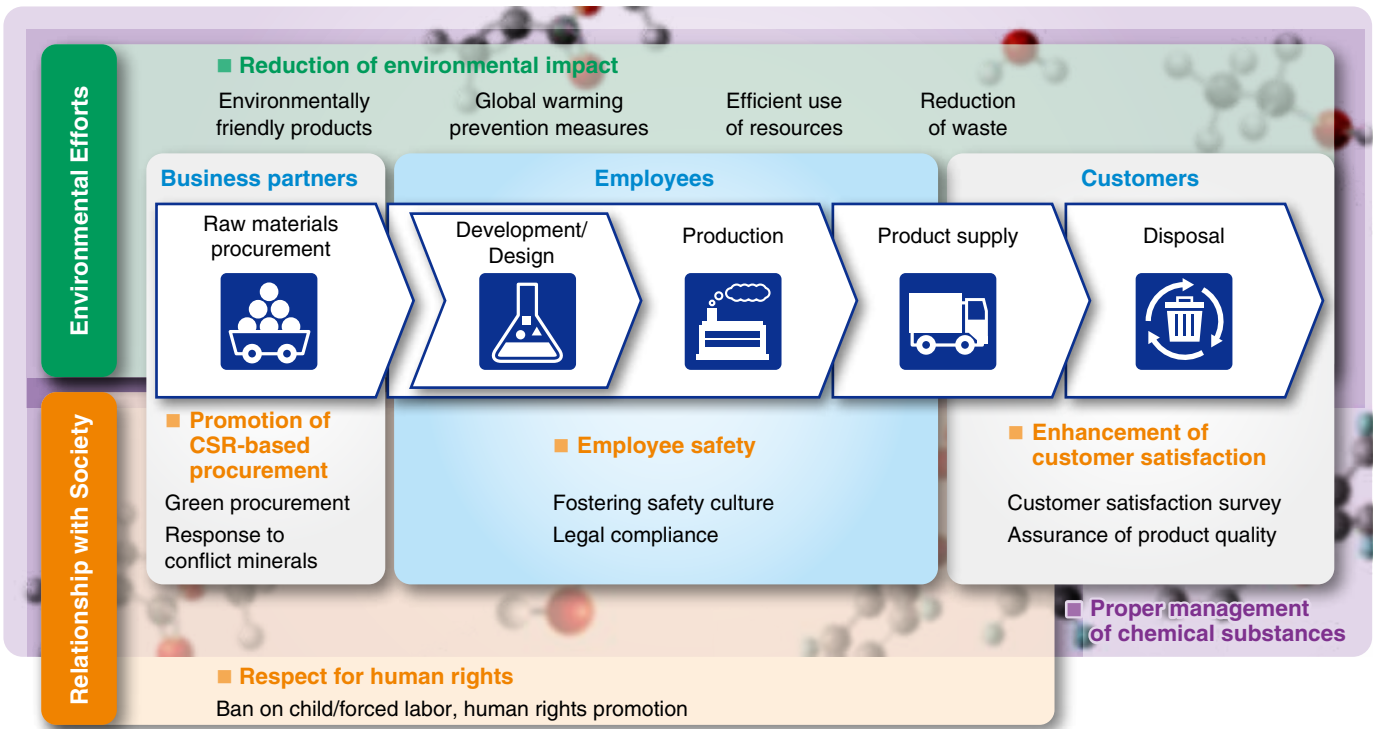


# Value Chain Management



The Nitto Group takes into account any and all impacts that its business undertakings throughout the value chain from R&D to disposal might have on society, and fulfills its corporate social responsibility by complying with laws and regulations in every country/region that it operates in and by respecting the spirit behind such legislation.

## Relationship with Society

Always keeping in mind the environmental impact of its business activities, the Nitto Group promotes the wellbeing of its stakeholders by practicing CSR-based procurement, increasing customer satisfaction, ensuring the safety of its employees, and respecting human rights.

