# Human Resources

## Reasons for Materiality

The Nitto Group considers human resources as our most valuable assets. Recruitment and retention of able human resources will determine the competitive advantage of the entire Group. In order for us to sustain our growth and continue creating new innovations, we see it as necessary to not only recruit global-minded people but also to create a work environment in which employees are constantly encouraged to take on challenges, thus enabling our diverse human resources to demonstrate their abilities to the fullest.

## ■ Nitto Group's Approaches

At the Nitto Group, every employee is expected to be a "Nitto Person," who comprehends and lives up to the Nitto Way, that is, one who can function as an integral member of a global team and is capable of joining hands with people of diverse backgrounds without being divided by differences in culture and values. To empower human resources across the globe, we are developing the group-wide foundation for human resource management, which encompasses a global grading system, a personnel evaluation system based on Nitto Competency, and the global Human Resource Information System (HRIS). Going forward, we intend to globally develop more Nitto Persons by accelerating the introduction of these inter-regional human resource development systems throughout the Group.

### Our Prospects for 2030 (Performance Targets)

- Investment in Employee Training Double the annual number of hours of employee training attended
- Continuous improvement of engagement surveys and measures against issues identified
- Ratio of women in management Global: 30%, Japan: 10%

## **Recruitment and Development of Employees**

Amid rapid changes in the contemporary business environment, the Nitto Group has expanded its global reach, with its overseas sales ratio exceeding 77% in fiscal 2020. To sustain business growth, we aim to become a corporate group that continues to innovate by recruiting and developing human resources through enhanced employer branding, diverse recruitment channels, and a systematic training scheme.

## **Recruitment of Globally-Capable Human Resources**

Out of a desire to have persons in the Group who have excellent communication skills, the zeal to create new values, and motivation for community service, we established the Nitto Internship Academy to provide student interns with opportunities to grow through various experiences at Nitto.

Four unique programs are available; after being briefed on the Nitto Group's hallmark innovations and strategies, interns are invited to join Nitto employees from the front line of each division to come up with ideas on new businesses or work on a task at various workplaces, which may not be very visible from the outside due to the B2B nature of the Group. In fiscal 2020, a total of 138 students participated in the programs, which were offered online to control the spread of COVID-19.

### ■ Nitto Internship Academy Programs

|                          | First-year<br>students          | Second-year students | Third-year<br>students<br>(M first-year<br>students) | Fourth-year<br>students<br>(M second-year<br>students) |
|--------------------------|---------------------------------|----------------------|--|--|
| Innovation               |                                 |                      | Attempting a new business                            |  |
| Internship               |                                 |                      | riccompaning a                                       | ilew business  |
| 1-day<br>Internship      | Designing one's own career path |                      |  |  |
|                          |                                 |                      |  | ·  |
| Extended<br>Internship   |                                 |                      | Gaining workpl                                       | ace experience   |
| Experience<br>Internship | Learning about global branding  |                      |  |  |



## Talent Management on a Global Scale

### **Global Human Resources Management Committee**

As a new initiative in fiscal 2020, we established the Global Human Resources Management Committee, which comprises three parties, Regional Leaders (Regional Management), Business Execution Leaders (Business execution departments), and HR Division Leaders (Special function departments), in a bid to accelerate the development of individuals who will support the Group's efforts to expand its global business reach in terms of the two management axes, "regional management standpoint" and "special function standpoint."

In more concrete terms, we plan to organize a leader candidate development program either in each region or globally and draw up a succession plan for presidents / managing directors at overseas Group

### Fast-track Leadership Development Program for Selected Talents

The Nitto Global Business Academy (NGBA) was launched in 2011 as an avenue to provide leadership training to promising candidates for global leadership positions. This practical program offers a hybrid curriculum that combines lectures on necessary knowledge for global business leaders, such as demonstrating leadership, creating new businesses, and managing organizations, with action learning for addressing a variety of managerial issues. In fiscal 2021, the program was redesigned into the NGBA-E (Executive) Course for candidates for corporate executive positions and the NGBA-A (Advanced) Course, which combined with global assignment/rotation from an education standpoint, for candidates for business leaders of the next generations. Both are for a small group of trainees and a seamless curriculum that ranges from discovering promising talents from across the globe to the development of leading managers.

