

Initiatives to Prevent Global Warming



Global warming by greenhouse gases, as typified by carbon dioxide (CO₂), is an extremely serious problem that threatens the continued existence of humans. It is said that the melting of Antarctic ice by global warming and the resulting rise in ocean levels will inundate some land areas. Further, not only will the temperature of the earth as a whole rise, but climate distribution will change; regions of extreme cold and heat will arise without warning; and agriculture and the ecosystem are expected to be affected. To prevent these atmospheric fluctuations, the Kyoto Protocol was signed in 1997 and took effect in February 2005.

The target for Japan is to reduce emission levels of greenhouse gases over a five-year span (starting in 2008, ending in 2012) by a ratio of 6% over 1990. Each industry has drawn up independent plans of action and has taken initiatives to reduce the volume of greenhouse gas emissions. At ROHM,

the level of prevention of global warming has raised to first place in its environmental activity objectives and initiatives on the following four items listed above.

- 1. Reduce energy consumption by manufacturing sections.**
- 2. Reduce greenhouse gas emissions other than CO₂.**
- 3. Reduce energy consumption by indirect sections.**
- 4. Reforestation activities.**

As an important indirect effect, ROHM has channeled its efforts into products with low energy consumption in electrical and electronic end-products that use our components.

Reduce Energy Consumption by Manufacturing Sections

Carbon dioxide (CO₂), a representative greenhouse gas, is generated by the burning of fossil fuels (petroleum, natural gas and methane) to convert energy. To deal with these problems, energy-saving activities are crucial. ROHM has been working on the ROHM Production System (RPS), a highly efficient production line that produces semiconductors with minimal energy consumption. Having developed key production facilities, ROHM continues to commit itself to enhancing QCD (quality, cost and delivery) as much as possible. Given this commitment, RPS is making considerable energy-saving contributions with improved production efficiency as well as the elimination of waste.

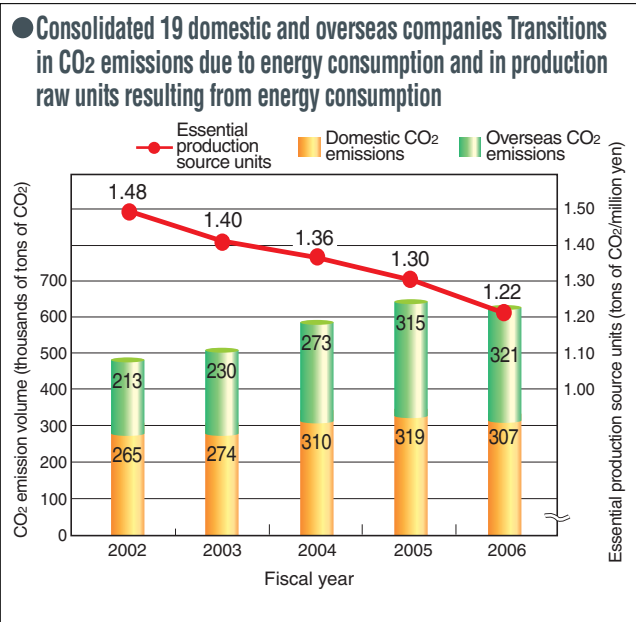
One example can be seen with air-conditioning facilities that control temperature and humidity in the early manufacturing stages (clean room) and that have high energy consumption. A clean room is a critical manufacturing environment that determines the quality of semiconductor products. In this room, dust particles are minimized and temperature and humidity are maintained within a certain range to meet stringent manufacturing conditions. Air conditioning is critical to maintaining the temperature range but consumes large amounts of energy. To conserve energy, clean-room temperature and humidity is optimized and inverters are used for equipment control. Unfortunately, air-conditioning facilities are not influenced by fluctuations in product output which requires a constant rate of energy. Therefore, a key to saving energy is to determine the number of products the number of value-added products that can be produced within a specific level of energy consumption.

We are maintaining and strengthening our post-production overseas system in order to further globalize our production sites. However, this has resulted in greater energy consumption than

domestic usage. Energy consumption on a consolidated basis (domestic and overseas) decreased in 2006 as compared to the previous year.

Also, while energy consumption increases with improvement in results, ROHM has steadily reduced per-unit energy consumption for real production since 2002. This measure reflects The Company's effort to reduce energy consumption and is the common measure used in the electric and electronics industry to evaluate activities to reduce energy consumption.

<Essential production = production (million yen) ÷ Bank of Japan corporate price index : electrical device portion.>



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2006 Activities

In 2005, ROHM increased the temperature of water used to cool production facilities from 20°C, which traditionally has been the norm, to 32°C, which enables cooling in open air. As a result, ROHM dramatically reduced its energy consumption from cooling by freezer machines.

ROHM expanded these efforts on a Group-wide basis, as a result of which, energy consumption was reduced on a Group-wide basis by 874kl and CO₂ emissions by 1,955t.

