

In order for a corporation and a society to continue sustainable development, the Nitto Denko Group believes that as a member of society, we have a responsibility to conduct management in harmony with the global environment. The Nitto Denko Group has been implementing environmental conservation activities according to an independent goal since the 1960's. We established our "Corporate Environmental Policy" in 1996 and our "Environmental Management Index" in 2004,

showing and evaluating our concept of environmental management. Since then, we have been promoting environmental management globally.

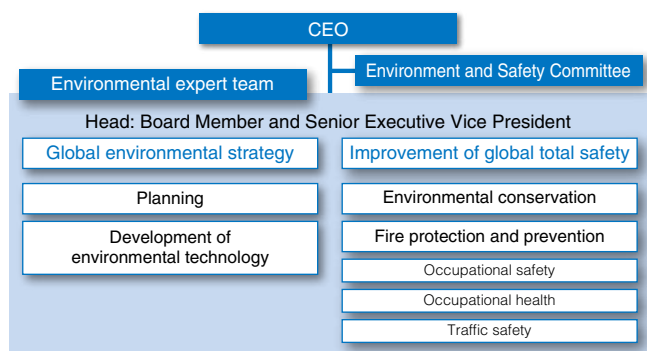
In order to protect the valuable Earth where we live, and pass it onto future generations, the Nitto Denko Group continues to implement environmentally-friendly business activities under our Corporate Vision of "Creation of New Value".

### Our Policy on the Environment – The Nitto Denko Group's Corporate Environmental Policy

1. We will develop an internal environmental management system that promotes effective environmental preservation.
2. With a proper understanding of the environmental impact of our operations, we will develop internal environmental objectives and targets as far as is technically and economically practicable; moreover, we will pursue these objectives and targets in an organized manner to ensure the continual improvement of our environmental preservation efforts.
3. Our technical and product development will focus on the reduction of environmental load.
4. We will continue our efforts to conserve resources and energy, reduce industrial waste, and promote recycling in all aspects of our operations.
5. As part of our dedication to reducing the load on the environment, we will develop alternative technologies intended to reduce consumption of the sources of environmental pollution as well as to control emissions of environmental pollutants to the greatest extent feasible.
6. We will comply fully with environmental laws, regulations and agreements, and will impose our own environmental criteria as required in the interests of environmental preservation.
7. We will make sure that our employees receive environmental training and information so that all understand the significance of our Corporate Environmental Policy, have increased awareness of the importance of environmental preservation, and act on our Corporate Environmental Policy.
8. We will conduct periodic environmental audits in order to monitor the effectiveness of our environmental management strategy and identify areas requiring improvement.
9. As part of our social contribution, we will publicize proprietary technologies and information that are likely to benefit the environment.

### Organization for Environmental Management

In order to promote business activities under our corporate vision and Corporate Environmental Policy, we have established an expert team, whose head is a representative director, promoting environmental conservation activities globally.



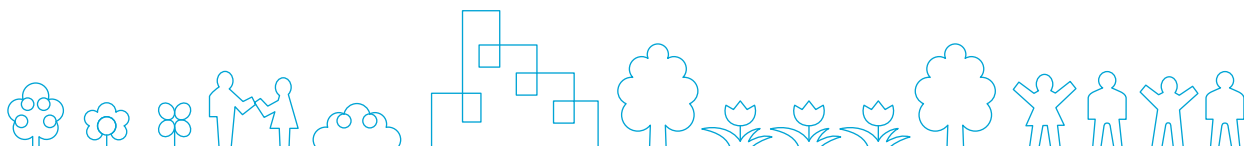
### Promotion of Environmental Management

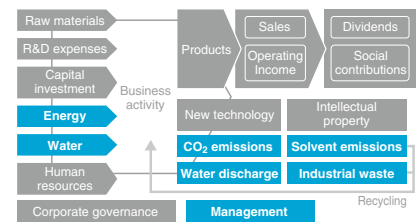
#### Our Concept of Environmental Management

In conformity with our corporate vision and our Corporate Environmental Policy, we implement environmental management through two approaches: a "reduction of environmental load associated with our business activity"; and the "development of business conducive to environmental conservation".

