



Environmental Data Book 2011

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Published information is based on environmental data and the site report of all production locations in scope of this report.

*Detailed social information is reported through "CSR report" and our HP "Approach to CSR".
*Detailed financial information is reported through "Annual Report".

Editorial Policy

■ Purpose of Publication

The aims of this data book is to explain ROHM environmental activity for achievement of sustainable society with low carbon, and to communicate with stakeholders that surround ROHM Group.

■ Basic Policy

ROHM has disclosed environmental data every year since FY 2000. First, we started to publish as “Environmental Report”. Since FY 2004, we have published as “Social/Environmental Report”, which contents expand not only to the environmental side but even to the social side. After that, we changed the title to “CSR Report” in FY 2007 and concentrated on readability and understandability with visual concept to support a broad level of readers. To disclose environmental data and environmental activity detailedly, we have reported as “Environmental Data Book”, independent of “CSR report”.

● Scope of this Report

The subject of this report is 18 locations: ROHM and its affiliates(9 domestic locations and 9 overseas locations). 4 companies of LAPIS Semiconductor Group(3 domestic companies and 1 overseas company) are included in the affiliates. Although ROHM activity is mainly focused in this report, the matters limited to specific affiliates are also mentioned. (All of production locations are contained in scope of this report.)

● Period covered by this report

April 1, 2010 to March 31, 2011

If necessary, previous and latest activities are also included in this report.

Next Publication Plan

Scheduled to be released in September 2012

Reference Guidelines

- Ministry of the Environment
「Environmental Report Guidelines(2007 edition)」
- Ministry of the Environment
「Environmental Accounting Guidelines(2005 edition)」
- Global Reporting Initiative
「Sustainability Reporting Guidelines(G3)」

Abbreviated Names of Overseas Affiliates

REPI	: ROHM Electronics Philippines, Inc.	(Philippines)
RIST	: ROHM Integrated Systems (Thailand) Co., Ltd.	(Thailand)
RSC	: ROHM Semiconductor (China) Co., Ltd.	(China)
REDA	: ROHM Electronics Dalian Co., Ltd.	(China)
RWEM	: ROHM-Wako Electronics (Malaysia) Sdn. Bhd.	(Malaysia)
RMPI	: ROHM Mechatech Philippines, Inc.	(Philippines)
RMT	: ROHM Mechatech (Thailand) Co., Ltd.	(Thailand)

*Changes in the Names of Affiliates since October 1, 2011

LAPIS Semiconductor Co., Ltd.	(←OKI Semiconductor Co., Ltd.)
LAPIS Semiconductor Miyagi Co., Ltd.	(←OKI Semiconductor Miyagi Co., Ltd.)
LAPIS Semiconductor Miyazaki Co., Ltd.	(←OKI Semiconductor Miyazaki Co., Ltd.)
LAPIS Semiconductor (Ayutthaya) Co., Ltd.	(←OKI (Thailand) Co., Ltd.)



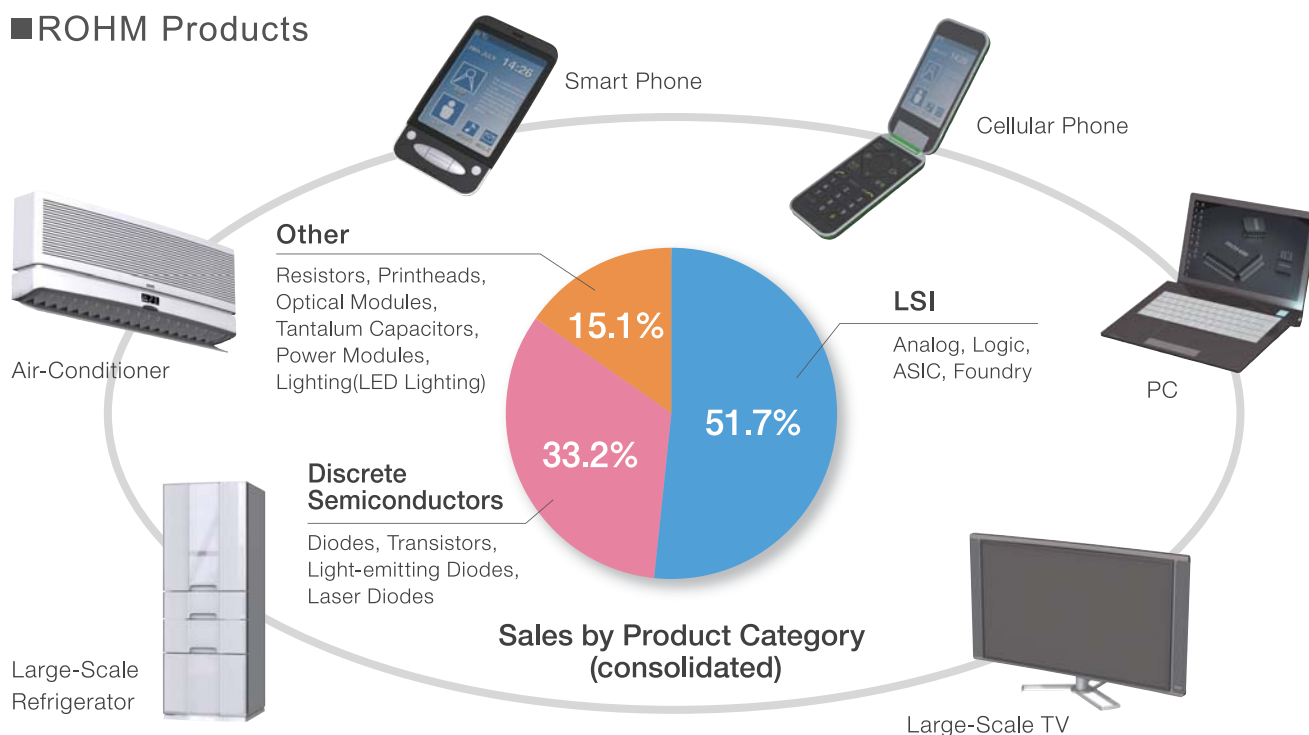
Corporate Data and ROHM Products

■ Corporate Data

Trade Name	ROHM Co., Ltd.
Address (Head Office)	21 Saiin Mizosaki-cho, Ukyo-ku, Kyoto 615-8585 Japan TEL: +81-75-311-2121 FAX: +81-75-315-0172
Date of Establishment	September 17, 1958
Paid-in Capital	86,969 million yen as of March 31, 2011
President	Satoshi Sawamura
Number of Employees (consolidated)	21,560 as of March 31, 2011
Net Sales (consolidated)	341,885 million yen, year ended March 31, 2011



■ ROHM Products



Environmental Policy

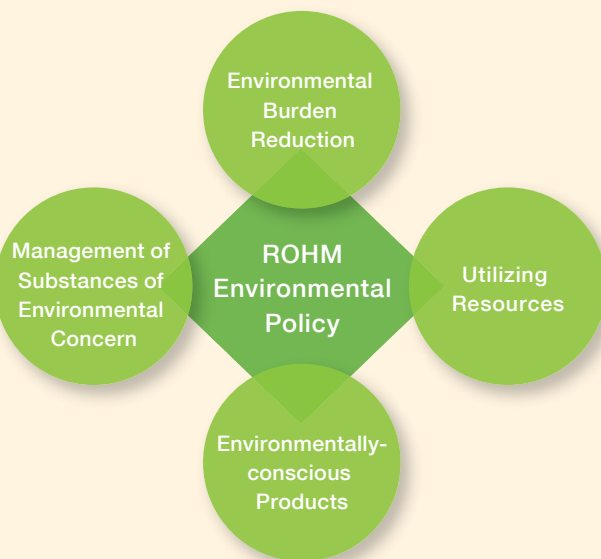
ROHM Environmental Policy

ROHM's everlasting conscientiousness to preserve the global environment contributes to the healthy existence of humanity and to the continued prosperity of the company

1. Conserve energy by initiating innovative methods in all corporate activities.
2. Develop environmentally-conscious products that minimize the environmental burden by employing responsible processes throughout the life cycle of each product.
3. Give priority to the procurement of materials and products that have the least levels of adverse impact on the environment.
4. Comply with international and national environmental laws and regional agreements.
5. Endeavor to train employees and encourage our constituents to actively care for their surroundings and the global environment.
6. Develop positive relationships with the community through contributions to the local environment and the proper disclosure of environmental data.

ROHM established ROHM Environmental Policy applicable to the entire group company on October 20, 1997 based on the environmental international standard ISO 14001. Moreover, corresponding to the amendments in ISO 14001:2004(2nd edition:revised in 2004), we revised ROHM Environmental Policy completely in a clear, concise and accurate content furthermore on April 1, 2006.

ROHM's Action to Global Environmental Conservation

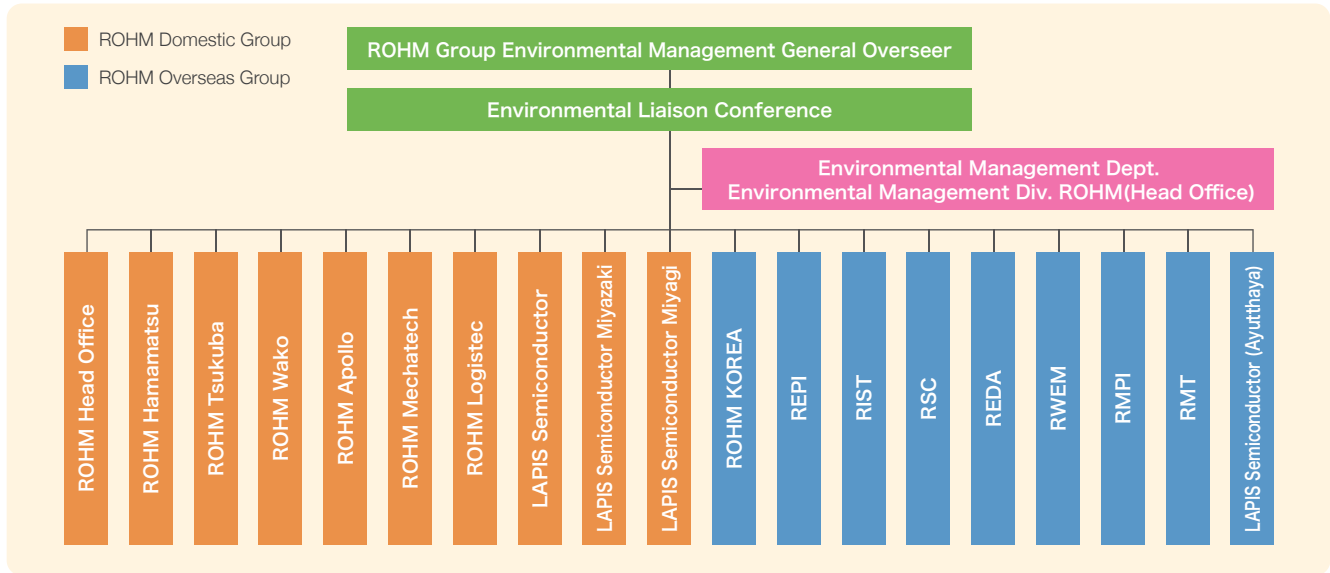


ROHM takes various actions to protect global environment based on ROHM Environmental Policy. We think that a corporate activity that contributes to the environment is not only producing environmentally-conscious products but even reducing the environmental burden throughout production process. Especially regarding the prevention of global warming, we take actions enthusiastically to reduce CO₂ and other greenhouse gases generated from ROHM corporate activities. Moreover, hereafter, we'll establish long-term objectives and targets taking account of biodiversity, and take actions to realize sustainable society.

Environmental Management System

ROHM has expanded the ROHM Group common environmental management system, which is based on the international environmental standard ISO 14001, to the entire Group, and all of its employees are making efforts toward continual improvement of the environment. The ROHM Group's environmental actions expand ceaselessly as consolidated basis with a global viewpoint.

ROHM Group Environmental Management Promotion System



The management promotion organization of each company in ROHM Group is building an organization with the same function as the ROHM Head Office, and is establishing subcommittees according to each actual situation.

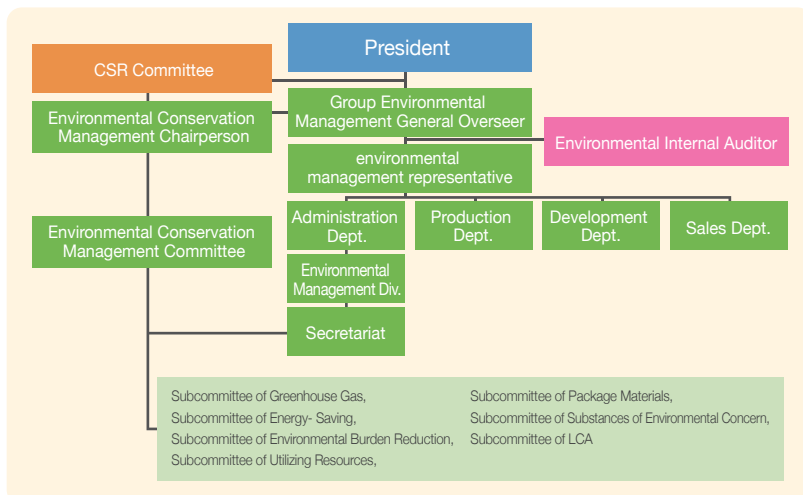
ROHM Group environmental liaison conference is held basically twice a year on June and December every year. Environmental management representatives and the members in charge from affiliates attend it, where we discuss group's environmental action plans, confirmation of achievement of environmental targets and latest environmental problem in ROHM Group. FY 2010 1st (June) environmental liaison conference was held at Kyoto Technology Center, it is ecological Green Building(→P17), where we conducted meeting to report environmental accounting from each company and to study MFCA*(Material Flow Cost Accounting) and LCA** (Life Cycle Assessment).

*1)cf. P22 *2)cf. P26



FY2010 Environmental Liaison Conference (June 17~18, 2010)

ROHM Environmental Management Promotion System



The environmental management promotion organization in ROHM Head Office started as the organization which conducted actions mainly about antipollution in 1990 and it was reconstructed into the new promotion organization that took account of global environment. In this organization, ROHM environmental conservation management committee which deliberates the major plan and policy about ROHM environmental activities, and seven subcommittees which constitute it, have played the important role. The subcommittee is composed of the experts, the engineers, and the related national qualification holders of the field, and that subcommittee chairperson serves as a committee member of ROHM environmental conservation management committee. The committee and subcommittee meeting are held once a month.

Environmental Internal Audit System

In ROHM Group, environmental internal audits are conducted periodically in accordance with ISO 14001 requirements. Internal audit team evaluates the effectiveness of the environmental management system based on ISO 14001, the compliance with environmental laws and the validity of results of the environmental activities. In addition, ROHM operates unique, unified environmental internal audit system to maintain and manage the environmental management system effectively throughout the entire Group.

In unified environmental internal audit system, unified audit team is composed of ROHM Group members and conducts environmental internal audit at each group company once a year. As a result of this, the level differences of the environment management activity of each company are corrected, and the effective environmental activity as a whole group is promoted. Especially, we check predominantly the accuracy of an environmental internal audit which is carried out at each company and the environmental facilities and verify environmental impacts in every aspect in order to prevent environmental accident.

In order to enhance and improve environmental internal audit system, ROHM Group promote that employees get qualification for environmental internal auditor, and conduct education program to auditors periodically.