# Talent Management with Respect for Individuals (Japan)

## **Expertise-based Specialist Grading System**

In Japan, in fiscal 2018, we introduced a job size-based grading system, a new grading system for those in managerial positions that scales according to the magnitude of their responsibilities. Fiscal 2021 will also see the commencement of an expertise-based specialist job grading system, which uses the level of expertise to assign grades.

By directly linking expertise to compensation, we will recruit persons with advanced skillsets, promote their development, and in the long run, produce results and contribute to business performance by having each of them give full play to their specialty. We will start with R&D and other technology divisions and roll the system out to other sectors in or after fiscal 2022.

**■** Employment Data of the Nitto Group

Employees Men 61% Women 39%

Non-Japanese executives Total 87

Men 83% Women 17%

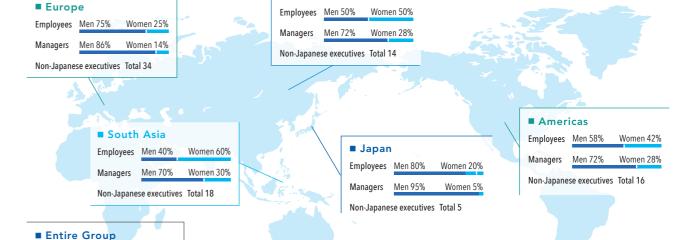
### Trying out a Full Work-from-Home System

In November 2020, we introduced the "super-smart" work system for those who wish to work from home on a trial basis to allow employees to lead the life and work style of their choice. Under the system, employees work remotely at home and come to the office several times a month as necessary. So far, feedback from those taking part in the system indicates that the physical distance between a supervisor and members of a team may not necessarily be a disadvantage, that active use of teleworking tools has made it easier to communicate with others, and that the quality of ideas and proposals from employees has improved as working remotely allows them to maximize their output and focus on tasks at hand. We will continue seeking the work style that best fits Nitto.

### **Enhancement of Job Satisfaction**

- Efforts to increase employee engagement -

In fiscal 2019, we conducted an engagement survey of 8,995 Nitto Group employees in Japan, with the goal of making ours a company where each of its members feels motivated. In fiscal 2020, we set about improving each of the challenges thus identified in the survey. This was accomplished by doing things such as asking each site to draw up an action plan for increased employee engagement, conducting workshops and 360-degree evaluations for office organization heads, providing coaching opportunities, and organizing activities to promote workplace communication.



■ East Asia

- Employees and Managers: Gender ratio as of April 1, 2021
- Non-Japanese executives: Number of non-Japanese executives (including concurent post) as of April 1, 2021

In fiscal 2021, we plan to conduct an engagement survey of all members of the Nitto Group, including those at overseas companies, to spread these initiatives globally.

### **Promotion of Employee-Driven Innovation**

#### Nitto Innovation Challenge

Each and every employee challenges themselves to innovate—Fostering such a corporate culture is the overriding imperative for the Nitto Group, which sources its competitive advantage from innovative products.

Inviting employees to contribute their ideas for new businesses, the Nitto Innovation Challenge (NIC) is one such initiative. Between April and June 2020, a total of 1,107 unique entries were received from around the world.

NIC is not just another campaign to scout employees for new business ideas; all entries are carefully screened for their feasibility to narrow down choices. Outstanding entries are then carried forward on the Acceleration Program, and an in-house advisor is assigned. As of this writing, the feasibility of ideas on the shortlist is being studied.

In fiscal 2021, in addition to organizing the NIC 2021, we plan to establish an in-house community site and organize webinars and other opportunities on new business development. This will be done so that employees who have a passion for and an interest in the development of new businesses can find like-minded individuals or mentors.

# **Diversity & Inclusion**

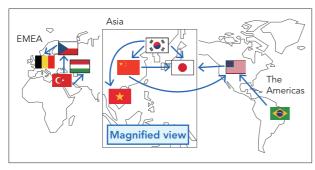
The Nitto Group employs diverse people from around the world, representing a wide range in terms of nationality, cultural background, gender, age, and employment type. As the working/productive age population continues to shrink in Japan, we are hiring people of any gender and nationality, taking a long-term perspective. At the same time, we are promoting diversity in management by continuing to improve the workplace environment in terms of productivity, comfort, and job satisfaction, in a bid to create new values as we internalize the diverse perspectives of such a varied group of people.