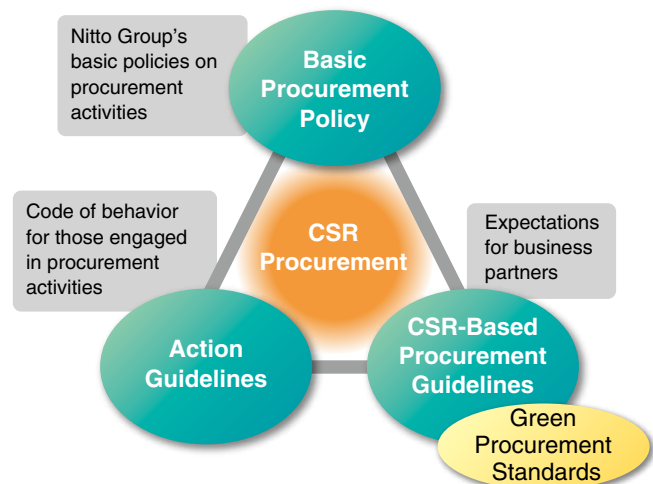
In FY2017, questionnaires will be distributed to business partners to find out their responses to each of the requirements in the CSR-Based Procurement Guidelines. Similar questionnaires will also be conducted with new business partners going forward.

The Nitto Group wishes to establish a win-win relationship with all of its business partners and enjoy the trust of every stakeholder.

## Promotion of CSR-Based Procurement

The Nitto Group pursues CSR-based procurement so that it can become an entity that is trusted and chosen by customers, business partners, and other stakeholders. In order to implement the Basic Procurement Policy, it makes every effort not to deviate from corporate ethics or social norms in accordance with the Action Guidelines.

Business partners are also asked to engage in fair and equitable trade, comply with corporate ethics and applicable laws, and show consideration for the environment in line with the CSR-Based Procurement Guidelines, so that the practice of CSR-based procurement throughout the supply chain can be ensured.



## Green Procurement

So far, the Nitto Group has pursued green procurement by preferentially procuring materials with little environmental impact from environmentally conscious business partners.

In early FY2017, Nitto Group companies in Japan updated their requirements concerning green procurement for business partners, which are included in the sixth edition of the Green Procurement Standards, and revised the checklist in order to monitor the progress of green procurement. Going forward, Nitto Group companies outside of Japan will also be urged to implement the Standards.

## Response to Conflict Minerals

The Nitto Group properly manages information on chemical substances contained in raw materials and produced within the Group, and discloses such information to its customers both appropriately and promptly. The Nitto Group has made clear its policy on non-use of conflict minerals\* and provides all relevant information as appropriate with cooperation from its business partners.

\* Minerals that are produced in conflict zones and used to finance armed groups

## Enhancement of Customer Satisfaction

The Nitto Group is engaged in a variety of initiatives in order to deliver products and services that satisfy customers.

To achieve the best possible product quality, the Nitto Group has introduced activities using Failure Mode and Effect Analysis (FMEA), which is an analysis technique for advance prediction of product failure and defects so that preventive measures may be taken, pursues SBSQ (Same Brand Same Quality) activities with the purpose of maintaining an identical level of quality for all products with the same serial number, irrespective of where they were made, and develops its human resources accordingly. In FY2016, past quality defect cases were utilized to take preventive measures by going back to the R&D stage with the aim of meeting customer requests to the greatest possible extent.

Also, starting from the Onomichi and Toyohashi Plants, dashboard cameras have been attached to forklifts to prevent recurrence of accidents within internal logistics services, thereby achieving timely delivery without compromising on quality. Now that the logistics management system that began construction in FY2014 has been completed in South Korea, Taiwan, and China, even further improvement of logistics efficiency is expected.

In addition to the above, the Nitto Group promptly and appropriately provides information on the properties and handling of chemical substances and other materials needed by customers.

Thanks to these endeavors, every product and service that

the Nitto Group provides is highly regarded by customers and markets both in and outside of Japan. To further improve those products and services, the Nitto Group periodically conducts customer satisfaction surveys and feeds survey findings back to the relevant departments.

