the environmental impact.



Please see for the calculation method of the indirect effects

http://www.sanyo.co.jp/Environment (Japanese only)

#### Environmental Conservation Effects

(millions of ven)

						-	
			FY2004		FY2003		
ltem	Content of main activities	Monetary effect	Ratio (%)	Increase (Decrease)	Monetary effect	Ratio (%)	
Energy conservation effect	Introduction of electricity saving equipment	1,042	15.7%	(732)	1,774	22.0%	
2. Resource conservation effect	Installation of waste water recycling facilities	612	9.3%	(2,876)	3,489	43.3%	
Reduction in waste disposal cost	Reduction of emission of industrial waste	300	4.5%	31	268	3.3%	
4. Income from used paper collection	Sales of used paper	26	0.4%	6	20	0.2%	
5. Environment-related business activities	ISO consultation income	559	8.4%	(67)	625	7.8%	
Profit on selling valuables related to waste disposal and recycling	Profits on sale of scrap	4,078	61.6%	2,196	1,882	23.4%	
Total of direct effects		6,617	100%	(1,441)	8,058	100%	
Environmental education effect	In-house training at training centers	35	0.1%	(182)	216	0.3%	
2. EMS construction effect	In-house consultation for facilities to newly construct the EMS	8	0.0%	(18)	25	0.0%	
Reduction in the payment of non-installment-type insurance premiums		5	0.0%	5	0	0.0%	
Improvement in operation rate through accident prevention	Installation of a back-up acid scrubber	1	0.0%	(497)	498	0.7%	
Avoidance of remediation by preventing pollution	Transfer of the waste water treatment facility to above ground	955	1.5%	(3,131)	4,087	5.8%	
<ol><li>Reduction in payment for compensation, etc.</li></ol>		0	0.0%	(0)	0	0.0%	
7. Inserts on newspapers	SANYO's Environmental efforts, environmentally-friendly products and introduction of Solar Ark	388	0.6%	59	329	0.5%	
8. TV coverage	Introduction of Solar Ark	118	0.2%	9	109	0.2%	
9. Access to environmental web site		852	1.4%	152	700	1.0%	
Writing environment-related research papers, and award money		3	0.0%	3	0	0.0%	
11. CO <sub>2</sub> reduction effect	Reduction in electricity and heavy oil consumption	13	0.0%	(66)	79	0.1%	
12. Energy and resource conservation effects of E21 products sold	Sale of E21 products	4,216	6.7%	2,349	1,867	2.6%	
Effects on reduction of chemical substance with environmental impact of E21 products sold	Sale of E21 products	55,919	89.5%	(6,996)	62,915	88.8%	
Total of indirect effects		62,513	100%	(8,313)	70,826	100%	
Total effects		69,130		(9,754)	78,884		

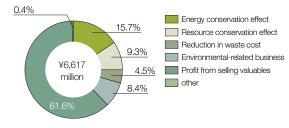
Note: Due to rounding of the fractions, total numbers may not always be consistent.

### **Environmental Conservation Indicators**

In order to understand the environmental impacts of the SANYO Group (within the scope of our environmental accounting) and utilize it in our efforts to reduce environmental impacts further, efforts are made to grasp the overall environmental performance of the Group.

Approximately 80 items are investigated concerning the consumption of fuel, electricity and water in FY2004, and the result is utilized to lower the environmental impact.

#### Environmental Conservation Effects (Breakdown of the Direct Effects)



### **Overview of the Environmental Impact of the SANYO Group**

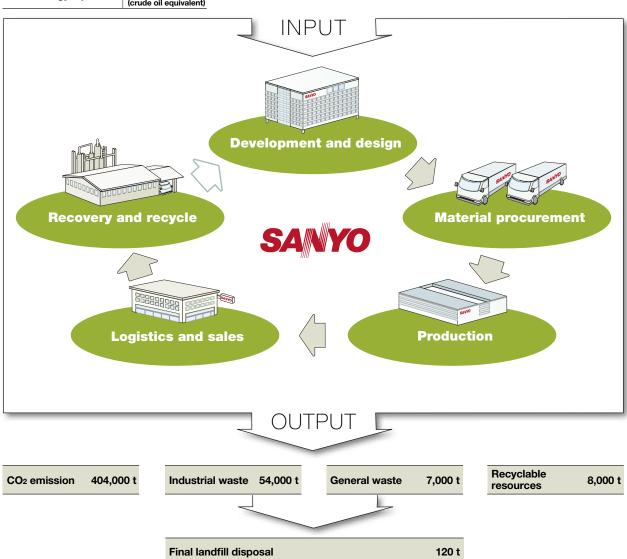
The SANYO Group is positively promoting environmental conservation activities at a wide range of business activities, including efficient usage of resources and energy, and reduction of waste, over the whole lifecycle of the products and services.

### **FY2004 GEMS Environmental Conservation Indicators**

Energy			
Electricity (522 million kWh)	132,000 kL		
Natural gas (70.55 million m³)	75,000 kL		
LPG	10,000 kL		
Heavy oil	13,000 kL		
Kerosene	400 kL		
Volatile oil	300 kL		
Total energy input	230,000 kL		

Raw material		
Metal	87,000 t	
Resin	18,000 t	
Other	100,000 t	
Total material input	205,000 t	

Water				
Groundwater	2,401,000 m <sup>3</sup>			
Water other than groundwater	10,128,000 m <sup>3</sup>			
Water resource input	12,529,000 m <sup>3</sup>			



### **Reduction of Environmental Impact in Products**

### **Products**

We strive to develop and expand "environmentally-friendly products" reducing the environmental impact via reduction of energy consumption, efficient usage of recycled materials, outstanding product durability, easier structure to recycle, and reduction of usage of chemical substances with environmental impact.

### **Strategy and Development Concepts for Environmentally-Friendly Products**

The SANYO Group is positively promoting the development of environmentally-friendly products considering the various effects on the environment.

Based on product assessment where the product's environment impact is preliminarily evaluated, we are making efforts to promote the 3Rs (reduce, reuse, and recycle), as well as energy and resource conservation by reducing the electricity, water and fuel consumption. We are also banning or reducing the use of chemical substances

with high environmental impacts that have recently attracted much public attention.

From FY2004, every new product being developed must at least meet a specific level for all of the above-mentioned environmental considerations, so that all the of these products are environmentally-friendly.

Among these environmentally-friendly products, those having cleared stricter criteria are registered as "E21 products."

### Strategy and Development Concepts for Environmentally-Friendly Products (conceptual diagram)



### **Environmentally-friendly products on display at** "Eco Products 2004"

"Eco Products 2004," the biggest comprehensive environmental exhibition in Japan, was held over three days between the 9th and 11th of December, 2004 at Tokyo Big Site. Approximately 450 companies participated in the event, displaying a wide range of environmentrelated products such as environmentally-friendly materials, energysaving consumer electronics, and waste recycling systems, etc. Approximately 125,000 people visited the exhibition, which exceeded the number of visitors in the previous year.

At the SANYO booth, solar cells, rechargeable batteries, "α-Electrolyzed water" series, consumer electronics products subject to green procurement and those with lead-free solder, and others were displayed. These products were exhibited in 6 areas reflecting "home" under the booth's main theme, "Ecology starts at home", set according to the business domain of "Energy and Ecology".

On the central stage, the live violin performance was carried out at the opening. Areas were also prepared where the mechanism of solar cell and electrolysis technology was explained in an easy-



to-understand quiz form and where visitors enjoyed taking pictures for souvenirs using a digital camera and a photo printer. Both areas attracted many visitors from children to adults.

### **Reduction of Environmental Impact in Products**

### **Products**

### **Product Assessment**

The SANYO Group is promoting development of products, taking the 3Rs (Reduce, Reuse and Recycle) into account, to help realize a recycling-oriented society in the 21st century. In order to promote these 3Rs and reduce the environmental impact of its products, the SANYO Group is exercising preliminary product assessment at the design and prototyping stages.

The product assessment is carried out in accordance with our own guidelines. The first edition of the guidelines was issued in 1992, followed by a revised edition in response to the "Revised Recycling Law"\* which came in force in April 2001.

The evaluation method has been changed from the previously used qualitative techniques to the current quantitative techniques to indicate the results of assessment for each item in numerical values. As a result, more objective assessment has become possible, with clearer targets for product assessment items. The specific assessment items include reduction in volume and weight of products and packaging materials, reduction of types of material, displaying the content of the resin components, improved rate of recyclability of used products, promotion of product design which takes account of the ease of separation and classification for waste treatment.

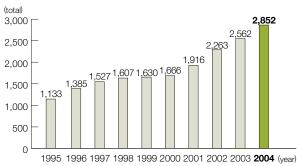
The SANYO Group applies the product assessment

not only to the products subject to the law but also to a wide range of products within the SANYO Group. This is why product designers are trained in recycling practice at recycling plants so that they design highly recyclable products based on the knowledge acquired from the experience.

In order to continue these activities overseas, the product assessment manual and assessment sheets are produced in English and Chinese, which are sent to the Group companies overseas.

\* Law for the Promotion of Effective Utilization of Resources

### Number of Products Subjected to Assessment by Fiscal Year (accumulated total)



### The evaluation items applied are as follows.

Reduction of product weight and volume	5. Ease of recycling	9. Safety and environmental friendliness	Reduction of environmental impact in the manufacturing stage
Use of recycled resources and components	6. Ease of waste classification	10. Energy savings when the product is in use	<ol> <li>Reduction of environmental impact in the distribution stage</li> </ol>
3. Longer product durability	7. Ease of disassembly and separation	11. Information disclosure	15. Recyclability of rechargeable batteries
4. Ease of collection and transportation	Environmental friendliness of packaging	12. LCA (Life Cycle Assessment)	

### **E21-Series Certification System**

Environmentally-friendly products which satisfy the evaluation criteria established by SANYO are registered as the "E21-series products." With this system, we enhance the environmentally-friendly features of our products, promote development of such products, and expand their sales. These items are clearly display E21 mark to help customers in selecting a product.

### E21 mark



For an easy-to-understand indication of environmentallyfriendly features, every E21 product bears an E21 mark with a short description of its features.

### **Conditions for Registration**

- 1. The product must exceed the in-house score standard in the product assessment.
- 2. The product does not contain environmentally-hazardous substances, use of which is banned by ourselves .
- 3. Components of the product are assessed for environmentally-hazardous substances.

The product must satisfy all three conditions above and at least one of the conditions below ((1) - (3)).

- (1) The product is an environmentally-harmonious product which satisfies the achievement level of 3R requirements, energy-saving features (less consumption of electricity, water and fuel), and cleanliness (lower content of environmentally-hazardous substances).
- (2) The product is an environmentally-harmonious product with distinguished features (a leading product in the industry, first in the industry, award-winning, etc.)
- (3) The product is an environment-conserving product with distinguished features.

# E-21 Series Registration Target and Achievement

The SANYO Group aimed to achieve the sales ratio of the E21-series products of 25% in FY2004. The result in FY2004 was 41.7%, which exceeded the target. We will update the

name, E21, raise the registration requirement, and aim to achieve 30% in FY2005 and 35% in FY2006.



List of E21-series products

http://www.sanyo.co.jp/Environment/E21.pdf (Japanese only)

## Examples of major E21-series products

Product name	Model	Environmentally-friendly features
		A cyclone vacuum cleaner which does not require consumable paper bags
Vacuum cleaner	SC-XW22F, SC-XW33F	By fitting a tissue paper in front of a filter, the filter needs to be cleaned 1/15 times less than the conventional model (compared to the 2003 model, SC-XW9E)
Electric hybrid bicycle	CY-SN243D, CY-SN263D,	By adoption of the system charging electricity generated in a motor part during high-speed run (Eco-rechargeable mode), the mileage at full charge is twice as long (increased from approx. 28 km to 56 km) (compared to the 2003 model, CY-S J 263D)
Liectric Hybrid bicycle	CY-SQ263, CY-SR273D	No polystyrene foam is used.
		Heavy metal ink is not used in the operations manual.
Dehumidifier	SDH-Z7	Dehumidifier without CFC Contents are also displayed for a resin component of 25g or less.
		Resin-coated components use trivalent chromium instead of hexavalent chromium.
Digital movie camera	DMX-C5	Circuit boards with lead-free solder
		LCD back light without mercury
		2004 energy saving Top Runner target value was achieved
Refrigerator	SR-FS44.I	Cyclopentane, which does not have global warming effect, is used for heat insulation.
Heingerator	0111 0440	Use of fluorocarbon-free refrigerant R600a
		Use of lead-free solder for printed circuit boards and suction pipes
		Leading energy-saving performance in the industry (as of July 2005)
	SAP-EX28R	Use of R410A, a new refrigerant which does not destroy ozone layer.
Split-type air-conditioner	(EX series 56, 45, 36, 28, 25, 22)	Use of lead-free solder, devinyl material and components with neither hexavalent chromium nor cadmium nor mercury Use of natural energy by connecting to the solar cell module (separately sold)
Natural refrigerant heat pump hot		Use of tap water instead of antifreeze for floor heating circuit
water supply unit	SHP-TCH37D	Use of CO <sub>2</sub> refrigerant, which does not destroy the ozone layer



Vacuum cleaner



Refrigerator



Electric hybrid bicycle



Dehumidifier



Split-type air-conditioner (Outdoor unit)



Digital movie camera



Natural refrigerant heat pump hot water supply unit

# Reduction of Environmental Impact in Products

# **Products**

# **Technology Development for Environmentally-Friendly Products**

# Power Generation with Biogas Fuel Cells

We have developed a technology to generate high-purity methane gas by purifying and condensing the biogas made from fermented cow manure and to eliminate a minute amount of impurity, such as hydrogen sulfide and ammonia

contained in the surrounding air. With these technologies, we have also succeeded in power generation by solid polymertype fuel cells using biogas. (Research sponsored by the Ministry of Agriculture, Forestry and Fisheries of Japan)



# **Environmentally-Friendly Treatment** Technology for Semiconductor CMP **Process Wastewater**

We have successfully developed and commercialized an efficient solid-liquid separation system for the wastewater from the semiconductor chemical mechanical polishing (CMP) process that contains fine grinder grains (product name: Slurrycloser®, manufactured and marketed by SANYO Aqua Technology Co., Ltd.). This system does not require chemical

agent such as coagulant. In addition, this system reduces the electricity consumption to 1/7, and a waste amount to 1/10 compared with a filtering system for the same purpose (UF membrane). The investment is recouped within two years at a site where whole-quantity industrial waste disposal treatment is carried out, as well as contributing significantly to reduce industrial waste.



# High Performance HIT Solar cell

We have achieved the world's highest level conversion efficiency at 21.5% for the HIT solar cell in the laboratory situation, using a newly developed technology. The HIT solar cell has the layered structure of thin films of amorphous silicon and single crystalline silicon, and

its environmental impact in manufacturing is small. With this technology, the SANYO Group is producing solar cell panels which have the highest output\* per installed area in the world.

\* SANYO survey, for mass-produced products, as of October 1, 2004



# Highly Efficient Direct Electrolysis Technology for Producing Recycled Water

There has been a rising need to recycle water from sewage water for uses such as equipment rinsing. As a result of research commissioned by the Sewage Bureau of the Tokyo Metropolitan Government, we have successfully developed a technology that easily produces germ-free, colorless and odorless recycled water from simply treated sewage water. A propriety electrolysis technology (sterilization with electrolysis) has been realized by combination of our high-efficiency bipolar direct electrolysis module and our direct electrolysis technology for producing

recycled water. Field test are continuing at the latter stage of purifying tank at the moment, which shows the reduction in the rinsing cost to 1/10 of the conventional method by replacing the water supply with recycled water. This technology can be used in the sewage-treatment plants across the country as well as in recycled water markets around the world.



## The electrolytic nitrogen removal system won the "Electrical Science Technology Award"

The electrolytic nitrogen removal device, which is an electrolytic industrial water treatment system, was awarded the



(OHM Technology Award)" by the Promotion Foundation for Electrical Science and Engineering, and Mr. Hiro, manager of Acua BU, Commercial Technology Division, received the award. (November 19, 2004)

This award is given every year to commend persons of merit who have contributed to electrical science and to promote development of scientific technology in Japan. 34 devices and systems were selected and 82 people were commended this year

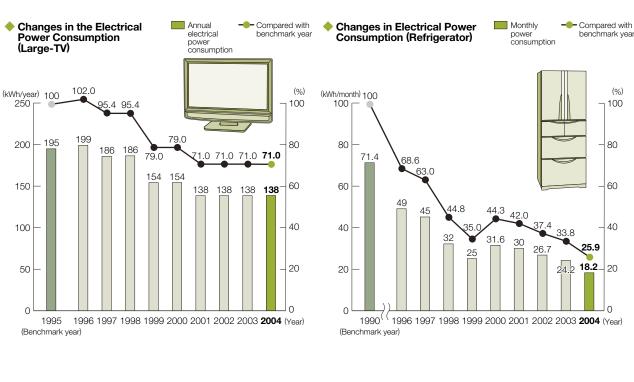
## Three products including Gas Heat Pump Air Conditioner received the Electrical Load **Equalization Device and System Award**

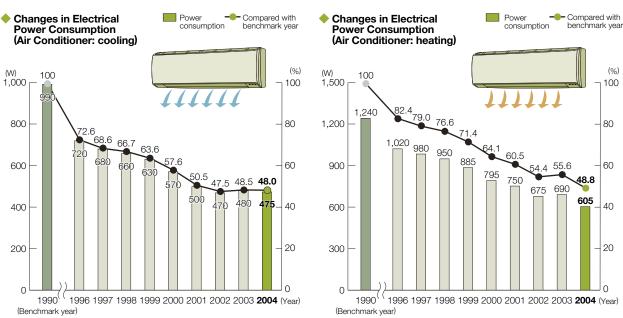
At the 7th Electrical Load Equalization Device and System Award by the Heat Pump & Thermal Storage Technology Center of Japan, the Industrial Air Conditioner and the natural refrigerant heat pump hot water supply unit with high output and multi functions received the "Heat Pump & Thermal Storage Technology Center Chairman's Award." (June

This commendation recognizes that three of our devices clearly exceed the 5 evaluation criteria of "electrical load equalization effect," "energy efficiency," "environment conserving effect," "economic efficiency," and "novelty and creativity." The three devices commended are the gas heat pump air conditioner with HFC refrigerant R410A "K1 series", the high-efficiency steam double absorption freezer "Steam Consumption 3.5kg/h RT Series", and the high-output multifunctional natural refrigerant heat pump hot water supply system "SHP-TCH37D."

# Development of Energy Conserving Products

We are working to develop products which consume as little energy as possible when in use. As a result, we have developed a number of the most energy efficient products in the industry.





# Reduction of Environmental Impact in Products

# **Products**

## Green Procurement - Efforts to Reduce Chemical Substances with Environmental Impacts



Following the recent rise in the awareness of environmental issues, demand to reduce or ban use of chemical substances in products is growing both in Japan and overseas.

The SANYO Group has been promoting green procurement according to the "Green Procurement Guidelines" since March 2000. In May 2002, the Group made an extensive revision to the existing internal rules and publicly disclosed guidelines concerning green procurement in order to respond to these demands. As a result, the "Green Procurement Standards," which put together the unified standards for the SANYO Group, was published, and the SANYO Group entered the "Second stage of green procurement."

This activity aims to strengthen the management of chemical substances among a variety of environmental impact. Since October 2003, the "environmental information" is added in the delivery specifications to show that chemical substances are a "part of product specifications" and a "part of product quality."

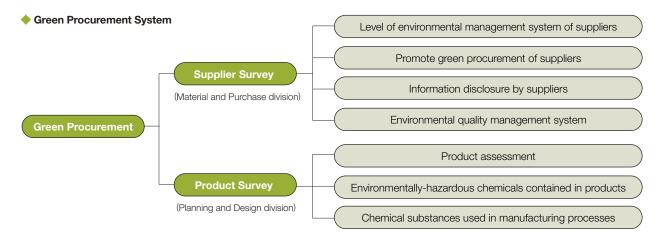
In April 2004, the "Management Standards for Environmentally Hazardous Substances" was issued. This clarifies the management standard of the chemical substances included in our products. At the same time, "Consent to non-use," and "Certificate of non-use" are demanded from the suppliers in order to procure goods that satisfy the standard. The Group will actively promote "green procurement" according to the standards, where "goods which satisfy our own environmentally-friendly standards" are sourced from "suppliers who are actively involved with environmental conservation."

