

# Yokohama Plant/Environmental Report 2006

**Business Summary:** Manufacturing of vehicle engines and axles  
**Address:** 2 Takara-cho, Kanagawa-ku, Yokohama-shi, Kanagawa, Japan  
**Start of Operations:** July 1935  
**Number of Employees:** 4,000  
**ISO 14001 Certification:** July 1998  
**Environmental Slogan:** Realizing a "recirculation society", creating an environmentally friendly facility, protecting the global environment, and caring for Yokohama's natural setting



General Manager  
Yokohama Plant  
and Vice President  
Atsushi Hirose

*A. Hirose*



Yokohama Plant

## Major Results in FY 2005

### Reducing CO<sub>2</sub> Emissions

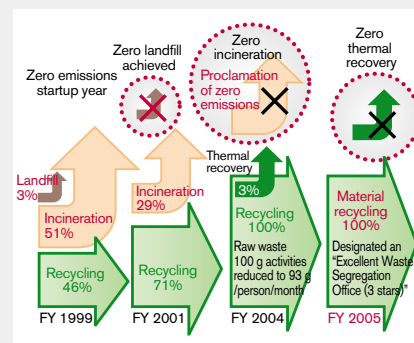
Along with improvement activities of the factory, a CO<sub>2</sub> reduction strategy committee of representatives from each department apportioned the following seven items for action:

- (1) Operate continuously between shifts on the engine machining line
- (2) Reduce the amount of forged materials to be reheated
- (3) Reduce compressed air use in the plant by installing air blowers
- (4) Consolidate furnaces at casting plants
- (5) Reduce electrical consumption during hours of non-operation
- (6) Seek energy savings in offices
- (7) Search for potential items for energy reduction through energy-savings diagnostics

We are working to meet even higher targets in fiscal 2006.

### Resource Recycling Activities

To achieve our target of recycling 100% of materials in fiscal 2005, we worked to minimize the use of items that are hard to recycle, such as cardboard and plastic which oil have soaked. We were successful, and as a result of our activities Yokohama City accorded us the "Excellent Waste Segregation (Three Star) Office" certification. In fiscal 2006, we are endeavoring to further reduce the total volume of waste.



### Reducing Substances with Environmental Impact

Because the sea surrounds the Yokohama plant, we make a special effort to improve the quality of wastewater we generate. We concluded an agreement of environmental preservation with Yokohama City. In addition to a biological treatment process added to one of our wastewater treatment facilities in fiscal 2005, we are making improvements to reduce chemical oxygen demand (COD) in the drain to half the previous volume to further reduce environmental risk. We are also making efforts to reduce the amount of potentially hazardous substances onsite by switching the refrigerant in our low-temperature test chamber to a Freon substitute and reducing the use of gasoline.



Wastewater treatment biological processing equipment

## FY 2005 Objectives and Results

Objective	Target	Result	Comment
Prevention of environmental accidents	Zero environmental accident*	+	Regular environmental measurement on: <ul style="list-style-type: none"> <li>▪ States of compliance with regulations</li> <li>▪ Operational states of plant facilities, further improvements in water treatment facilities, promotion of environmental education</li> </ul>
CO <sub>2</sub> emissions (Energy conservation)	Reduction in emissions 120,000 tons of CO <sub>2</sub> /year or less	+	Plant-wide efforts designated seven items for action, and beginning with reduction of electric power during hours of non-operation, we succeeded in significantly reducing CO <sub>2</sub> .
Resource recycling (Zero emission of waste)	100% recycling of materials	+	We implemented materialization of thermal recycling, which comprises 3% of recycling, enabling us to achieve a 100% recycling rate. (perfect recycling)
Reduction in use of hazardous chemical substances	Reduction in chemical use and change or verify chemicals prior to use. (Reduction in benzene and toluene use.)	+	We reduced the use of hazardous chemicals by switching to a Freon substitute called R404—which has a zero ozone damage coefficient—as the refrigerant in our low-temperature test chamber, making engine tests more efficient as a way to cut the use of gasoline (benzene, toluene), and verifying materials prior to use.
Cooperation and coexistence with local communities	Management of Guest Hall and Engine Museum	+	The Guest Hall celebrated its third year of operation, with the number of visitors reaching 50,000 as of November 2005.
	Administration of summer festival and plant open house	+	As in previous years, besides exchanges with the community, we tied up with Yokohama City, Kanagawa Prefecture and related companies to introduce environmental activities at the Yokohama plant, including waste segregation and energy-saving efforts.
Creating a corporate culture that values the environment	Operation of patrols and environmental education	+	We conducted patrols to prevent environmental mishaps and raise environmental awareness throughout the plant, and also reviewed actual mishap case studies and conducted waste segregation education.

\* Environmental accident: A spill above legal requirements leaving plant grounds

## Communication with the Community

### Nissan Yokohama Summer Festival

A record 17,000 visitors participated in the 2005 festival, contributing to our relations with the local community. As in previous years, Yokohama City also took part, promoting its Yokohama G30 waste reduction initiative.