## Environmental Efforts

The Nitto Group acts with integrity to reduce the environmental impact that its business activities generate, out of consideration for the environment on a regional and global scale.

## Reduction of Environmental Impact

The Nitto Group uses a large quantity of chemical substances for its business activities, and this raises concerns about potential impact on the environment. For instance, organic solvent vaporizes at the adhesive tape production process and, although it is rendered harmless along the way, minute quantities of organic solvent gas are discharged into the atmosphere. In addition to chemical substances, large quantities of energy, raw materials, and water are used for production, which inevitably result in the emission of CO<sub>2</sub>, waste, and effluent. There are concerns that these byproducts can have an adverse effect on the environment. With this in mind, the Nitto Group has set its “responses to climate change, resource depletion, the water crisis, and decreased biodiversity” as one of its material issues. In the current mid- and long-term plan, reduction targets have been set for CO<sub>2</sub> and atmospheric toluene emissions and waste discharge and efforts are being made toward them. For other environmentally hazardous substances, the Nitto Group not only has complied with the relevant laws and regulations of each country, but also has reduced the quantities of substances subject to the PRTR\*<sup>1</sup> system that are emitted into the atmosphere. The Nitto Group’s policy is to set internal standards that are more rigorous than required, so that such substances can be managed on a voluntary basis.

\*1 PRTR: Pollutant Release and Transfer Register

## Global Warming Prevention Measures

To combat global warming, the Nitto Group remains committed to energy conservation in processes and equipment that consume large quantities of energy. To plants that consume large quantities of energy, an “energy visualization system” has been introduced to conduct detailed monitoring. The system allows determination of

which equipment and production processes require energy reduction and quantification of how much energy consumption has been reduced due to improvements.

Following its success at some Japanese sites, the cogeneration system\*<sup>2</sup> was introduced to Nitto Group companies in Europe in FY2016. Greater energy use efficiency is expected to reduce CO<sub>2</sub> emissions by approximately 1,400 tons in a year.

In response to the resolution in the Montreal Protocol to discontinue production of specified CFCs, the Nitto Group announced in FY2016 its policy to cease use of any and all equipment using specified CFCs.

Accordingly, Nitto Group companies in Japan, Taiwan, the U.S., and Europe will abolish all such equipment by 2020, and those in other regions will do so by 2030. Based on the data on usage of such equipment, replacement has begun according to schedule.

The Nitto Group will continue to promote anti-global warming measures while sharing all relevant information among its companies.

## Reduction of Waste

The Nitto Group uses Material Flow Cost Accounting\*<sup>3</sup> (MFCA) to reduce waste generation. Known by the Japanese shorthand *Mate Furo*, this environmental management method helps to cut down unnecessary resource use by visualizing loss of raw materials and energy.

The Nitto Group played a leading role in an MFCA international standardization project for its implementation in a supply chain, and rendered its services to the publication of ISO 14052 in March 2017. It is expected that MFCA will be introduced to various aspects of the organization, including the supply chain.

Concerning hazardous waste, the Nitto Group has external services process such waste properly and shares information on its disposal within the Group.

## Efficient Use of Resources

Effluent generated from production processes of displays and electronic devices is discharged after proper treatment and/or recycled within the organization by using the Nitto Group’s own membrane products for the sake of efficient use of resources.

\*2 A system that recovers exhaust heat while generating electric power through the use of petroleum or gas as a fuel

\*3 An environmental accounting method that monitors resource and energy losses from the production process to visualize both physical and monetary waste; made into an ISO international standard (ISO 14051) in 2011

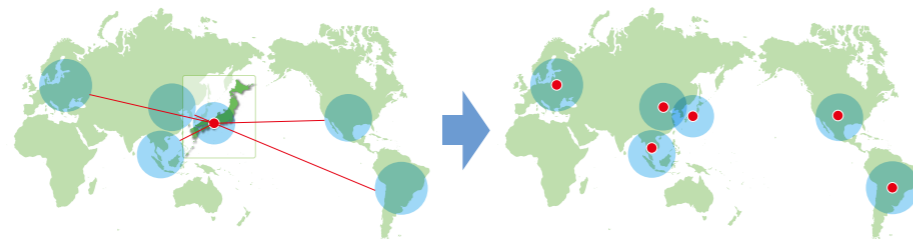
## Reinforcement of the Chemical Substance Management System

The Nitto Group is building a chemical substance management system led by those in the relevant regions in order to be able to promptly respond to changes in the laws and regulations of each country/region.

