

Environment

Environmental Philosophy and Policy

All employees of Pentel engage in activities for environmental conservation under an environmental management framework based on the basic philosophy of global environmental protection and protection against contamination.

Environmental Principles

Pentel formulated its Environmental Principles in 1996 to fulfill its social responsibility as a corporate citizen of the global community and established an organization for environmental management and promotion in 1997. We also established the Corporate Environmental Management Committee in 2003 to facilitate company-wide environmental activities with particular focus on production sites, which are considered to have greater environmental impact than other locations.

Environmental Principles (Established in 1996)

● Basic Philosophy

As a good corporate citizen in the global community, Pentel recognizes the importance of responsibility for the community. We are committed to global environmental protection and protection against contamination, in line with our corporate management philosophy. We increase the environmental awareness of employees and promote environmentally friendly corporate activities to create a society where people can live in harmony with the environment.

● Action Agenda

1. In every stage from design and development to disposal, across our corporate activities, we shall develop and provide environmentally aware products and services.
2. Complying with environmental laws, regulations, agreements and commitments inside and outside Japan, we shall continuously contribute to environmental conservation and improvement.
3. In our overseas operations, we shall ensure the environmental conservation of the relevant countries.
4. When planning a new project, we shall perform continuous assessment and remain committed to

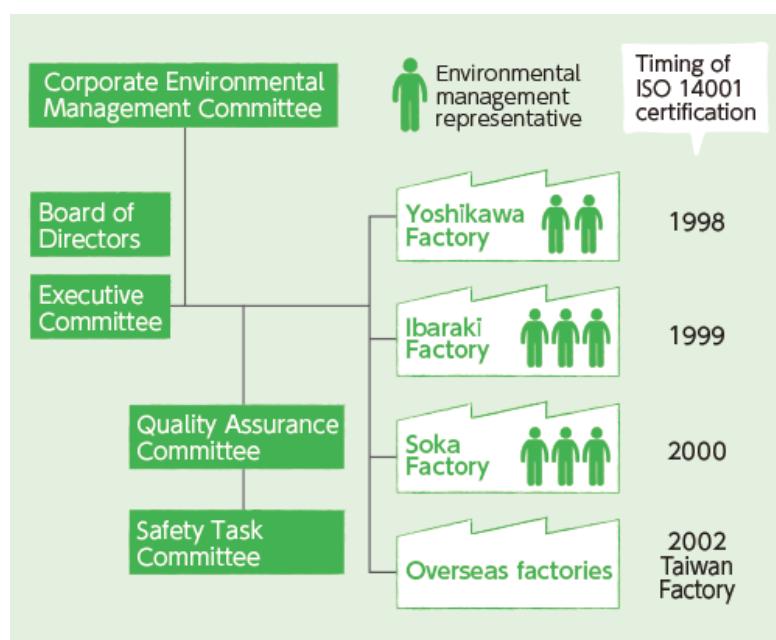
environmental conservation.

5. We shall provide information and education concerning environmental conservation to our employees, while providing relevant information for environmental conservation to customers, governments and regional societies.

6. We shall communicate and enforce this agenda to all employees and organizations, while improving our knowledge about and technologies for environmental conservation.

Environmental management framework

Based on the Basic Philosophy of the Environmental Principles, we have built an environmental management framework, which is aimed at developing and operating environmental management systems, to make our activities at factories and offices even more environmentally conscious and effective for environmental conservation. The three factories in Japan acquired ISO 14001* certification in 1998, 1999 and 2000, followed by the Taiwan Factory in 2002, and these factories steadfastly continue to make improvements in their environmental performance.



Environmental management framework

*ISO 14001 : A set of standards for the development of an environmental management system designed to continuously improve environmental performance of corporate activities, products and services (including the reduction of their impact on the environment).

■ Promotion of environmental training

We provide all employees with environmental training, which is aimed at improving their basic knowledge of the environment and raising their awareness of environmental conservation. In addition, we provide leaders of environmental activities with training on relevant laws and regulations and specialized technologies, skills training and training to qualify them as internal environmental auditors.