These actions are also an effort to respond to the EU RoHS Directive, which regulates the use of 6 substances, namely, lead, mercury, hexavalent chromium, cadmium, PBB and PBDE.

★ The "Consent to non-use" is provided accompanied with the delivery specifications, and the "Certificate of non-use" is provided at the first delivery of the product, from suppliers.

#### Product Survey Classification Based on Procurement System

		Survey items	ems		
Purchased products	Product assessment	Environmentally- hazardous chemicals contained in products	Chemical substances prohibited for use in manufacturing processes		
Assembled products designed by other parties (ASSY), finished products (including OEM), and accessories.	0	0	0		
Parts and Materials	_	0	0		



# Supplier Environmental Management (Supplier Survey)

Establishing partnerships with suppliers is essential in promoting green procurement. In the period from October to December every year, the SANYO Group surveys the state of the environmental management systems among our

In the case of new suppliers, we execute a similar survey when the first transaction takes place. The survey is conducted using the Internet where the supplier directly enters their answers.



Survey site for the supplier's green procurement system

# **Environmental Friendliness of Products** (Product Survey)

With regard to the environmental friendliness of purchased goods, each facility requests the supplier for the survey when a purchase of new goods takes place. The registration and answers are provided via the Internet, and the information is shared within the company. If goods do not meet the purchase standard of the SANYO Group, measures for improvements are taken before purchase decision of the goods is made. Through the promotion of green procurement, the Group aims to reduce chemical substances contained in products, as well as to support the suppliers' efforts for the environment.

The SANYO Group believes the most important aspect of green procurement is the appropriate control of chemical substances contained in the products, components and materials. Thus in 1998, the Group established the "Chemical Substances Control System" which unifies the management of chemical substances in products in the whole company. This system contains approximately 600 chemical substances in a database, based on laws and regulations as well as our own standards.

In 2003, the SANYO Group joined the Japan Green Procurement Survey Standardization Initiative which was established primarily by the electric and electronics industry in Japan. We are currently investigating 29 substance groups specified by the Initiative.

In addition, the SANYO Group has specified chemical substances which are prohibited for use in manufacturing process, and the non-use for product to be purchased is confirmed at the time of purchase.

When a finished product is purchased, the product is evaluated according to our product assessment standards, and only those products which have met the standards are purchased.

# Overseas Briefing Sessions for Green Procurement

In the EU, the use of lead, mercury, hexavalent chromium, cadmium and designated bromine fire retardants (PBB and PBDE), which are currently contained in electrical and electronic products, will be banned after July 2006. In order to promote green procurement for products shipped for the EU at manufacturing sites overseas, the SANYO Group has been holding briefing sessions to ensure the manufacturing companies in China, which produce a large amount for the EU, are fully aware of the requirements and to request business partners for their cooperation.

## Status of green procurement briefing session

- 1. SANYO Sales & Marketing Corporation and the Corporate **Environment Center** A briefing session for green procurement was held in Shenzhen. China for related companies and OEM suppliers. (May 2004)
- 2. Dalian SANYO Air Conditioner Co., Ltd. and the Corporate **Environment Center**

- A briefing session was held in Dalian, China, for related companies in Dalian industrial district and the surrounding area. (May 2004)
- 3. AV Company A briefing session was held in Shenzhen for related companies and business partners of SANYO Techno Sound Inc. (June 2004)
- 4. Electronic Device Company Explanations were provided to persons responsible for the environmental management at SANYO Electric (Shekou) Co., Ltd. (October 2004)
- 5. Home Appliance Company (former Amenity Solutions Company) Explanations were provided to persons in charge at Shenyang SANYO Air Conditioner Co., Ltd., and Guangdong SANYO Air Conditioner Co., Ltd. (July 2004)
- 6. Commercial Company Sufficient explanations of green procurement promotion and the control system of RoHS 6 substances were provided at related companies in Dalian. (December 2004, February 2005)





A briefing session in Shekou, China, for suppliers

A briefing session in Shekou, China, for related companies

# Use of Green Procurement System

In the 2nd stage of green procurement, the survey system was extensively revised and the green procurement system was restructured in December 2002. The new system is based on responses via the Internet.

The survey of goods also started in April 2003, where suppliers report via the Internet the chemical substances with environmental impacts contained in the components and materials. In May 2004, the English version of the survey was introduced, and the survey of overseas suppliers started.

This green procurement system allows SANYO to promote purchasing of goods and product development with minimum impact on the environment from product planning and design

through to

disposal after use.

English version of the Green Procurement System screen

# **Reduction of Environmental Impact in Products**

# **Products**

# **Recycling of Home Appliances**

Our recycling achievement in FY2004, in total of 4 items specified by the Home Appliance Recycling Law (Law for Recycling of Specified Kinds of Home Appliances), was 1,188,000 units recovered, and 1,186,000 units recycled. All 4 items exceed the legal standard for the recycling ratio. In these activities, understanding and cooperation were obtained as before from those who dispose of used products, retailers and central and local governments.

# Home Appliance Recycling Law -**Promotion Activities**

## Promotion activities, for SANYO retailers (SMILE Group)

The "Recycle School for Retailers" has been held since May 2003 at our recycle plant, JFE Urban Recycle Corporation in Kawasaki city, in order to promote the retailers of the Home Appliance Recycling Law. RBN Co., Ltd. in Himeji city was added as a new activity venue, expanding the scope of activity to cover the Kansai and Chugoku regions.

54 people from retailers (SMILE group) have attended the "Recycle School for Retailers" so far. The comments received from participants includes: "The Recycle School for Retailers made me realize the importance of recycling home electric appliances. My awareness has been changed and I would like to make good use of it in sales activities in the future."

## Number of Specified Waste Home Electric Appliances Recycled (Units)

	Air conditioner	Television	Refrigerator	Washing machine
Number of products recovered	171,521	294,262	356,387	366,307
Number of products recycled	171,475	294,308	357,676	363,039

## Ratio of recycling

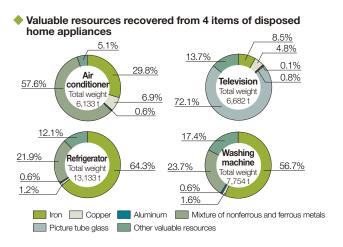
(%)

	Air conditioner	Television	Refrigerator	Washing machine
Ratio of recycling	83	85	65	70
Legally required standard	60 or more	55 or more	50 or more	50 or more

## Volume of Recovered Refrigerants

(kg)

	Air conditioner	Refrigerator
Recovered volume	93,070	38,688



## Compliance with the Container and Packaging Recycling Law

To comply with the "Container and Packaging Recycle Law,\*" the SANYO Group has been calculating the consumed volume of containers and packaging materials per year since FY2000 when the law came into force. The annual volume is reported to the Japan Containers and Packaging Recycling

Association, a designated corporation, and a recycling contract is exchanged. In this way, we are fulfilling our duty to recycle our containers and packaging materials.

\* Law for promotion of sorted collection and recycling of containers and packaging

## Volume applied as a container and packaging user (expected discharge volume)

(kg)

	Container and packaging user							
	0	Otherware	Plastic packaging					
	Corrugated cardboard	Other paper packaging	Styrofoam	Sheets and bags	Subtotal			
FY2002	12,716,125	101,945	87,390	93,603	180,993			
FY2003	11,027,532	115,521	67,159	73,738	140,897			
FY2004	10,618,329	185,835	69,781	78,909	148,690			

## Volume applied as a container and packaging manufacturer (expected discharge volume)

(kg)

	Container and packaging user							
	0	Otto	Plastic packaging					
	Corrugated cardboard	Other paper packaging	Styrofoam	Sheets and bags	Subtotal			
FY2002	3,607,765	84,762	33,007	40,717	73,725			
FY2003	4,307,930	87,480	50,911	40,745	91,655			
FY2004	5,296,347	167,364	44,158	46,436	90,595			

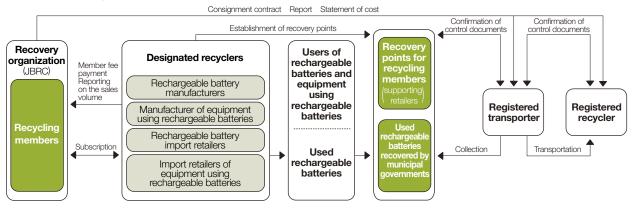
## **Recycling of Rechargeable Batteries**

As the world's leading manufacturer of portable rechargeable batteries, SANYO has been working positively to recover and recycle rechargeable batteries. As well, SANYO has been playing a core role in constructing recovery routes at the "Portable Rechargeable Battery Recycling Center," which was established within the Battery Association of Japan in April 2001.

In April 2004, the "Portable Rechargeable Battery

Recycling Center" was constructively dissolved and the "JBRC," a limited liability intermediate corporation was established in order to expand the scope of rechargeable battery recovery and recycling. SANYO played an important role as a promoter in founding the corporation. SANYO will continue to be actively committed to increase the amount of rechargeable batteries recovered and recycled.

## Portable Rechargeable Battery Recovery System



## **Recycling of Personal Computers**

According to the "Revised Recycling Law.\*" every PC manufacturer is obliged to recover and recycle used PCs which were manufactured by themselves.

To comply with this law, SANYO has established a system to promptly recover our used PCs when it is requested by the customer.

In constructing this system, SANYO designated distributors who can recover used PCs from anywhere in Japan and waste treatment providers who can recycle them.

In FY2004, we have recovered and recycled 2,600 units of desktop PCs and 4,000 units of CRT displays. Please see our website for details.

\* Law for Promotion of Effective Utilization of Resources

# Recovery system of PCs (Home-Use PCs are also recovered.) Waste discharging enterprises across the country Personal computers and peripheral devices Recovery points across the country Hokkaido, Tohoku, Hokuriku, Kanto, Tokai, Kansai, Chugoku, Kyushu, Okinawa Recycling points Reuse and recycle Disposal About recovery and recycling of PCs http://www.sanyo.co.jp/recycle/pcrecycle/index.htm

# **Reduction of Environmental Impact in Business Activities**

# **Process**

In business activities, we endeavor to reduce energy consumption and resource input by improved efficiency of processes and efficient usage of recyclable energy and recycled materials. At the same time, reducing emission of environmentally harmful chemical substances we strive to prevent global warming, conserve exhaustible resources, reduce waste and prevent pollution.

# **Countermeasures against Global Warming**

"We care for people and the earth" is the corporate slogan of the SANYO Group. It expresses our desire to coexist with many people without destroying the environment. In order to put this into action, we uphold "business activities

## which aim for the formation of a sustainable society," in the group environmental policy, and we are striving to reduce the emission of greenhouse gases such as CO2 to prevent global warming.

# Restraining the CO<sub>2</sub> Emissions

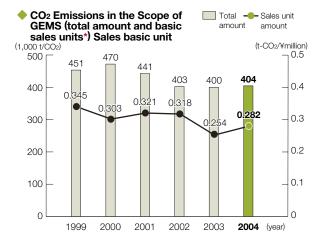
## Achievements of our Group **Environmental Management System** (GEMS)

Targets are set for CO<sub>2</sub> emission reduction at 16 major sites in Japan which form part of the GEMS, and the countermeasures against global warming are being implemented.

FY2004 saw new additions to the GEMS, including Nishikinohama plant of Clean Energy Company, SANYO Semicon Device Co., Ltd., and other semiconductor sales companies, Kyusyu branch of SANYO Electric Logistics Co., Ltd. The scope of data collection expanded as a result, but we have managed to contain the total CO2 emissions to 404,000 t-CO<sub>2</sub>, which is at a similar level to the previous fiscal year's result of 400,000 t-CO2. This is mainly due to upgrading the manufacturing equipment and facilities to energy saving models as well as improving and streamlining the manufacturing process.

On the other hand, the sales CO2 unit volume, which we aim to reduce, decreased in FY2004 by approximately 18% compared to the FY2004 target which was the "reduction of 20% compared to FY1999." This was mainly caused by the slow sales of high value-added products such as digital cameras, mobile phones and high-performance devices, and also by the reduced production of semiconductor related products due to the effects of the Niigata Chuetsu

We will continue our efforts to reduce CO2 emissions by promoting energy conserving and efficient manufacturing in accordance with the sales CO<sub>2</sub> unit volume reduction plan set by the GEMS.



★ The sales of products which are produced overseas are excluded from the total sales this time in order to evaluate the sales CO2 unit amount more accurately.

# Aggregate Performance of Our Domestic **Facilities**

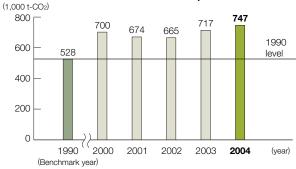
In the SANYO Group, other domestic facilities in Japan outside the GEMS are also striving to reduce CO2 emissions by establishing their own EMS system and setting the energy conservation target. The total CO2 emissions\* of the domestic facilities within the Group (including the GEMS) was 747,000 tonnes in FY2004, an increase of approximately 4.2% from the previous fiscal year. This increase is mainly attributed to the increased production of rechargeable batteries and other clean energy related products on which we have emphasized.

The FY2004 results, on the other hand, rose significantly by 42% compared to FY1990. The major cause was the increase of energy consumption in the manufacturing process along with the increase in production of semiconductors, electronic components, batteries, etc., especially in the early 1990s. Under such circumstances, each facility is continuing its effort by conserving energy in production and air conditioning systems, switching fuels from kerosene to natural gas, installing a cogeneration system, utilizing new energy such as solar cell, etc., to contain the increase in CO<sub>2</sub> emissions as much as possible amidst the expanding production.

SANYO Electric Co., Ltd. and the manufacturing facilities of related companies in Japan will continue making these efforts, and promote more efficient and streamlined production processes.

\* THE LCD section, which was sold in FY2004, is excluded from the total. Thus, the numerical values in comparison with FY2003 and FY1990 are calculated by subtracting the emission from LCD section from the actual value of each fiscal year

# Total CO<sub>2</sub> Emissions of the SANYO Group Domestic Facilities\*



- ★ The coverage includes all the domestic manufacturing facilities (including subsidiaries) and major non-manufacturing facilities within
- The factor notified by the Federation of Electric Power Companies of Japan is used as the CO<sub>2</sub> factor for purchased electricity. (The figure is not announced for FY2004 yet. The emission factor for FY2003 was 0.436kg-CO<sub>2</sub>/kWh.)
- Standard values and data values for each fiscal year in the table vary due to the changes of scope as a result of mergers and acquisitions.

# Curtailing the Emission of Greenhouse Gases Other than CO2

# Reducing the Emission of Greenhouse Gases

In the manufacturing process of semiconductors and related products, the SANYO Group uses greenhouse gases \* such as perfluorocarbon (PFC), sulfur hexafluoride (SF6), hydrofluorocarbon (HFC). Efforts are being made to reduce the usage and emission of these gases and to replace them with other substances in order to prevent global warming.

Since FY2003, we have replaced hexafluoroethane (C<sub>2</sub>F<sub>6</sub>) in the semiconductor clearing process, with perfluoropropane (C<sub>3</sub>F<sub>8</sub>) \*3, which has relatively low Global Warming Potential (GWP) \*2. At the same time, the gas emissions were reduced by improving the reaction process. In FY2004, improvement was completed for all processes by changing the gas. In addition, the gas emissions were made to the minimal by installing the reaction gas elimination

As a result, the emission of greenhouse gases other than CO<sub>2</sub> was reduced by 18.7% compared to the previous fiscal year. The decrease was partly due to the smaller production at Niigata SANYO Electronic Co., Ltd., after the Niigata Chuetsu earthquake in October.

Compared to FY1995, the ratio increased by 13%, and we will continue to promote reduction of greenhouse gas emission, mainly PFC.

The SANYO Group is currently investigating the use of carbonvl fluoride (COF2) which barely emits greenhouse gases after reaction in order to further reduce the environmental impact.

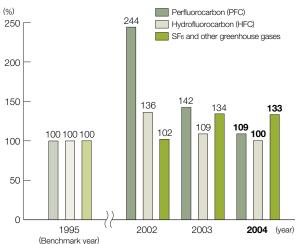
- \*1 Greenhouse gases: Substances that have global warming effects due to their characters that allow solar energy of sunlight to pass through, while absorbing the heat (infra-red radiation) released from earth's surface, thus limiting the temperature of the earth's surface from cooling. The Kyoto Protocol specifies 6 substances as greenhouse gases, namely, carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), dinitrogen monoxide (N<sub>2</sub>O), hydrofluorocarbon (HFC), perfluorocarbon (PFC) and sulfur hexafluoride (SF6).
- ★2 Global Warming Potential (GWP): An indicator to represent the degree of effects on the global warming. The degree is calculated based on CO2 as "1."
- ★3 The Global Warming Potential of C3F8: 7,000 The Global Warming Potential of C<sub>2</sub>F<sub>6</sub>: 9,200 (Source: "Guidelines to calculate the greenhouse gas emissions by business entities" by the Ministry of Environment.)

## **About COF2**

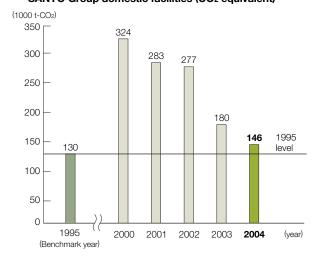
COF<sub>2</sub> has the Global Warming Potential of less than 1, and the atmospheric lifetime (the time when the gases are naturally degraded and resolves in the atmosphere) is short at less than an hour. When it is used in the cleaning process of semiconductors, it reduces the environmental impact on global warming by 97%<sup>2</sup> compared to C<sub>3</sub>F<sub>8</sub> (MMTCE<sup>-1</sup> comparison). Furthermore, it reduces the cleaning time by 20%, while there is no issue relating to substitution in terms of extraction rate, reliability, quality of semiconductor (epitaxial) wafer membrane (stress, refraction factor) and particles.  $\mbox{COF}_2$  is more costly than  $\mbox{C}_3\mbox{F}_8$ and other gases,\* but we are considering it a possible alternative.

- ★1 MMTCE: A short form for Million Metric Tons Carbon Equivalent. The equation is the following: "MMTCE =  $\sum$  (Qi× (12/44) × GWP<sub>100i</sub>) /109" where Qi is the weight (kg) of the gas emitted during treatment and GWP100i is the Global Warming Potential. The smaller the value is, the less impact it has on the global warming.
- ★2 The figure is based on the experimental result at SANYO Electric Co., Ltd.. In the experiment, greenhouse gas emissions from one cleaning process was measured when C<sub>3</sub>F<sub>8</sub> was used for cleaning gas and when COF2 was used, with the Fourier Transform Infrared Spectroscopy (FTIR), which is a highly-sensitive measuring method. Then MMTCE was calculated for each gas. When the case of C<sub>3</sub>F<sub>8</sub> was taken as 100, the value for COF2 was equivalent to 3, hence the statement "reduction by 97%."

### Greenhouse gas emissions other than CO2 by the SANYO Group domestic facilities (compared to FY1995) (CO<sub>2</sub> equivalent)



## Greenhouse gas emissions other than CO<sub>2</sub> by the SANYO Group domestic facilities (CO2 equivalent)



# **Process**

# Energy Conservation and Energy Creation

The SANYO Group is actively working on "Energy Conservation" to reduce energy consumption and CO2 emissions in business activities and "Energy Creation" to create clean energy from solar power in order to restrain

## global warming and resource depletion and contributes to global environment conservation. "Energy Conservation" and "Energy Creation" are significant themes of environment conserving activities of the Group.