#### Doubling our Environmental Efficiency – Environmental Management Index

By establishing an "Environmental Management Index" (Environmental Impact Value-added Productivity), we aim to double our environmental efficiency between fiscal 2005 and 2015. The Environmental Impact Value-added Productivity is an index which indicates the environmental





load from corporate activity vis-a-vis the added value created from that activity. It is obtained by dividing the added value\*<sup>1</sup> created from corporate activity by Environmental Impact\*<sup>2</sup> entailed in the creation of the added value.

**Environmental Impact Value-added Productivity in fiscal 2012**  
**0.394 million yen/ton-EI Index\*<sup>3</sup>: 109**

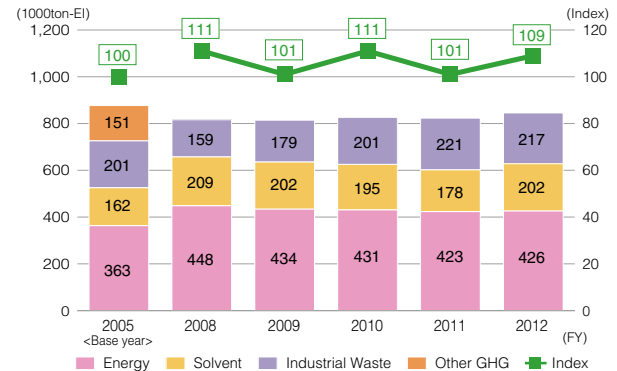
In fiscal 2012, the Environmental Impact Value-added Productivity Index rose slightly on the previous fiscal year. That was because Environmental Impact remained mostly unchanged while Added Value rose. However, in order to achieve our goals for fiscal 2015, more reductions of Environmental Impact and an increase of the Added Value will be necessary. Together we will make concerted efforts globally to tackle such problems.

\*<sup>1</sup> Added value = sales – (material costs + outside order expenses + energy costs)

\*<sup>2</sup> A unique unit utilized by the Nitto Denko Group, indicating Environmental Impact (quantity of CO<sub>2</sub> equivalent emissions), into which we convert energy purchased, industrial waste generated, solvent purchased and the like through the use of a coefficient. (unit: ton-EI).

\*<sup>3</sup> Index shows variation in Environmental Impact Value-added Productivity by setting the index at 100 as of fiscal 2005