■ Internal environmental audit and improvement activities

The environmental management representative of each factory and internal environmental auditors check that all business activities conducted at their respective sites are in compliance with the ISO 14001 standard and the company's environmental management system. They also use these audits as an opportunity to hear proposals from every division regarding on-going improvements of the environmental activities conducted at each site. The company also employs a bottom-up approach in its efforts to improve the environment by encouraging every employee to take part through quality control (QC) circle activities such as environmental improvement planning and "wall newspaper" contests.

Evaluation of compliance with laws and regulations

■ Proper management of chemical substances

To ensure compliance with the RoHS Directive^{*1}, the REACH Regulation^{*2} and other regulations concerning chemical substances, we have developed a database on the safety of chemical substances used for each product and material as part of our efforts to build a robust chemical substance management system.

We use a GHS^{*3} compliant safety data sheet (SDS) creation system to quickly check The Negative List of Chemical Substances and The List of Chemical Substances and investigate the chemical content of materials submitted by suppliers.

^{*1} RoHS Directive

The Restriction of Hazardous Substances (RoHS) Directive was issued by the European Union (EU) to restrict the use of six hazardous substances (lead, mercury, etc.) in electrical and electronic equipment.

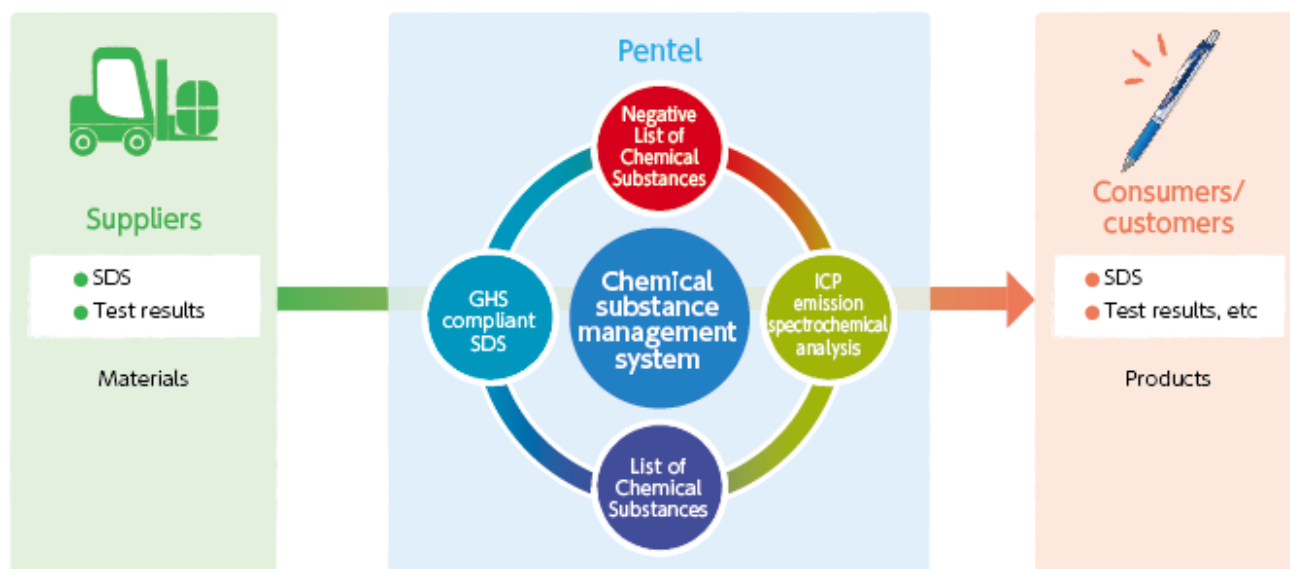
^{*2} REACH Regulation

An EU regulation for registration, evaluation, authorization and restriction of chemicals.

^{*3} GHS

The Globally Harmonized System of Classification and Labelling of Chemicals (GHS) is a proposal made by the United Nations in July 2003. Its intention is to promote standard criteria for classifying chemicals according to their hazards

as well as for providing information on chemicals used through labeling and SDS to help prevent accidents and protect people's health and the environment.