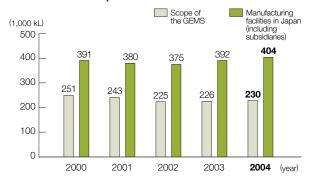
# **Energy Conservation**

# Introduction of Cogeneration System

The SANYO Group has been actively introducing cogeneration systems at its facilities (factories and largescale buildings) to achieve independent power generation. At the same time, the waste heat (heat energy) from the system is fully utilized to produce steam and hot water, which is then used for cooling and warming of production processes and facilities. The usage of waste heat improves the energy efficiency at the facilities, curtailing the increase in the energy consumption in total.

The cogeneration system is currently in operation at 5 facilities in the SANYO Group.

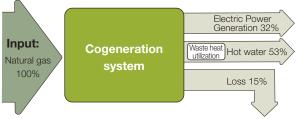
## Energy consumption by the domestic facilities of the SANYO Group



# Electricity generated by the Cogeneration System in Fiscal 2004

Name of facility	Generation capacity	Fuel	Electricity Generated (1,000kWh)
Tokyo Plant	6,500kW 4 units	Natural gas 13A	180,608
SANYO Energy Twicell Co., Ltd., Kaizuka Plant	560kW 1 unit	Natural gas 13A	4,443
Head Office Building No.1	400kW 2 units	Natural gas 13A	2,437
Head Office Building No.2	460kW 2 units	Natural gas 13A	3,368
Daito Plant	400kW 2 units	Natural gas 13A	1,044

# Energy Flow (Head Office Building)



## **Example of Introduction at a manufacturing** site—Tokyo Plant

At our Tokyo Plant, one of the biggest cogeneration systems of its kind in Japan was installed in 1998. Since then, the system has been supplying electricity and heat energy within the plant by own generation and waste heat utilization. The system uses natural gas (city gas 13A) for its fuel. It curtails NOx emission at combustion, while CO2 emissions is low, and it is high in combustion efficiency.

The total electricity consumption at the Tokyo Plant was 300,000 MWh in 2004, 180,000 MWh (61%) of which was generated by the cogeneration system.

The amount of steam produced by the waste heat was 250,000 tons in FY2004. The energy consumption curtailing effect was equivalent to 19,000 kL of kerosene, or approximately 50,000 tons of

The system is in operation 24 hours a day, and the operating method is seasonally adjusted to maximize the total energy efficiency throughout the year. For example, the air intake for gas turbines is cooled in summer to raise the electricity output while implementing measures to ease electricity peaks. In winter, the steam generated is used to preheat the system.

## **Example of Introduction in Office Buildings** —Head Office Buildings

A cogeneration system was introduced at each of SANYO's Head Office Buildings (Buildings No. 1 and No. 2) In Moriguchi city in Osaka. They generate approximately 60% of the energy consumed in these buildings. In addition, the waste heat from the system is used to heat water, which is then utilized for heat source of absorption refrigerators as well as heating. In this way, all the energy necessary for cooling and heating the buildings is supplied. As a result of utilizing waste heat, we conserve energy equivalent to approximately 100 kL of crude oil, with the effect of reducing the CO<sub>2</sub> emissions by approximately 1,300 tons \*per year between the two buildings.

★ The emission coefficient of the thermal power generation of 0.69kg-CO<sub>2</sub>/kWh is used for the CO<sub>2</sub> conversion.

# **Energy Creation**

# Installation of Photovoltaic Power **Generation Systems**

The SANYO Group has been committed to developing and disseminating clean energy technology, using solar power. As well as producing and selling modules for photovoltaic generation, we promote the usage of clean energy within

the Group. The photovoltaic generation systems have been installed at 9 facilities, including Gifu Plant and Head Office.



Photovoltaic power generation system on the roof and sidewalls of the SANYO Head Office Building

## Electricity Generated by the Photovoltaic Power Generation System in Fiscal 2004

Facilities	Generation capacity (kW)	Electricity generated (kWh)	CO <sub>2</sub> equivalent (t-CO <sub>2</sub> )*
Gifu Plant	641	562,608	388
Head Office Building	118	81,672	56
Saga SANYO Industries Co., Ltd.	100	120,412	83
SANYO Electric Logistics Co., Ltd.	100	99,329	69
Tokushima Plant	85	83,600	58
Tokyo Plant	40	44,798	31
Daito Plant	30	15,678	11
SANYO Seimitsu Co., Ltd.	20	17,717	12
SANYO Energy Nandan Co., Ltd.	20	20,600	14

<sup>\*</sup> The emission coefficient of the thermal power generation of 0.69kg-CO<sub>2</sub>/kWh is used for the CO<sub>2</sub> conversion.

# Solar Ark

The 21st century is often referred to as the "century of the environment." It was at the beginning of this century in December 2001 that the "Solar Ark," our photovoltaic power generation system, was completed as the symbol of the SANYO Group which continues to pursue the possibility and the dream of clean energy. It is in the shape of a gigantic ark, measuring 315 meters in length and weighing approximately 3,000 tons. 5,046 solar panels cover the exterior walls with one of the biggest generation capacities in the world of up to 630 kW. The direct-current electricity generated by the system is converted to alternate current by the power conditioner. The voltage is then raised to 6,600 V before it is supplied to the Gifu Plant via the substation on the premises.

Approximately 563,000 kWh was generated in FY2004, with the effect of reducing CO<sub>2</sub> emissions by 388 tons\*1. This is equivalent to 150 kL of kerosene. The second phase of system construction started in the second half of FY2004, and in March 2005, approximately 11kW of solar panels were added.

The "Solar Ark" is registered as a partnership business\*2 of the EXPO 2005 Aichi Japan. It is open to visitors for free.

- ★1 The emission coefficient of the thermal power generation is used for the CO2 conversion.
- ★2 Business planned to exhibit in the vicinity of the EXPO 2005 Aichi Japan in order to create a synergic effect with the EXPO. Applications are invited by the Japan Association for the 2005 World Exposition, and businesses and events of the applying corporations and research institutions are registered after review.



Solar Ark - exterior appearance



Solar Wing

# **Process**

## **Countermeasures for Fluorocarbon**

# Non-Use of Fluorocarbon in Refrigerators

In order to protect the ozone layer, hydrofluorocarbon (HFC), which does not have an ozone-destroying effect, has often been used for refrigerators to replace specified chlorofluorocarbon (CFC) and hydrochlorofluorocarbons (HCFC). However, HFC has a few hundreds to 10,000 times more impact on the global warming than CO2, so the SANYO Group is promoting the shift to hydrocarbons (isobutene and cyclopentane: HC) which have lower global warming potential.

Amongst others, Home Appliance Company has been proceeding with the non-use of fluorocarbon in the refrigerator refrigerant and heat insulator forming agent by switching from fluorocarbons to HC. In FY2003, the shift from HCFC to cyclopentane was completed for the forming agent in the production of home refrigerators. The refrigerant for the 4 major domestically produced models was also changed from HFC to isobutene. In FY2004, nonuse of fluorocarbon was completed for all home refrigerators produced in Japan and all small to medium sized home refrigerators except for 1-door type produced overseas.

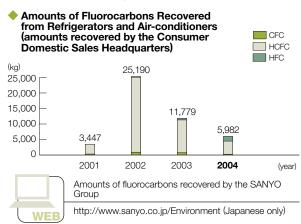


Production of home refrigerators

# Recovery of Fluorocarbons (CFC, HCFC, HFC)

Fluorocarbons, which are used as refrigerants in refrigerators and air-conditioners, have effects on destroying the ozone layer and global warming when released into the atmosphere. In order to prevent these effects, the Consumer Domestic Sales Headquarters is ensuring the recovery of fluorocarbon that would otherwise be emitted as gas when the equipment is repaired, disposed or relocated. We have a system in place to recover fluorocarbons from anywhere in Japan with our 104 recovery points equipped with recovery devices, cylinders and recovery manuals.

The recovered fluorocarbons are safely disposed of by the fluorocarbons disposal firms. In order to ensure smooth hand-over, each of our recovery points has access to a network provided by fluorocarbons disposal firms. A realtime communication with such firms as well as prompt and sure hand-over is achieved by inputting the recovery information into the computer.



## **Environmental Improvement Activities in Logistics Businesses**

# Higher Efficiency in Delivery— SANYO Electric Logistics Co., Ltd.

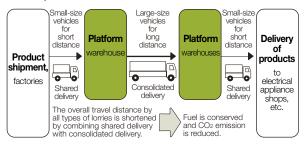
SANYO Electric Logistics Co., Ltd. offers the logistics solution services which aim to achieve higher efficiency in storage, loading, unloading, shipping and delivery using the 3PL\*. SANYO Electric Logistics is proceeding with environment conserving activities based on its own Environmental Management System (EMS), to promote energy conservation and waste reduction by inviting participation from business partners who carry out transport and delivery business on contract, as well as its own 14 locations across the country.

In particular, the Company aims to "reduce the auto emission from delivery vehicles." Each location across the country endeavor to reduce the auto emission by increasing the "number of improvements implemented to make the

delivery more efficient." The Company is building a network that connects its locations and relevant companies in order to realize comprehensive and consolidated distribution and to promote shared delivery and round-trip transportation with high efficiency.

\* Practice of outsourcing services in which all corporate logistics functions are commissioned to one logistics agent.

## Comprehensive and consolidated distribution



# Modal Shift

In addition to raising the efficiency by using larger vehicles, SANYO Electric Logistics Co., Ltd is also promoting the modal shift which utilizes rail transport and coastal marine transportation.

For example, Tottori branch is expanding its use of JR freight, Japan Freight Railway Company (5 ton containers), and the ratio of rail transport to the total shipment improved from 3.6% in FY2002 to 4.79% in FY2003. Ship transport has started since August 2004 at the rate of 5 to 6 units a month (15 ton containers). Adding this to the rail transport, the ratio of modal shift is 4.75%.

In February 2005, the Kinki Branch carried out a test transport using JR freight (10 tons, 31 feet wing

container) between Umeda in Osaka and Hakata in Kyushu (approximately 700 km) on four occasions. Measures to reduce the loading time and the cost are currently under review.

In June 2005, our active promotion to utilize rail transport was commended by the Railway Freight Association. We will continue our effort to raise efficiency in transport in order to reduce CO<sub>2</sub> emissions further.

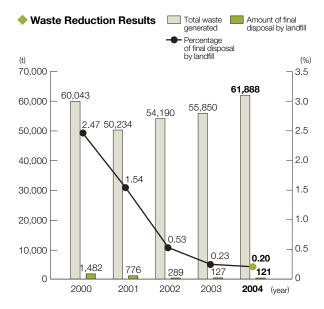




Container

Commendation by Railway Freight Association

## Waste Reduction Measures



The SANYO Group has been making efforts to reduce the ratio of final disposal by landfill along with the establishment of the GEMS in 2000. We achieved zero emissions in FY2002 (the SANYO definition of zero emission = the ratio of final disposal by landfill to the total industrial waste of 1% or less) within the GEMS. The past achievements are shown on the graph. The ratio of final disposal by landfill was maintained below 0.3% for both FY2003 and FY2004. Since FY2004, we have been aiming at a medium-term goal to achieve complete emission for all the sub-sites within the GEMS, while maintaining the final disposal rate of 0.3% or less. However, unlike manufacturing sites where the majority of waste is industrial and recyclable, in the case of sales companies and offices, waste is predominantly domestic which needs to be incinerated by the local administration, so some waste may still remain for disposal by landfill.

The fundamental solution to this issue is to curtail the waste generation, and we are working to transform the by-product from the manufacturing process into valuable resources for sale, rather than to be disposed of as waste.

# Turning the by-products from processes into valuable resources

# Turning the Silicone Sludge into Valuable Resources

Waste water from the manufacturing process of semiconductors contains microparticles of silicone, and it has been a costly process to separate the silicone sludge from service water for waste disposal.

The SANYO Group has developed a waste water treatment system, "Aquacloser." The system extracts service water from waste water at low cost. After the extraction of service water, it then solidifies the remaining waste water which contains the silicone sludge with the dehydration device to create pure silicone paste for commercial use as molten steel deoxidizing substances for steel converter and electric furnaces.





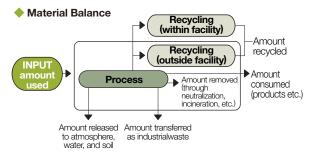
Aquacloser

PSiP (pure silicon paste)

# **Process**

# **Measures against Chemical Substances**

# Pollutant Release and Transfer Register (PRTR\*)



Since FY1997 the SANYO Group has been investigating the emission status of environmental pollutant from all the facilities in Japan including subsidiaries. Based on the findings, efforts are being made to curtail the waste generation so that the environmental impact will be reduced. More specifically, the processes where chemical substances are used are identified, and an accurate understanding of where these substances are finally emitted to is obtained. After that attempts are then made to change the process so that the chemical substances are not used, or improve the process to reduce the amount used. In some cases, we discontinue the products which contain the specific chemical substances and replace them with alternative products.

Approximately 20 facilities in Japan notify the relevant administrative bodies of the PRTR substances before June every year since 2002, in accordance with PRTR law of Japan.

The table below shows the PRTR data for the whole Group. Please refer to our homepage concerning the PRTR data of individual facilities.

★ The structure that collects data concerning where harmful chemical substances are emitted from, by how much, and whether they are transported to outside of the facilities in a form of waste, etc., then calculates, reports and publicizes the data.

## Reduction of PRTR Substance Emission

The SANYO Group sets the target to reduce the emission of PRTR substances in the GEMS environmental action plan, and endeavors to achieve the target. In FY2004, we succeeded in reducing the PRTR emissions by 86% compared to FY1999. Our emission reduction measures include: 1 replacing the organic solvents (xylene, toluene) used in the coating process with other substances, such as water-based coating; 2 shift from CFC substitute to non-fluorocarbons; and 3 installation of hazardous emission removal devices. We will continue our effort to reduce PRTR substance emission by reducing amount of PRTR substances used, improving the process of facilities and equipment, etc., shifting to alternative substances, and thorough recovery of generated substances.

## Fiscal 2004 PRTR Survey Results (All facilities in Japan, including subsidiaries)

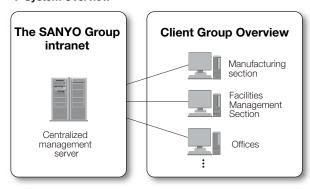
(t/year)

Sub-			Amount released				Amount transferred			Amount	Amount				
stance	Substance name	Amount used	Amount	Amount released to	Amount released	C	On-site landf	ill	Total	Amount transferred	Amount transferred	Total	consumed as	removed and	Amount recycled
No.		useu	released to atmosphere		into the soil	Least controlled	Controlled	Strictly controlled	amount released	to sewage systems	as industrial waste	amount transferred	product	treated	recycled
1	Zinc compounds (water-soluble)	52.04	0.00	0.03	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	49.67	0.00	2.35
16	2-Aminoethanol	27.35	7.71	0.00	0.00	0.00	0.00	0.00	7.71	0.00	19.26	19.26	0.00	0.39	0.00
25	Antimony and its compounds	24.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.01	1.01	19.14	0.00	3.99
40	Ethylbenzene	1.77	1.60	0.00	0.00	0.00	0.00	0.00	1.60	0.00	0.00	0.00	0.00	0.00	0.17
43	Ethylene glycol	1.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.45	1.45	0.00	0.00	0.00
46	Ethylenediamine	3.65	0.15	0.00	0.00	0.00	0.00	0.00	0.15	0.00	3.50	3.50	0.00	0.00	0.00
60	Cadmium and its compounds	4,042.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4,025.32	0.00	17.65
63	Xylene	36.90	24.55	0.00	0.00	0.00	0.00	0.00	24.55	0.00	11.38	11.38	0.00	0.00	0.96
64	Silver and water-soluble silver compounds	14.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.38	0.00	2.38
85	1-chloro-1,1-difluoroethane	52.47	1.82	0.00	0.00	0.00	0.00	0.00	1.82	0.00	0.00	0.00	48.73	1.92	0.00
100	Cobalt and its compounds	4,457.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.26	4,269.35	0.00	187.68
101	2-ethoxyethyl acetate	2.46	0.74	0.00	0.00	0.00	0.00	0.00	0.74	0.00	1.72	1.72	0.00	0.00	0.00
109	2 (diethyl-amino) ethanol	5.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.90	5.90	0.00	0.00	0.00
144	Dichloropentafluoropropane	1.95	1.81	0.00	0.00	0.00	0.00	0.00	1.81	0.00	0.14	0.14	0.00	0.00	0.00
172	N,N-Dimethylformamide	2.28	0.16	0.00	0.00	0.00	0.00	0.00	0.16	0.00	2.11	2.11	0.01	0.00	0.00
177	Styrene	7.16	0.07	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.43	0.43	6.66	0.00	0.00
179	Dioxins*	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
202	Tetrahydromethylphthalic anhydride	16.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.18	4.18	12.70	0.00	0.00
211	Trichloroethylene	1.69	0.50	0.00	0.00	0.00	0.00	0.00	0.50	0.00	1.19	1.19	0.00	0.00	0.00
224	1,3,5-trimethylbenzene	1.15	1.15	0.00	0.00	0.00	0.00	0.00	1.15	0.00	0.00	0.00	0.00	0.00	0.00
227	Toluene	8.39	6.94	0.00	0.00	0.00	0.00	0.00	6.94	0.00	0.00	0.00	1.45	0.00	0.00
230	Lead and its compounds	11.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.03	9.75	0.00	1.71
231	Nickel	5,615.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5,402.48	0.00	213.42
232	Nickel compounds	3,119.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2,967.57	0.00	151.57
239	p-nitrophenol	2.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.55	1.55	0.00	0.00	1.36
252	Arsenic and its inorganic compounds	1.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.15	1.15	0.02	0.00	0.04
253	Hydrazine	1.57	0.07	0.00	0.00	0.00	0.00	0.00	0.07	0.00	1.50	1.50	0.00	0.00	0.00
260	Pyrocatechol	13.77	1.38	0.00	0.00	0.00	0.00	0.00	1.38	0.00	12.39	12.39	0.00	0.00	0.00
266	Phenol	14.57	1.06	0.00	0.00	0.00	0.00	0.00	1.06	0.00	13.51	13.51	0.00	0.00	0.00
283	Hydrogen fluoride and water-soluble salts	132.20	0.68	11.51	0.00	0.00	0.00	0.00	12.19	0.00	54.82	54.82	0.00	0.00	65.19
311	Manganese	1,015.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	207.13	207.13	799.65	0.00	9.15
	Total	18,691.35	50.39	11.54	0.00	0.00	0.00	0.00	61.93	0.00	344.62	344.62	17,624.88	2.30	657.62
			•				•	•				-	•		

<sup>★</sup> Less than 0.000002 tons released per year

# Implementation of Management System for Chemical Substances

## System Overview



All facilities of the SANYO Group in Japan including subsidiaries have introduced the management system for chemical substances one after another since FY2003, and the harmful substances contained in the input materials (substances subject to PRTR Law) are centrally controlled concerning the transaction volume, emission volume and transported volume.

In FY2004, this management system has been almost completed for all the domestic facilities, enabling the aggregation of data for consumed, emitted, and transported volumes of PRTR substances for the overall Group, by each corporation, each facility and each internal company. The system also enables each department on site to find out in no time the amount of harmful substances contained in the input materials. Based on these data, we will endeavor to reduce consumption and emission of harmful substances by replacing them with alternative substances, and investigating and improving the production process.

# Curtailing Emission and Scattering of the Volatile Organic Compounds (VOC)\*

The revised "the air pollution control law" was promulgated on May 26, 2004. It stipulates to effectively curtail the emission and scattering of the VOC, which is a causative substance of pollution such as oxidase smog, by combining the voluntary efforts of businesses and legal requirements.

The law is expected to come into force on April 1, 2006, when companies will be obliged to have a good grasp of the VOC emission status caused by the businesses and to take necessary measures to curtail such emissions.

The SANYO Group is in the process of investigating the VOC emission situations at all the facilities in Japan including subsidiaries as well as addressing the reduction in generation and emission.