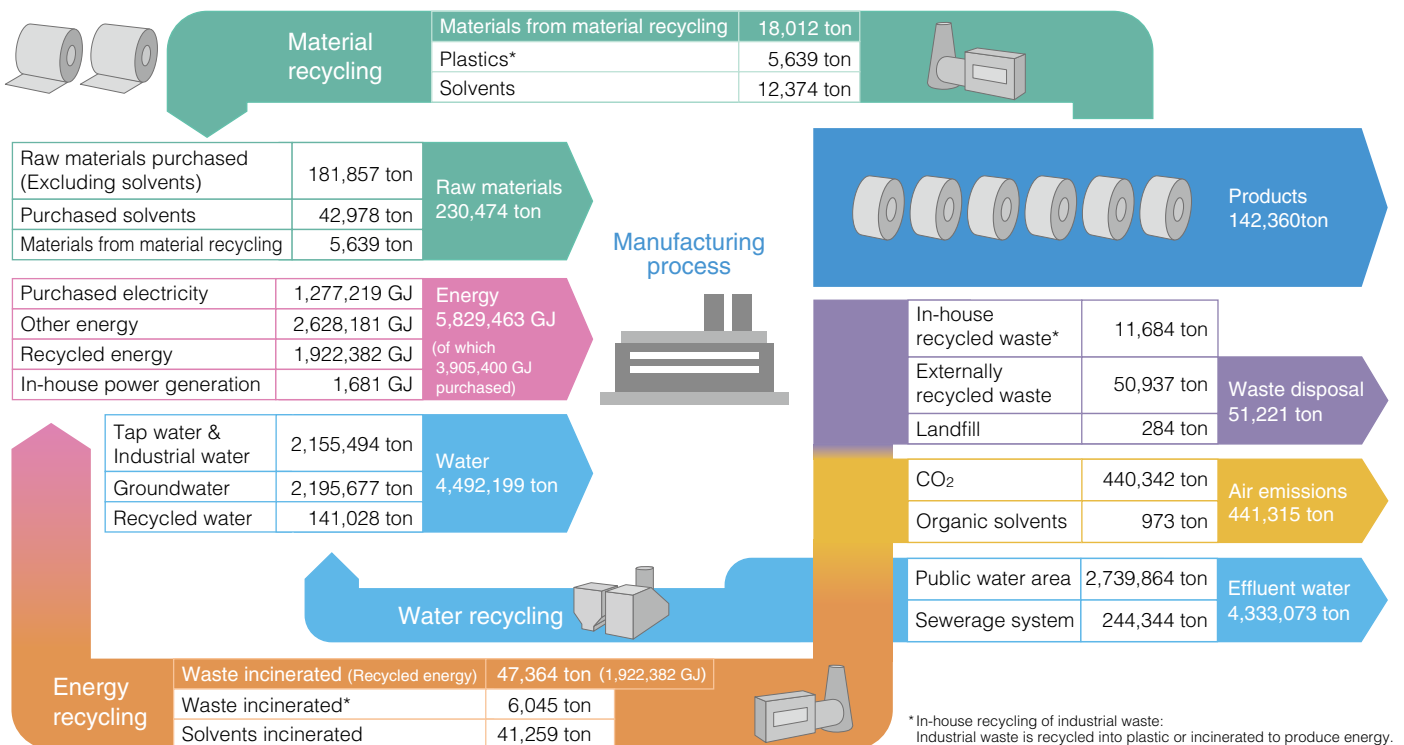
### Environmental Impact Value-added Productivity (Environmental impact and Relative index) (consolidated)



### Environmental Impact Value-added Productivity (consolidated)

FY	2005	2008	2009	2010	2011	2012
Added Value (million yen)	318,098	328,264	298,890	332,153	300,365	332,860
Environmental Impact (ton-EI)	876,846	815,973	814,210	826,178	822,979	845,349
Productivity	0.363	0.402	0.367	0.402	0.365	0.394
Relative Index	100	111	101	111	101	109

## Environmental Impact of Our Business Activities – Material Flow of Business Activities (non-consolidated)



## Our Approach to Climate Change

### Our Policy on Climate Change

Almost half of CO<sub>2</sub> emissions generated by the consumption of energy in the world are caused by industry. Therefore, a reduction in CO<sub>2</sub> emissions is a significant issue for the Nitto Denko Group. In conformity with our Environmental Policy: "We will continue our efforts to conserve resources and energy, reduce industrial waste, and promote recycling in all aspects of our operations", we are implementing reductions in CO<sub>2</sub> emissions.

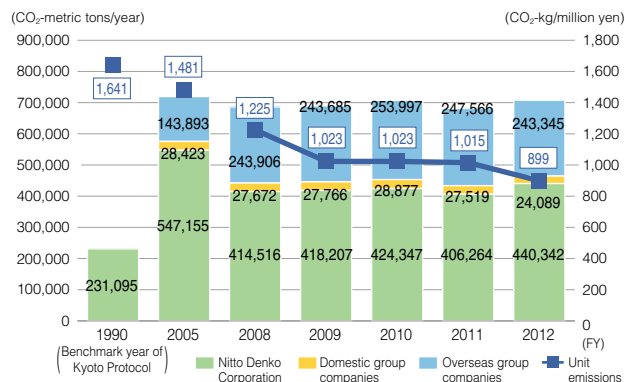
### CO<sub>2</sub> Emissions (Scopes 1+2)

