Environmental Conservation in Local Communities

Proactively Preventing Environmental Pollution and Accidents

Toyota Industries believes a vital responsibility for doing business is to protect the environment of the community surrounding our plants and to prevent adverse impact from environmental accidents. In this context, we are actively working to prevent air, water and soil pollution in local communities.

Our basic policy is to identify risks to the environment in local communities and take measures to avoid them, and to minimize the consumption of materials that impact the environment. We are implementing preventive measures, such as setting and monitoring voluntary environmental targets, which are stricter than both regulatory standards and community guidelines; and consistently overseeing facilities with daily checks and providing thorough staff training.

We also plan to introduce a system for assessing risk at the time of establishing any new business plans, including the construction of new plants. No environmental laws or regulations were violated by Toyota Industries in FY 2005.

Preventing Air Pollution

Reduced VOC Emissions per Net Sales by 60% Compared with FY1999 and Substantially Reduced SOx Emissions

Reduced Volatile Organic Compounds (VOCs) Emissions ▶Graph 16, 17

Volatile organic compounds (VOCs), air pollutants generated from the use of paints during the coating of automobile and forklift truck bodies, have attracted a significant amount of public attention as a result of the major impact they have on the environment. Consequently, Toyota Industries established a target for reducing VOC emissions per net sales by 50% compared with FY 1999 levels by the end of FY 2006 and is actively working to implement programs to meet this goal, such as changing the materials used and improving painting efficiency by upgrading manufacturing facilities. In FY 2005, we introduced water-based painting processes that generate a smaller volume of VOCs to the vehicle business while also introducing powder painting, which generates an extremely low level of VOCs, to the textile machinery business. As a result, we have reduced the total volume of VOC emissions per net sales by approximately 60% compared with FY 1999 levels.

In FY 2006, we will strive to achieve our target for the year, despite some concern that VOC emissions may rise along with the growth in automotive production, an area of our business that accounts for more than 70% of the total VOC emissions of the company.

Note: Please refer to page 64 for details on chemical substance management (PRTR Law-designated substances).

Case Study Using Water-Based Paint for the Vitz Model

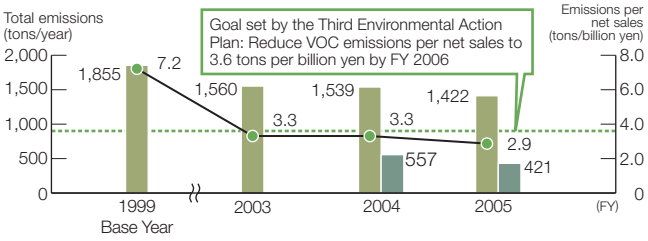
The primary source of our VOC emissions is the use of organic solvent paints for the painting of automobiles. To reduce VOCs, we began using water-based paint for the Vitz model in FY 2005.

Water-based paint has the advantage of substantially reducing VOC emissions because it contains a low-level of VOC—80% less in volume than existing organic solvent paints.

In FY 2006, we plan to reduce VOC emissions per vehicle by approximately 36% by introducing water-based paint for the RAV4 model.

Application of water-based paint to the Vitz model

Graph 16 Total VOC Emissions and VOC Emissions per Net Sales

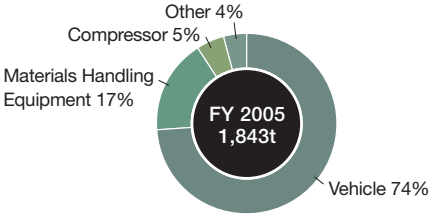


Total VOC emissions: automobile painting, forklift truck painting, textile machinery painting

Reference (beyond scope prior to FY 2004): compressor painting, vehicle identification number painting; VOC emissions generated by these activities were included in the scope of calculating environmental impact starting FY 2004.

—●— Emissions per net sales

Graph 17 VOC Emissions by Business



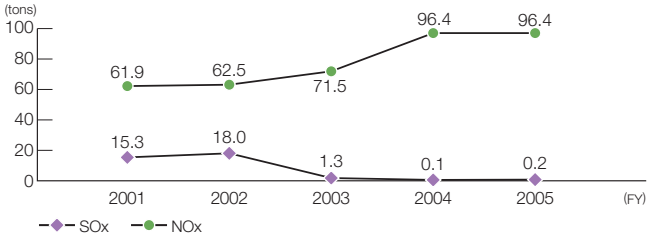
Reducing Sulfur Oxides (SOx) and Nitrogen Oxides (NOx) ▶Graph 18

Toyota Industries generates sulfur oxides (SOx) and nitrogen oxides (NOx), which are considered to be causes of acid rain, due to the use of coke in the casting process of the engine business in the Higashichita Plant.