\* VOC (Volatile Organic Compounds): Organic compounds which easily evaporate at room temperature, including a number of substances such as trichloroethylene, formaldehyde, toluene, benzene and

## VOC emission reduction by process improvement—an example of Commercial Company

Commercial Company manufactures showcases for food items at convenience stores and grocery shops. The manufacturing process used to use coating materials (paint) which contains organic solvent for coating. However in FY2003, full-scale shift to powder coating was implemented, and by FY2004, the process was fully converted to powder coating process which does not emit any VOCs such as xylene and toluene. In FY2003, Prodex Co., Ltd., a subsidiary of Commercial Company, which was established as a joint venture in July 2002 between the Food System Division of SANYO Electric Co., Ltd. and Ariga Co., Ltd., started to build the EMS. It obtained the ISO14001 certification in February 2004, and is now proceeding with environmental improvement activities on a continuous basis.

Ariga Co., Ltd. has been using trichloroethylene in the rinsing process of supermarket show cases since before the creation of a joint venture. However, in April 2004, the company commenced the reduction activities according to the instruction from the SANYO Group (August 1998) which bans the use of organic chlorine solvent. Ariga implemented changes to the materials used for parts that are processed, and to the method of processing, as well as replacing the solvent with an alternative. As a result, the full phase-out of trichloroethylene was achieved in October of FY2004.

## **VOC** emission reduction through installation of organic emission treatment system—an example of Semiconductor Company

Semiconductor Company has installed the organic emission treatment system at the Gifu Plant (1 unit) and Tokyo Plant (2 units). The system recovers the organic compounds in the emissions from manufacturing

The system is characteristic in that it does not use filters. It limits the emission of organic compounds into the atmosphere by absorbing them in the activated charcoal, then converting it to a liquid before recovering. It significantly reduces the VOC emissions into the atmosphere, including xylene, n-butane, and alcohols, and recovers

The system at the Tokyo Plant recovers approximately 7 tons of xylene a year, which is a 98% recovery rate for xylene. The overall recovery amount of VOCs is approximately 120 tons, which is recycled as the combustion improver at the clean center on the same site.

# **Process**

# **Measures against Chemical Substances**

# Management of Items that Contain PCBs

Polychlorinated biphenyls (PCBs) have excellent electrical characteristics, so they have been imported and manufactured in large quantities and used widely in large electrical condensers and transformers and partly in small condenser chips in electrical products. However, the import and production were banned by law in 1974 after their toxicity became apparent, and the possessors of the PCBcontaining products, such as companies, were obliged to store and report the possession of PCBs under the Waste Disposal and Public Cleansing Law, though adequate disposal methods have not yet been established. In August 2001, however, the Law Concerning Special Measures against PCB Waste came into force, and efforts began by the central government for adequate national PCB disposal projects. At the same time, PCB-holding corporations became obliged by law to report their PCB storage to the government every year until an adequate national PCB disposal system is established and disposal of PCBs actually begins. In October 2001, the reporting rule for the Electric Business Act was revised. As a result, it became mandatory to report the currently active (i.e., it is connected to an electric line) PCB-containing electric transformers and condensers to the Director-General of the local Bureau of Economy, Trade and Industry within one year.

The SANYO Group is appropriately reporting its PCBcontaining items to the relevant authority according to the laws and regulations.

<b>\$</b>	A	В	С	D	E	F	G	H
1	PCB使用機器類領	有(使用or保管)状況リスト(	A3版)					
2								
3	エリア(都道府県)	ビル名・事業所名	C/TR	仕様(容量等)	数量	製造メーカー	製造年	保管or使用
4	北海道	釧路ビル	С	10kVA	1	日本コンデンサ	543	使用中
5	関東・群馬県	三洋電機東京製作所	С	100kVA	1	指月電機	1967	保管
6	関東・群馬県	三洋電機東京製作所	С	100kVA	1	指月電機	1968	保管
7	関東・群馬県	三洋電機東京製作所	С	100kVA	1	指月電機	1968	保管
8	関東・群馬県	三洋電機東京製作所	С	100kVA	1	指月電機	1966	保管
9	関東・群馬県	三洋電機東京製作所	С	100kVA	1	指月電機	1966	保管
10	関東・群馬県	三洋電機東京製作所	С	100kVA	1	指月電機	1967	保管
11	関東·群馬県	三洋電機東京製作所	С	100kVA	1	指月電機	1967	保管
12	関東·群馬県	三洋電機東京製作所	С	100kVA	1	指月電機	1966	保管
13	関東・群馬県	三洋電機東京製作所	С	100kVA	1	日本コンデンサ	1966	保管
14	関東・群馬県	三洋電機東京製作所	C	20kVA	1	指月電機	1965	保管
15	関東・群馬県	三洋電機東京製作所	С	50kVA	1	三菱電機	1968	保管
16	関東・群馬県	三洋電機東京製作所	С	100kVA	1	指月電機	1967	保管
17	関東・群馬県	三洋電機東京製作所	С	100kVA	1	指月電機	1967	保管
18	関東·群馬県	三洋電機東京製作所	С	100kVA	1	指月電機	1969	保管
19	関東·群馬県	三洋電機東京製作所	С	100kVA	1	指月電機	1969	保管
20	関東・群馬県	三洋電機東京製作所	С	100kVA	1	指月電機	1968	保管
21	関東・群馬県	三洋電機東京製作所	C	50kVA	1	指月電機	1969	保管
22	関東・群馬県	三洋電機東京製作所	C	30kVA	1	帝国コンデンサ	1965	保管
23	関東・群馬県	三洋電機東京製作所	С	100kVA	1	指月電機	1967	保管
24	関東・群馬県	三洋電機東京製作所	С	100kVA	1	指月電機	1967	保管
25	関東・群馬県	三洋電機東京製作所	C	50kVA	1	指月電機	1968	保管
26	関東・群馬県	三洋電機東京製作所	С	100kVA	1	指月電機	1968	保管
27	関東・群馬県	三洋電機東京製作所	С	100kVA	1	指月電機	1969	保管
28	関東·群馬県	三洋電機東京製作所	С	50kVA	1	指月電機	1969	保管
29	関東・群馬県	三洋電機東京製作所	С	50kVA	1	指月電機	1969	保管
30	関東・群馬県	三洋電機東京製作所	С	100kVA	1	指月電機	1968	保管
31	関東・群馬県	三洋電機東京製作所	C	100kVA	1	指月電機	1968	保管
32	関東・群馬県	三洋電機東京製作所	С	100kVA	1	指月電機	1968	保管
33	関東・群馬県	三洋電機東京製作所	C	100kVA	1	指月電機	1968	保管
34	関東・群馬県	三洋電機東京製作所	С	100kVA	1	指月電機	1966	保管
35	関東・群馬県	三洋電機東京製作所	C	100kVA	1	指月電機	1967	保管
36	関東・群馬県	三洋電機東京製作所	C	100kVA	1	指月電機	1969	保管
37	関東・群馬県	三洋電機東京製作所	С	100kVA	1	指月電機	1969	保管
38	関東・群馬県	三洋電機東京製作所	С	100kVA	1	指月電機	1971	保管
39	関東・群馬県	三洋電機東京製作所	С	100kVA	1	指月電機	1971	保管
40	関東·群馬県	三洋電機東京製作所	С	100kVA	1	指月電機	1971	保管
41	関東·群馬県	三洋電機東京製作所	С	100kVA	1	指月電機	1970	保管
42 43	関東·群馬県	三洋電機東京製作所	С	20kVA	1	指月電機	1970	保管
	関東・紅馬車		- C	100kVA	1	指月雷機	1966	保管

PCB management list

# Appropriate Management and Storage of PCB-containing Items

After the enforcement of the new law, the SANYO Group established the "Regulations for Controlling PCB-Containing Items" in the Group Environmental Management System. We are continuing to ensure that each facility stores PCBcontaining items appropriately and reports the possession to the authority according to the national storage standard.

With regard to the management system, we have expanded the scope of the system in order to manage some of the buildings owned by ourselves, related companies and collaborating companies in addition to those specified by the GEMS.

The major PCB-containing items managed mainly by our environmental sections are electrical power condensers attached to the buildings (approximately 300 units including those in storage and in use) and condenser chips recovered from some discarded home appliances and old fluorescent ballasts (approximately 110,000 units).

Concerning the disposal of PCBs, we are proceeding with our preparation to cooperate with the PCB disposal project by the Japan Environmental Safety Corporation (JESCO). The JESCO has been encouraging the PCB possessors to pre-register for pre-adjustment. This is said to be for the reason that the disposal system needs to maintain its operation rate at 100% as the disposal capacity

is at the minimum to be able to dispose of the domestic PCBs within the time limit set by the government. It is our policy to respond to the request from JESCO and to cooperate with the preregistration and adjustment.



PCB storage site

# Measures against Soil and Groundwater Contamination

From the mid to late 1990s, the SANYO Group surveyed almost all of the manufacturing facilities, including domestic subsidiaries, concerning the usage history of organochlorine compounds and possible soil and groundwater contamination as a result. In addition, the Group has been conducting surveys on heavy metal contamination since 1999.

# 1. Contamination by Organochlorine Compounds

The environmental pollution by organic chlorine solvents has come under close scrutiny since the 1990s. The SANYO Group conducted a survey on almost all of its 36 manufacturing sites in Japan including the subsidiaries between the mid to late 1990s. Contamination that exceeds the environmental standard was found at some plants within the premises, and measures were taken for decontamination or removal by excavation after it was reported to the administrative bodies. The current status is as shown in the table on the right.

# 2. Heavy-metal Contamination

In response to the public attention on the environmental pollution by heavy metal since the late 1990s, the SANYO Group in Japan has been investigating the contamination status by heavy metal since 1999. The investigation is currently in progress, and measures including decontamination or removal by excavation are being taken for sites where contamination has been confirmed.

#### Countermeasures Situation against Organic Chlorine Solvents

Facility	Contamination situation	Measures
Tokyo Plant	Trichloroethylene, etc.	Decontamination in progress
Shiga Factory	cis-1, 2-dichloroethylene, etc.	Decontamination in progress
Kasai Factory	Trichloroethylene, etc.	Decontamination in progress
Kanto SANYO (Omama)	Trichloroethylene	Decontamination in progress
Former Yodogawa Factory	Trichloroethylene, etc.	Countermeasures completed
Sanyo Hometech	cis-1,2-dichloroethylene	Countermeasures completed

## Progress Status of Heavy Metal Contamination Surveys

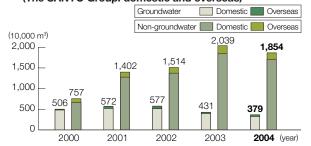
Facility	Status of survey	Status
Tokyo Plant	Complete	No problems
Ashikaga Factory	Complete	No problems
Sumoto Factory	Complete	No problems
Tokushima Factory	Complete	No problems
Tokonabe Factory	Complete	No problems
Research Laboratories	Complete	No problems
SANYO Mediatec, Mochizuki Factory	Complete	Countermeasures completed
Daito Factory	Complete	Countermeasures completed
Former Yodogawa Factory	Complete	Countermeasures completed
Gifu Factory	Complete	No problems
Shiga Factory	in progress	-
Kasai Factory	in progress	-
Other subsidiaries	in progress	-

## **Conservation of Water Resources**

The water consumption by the SANYO Group\* in FY2004 was just over 22 million m<sup>3</sup>, approximately 40% of which was used by the semiconductor businesses. Semiconductor Company including its related companies is making efforts toward the "Water Recycle" as well as commercializing the semiconductor waste water treatment technology as a system. This system is sold both within and outside the company, and new technologies are also being developed based on this technology.

\* According to the scope of environmental accounting

## Changes in the Water Consumption (The SANYO Group: domestic and overseas)



# Development of a High-efficiency Technology for the Recycling of Hydrofluoric Acid Waste

In July 2005, our R&D Headquarters, the Human Ecology Research Center, and SANYO Agua Technology Co., Ltd. a subsidiary of our semiconductor company, successfully developed a recycling technology of hydrofluoric acid waste, based on the accumulated technology for semiconductor waste water treatment (already on the market as Aquacloser and Slurrycloser). This technology is unprecedented in that it does not rely on the level of fluorine concentration of the waste liquid and yet it achieves both the quality of the treated water which satisfies the fluorine wastewater quality standards (8mg/L) and recovery of high-purity fluorite (98%). This system can be applied not only to the hydrofluoric acid waste from semiconductor plants but also to that from the degradation process of fluorocarbon gases.

"Environmental" **Performance** 

## **Communication Promotion**

# Mind

The SANYO Group is promoting environmental communication via interaction with society both regionally and globally, and with children who will lead the next generation in order to raise the awareness of environmental conservation and to achieve a sustainable society.

## **Environmental Communications**

Addressing the Environmental Issues at the Global Level by Participating in an International Conference, WBCSD

(World Business Council for Sustainable Development)

## **About ioining the World Business Council** for Sustainable Development

In March 2005, SANYO joined the "World Business Council for Sustainable Development (WBDSD)," which promotes business efforts for the environment on a global scale.

WBCSD was established in 1995 in order for the business community to contribute in the development of a sustainable global society. It comprises top management of approximately 175 corporations around the world. At the WBCSD general assembly held in Nagoya city, Japan, in June 2005, SANYO cooperated in preparing to hold the meeting, as well as participating in some of the meetings including the Council Meeting, 1 LD Meeting, 2 and the major WG Meeting.\*3

- ★1 Meeting of the representative members
- ★2 Meeting of the delegates
- ★3 Meeting of the working groups

# Background to Joining the WBCSD

SANYO has been deliberating on the way to sustain both environmental efforts and economic development. While recognizing that it is an issue that requires cooperation amonast various business sectors and industries and that what a single company can solve is somewhat limited, we have been seeking a way forward. In March 2005, we decided to join the WBCSD, the international council which aims to realize a sustainable global society.

# The Aim of Participation

WBCSD continues to make recommendations and implement hands-on activities towards sustainable development, based on three pillars, namely, "economic development," "environmental balance," and "social progress." SANYO participates in the activities as a member and makes contributions towards the realization of a sustainable society. At the same time, SANYO obtains the information and best practices (successful case examples) from participation in the Council and applies the information to the global environmental measures of the SANYO Group.

# Specific Measures

In order to address global environmental issues which spread beyond the boarders and generations, such as global warming and the effects of chemical substances on humans, the SANYO Group is consolidating the structure to establish the global EMS before the end of FY2007. The new environmental management structure will provide an essential base for establishing an international collaboratory and cooperative framework amongst countries and industries in the future.

# **Current Status**

The EMS of the SANYO Group is currently structured focusing on the domestic facilities (GEMS and independent EMS), and our overseas manufacturing facilities have their own EMS. Based on this current status, we will strive to establish a more complete and across-the-Group EMS from a global perspective.

In the global EMS, similar to the domestic EMS, we will classify the environmental issues broadly into the following three areas, each of which will have the environmental aims and targets, and we will implement various activities.

- 1. The issue of global warming
- 2. The issue of waste reduction
- 3. The issue of chemical substance management

# Outlook

The WBCSD, which we joined recently, plays an important role in terms of the above mentioned issues and the interindustrial collaboration which is expected to be needed in the future. As well, many of the WBCSD missions and aims correspond to our management philosophy and environmental policy.

For example, concerning "Leadership in the business community" and "Policy formulation," we would like to have our views reflected on the opinions of the business community worldwide.

Based on the guiding principle of the WBCSD to "show the progress made by the business community in the environment, resource utilization and social responsibility of corporations, and to share the best practices amongst the WBCSD members," we will absorb the many actual examples and deploy them in the global development of the SANYO Group environmental management.

# Risk Communication to Promote the Dialogue with the Local Area

Chemical substances and products containing them are common in our daily life in the modern society. However, the environmental risk involved with the chemical substances, namely, the effects on human health and ecology, is not often fully understood by non-specialists. This is why the role of "risk communication" is attracting attention. "Risk communication" promotes the sharing of information about chemical substances among the general public, industry and the administration, contributes to formation of a common understanding of chemical substances, and promotes mutual communication to arrive at a social consensus regarding environmental risk management.

"Risk communication" in general refers to the communication which discloses information, both convenient and inconvenient, to all the people concerned equally to form a consensus regarding the bearing of risk. However, when factory officials and local residents discuss emission of chemical substances from a factory and its effects on the health of the local residents based on objective data regarding toxicity, scale of contamination and the effects on the human body, this is sometimes referred to as "risk communication" in a much narrower sense.

Under such social situation, the SANYO Group is conducting risk communication, examples of which are as follows.

# Participation in the Gifu Seino Area Chemical Substances Communication Conference





A communication scene

As 50% of chemical substances emissions in the Gifu prefecture is concentrated in the Seino area, the Gifu Prefecture Regional Development Bureau Seino Office served as the intermediary to establish the above mentioned residents-industry-academia-government conference for the local corporations and residents to discuss chemical substances, hence promoting risk communication and reducing the chemical substance emissions into the environment. SANYO participated in the Second Risk Communication of FY2004 held at Ogaki Information Studio, Swink Hall, on December 17, 2004. Kazuhiro Yamamoto, senior manager of Gifu Area General Affairs department on behalf of the Gifu facility explained the "Regional Communication," while Masahiro Hashimoto, on behalf of the Semiconductor division explained the "Handling

and Emission of Chemical Substances at the facility" to the representatives of the local residents.

In the question and answer session, questions were asked by the residents using technical terms, indicating the high level of interest in environmental issues. We will continue with the risk communication on a variety of

# Environmental Education and Solar Ark

# Cultivating the Spirit of Environment and Science

The "Solar Lab," SANYO's Solar Energy Museum, aims to encourage children who will lead the future to be more interested in global environmental issues and science and technology concerning photovoltaic power generation, etc. via planning and developing exhibitions, original workshops and science shows that would leave a lingering impression in the visitors' mind.

The Solar Lab is also utilized as a venue for a number of environmental education sessions organized by the Gifu prefecture. "Gifu Earth Environment School," which is

one of those sessions, was established at the same time as the Solar Ark, is gaining recognition as a venue for regional lifelong learning and as the destination for school field trips.



Outside exhibition scene

# Gifu Earth Environment School

The Gifu Farth Environment School was founded in June 2002 to promote the interest of children in nature and science with the goal of cultivating future environmental conservation leaders. The students are elementary school children and their parents in the Seino Area of Gifu Prefecture. A variety of programs and experiences are provided by this school, including lectures on environmental philosophy, ecological living and firefly breeding. Workshops are also given on topics such as photovoltaic power generation and natural dyeing using plants, and study visits are made to other environment related facilities in

Gifu Prefecture. This school is open 12 times a year on the 2nd Saturday every month, which is Gifu Citizen Environment Dav.

In fiscal 2004, 37 pairs (73 people) participated.



Gifu Earth Environment School

# Mind

## **Environmental Communications**

## Supporting a Wide Variety of Environmental Education and Awareness **Promotion Activities**

General consumers increasingly want to learn about the activities for prevention of global warming and reduction of waste, and about other activities for environmental conservation.

Here, we use Solar Ark to provide a place where both men and women, young and old, can acquire knowledge of the Earth's environmental problems—that is, what is happening now, and what we can do about it, etc. Every year many people attend the Solar Ark, some as part of their lifelong educational programs, while elementary school pupils and junior and senior high-school students do so as part of their social studies. In addition, we accept Energy Conservation & New Energy Study Groups for foreign trainees from the Energy Conservation Center, Japan, training inspection by professional educators (teachers and members of Boards of Education, etc.) and corporate staff

In addition to these study and inspection programs, an ongoing series of easily understood environmental lectures is given that identifies the factors and mechanisms behind environmental destruction, and introduces the practical environmental activities of the SANYO Group. We also actively cooperate with and support events, held outside the facilities, that encourage interest in science and the environment, for example the Gifu Symposium sponsored by Gifu University and the Environmental Festival sponsored by Ogaki City.

In winter, the Solar Ark Jogging Meet is held in conjunction with local schools. With health as the keyword, Solar Ark staff members are promoting an increase in interest in the global environment among local children.