### **Empowerment of Women**

Empowerment of women is among the top priority issues at the Nitto Group. As such, we have a target of doubling the current ratio of women in management by 2030. To this end, we have launched a variety of initiatives in Japan, including recruiting more women, offering support for their life events, such as childbirth and childcare, and assisting them in developing an uninterrupted career path. On International Women's Day, we organize educational events within the company.

## Cross-Border Assignment of Employees at Overseas **Group Companies**

Having operations globally as we do, we need to develop employees from around the world and allow them to give full play to their talents. To provide them with opportunities to thrive, we transfer and rotate people across borders. As of April 2021, 38 employees at our overseas Group companies have taken advantage of this international assignment program to work in a country other than the one in which they were originally hired.



Examples of international transfer of employees at overseas Group

## Creation of a Sense of Unity in the New Era

The ongoing COVID-19 pandemic has seriously affected the business activities of many private enterprises, and the Nitto Group is no exception to this. Although the situation warrants no optimism yet, we have been able to minimize negative impacts on and damage to management through carrying out our work as we take the utmost precaution to ensure the safety and health of our people by controlling the spread of infection.

Out of his sincere wish to deliver words of gratitude and encouragement to every Nitto employee and their family members, who have collectively dedicated themselves to supporting the Nitto Group and its activities by modifying the way they work or otherwise, President Hideo Takasaki sent out a card with his message of encouragement in 15 different languages to all the members of the Nitto Group. Together with words of appreciation, the cards were personally delivered by supervisors, who took every measure to prevent the spread of infection, bringing a smile to everyone's face at the Nitto Group's offices and plants throughout the world

A supervisor handing over the card, together with words of appreciation and personal protective equipment against COVID-19



# Product Safety/Quality

## ■ Reasons for Materiality

The Nitto Group operates in 28 countries and regions around the world. As such, we are aware of the magnitude of impact that our business activities have on local communities and economies. As a responsible manufacturer, we deem it imperative to ensure product safety, a secure workplace environment, and respect for human rights throughout the supply chain. In fact, we currently receive customer requests that are more diverse and advanced than ever before, and local authorities are tightening their laws and regulations across the world. We at the Nitto Group consider it part of our corporate social responsibility to ensure that the workplace environment is improved and that human rights infringements are prevented, while at the same time providing products and services that satisfy our customers.

## Nitto Group's Approaches

In order to deliver well-being and satisfaction to our valued customers through the supply of products and services, we assign quality managers in the corporate quality division, business execution departments, and Group companies, to build a structure for proper quality management and we have obtained certifications of external international standards for management systems.

To form a safe and secure workplace environment, the Corporate Strategy Meeting meets to discuss programs and any challenges in integrating such activities with management objectives.

Respect for human rights is another key consideration for the Nitto Group that needs to be promoted globally, not only within the Group but also throughout the entire supply chain. The Nitto Group endorses the Universal Declaration of Human Rights and has established its own Basic Policy on Human Rights to promote CSR-based procurement.

### Our Prospects for 2030 (Performance Targets)

- Proactive quality assurance and safety management
- Zero critical/serious occupational accidents
- Sustainability appraisal and improvement of suppliers who account for 90%+ of total purchases
- Digitalized logistics for greater efficiency

## **Enhancement of Safety and Quality of Products**

The Nitto Group continuously anticipates changes in society and the market to conceive innovative product ideas and enhance product safety and quality in a bid to deliver products and services that satisfy customers. To better cater to our valued customers, we make it a rule to differentiate ourselves by working closely with them from the development stage to ensure that they know they can come to us for consultations on their new challenges or issues early on, allowing us to develop and deliver products and technologies that meet their needs.

We make utmost efforts to avoid critical complaints and product recalls by introducing and implementing the quality management system to enhance the safety and quality of products. We see to it that every product we ship has met these safety and quality specs, and should any problems occur, we are quick to troubleshoot

The Nitto Group uses upwards of 4,000 varieties of chemical substances, and their proper management is our essential responsibility.

Constantly monitoring trends in the revision of relevant laws and changes in customer requirements, we set for ourselves stricter voluntary standards for proper management of chemical substances.

Furthermore, by centralizing the management of data on chemical substances contained in materials and products, we respond to inquiries from customers promptly and properly.