ROHM Group Registered Environmental Internal Auditors

Qualifications	Number of Registrants(persons)
Employees who complete official environmental surveillance auditor training	19
Employees who complete environmental internal auditor training	335
Employees trained as environmental internal auditor in individual companies	85
Total	439

(As of March 31, 2011)



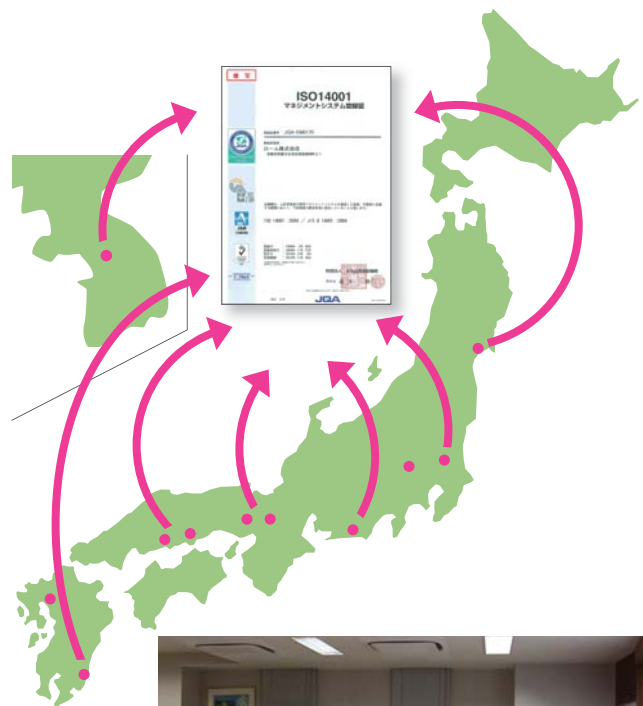
Unified environmental internal audit at RIST (December 9~10, 2010)

Integrated ISO 14001 System

ROHM Head Office obtained the certification of ISO 14001 for the first time in ROHM group. After that, although each group company completed obtaining the certification individually, we decided to newly acquire the integrated certification of the entire domestic group including ROHM KOREA in 2000. The reason why we decided like this was because we tried to take up as the entire group's environmental problem when a group company had environmental problem, in order to clarify the individual measure and the measure as the entire group, and to attain unification of effective environmental activity and information.

In November 2000, ROHM obtained ISO 14001 certification as integrated domestic group. Overseas locations established the environmental management system as self-declaration. At overseas locations, ROHM unified environmental internal audit team conducts the audit with common manuals every year and evaluates the validity of self-declaration strictly to maintain their environmental management system as well as that in integrated domestic Group.

Moreover, certification at ROHM Logistec Co., Ltd. which is a consolidated distribution company, attract a great deal of attention because ROHM conducts the global environmental conservation activities not only at production locations but in the entire group.



2010 JQA surveillance audit(November 16, 2010)

Environmental Targets

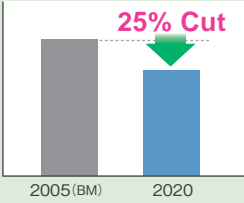
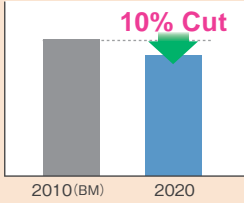
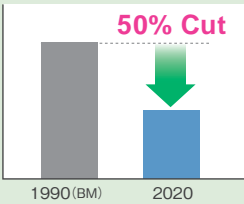
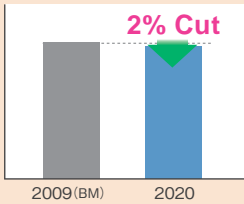
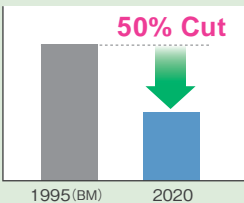
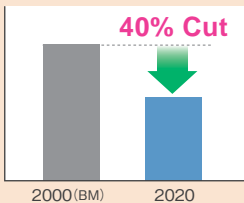
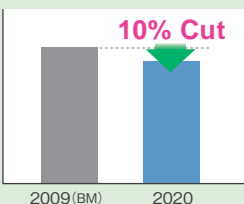
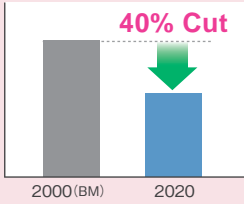
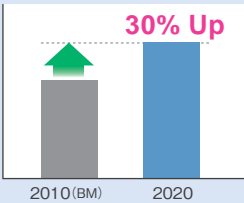
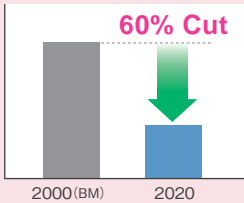
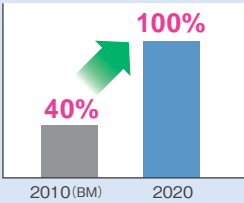
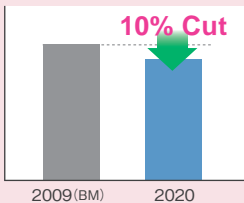
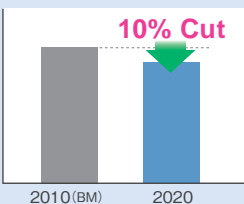
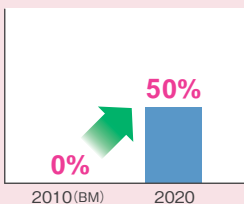
Environmental Targets:2010 Environmental Targets and Results/ 2011 Environmental Targets

○:Achieved x:not Achieved

2010 Environmental Targets	ROHM Head Office	Domestic Group consolidated	Overseas Group consolidated	ROHM Group consolidated	2011 Environmental Targets
1.CO₂ Countermeasures at Each Sites					
1)Implement measures to reduce CO ₂ emission in FY 2010 by 1% from the previous year's level.	✕ 2.6%	✕ 0.69%	○ 2.1%	✕ 0.67%	1)Reduce CO ₂ emission by 1% in FY 2011 from the actual of FY 2010.
2)Reduce CO ₂ emission per unit in FY 2010 by 1% from the previous year's level.	○ 1.6%	✕ 0.35%	○ 3.5%	○ 1.6%	2)Reduce CO ₂ emission (per production unit) by 2% in FY 2011 from the actual of FY 2010.
3)Reduce Greenhouse Gas(PFCs, SF ₆ , etc) emission in FY 2010 by at least 3% from the FY 2005 level.	○ 88.6%	○ 71.0%	—	○ 71.0%	3)Reduce Greenhouse Gas emission (PFCs, SF ₆ , etc) by more than 14% f in FY 2011 from the actual of FY 1995.
4)Reduce CO ₂ emission energy consumption in offices in FY 2010 by 1% from the previous year's level through energy-saving promotion.	✕ 10.6%	✕ 4.2%	✕ 5.6%	✕ 4.7%	4)Promote the energy conservation at offices and reduce CO ₂ emissions by 1% in FY2011 from the actual of FY2009.
2.CO₂ Countermeasures in the Product Lifecycle					
1)Increase CO ₂ emission reduction through use of environmentally-conscious products in FY 2010 by 2% from the previous year's level.	○ 9.6%	—	—	○ 9.6%	1-1)Increase CO ₂ emission reduction through the use of environmentally-conscious products to 3% more than FY2010 levels by FY2011.
-----	—	—	—	—	1-2)Increase the ratio of environmentally-conscious products that comprise sales profits to 50% in FY2011.
2)Research the current CO ₂ emission per logistics unit and prepare a reduction plan.	○	—	—	○	2)Reduce CO ₂ emission level in logistics (per production unit) by 1% in FY2011 from the actual of FY 2010.
3.Reduction of Environmental Impact					
1)Reduce PRTR substances consumption per unit in FY 2010 by 1% from the previous year's level.	○ 3.7%	○ 8.9%	○ 5.3%	○ 8.0%	1)Reduce handling volume of PRTR substances(per production unit) by 1% in FY2011 from the actual of FY 2010.
2)Research new technology to reduce chemical (subject to voluntary reduction) consumption and prepare a chemical reduction plan.	○	○	○	○	2)Reduce handling volume of chemical substances(voluntarily reduction substances) by 2% in FY2011 from the actual of FY 2009.
3)Reduce VOC emission in FY 2010 by 32% from the 2000 level.	○ 71.6%	○ 37.2%	—	○ 37.2%	3)Reduce VOC discharge volume by 33% in FY 2011 from the actual of FY 2000.
4.Effective Use of Resources					
1)Maintain zero emission and reduce waste generation per unit in FY 2010 by 2% from the previous year's level on a domestic consolidated basis.	○ 7.0%	✕ 0.39%	—	✕ 0.69%	1)Maintain zero emission in domestic group consolidated and reduce waste volume(per production unit) by 2% in FY2011 from the actual of FY 2010.
2)Reduce waste generation per unit in FY 2010 by 2% from the previous year's level on overseas consolidated basis.	—	—	✕ 1.6%		2)Reduce waste volume (per production unit) in overseas group consolidated by 2% in FY 2011 from the actual of FY 2010.
3)Research the recycling technology to reduce water consumption and prepare a water eduction plan.	○	○	○	○	3)Implement measures to reduce water consumption by 1% in FY 2011 from the actual of FY 2010.
-----	—	—	—	—	4)Increase the usage ratio of eco-reel(reduced, compact reel) that comprises the reel for package to 3% in FY2011.

Environmental Objectives: Mid-term Targets toward FY 2020

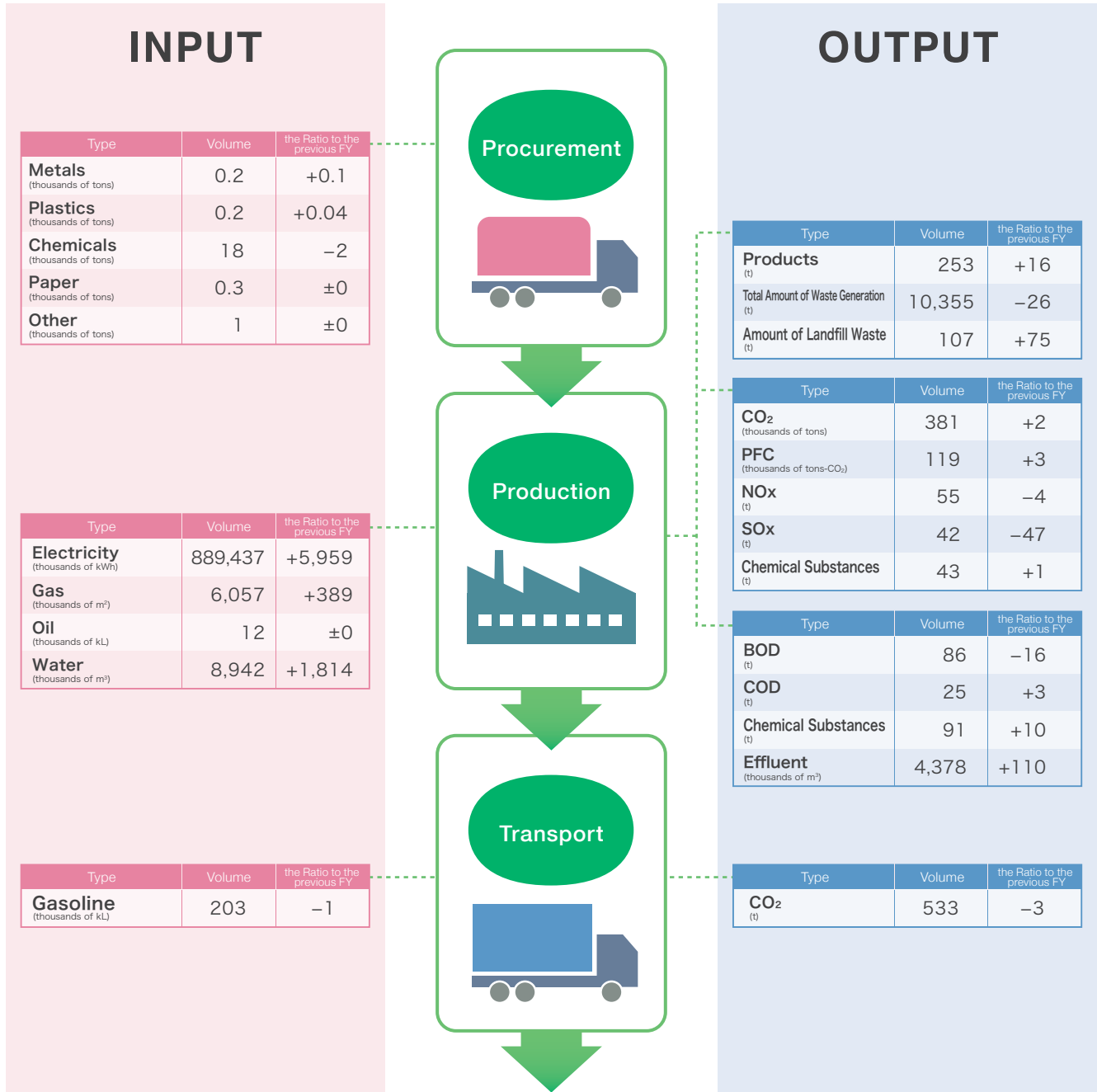
ROHM Group establish the mid-term targets as Environmental Objective and take actions to achieve them.(All the objectives are planned in FY 2020)

1.CO ₂ Countermeasures at Each Sites		3.Reduction of Environmental Impact	
①CO ₂ Emission		①Handling Volume of PRTR Substances (per production unit)	
②CO ₂ Emission (per production unit)		②Handling Volume of Chemical Substances (voluntarily reduction substances)	
③Greenhouse Gas Emission		③VOC Emission	
④CO ₂ Emission in Offices		4.Effective Use of Resources	
2.CO ₂ Countermeasures in the Product Lifecycle		①Waste Generation (per production unit) (Domestic Group)	
①CO ₂ Emission Reduction throughout Use of Environmentally-Conscious Products		②Waste Generation (per production unit) (Overseas Group)	
②Percentage of Environmentally-Conscious Products in the total Net Sales		③Water Consumption	
③CO ₂ Emission (per production unit) in logistics		④Percentage of Eco-reel in the total of Package Materials	

Environmental Burden Highlights

ROHM Group uses a multitude of resources as materials and subsidiary materials and utilizes various natural resources such as energy and water in our production process. We try to check the amount of various resources we use and the emission of substances in all of our production process, in order to have grasp of the overall material balance of environmental burden.