Chemical substance management framework

■ Proper management of equipment, etc.

We maintain and manage our equipment that has an impact on the environment (including an impact on water quality, air and soil, noise and vibrations, ozone depletion, and the consumption of resources and energy) in accordance with laws and regulations or by applying standards that are stricter than these. We manage the equipment by specifying the management items, standards, frequency and method for each.

Acquisition of external certifications

We strive to improve the effectiveness of our environmental management system by proactively making use of certification programs of public organizations and third-party organizations to evaluate the quality of the system objectively. To provide specific examples, we have obtained ISO 14001 certification and made use of a program for certifying eco-friendly companies, a program for the registration of eco-friendly business sites and a program for certifying outstanding recycling business sites under which we have been certified continuously. (All three of these programs are operated by the Ibaraki Prefectural Government.) We have also used a system for certifying business sites that are deemed to be excellent in terms of eco-friendly commuting, which is operated by a government council for managing the promotion of the use of public transportation services.

The Ibaraki Factory has taken initiatives including the replacement of materials of products that used substances to be disposed of in landfills. As a result, the factory has achieved a recycling rate of 100% and zero emissions every year since FY2011, and has continued to be certified by the Ibaraki Prefectural Government as an outstanding recycling business site.



Outstanding recycling business site certificate awarded the Ibaraki Prefectural Government



Certificate of registration as an eco-friendly business site



Certificate of excellent business site in eco-friendly commuting

Environment

Environmental Conservation

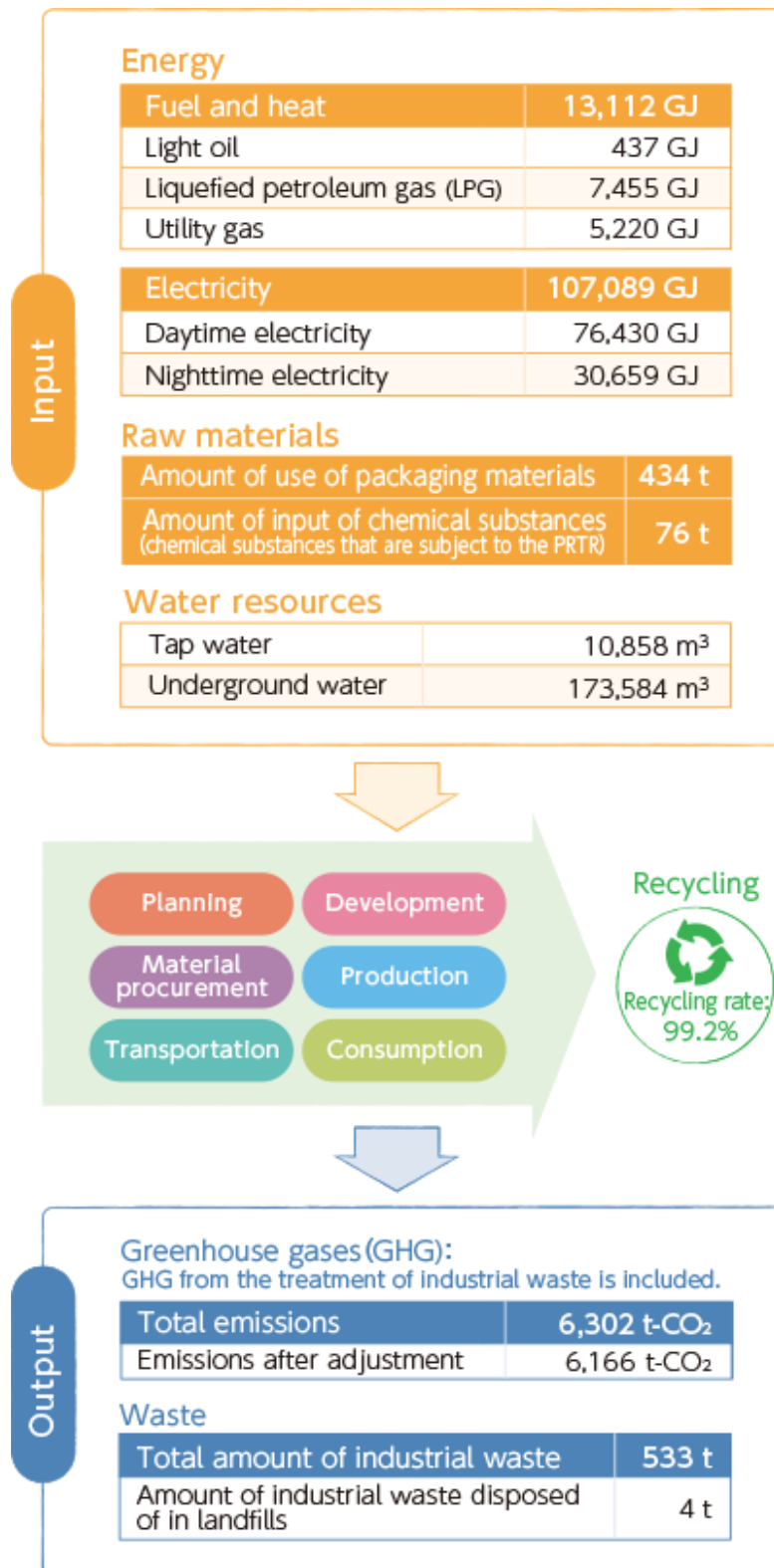
We strive to reduce our environmental impact by taking initiatives for reducing CO₂ emissions and protecting biodiversity throughout all of our business activities from the procurement of raw materials to manufacturing and disposal.