Total CO<sub>2</sub> emissions in fiscal 2012:  
**707,776 CO<sub>2</sub>-metric tons** (consolidated)

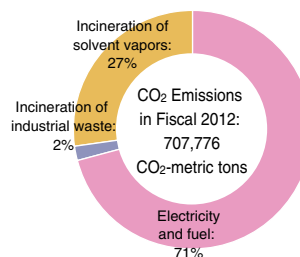
Total CO<sub>2</sub> emissions in fiscal 2012 increased over the previous fiscal year. On the other hand, our unit CO<sub>2</sub> emissions (CO<sub>2</sub> emissions per 1 million yen of production output) decreased to 899 CO<sub>2</sub>-kg/million yen. Total CO<sub>2</sub> emissions increased mainly because the amount of energy used, which accounts for 71 % of CO<sub>2</sub> emissions, did not decline, while the CO<sub>2</sub> emission factors for electricity purchased at production bases in Japan deteriorated, as a result of the halt in operations of domestic nuclear power plants.

In the future, we will implement the development of products and processes which are energy-efficient at the time of manufacture.

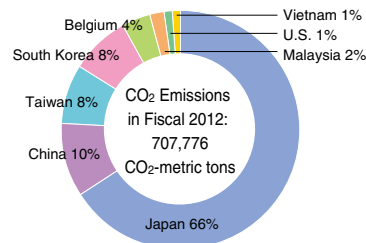
### Total and Unit CO<sub>2</sub> Emissions (Scopes 1+2) (consolidated)



### CO<sub>2</sub> Emissions by Source (consolidated)



### CO<sub>2</sub> Emissions by Country (consolidated)



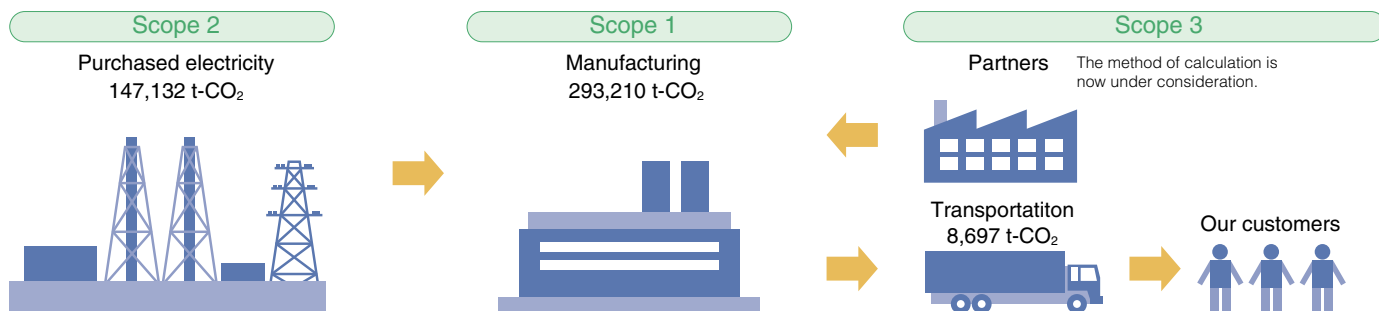
### Visualization of CO<sub>2</sub> Emissions throughout the Entire Supply Chain (Scope 3)

We are trying to grasp what kind of influence the entire supply chain has on climate change. In fiscal 2012, we calculated CO<sub>2</sub> emissions generated from the transportation of our products to our customers.

In order to grasp the situation across entire supply chains, we will establish a method for calculating other objects.

The Nitto Denko Group releases information on climate change through the Carbon Disclosure Project.