Domestic Group (9 production locations)

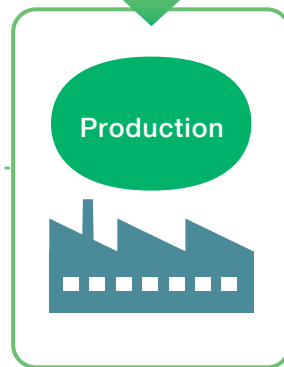
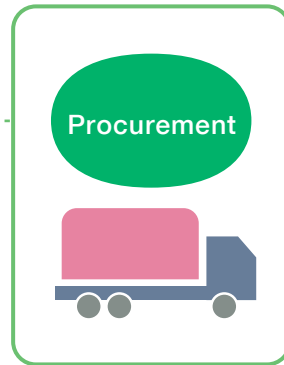


Overseas Group (9 production locations)

INPUT

Type	Volume	the Ratio to the previous FY
Metals (thousands of tons)	8	-1
Plastics (thousands of tons)	5	-0.1
Chemicals (thousands of tons)	6	-0.1
Paper (thousands of tons)	2	0.4
Other (thousands of tons)	1	±0

Type	Volume	the Ratio to the previous FY
Electricity (thousands of kWh)	600,174	+102,150
Gas (thousands of m ³)	246	+146
Oil (thousands of kL)	28	-53
Water (thousands of m ³)	4,576	+302



OUTPUT

Type	Volume	the Ratio to the previous FY
Products (t)	11,110	-765
Total Amount of Waste Generation (t)	7,012	+201
Amount of Landfill Waste (t)	796	+76

Type	Volume	the Ratio to the previous FY
CO₂ (thousands of tons)	326	±0
NO_x (t)	870	-209
SO_x (t)	598	-162
Chemical Substances (t)	18	+18

Type	Volume	the Ratio to the previous FY
BOD (t)	15	-2
COD (t)	75	-10
Chemical Substances (t)	2	+2
Effluent (thousands of m ³)	1,636	+52

<INPUT>

- Electricity :Amount of electricity purchased from electric power company
- Gas :Usage of city gas and LPG
- Oil :Usage of heavy oil, light oil and kerosene
- Water :Usage of service water, industrial water and ground water

<OUTPUT>

- CO₂ :CO₂ emission generated by the use of electricity, gas and oil
- NO_x :Nitrogen oxide emission generated by the burning of gas and oil
- SO_x :Sulfur oxide emission generated by the burning of oil
- BOD :Biochemical Oxygen Demand emission
- COD :Chemical Oxygen Demand emission

Environmental Accounting

Analyzing costeffectiveness is necessary to maintain corporate environmental conservation activities effectively, so environmental accounting is very important as the tool of environmental management. We started introduction of environmental accounting in 1998 and have announced it since 2001. We refer to “Environmental Accounting Guidelines(2005 edition)”, made by Ministry of the Environment, and adapt to ROHM Group’s business forms, in totaling and analyzing our own environmental accounting. And also we have examined the system to analyze and evaluate our environmental activities and its effects. Costs

for the previous term are adjusted by the cutbacks in expense of action of environmental burden reduction and the increase/decrease of production volume between the previous term and the current term, and then the balance between the values after adjustment and costs for the current term is totaled as the economic effect. However, “de facto” effects, such as risk avoidance, are not counted. Environmental Accounting has applied to overseas locations since FY 2005, and we continue to observe the details of environmental costs in all ROHM Group.

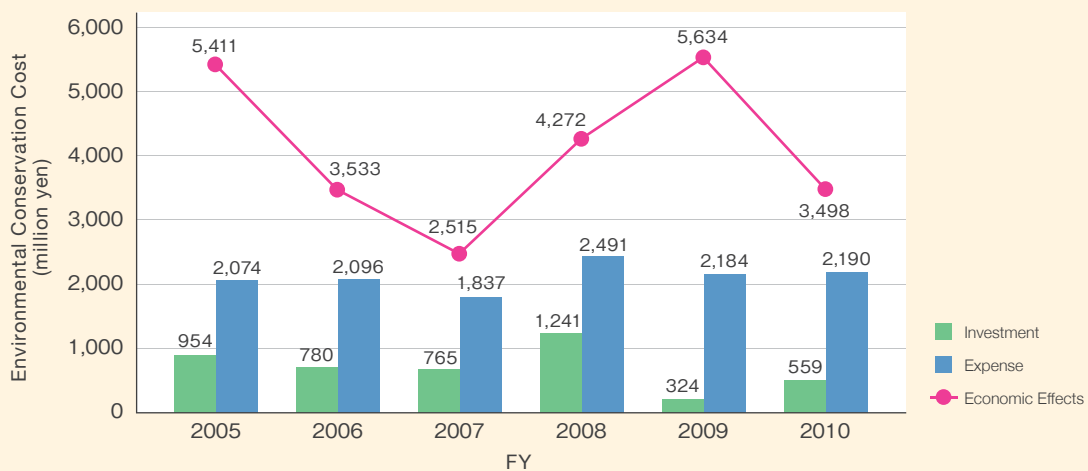
Domestic Group

Environmental Conservation Cost and Economic Effects

Cost Classification at Guideline	Investment	Expense	Economic Effects
Antipollution	118	1,242	—
Global Environmental Conservation	434	196	836
Recycling Resources	2	431	2,662
Management Activities	0	275	—
Social Activities	5	46	—
Environmental Damage	0	0	—
Other	0	0.4	—
Total	559	2,190	3,498

FY2010(April, 2010~March, 2011) (million yen)
Total of 10 domestic locations

In the environmental conservation cost in FY 2010, the investment is 559 million yen (an increase of 73% compared to the previous year) and the expenses is 2,190 million yen (an increase of 0.3% compared to the previous year). In the investment, global environmental conservation cost (measure against global warming and energy-saving) is 434 million yen and it accounts for about 78% of the total investment . ROHM Group puts emphasis on and takes measures against global warming and energy-saving, which is reflected in the aspect of environmental accounting. Concretely, we invested 190 million yen (44% of the global environmental conservation cost) in turbo-refrigerators and PFC removable equipments. As the action plan in FY 2011, we are going to continue to introduce turbo-refrigerators and PFC removable equipments, to replace the current boiler with high-efficiency boiler and to implement measures about prevention against air pollution and water pollution.



Changes of Investment / Expense / Economic Effects

Overseas Group

Environmental Conservation Cost and Economic Effects

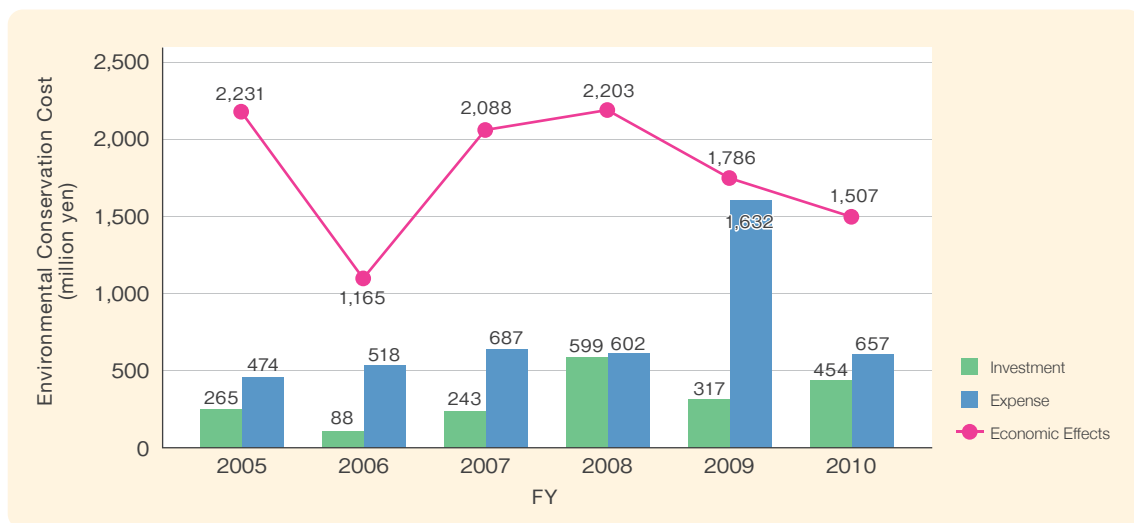
Cost Classification at Guideline	Investment	Expense	Economic Effects
Antipollution	276	345	—
Global Environmental Conservation	147	74	1,048
Recycling Resources	31	194	459
Management Activities	0.2	29	—
Social Activities	0.1	14	—
Environmental Damage	0	0	—
Other	0	0.6	—
Total	454	657	1,507

FY2010(April, 2010~March, 2011)
Total of 9 overseas locations

(million yen)

In the environmental conservation cost in FY 2010, the investment is 454 million yen (an increase of 43% compared to the previous year) and the expenses is 657 million yen (a 60% decrease compared to the previous year). As a special feature of overseas group, they put emphasis on measures about prevention against air pollution even as well as global warming and energy-saving. Concretely, a dust collector was invested at REDA (about 50% of the entire investment).

In FY 2011, REPI is going to change from the private power generation of electricity using heavy oil to purchased electricity, so the expenses for that is added up.



Changes of Investment / Expense / Economic Effects

※Please also refer to “the ratio to the previous year” in OUTPUT table as environmental conservation effect in P.9 and P.10 “Environmental Burden Highlights”

Approach to Environmental Burden Reduction

CO₂ Emission Reduction

Basic Policy

CO₂ is a representation of greenhouse gas and generated from energy conversion after combustion of fossil fuels(oil, gas and coal). Therefore, it can be said that the measures against energy-saving which reduce energy consumption are the most demanded. At ROHM, in order to systematically promote the measure against energy-saving including affiliates, we advance the visualization of power consumption of each production facility and the energy usage in the office, and announce the case report to all locations.

2010 Environmental Targets

- Implement measures to reduce CO₂ emission in FY 2010 by 1% from the previous year's level.
- Reduce CO₂ emission per unit in FY 2010 by 1% from the previous year's level.
- Reduce CO₂ emission energy consumption in offices in FY 2010 by 1% from the previous year's level through energy-saving promotion.

We produce various semiconductor products in Clean Room on Wafer Process. Clean Room has air conductors which regulate temperature and relative humidity control, and it consumes a great deal of energy. Clean Room is an important manufacturing environment where the quality of a semiconductor product is determined, and where the dust is removed to the utmost limit and temperature and relative humidity are regulated to manufacturing conditions. We have changed gas absorption type refrigerator to turbo-refrigerator which consumes electricity, so we have achieved drastic CO₂ emission reduction. Moreover, although the cold water of the refrigerator was used for the cooling water for production equipments, we introduced the cooling system by the open air and it became possible to supply cooling water with less energy (It also contributes to reduce CO₂ emission).



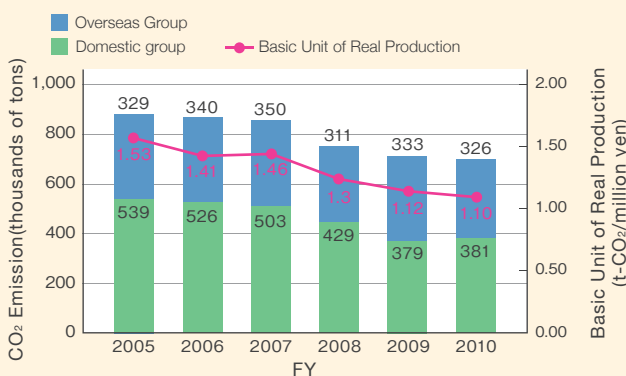
Inverter Turbo-refrigerator



Cooling System by the Open Air

Energy-Saving in Production Division

Changes of CO₂ Emission from Energy and CO₂ Emission(per Production Unit)



As the globalization of the production locations, we have shifted Assembly Process to overseas locations and strengthened it. As a result, domestic CO₂ emission decreased by 30% as compared with that of FY 2005, and overseas CO₂ emission showed a tendency to decrease due to the effort to reduce although it increased in recent years. Moreover, since the amount of energy consumption increases as result growth, we adopt basic unit of real production* as the index of CO₂ emission to reflect the energy-saving efforts. Also, regarding this basic unit of real production, it decreased by 30% from that in FY 2005.

*real production= production(million yen)/
Bank of Japan corporate price index:electrical device portion

Consideration and Future Tasks

In FY 2010, we implemented various measures to reduce CO₂ emission in domestic group: introduction of inverter turbo-refrigerator (ROHM Hamamatsu) and putting together of the incidental facilities and a production line (LAPIS Semiconductor). Even though the production volume increased as a result, domestic CO₂ emission from energy were almost the same as that in the previous year. Moreover, in overseas group, it's planning to change private power generation through the use of heavy oil to purchased electricity at REPI from FY 2010 to FY 2011, so overseas CO₂ emission will reduce drastically.

Energy-Saving Promotion in Transportation

Social concern about environmental burden reduction in the logistics has increased still more. To reduce CO₂ emission caused by truck fuel consumption, ROHM Group has conducted some kinds of measures since 2004, such as cross-dock transport which brings improvement of the carrying rate and optimization of the carrying frequency. We also have conducted contraction and abolition of carrying since then.

ROHM Logistec Co., Ltd. is a distribution center of ROHM Group, it contributes to reduce CO₂ emission in the logistics by carrying out unipolar centralization management of the product produced in each production location.

2010 Environmental Targets

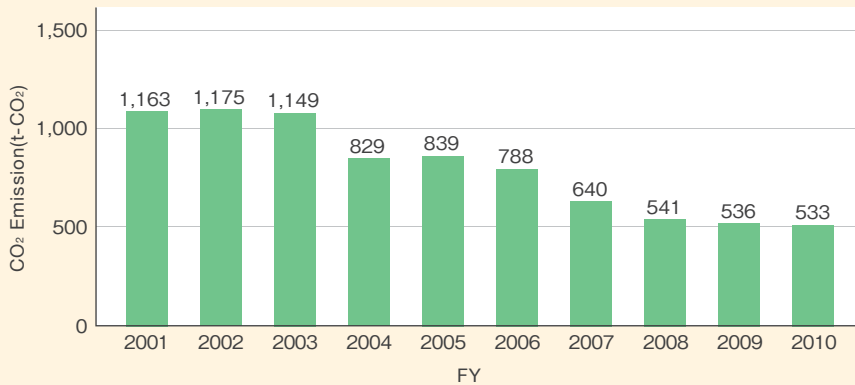
- Research the current CO₂ emission per logistics unit and prepare a reduction plan.



ROHM Logistec



Changes of CO₂ Emission in Logistics



Future Tasks

It is planning to reduce the amount of package materials in FY 2011, so that we can need less fuel to transport the same cargo because of decreasing the total weight.

Energy-Saving Promotion in Sales Activities

We have allocated hybrid cars which use both gasoline and electricity at ROHM sales offices in Japan since April, 1999 and it contributes to the prevention of global warming. As of September, 2011, 141 of the total 177 domestic company cars are low emission gas vehicles containing a hybrid car. Moreover, while appealing for the cooperation of idling stop to the employees and visitors, a standing sign board for instruction is installed in the parking lot in ROHM Head Office.



Hybrid-Company Car for Sales



"Idling Stop!"
Appealing Signboard

CO₂ Emission Reduction by Absorption of Afforestation

Basic Policy

As one of the global warming prevention measures, ROHM puts emphasis on energy-saving to reduce CO₂ emission which is the primary factor of global warming. On the other hand, the afforestation are also effective against global warming prevention, because forests absorb CO₂. As measure to contribute to prevent global warming, ROHM has conducted large-scale eucalyptus plantation on the outskirts of city Mount Gambier of Australian southern part Victoria state since 2001. The afforestation named "ROHM Forest" have reached 923 ha in 2008. We have afforested eucalyptus (*Eucalyptus Globulus*), which growth is fast and will be up to 20~25m high in

about 10 years. The cumulative fixed amount of CO₂ by this planned afforestation is set to 108,000 t-CO₂, and this fixed amount is equivalent to 28% of CO₂ emission from energy (381,000t -CO₂) of the domestic production locations in FY 2010. Although ROHM corporate activity is mainly developed in the Northern Hemisphere, the contribution activities to prevent global warming will work in the opposite side Southern Hemisphere. ROHM is developing the measure substantially and globally as a global environmental conservation activities.