Relationship between our business activities and environmental impact

The processes of our business activities involve the use of global resources such as raw materials, energy and water (input) and emissions of CO₂, waste and others (output).

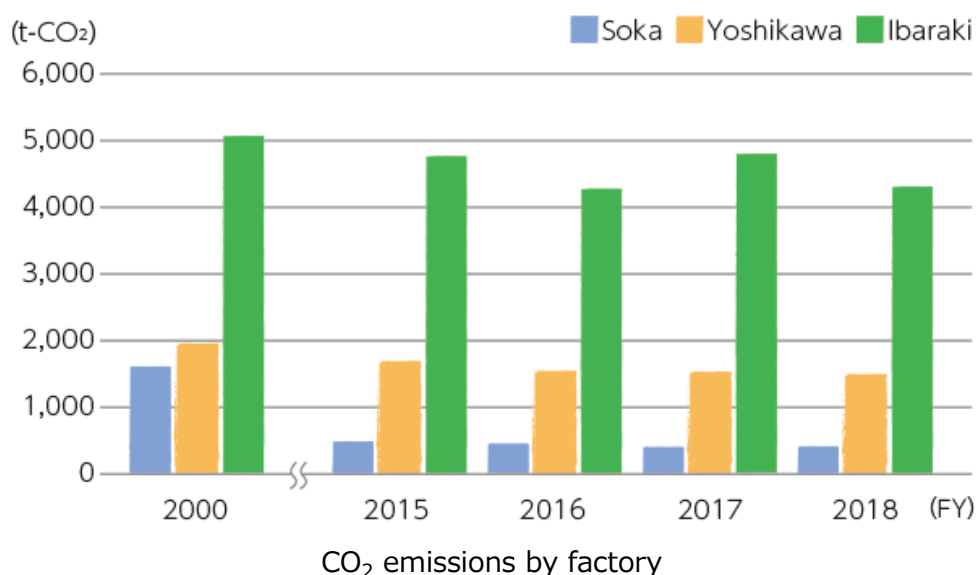
Based on an accurate understanding of the environmental impact of our business activities, we use limited global resources carefully to avoid waste in our overall business activities from product development to production, transportation, consumption and recycling in our efforts to reduce their environmental impact.

FY 2018 performance



Reduction of CO₂ emissions

Pentel is working hard to reduce CO₂ emissions by, among other measures, cutting electricity and other energy consumption, utilizing reprocessed resin and reducing waste. At the three factories in Japan, CO₂ emission reduction targets are set every year, and everyone across the company is united in working towards achieving these goals.