**Total amount of greenhouse gas emissions in fiscal 2012 (Scopes 1, 2 and 3) (non-consolidated): 449,039 t-CO<sub>2</sub>**



\* Scopes 1, 2 and 3 described on this page show the range of estimates covered by the 'Greenhouse Gas Protocol'.

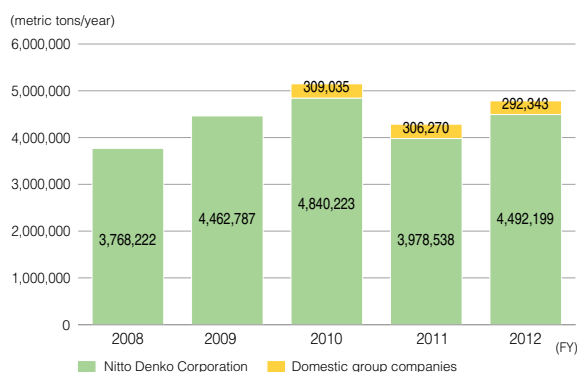
## Management of Water Resources

Amount of water consumption in fiscal 2012:  
**4,784,542 metric tons** (domestic bases)

Large amounts of water are used in the production of polarizing films and flexible printed circuit boards. We tackle the effective utilization of water resources by utilizing our membrane products and recycling drainage water. As much water is necessary in the production process, we do not manufacture our products in areas that suffer from physical and economic water scarcity (where usage rates of water resources exceed 75%).

In discharging water used in the production process, we adequately process and then drain it before it is released into the environment.

### Water Consumption (including water recycled at domestic bases)

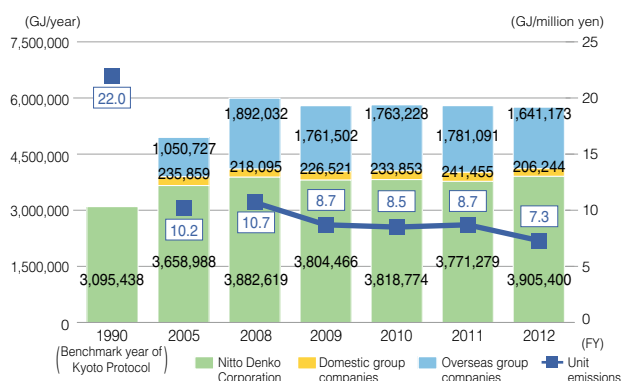


## Effective Utilization of Fossil Fuels

Amount of energy from fossil fuels used in fiscal 2012:  
**5,752,818 GJ** (consolidated)

For manufacturers like us, the exhaustion of fossil fuels used as raw materials or energy is a serious problem. With the aim of sustainable development, we put effort into the effective utilization of materials and energy by means of saving energy and reducing waste. In addition, we promote the introduction of raw materials from non-fossil fuels and renewable energy.

### Total and Unit Energy Purchased (from fossil fuels) (consolidated)

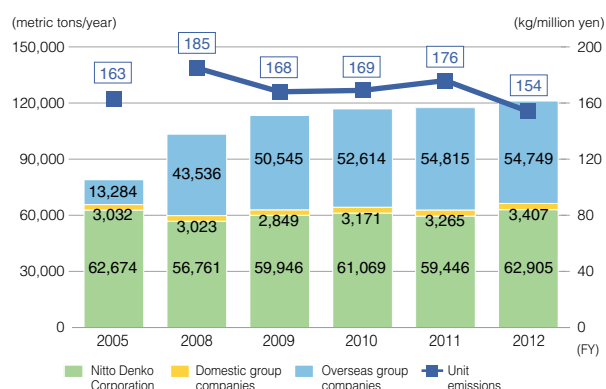


## Management of Waste

Unit generation of waste in fiscal 2012:  
**154kg/million yen** (consolidated)

Waste within the Nitto Denko Group is mainly log roll edges of tape and offcuts of film generated from the cutting process. We adequately deal with waste within the Group in conformity with the Nitto Denko Group's "Regulations for Waste Management". Furthermore, we recycle as much waste generated as possible.

