Initiatives for Reducing Impacts on the Environment

Web Website listed information: Business site initiatives, Management of PRTR substances, etc.

Basic Approach

Plant effluents and emissions can be a source of water, air, and soil pollution that poses a threat to local communities. At the Minebea Group, we believe that harmony with local communities is indispensible to our business activities, and as such, we are striving to reduce our impact on the environment.

Results of FY2012 Initiatives

In order to ensure compliance with the environmental laws and regulations of each country and community, the Minebea Group has established environmental standards surpassing its legal requirements and undertakes daily compliance monitoring. In FY2012, there were no incidents which violated either the legal requirements or the Group's own standards. The Group also monitors the impact of its plants on the surrounding communities by conducting environmental patrols at all of its plants to ensure there are no leakages, foul odors, noise, or vibration caused by the plants.

In FY2012, we established and began operation of a new database to efficiently manage chemical substances and the amount of substances used throughout the Group.

Plant Initiatives

● Plant Wastewater Purification

Prior to releasing wastewater into rivers, Minebea Group plants use their own processing equipment to purify wastewater to within fixed environmental standards. These plants adhere to environmental laws of the countries and localities in which they operate, and independently monitor such wastewater discharges, including regular testing for such metrics as pH[1], COD[2], BOD[3], SS[4], and the oil content of n-hexane extracts[5].

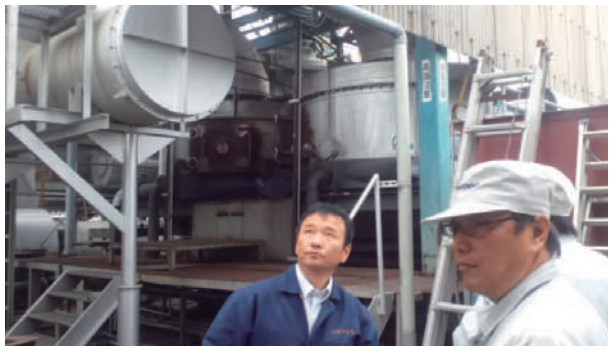
In FY2012, no anomalous monitored values were reported by any plant. In addition, no complaints relating to these metrics were received.

1. **pH:** A scale indicating whether substances are acidic or alkaline. pH7 is neutral. pH values below 7 indicate increasing acidity, while values above 7 indicate increasing alkalinity.
2. **COD (chemical oxygen demand):** The amount of oxygen consumed to oxidize organic substances (pollution) in water. COD measurement takes less time than BOD measurement, but is less reliable. COD is generally used as a metric in wastewater management for sea, lake, and marsh waters.
3. **BOD (biological oxygen demand):** The amount of oxygen required for bacteria to consume and decompose organic matter (pollution) in water. Higher values indicate greater degrees of pollution. Measurement takes several days. BOD is generally used to observe effluent water in rivers.
4. **SS (suspended solids):** The volume of substances suspended in water. The higher the number, the greater the degree of water pollution.
5. **n-hexane extracts:** Substances extracted from oils and detergents that are difficult to volatilize in water using a substance called n-hexane as solvent. In this report they signify mineral oils.

● Investigating Landfill Waste Sites (Japan, Thailand, China, etc.)

At each plant and office, there are types of waste which are difficult to reuse or recycle within the site. In these cases, the waste is disposed of through third-party waste disposal companies.

The Minebea Group selects reliable waste disposal companies, and conducts regular inspections of their disposal sites to confirm the status of waste disposal and management. We will continue to cooperate with waste disposal companies to ensure that their waste disposal processes do not generate soil, water, or air pollution.



Inspection of waste disposal company

● Operation of Plant Wastewater Zero System (Thailand, China)

Minebea Group plants that use large amounts of water during processing are taking measures to reduce wastewater emissions. Though water is discharged from plants only after being purified to standards mandated by environmental regulations in each country and region, the wastewater may still have an impact on the local environment. In Thailand and China, where water use by the Group is high, plants have introduced the "Plant Wastewater Zero System" designed to reduce wastewater emissions to zero.

Under this system, water that previously was purified and discharged is purified to a higher level and the entire supply reused within the plant to eliminate external emissions. The "Plant Wastewater Zero System" has been introduced at the Bang Pa-in and Ayutthaya plants in Thailand along with the Shanghai and Xicen plants in China.

Future Issues and Goals

The Minebea Group continues to conduct business operations in compliance with environmental laws in Japan and around the world, and is proceeding with cleanup work in areas where it has caused environmental contamination in the past.