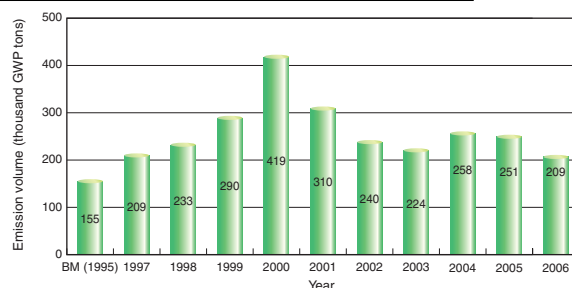
Also, as part of the efforts of individual Group companies, ROHM Apollo Device changed the small once-through boiler to a high-efficiency type and reduced energy consumption by 144kl and CO₂ emissions by 388t. In addition, ROHM Wako Device installed a mechanism to directly use open air for certain facilities to maximize clean rooms and reduced energy consumption by 259kl and CO₂ emissions by 386t.

Reduce Greenhouse Gas Emissions other than CO₂

LSI manufacturing has experienced significant technical innovations. For today's fine-patterning technologies, perfluorocarbon (PFC) gases have become essential for producing high-density LSI chips. Once emitted into the air, PFC gases have 6,500 times the greenhouse effect of CO₂. With this awareness, the semiconductor industry in Japan established in July 1999 the Global Warming Prevention Committee to address this issue. As an active member of this committee, ROHM initiated an action plan to reduce PFC gas emissions.

ROHM is continuing to install non-toxic equipment according to its reduction plan. However, through technological innovation, alternative gases have been developed that are largely unrecognized by warming indices. ROHM will continue to evaluate them and the potential threat they may pose to the environment. If an alternative gas is proven viable, it might make it possible to reduce greenhouse gas emissions, resulting in reduced environmental impact.

●PFC gases Emission transition



Reduce emissions by 2010 by 10% or more over FY 1995 performance.

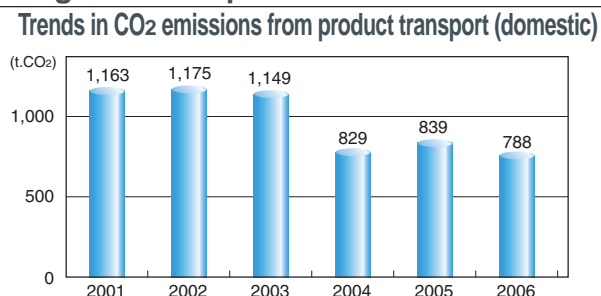
Emission Reduction Steps

1. Plan to optimize manufacturing conditions so that excessive gases are not used.
2. Change to alternative gases with small warming indices.
3. Install non-toxic equipment to avoid emission.

Reduction of CO₂ Emissions in Distribution

As society's interest in reducing environmental impact at the distribution stage increases, ROHM has implemented measures such as improvement in loading efficiency through cross docking, maximizing dispatch frequency and is working on reducing CO₂ emissions from delivery truck fuel consumption.

●Logistics from production site



Reduce Energy Consumption by Indirect Departments

■ Introducing Photovoltaic Power Generation

Photovoltaic power generation, which is expected to be a source of power in the future, was installed in the employee services center (ROHM head office) in 1999.



Employee Services Center (ROHM head office)



ROHM head office solar energy generation facility
Annual power generation capacity of 11,000 kwh



ROHM Fukuoka solar energy generation facility
Annual power generation capacity of 22,000 kwh



ROHM Apollo solar energy generation facility
Annual power generation capacity of 24,000 kwh

■ Introducing Automatic-lighting Control

For indoor lighting in the new employee services center (ROHM head office), natural daylight is used together with a system that automatically controls artificial lighting according to the amount of daylight available.

■ Introducing a Lighting System with Heat-detection Sensor

To ensure that unnecessary lights get turned off, employee services center (ROHM head office) are equipped with a sensor-based system. This system uses a combination of movement and body heat within a specified zone to sense human occupancy and control the lighting system accordingly-either by turning the lighting system on/off or increasing/decreasing light output.

■ Introducing an Ice Thermal Storage Air-conditioning System

Employee services center (ROHM head office) are equipped with an ice thermal storage air-conditioning system that uses nighttime electrical power to produce ice during the summer and a reserve of hot water during the winter. This arrangement allows daytime air conditioning or heater to use ice or hot water, depending on the season. The system lowers power consumption which peaks during daytime hours, helping level power demand and contributing to environmental conservation.



Ice thermal storage air-conditioning system

■ Employing Energy Efficient Cars

ROHM has deployed hybrid cars that use both gasoline and electricity for use at its business centers throughout Japan since April 1999 in order to contribute to the prevention of global warming. In fiscal 2005, the number of low-emission cars was 116 out of a total of 150 cars for the entire corporation in Japan.



Hybrid car

■ Stop Idling Campaign

ROHM is asking all of its employees and customers to stop idling their vehicles. At ROHM headquarters, billboards have been placed in all parking lots in accordance with local ordinances.



Campaign signboard

■ Introduction of Insulating Paint

In Malaysia, a country of scorching heat, the amount of electricity consumed by air-conditioning at ROHM-Wako Electronics (Malaysia) SDN, BHD is enormous. To minimize the use of air-conditioning, the roofs of all building were painted with insulating paint and an annual savings of 486,000 kWh of electricity was achieved. This initiative is being expanded to production bases in the Philippines as well.



Insulating paint finish

■ Introduction of Green Electricity

ROHM takes into account the prevention of global warming by using green electricity through biomass generation for the annual year-end illumination event.



Green electricity certificate