Hands-on environmental education

# Gifu Youngsters' Science Festival at the Solar Ark

The Youngsters' Science Festival is held annually in every prefecture throughout Japan. The Gifu regional festival was held at the Solar Ark in June 2005, as it had been the year before. Over the two days of the event, 11,310 participants gathered at the Solar Ark. It was mainly supported by the Gifu Prefectural Board of Education, and attended by local science teacher and student volunteers. The event created a powerful impression of the Solar Ark as a key facility in global environmental problems and science education by offering many scientific experimental workshops at a single location. The Festival Executive Committee was financially supported by the SANYO Environmental Fund.





Gifu Youngster's Science Festival

# Workshop and Science Show

The staff of the Solar Cell Laboratory, the "Solar Lab", with those of the Japan Science Foundation, every year create a rich menu of scientific experimental projects that are fun for parents and children to construct and that encourage a scientific attitude. There are Saturday workshops on the themes of spectroscopes and diffraction gratings, special menu workshops in the spring, summer and winter holidays, charge-free workshops on weekdays, and group workshops for schools and children's groups. A cumulative total of 3,300 participated over the period from 2002 through 2004. Then, from 2004, the new and original "Science Show" was planned and developed, which allows some participation by adults, and not limited to just children. This is aimed at extending the reach of these activities. From 2005, the Tokai Chapter of the Japan Society of Applied Physics (JASP) has joined in with a "Science Refresher Class" for children up to junior high school and provides thoroughgoing support for educational activities.





Workshops

# Activities Linked with Regional Science Centers

The Japan Science and Technology Agency (JST), an independent administrative institution, works with Science Centers in the regions to encourage cooperation for science activities with local schools. In Gifu Prefecture, the prefectural science center, "Science World" plays a central role in association with the Hida Kiyomi Nature Center, the Gifu Academy of Forest and Culture, Gifu City Science Museum and SANYO's Solar Lab. Each institution supports science education by undertaking certain fields of study best suited to its expertise, giving scientific demonstrations at schools and inviting elementary pupils and junior high school students to perform experiments and attend "handson" classes.

The Solar Lab implemented experiential activities in five schools for some 400 pupils in 2004, including a "handson" energy class for a Kobe primary school. This energy class received the Director's Award from the Agency for Natural Resources and Energy at the 14th annual awards for facilities engaged in energy-related publicity sponsored by the Information Center for Energy and Environment Education.

As an enterprise engaged in actual production, and having the solar energy museum, which is rare amongst institutions worldwide, we are committed to providing improved educational materials in science.

# "Coco Chan" Activities

The SANYO Electric workers' union, in its regular bulletin for members, has been calling on members and their families to participate in the "Coco Chan" activities of the industry-wide Japanese Electrical Electronic & Information Union for the last eight years. "Coco Chan" is a cartoon character used to illustrate the activities. ("Chan" is the affectionate form of "San," the Japanese "Mr./Ms.")

These activities introduce energy-saving measures that can be devised by anyone with even the slightest awareness of environmental issues in daily life, and urge that they should be put into action. The program runs every year from June through September, during which time families check their energy savings, thus spreading awareness of the issue. In 2004, 1,095 people responded, and ongoing participation was encouraged by drawing lots among participants and sending commemorative gifts to the winners.

## SSTH Wins the Prime Minister of Thailand's Environmental Conservation Award.

SANYO Semiconductor Thailand (SSTH) received the Prime Minster's outstanding enterprise award for 2005 in the environmental preservation category. The award honored SSTH for its active environmental effort within the local community, that is to promote reuse of wastewater by the adoption of "Aquacloser", wastewater treatment systems by SANYO Aqua Technology Co., Ltd., and recycling of waste materials, etc.

The waste materials recycling system took three years to develop. It takes plastic wastes from the semiconductor manufacturing process, burns them as fuel in the process of making cement, and then uses the resulting ash as a raw material of the cement itself.

SSTH has also received outstanding enterprise awards in the safety management category (in 2001), in quality control (2003) and in productivity (2004), making this the fourth such award and the third in successive years.

SSTH's Director Pornchai responded to the award by saying "We are deeply honored to receive the Prime Minister's award for environmental conservation. The award will encourage even greater awareness of the environment, and is sure to assist sales activities for wastewater-treatment systems. We will not fall into complacency over the award, but will work to achieve even higher standards."



President Wakabayashi receiving the trophy



SSTH representatives who attended the award ceremony (Director Pornchai is on the left in the front row)

# Working w



A very varied cross-section of people form the stakeholders of the SANYO Group, from our customers, business partners, shareholders and investors, local community, and our employees — men and women, children and the elderly, Japanese and many other nationalities.

The SANYO Group seek to share with these people in sustainable development, and we are committed to becoming an indispensable element. We will discharge our social responsibilities in close communication with our stakeholders.



# ith People

# Market in

The SANYO Group always seeks to provide the products that will satisfy our customers' wants. In view of today's rapidly diversifying lifestyles, we pay careful attention to the opinions of a wide variety of customers in the marketplace, and actively make use of this information in our product development. We see one of our prime responsibilities as a manufacturer to be the ongoing provision of safe, high-quality products from the customers' viewpoint.





# Special Feature ......P59

Everything begins with listening to the customer's opinions. That is the starting point for all SANYO product development.

Working with Our CustomersP61-65
<b>Working with Our Business Partners</b> P66
Working with Our Shareholders / InvestorsP67
Working with Our EmployeesP68-73

**Working with** 



**Market in Special Feature** 

Everything begins with listening to the customer's opinions. That is the starting point for all SANYO product development.



# The SANYO Organizations and Approaches to

From 1994, SANYO established a Lifestyle Software Research Dept. that regularly performed monitoring research by mailing questionnaires to customers. In 1999, a Woman-Friendly Project\*1 was initiated specifically to stimulate the creation of products that would embody the opinions of

listening carefully to the customer's opinions since October 2002, when it was first established (initially as Life Innovation Planners [LIPS] being subsequently renamed in July 2005). Ever since, this group has sought to anticipate needs in daily living. Also, in order to grasp consumer awareness and product evaluations by customers after purchase, it has concentrated on performing in the whole cycle of work from research to verification of the research results and exploiting the customer's opinions in product development. It also runs the "Oeuf Club"\*2 whose members are our customers and implements market research for members

- are women customers, intended to encourage their participation in product creation and to make them fans of the company. It was occasioned by a comment of former President Aquino of the Philippines, who was then an outside director, "You should bear in mind to make more women-friendly products.
- \*2 Oeuf is the French word for egg, and this members' organization was formed in July 2000 with the idea of working with our customers to give birth to something new. We ask to join the club customers who filled in the user's card (registration card) included with all SANYO products and responded to the follow-up questionnaire on their satisfaction with the products. They become members for two years. As of June 2005, there were 2,034 members.

Product

Prototype

Product

# The Specialized Customer Lifestyle Research Group is Central in Listening Sincerely to the Customer's Opinions

# Purpose-directed research gathers customer's opinions.

The Customer Lifestyle Research Group seeks to create products that truly satisfy customers, and has established a number of research methods to encourage them to express their various opinions.

For example, it performs "exit surveys" for the purchasers at the shop to confirm their purchase motivation, and interviews of customers to ascertain their degree of satisfaction or any points of dissatisfaction. In order to investigate the different potential needs of each age group and lifestyle, it carries out surveys of user satisfaction, regular postal questionnaires and fax-based surveys, group interviews and home-visit surveys for members of the "Oeuf Club" who are our partners for product creation.

Here, as an example of product development based on these surveys, we introduce the DW-SX3000 dishwasher and drier, a hit product in 2003 that originated in a postal survey.

# A hit product that arose from a customer survey—A dishwasher and drier that uses kitchen detergents.

By 2002, improvements made by each manufacturer to its own dishwasher/drier products were eliminating performance differences between them. At this point, those responsible for product planning and the Customer Lifestyle Research Group noticed that surveys at the shop and others revealed a feeling that special dishwasher detergents were expensive. They therefore identified the ability to use standard kitchen detergents as the point of appeal for a new product.

A postal survey of "Oeuf Club" members in February 2003 revealed that 30% of users felt restricted by having to use special dishwasher detergents. Home-Appliance (HA) company immediately started development work based on confidence in the potential need evident from these results.

On October 1, 2003, we launched sales of the DW-SX3000 dishwasher/drier, emphasizing the sales point that it was "the first in the world to allow use of standard kitchen detergents." It immediately became such a hit that stores found it hard to keep them in stock.

# The Customer Lifestyle Research Group functions as a consumer advocate.

The Customer Lifestyle Research Group also performs fax-based surveys to grasp key needs, visits homes to investigate the ways products are actually used, and conducts group interviews to confirm the viability of proposed products, serving at every stage from information gathering through actual product development.

It also plans events designed to increase the number of company "fans," and experiments with new ways to obtain detailed opinions and evaluations of products.

In this way, the Customer Lifestyle Research Group is familiar with customer realities, adopting their perspective in evaluating product planning, and so serving as a consumer advocate.

SANYO is committed to learn from customers, and to continue developing products that will delight them.

# **Column** Protecting Members' Personal Information

The Customer Lifestyle Research Group has been entrusted with personal information by approximately 2,000 members of the "Oeuf Club", and takes great care to manage such information. Members' information is stored on head office's host computer and protected by access codes known only a few responsible persons. It is forbidden to store this personal information on PCs or on removable media, so even in the unlikely event of PC theft, members' information will not leak to outsiders.

In reports on the results of questionnaires etc., sent within the company by E-mail etc., personal information including member's names are not used, but member's number only are listed.

Our responsibilities and our approach

# Listening Intently to the Customer's Opinions in Creating Products

**Kiyoko Tani,** Customer Lifestyle Research Group, Engineering & Development Unit, Company Management Office, HA Company.

I want customers to use our products for as long as possible. And my dream is to create quite new categories of product that did not exist before. Completely intent on listening to the customer's opinions, I aim to create products with well thought-out concepts that will be thought typical of SANYO.



# **Working with Our Customers**

The SANYO Group provides a wide range of products, from electrical goods through electronic components to industrial equipment, and we fulfill our responsibility to our customers pursuing an ongoing dialog with the priority on quality and safety of the products including servicing.

# "Customer-First" as Both Management Philosophy and Principles of Conduct



Since its foundation, SANYO Electric Co., Ltd. has been committed to placing priority on customer satisfaction in our business activities. Customer-First concept is expressed explicitly in SANYO's Management philosophy and

principles of conduct. All company officers and employees keep this in mind in their daily work, and each seek to relate their own activities

to putting customer satisfaction first.

# Customer Satisfaction Is Pursued in All Corporate Activities.

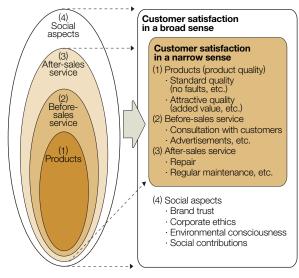
The level of customer satisfaction relating to products

and services is determined by customers and not by the company that provides such products and services. We must keep customers satisfied from the time of purchase, through the period of use and finally at the time of product disposal to raise the overall level of customer satisfaction. Thus, employees in all sections, from the sales and service people who directly meet with customers to members in the planning, engineering, production and quality management cooperate to improve the level of customer satisfaction.

For the company required by its CSR in recent years, to enhance quality of overall management including social aspects as well as that of the products and services, it is necessary for the company to satisfy customers and society. To improve the quality of management, the SANYO Group is promoting Customer Satisfaction Diagnosis based on the Japan Quality Award (JQA)\* Criteria. In accordance with the results of Customer Satisfaction Diagnoses, we are making efforts to improve and enhance job execution as well as develop customer satisfaction strategies.

★ JQA: The Japan Quality Award was founded in 1995 by the Japan Productivity Center for Socio-Economic Development. Giving this award is one of the major activities of the center's Management Quality Improvement Program to support development of organizations that achieve performance excellence by customerfocussed management. Award-winning organizations are determined by referring to JQA Criteria, which reflect the latest management principles for responding to changing social needs.

## Elements of Customer Satisfaction



# In Order to Raise Product Quality Which Forms the Basis of CS

In manufacturing business, product quality is the most fundamental item for increasing customer satisfaction. Aware of this, the SANYO Group has provided "Basic Rules for Quality Management" as group-wide top-level rules governing product quality, and "Basic Principles about Quality" in which it says "offering useful and harmless products that satisfy customers" is the most important consideration among the social responsibilities of a corporation.

For SANYO, product quality comprises not only safety, reliability and usability of the product itself and its basic functions, but also good pre-sales services such as instruction manuals, warning labels, and a way of providing product information, including its usage, and after-sales servicing. The interface with the customer in servicing is vitally important. The Basic Principles about Quality are inseparably linked to The Basic Principles about Customer Relations.

In fiscal 2004, a company-wide innovation program was started to thoroughly implement the "Quality First" principle targeting a reconfigured quality assurance system.

With this in view, quality-control section in head office implemented purchase inspections to confirm that our brands of products in the marketplace met the standards of the "Electrical Appliance and Material Safety Law of Japan" and on-the-spot inspections of each manufacturing or importing operation to confirm proper quality control and legal compliance. By these measures, we strengthened the system of enforcing strict compliance with the relevant laws.

The approach was not restricted to manufacturing but also included a wide variety of workplaces in sales and distribution. In all such workplaces, inspections, using our own check sheets for quality achievement, were made of systems designed to ensure product quality and the system of risk management, promoting an ongoing program of quality-control improvements in the PDCA cycle.

From fiscal 2005, our main policies and objectives have been to "strengthen the global quality assurance system", "strengthen quality risk management", and to "implement overseas our information system for customer satisfaction."

## Basic Principle about Quality (established in Jan. 1986)

Offering useful and harmless products that satisfy customers is the most important consideration among the social responsibilities of a corporation, and is the basis for its development. For this reason, we are committed to quality management that places the utmost priority on quality.

## Basic Principles about Customer Relations (established in Dec. 1992)

- 1. Always consider the perspective of the customer and give priority to customer satisfaction.
- 2. The true target is the hearts of the customers. Always react in a way that will leave a positive impression in the memories of customers.

## Basic Policy about Customer Relations (established in Dec. 1992)

- 1. Build systems that make it easy for customers to approach our group.
- 2. Respond appropriately to the customer's goodwill.

- 3. Actively provide the information that customers want.
- 4. Incorporate customer's opinions in management.

## In Order to Provide Safe and Reliable Products

# Safety Is Assessed in the Largest Product Safety Testing Laboratory

In order to provide safe products that the customer can use with confidence, we built a new Safety Testing Laboratory which, when it opened in February 2004 at SANYO's Tokyo Plant, was the largest in the industry.

The laboratory engages in preventative safety measures by evaluating and verifying the safety of products and components in continuous operations under a wide variety of the most severe conditions to ensure that none will ever give rise to fire or smoke hazards. Its results are employed in the design and development of products throughout our

The combustion gases generated during the tests were "decontaminated" by exhaust-gas processing equipment in the laboratory, with full consideration for environmental protection.

# **Product Safety Information Is** Appropriately Disclosed

The SANYO Group has an unending commitment to harmless, high quality technologies, products and services, and provides safety information for the proper, safe usage of products and services as detailed in the panel on the right.

In the unlikely event that we find a particular product presents any kind of safety problem, we put customer safety first and immediately disclose the information, inspect the suspect part, and repair or replace it to minimize customer inconvenience.

Important announcements are always prominently displayed on our corporate website, and we earnestly request that customers should take note of them in the safe operation of our products.

## The Main Methods of Providing Product Safety Information

- 1. When a product is found to have a safety-related problem, we display an "Important Announcement" on our corporate website, and provide guidance about inspections and repairs.
- 2. On the theme of proper product usage, we regularly provide lecturers at government organs such as Consumer Centers. With the aim of contributing to consumer education we also produce instructional videotapes on the right way to use products and present them to consumer centers, consumer organizations, schools, fire services, etc.
- 3. For 26 categories of product that have been used for many years, we have produced a "Tender Loving Care" guidebook that specifies items to be checked and any special care to be taken in their continued use. As well as showing this on our website, we distribute copies to customer via sales outlets or when repairs are made. Basic knowledge and information about batteries and their proper handling is also provided on our website under the title "The Academy of Battery Whys and Wherefores.
- 4. Our instruction manuals and product catalogs always provide the telephone numbers of information desks that can advice on usage or other product-related matter.



The "Tender Loving Care" quidebook.



The top page of our "Academy of Battery Whys and Wherefores?

## In Order to Provide Safe and Reliable Products

# At 104 locations throughout Japan, SANYO home appliances are inspected and repaired.

SANYO Consumer Marketing Co., Ltd. has our after-service organization for consumer home appliances, having 104 locations in a service network as of July 2005 that provides the full range of inspection and servicing for SANYO home electronics products, including peripheral equipment and software.

This organization's objective is to provide Swift, Reliable and Obliging service that will delight the customers, and it is contributing to customer satisfaction by fast and accurate work. When service engineers visit the homes of customers, they ask for cooperation in filling out questionnaires, to ensure that the customer's voice is reflected in high quality service.

From April 2004, to increase customer satisfaction by upgrading the skills of service engineers, ten leading and highly skilled "support staff" were appointed to travel around the 104 nationwide locations, in a new effort to teach both technical skills and how to develop a better manner of interacting with the customers. The results of this effort are appearing as high evaluations in opinions expressed by customers and the assessments of customer satisfaction with our servicing by external organizations, and will be used to effect further improvements.

We will continue to take very seriously the opinions of our customers and provide service of such high quality that it will leave them with a lasting impression. Also, by carrying out the proper inspections and repairs and so enabling customers to use their products regularly and habitually, this will therefore reduce the environmental impact of scrapping



Inquiries should be addressed to:

SANYO Consumer Marketing Co., Ltd. http://www.sanyo-scm.com/index.html (Japanese Only)

# Appropriate Publicity and Advertising Activities

To ensure that the appropriate information is sent to our customers, the SANYO Group has specified in its compliance guidelines the requirement for "appropriate advertising" and all public relations and advertising activities are conducted accordingly. In practical terms this means rigorous compliance with the relevant laws within Japan, including antitrust law, act against unjustifiable premiums and misleading representations, unfair competition prevention law, pharmaceutical affair law, copyrights law, trademarks law, act concerning protection of personal information, and the agreements on fair competition. We also rigorously observe the standards and voluntary agreements of the Japan Advertisers Association, Inc. (ethical considerations), the Japan Newspaper Publishers and Editors Association (standards in newspaper advertising), the Japan Magazine Advertising Association (standards in magazine advertising), the National Association of Commercial Broadcasters in Japan (standards in broadcasting), and the Japan Advertising Review Organization. In addition to these, staff responsible for publicity and advertising of home electrical and electronic products participate in in-house training about the fair-competition agreement on the descriptions of home electrical and electronic manufacturing industry, and keep up to date with information on the latest changes.

In order to ensure thorough compliance with the above, SANYO channels all domestic (Japanese) media purchases and advertising creation through the Advertising Dept., which is responsible for the integrated system of controlling advertising. The system also ensures that appropriate expressions in the advertising are used by having parallel reviews performed by a number of responsible staff.

Overseas, we obtain information on advertising restrictions via our agencies in each country, and if these are unclear, we confirm them with the agency concerned and discuss how to proceed.

## Compliance Guidelines (Extracts)

## Appropriate advertising

We will implement appropriate advertising and publicity. We will not use inaccurate description or expressions, nor ones that would mislead our customers.

## We value dialog with customers

# We set up desks to respond directly to the customers

SANYO has provided information desks to deal with the various matters raised and requests made by customers. In our catalogs we show the guidance to purchase inquiries, and in our instruction manuals we show the guidance for

general inquiries and repairs, and accept telephone calls, faxes and letters. Our Customer Center is the general location for all purchase inquiries and questions concerning how to handle products, while our after-service divisions take care of servicing inquiries. Our corporate website also provides similar guidance to the information desks, and provides for discussions via E-mail.

# Responses at the Customer Center

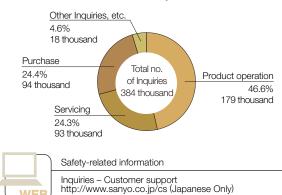
At the Customer Center, dialog is always based on basic principles and policy about customer relations, under the slogan "Fast, accurate and friendly." The customers are always put first in our efforts to respond.