ROHM Forest in Australia



Seedling



Young Plant



Tree

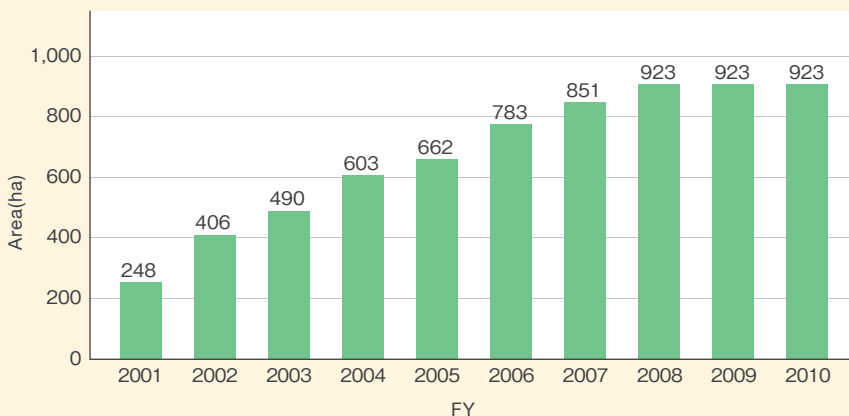


Shrub

What is eucalyptus?

It is said that there are more than 500 types of eucalyptuses. The type "globulus" which ROHM has afforested is said to grow fast and to be suitable for pulp raw materials. Besides this, it is said that a eucalyptus also has a type used for construction material, eucalyptus oil and spice.

Changes of Afforestation Area



The afforestation started with 248ha in 2001 and reached 923ha in 2008. After that, the growth of a eucalyptus has been urged without carrying out area expansion till 2010. Deforestation is started from the eucalyptus which became an adult tree in 2011, and after chipping, it is used effectively as a paper manufacture material.

Greenhouse Gas Emission Reduction other than CO₂

Basic Policy

As the technical innovation of LSI manufacturing has progressed in recent years, PFC (perfluorocarbon) gas is mentioned as key item indispensable to the ultra-integrated processing technology. Since greenhouse effect of PFCs exceeds that of CO₂, the special committee against global warming was founded in July, 1999 in the semiconductor industry, and dealt with this problem really. ROHM also created an independent action plan as one of this members, and since then, have dealt with PFCs emission reduction. ROHM basically promotes establishment of removable equipments in order to reduce PFCs emission. Furthermore, nowadays, since the development of the alternative gas progresses and it has hardly any greenhouse effect due to technology innovation, ROHM is going to assess alternative gas.

2010 Environmental Targets

- Reduce Greenhouse Gas(PFCs, SF₆, etc) emission in FY 2010 by at least 3% from the FY 2005 level.

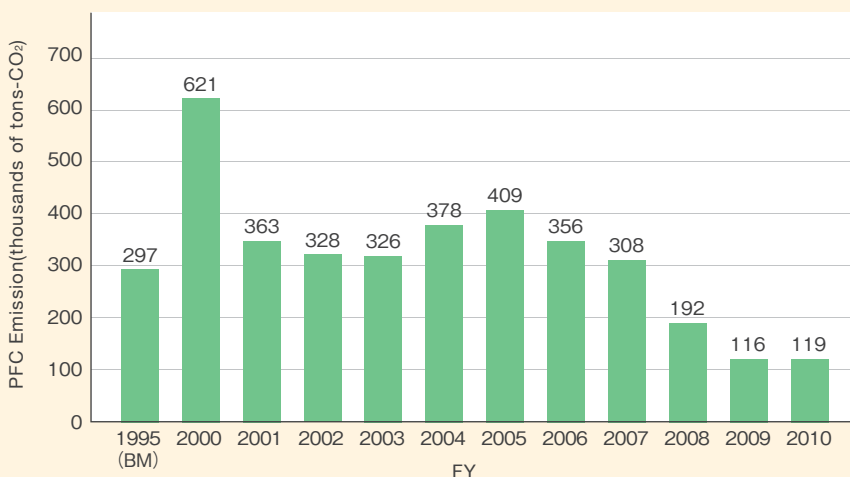
Mid-term Targets

- Reduce Greenhouse Gas(PFCs, SF₆, etc) emission in FY 2020 by more than 50% from the actual result in FY 1995.

What is PFC?

PFC gas is indispensable for semiconductor, especially LSI ultra-integrated processing. When PFC gas is emitted to the atmosphere, it becomes a greenhouse gas which effect is more than 6,500 times as that of CO₂. In the semiconductor industry, reduction targets are determined about the amount of PFCs emission and introduction of removable equipments is advanced.

Changes of PFCs Emission



Even after ROHM progressed to introduce removable equipments and achieved the target of the semiconductor industry in advance of two years in 2008, We have continued to reduce PFCs emission in ROHM group regardless of the increase in the production volume.

Consideration and Future Tasks

Although we cleared Mid-term targets in FY 2010, we have tried to assess alternative gas in order to maintain continuous achievement of Mid-term targets.

Various Energy-Saving Promotion Activities

Basic Policy

At ROHM, energy-saving activities are advanced also not only in Production Division but in Offices, and especially we introduce renewable energy proactively. Renewable energy is the energy which can be continuously obtained from natural environment, and ROHM continues to take environmentally-conscious actions in harmony with nature.

Introduction of Solar Water Heating System

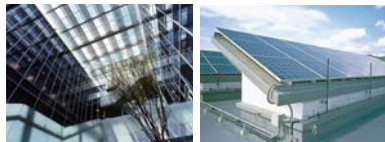
At ROHM Apollo, the infinite thermal energy which the sunlight emits is gathered in the solar energy collector on the roof, the warm water is boiled with the energy and stored in the storage tank.



ROHM Apollo

Introduction of Solar Power Generation System

ROHM Head Office introduced solar power generation system at welfare building for the first time in 1999, and since then, each group company has introduced it.



ROHM Head Office

ROHM Apollo

Introduction of Ice Thermal Storage Air-Conditioning System

At ROHM Head Office Welfare Building, Kyoto Technology/Business Center and ROHM Apollo, air conditioning is carried out with ice thermal storage air-conditioning system. In this system, electric energy is stored as thermal energy(ice in summer, warm water in winter) at night, so that the electric energy during daytime can be reduced. It contributes to the environmental conservation by leveling of this electricity demand.



ROHM Head Office ROHM Apollo

Introduction of Automatic Lighting Control System

Indoor lighting took in natural light as much as possible. And we have introduced automatic lighting control system which adjusts according to the intensity of illumination of natural light into ROHM Head Office Welfare Building and Kyoto Technology/Business Center.

Introduction of Green Power

At ROHM, Green Power is used for the Christmas illuminations of the year-end annual event, and it contributes to global warming prevention. In the Christmas illuminations in 2010, we used both Green Power by the biomass electricity generation of ENESERVE CORP and the carbon offset (Kyoto Eco-Point) which Kyoto CO₂ reduction bank promotes.

Introduction of Heat Detector Sensor Lighting System

In order to be complete in the putting out of lights when not needed, ROHM Group including ROHM Head Office welfare building introduces heat detector sensor lighting system, which detects the heat of a human body and turns ON-OFF the light automatically.

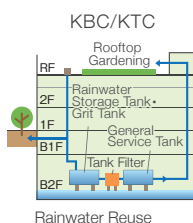


Christmas Illuminations at ROHM Head Office



Kyoto Technology/Business Center as Ecological Green Building

In spring of 2010, Kyoto Technology/Business Center were redecorated completely as ecological Green Building. It means the building with various environmental burden reduction facilities: rainwater reuse, rooftop gardening, high efficiency air-conditioning equipment, solar panel, LED lighting, etc.



High-efficiency Air-conditioning Equipment with Frequent Control

Rooftop Gardening

Solar Panels on the Roof

Entrance with Seamless LED



Consideration for Water Resource

Basic Policy

Since water is needed in semiconductor production, it is important to suppress the influence on water circulation system to a minimum. ROHM Group conducts various measures to protect water resource and to management of drainage quality strictly, which are to the foundations of biodiversity: the recycling technology of the used water in production process, the reduction technology of water consumption and the treatment technology of waste water.

2010 Environmental Targets

- Research the recycling technology to reduce water consumption and prepare a water reduction plan.

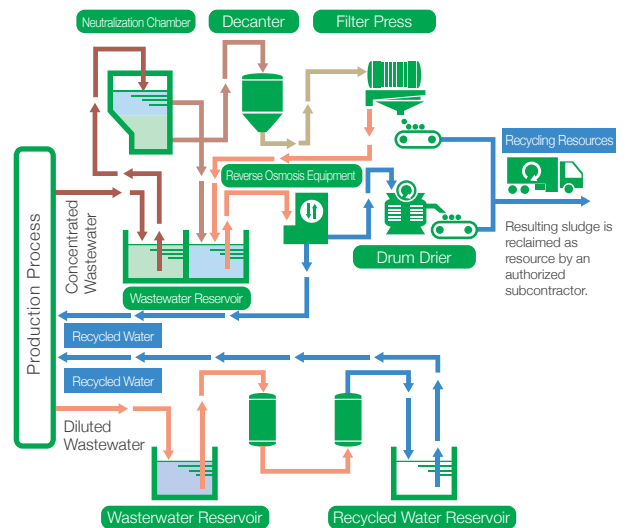
Closed Treatment System of Waste Water

Plant waste water is neutralized chemically and discharged into sewerage. To enhance environmental conservation around the discharge area in river, we use Closed Treatment System of waste water. In this system, the water after treatment of chemical neutralization is concentrated and then evaporated completely by a special drier. This system is introduced into ROHM Apollo, REPI and RMPI. Especially, there is Lake Laguna, the largest lake in Philippines, near REPI and RMPI. The water quality management of Lake Laguna is one of the important issues in the Philippines' environmental administration. This is the reason why we introduced closed treatment system into Philippines' production locations. Like this, we adapt effective environmental measures to overseas group as well as domestic group. ROHM Group considers that it is important to take actions for coexisting with natural environment and take account for biodiversity, based on fully understanding the local characteristic.



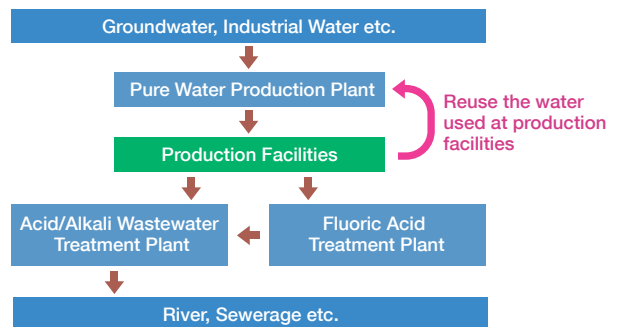
Drum Dryer at REPI

Closed Treatment System Facility



Recycling System of the Water in the Production Process

In semiconductor factories, groundwater and industrial water turn into ultra-pure water in pure water production plant, and they are mainly used for washing semiconductors. The water with a comparatively small amount of dirt is recycled for the washing, and returns to a pure water production plant again to become ultra-pure water. This recycling rate is roughly 40% of the overall net feed water of the factory. The water used for washing is treated at wastewater treatment plant as water that cleared the standard of available drainage, and is discharged into river or sewerage and returns to water resource.



Consideration and Future Tasks

The water recycling facility in a semiconductor factory is a very large-scale facility, and the measures against the incidental facilities which supply ultra-pure water have mainly conducted. We have tried to reduce net feed water by the water reduction technology in production facilities, in addition to the recycling technology in plant.

Consideration for Atmosphere

Basic Policy

The organic solvent required for the semiconductor production process corresponds to VOC (Volatile Organic Compounds), and it is considered to one of the causative substances which generate photochemical smog through the photochemical reaction in the atmosphere. In ROHM Group, we established the self-reduction targets in accordance with the indicator of electrical and electronic industry, and have taken actions against anti-air pollution, which is mainly the development of alternative technology and the introduction of discharge control technology.

2010 Environmental Targets

- Reduce VOC emission in FY 2010 by 32% from the 2000 level.

Previous Action① Abolition of ODC

Although the chlorofluorocarbon developed as an artificial chemical substance and it was widely used as an excellent detergent in the electrical and electronics industry, it turned out to be one of ODC (Ozone Depletion Chemicals) and we abolished in May, 1992 earlier by 3 years than the period set by the Montreal Protocol of the United Nations. Furthermore, in order to abolish chlorofluorocarbon, alternative chlorofluorocarbon was used in part, but this has also completed abolition in 2003.

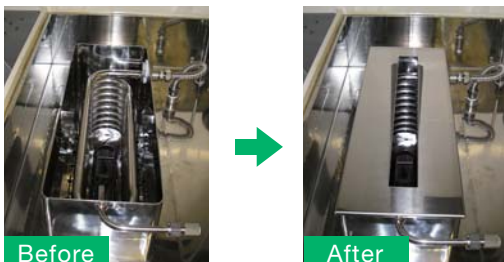
Previous Action② Change to Natural Gas

In order to reduce air pollution gas emission (SO_x, etc) or global warming gas emission (CO₂, etc), ROHM abolished to use the heavy oil boiler in 1988 and changed to use natural gas which is one of clean energy. ROHM Hamamatsu also abolished the use of heavy oil by changing into natural gas in 2001, in order to advance air environmental conservation.



VOC Emission Reduction

As a measure against reducing VOC which causes photochemical smog, ROHM Head Office had established VOC removable equipments since FY 2008. Since then, we have taken actions to not only increase the number of establishment of the equipment but cover the open portion of the washing equipment with the lid, so that the VOC emission has drastically reduced. We have try to take measures against VOC emission reduction and spread them laterally to affiliates actively.



VOC Removable Equipments

VOC emission **reduced by 90%** because of covering the open portion with the washing equipment with the lid

Approach to Utilizing Resources

Enhancement of Waste Disposal

Basic Policy

A waste problem is divided roughly into the problem of insufficient landfill waste disposal place and the problem of the soil and groundwater contamination by the hazardous substances contained in the waste that is filled up. Therefore, it is important to reduce the amount of waste generation and to reuse and recycle waste. ROHM has made an effort in eliminating the uselessness as our concept of corporate activity since its establishment. This is not only related to the profit as a corporation but also leads to waste generation reduction. Still, we have examined in every field in order to reuse the recycled resources with a new purpose after generated waste is recycled as a renewable resource. We consider that it is essential to reuse and recycle economically and smoothly, and as a result, reduce waste generation drastically in order to realize recycling-based society.

2010 Environmental Targets

- **Maintain zero emission and reduce waste generation per unit in FY 2010 by 2% from the previous year's level on a domestic consolidated basis.**
- **Reduce waste generation per unit in FY 2010 by 2% from the previous year's level on overseas consolidated basis.**

History of Waste Disposal at ROHM Head Office

We have taken actions about both the control of amount of materials and subsidiary materials, and the improvement in the yield in order to reduce waste generation. On the other hand, segregated waste becomes to have the value as materials, so we can sell the segregated waste. Reuse is so effective means to realize recycling-based society because disused articles don't become to be waste, so that we consider it as the focus point to reduce waste generation. Recycling waste as a renewable resource needs to dispose properly based on related laws. In order to carry out waste disposal certainly, ROHM contracts with waste disposal companies which have obtained administration permission, publishes a manifest(document to management industrial waste), records the results of the waste disposal and audits periodically at the waste disposal companies. In FY2010, ROHM audited CAMPO Co., Ltd. . We checked production process from waste plastic to RPF(briquette fuel) and documents.

