

# Passing the Beautiful Earth and Local Environment onto the Next Generation

In conformity with our corporate vision, our voluntary environmental action plans and regulations, the Nitto Denko Group implements environmental management to protect the local and global environment through two approaches:

A "reduction of environmental load associated with our business activities" and the "development of business conducive to environmental conservation."

# Concept of Environmental Management

We believe that we have a responsibility to minimize the environmental load resulting from our business activities. Therefore, by means of assessing the relationship between the added value created from corporate activities and environmental load, we implement measures such as a reduction in energy used in production and industrial waste, aiming to reduce environmental load.

We promote the development of environmentallyconscious products in order for our products and services to realize an overall reduction in the environmental load of our customers' production processes.

## **Environmental Management Index**

The Nitto Denko Group is implementing environmental load reduction activities aimed primarily at the prevention of global warming. An example of this is the establishment of a unique environmental efficiency index and its target values.

The "Environmental Management Index" (environmental load value-added productivity) set by the Nitto Denko Group is an index which indicates the environmental load from corporate activities vis-à-vis the added value created from corporate activities. It is obtained by dividing the added value\*¹ created from corporate activities by environmental load\*² entailed in the creation of the added value. By using the fiscal 2005 environmental





load level as a benchmark, we aim to double our environmental efficiency by fiscal 2015.

As fiscal 2010 was the halfway point to fiscal 2015, we put special effort into reducing the environmental load by means of setting an aggressive goal.

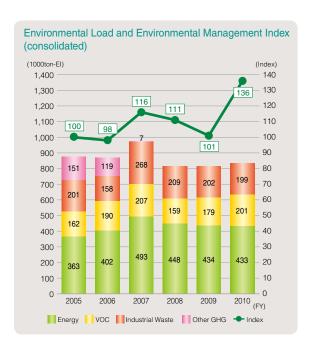
Although the amount of environmental load remained at the same level as that of fiscal 2009, the added value created improved and the relative index was 136 as a result. In order to realize the target value for fiscal 2015, we will improve development of more energy-efficient products and processes as well as products manufactured without using organic solvents, in line with continuing existing activities.

In addition, we will increase our efforts to create high value-added products.

- \*1: Value calculated by subtracting cost of materials, outside order expenses and energy costs from sales
- \*2: A unique unit utilized by the Nitto Denko Group, indicating environmental load, into which we convert energy purchased, industrial waste generated, VOC purchased and the like through the use of a coefficient. (unit:ton-El)

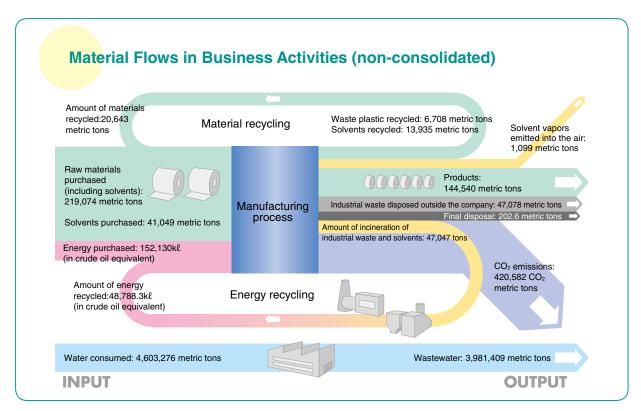
#### **Certification**

In fiscal 2010, the following group companies obtained ISO 14001:2004.



Environmental Management Index* (consolidated)								
FY	2005	2006	2007	2008	2009	2010		
Added Value (million yen)	318,098	310,714	410,835	328,264	298,890	409,971		
Environmental Load (ton-El)	876,846	869,820	975,421	815,973	814,210	832,488		
Index	0.363	0.357	0.421	0.402	0.367	0.492		
Relative Index	100	98	116	111	101	136		
*Added Value / Environmental load								

April 2010	Nissho Precision (Malaysia) Sdn. Bhd. Penang Factory
June 2010	Shanghai Nitto Optical Co., Ltd.
February 2011	Nitto Denko Automotive, Virginia, Inc.