### Yokohama City "Excellent Waste Segregation (Three Star) Office" Award



One of Yokohama City's new Environmental Action Awards, aimed at businesses (some 2,600 companies located in the city), is the "Excellent Waste Segregation (Three Star) Office" certification system, which was conferred on Nissan's Yokohama plant and four other sites.



### A "Y-Green Partner" for Wind Power Generation

The Yokohama City Wind Turbine project—part of efforts to prevent global warming through the promotion of natural energy sources—has been progressing. Nissan has been designated as a "Y-Green Partner," and is supporting Yokohama City and the Environmental Agency by agreeing to purchase this "Green Electricity" (planned from April 2007).



## Environmental Data

### Air Quality (Air Pollution Control Law and ordinances)

Substance	Facility	Legal Limit	Measured Value
NOx	Boiler	150	45
	Paint oven	230	31
	Gas engine	300	32
	Heating furnace	180	78
	Smelting furnace	180	55
Soot and dust	Boiler	0.05	0.002
	Paint oven	0.1	0.003
	Gas engine	0.04	0.021
	Heating furnace	0.1	0.008
	Smelting furnace	0.1	0.049
Dioxins	Aluminum smelting furnace	5	0.028

Unit: NOx: ppm, Soot and dust: g/m<sup>3</sup>N, Dioxins: ng-TEQ/m<sup>3</sup>N  
 \* Measured values are the maximum measured values in FY 2005.

### Wastewater Quality (Water Pollution Control law and other ordinances)

Item	Legal Limit	Measured Value		
		Maximum	Minimum	Average
pH(-)	5.8-8.6*	7.5	6.8	7.1
COD	60*	19	2	8.7
COD (total) (kg/d)	Area 2	64.5	50.0	1.0
	Area 3	90.9	58.2	3.7
	Area 4	7.0	1.1	0.1
		60*	19	2.3
BOD	60*	17	ND	4.2
SS	90*	3	ND	3
Oil	5*	0.1	ND	0.03
Copper	3*	0.29	0.05	0.09
Zinc	3*	0.29	0.05	0.09
Fluoride	15	0.02	ND	0.02
Lead	0.1	0.4	ND	0.1
Soluble iron	10	0.3	ND	0.1
Soluble manganese	1*	17	2.4	6.9
Total Nitrogen	50*	0.4	ND	0.1
Total Phosphorous	16	-	-	0.003
Dioxins (pg-TEQ/L)	10	-	-	-

Unit: mg/l (except pH)  
 \* Measurements of items other than those listed above were below minimum quantifiable limits.  
 • ND indicates below minimum quantifiable limits. \* Indicates a Kanagawa prefectural ordinance

### PRTR Substances

Substance number	Chemical substance	Amount handled	Unit: kg/year (Dioxins: mg-TEQ/year)						
			Air	Water	Waste	Landfilled by Nissan	Recycled	Chemically changed	Product
1	Water-soluble zinc compounds	297	0	1	0	0	38	0	258
16	2-aminoethanol	17	0	6	0	0	0	11	0
40	Ethyl benzene	26,036	23	0	0	0	0	26,013	0
63	Xylene	118,630	84	0	0	0	0	118,546	0
227	Toluene	207,807	801	0	0	0	0	207,005	0
230	Lead and its compounds	15	0	0	0	0	5	0	11
232	Nickel compounds	272	0	7	0	0	173	0	92
243	Ethylene glycol	301	0	0	301	0	0	0	0
272	Bis (2-ethylhexyl) phthalate	3,441	0	120	0	0	0	3,320	0
299	Benzene	15,677	140	0	0	0	0	15,537	0
304	Boron and its compounds	65	8	27	0	0	31	0	0
309	Poly (oxyethylene) nonyl phenyl ether	4,174	0	145	0	0	0	4,028	0
311	Manganese and its compounds	3,184	0	0	0	0	0	0	3,184
346	Molybdenum and its compounds	127	0	0	0	0	127	0	0
179	Dioxins	5	5	0	0	0	0	0	0
<b>Total</b>		<b>380,043</b>	<b>1,056</b>	<b>306</b>	<b>301</b>	<b>0</b>	<b>373</b>	<b>374,462</b>	<b>3,545</b>

\*PRTR: Pollutant Release and Transfer Register. This system calculates the extent to which the production, use, and storage of chemical substances result in the release and transfer of those substances into the environment. The PRTR Law was originally enacted in July 1999 in Japan. \*According to PRTR law, raw materials that contain 0.1% or more of carcinogen and those that contain 1% or more of other substances are measured, and substances that contain carcinogens handled in quantities of over 500kg per year, or other substances of over 1 ton, are reported to the local government, but information on additional substances is included in this chart (all types of dioxins are stated). \*As the figures are rounded to the first place, the sum of air, water, waste, or buried by Nissan, recycled, chemically changed, and made into products may not necessarily be the same as the sum of the amount handled or total.

### Major Products



MR18DE Engine (installed in the TIIDA Latio)

VK45 Engine (installed in the Cima)

## Nissan Motor Co., Ltd.

[For inquiries, please contact]

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