* TEPCO Energy Partner's CO₂ emission factors (after adjustment) are used

■ Initiatives for Energy Saving

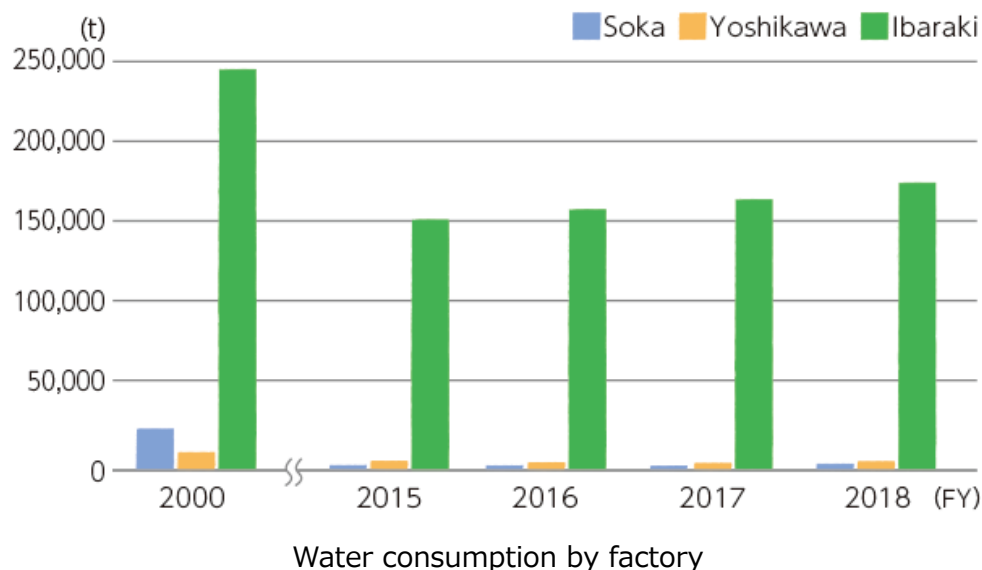
According to the Energy Conservation Act revised in 2010, we were designated as a specified business, and our Ibaraki Factory is a type-2 designated energy management factory*. At three factories in Japan, we are working to procure and switch to manufacturing equipment with low power consumption and to improve the efficiency of the manufacturing processes. We are also promoting the reduction of power consumption by improving the steam pipes and refill dryers at Yoshikawa Factory, and enhancing the operation efficiency of compressors (air compressors) at Ibaraki Factory. In addition, we monitor power consumption in real time. When it is about to exceed the planned value, we take measures to control usage.

* Type-2 designated energy management factory

Factories and offices whose energy consumption is 1,500 kL (crude oil equivalent) or more and 3,000 kL or less are designated as type-2 designated energy management factories.

■ Reduction of water consumption

Water consumption and discharge of wastewater are monitored at all times at the Ibaraki Factory. The factory is working to reduce water consumption by reusing cooling water used in production facilities and through other water-saving efforts.



■ Waste reduction and recycling

With the aim of realizing zero emissions, we are striving to reduce waste and promote recycling by making the best use of resources.

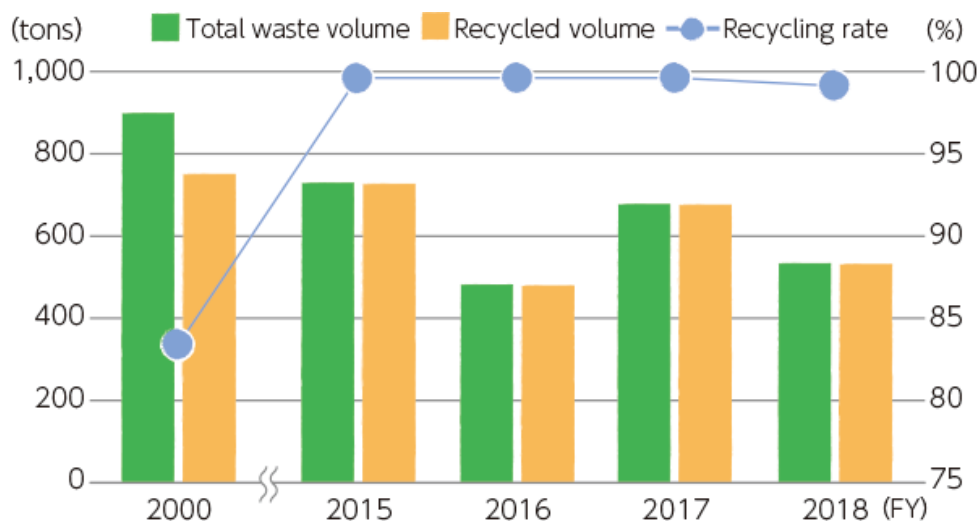
In FY2010, the recycling rate of the Ibaraki Factory was 99.7%. However, the recycling rate of the factory has been 100% since FY2011 as a result of changing product designs so as not to use materials whose waste had to be disposed of in landfills.