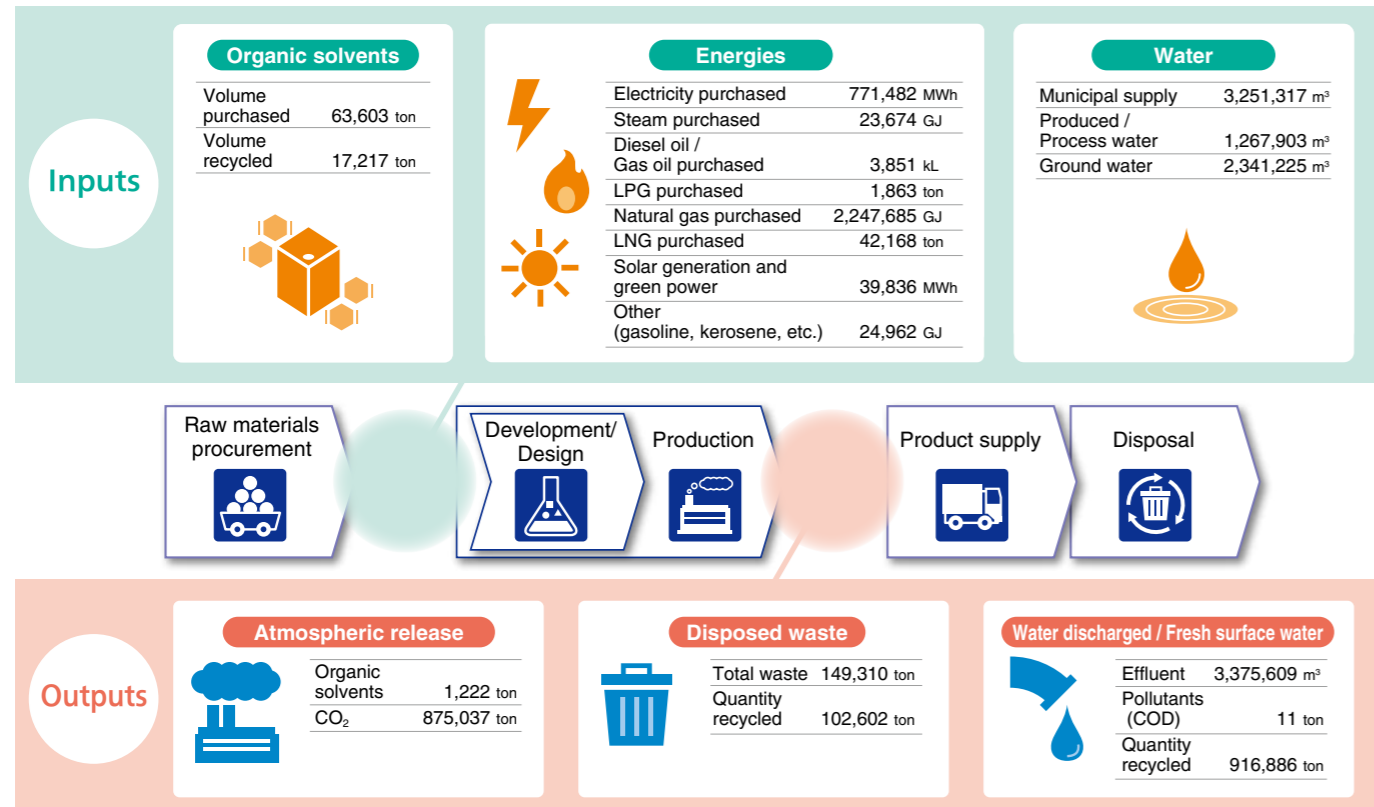
In FY2016, surveys were conducted mainly at sites where regulated chemical substances are frequently used to check the progress of that initiative and comprehend any problems. The surveys found that, although information on each country/region’s laws and regulations and what raw materials are used is managed under the lead of the relevant regions, most information on intermediate products and finished products is still placed under centralized management in Japan.