SOx emissions into the atmosphere substantially declined to less than 1% compared with FY 2001 levels as a result of introducing a system to recover these gases, improvements in manufacturing facilities, and changes in the fuels we use.

On the other hand, NOx emissions tended to increase due to a greater use of city gas for a cogeneration system we are actively introducing to reduce CO_2 emissions.

Graph 18 SOx and NOx Emissions



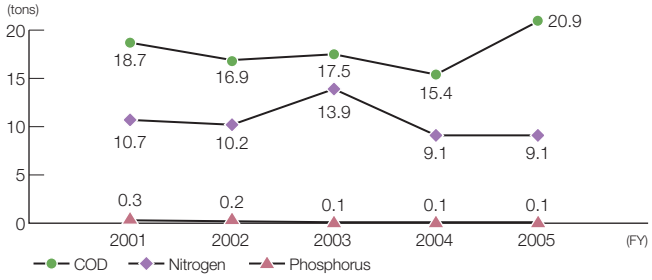
Water Quality Preservation ▶Graph 19

Household and industrial wastewater containing nitrogen and phosphorus is one cause of eutrophication, which is associated with the degradation of lake and sea water quality. Given the fact that our plants are located in the Ise Bay area, where eutrophication is a serious problem, we regard the maintenance of wastewater in that area at mandated levels as a critical challenge.

From this perspective, Toyota Industries not only thoroughly manages the water quality of wastewater on a daily basis but also reduces the volume of wastewater through the recycling of the water we use, thereby reducing the environmental impact on public water resources.

In FY 2005, COD emissions rose due to an increase in production and the introduction of water-based paint in the vehicle business. In response, we will promote the renovation of our wastewater treatment facility in FY 2006.

Graph 19 COD, Nitrogen and Phosphorus Emissions in Public Water Supplies



Soil Preservation

Purifying Polluted Soil and Groundwater and Preventing Further Contamination ▶Graph 20 ▶Chart 8

Toyota Industries surveys and works to purify polluted soil and groundwater resulting from our past use of trichloroethylene as a cleaning agent. We prevent the outflow of pollutants beyond plant boundaries and purify and recover polluted soil.

To prevent recurrences of soil pollution, we are taking measures such as using aboveground piping and underground pits with double-wall construction in existing and new facilities and plants to prevent the leakage of pollutants. We plan to complete these measures for all facilities by the end of FY 2006. We have also strengthened our daily controls to prevent such pollution.

Graph 20 Trichloroethylene Readings

(Average density for FY 2005: Kyowa and Kariya Plants)

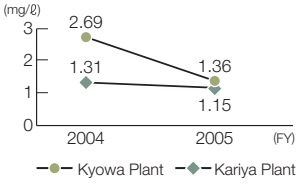
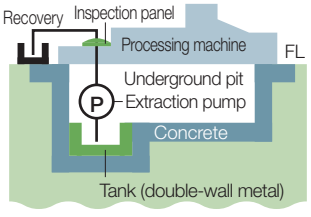


Chart 8 Measures to Prevent Soil Pollution



Note: No trichloroethylene was detected at any other plants. Reference value: 0.03mg/ℓ

Soil Pollution Surveys for Land Transactions

Land owners are responsible for conducting surveys on the contamination of their land. If Toyota Industries discovers that land we have purchased is polluted, we are liable for such pollution and must purify it. Therefore, we must conduct land surveys prior to purchase to avoid such risks. Conversely, when we sell land, we must also guarantee that it is not polluted. In this context, Toyota Industries has established standards and procedures for historical surveys on soil and groundwater when it considers purchasing, leasing, or selling new land, and effectively uses them.

Storage of Polychlorinated Biphenyls (PCBs)

Until they were banned as toxic substances in 1976, polychlorinated biphenyls (PCBs) had been used to insulate transformers and condensers. Toyota Industries owns and stores 904 transformer/condenser units and ballasts containing PCBs on our premises as at the end of FY 2005. We store them in a PCB storage shed in a manner that ensures PCBs are neither released nor allowed to leach into the soil, and we regularly report the status of PCB management to authorities.

Toyota Industries began detoxifying condensers containing PCBs in our treatment facility in Toyota, Aichi Prefecture in September 2005.

PCB storage shed

Case Study Using Permeable Pavements ▶Chart 9

Toyota Industries is promoting the introduction of permeable pavements for employee parking lots and pedestrian pathways within the plants. Permeable pavements enable water to penetrate into and return to the soil through the paved surface, unlike conventional pavements which repel rainwater and allow it to drain off. Consequently, permeable pavements help to restrain the "heat island" effect, a phenomenon which raises temperatures in urban areas compared to suburban areas. Permeable pavements are also more environmentally friendly to subterranean ecosystems.

This method also reduces the level of noise caused by cars and reduces the physical load on pedestrian's legs.

Chart 9 Permeable Pavements