History of Waste Disposal at ROHM Head Office

1990	● Start on segregated disposal into 52 types in order to promote recycling waste
1993	● Start on recycling calcium fluoride sludge as a part of cement material by cement company (it had been landfill waste and accounted for 60% by weight of total amount of waste generation)
1995	● Start on recycling waste plastics as briquette fuel by recycling company (it had been landfill waste after incineration) ● Start on recycling used office paper by paper company (We use the recycling paper as toilet paper in ROHM)
1998	● Start on sale of recycled phosphoric acid in order to reuse it in other industries
1999	● Introduction waste electronic-measuring system in order to improve the precision of the waste data ● Start on segregated disposal into 75 types in order to promote recycling waste
2000	● Introduction latest waste disposal facility(decomposition type) in order to reduce garbage from the staff canteen
2002	● Start on sale of recycled alcohol in order to reuse it in other industries
2003	● Certified by Kyoto Prefecture's "Eco Kyoto 21" for recycling-based society
2004	● Achievement zero emission at all domestic group, including ROHM Head Office
2006	● Certified by Kyoto Prefecture's "Eco Kyoto 21" for recycling-based society as "Advance" course
2008	● Success of 50% reduction of sludge generation after waste treatment with hydrogen fluoride by induction of organic coagulants ● Start on recycling used chemical containers as plastic material
2010	● Certified by Kyoto Prefecture's "Eco Kyoto 21" for recycling-based society as "Meister" course ● Awarded "Environment Minister Award" for recycling-based society by Ministry of Environment

<Audit at CAMPO Co., Ltd.>



RPF Production Factory



RPF Production Process



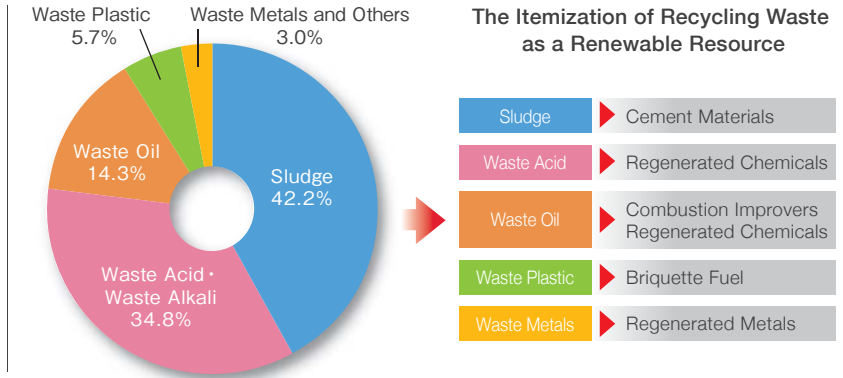
Central Management Room for Production Process



Documents about Education Record

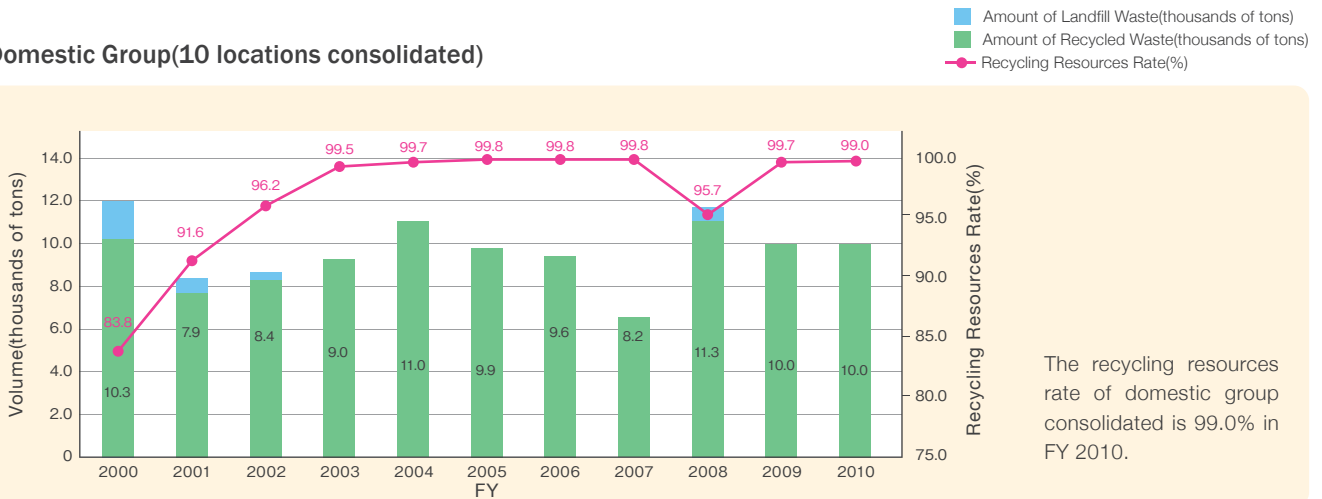
Zero Emission

It is generally known as “zero emission” to reduce amount of landfill waste to zero as nearly as possible. In order to achieve “zero emission” by FY 2005, ROHM established zero emission standard which defined that recycling resources rate is more than 99%. We had promoted to recycle waste as a renewable resource and domestic group achieved zero emission in FY 2004. We keep on taking actions to achieve zero emission at overseas locations according to each actual situation.

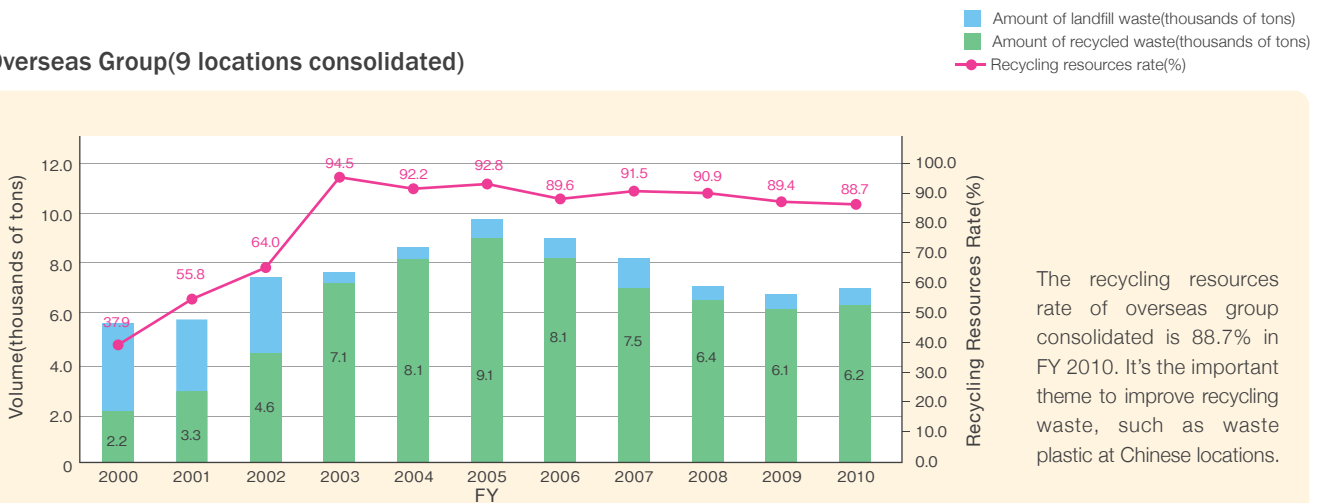


Changes of Recycling Resources Rate

Domestic Group(10 locations consolidated)



Overseas Group(9 locations consolidated)



Introduction Material Flow Cost Accounting

Basic Policy

ROHM is starting the introduction of Material Flow Cost Accounting (MFCA) which is an accounting technique for activating waste generation reduction through visualization of the cost involved in the waste. A study group was held in the 1st environmental liaison conference in FY 2010, and we have advanced to analyze with MFCA about model lines at ROHM Group companies. In FY 2010,

we devised the method for data input to the MC arrangement table (list of material cost) and it was proven that the calculation result of the MFCA could be utilizable also in the semiconductor wafer process. We try to progress this actions with MFCA in order to use effectively and reduce waste generation.

MFCA Calculation Method

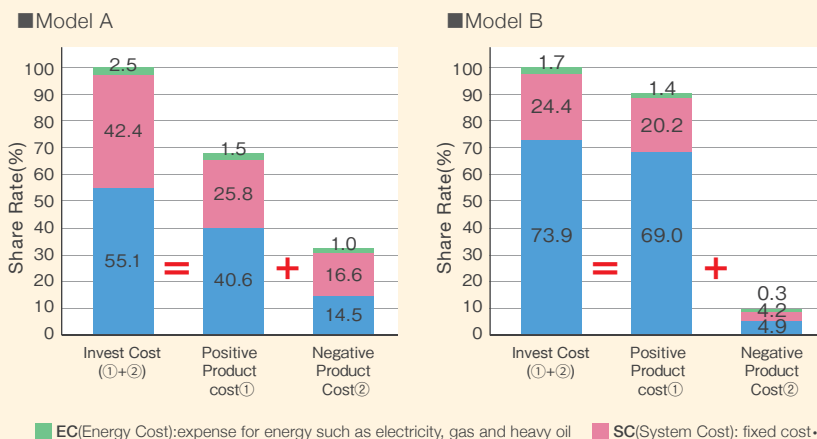
MC Calculation Table

工程	工程名	In/Out	分類	MC区分	名称	材料単価 (千円/kg)	正負のマテリアル物量計算			正負のマテリアルコスト計算			後処理コスト計算	
							投入物量 (kg)	正の製品物 量(kg)	負の製品物 量(kg)	投入MC (千円)	正の製品 MC(千円)	負の製品 MC(千円)	処理費、or 売却の単価 (千円/kg)	処理費、or 売却額 (千円)
工程1	QC1	Inp ut	前工程良 品	前工程良品1-1						0.0	0.0	0.0	-	-
				前工程良品1-2					0.0	0.0	0.0	-	-	
				前工程良品1-3					0.0	0.0	0.0	-	-	
				小計	-	0.0	0.0	0.0	0.0	0.0	0.0	-	-	
	Inp ut	直接材 料	直接材料1-1	ウエハー		1,000	99,920.0	49,960.0	49,960.0	99,920.0	49,960.0	49,960.0	-	-
			直接材料1-2							0.0	0.0	0.0	-	-
			直接材料1-3								0.0	0.0	-	-
			小計	-							0.0	0.0	-	-
	Inp ut	間接材 料	間接材料1-1	薬品		1,000	2,000	18,000	18,000				-	-
			間接材料1-2	ガス		1,000	18,000	4,000	4,000				-	-
			間接材料1-3	ターゲット		1,000	4,000	16,000	16,000				-	-
			間接材料1-4	その他		1,000	16,000	58,000	58,000				-	-
	Out put	次工程良 品、正 の製品	良品1-1			1,000							-	-
			良品1-2										-	-
			良品1-3										-	-
			小計	-									-	-
	Out put	工程内リ サイクル	工程内R1-1										-	-
			工程内R1-2										-	-
			工程内R1-3										-	-
			小計	-									-	-
	Out put	排出物、廃 棄物	排出、廃棄1-1	ウエハー					49,960.0				0.0	0.0
			排出、廃棄1-2	薬品					23,200.0				0.1	1,814.0
			排出、廃棄1-3	ガス					18,440.0				0.1	1,442.0
			排出、廃棄1-4	ターゲット					475.0				0.1	38.0
排出、廃棄1-5			その他					0.0				7.8	0.0	
小計			-					92,075.0				-	3,294.0	
Out put	有価廃棄 物	有価廃棄物1-1											0.0	
		有価廃棄物1-2											0.0	
		有価廃棄物1-3											0.0	
		小計	-										0.0	

The material unit price is fixed to 1 and the amount of money from calculation unit (expense in a monthly amount or lot) is inputted into the weight column. Moreover, we calculate simply with MFCA calculation method even in the LSI wafer process without measuring the detailed weight because of accounting all the indirect expenses such as material gas, chemicals, etc, as the negative cost.

※ROHM cites the MFCA simple calculation tool developed by Japan Management Association Consultants Inc. (It is outsourced by the Ministry of Economy).

A Case of MFCA Calculation



These are comparisons between 2 models about itemization of EC, SC and MC in each input cost, positive product cost and negative product cost. In case of model A, the share of not only MC (material expense) but also SC (fixed cost, depreciation expenses, etc) is large in negative product cost that becomes waste. Thus, we try to promote actions about waste generation reduction by visualizing not only the amount of waste generation(cost)but also the itemization of negative product cost.

Effective Use of Package Materials

Basic Policy

We have taken actions with consideration to environment, based on these basic policies below.

- 1) **Package materials don't include substances of environmental concern.**
- 2) **We promote volume and weight reduction of package materials, maintaining the intensity.**
- 3) **We choose the form and material which are easy to reuse and recycle.**

The packaging of electronic components has the two purposes, one is guaranteeing product quality, and the other is putting support when electronic components are set in customer's products. In recent years, we are needed consideration to environment from the point of not only products but also package materials which wrap up the products. In selection of package materials, ROHM Group makes effort to consider to environment sufficiently, and to simplify and reduce volume and weight according to the property of the package material.

■ Reduction of Package Materials made from Polyvinyl Chloride

Mounting the surface mount type(chip products) to substrate is done mostly by automatic mounter. For this purpose, it is necessary for the parts to be allined at equal intervals on the tape. The tapes were mainly made from plastics processed emboss, most of which were composed of polyvinyl chloride (PVC). Because hazardous substances generate in incineration of PVC and it is difficult to recycle PVC as a renewable material, ROHM Group eliminated PVC contained in all the plastic tapes in FY 2000 and changed into polystyrene (PS) or polyethylene terephthalate (PET).

■ Abolition of Package Materials made from Styrene Form

The use of styrene foam as package materials was abolished in 1997 since the environmental burden was pointed out in the disposal of disused package materials made of styrene form.

■ Recovery and Reuse of Package Materials

ROHM products are packed up in mounting-support package containers for greater mounting efficiency. These disused containers turned into waste plastic, which is one of industrial waste, at customer's companies. Reuse is the best way to reduce environmental burden, so ROHM has conducted the standardization of package containers and the establishment of the way to recover them for reuse. Since May 1996, ROHM started to recover and reuse plastic reels used ad taping materials. And also, based on recovery and reuse other package materials and plastic packages, we have taken actions about the standardization of materials and the establishment of the appropriate way to recover them.



Tray and Tubes for Package Materials

	Surface	Back	Side
Injection Molded Type Reel			
Vacuum Molded Type Reel			

Vacuum molded type reel can reduce the used plastic material by about 50% compared with injection molded type reel, and has a big effect to reduce environmental burden.

Consideration and Future Tasks

In FY 2011, we try to evaluate the eco-reel (30% decrease of weight proportion with the previous model) to introduce it in order to reduce volume and weight further.

Approach to Management of Substances of Environmental Concern

Basic Policy

In July 2006 RoHS Directive, in March 2007 China RoHS Directive and in June 2007 REACH Regulation (Registration, Evaluation, Authorization and Restriction of chemicals) was enforced respectively. It is required to make products based on consideration to global environment, and the laws about management of substances of environmental concern have been tightened up more and more. ROHM Group has promoted green procurement and emphasized on the improvement of the precision of research on substances of environmental concern contained in purchasing parts and materials. Thus, we constructed the control system so that prohibited substances are "not contained", "not used" and "not shipped out", and have offered the products that customers can use confidently.