### Total and Unit Generation of Industrial Waste (consolidated)

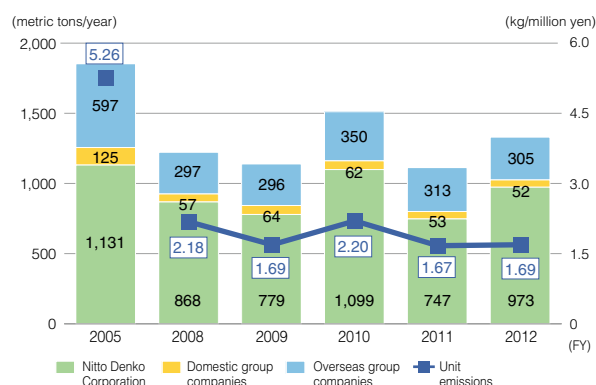


## Management of Organic Solvents

Amount of solvent emissions in fiscal 2012:  
**1,330 metric tons** (consolidated)

In order to minimize air pollution generated from organic solvents, we install incineration equipment used for solvent gases or solvent recovery units, on every production line as needed. Furthermore, we are aggressively engaged in reducing the quantity of organic solvents used. The amount of solvent emissions has been declining year after year.

### Total and Unit Solvent Emissions (consolidated)



## Providing Sustainable Products

As a business contributing to environmental conservation, we strive to develop and supply sustainable products.

### Sustainable Products

Products contributing to environmental conservation are referred to as sustainable products in the Nitto Denko Group. By giving them a unique definition, evaluating products according to the two criteria of “Being useful for solving global environmental problems” and “Effectively utilizing resources through the life-cycle of products” and measuring their contribution to environmental conservation,

we classify our products as “Low Environmental Impact Products” or “Positive Environmental Impact Products”.

### Definition of Sustainable Products

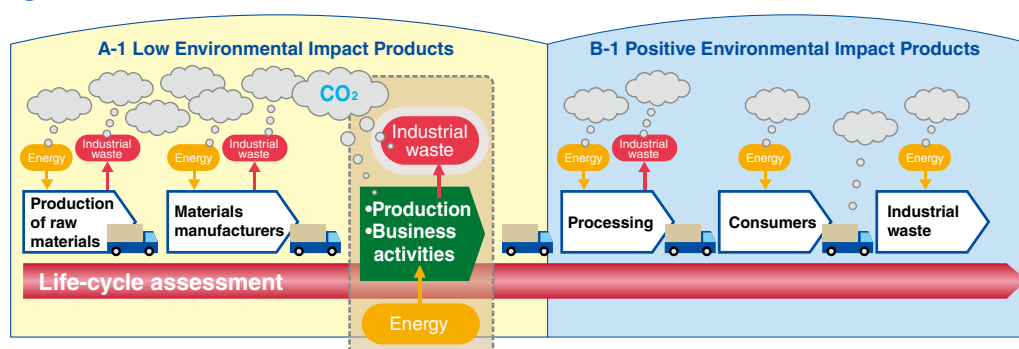
In fiscal 2012, we reviewed the definitions for and the names of the two subcategories. We classify sustainable products according to the definitions in the table below.

### The Number of Products Qualifying as Sustainable

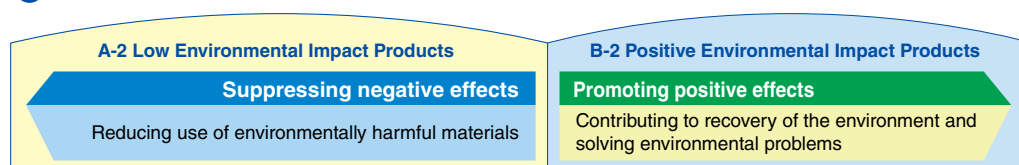
In fiscal 2012, 2,050 products qualified as Low Environmental Impact Products and 20 as Positive Environmental Impact Products.