The Customer Centers is manned all-year round, readily enabling all to call at their own convenience, and specialist staff always stand by to handle specific problems assisted by the introduction of an interactive voice recognition (IVR) system.

In fiscal 2004, opinions expressed by customers were reflected in improvements to our instruction manuals and to product functions, and the hours of operation were extended from the previous 9:00 to 5:00 to 9:00 to 6:30. We also extended the free call service to mobile phones, which had previously been impossible.

From now on, as products are given more sophisticated and complex functions, we will be improving the knowledge and skills of our staff, seeking to provide them with the specialized ability to handle a wide range of inquiries and requests appropriately.

## Content of Customer Center Inquiries (in fiscal 2004)



# Mechanism to Reflect Uses Customer Opinions in Product Development

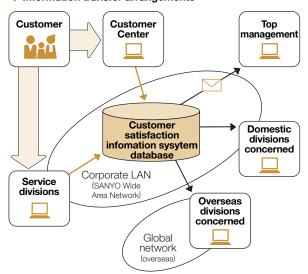
In order to reflect opinions received from customers in our corporate activities, the opinions and requests made to the Customer Center and to service and other divisions of the company are shared throughout the company over the corporate LAN after being registered in the customer satisfaction information system\*. The daily accumulation of opinions and requests are analyzed for trends, and problems with products and services identified, which are then reported on a monthly basis via E-mail to top management and the divisions involved.

Further, each business headquarters is, by its own independent methods, conducting dialog with its individual and corporate customers, and sharing the results of this dialog with planning, engineering, quality and manufacturing divisions so as to ensure that they are reflected in new

product planning, that quality is improved, and defective products in the marketplace rapidly identified so as to improve the quality of both products and servicing.

\* The information in customer inquiries, and the information on product repairs and quality in servicing is turned into a database with an analytical system that provides company-wide access for all staff over the corporate LAN to this customer information.

## Information transfer arrangements



# Protecting and Managing Personal Information

In April 2004, a common policy for the protection of personal information, and corporate rules, were drawn up to ensure that personal information is fully protected. At the corporate website, details of the rules affecting the protection of personal information are disclosed, with the site privacy policy.

In fiscal 2004, as well as completing the system to ensure the protection of personal information, a succession of trainings was given to officers and employees of the company to raise their awareness. A handbook on the protection of personal information was also produced and distributed. This covers the legal obligations, group policy. compliance with corporate rules, heightening awareness, identifying the types of personal information, their characteristics, the opportunities to gather it.

In future, in order to ensure the widespread circulation of corporate rules and complete compliance with them, we will soon introduce the PDCA cycle complemented by audits.



On handling personal information

http://www.sanyo.co.jp/koho/doc/j/privacy/privacy\_p.html (Japanese Only)

# **Working with Our Customers**

# **Advancing Universal Design**

# Creating Products that are Safe and Easy-to-Use for All Customers

In order to satisfy all customers who use our products, it is vital to provide products that are equally safe and easy-touse for everyone. Aware of this, the SANYO Group gives detailed consideration to the entire process of product development, recognizing the needs of the widest variety of customers, including the elderly, those with disabilities, children, expectant mothers, etc., so as to improve ease of

## The SANYO Universal Design Concept

# SANYO UNIVERSAL DESIGN



Our group set up the SANYO Universal Design Concept in April 1999: "For all." This embodies the determination of the SANYO Group to develop products that are easier to use by everyone, including the elderly and those suffering from physical and other disabilities.

At the same time, we set up the SANYO Universal Design Guide to establish targets for the realization of this concept, and have been actively committed to product development on this basis ever since.

## ♦ The SANYO Universal Design Guide and Typical Products

# Easy-to-understand

Use terms and displays that anyone can understand.

## **Beautiful**

Pursue elegant shapes which would engender a feeling of attachment

## Very safe

Give full consideration to safety in use.

# Easy-to-use

Make operation simple so that anyone can do it.

## No effort to use

Require no special effort by anyone to use it.



## Moving Kitchen: XG-70

 A simple switch operation alters the counter height to anywhere between 73 and 90cm.



## IH Cooker: IC-BF1 (C)

- Audio quide provides audible confirmation of operating procedures.
- Braille labels on the operating panel and the plug to assist operation and plug-in location.
- Guard ridge around the top plate prevents saucepans slipping off.



## Drum-Type Washing Machine/ er: AWD-GT9612

- Top-open drum, which combines advantages of drum-type and vertical units, for easy insertion and removal of laundry.
- · Non-detergent cycle and water-purifying cycle to remove bacteria, using electrolyzed-water for health and the environment consideration.
- · Child lock prevents tampering.



# **Rice Cooker:**

- Audio guide provides audible confirmation of the state of the rice and the operating procedures.
- The large, highly legible display prevents operational errors.
- Simple, easy-to-use center control keys



## **Bone-Conduction** Telephone: TEL-KU2

- A cordless handset using bone conduction that allows hard-to-hear voices to be heard.
- "Slow" setting can slow down conversation to make it easier to follow
- Has loud ring tone and light display to warn of incoming calls.
- Large, highly legible tilting LCD and large buttons.

"Social" **Performance** 

# **Working with Our Business Partners**

The SANYO Group purchases a wide variety of materials and components, and we work with our suppliers to maintain good relationships based on fair dealing, protection of their proprietary information in joint development work with them and legal compliance.

# **To Maintain Fair Business Relationships**

# We ensure fair-trading practices with our suppliers.

The SANYO Group thoroughly and rigorously enforces the regulation in our Compliance Guidelines that calls for fair dealings with our suppliers.

In fiscal 2004, each company in the group held meetings to announce its policy towards suppliers, materials purchasing departments held a variety of explanatory meetings, and we actively participated in exchanges of opinion at exhibitions of materials arranged by supplier. We have also taken the opinions of our suppliers into account in our product planning, production activities and reduction in materials cost, etc. The results of such dialog or communication are reported, from the material purchasing department in each company, to each company's president and other related departments such as product planning, technology and design development, quality control and production planning.

In order to be able to supply the market with better products, we intend to continue exchanges of information with our various suppliers, building good partnerships with them based on fair business practices.

## Basic Policy for Procurement Activities

The SANYO Group conducts its business activities with its corporate slogan "We Care for People and the Earth", seeking to realize symbiosis with the environment, the world and the society as an enterprise in the 21st century.

## • Global and open procurement

We will perform open procurement activities both in Japan and overseas, providing equal opportunities to all suppliers and seeking always the best quality, price, and delivery date to give the highest possible satisfaction to our customers

## Fair and transparent selection of suppliers

We will, in selecting our suppliers, strive to make strictly fair and impartial overall assessment based on our group's procurement standards.

## Partnership

We will, through fair business dealings with our suppliers, deepen mutual understanding as a "good partner" to fulfill each role and build relationships of mutual trust.

## · Symbiosis with the environment

We will advance "green procurement" that is the purchase of goods with little impact on the environment preferentially from suppliers positive to environmental protection, and seek to realize symbiosis

## Legal Compliance and Information Management

We will, in procurement activities, observe strictly the laws and social norms of Japan and the other countries related to our business operations. We also keep strict control of the proprietary information that we may acquire through our procurement activities in order to maintain its confidentiality.

The SANYO Group seeks to form good partnerships with its suppliers that enable both parties to contribute to society, and seek the understanding and cooperation of its suppliers for these efforts.

# Compliance with the Subcontract Act

The group, in procuring materials and components, respects the provisions of the Act against Delay in Payment of Subcontract Proceeds, Etc. to Subcontractors ("the Subcontract Act" and avoids delays in payment to each subcontractor even where the act does not apply. According to the Act revised on April 1, 2004, the SANYO group has reconfigured its system for ensuring compliance with the Subcontract Act and, through the system, not only increases awareness of subcontract issues among officers and staff in related divisions but also checks the state of subcontract dealings in surveys of compliance with the Antitrust Law (see the following section), seeking to ensure full compliance and prevent non-compliance before it can arise.

The SANYO Group has also prepared internal rules on compliance with the Subcontract Law. Under its provisions, each company or headquarters has created a compliance committee on subcontract law, ensuring thorough awareness of the legal issues and encouraging the proper transactions with subcontractors.

# Surveys of Compliance with the Antitrust Law

The SANYO Group confirms compliance with the provisions of the Antitrust Law in business and seeks to prevent any non-compliance before it can take place, by implementing regular surveys of managers in divisions, such as sales, purchasing, engineering and production.

The surveys are carried out in face-to-face interviews with managers by a person responsible for promoting compliance with the Antitrust Law in each company, using our own checklist based on the Guidelines provided by the relevant authority. The results of the surveys are reported to each company's president, and when concerns arise over any item of the checklist, the necessary improvements are enforced.

In fiscal 2004, in addition to the previous system of interviews, a new written questionnaire was introduced, and the number of those surveyed was increased. Several items of concern were identified and improvements were immediately enforced.

# Protecting Suppliers' Proprietary Information

In 1992, SANYO provided, in our internal rule on trade secret management, the policy on protecting proprietary information and the system for ensuring compliance with them. Therefore, proprietary information is managed and protected according to the internal rules and confidentiality agreements signed with our business partners.

In fiscal 2004, there was a review of IT-related internal rules, including IT security\*, as part of efforts to strengthen control over the handling of electronic information. No leakage of proprietary information of our business partners took place in fiscal 2004.

We are committed to the ongoing protection of all proprietary information of our business partners.

\* Rules concerning information security, in-house networks and the use and scrapping of PCs.

# **Working With Our Shareholders / Investors**

The SANYO Group, in order to secure profits for shareholders and investors while at the same time ensuring sustainable progress as an enterprise, engages in investor relations (IR) activities with the stress on the disclosure of information and communications.

# IR Activities Based on the Appropriate Disclosure of Information

# Our policy for information disclosure and Investor Relations (IR) activities

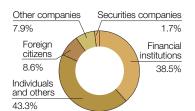
SANYO makes appropriate disclosures of important information to shareholders, investors and other stakeholders, not only the financial aspects but also covering environmental and other social responsibilities.

We see the transparent, unbiased and continuous disclosure of information to our shareholders and investors as being of prime importance. While we naturally provide timely information in conformity with timely disclosure rules of stock exchange of Japan, we also pursue a policy of timely and unbiased disclosure that goes beyond regulatory requirements in the form of meetings to explain our financial statements and our business strategy. By so doing, we assist shareholders and investors in their assessments and investment decisions, and seek to ensure smooth and equable trading in securities (SANYO shares and bonds).

Concerning our IR activities, we complement our information disclosure by active dialogs with our shareholders and investors, and are committed to reflecting their opinions in our corporate activities, seeking to increase our corporate value and to build enthusiasm for the company.

# The Situation with Respect to Shareholders

## Shareholdings by category of shareholder (as of March 31, 2005)



As of March 31, 2005. there were 257,255 shareholders, about a 40,000 increase over the previous year.

# Socially Responsible Investment (SRI)

The concept of socially responsible investment, which accords importance to a corporation's activities towards the environment and society in reaching investment decisions, has been rapidly gaining influence not only in the West but also more recently in Japan. SANYO, by disclosing both its financial situation and activities in discharging its responsibilities to society, including the environment, seeks to approach would-be long-term investors who make an investment in terms of SRI.

SANYO is currently included in the Morningstar Socially Responsible Investment Index and a number of Japanese SRI funds and eco-funds.

# IR Activities that Meet Shareholder and **Investor Needs**

SANYO, while following its own IR policy, seeks to meet the needs of shareholders and investors in different situations and with different requirements by its IR activities. Through these IR activities, the opinions we receive from shareholders and investors are immediately informed from the departments responsible for IR to top management so that they can be reflected in future business and IR activities.

## **Shareholder Meeting with the Stress on Comprehensible Reports and Dialog**

SANYO's ordinary general meeting for shareholders, which attracts over 1,000 participants every year, is held with the aim of giving clear and readily comprehensible reports on the business, and responding respectfully to questions and opinions from shareholders.

For the many shareholders who cannot attend our shareholder's meeting, we record the proceedings and disclose them by distributing the video recordings under the heading "Investor Relations" on our corporate website shortly afterwards. In order to get as many shareholders as possible to exercise their voting rights, we have also made it possible for them to vote over the Internet.

## **Active Communications with Institutional Investors and Analysts**

For institutional investors and analysts, we frequently provide opportunities to visit our factories in Japan and overseas. Also, explanatory meetings for our financial statements are held quarterly, with an annual meeting to explain corporate policy and business strategy, and individual visits follow the publication of our financial statements. We also cooperate actively with requests for interviews from institutional investors and analysts.

## **Creating Opportunities to Provide Individual Shareholders and Investors with Information**

We provide a wide range of information to individual shareholders and investors through our business reports and other publications mailed to them and our corporate website available to them. Business reports are designed to ensure that the content is readily understandable by all shareholders, and summarizes the nature of our business and financial statements using many photographs and graphs.

In fiscal 2004, we began a new initiative by participating in an IR event addressed to the individual investor. This event was sponsored by security companies, and our booth attracted approximately 3,500 individual investors, enabling us to give farreaching explanations of our attractions and our business activities.

## IR Information Disclosure on Our Website

"Investor Relations" on our website includes information on a wide variety of SANYO Group activities, and displays or receives requests to send materials such as annual reports, fact books, and other information. To encourage two-way communications with our shareholders and investors, the forms requesting these materials have spaces for adding opinions about SANYO.

In fiscal 2004, we updated the site with the stress on increasing the ease of use, navigation and search functions.

# **Working With Our Employees**

The SANYO Group seeks to provide fair employment and treatment, and to secure fully the health and safety of employees. To ensure the growth of the enterprise, and of all its employees, we are working to strengthen educational and training programs for employees and to improve and expand our personal system.

# **Fair Employment and Treatment**

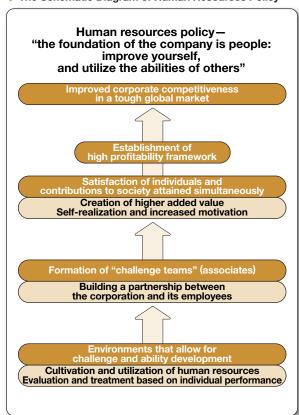
# Our Basic Policy on Human Resources

As our policy on human resources, we believe "the foundation of the company is people: improve yourself, and utilize the abilities of others." Every employee should feel that their job is worthwhile, while we provide an environment that enables each of them to do their best.

We have been implementing measures on our policy so that the talents of individuals are actively cultivated and are assigned to relevant jobs at appropriate times, with fair and impartial assessments of their work.

Furthermore, recruitment, employment and treatment of employees shall show no discrimination on the grounds of gender or personal history, while we strive to create workplaces that give full respect to the individual human rights and individuality of all employees.

## ♦ The Schematic Diagram of Human Resources Policy



# The Condition of Our Employees

The SANYO Group is operating businesses on a worldwide scale, and as of March 2005, it employed a total of 96,023 around the world.

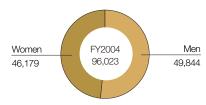
At our overseas locations, local people were employed mostly in the manufacturing division, but in recent years, as our operations have become more global, local employees have also been employed in research and development, management, quality control and service division, etc.

In the future, we plan to further enhance our personal system such as work evaluation, employment and education.

## The number of Employees by gender (Non-consolidated)

		2000	2001	2002	2003	2004
Non- consolidated	Men	16,111	13,903	13,066	13,652	12,834
	Women	4,001	3,336	3,101	3,157	2,853
	Total	20,112	17,239	16,167	16,809	15,687

## The number of Employees by gender (Consolidated)



#### The number of employees by region in fiscal 2004 (Consolidated)

North America	Europe	Asia	Japan	Others
2,210	2,447	53,203	38,113	50

## Average wages / length of service per employee (Non-consolidated)

	2002	2003	2004
Average wages	6,284,918 yen	6,523,436 yen	6,614,362 yen
Average years of employment	19 years	19 years and 4 months	19 years and 3 months
Men	19 years and 6 months	19 years and 10 months	19 years and 7 months
Women	16 years and 10 months	17 years and 3 months	17 years and 8 months

# **Fair Employment and Treatment**

# Our Attitude to Mid-Career and New Graduate Employment

SANYO, in accordance with the group's Principles of Conduct and Compliance Guidelines, seeks to promote fair and impartial recruiting practices. Recent graduates and those already in employment are recruited and considered for employment in accordance with the law and without limitations of gender or nationality.

As a result, due to the increasing participation of women in society and the internationalization of our business, the proportion of women and of non-Japanese among recent graduates employed in clerical work in Japan has risen. Changing attitudes to employment by young people and our desire to recruit exceptional candidates have led us to consider the appointment of those who have been working for up to three years at another company since graduation on exactly the same terms as new graduates (i.e., for potential employment).

We also intend to make more effort into recruiting midcareer candidates, particularly for positions in engineering divisions that are strategically important to our business.

## Employment Figures (non-consolidated)

		2002	2003	2004
Job Type	Office Worker	65	118	143
	Engineer	210	261	232
Gender	Male	245	345	348
	Female	30	34	27
New Graduate/	New Graduate	233	239	205
Experienced	Experienced	42	140	170

# **Expanding Employment Opportunities** for Women

SANYO formed a joint management and labor investigative Positive Action\* Committee in 1993 that regularly discusses issues such as how to expand quickly women's employment opportunities.

Measures to prevent sexual harassment include the establishment of a sexual harassment hotline in 1999 and provision of trainings to improve employee awareness and create pleasant working environments for women.

We intend to ensure that the necessary policies are implemented so that employees can work regardless of gender.

\* The voluntary and proactive efforts of a company to eliminate actual gaps that arise between male and female workers due to fixed concepts about role division based on gender and past practice.

# Reemployment after Retirement (at age 60 or later)

SANYO actively encourages reemployment, and has responded to employees who wish to use their skills after their retirement by introducing a system of reemployment and part-time employment, etc.

Company policy calls for expansion of reemployment after retirement.

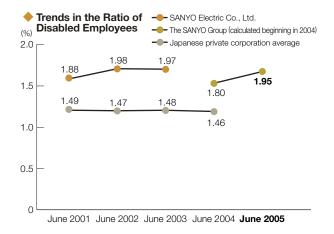
# Employment of People with Disabilities

We have been actively increasing job opportunities for those with disabilities so that they can work with others and enjoy the satisfaction of working.

Currently, disabled employees are working in various offices and facilities where their abilities can be optimally developed, including specially designated subsidiaries SANYO Heart Ecology Co., Ltd., which cultivates flowers and vegetable seedlings, and Harima SANYO Industry Co., Ltd., which mainly packages batteries. The employment ratio<sup>2</sup> for the disabled in the SANYO Group was 1.95% as of June 2005.

We also intend to increase the number of such specially designated subsidiaries, and to create stable workplaces and employment opportunities for those with disabilities throughout the entire group.

- ★1 These are subsidiaries that satisfy certain conditions, including employing those with disabilities in at least 20% of the number of workforce. Under the provisions of the law for employment of the disabled, the number of workforces of such subsidiaries can be consolidated with those of the parent company, in calculating the ratio of disabled employees for the parent company.
- ★2 This calculation was made for SANYO, two specially designated subsidiaries, and 12 subsidiaries that have been authorized for consolidation in the disabled persons employment grouping. Calculations from fiscal 2004, as reported to the Ministry of Health and Welfare
- \*3 This is a new system introduced with a revision of the law for employment of the disabled that took place in October 2002, by which authorization is given to companies that meet certain conditions and whose parent company already possesses specially designated subsidiaries, in which case such companies, like the specially designated subsidiaries, can also be consolidated with the parent company's employment of disabled persons.