2010 Environmental Targets

- **Reduce PRTR substances consumption per unit in FY 2010 by 1% from the previous year's level.**
- **Research new technology to reduce chemical (subject to voluntary reduction) consumption and prepare a chemical reduction plan.**

Correspondence to RoHS Directive



RoHS Directive is for the control of hazardous substances by EU(European Union) and prohibits the specified substances in the electrical and electronic equipment. In ROHM products, the specified hazardous substances are not contained more than threshold levels, except for applicable regulation exclusion use.

Specified Hazardous Substances(Threshold Values)

- **Lead and its compounds(1000ppm)**
- **Cadmium and its compounds(100ppm)**
- **Mercury and its compounds(1000ppm)**
- **Hexavalent chromium and its compounds (1000ppm)**
- **Polybrominated biphenyls(PBB)(1000ppm)**
- **Polybrominated diphenyl ethers(PBDE)**

Halogen Free



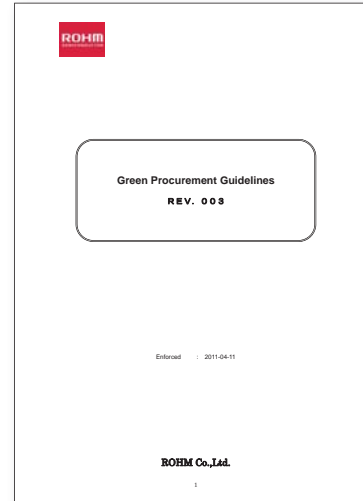
Although specific brominated flame retardants have been controlled by RoHS Directive, customer requirements for reduction of halogen compound and antimony compound are increasing as customer's original initiatives. ROHM Group has developed halogen free products as environmentally-conscious products as a step forward, in order to response to the customer requirements.

- 1. Less than 900ppm of chlorine in homogeneous materials**
- 2. Less than 900ppm of bromine in homogeneous materials**
- 3. The total amount of chlorine and bromine Compounds will not exceed1500ppm in homogenous materials**
- 4. Less than 1000ppm of antimony trioxide**

We consider the products which satisfy all requirement above as Halogen Free Products.

Green Procurement

In order to manufacture the products with lower burden on environment, ROHM has requested all of ROHM's customers to improve environmental quality management system still more, and also received the report on chemical substances if contained and guarantee that ensures that prohibited substances in ROHM are not used and contained against all of materials and subsidiary materials supplied. Moreover, ROHM started to response to REACH regulation from FY 2008, and as a result, we abolished silica gel which contained the cobalt dichloride(SVHC: substance of very high concern) entirely in FY 2009. Furthermore, from FY 2010, we started to investigate using JAMP (Joint Article Management Promotion Consortium) Chemical Substances in Products Communication tool in order to improve the response to REACH regulation.



ROHM Green Procurement Guideline REV.003

Confirmation of Adaptation for RoHS Directive

The materials and parts supplied from suppliers and the products supplied to the customers are periodically verified for the presence or absence of substances of environmental concern using X-ray fluorescence spectrometers at ROHM Quality Assurance Department and each production locations. Furthermore, when an abnormal value is detected or more detailed analysis is required, precision analysis is conducted using ICP-AES(Inductively Coupled Plasma Atomic Emission Spectrophotometry) at ROHM Head Office. Thereby, we have established the system where substances of environmental concern prohibited to use at ROHM Group "are not shipped from ROHM Group" and "does not go into ROHM Group". Moreover, the system "not to use prohibited substances" is also established by controlling discrimination and change points thoroughly at each production location. On March 27, 2007, ROHM Quality Assurance Analysis Center acquired the certification of ISO/IEC 17025(JISQ:17025: 2005) – the international standard for laboratories. The certification ensures the results of tests(within authorized field) conducted by ROHM Quality Assurance Analysis Center internationally and they are recognized all of the world.



ISO/IEC 17025 (JISQ17025:2005) Certification



ROHM Quality Assurance Analysis Center



Inductively Coupled Plasma Atomic Emission Spectrophotometry (ICP-AES)



X-ray Fluorescence Spectrometers(XRF)

Approach to Environmentally-Conscious Products

Basic Policy

ROHM's products are used for almost all electric appliances. For this reason, the semiconductor products themselves are environmentally-conscious products which realize energy-saving and space-saving. In addition to this, ROHM tries to develop more energy-saving and space-saving products to contribute to improve energy-saving electric appliances.

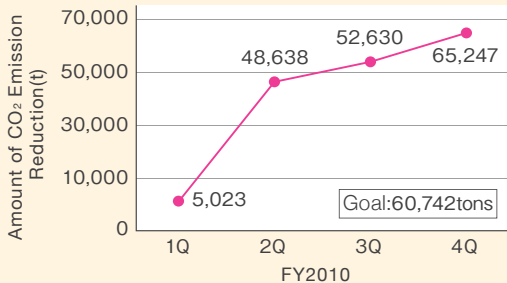
2010 Environmental Targets

- Increase CO₂ emission reduction through use of environmentally-conscious products in FY 2010 by 2% from the previous year's level.

Introduction of Environmental Contribution Level Evaluation Sheet and Evaluation of the Amount of CO₂ Reduction by Products

At the development stage of a new product, ROHM evaluates objectively how much each product contributes to environment compared to the previous model with numerical value. We conduct comparison various evaluation factors such as the reduction of resources by shrinking packages, and CO₂ reduction by reduction of power consumption. Also we calculate amount of CO₂ reduction in its use with power consumption per product and the number of expected sales, and total up every quarter of a year. In FY 2010, we establish CO₂ reduction target through the use of a product as 60,742 tons, and as a result, we reduced 65,247 tons and achieved our target.

Results of CO₂ Emission Reduction throughout Use of Environmentally-conscious Products



Calculation Method

The amount of CO₂ reduction (t-CO₂)
 = Σ (Amount of electric power (kW/pcs) × Use time (hour/year) × Use year (year) × Amount of expected sales (pcs) × The CO₂ conversion coefficient of electric power (0.00038t-CO₂/kWh) }

*Σ : It means that all devices which are started mass production in FY2010 are summed.

Environmental Contribution Level Evaluation Sheet

Environmental Contribution Level Evaluation Sheet

Actions to introduce LCA

<What is LCA?>

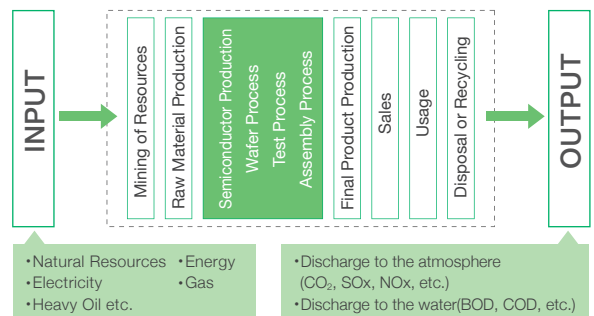
LCA is technique to not only calculate amount of resource consumption and waste generation but also evaluate environmental impact with considering the lifecycle of the product from beginning to the end: mining of resources, raw material production and production, transport usage and disposal of the product. The general flow of semiconductor production is shown on the right.

<What is Carbon Footprint?>

"Carbon footprint" is one of LCA technique and it focuses greenhouse gas emission, mainly CO₂, and calculate CO₂ emission per each product.

<ROHM's Approach>

ROHM started to calculate carbon footprint about main LSI in FY 2009. The target range(system boundary) is focused on semiconductor production process(colored portion in the flow on the right) which we can invest and analyze responsibly. The result has began to appear in some LSI. The figure on the right is one of LSI carbon footprint calculation results. ROHM tries to conduct carbon footprint calculation about our products proactively hereafter.



Results of LSI Carbon Footprint at ROHM

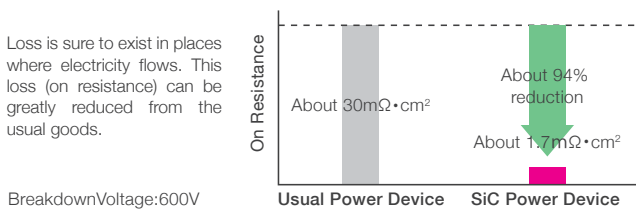
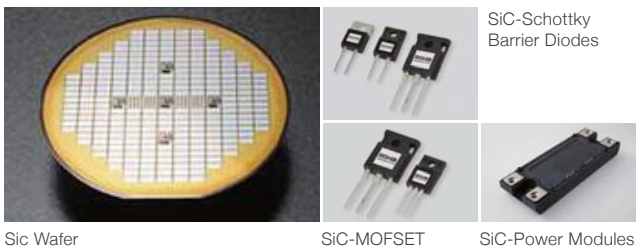
Category	Value
1 Material CO ₂	2
2 Production CO ₂	90
3 Transport CO ₂ between domestic and overseas locations	245
4 Use CO ₂	331
Total	668

(g)

ROHM Environmentally-Conscious Products

SiC Power Devices

SiC gets attention as a next-generation power device. It can operate under high temperature environment, become to operate rapidly and its power loss is less. As not only high- efficient inverter of electric vehicle or hybrid car, also DC/AC converters such as solar and wind power generation and industrial appliances, SiC becomes to be the device for energy-saving further against various uses. ROHM is the first in the world to develop SiC power devices and modules and meet the new market needs.

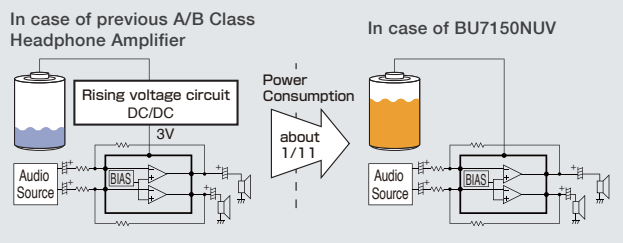


Low-voltage Operated Headphone Amplifier

About portable devices such as a portable audio device, IC recorder and electronic dictionary, we need to consider not only continuous using time also miniaturization, so the portable devices are required to operate using one battery in order to realize compact design. ROHM developed headphone amplifier BU7150NUV which can operate by a low voltage from 0.93V. This product has a power consumption as small as 1 mA, has a broad operating voltage range of 0.93~3.5V and needs no rising voltage circuit, so it can greatly contribute to improve continuous using time compared to the conventional AB class amplifier. Therefore, it became possible to extend life-span of the battery even when it uses just one battery.



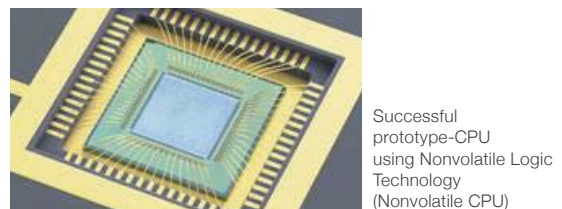
Comparison Headphone Amplifier Power Consumption through the Operation using One Battery



Nonvolatile Logic Technology

The more efficient devices become, the more power they consume. ROHM has successfully developed innovative technology to realize energy-saving system by turning some unused circuits and LSI off (with the main power remaining on). If we apply this technology, it is possible to reduce useless power which consumes to keep the data of home appliances etc. (It reaches to 15 billion Wh/year*). With application for PCs, start-up time would reduce considerably so that we could use PCs just like TVs.

*Estimate based on "Report of standby power consumption"(Energy Conservation Center, Japan)(Data is applicable within Japan.)



Applications for Nonvolatile Logic Technology

General Home Information Appliances

Possible use for embedded LSIs for general domestic high-performance/information appliances



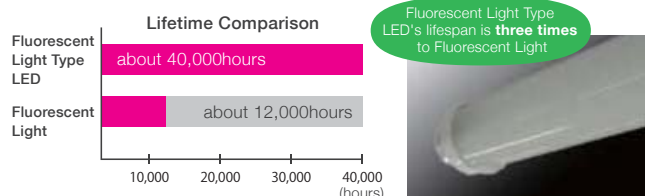
PCs

- Reduce start-up time
- Use PCs like TVs

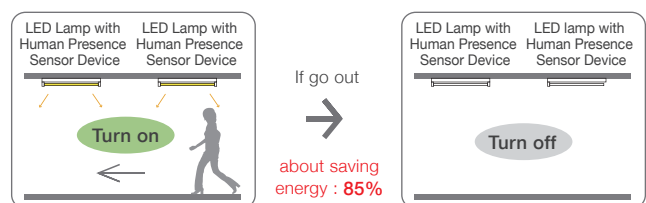


Straight Fluorescent Light Type LED

While the power-saving activities spread, LED lighting gets attention as its high level of contribution to energy-saving. ROHM has supplied high quality LED as general semiconductor company since we started to sell LED in 1973. The power consumption of LED decreased 70% compared to the conventional rapid fluorescent lamp and 40% compared to the conventional straight LED lamp, so we realized to reduce power consumption drastically. Also, LED lamp with human presence sensor device doesn't need to exchange its utensils, so the power consumption decreases drastically. Even the lifespan is about 40,000 hours which is 3 times more than a fluorescent lamp and the efficiency of maintenance becomes to be excellent.



○ If use in a hall



In case of that people go into/out hole , turn on time = 2 minutes/time, 5 times/hour

It is the most suitable in a place that people go into/out few times

Approach to Environmental Education

Employee Education

At ROHM Head Office, we conduct employee education at each section, and make education plan and record its result. The educational material is "Environmental Management Handbook", which contains the detail of environmental laws and daily environmental activity. In addition, all employees access to ROHM Portal Site and we can see ROHM Environmental Policy, environmental objectives and targets anytime, and, if necessary, we can print out.



Education to New Employees(ROHM Head Office)



Education to Younger Employee(LAPIS Semiconductor)



Environmental Management Handbook

Emergency Training

ROHM Group carries out emergency trainings in accordance with each emergency situation periodically. Every year, we make emergency training plan at each section and conduct each emergency training with emergency manual and the list of contact address. If there are some problems in emergency training, we revise the emergency manual to response quickly in emergency.



LAPIS Semiconductor



LAPIS Semiconductor Miyazaki



LAPIS Semiconductor Miyazaki



RWEM

Environmental Poster Contest

World Environmental Day is June 5, so ROHM Group defines June as Environmental Month and we hold ROHM environmental liason conference in every June. Each company collects posters and environmental slogan related to environment and, after that, the contest is held during the Conference. The number of entries has increased and the content is more considerate to global environment.



Best Award



Award for excellence



Award for excellence

The Number of Employees who Acquired Environment-related National Qualification

(as of March 31, 2011)

Environment-related National Qualification	The Number of Employees who acquired the license(persons)
Manager in charge of Pollution Control(air)	14
Manager in charge of Pollution Control (water)	75
Manager in charge of Pollution Control (noise)	29
Manager in charge of Pollution Control (oscillation)	13
Energy Manager(Type I)	66
Energy Manager(Type II)	11
Representative of Management of Specially Controlled Industrial Waste	91

ROHM employees are encouraged to obtain a national qualification as the final stage of training. Schooling opportunities and costs are completely funded by the company.