Subcategory name	No.	Definition
A. Low Environmental Impact Products	A-1	Products that do not contain any prohibited substances specified by customer request, legal regulations, or in the Group Regulations on Voluntary Management of Chemicals, or products whose content of substances specified for reduction by customer request, legal regulations, or in the Group Regulations on Voluntary Management of Chemicals have been reduced.
	A-2	Products that not only have lower environmental impact (e.g., energy consumption, industrial waste reduction) during any process from collection of raw materials to the Group processes (manufacturing, disposal, and logistics), but also have a lower total environmental impact from collection of raw materials to Group production processes, in comparison with other Group products or competing products.
B. Positive Environmental Impact Products	B-1	Products that not only have a lower environmental impact during any customer process from use to disposal, but also a lower total environmental impact from use to disposal by the customer, in comparison with other Group products, competing products, or conventional technologies.
	B-2	Products that help resolve global environmental issues. This subcategory also applies to products whose total environmental impact generated over their life cycle, from collection of raw materials to manufacture and disposal, has a positive effect on the global environment according to the Life Cycle Assessment* or another assessment method.

### 1 Life Cycle Assessment\*



### 2 Global Environmental Problems



## Biodiversity Conservation

In order to contribute towards a sustainable society, Nitto Denko has been involved in biodiversity conservation activities as a driving partner of "Declaration of Biodiversity by Nippon Keidanren" since 1997.

In conformity with the basic standpoint of this declaration, we approach business activities with due consideration to biodiversity.

## Supporting UNEP Activities

The Nitto Denko Group cooperates with United Nations Environment Programme (UNEP) in playing an active role to realize a sustainable society and has been a supporting company since fiscal 2010. We support the publication and distribution of the Japanese version of *Our Planet* and *TUNZA*, which are official UNEP magazines.

## Aiming at sustainable society

We support the work of  UNEP

### \* Life Cycle Assessment

We have introduced the concept of 'life-cycle assessment' to assess sustainable products. Life-cycle assessment is a technique to assess environmental impacts associated with all the stages of a product's life from raw material extraction through manufacture, use, disposal and transportation.

Life-cycle assessment consists of four stages. The first stage begins with a clear statement of the goal and scope of the study. The second stage is an inventory analysis, the third is an impact assessment and the fourth is interpretation. In fiscal 2012, we conducted an analysis of CO<sub>2</sub> emissions for two products.

In fiscal 2013, we will proceed with an analysis of our products other than CO<sub>2</sub> emissions to quantitatively assess what impact our products have on society.

## Highlights of Environmental Conservation Activities in Fiscal 2012

### Sharing Policy and Cases of Environmental Conservation Activities across the Whole Group

The Nitto Denko Group has held an Environment Global Conference once every three years since 2003, as an opportunity to exchange opinions on approaches toward environmental conservation across the whole Group. The fiscal 2012 conference was held in Japan.

Approximately 200 participants from 50 bases talked with one another about world trends in the environment, our position, our ideals and our goals in environmental conservation activities. We will adopt the issues covered at the conference into our action policy and steadily engage them.



### E-BOX Receives Award in World Packaging Organization Contest

Environmentally-friendly packaging material E-BOX received a WorldStar Award and a Sustainability Award in 2012 at the WorldStar Awards, hosted by the World Packaging Organization.

E-BOX won approval for reducing CO<sub>2</sub> emissions by 57% compared to traditional packaging and raising load efficiency in transportation.

### Employees Practice Energy Conservation at Home, Cutting 40 ton of CO<sub>2</sub>

We have been implementing a "Green Design Action" since fiscal 2009 in order to improve employees' awareness of the environment.

In fiscal 2012, employees practiced energy saving in their own backyard, such as in their homes and reduced CO<sub>2</sub> emissions by 40 ton.