# **Human Resources Policy and Cultivation**

# **Cultivating Human Resources**

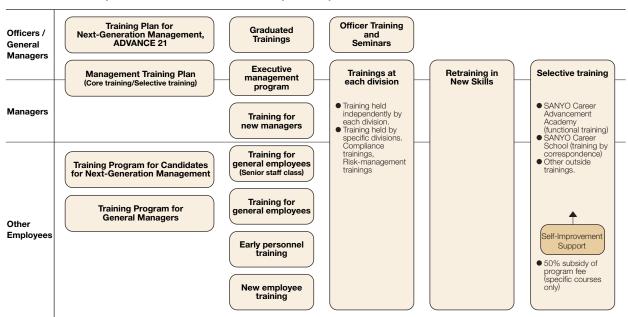
We support self-realization as well as increased motivation of employees through extensive training programs to cultivate human resources. These programs are not imposed by the company but are offered to help employees develop their own career plans, and provide a diversity of opportunities to employees who have solid targets for their lives and are making continuous efforts to achieve them.

# Supporting the Balancing of Work and Family Life

In addition, we are creating a pleasant working environment for employees who want to balance work and family life. To this end, we have introduced systems for maternity, child care and nursing (maternity leave, leave or shorter working hours for child care, family care or nursing, and reemployment of ex-workers who resigned for these reasons).

In future, in accordance with the law advancing measures to support the upbringing of the next generation (passed in April 2005) we intend to further increase and enhance these systems.

## The SANYO Group Human Resources Cultivation Map (as of April 2005)



## Work and Family Support

Content	SANYO	Legal requirements
Leave for child care	Up to the end of March after reaching age one year	Up to age one year
Child-rearing system	Up to three months after reaching the age of three.	Up to the age of three
(shorter working hours)	The first year after enrolling in elementary school	
Restrictions on Overtime Work	Upon application by those bringing up children until they graduate from elementary school Up to 20 hrs in any one month	Upon application by those bringing up children under elementary school age Up to 24 hrs in any one month
	Up to 150 hrs in any one year	Up to 150 hrs in any one year
Family Support System	Grant of 500,000 yen on birth of first child, 700,000 on birth of second, 900,000 on birth of third. Child-rearing assistance: 100,000 yen per year, etc.	
Special leave for wife's maternity	Up to five days paid leave.	
Welfare Loan System	Up to 2 million yen for child-rearing expenses.	
Nursery Care Room	Available in some workplaces	
Home Nursery Service	Discount tickets issued up to third grade of elementary school.	

## Fair Assessment and Fair Treatment

# Achievement-Based Pay Scales

SANYO makes clear what is expected of each and every employee and discloses the elements of performance on which assessments will be based, and evaluates according to the nature of the work and the success in performing it.

This motivates employees to try for the very best results, building a corporate climate that encourages each employee's creativity and personal growth and seeks to make SANYO a company that provides employees with more rewarding experiences.

# Target Management System

A target management system, called the "challenge system," has been introduced, as a suitable tool for evaluating the performance and achievement of each employee through their efforts to fulfill clear-cut job targets.

Assessing the results achieved by each employee not only yields the appropriate pay scales and promotions but also leads to work that generates higher added value and the personal growth of the individual. The results of the assessments are explained to each employee and are used in setting targets for the subsequent year.

# The System of Pay Scales and Promotions

The new system of pay scales was introduced in fiscal 2000, and the previously implemented system of uniform annual raises was abolished in 2001, when an assessment-based annual pay raise system according to which the pay raises for all workers are determined based on their individual annual performances was introduced. The range of raise assessment has been set fairly wide so that pay raises are more proportional to performance results.

Promotions, too, are no longer based on seniority, but on a review of the actual requirements of the position. Age limitations for promotion to each position were abolished. As a result, employees who achieve results can be promoted however, young they are, and we are seeing managers in their 20s.

## **Our Approach of Employee Inventions**

SANYO, to provide employees with incentives for invention. has set up the inventor reward system for employee inventions and internal "Incentive Rule" to reward inventions made within the company. The rule covers rewards when the application is made, early rewards for outstanding inventions when they appear to be particularly promising, actual payments for inventions that are used by SANYO, and rewards to the inventor equivalent to a part of the royalty income from other companies that the patent may generate, and also to a part of any income produced by contributions to cross-licensing agreements, etc. Patents that make a significant contribution to the company's business and results are eligible for special awards at the annual Convention of Engineering Invention\*, etc., where employees' achievements in inventions are recognized and publicized internally.

SANYO has always updated the Incentive Rule appropriately in response to changes in the social environment, and when Japanese Patent Law was changed (came into force in April 2005), affecting the provision of employee inventions, we immediately amended the rule and the inventor reward system accordingly. This involved not

just discussions among employees and modification of level of the rewards but extended to future changes in the rule to cover in-house know-how that does not lead to a patent application.

However, there is no well-established methodology for appropriate evaluation of inventions. We are also aware that those who are eligible for rewards are not necessarily regular employees or retirees of the company but may also need to include those dispatched temporary from other companies. We therefore intend to keep the provisions of the Incentive Rule under review.

In fiscal 2004, rewards were given in accordance with the provisions of the Incentive Rule, as in previous years, but in fiscal 2005 we intend to implement them in accordance with revised rule that reflect the changes in Patent Law.

SANYO does not reflect achievements in invention in regular personnel treatment.

\* This is an event in the SANYO Group's engineering calendar. It is mainly attended by engineers, introducing the results of their research and reporting on the development of certain topical products. It is held with the aim of stimulating exchanges between engineers and their professional growth. It is attended by our top management.

# **Building Good Management/Labor Relations**

# Encouraging Dialog with the Union

The SANYO Group considers dialog and good relations between the company and its employees and their union as very important. Discussions of working conditions, etc., frequently take place between representatives of SANYO and representatives of the SANYO Electric workers' union of which employees of SANYO and its main domestic subsidiaries become a member (membership about 20,000). Leaders of both management and union attend the Joint Management-Labor Conference\* which is held regularly. At the Joint Management-Labor Conference, top management explains management policy and listens to

the voices of employees from the union side, and seeks to reflect them in management of the company. Joint Management-Labor Conferences are also held regularly at each facility, with similar efforts to achieve mutual understanding.

\* The central Joint Management-Labor Conference is held once every one or two months to discuss current management policies and measures, while the Annual General Joint Management-Labor Conference discusses the long-term relationship between the two sides.



The Annual General Joint Management-Labor Conference

# Focusing on Occupational Health and Safety

# Policy

When a series of serious major disasters occurred in Japanese manufacturing industry in 2003, the SANYO Group sets important objectives for fiscal 2004 to strengthen our risk management system and to preserve and improve the health of employees, and this significantly strengthened health and safety systems.

The risk management system was strengthened not only for manufacturing but also for sales divisions, in both of which procedures for reporting and other measures in health and safety systems were reviewed. This resulted in setting up frameworks and procedures to ensure that more accurate information on health and safety would be more rapidly conveyed from each workplace to top management.

From fiscal 2005, past industrial accidents have been analyzed in detail, and we took thoroughgoing measures

to prevent and reduce the occurrence of similar industrial accidents. In terms of health and hygiene management, we implemented thoroughgoing health checks with followup where indicated by the results so as to preserve and improve the health of employees.

## Basic Policy for Health and Safety

- 1. Achieve zero industrial accidents in the workplace
- 2. Promote overall health
- 3. Hold health and safety activities for all employees

## Action Policy for Fiscal 2005

## Safety Management

Reduce industrial accidents arising from administrative and material

## Health and hygiene management

Strengthen mental health management, commit to measures needed to prevent health impairment through overwork, and rigorously implement follow-up diagnoses after health checkups.

## The Damage Caused by the Niigata-Chuetsu Earthquake

The Niigata-Chuetsu earthquake that struck on 23 October 2004 caused heavy damage to the group's semiconductor device production facilities at Niigata SANYO Electronics Co., Ltd. Production was forced to a halt and some employees were required to wait at home. We adopted the following measures towards employees affected by the earthquake.

In terms of industrial accidents, four accidents took place due to falling objects and obstructions when fleeing for safety, and one of the victims received treatment in hospital. However, there were no serious

## **Employees working at Niigata SANYO Electronics were dealt** with as follows:

- Employees unable to attend for work from the day of the earthquake on 23 October until November 8 received full pay.
- Employees unable to attend for work from November 8, 2004

through March 10, 2005, received 60% of their pay.

- Every employee was retained in employment.
- Employees whose homes were damaged or for whom commuting to their homes would have been difficult were housed in the dormitories for single men and single women which escaped damage.
- Employees who assisted in the restoration work were provided with lunch and evening meals at company expense (until 8 Nov. 2004)
- Cash gifts were made to express sympathy for the disaster.

## For the Areas Surrounding Niigata SANYO Electronics, SANYO took the following actions:

- Provided relief supplies (food and drink, etc.) to the City Hall and the immediately surrounding areas.
- Semiconductor company personnel volunteered to serve the local inhabitants.

# The Priority on Health and Safety

# Activities for Health and Safety

The SANYO Group's health and safety system is under the overall control of the Officer responsible for General Affairs/ Human Resources Administration, with local organizations for health and safety having been formed under the control of general managers in each division. There is also a Safety and Health Committee formed of representatives of management and labor, industrial doctors, and members of the health insurance society. The Central Health and Safety Committee assesses the previous year's activities and decides policy for the coming year, while at each division, local Health and Safety Committees practice health and safety management with methods according to the characteristics and the situation of each business under the group-wide health and safety action policy.

Every year, a group-wide Health and Safety Conference is held with approximately 1,300 participants including top management and persons in charge of the workplace at each division. The conference participants achieve a common awareness of the current situation and report advances made in workplace activities, in order to heighten awareness of health and safety issues.

When industrial accidents have taken place, an accident report is sent to the person in charge of health and safety and measures to prevent reoccurrence of similar accidents are taken, and at workplaces where there has been an increase in the number of industrial accidents occurring. the Health and Safety Committee takes a leading role in arranging patrols and inspections to ensure thoroughgoing implementation of accident prevention measures.

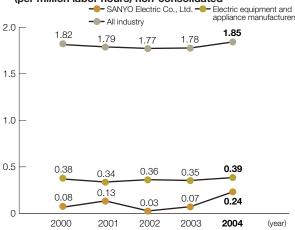
At divisions where the Occupational Safety and Health Management System\* has been introduced, the review of risk management and internal audits are carried out to ensure ongoing continual improvements in the management system, as well as having the local Health and Safety Committee hold meetings to report successful improvement activities.

\* In order to further reduce industrial accidents and to advance the systematic and stable management of health and safety by successfully inheriting the proper experience and functions of the erson responsible for health and safety, etc., the Plan-Do-Check-Act (PDCA) cycle is followed, clarifying related processes and forming an ongoing continual system.



The Group-Wide Health and Safety Conference

#### **Trends in Accidents Occurrence Ratio** (per million labor hours) non-consolidated



# Mental Health Measures

To ensure the physical and mental health of employees, SANYO has a number of measures for mental health.

First, mental health trainings, primarily for managers, and calling upon outside lecturers, are given to ensure more accurate and deeper understanding of mental health in the workplace and to encourage recognition of problems as they arise.

From fiscal 2003, mental health information is being provided to employees over the corporate intranet. In practical terms, this means providing checklists for self diagnosis and introductions to the counseling and other services provided by industrial health centers in each location. For managers actually responsible for health and safety, possible practical approaches to care are listed, and they are made aware of their role in linking their staff to industrial doctors, or staff in charge of employee health management, or consultants and other outside specialists. As a result, referrals from managers or senior staff are increasing, and early recognition of problems is leading to the best possible handling of them.

We also takes its own distinctive approaches at each location. Activities to heighten awareness of health care are performed, such as the distribution by E-mail of "Health Care Mail" including a wide spectrum of information besides mental health and education of "active listening" for mental health counseling, in close association with the industrial doctors and other medical staff of the local industrial health centers

# **Working with Local Communities**

The SANYO Group has contributed to the development of local communities, through communication with them and contribution activities such as human support or donations to a wide range of organizations, strengthening its links with many people.

# **Communications with Local Communities**

# Providing Opportunities to Visit **Factories**

As part of its communications with local communities, each SANYO factory actively encourages visitors, whether as part of education in the schools or as training of central and local government officials. In fiscal 2004, a total of 9,724 visitors of 355 groups visited when the 6 factories' visits were combined.

# The Daito Factory

The Daito Factory welcomed a party of about 100 children of fifth grade in elementary school and showed them over the digital camera production lines, and introduced them to SANYO's environmental preservation activities. We also gave them an opportunity to use the products in taking photographs of each other. The children reported that they

had "enjoyed themselves" or "learned something." The teacher also told us that it had been educationally valuable to be able to hold one of the actual printed circuit boards in his hands and look at it.



# The Shiga Factory

The Shiga Factory was asked to cooperate by helping students of Technical Highschool in Osaka with their postgraduation course studies. A total of 31 came-secondyear students and the teacher responsible for career counseling for them. We had them visit the integrated production line for automatic washing machine/driers. To deepen their understanding of the factory we gave them detailed explanations of the main processes. The students

were interested in the notice-boards on which the technical training given to employees and target setting by employees were displayed, looking at them attentively.







# **Social Contribution Activities**

# Volunteer Activities by Employees

# The "Environment for All" Campaign

The SANYO Committee to Encourage Volunteers, set up by the management and labor, has been carrying out the Environment for All campaign on the themes of environmental preservation and international cooperation since 1999. Its main activity is an overseas work camp in Sarawak, Malaysia where pollution of river water caused by extensive destruction of forests has become a problem.

In October 2004, the fifth overseas work camp was held and ten employees from the SANYO Group participated.

They stayed in one of the local villages and cooperated with the residents, building and installing water tanks and piping for the water supply system to catch water for daily living.



The Fifth Overseas Work Camp

# International Coastal Cleanup Activity

The SANYO Group endorsed the aim of International Coastal Cleanup Activities started by the US nonprofit group, the Ocean Conservancy and has been participating since 1992. Worldwide in scope, it is intended not only to clean the beaches but also to survey the quantity and types of garbage left on them. Its purpose is to formulate environmental protection measures based on the analysis of pollution sources. A total of 972 employees of the SANYO Group had participated by the end of 2004.





International Coastal Cleanup Activities in Nishiki-no-hama (Co-sponsorship)

# **Working with Local Communities**

# Social Contribution Activities

# Supporting Employee Volunteer Activities

# Volunteer Vacations / Volunteer Temporary Leaves

SANYO employees wishing to take part in volunteer or community activities for local community on workdays are allowed to take up to six extra paid holidays per year. Employees planning to participate in long-term volunteer activities are allowed to take temporary leaves for a period from one month to less than a year.

## Examples of past activities

## Volunteer Vacations

Participation in overseas work camps, mangrove planting on Iriomote island, support of welfare facilities, reading volunteers, disaster relief services, and help with a marrow donor registry.

### Volunteer Temporary Leaves

Participation in the Overseas Cooperation Volunteers (JOCV) service (including a predeparture training period) and planning and advertising activities for the Japan Marrow Donation Registry Promotion Conference (JMDRRC).

# Inviting Children of Traffic Victims to the SANYO Professional Baseball All Star Games

Every year, we invite children who have lost parents in traffic accidents to the SANYO Professional Baseball All-Star Game that we regularly sponsor. Fourteen years have passed since 1991, when this program started, and the number of children invited has reached 1,650. On the days of games, our employee volunteers guide the children to their seats and distribute box lunches to help them enjoy the event.

\* Cooperation by the National Agency for Automotive Safety & Victims' Aid (We commit to the Agency the selection of children and their families who are invited and the contact with them.)





The SANYO Professional Baseball All-Star Games

# Patronage of the Arts

# Supporting Osaka Cultural and **Artistic Activities**

We are committed to the promotion of art and culture in Osaka, and cultivation of the talents of young artists. We support the Hakujitsukai art promotion group with awards and the Osaka Symphoniker Orchestra with funding.



The Osaka Symphoniker Orchestra

# Working with local citizens and NPOs / NGOs, etc.

SANYO is increasing its cooperation with representatives of the local community and local NPOs and NGOs through the participation in volunteer activities for environmental protection, events arranged by local government and local communities activities. From now on, we will seize more such opportunities for effective dialogs to build better relationships.

In fiscal 2005, we plan to participate in the Kansai CSR Forum\*, proposed by the Osaka Voluntary Action Center, a Social Welfare Corporation (NPO) in order to have a dialog with NPOs and NGOs more.

\* The forum, initiated in 2005, provides opportunities to consider the state of corporate CSR and, for those engaged in practical CSR activities, to challenge and inspire each other http://cw1.zaq.ne.jp/osakavol/ccc/ccccsr.html

# Support and Donations to Various Groups

# The SANYO Environmental Fund

The completion of the world's largest photovoltaic power generation system, Solar Ark (in December 2001, see P46) encouraged SANYO to establish "the SANYO Environmental Fund" for many kinds of environmental protection activities. This followed in April 2002, with the amount of the fund reflecting the economic effect of the Solar Ark installation. With its secretariat in the Quality, CS & Environment Unit (now, Corporate Environment Center) of SANYO Electric Co., Ltd., the SANYO Environmental Fund has been financially supporting sincere environmental conservation activities by volunteer organizations and NPOs.

Since the foundation was formed, it has completed its first and second terms, and from April 2004 it has started its third term. Total contributions to 18 projects over the three years from April 2002 through March 2005 totaled approximately 24 million yen.



A Summary of the SANYO Environmental Fund and the Activities it has Supported

http://www.sanyo-ecokikin.jp (Japanese only)

# Main Donation Activities in Fiscal 2004

To support relief activities in the areas affected by the Niigata-Chuetsu Earthquake and Typhoon No.23, charity donation achieved a total of 15 million yen which was presented to Ojiya City and Sumoto City, and to employees affected by the disaster.

To support those affected by the earthquake along the coast of Sumatra and the tsunami that followed in the Indian Ocean, charity donation achieved a total of 4,800,000 yen that was donated to the Japan Red Cross and the Asia Volunteer Center (an NPO). Group companies located in Southeast Asia—the Philippines, Malaysia, Singapore, Indonesia and Vietnam—also engaged in their own independent charity donation activities, and these, with funds from each company, totaled 19 million yen in donations to the various national Red Cross or Red Crescent organizations.

In addition to disaster relief, donations were made and support given for regional exchanges, international cultural exchanges, and the promotion of cultural, academic and sports when we consented to the aim of such activities.