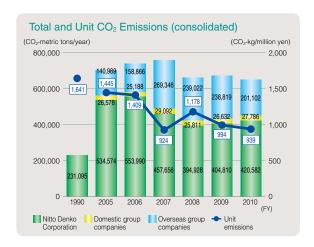
### Environmental Performance Data - Working to prevent global warming –

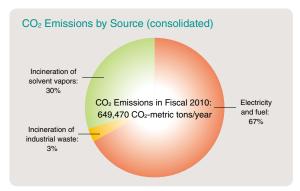
The Nitto Denko Group is taking steps to reduce CO<sub>2</sub> emissions associated with our business activities in order to prevent global warming. As energy use is almost invariably accompanied by the generation of CO<sub>2</sub>, we actively strive to improve our energy efficiency and implement energy-saving activities.

Our unit CO<sub>2</sub> emissions (CO<sub>2</sub> emissions per 1 million yen of production output) throughout fiscal 2010 decreased by approximately 6% over the previous fiscal year. Compared to fiscal 2005, total CO<sub>2</sub> emissions declined by 7.5% (approximately 50,000 metric tons), but we will have to implement new activities for further reductions. Thus far, we have mainly taken steps to introduce environmentally-conscious energies by switching to fuels which

Energy Purchased and Unit Energy Consumption (consolidated) (kl/year in crude oil equivalent) 300.000 600 250,000 500 90,579 78.497 74.093 383 375 200.000 344 400 316 82 298 48,763 45,163 150,000 300 10.839 10,813 100.000 200 50,000 100 31.032 2010 (FY) 1990 2005 2006 2007 2008 2009 Nitto Denko Domestic group Companies Overseas group companies - Unit consumption

produce fewer CO<sub>2</sub> emissions. As next steps, we are tackling the development of environmentally-conscious products and processes at the time of manufacturing. For example, we are focusing on a further reduction of CO<sub>2</sub> by means of introducing environmentally-conscious technologies such as UV polymerization produced efficiently with less energy using ultraviolet light and emulsion polymerization manufactured without the use of organic solvents.





#### Participating in Nippon Keidanren's Commitment to a Low Carbon Society

In December 2009, aiming to reduce greenhouse gas emissions by half, Nippon Keidanren (Japan Economic Federation) made an announcement of basic policies, "Nippon Keidanren's Commitment to a Low Carbon Society". Assenting to its intent and purpose, the Nitto Denko Group committed our participation by way of the Japan Chemical Industry Association, to which we belong. To help accomplish the Federation's goal, we are making efforts to reduce  $CO_2$  emissions.

### Environmental Performance Data - Effective utilization of resources –

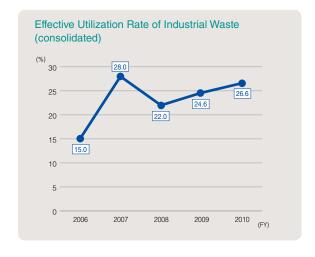
Most of the industrial waste generated from production activity within the Nitto Denko Group consists of solid material and liquid waste. The solid waste mainly consists of log roll edges and off cuts from the production process whilst the liquid waste is comprised of etching and iodine waste and the like from the manufacture of electronics-related products. The solid waste is created in making adhesive tapes and optical products. Liquid waste is generated from the production of circuit boards and the like.

As to the amount of industrial waste in 2010, the growth rate was almost the same as the increase in turnover on the previous year. In consequence of our

implementing the effective utilization of industrial waste, mainly in domestic bases, the amount of marketable resources recovered from industrial waste increased over the previous year. Marketable resources are recyclable as fuels or materials and marketable. The effective utilization rate (the ratio of the amount of marketable resources to the total amount of industrial waste) of industrial waste increased by 2%.

Adopting and implementing approaches that result in reusable waste is very important, but the Nitto Denko Group focuses on reducing the amount of industrial waste created. The generation of industrial waste stems from the inefficient use of resources. We will continue to focus on the development of production processes in which no industrial waste is created.