With regard to packaging materials, most of which are disposed of after the distribution phase, we strive to reduce the amount of waste through measures such as replacing cardboard boxes with boxes made of recycled paper and using foldable containers.

Furthermore, we use recycled materials for all of our product packages that are disposed of as waste by the customers who use them. We also design them specially to avoid waste in our efforts to reduce the amount of materials we use.

Activities to achieve zero emissions

- Sorting and conversion of waste into valuable resources
- Use of waste plastics as blast furnace feed; recycling of waste plastics as cement materials
- Composting of waste
- Recycling of waste fluorescent tubes



Waste generation and recycling at three factories in Japan

* In FY2015, a large amount of sludge was generated due to problems with the wastewater treatment facility, resulting in higher total waste emissions than usual.

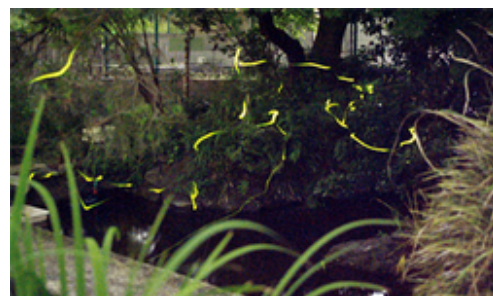
* In FY2017, a large amount of waste oil was generated due to large orders of OEM products, resulting in higher total waste emissions than usual.

Conservation of biodiversity

We recognize the direct and indirect impacts of our business activities on biodiversity and check and evaluate constantly whether or not effluent from our factories is affecting the ecosystem.

■ Rearing fireflies by using factory effluent

Since it started operating in 1964, the Ibaraki Factory has been taking measures to purify effluent from the factory to protect the water environment of Lake Kasumigaura, into which the effluent flows. It has undertaken an ongoing activity of rearing fish in the purified effluent. In 2008, it renewed the effluent purification facility to preserve the water environment at a higher level and began to rear fireflies in a biotope created on the premises of the factory. Starting from 2009, fireflies have emerged from pupae every year for 10 consecutive years and fly in the night sky in early summer. This proves that effluent from the Ibaraki



Fireflies flying around the biotope of the Ibaraki Factory



A firefly emerging from a pupa on the premises of the Ibaraki Factory

Factory is purified to a level that allows fireflies, which can live only in fresh streams, to make it their habitat.

■ Sweetfish breeding in the final release tank

Following the growth of fireflies, we have been working on sweetfish breeding since 2011 to prevent moss from sticking to the final discharge tank of factory wastewater. The fry are released into the final release tank in early May and grow to over 20 cm in August.

There is an index that the average BOD value is 3 mg/L or less as an indicator of the quality of water in which sweetfish can live, but it has been sufficiently proved that the factory effluent is at a level that can be called a clear stream. The grown sweetfish is grilled with salt at the summer festival and is enjoyed by the local people.

* : BOD

Biochemical Oxygen Demand is the amount of oxygen required when microorganisms oxidize and decompose organic matter in water, and is mainly used as an indicator of river pollution.



A sweetfish that swims vigorously in the final release tank and salt-grilled sweetfish that was popular at the summer festival