## The SANYO Environmental Fund Support Recipients (April 2002 to March 2005)

Name of organization	Location	Theme of activity	FY
Osaka Junior Chamber, Inc.	Chuo-ku, Osaka City	Program to create an abundant earth	2002
Society for Constructing a Citizen Power Station – Otsu	Otsu City, Shiga Prefecture	Activity sponsored by Otsu Environmental Forum	2002
Otsu Environmental Forum	Otsu City, Shiga Prefecture	Environment-oriented citizen movement based at the photovol- taic power generation station constructed by citizens	2002
Anpachi-cho, Anpachi-gun, Gifu Prefecture	Anpachi-gun, Gifu	Planting of ecological trees at Heartpia Anpachi, a lifelong learning complex in Anpachi-cho	2002
NPO Mori-no-kai	Maebashi City, Gunma Prefecture	Support for maintenance of tropical rain forests and global environmental efforts	2002
NPO Asia Volunteer Center (AVC)	Kita-ku, Osaka City	South-South Project for mangrove reforestation in Plicat- Sarawak	2003
Kasai Yumekko Club	Kasai City, Hyogo Prefecture	Fabrication of a solar car	2003
Osaka Council, Boy Scout Association of Japan	Chuo-ku, Osaka City	Environmentally conscious experiential activities — "We are environmental Pioneers"	2003
NPO KANKYONET 21	Isezaki City, Gunma Prefecture	Consideration of and actions for countermeasures against global warming	2003
Youngsters' Science Festival  – Gifu Festival Executive Committee	Gifu City, Gifu Prefecture	2003 Gifu Youngsters' Science Festival at the Solar Ark	2003
Amanogawa Cleanup Society	Moriguchi City, Osaka Prefecture	Natural environment conservation in Katano City around the Amanogawa River, and support for healthy youth	2003
NPO Fujisan Club	Mishima City, Shizuoka Prefecture	Mt. Fuji environmental education software development project	2003
ECO-SAITAMA	Saitama City, Saitama Prefecture	Ecological living in life-abundant gardens	2003
Ecosystem Conservation Society Japan	Toshima-ku, Tokyo	Provision of information and teaching aids, as well as support for leader training to create a special area in Nepal where people can coexist with wildlife	2003
Otsu Environmental Forum	Otsu City, Shiga Prefecture	Supporting the Otsu Environmental Forum's raw garbage recycling business "Soil reformation trends and the quality of cultivated vegetables" analyzing business.	2004
Soni National Nature Children's Center	Soni Village, Uda-gun, Nara Prefecture	Teaching young people the importance of nature through experiences of activities in nature and staying overnight; enriching strengthening their minds bodies in the "Kids' Adventure Club" and the "SONI Winter Wonderland."	2004
Youngsters' Science Festival  - Executive Committee	Gifu City (Science Education, Faculty of Education, Gifu University)	2004 Gifu Youngsters' Science Festival at the Solar Ark	2004
NPO Nature Science Club	Ogaki City, Gifu Prefecture	Gifu Earth Environment School	2004

## **Reference Information**

SANYO Electric Co., Ltd. Administrative Organization (as of June 29, 2005)

#### **General Meeting of Shareholders Home Electronics Group** Board of Chairman & CEO **Directors** Group Executive Committee AV Company President & COO Chairman of the HA Company Executive Vice President & CFO → HA International H.Q. Vice Chairman of the Board **Personal Electronics Group Finance** - Telecom Company Headquarters Nominating DI Company Committee Accounting Unit OEM Sales H.Q. Compensation Finance Unit Committee Facility Management **Component & Device Group** Internal Audit Unit Committee Electronic Device Company Insurance Unit Semiconductor Company IR Unit Oisplay H.Q Financial Strategy Planning Unit **Power Solutions Group** Corporate Auditors Mobile Energy Company General Affairs/ Human Resource Headquarters Board of Lo Automotive Company **Auditors** Human Resource Unit **Commercial Solutions Group** Employee Health Management Unit Commercial Solutions Company General Administration Clean Energy Company Unit Medical Business H.Q. Corporate External Relations Unit Sales & Marketing Group **Executive Office Unit** Consumer Domestic Sales H.Q. SANYO Sales & Marketing Corp. - Governmental & Institutional Market Development H.Q. Legal Headquarters Legal Unit **Innovation Group CSR Unit** -● R&D H.Q. **Business Planning &** Corporate Audit Office Management Group Brand Development H.Q. Corporate Strategy H.Q. Corporate Cross-functional Management H.Q. Business Development H.Q. International Management H.Q. **D&D Steering Committee E&E Steering Committee C&C Steering Committee**

## List of ISO14001 Certified Companies (as of March 31, 2005)

Type of certification	Domestic/ Overseas	Nam	e of company (date of certification acqu	uisition)	Manufacturing /Sales/Other
Entire GEMS	Domestic	SANYO Electric Co., Ltd. SANYO Sales & Marketing Corporation SANYO Electric Logistics Co., Ltd. NTT DATA SANYO System Corporation SANYO Technosound Co., Ltd. SANYO Multimedia Sales Co., Ltd. SANYO MAVIC · MEDIA Co., Ltd. Tottori SANYO Electric Co., Ltd. Torisan Business Service Co., Ltd. Kyoei SANYO Industry Co., Ltd. Harima SANYO Industry Co., Ltd. SANYO Air-conditioners Corporation SANYO Consumer Marketing Co., Ltd. SANYO Living Supply Co., Ltd.	SANYO Electric Biomedical Co., Ltd. SANYO Electric Techno Clean Co., Ltd. SANYO Electric Golf Systems Co., Ltd. SANYO Electric Golf Systems Co., Ltd. SANYO Tokyo Manufacturing Co., Ltd. SANYO Showa Panel System Co., Ltd. Prodex Co., Ltd. Gifu SANYO Electronics Co., Ltd. SK Display Co., Ltd. SANYO Semicon Device Co., Ltd. OS Electronics Co., Ltd. Shin-Nichi Electronics Co., Ltd. SANYO Solar Energy System Co., Ltd. SANYO Tuners Industries Co., Ltd. SANYO Telephone Service Co., Ltd.	SANYO Creative Service Co., Ltd. SANYO Sky Resort Co., Ltd. SANYO Telecommunication Engineering Co., Ltd. SANYO Reform Co., Ltd. SANYO Associate Support Co., Ltd. SANYO Human Network Co., Ltd. SANYO Cash Management Center Co., Ltd. SANYO Design Center Co., Ltd. SANYO Design Center Co., Ltd. SANYO Testing Laboratory Corporation SANYO Adnet Corporation SANYO Investment Corporation SANYO Heart Ecology Co., Ltd. SANYO Life Co., Ltd. <all 01="" 3="" acquired="" in=""></all>	16 manufacturers 8 sales 18 others
	Domestic	Niigata SANYO Electronic Co., Ltd. <9/95> Kanto SANYO Semiconductors Co., Ltd. <6/97> Techno Device Co., Ltd. (included in Kanto SANYO Semiconductors Co., Ltd.) <8/97> SANYO Energy Twicell Co., Ltd. <10/97> Tottori SANYO Electric Co., Ltd. Photonics BU <12/97> Sendai SANYO industries Co., Ltd. (included in Tottori SANYO Electric Co., Ltd. (reluded in Tottori SANYO Electric Co., Ltd. Photonics BU) <12/97>	SANYO Showa Panel System Co., Ltd. (Ashikaga Plant). <11/97> Shimane SANYO Industrial Co., Ltd. <12/97> SANYO Seimitsu Co., Ltd. <12/97> SANYO GS Soft Energy Co., Ltd. <12/97> SANYO Energy Tottori Co., Ltd. <2/98> SANYO Mediatec Co., Ltd. <3/98> Sanwa Electric Co., Ltd. <3/98> Saga SANYO Industries Co., Ltd. <3/98>	SANYO Opt. Electronics Co., Ltd. <3/98> SANYO Homes Corporation <10/99> SANYO Energy Nandan Co., Ltd. <3/00> SANYO Hikari Sales Co., Ltd. <4/00> Tsuna Electronica Co., Ltd. <7/00> SANYO Energy Logistics Co., Ltd. <3/01> Prodex Co., Ltd. <2/04>	19 manufacturers 1 sales 1 other
Independent	Overseas	SANYO Electronic (Taichung) Co., Ltd. <12/96> SANYO Industries (U.K.) Limited <12/96> Korea Tokyo Silicon Co., Ltd. <4/97> SANYO Energy (Hong Kong) Company Limited <5/97> P.T. SANYO Electric Home Appliances (Suzhou) Co., Ltd. <8/97> Dalian SANYO Cold-Chain Co., Ltd. <9/97> SANYO Semiconductor (Shekou) Ltd. <9/97> SANYO Semiconductor (Co., Ltd. <9/97> SANYO Manufacturing Corporation <9/97, 11/97> Shenzhen SANYO Huaqiang Energy Co., Ltd. <12/97> SANYO Airconditioners Manufacturing Singapore Pte. Ltd. <12/97> SANYO Electric (Shekou) Limited. <1/98> Tottori SANYO Electric (Shenzhen) Ltd. <1/98> SANYO Component Europe GmbH <1/98> SANYO Energy (UK) Company Limited <1/98> Dongguan Huaqiang SANYO Motor Co., Ltd. <2/98>	Shenzhen SANYO Huaqiang Optical Technology Co., Ltd. <3/98> Dalian SANYO Compressor Co., Ltd. <3/98> SANYO ESE Corporation <3/98> SANYO Energy (U.S.A.) Corporation <3/98> SANYO Energy (U.S.A.) Corporation <3/98> SANYO Espana, S.A. (Unipersonal) <3/98> SANYO Espana, S.A. (Unipersonal) <3/98> SANYO Semiconductor (Thailand) Co., Ltd. <4/98> SANYO Electric (Penang) Sdn. Bhd. <4/98> P.T. SANYO Compressor Indonesia <5/98> Dalian SANYO Refrigeration Co., Ltd. <6/98> Dalian SANYO Flectro-Mechanical Co., Ltd. <6/98> Dalian SANYO Home Appliance Co., Ltd <7/98> P.T. SANYO Jaya Components Indonesia <7/98> P.T. SANYO Jaya Components Indonesia <8/98> SANYO Gallenkamp PLC <7/98> P.T. SANYO Industries Indonesia <8/98> Sanwa Electric Philippines, Inc. <10/98> SANYO PT (M) Sdn.Bhd. <11/98> SANYO Automedia Sdn. Bhd. <12/98> Japanese branch is under operation within GEMS) P.T. SANYO Electronics Indonesia	SANYO Semiconductor Manufacturing Philippines Corporation <12/98> Tesonic-Tottori SANYO Electronic Co., Ltd. <1/99> Dalian SANYO Air Conditioner Co., Ltd. <1/99> P.T. Jaya Indah Casting <2/99> Dalian SANYO Meica Electronics Co., Ltd. <5/99> SANYO Solar (USA) L.L.C. <1/00> SANYO HA Asean Corporation <3/00> SANYO HA Asean Corporation <3/00> SANYO GS Battery (Shanghai) Ltd.<11/01> P.T. SANYO Precision Batam <11/01> P.T. SANYO Precision Batam <11/01> SANYO Energy (Tianjin) Co., Ltd. <12/01> SANYO Capacitor (Philippines) Corporation <12/01> SANYO Energy (Taiwan) Co., Ltd. <1/02> SANYO Energy (Suzhou) Co., Ltd. <11/02> SANYO Energy (Suzhou) Co., Ltd. <11/02> Shenyang SANYO Airconditioner Co., Ltd. <2/03> SANYO Energy (Beijing) Co., Ltd. <12/03> Guangdong SANYO Air Conditioner Co., Ltd. <7/04>	54 manufacturers 1 sales 1 other

Note 1: Tottori SANYO Electric Co., Ltd. LED Business Unit in the last fiscal year was changed to Photonics BU. Tottori SANYO Electric Co., Ltd. LCD Business Unit was integrated to SANYO EPSON Imaging Devices Corporation.

Note 2: Since the last fiscal year, SANYO Home Appliance Vietnam Corporation was changed to SANYO HA Asean Co., Ltd., Tianjin Lantian SANYO Energy Co., Ltd. to SANYO Energy (Tianjin) Co., Ltd., Dalian Meica Electronics Co., Ltd to Dalian SANYO Meica Electronics Co., Ltd, and SANYO Energy Europe Ltd., was to SANYO Component Europe Ltd.

# **Reference Information**

## ◆ GRI (Sustainability Reporting Guidelines 2002) Table

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5. Performance			170
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Oustorners	EC2	Geographic breakdown of markets	P4
	EC3	Cost of all goods, materials, and services purchased	
Suppliers	EC4	Percentage of contracts that were paid in accordance with agreed terms, excluding agreed penalty	_
		arrangements  Total payroll and benefits (including wages, pension,	
Employees	EC5	other benefits, and redundancy payments) broken down by country or region	P68
Providers of	EC6	Distributions to providers of capital broken down by interest on debt and borrowings, and dividends on all	
Capital		classes of shares, with any arrears of preferred dividends to be disclosed	
	EC7	Increase/decrease in retained earnings at end of period	
	EC8	Total sum of taxes of all types paid broken down by country	_
	EC9	Subsidies received broken down by country or region	P76
Public Sector		Donations to community, civil society, and other groups	
	EC10	broken down in terms of cash and in-kind donations	P76
Environmenta	l Perform	per type of group nance indicators	
	EN1	Total materials use other than water, by type	P33
Materials		Percentage of materials used that are wastes	
	EN2	(processed or unprocessed) from sources external to the reporting organization	
	EN3	Direct energy use segmented by primary source	P45
Energy	EN4	Indirect energy use	P45
	EN17	Initiatives to use renewable energy sources and to increase energy efficiency	P45-46
Water	EN5	Total water use	P52
	EN6	Location and size of land owned, leased, or managed	
Die alle se lt :		in biodiversity-rich habitats	
Biodiversity	EN7	Description of the major impacts on biodiversity associated with activities and/or products and services in terrestrial, fresh-water, and marine environments	_
		Greenhouse gas emissions (CO <sub>2</sub> , CH <sub>4</sub> , N <sub>2</sub> O, HFCs	
	EN8	PFCs SF6)	P43-44
Fasioniono	EN9	Use and emissions of ozone-depleting substances	P47
Emissions, Effluents.	EN10	Nox, Sox, and other significant air emissions by type	P50
and waste	EN11	Total amount of waste by type and destination	P48
	EN12	Significant discharges to water by type Significant spills of chemicals, oils, and fuels in terms of	P48
	EN13	total number and total volume	P52
Products and	EN14	Significant environmental impacts of principal products and services	P34-40
Services	EN15	Percentage of the weight of products sold that is reclaimable at the end of the products' useful life and	P41-42
		percentage that is actually reclaimed Incidents of and fines for non-compliance with all	
Compliance	EN16	applicable international declarations / conventions /	P53
COMPILIE TOO	21110	treaties, and national, sub-national, regional, and local regulations associated with environmental issues	1 00
T	EN 10 :	Significant environmental impacts of transportation	Dic
Transport	EN34	used for logistical purposes	P48
Overall	EN35	Total environmental expenditures by type	P31-32
Social Perfori			
Labour Practic	es and Dec	Breakdown of workforce, where possible, by region /	
		country, status (employee / non-employee),	
		employment type (full time / part time), and by	
Frank:	LA1	employment contract (indefinite or permanent / fixed term or temporary). Also identify workforce retained in	P68-69
Employment		conjunction with other employers (temporary agency	
		workers or workers in co-employment relationships), segmented by region / country	
		Net employment creation and average turnover	
	LA2	segmented by region / country	P68-69
		Percentage of employees represented by independent	
		trade union organizations or other bona fide employee representatives broken down geographically OR	_
Labour/	LA3	percentage of employees covered by collective	P72
Management		bargaining agreements broken down by region /	
Relations	·	country  Policy and procedures involving information,	
	LA4	consultation, and negotiation with employees over	
	LA4	changes in the reporting organization's operations	
		(e.g., restructuring)	1
		Draotices on recording and natification of accurational	
Health and	LA5	Practices on recording and notification of occupational accidents and diseases, and how they relate to the ILO	P72-7

		Contents	Pages
	LA6	Description of formal joint health and safety committees comprising management and worker representatives and proportion of workforce covered	P73
Health and Safety	LA7	by any such committees Standard injury, lost day, and absentee rates and number of work-related fatalities (including	P73
	LA8	subcontracted workers)  Description of policies or programmes (for the workplace and beyond) on HIV / AIDS	
	LA9	Average hours of training per year per employee by	
Training and	LA16	category of employee  Description of programmes to support the continued employability of employees and to manage career	P70-71
Education	LA17	endings Specific policies and programmes for skills	P70-71
	LA10	management or for lifelong learning  Description of equal opportunity policies or programmes, as well as monitoring systems to ensure	P68-69
Diversity and Opportunity	LA11	compliance and results of monitoring Composition of senior management and corporate governance bodies (including the board of directors), including female / male ratio and other indicators of	
Human Rights		diversity as culturally appropriate	
	HR1	Description of policies, guidelines, corporate structure, and procedures to deal with all aspects of human rights relevant to operations, including monitoring mechanism and results	
	HR2	Evidence of consideration of human rights impacts as part of investment and procurement decisions, including selection of suppliers / contractors	
Strategy and Management	HR3	Description of policies and procedures to evaluate and address human rights performance within the supply chain and contractors, including monitoring systems and results of monitoring	
	HR4	Description of global policy and procedures / programmes preventing all forms of discrimination in operations, including monitoring systems and results of monitoring	
Freedom of Association and Collective Bargaining	HR5	Description of freedom of association policy and extent to which this policy is universally applied independent of local laws, as well as description of procedures / programmes to address this issue	P72
Child Labour	HR6	Description of policy excluding child labour as defined by the ILO Convention 138 and extent to which this policy is visibly stated and applied, as well as description of procedures / programmes to address this issue, including monitoring systems and results of monitoring.	
Forced and Compulsory Labour	HR7	Description of policy to prevent forced and compulsory labour and extent to which this policy is visibly stated and applied as well as description of procedures / programmes to address this issue, including monitoring systems and results of monitoring	
Society		Description of policies to manage imposts on	
Community	SO1	Description of policies to manage impacts on communities in areas affected by activities, as well as description of procedures / programmes to address this issue, including monitoring systems and results of monitoring	_
	SO4	Awards received relevant to social, ethical, and environmental performance	Web
Bribery and Corruption	SO2	Description of the policy, procedures/ management systems, and compliance mechanisms for organisations and employees addressing bribery and corruption	
Political Contributions	SO3	Description of policy, procedures / management systems, and compliance mechanisms for managing political lobbying and contributions	
Product Respo	II ISIDIIITY	Description of policy for preserving customer health	
Customer Health and Safety	PR1	and safety during use of products and services, and extent to which this policy is visibly stated and applied, as well as description of procedures / programmes to address this issue, including monitoring systems and results of monitoring	P61-63
Products and Services	PR2	Description of policy, procedures / management systems, and compliance mechanisms related to product information and labelling	P61-63
Advertising	PR9	Description of policies, procedures / management systems, and compliance mechanisms for adherence to standards and voluntary codes related to advertising	P63
Respect for Privacy	PR3	Description of policy, procedures / management systems, and compliance mechanisms for consumer privacy	P64

## Independent Review Report



# **DET NORSKE VERITAS**

## Independent Review Report

November 28, 2005

To: SANYO Electric Co., Ltd.

#### Introduction

Det Norske Veritas AS (DNV) has reviewed "Sustainability Report 2005" published by SANYO. SANYO is responsible for the contents of the report and DNV is responsible for conducting a high-level independent review of the report to establish whether the information reported is accurate.

## Review scope and procedures

Currently there are no formal generally accepted international sustainability reporting and verification standards. Therefore, DNV has referred to the Draft Japanese guidelines for environmental reporting verification (Ministry of Environment, Japan, 2004) and emerging good practices and guidance.

DNV's review was conducted at Corporate Environment Center and CSR Unit at SANYO's Headquarters (Moriguchi City, Osaka, Japan) on 11 August 2005 and has not included any other site visits. DNV has therefore not reviewed the reliability of data management systems at the SANYO's local sites and nor verified data presented in the report. No other stakeholder engagement was conducted.

## Overview of review processes

DNV reviewed the following items, through document review and interviews with management responsible for processes to collect and interpret information from individual sites, at SANYO's Headquarters, and

- (1) Reliability of data management systems at the SANYO's Headquarters, covering the collation and
- interpretation of the information received from individual sites.

  (2) Consistency of information presented in the report with supporting documents obtained during the interview process on a sample basis.

## Results of the review

As a result of the review, we are not aware of any material modification that should be made to the parameters, environmental accounting indicators and other information in the SANYO's report, consistent with the information DNV reviewed at the Headquarters.

> Tsuyoshi Nakao Project Leader DNV Certification, Japan

General Manager DNV Certification, Japan

## Contacts for Public Materials

D. I. II. II. II. II. II. II. II. II. II	_	Where to get information				
Publicity materials	Form	Inquiries	Telephone	Facsimile		
Company Brochure	Printed material (Japanese/English)	Corporate Communications Headquarters Media Relations Unit	+81 (6) 6991-1181			
Annual Report	Printed material (Japanese/English)	Finance Headquarters IR Unit	+81 (6) 6991-1181	+81 (6) 6992-0009		
	Printed material	Finance Headquarters Accounting Unit	+81 (6) 6991-1181	+81 (6) 6994-1572		
Financial Statements	Electronic media	Open to inspection on the Financial Services Agency's EDINET system		_		
SANYO Technical Review	Electronic media	Innovation Group R&D H.Q. Engineering Cross Function Unit	Get information from the web site (Japanese only) ( http://www.sanyo.co.jp/giho/ )			



Let's conduct business and our lives in an environment-friendly manner!

# **SANYO Electric Co., Ltd.**

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## **About Cover**

The SANYO Group is committed to becoming an indispensable element to the earth and life—the people who live on it. In other words, an entity like the sun itself. Our cover shows a sunflower motif that recalls the image of the sun, and thus symbolizes the new SANYO Group.