#### **Environmental Performance Data**

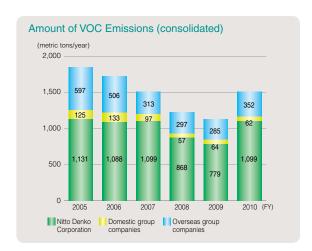
- Reduction of organic solvents -

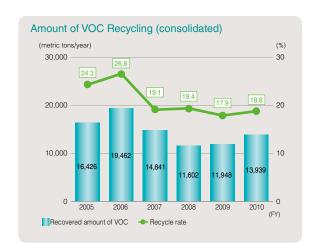
The Nitto Denko Group is implementing measures to reduce the quantity of organic solvents used in manufacturing our products. A reduction in the amount of organic solvents used helps to avoid the possibility of hazardous explosions and damage to human health, as well as to reduce environmental load.

The Nitto Denko Group installed oxidizing equipment (incinerating equipment used for solvent gases) or solvent recovery units in every production line aimed at preventing air pollution generated from organic solvents. However, it was difficult to capture the emissions perfectly, and in fiscal 2010, the amount

of organic solvents discharged into the air increased in line with the increase in the amount of organic solvents used over the previous year.

In order to reduce the amount of organic solvents used, we are actively tackling the development of products manufactured without the use of organic solvents. Recently, from the standpoint of global environmental protection, emulsion polymerization and UV polymerization manufactured without using organic solvents have attracted attention. Each technology has its own merits. We will realize the development of products with superior characteristics, making use of these technologies, our essential technologies and experience and disseminate our technical know-how throughout the entire Group.





#### Low-VOC Re-peelable Double-coated Tape (No.5000E)

The number of environmentally-conscious products which the Nitto Denko Group manufactures continues to increase year by year. Low-VOC re-peelable double-coated tape (No.5000E) is one of the products which we create without the use of organic solvents. In addition, it has other merits that include its high adhesiveness which is required for double-coated tape and its ability to be easily detached when needed. In the future, as with this double-coated tape, we will continuously undertake the development of products of superior performance with our environmentally-conscious technology.



#### **Contributing to the Environment**

#### Activities Geared Toward the International Standardization of Material Flow Cost Accounting

Material Flow Cost Accounting (MFCA) is a measure of cost accounting and analysis, in which we define material costs, process costs and depreciation costs invested to the loss of resources and energy throughout the production process as "negative product", thus providing a total cost evaluation. In 2000 the Nitto Denko Toyohashi Plant introduced MFCA for the first time on a trial basis.

Following that, under the initiative of the Japanese government, MFCA is in the process of being established as an international standard and will be put into effect (ISO 14051) by ISO in 2011. Aiming at introducing the manufacturing of environmentally-conscious products throughout the world, the Nitto Denko Group is cooperating in the promotion of international standardization and diffusion of MFCA.



Inspectors from Malaysian enterprises visit the Toyohashi Plant

# Driving Partner of "Declaration of Biodiversity by Nippon Keidanren"

In order to promote activities giving further protection to biodiversity, Nippon Keidanren (Japan Economic Federation) issued "Declaration of Biodiversity by Nippon Keidanren" as a basic policy

in its approaches to such activities. As biodiversity is a significant base for a sustainable society, Nitto Denko has been a driving partner of Keidanren and has supported its activities since 1997.

### Environment Photo Campaign 2010

In fiscal 2009, the Nitto Denko Group launched "Green Design Action" with the aim of improving employees' environmental awareness. As a campaign following "UNEP (United Nations Environmental Programme) World Environment Photographic Exhibition: Focus on Your World" of the previous year, we held a contest of environmentthemed photos, "Environment Photo Campaign 2010" by employees of the Nitto Denko Group. A number of photos were entered in the contest from home and abroad; photos of beautiful natural environments and photos stimulating thought about nature and environmental issues. In order to further boost employees' awareness of environmental problems, we will continue to promote such activities in the future.



Courtship dance of the Japanese red-crowned crane



"Who make flood"