Approach to Environmental Communication

Actions about Environmental Conservation



ROHM Wako
 "Cleanup Volunteer at King Crab Protection Area"

In the Kasaoka water supply zone where is famous for king crab breeding place designated as a natural monument, "Cleanup Activities around Setouchi Bay seashore to protect king crabs!" was held by Kasaoka Municipal Board of Education annually. ROHM Wako employees and their family, led by environmental conservation management committee members, participated in the activity.



REDA
 "Environmental Conservation Information Campaign (in cooperation with Intel)"

REDA participated in an environmental conservation activity called "a low carbon home, a modern life" which the women federation committee and environmental conservation volunteer association located in REDA have advocated. REDA has worked this time in cooperation with Intel and distributed the eco-bag that published the environmental conservation enlightenment matters, such as energy saving, etc. at the meeting site.



REDA
 "Cleanup Activities for Xing hai Bay and Ocean Conservation"

REDA participated in the "marine eco-friendly, garbage picking activity" that the Dalian Environmental Conservation Bureau and Dalian Environmental Conservation Volunteer Association Organization conducted in the Xinghai Bay on the 39th World Environment Day on June 5, 2010 and cleaned the waste of the sea surface and the seashore.



REDA
 "Crude-oil Pollution Removal Volunteer Activities"

On July 16, 2010, a fire occurred due to the explosion of a Dalian new harbor crude oil transport pipe. Since the neighboring ocean area was polluted drastically, volunteers were recruited at REDA and participated in the seashore crude oil pollution removal activities.



REDA
 "Tree Planting Activities in the Development Sector"

REDA participated in the tree-planting activities in development sector Da Li Jia Street wherein the development sector management committee organized and have planted about 100 ginkgo trees.

Actions about Environmental Education



LAPIS Semiconductor
 "Posting of Garbage Reduction Education Posters"

Hachioji-city collects the "waste garbage reduction education poster" that is created by Hachioji-city public in the integration of the environmental education. Notice for cooperation was requested from Hachioji-city to LAPIS Semiconductor north-side fence (JR railway side) in July, 2005, and have cooperated in the posting of the child's work in the LAPIS Semiconductor after that have updated about 140 posters on October 18, 2010 in the fiscal year 2010.



REDA
 "Elementary School Environmental Education (in cooperation with Intel)"

REDA conducts educational activities to protect environment around schools in collaboration with Intel with "hand in hand, let us make a lushly green school together" as a theme. The corporate culture, conservation products and ROHM's environmental conservation policy principles were explained, and next, the view of Japan's waste segregation, method and the method of making environmental conservation awareness high, etc. were introduced, and interaction was deepened.



REDA
 "EARTH HOUR Publicity Campaign"

The EARTH HOUR publicity campaign is the promotion which tells the initiative concerning the battle against global warming and environmental conservation. REDA introduced various initiatives of REDA to the employee, a neighboring elementary school, concerned traders and residents.



ROHM Head Office
 "Elementary School Environmental Education"

ROHM goes to a neighboring elementary school and conducted environmental education activity. In the lesson, elementary school students make the circuit which combined various eco-parts made by ROHM, considers something together what can be done to conserve electricity and ROHM conducted an education with a theme to raise the environmental awareness.

The list of Outside Environmental Award in FY 2010

Award name	Award title	Company
Ministry of Environment "Recycling-based society promotion award" 	Minister of Environment award	ROHM Co.,Ltd.
Kyoto-prefecture "Kyoto-prefecture the formation of recycle society Eco-Kyoto 21" 	Eco-Kyoto 21 Meister authorization	ROHM Co.,Ltd.
Okayama-prefecture "Okayama-prefecture The formation of recycle society award" 	Okayama eco-factory authorization	ROHM WAKO Co.,Ltd.
Japan electric association "Efficient use of electricity award in kanto-area" 	Award	LAPIS Semiconductor Co.,Ltd.
Tokyo Fire Department "fire prevention campaign in autumn" 	Testimonial	LAPIS Semiconductor Co.,Ltd.
Ministry of Economy "Director Nuclear safety Agency Award" 	Good manufacturing site award	LAPIS Semiconductor Miyazaki Co.,Ltd.
Japan green center "The 29th green factory promotion general meeting" 	Minister of Economic award	LAPIS Semiconductor Miyagi Co.,Ltd.
Korean Government "Green company award" 	Green company appoint	ROHM KOREA
Dalian city environmental protection bureau "The 3rd Environmental promotion education personal award" 	Environmental promotion education personal award	REDA
Dalian city environmental protection bureau "FY2009-2010 Environmental publicity education person award" 	Environmental publicity education person award	REDA
Laguna lake Development authority "Laken ng Lawa Award" 	"Blue " Rating Awardee	RMPI

All ROHM Site Reports

ROHM Co.,Ltd. 21 Saiin Mizosaki-cho, Ukyo-ku, Kyoto



Manufacture of Electronic Parts like semiconductor

2010

- Minister of Environment award in "Recycling-based society promotion award"
- Master course in "Kyoto-prefecture the formation of recycle society Eco-Kyoto 21"

Item	FY	2008	2009	2010
Power Consumption		102,721,000 kWh	96,034,000 kWh	97,413,000 kWh
Fuel Consumption		2,303 kℓ	1,411 kℓ	1,658 kℓ
Water Consumption		730 thousands of m ³	890 thousands of m ³	977 thousands of m ³
Total Amount of Waste Generation		1,024 t	891 t	858 t
Amount of Landfill Waste		4.4 t	3.4 t	1.4 t
Recycling Resources Rate		99.6 %	99.6 %	99.8 %
NOx		4.3 t	5.9 t	5.1 t
BOD		8.7 t	9.6 t	6.1 t

PRTR

Ordinance No.	Substance	2010 (t)							
		2008 Amount used	2009 Amount used	2010 Amount used	2010 Amount released	2010 Amount transferred	2010 Amount consumed	2010 Amount eliminated	2010 Amount recycled
213	N,N-dimethylacetamide	—	—	8.2	—	8.2	—	—	—
332	Arsenic and its inorganic compounds	1.3	1.6	1.1	—	0.01	0.01	—	1.1
374	Hydrogen fluoride and its water-soluble salts	19.7	17.4	17.9	0.6	0.7	—	16.6	—

ROHM Hamamatsu Co.,Ltd. 10 Sanwa-cho, Minami-ku, Hamamatsu



Manufacture of ICs and LEDs

Item	FY	2008	2009	2010
Power Consumption		128,083,000 kWh	121,572,000 kWh	130,231,000 kWh
Fuel Consumption		3,925 kℓ	3,138 kℓ	3,647 kℓ
Water Consumption		971 thousands of m ³	950 thousands of m ³	1,067 thousands of m ³
Total Amount of Waste Generation		618 t	713 t	862 t
Amount of Landfill Waste		1.0 t	0 t	0.1 t
Recycling Resources Rate		99.8 %	100 %	99.9 %
NOx		8.0 t	4.0 t	6.0 t
BOD		84 t	67 t	55 t

PRTR

Ordinance No.	Substance	2010 (t)							
		2008 Amount used	2009 Amount used	2010 Amount used	2010 Amount released	2010 Amount transferred	2010 Amount consumed	2010 Amount eliminated	2010 Amount recycled
213	N,N-dimethylacetamide	—	—	31.7	31.7	—	—	—	—
374	Hydrogen fluoride and its water-soluble salts	33.9	37	46.8	2.5	—	—	44.3	—

ROHM Tsukuba Co.,Ltd. 10 Kitahara, Tsukuba, Ibaraki



Manufacture of Transistors, Diodes and SiC

Item	FY	2008	2009	2010
Power Consumption		55,716,480 kWh	50,409,840 kWh	51,890,592 kWh
Fuel Consumption		1,247 kℓ	1,093 kℓ	1,040 kℓ
Water Consumption		543 thousands of m ³	372 thousands of m ³	428 thousands of m ³
Total Amount of Waste Generation		1,226 t	1,139 t	1,227 t
Amount of Landfill Waste		6.8 t	5.1 t	89.9 t
Recycling Resources Rate		99.5 %	99.6 %	92.7 %
NOx		2.1 t	1.0 t	0.9 t
BOD		3.9 t	1.7 t	2.7 t

PRTR

Ordinance No.	Substance	2010 (t)							
		2008 Amount used	2009 Amount used	2010 Amount used	2010 Amount released	2010 Amount transferred	2010 Amount consumed	2010 Amount eliminated	2010 Amount recycled
374	Hydrogen fluoride and its water-soluble salts	7.9	7.9	13.9	—	4.3	—	—	9.6

ROHM Wako Co.,Ltd.

100 Tomioka, Kasaoka, Okayama

Previous ROHM WAKO and ROHM Wako Device merged on April 1, 2011.
In this table, the total of the two companies are showed.



Manufacture of ICs, Diodes and LEDs

2010

●Okayama eco-factory authorization in "Okayama-prefecture the formation of recycle society award"

Item	FY	2008	2009	2010
Power Consumption		92,736,175 kWh	93,863,461 kWh	94,903,660 kWh
Fuel Consumption		1,348 kℓ	694 kℓ	656 kℓ
Water Consumption		634 thousands of m ³	630 thousands of m ³	631 thousands of m ³
Total Amount of Waste Generation		1,403 t	1,530 t	1,672 t
Amount of Landfill Waste		0.8 t	0.4 t	0.5 t
Recycling Resources Rate		99.9 %	99.9 %	99.9 %
NOx		20 t	1.0 t	2.0 t
SOx		2.0 t	0.8 t	0.9 t
BOD		5.1 t	5.3 t	4.3 t

PRTR

(t)

Ordinance No.	Substance	2008	2009	2010					
		Amount used	Amount used	Amount used	Amount released	Amount transferred	Amount consumed	Amount eliminated	Amount recycled
53	Ethylbenzene	1.3	1.5	4	2.7	—	—	—	1.3
58	Ethylene glycol monomethyl ether	3.1	4.1	3.8	—	—	—	—	3.8
80	Xylene	33	37.1	32.8	3.1	—	—	—	29.7
82	Silver and its water-soluble compounds	1.6	1.9	2.2	—	—	0.6	—	1.6
213	N,N-dimethylacetamide	—	—	2.7	0.1	2.6	—	—	—
302	Naphthalene	—	—	15.9	0.1	—	—	—	15.8
343	Pyrocatechol	1.4	1.7	1.8	—	—	—	—	1.8
374	Hydrogen fluoride and its water-soluble salts	32.6	38.1	37.2	0.1	2	—	35.1	—
438	Methyl naphthalene	—	—	27.3	0.1	—	7.7	—	19.5

ROHM Apollo Co.,Ltd.

1164-2, Hiyoshi, Hirokawa, Yame, Fukuoka

Previous ROHM Apollo, ROHM Apollo Device and ROHM Fukuoka merged on June 30, 2011.
In this table, the total of the three companies are showed.



Manufacture of ICs, Transistors, Diodes, SiC and Tantalum Capacitors

Item	FY	2008	2009	2010
Power Consumption		161,697,096 kWh	152,743,443 kWh	156,667,954 kWh
Fuel Consumption		3,827 kℓ	2,429 kℓ	2,460 kℓ
Water Consumption		1,234 thousands of m ³	1,277 thousands of m ³	1,324 thousands of m ³
Total Amount of Waste Generation		2,190 t	1,979 t	1,990 t
Amount of Landfill Waste		0.5 t	0.3 t	0.3 t
Recycling Resources Rate		99.9 %	99.9 %	99.9 %
NOx		8.7 t	5.9 t	7.0 t
SOx		5.5 t	4.0 t	4.0 t
BOD		8.6 t	13 t	12 t
COD		1.6 t	2.0 t	1.9 t

PRTR

(t)

Ordinance No.	Substance	2008	2009	2010					
		Amount used	Amount used	Amount used	Amount released	Amount transferred	Amount consumed	Amount eliminated	Amount recycled
20	2-aminoethanol	3.7	—	—	—	—	—	—	—
53	Ethylbenzene	2.8	3.2	3.1	0.02	—	—	—	3.1
80	Xylene	2.7	3.0	3.0	0.9	—	—	—	2.1
213	N,N-dimethylacetamide	—	—	4.6	0.03	—	—	—	4.6
341	piperazine	—	—	1.1	—	—	—	—	—
374	Hydrogen fluoride and its water-soluble salts	26.4	29.9	34.9	0.4	5.5	—	28.6	—
412	Manganese and its compounds	1.3	0.8	1.1	—	—	0.8	—	0.4
438	Methyl naphthalene	—	—	24.3	—	—	24.3	—	—

ROHM Mechatech Co., Ltd.

3-6-1 Tsuchida, Ooi-cho, Kameoka, Kyoto



Manufacture of Molding Dies and Lead Frames

Item	FY	2008	2009	2010
Power Consumption		2,824,282 kWh	2,467,028 kWh	2,665,368 kWh
Water Consumption		1.5 thousands of m ³	1.6 thousands of m ³	1.8 thousands of m ³
Total Amount of Waste Generation		20 t	20 t	19.9 t
Amount of Landfill Waste		0.3 t	0.1 t	0.9 t
Recycling Resources Rate		98.5 %	99.5 %	95.5 %
BOD		0.01 t	0.01 t	0.01 t
COD		0.01 t	0.01 t	0.01 t

LAPIS Semiconductor Co., Ltd.

550-1 Higashiasakawa-cho, Hachioji-shi, Tokyo

(OKI Semiconductor changed the company name to LAPIS Semiconductor on October 1, 2011.)



Manufacture of ICs

Item	FY	2008	2009	2010
Power Consumption		57,280,096 kWh	44,875,000 kWh	35,573,980 kWh
Fuel Consumption		1,613 kℓ	1,340 kℓ	990 kℓ
Water Consumption		401 thousands of m ³	370 thousands of m ³	287 thousands of m ³
Total Amount of Waste Generation		724 t	491 t	390 t
Amount of Landfill Waste		11.5 t	8.2 t	0.5 t
Recycling Resources Rate		98.4 %	98.3 %	99.9 %
NOx		2.0 t	2.2 t	1.0 t
BOD		2.2 t	2.6 t	2.0 t

PRTR

(t)

Ordinance No.	Substance	2008		2009		2010			
		Amount used	Amount used	Amount used	Amount released	Amount transferred	Amount consumed	Amount eliminated	Amount recycled
20	2-aminoethanol	2.8	0.5	3.1	0.6	—	—	—	2.5
71	Ferric chloride	—	—	13.3	—	—	—	13.3	—
232	N,N-dimethylacetamide	1.5	0.3	2.4	0.4	—	—	—	2

2010

- Award in "Efficient use of electricity award in kanto-area"
- Testimonial of "Fire prevention campaign in autumn"

LAPIS Semiconductor Miyagi Co., Ltd.

1 Okinodaira, Ohira-mura, Kurokawa-gun, Miyagi

(OKI Semiconductor Miyagi changed the company name to LAPIS Semiconductor Miyagi on October 1, 2011.)