In FY2017, we will draw up an improvement plan based on the status of each site’s chemical substances management, so that every region can take the lead in managing such information in its territories.

### ■ From central management to region-led management



## Material Flow



### Kameyama Plant's transition to ISO 14001: 2015

The Kameyama Plant was certified for ISO 14001 as a collective entity of multiple business divisions and Group companies that is overseen by the head of the plant. One of the challenges that they faced with when moving to the 2015 version involved how to integrate the requirements of the environmental management system into their business process. To address this challenge, they realigned their organization into one in which the heads of each business division oversee the status of ISO certification, and invited external experts to hold internal training sessions for all management-level employees. These efforts paid off when the Kameyama Plant was certified for the ISO 14001: 2015 in March 2016.

Using this as a model, a task force team has been assembled to spread their initiative throughout the Nitto Group.



Internal training held at the Kameyama Plant

## Environmental Data

### Total Energy Input

	Fiscal 2014	Fiscal 2015	Fiscal 2016
Japan	4,385,508	4,218,336	4,321,749
The Americas	245,444	377,032	1,173,438
Europe	342,474	353,345	304,411
Asia and Oceania	1,781,411	1,732,841	1,808,486
Total	6,754,837	6,681,554	7,608,084

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

	Fiscal 2014	Fiscal 2015	Fiscal 2016
Japan	540,689	521,562	505,267
The Americas	27,059	37,430	72,555
Europe	44,090	44,919	47,177
Asia and Oceania	241,294	233,983	250,039
Total	853,132	837,894	875,037

### Water Withdrawal

	Fiscal 2014	Fiscal 2015	Fiscal 2016
Japan	4,328,713	4,171,581	4,140,776
The Americas	580,896	719,810	666,267
Europe	85,351	88,057	82,641
Asia and Oceania	2,202,531	1,966,708	1,970,761
Total	7,197,491	6,946,156	6,860,445

### COD Discharge / Fresh Surface Water

	Fiscal 2014	Fiscal 2015	Fiscal 2016
Japan	15.1	11.4	9.0
The Americas	0	0	0
Europe	0	0	0
Asia and Oceania	2.2	2.0	2.1
Total	17.3	13.4	11.1

### Disposed Waste

	Fiscal 2014	Fiscal 2015	Fiscal 2016
Japan	74,658	73,365	75,079
The Americas	7,532	8,370	11,423
Europe	9,697	10,426	10,902
Asia and Oceania	66,040	57,893	51,905
Total	157,927	150,054	149,310

### Percentage of Disposed Waste Recycled

	Fiscal 2014	Fiscal 2015	Fiscal 2016
Japan	92	93	98
The Americas	23	17	20
Europe	57	56	97
Asia and Oceania	31	28	31
Total	61	61	69

### Hazardous Waste

	Fiscal 2014	Fiscal 2015	Fiscal 2016
Japan	6,114	6,248	8,363
The Americas	438	495	2,033
Europe	656	654	597
Asia and Oceania	37,311	30,055	23,823
Total	44,519	37,452	34,816

### Atmospheric Release of PRTR Substances (non-consolidated)

	Fiscal 2014	Fiscal 2015	Fiscal 2016
Toluene	437.1	585.7	590.3
Xylene	8.9	9.0	5.1
N-hexane	10.6	11.5	10.1
Butyl acrylate	2.6	3.1	0.3
2-hydroxyethyl acrylate	0.2	0.1	0.0

### Atmospheric Release of NO<sub>x</sub> and SO<sub>x</sub> (non-consolidated)

	Fiscal 2016		Fiscal 2016
NO <sub>x</sub>	11	SO <sub>x</sub>	225