Manufacture of ICs

Item	FY	2008	2009	2010
Power Consumption		173,245,400 kWh	148,415,000 kWh	135,732,980 kWh
Fuel Consumption		143,348 kℓ	4,525 kℓ	4,411 kℓ
Water Consumption		2,384 thousands of m ³	1,687 thousands of m ³	1,544 thousands of m ³
Total Amount of Waste Generation		2,720 t	1,863 t	1,427 t
Amount of Landfill Waste		482 t	13.6 t	2.6 t
Recycling Resources Rate		82.0 %	99.2 %	99.8 %
NOx		14 t	16 t	16 t
SOx		14 t	14 t	10 t
BOD		3.0 t	2.0 t	3.0 t
COD		38 t	19 t	22 t

PRTR

(t)

Ordinance No.	Substance	2008		2009		2010			
		Amount used	Amount used	Amount used	Amount released	Amount transferred	Amount consumed	Amount eliminated	Amount recycled
232	N,N-dimethylacetamide	—	—	1.8	0.3	1.5	—	—	—
278	Triethylenetetramine	—	—	1.9	0.3	1.6	—	—	—
374	Hydrogen fluoride and its water-soluble salts	126.5	66.1	53.3	0.3	0	—	53	—
438	Methyl naphthalene	—	—	50.1	0.3	—	—	49.9	—

2010

- Minister of Economic award in "The 29th green factory promotion general meeting"

LAPIS Semiconductor Miyazaki Co.,Ltd.

727 Kihara, Kiyotake-cho, Miyazaki-shi, Miyazaki

(OKI Semiconductor Miyazaki changed the company name to LAPIS Semiconductor Miyazaki on October 1, 2011.)



Manufacture of ICs

2010

● Good manufacturing site award in "Director Nuclear safety Agency Award"

Item	FY	2008	2009	2010
Power Consumption		183,459,740 kWh	173,098,322 kWh	184,358,530 kWh
Fuel Consumption		3,192 kℓ	3,726 kℓ	3,389 kℓ
Water Consumption		886 thousands of m ³	894 thousands of m ³	891 thousands of m ³
Total Amount of Waste Generation		1,947 t	1,755 t	1,909 t
Amount of Landfill Waste		3.3 t	1.3 t	10.6 t
Recycling Resources Rate		99.8 %	99.9 %	99.4 %
NOx		7.4 t	22 t	17 t
SOx		61 t	71 t	27 t
BOD		1.7 t	0.8 t	1.5 t
COD		1.4 t	1.2 t	1.2 t

PRTR

(t)

Ordinance No.	Substance	2008	2009	2010					
		Amount used	Amount used	Amount used	Amount released	Amount transferred	Amount consumed	Amount eliminated	Amount recycled
20	2-aminoethanol	21.0	19.2	18.3	3.3	15.0	—	—	—
80	Xylene	—	4.0	4.5	0.8	3.7	—	—	—
343	Pyrocatechol	1.4	1.4	0.9	0.2	0.8	—	—	—
374	Hydrogen fluoride and its water-soluble salts	30.3	30.3	32.9	0.2	2.2	—	30.5	—
438	Methyl naphthalene	—	—	39.9	0.2	—	—	39.7	—

ROHM Logistec Co.,Ltd.

75 Masusaka, Kamogata-cho, Asakuchi, Okayama



Distribution of ROHM Products

Item	FY	2008	2009	2010
Power Consumption		1,351,961 kWh	1,153,566 kWh	1,132,752 kWh
Fuel Consumption		96 kℓ	84 kℓ	93 kℓ
Water Consumption		5 thousands of m ³	4 thousands of m ³	4 thousands of m ³
Total Amount of Waste Generation		38 t	20 t	18 t
Amount of Landfill Waste		0.1 t	0.04 t	0.04 t
Recycling Resources Rate		99.9 %	99.8 %	99.8 %
NOx		0.1 t	0.1 t	0.1 t
SOx		0.1 t	0.1 t	0.1 t
BOD		0.1 t	0.01 t	0.02 t

ROHM Korea Corporation

371-11 Gasan-Dong, Gumcheon-gu, Seoul 153-803 Korea



Manufacture of ICs, Transistors, Diodes, LED Displays

2010

●Green company appoint in "Green company award"

Item	FY	2008	2009	2010
Power Consumption		39,173,000 kWh	35,076,912 kWh	34,170,043 kWh
Fuel Consumption		65.6 kℓ	61.9 kℓ	0 kℓ
Water Consumption		138 thousands of m ³	113 thousands of m ³	77 thousands of m ³
Total Amount of Waste Generation		594 t	459 t	424 t
Amount of Landfill Waste		6.0 t	1.0 t	0.7 t
Recycling Resources Rate		99.1 %	99.7 %	99.8 %
BOD		0.3 t	0.3 t	0.2 t
COD		0.8 t	0.5 t	0.5 t

PRTR

(t)

Ordinance No.	Substance	2008	2009	2010					
		Amount used	Amount used	Amount used	Amount released	Amount transferred	Amount consumed	Amount eliminated	Amount recycled
31	Antimony and its compounds	6.1	3.5	7.8	—	—	5.7	—	2.2

ROHM Electronics Philippines, Inc.

People's Technology Complex Special Economic Zone, Carmona, Cavite 4116 Philippines



Manufacture of ICs, Transistors, Diodes and Resistors

2009

●Philippine Administration Agency Environmental Prize Acknowledgement/Recognition

Item	FY	2008	2009	2010
Power Consumption		—	—	69,708,666 kWh
Fuel Consumption		41,055 kℓ	42,875 kℓ	28,882 kℓ
Water Consumption		1,192 thousands of m ³	1,331 thousands of m ³	1,497 thousands of m ³
Total Amount of Waste Generation		1,242 t	1,321 t	1,232 t
Amount of Landfill Waste		0 t	0 t	0 t
Recycling Resources Rate		100 %	100 %	100 %
NOx		1,009 t	1,079 t	870 t
SOx		753 t	759 t	597 t
BOD		1.0 t	1.0 t	1.0 t
COD		5.0 t	6.0 t	3.0 t

PRTR

(t)

Ordinance No.	Substance	2008	2009	2010					
		Amount used	Amount used	Amount used	Amount released	Amount transferred	Amount consumed	Amount eliminated	Amount recycled
31	Antimony and its compounds	11	7	7	—	—	2	—	5
82	Silver and its water-soluble compounds	5	10	9	—	—	8	—	1
308	Nickel	16	11	6	—	—	6	—	—
309	Nickel compounds	5	5	5	—	—	4	—	1

ROHM Integrated Systems (Thailand) Co., Ltd.

101/94, 102 Navanakorn Industrial Zone, Moo 20, Phaholyothin Road, Tambol Khlong-Nueng, Amphur Khlong-Lueng, Pathumthani 12120 Thailand



Manufacture of ICs, Transistors, Diodes, Resistors and Tantalum Capacitors

Item	FY	2008	2009	2010
Power Consumption		167,300,905 kWh	194,021,983 kWh	202,322,701 kWh
Fuel Consumption		11 kℓ	0 kℓ	211 kℓ
Water Consumption		1,086 thousands of m ³	1,241 thousands of m ³	1,355 thousands of m ³
Total Amount of Waste Generation		1,960 t	2,306 t	2,300 t
Amount of Landfill Waste		0 t	0 t	0 t
Recycling Resources Rate		100 %	100 %	100 %
BOD		4.0 t	4.0 t	4.0 t
COD		15 t	21 t	19 t

PRTR

(t)

Ordinance No.	Substance	2008	2009	2010					
		Amount used	Amount used	Amount used	Amount released	Amount transferred	Amount consumed	Amount eliminated	Amount recycled
31	Antimony and its compounds	12.4	10.8	10.1	—	—	0.9	—	9.2
82	Silver and its water-soluble compounds	6.8	8.6	8.0	—	—	6.3	—	1.7
308	Nickel	20.4	24.9	24.5	—	—	23.6	—	1.0
309	Nickel compounds	7.7	11	11.2	—	—	9.0	—	2.2

ROHM Semiconductor (China) Co.,Ltd.

No.7 Weisan Road, Micro-electronics Industrial Park, Jingang Highway, Xiqing District, Tianjin 300385 China



Manufacture of Transistors, Diodes, LED, Laser Diodes, LED Displays and Optical Sensors

Item	FY	2008	2009	2010
Power Consumption		69,838,310 kWh	77,621,000 kWh	87,646,000 kWh
Water Consumption		539 thousands of m ³	445 thousands of m ³	459 thousands of m ³
Total Amount of Waste Generation		808 t	751 t	862 t
Amount of Landfill Waste		496 t	560 t	656 t
Recycling Resources Rate		39 %	25 %	24 %
BOD		3.0 t	3.0 t	4.0 t
COD		24 t	16 t	19 t

PRTR

Ordinance No.	Substance	2010							
		2008 Amount used	2009 Amount used	2010 Amount used	2010 Amount released	2010 Amount transferred	2010 Amount consumed	2010 Amount eliminated	2010 Amount recycled
20	2-aminoethanol	—	—	1	—	—	1	—	—
31	Antimony and its compounds	—	—	2	—	1.7	0.3	—	—
71	Ferric chloride	—	—	48	—	—	48	—	—
82	Silver and its water-soluble compounds	1.7	2	2	—	—	0.2	—	1.8
265	Methyltetrahydrophthalic anhydride	—	2	3	—	—	0.3	—	2.7
291	Tris (2,3-epoxypropyl)	11.4	11	12	—	—	12	—	—
305	Lead and its compounds	4.2	5	5	—	3	2	—	—

ROHM Electronics Dalian Co.,Ltd.

No.20 Four Street East & North, Dalian Economic & Technical Development Zone, Dalian 116600 China



Manufacture of Power Modules, Thermal Print Heads, Contact Image Sensor Heads, Photo Link Modules, Lighting, Optical Sensors and LED Displays

Item	FY	2008	2009	2010
Power Consumption		64,901,341 kWh	60,920,564 kWh	62,857,810 kWh
Fuel Consumption		4,491 kℓ	2,145 kℓ	5,183 kℓ
Water Consumption		358 thousands of m ³	304 thousands of m ³	317 thousands of m ³
Total Amount of Waste Generation		214 t	174 t	178 t
Amount of Landfill Waste		46 t	46 t	35 t
Recycling Resources Rate		78 %	76 %	80.6 %
BOD		1.4 t	1.0 t	1.6 t
COD		56 t	31 t	20 t

PRTR

Ordinance No.	Substance	2010							
		2008 Amount used	2009 Amount used	2010 Amount used	2010 Amount released	2010 Amount transferred	2010 Amount consumed	2010 Amount eliminated	2010 Amount recycled
31	Antimony and its compounds	—	—	1.4	0.1	0.1	1.2	—	—
71	Ferric chloride	—	—	9.9	1.0	0.5	8.4	—	—
82	Silver and its water-soluble compounds	2.1	1.4	1.8	0.2	0.1	1.5	—	—

2010

- Environmental promotion education personal award in "The 3rd Environmental promotion education personal award"
- Environmental publicity education person award in "FY2009-2010 Environmental publicity education person award"

ROHM-Wako Electronics (Malaysia) Sdn. Bhd.

Lot 1320 Kawasan Perindustrian, Pengkalan Chepa II, Padang Tembak, 16100 Kota Bharu, Kelantan, Malaysia



Manufacture of Diodes and LEDs

Item	FY	2008	2009	2010
Power Consumption		53,841,810 kWh	61,120,286 kWh	69,230,879 kWh
Fuel Consumption		14 kℓ	11 kℓ	16 kℓ
Water Consumption		304 thousands of m ³	351 thousands of m ³	358 thousands of m ³
Total Amount of Waste Generation		855 t	953 t	1,062 t
Amount of Landfill Waste		34 t	79 t	75 t
Recycling Resources Rate		98.3 %	91.8 %	93 %
BOD		0.7 t	0.8 t	1.0 t
COD		1.8 t	1.1 t	1.6 t

PRTR

Ordinance No.	Substance	2010							
		2008 Amount used	2009 Amount used	2010 Amount used	2010 Amount released	2010 Amount transferred	2010 Amount consumed	2010 Amount eliminated	2010 Amount recycled
20	2-aminoethanol	1.5	2	1.9	0.6	—	—	—	1.3
71	Ferric chloride	—	—	8.1	2.8	—	—	—	5.3
291	Tris (2,3-epoxypropyl)	—	—	1.1	0.4	—	—	—	0.7
297	1,3,5-trimethylbenzene	1.1	0.9	1.2	0.2	—	—	—	1.0
305	Lead and its compounds	7.1	7.8	12.3	4.3	—	—	—	8.0

ROHM Mechatech Philippines, Inc.

People's Technology Complex Special Economic Zone, Carmona, Cavite 4116 Philippines



Manufacture of Molding Dies and Lead Frames

2010
● "Blue" Rating Awardee in "Laken ng Lawa Award"

Item	FY	2008	2009	2010
Power Consumption		10,189,106 kWh	10,778,695 kWh	10,036,005 kWh
Fuel Consumption		460 kℓ	386 kℓ	420 kℓ
Water Consumption		28 thousands of m ³	39 thousands of m ³	29 thousands of m ³
Total Amount of Waste Generation		500 t	374 t	346 t
Amount of Landfill Waste		9 t	2 t	0.4 t
Recycling Resources Rate		98 %	99.6 %	99.9 %
NOx		0.2 t	0.1 t	0.1 t
SOx		1.0 t	0.6 t	0.6 t
BOD		1.0 t	0 t	0 t
COD		3.0 t	0 t	0 t

ROHM Mechatech (Thailand) Co., Ltd.

102/2 Navanakorn Industrial Zone, Moo 20, Phaholyothin Road, Tambol Khlong-Nueng, Amphur Khlong-Lueng, Pathumthani 12120 Thailand



Manufacture of Molding Dies and Lead Frames

Item	FY	2008	2009	2010
Power Consumption		7,114,200 kWh	7,463,880 kWh	11,325,630 kWh
Fuel Consumption		—	—	155.8 kℓ
Water Consumption		44 thousands of m ³	42 thousands of m ³	60 thousands of m ³
Total Amount of Waste Generation		16 t	15 t	127 t
Amount of Landfill Waste		0.7 t	0.8 t	23.3 t
Recycling Resources Rate		95.4 %	94.7 %	81.8 %
BOD		1.9 t	1.8 t	2.2 t
COD		5.0 t	4.7 t	7.3 t

PRTR

(t)

Ordinance No.	Substance	2010							
		2008	2009	2010					
		Amount used	Amount used	Amount used	Amount released	Amount transferred	Amount consumed	Amount eliminated	Amount recycled
82	Silver and its water-soluble compounds	—	—	1.4	—	—	1.4	—	—

LAPIS Semiconductor (Ayutthaya) Co., Ltd.

1/39 M.5 Tambol Kanham, A.U-thai Ayutthaya 13210, Thailand

(OKI(Thailand)Co., Ltd changed the company name to LAPIS Semiconductor(Ayutthaya) on October 1, 2011.)



Manufacture of ICs

Item	FY	2008	2009	2010
Power Consumption		51,062,208 kWh	51,020,537 kWh	52,876,215 kWh
Fuel Consumption		29.3 kℓ	28.5 kℓ	24.3 kℓ
Water Consumption		444 thousands of m ³	406 thousands of m ³	424 thousands of m ³
Total Amount of Waste Generation		1,037 t	458 t	481 t
Amount of Landfill Waste		44 t	32 t	5.6 t
Recycling Resources Rate		95.8 %	92.5 %	98.9 %
BOD		0.7 t	1.3 t	1.3 t
COD		1.8 t	5.1 t	5.4 t

PRTR

(t)

Ordinance No.	Substance	2010							
		2008	2009	2010					
		Amount used	Amount used	Amount used	Amount released	Amount transferred	Amount consumed	Amount eliminated	Amount recycled
374	Hydrogen fluoride and its water-soluble salts	3.3	2.2	2	—	0.7	—	1.3	—



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