## Improvement of the Workplace **Environment**

True to its slogan of "We place safety before everything else," the Nitto Group attends diligently to the prevention of occupational accidents and injuries through concerted efforts to create workplace environments where everyone can work in good health without anxiety.

By "everyone," we do not mean Nitto Group employees only. Rather, we consider all persons working on the Nitto Group's premises, including workers from subcontracting businesses and construction services, as members of our team, and we believe that it is our corporate responsibility to ensure their safety. Toward the self-set goal of achieving "zero accidents and injuries," we make every effort possible.

In fiscal 2020, we had five critical/serious accidents, down from 12 in fiscal 2018 and seven in fiscal 2019. Although our continuous efforts are proving to be effective in lowering the number of accidents, we have yet to achieve our ultimate target of zero critical/serious accidents.

Going forward, we will introduce more industrial robots to totally eliminate the risk of occupational accidents and injuries and enhance captaincy to foster a safety culture. At the same time, we are working to establish a system that allows us to respond promptly in the unfortunate event of an accident.

### Eliminating the Risk of Occupational Accidents and Injuries

As different plants use different sets of production equipment, we used to determine the risk of accidents at each site and took action commensurate with the risks thus determined. Because many accidents falling under the categories of "Caught in/between" continue to occur, in fiscal 2020, we decided to address this imperative for the Group and have made intensive efforts to eliminate these types of accidents.

In more concrete terms, we have ensured that humans and machines are separated from each other and aggressively promoted automation at production plants. For example, there is a process where operators have to manually handle rubber materials near rolls, which involved a high degree of risk. We introduced industrial robots on several of those lines to automate the operation, which also reduced the burden on operators.

To further reduce avoidable risks, we have begun developing measures to detect hazards and prevent accidents using artificial intelligence (AI)

# **Topics**

## **Supporting Remote Locations at Emergencies**

In the past, when a critical/serious occupational accident occurred at any of our sites, not only would the department involved in the affected business send their staff to the scene, but also the business execusion departments and the special function departments would immediately respond to assist the members of the plant in question in dealing with the situation.

To ensure that prompt action is taken in emergencies no matter the distance or country or external factors involved, such as travel curbs due to COVID-19, we have recently introduced a remote assist system using Microsoft's HoloLens 2 smart glasses.

With this, it is now possible to get an accurate grasp of the situation to quickly respond and troubleshoot without having to visit the site.

In fiscal 2020, we began implementing the system at our sites and Group companies in Japan and plan to do so at overseas locations from fiscal 2021.

This approach is still in its infancy, but it is expected to make a huge difference in our future safety management operations, which should also facilitate work style reform in the long run.

### Fostering a Safety Culture

The Nitto Group has been promoting a small group activity called "Group Activity Toward Excellence (GATE)" throughout the globe. In each of the four areas of "Quality," "Safety," "Environment," and "Rationalization," groups of persons from the front line pool their unique wisdom and experiences and gather to have a friendly competition in improvement activities.

To assure safety, however, on not a few occasions, heads of each site must take the lead in maintaining such activities at their whole sites by showing their stance to their subordinates and delivering results, over and above the bottom-up approaches on the shop floor. Hence the need for captaincy.

As this is the case, we decided to separate safety activities from GATE in fiscal 2020, and instead launched a Safety Promotion

The conference's objectives are two-fold: to shed light on outstanding efforts and learn from each other in a bid to raise the overall level of safety; and to commend sites and individuals who have made steady efforts consistently, thus fostering a safety culture of "praising wonderful organizations that are committed to safety."

In fiscal 2020, despite the impact of COVID-19, we managed to deliver the conference remotely using online tools to run the event safely, and the team from Nitto Denko (Foshan) Co., Ltd., China performed admirably in both categories of "Occupational Accident Prevention and Fire/Disaster Prevention" and "Traffic Safety" to win the Special Excellence Award in the General category.



The Foshan team celebrating their achievement at the 1st Safety Promotion

### **Commitment to Health and Productivity Management**

The Nitto Group is committed to health and productivity management, knowing that employees' physical and mental health is essential for delivering quality products and services to customers. Accordingly, we set the basic health and productivity policy of "realizing a vibrant organization by enhancing employees' well-being" in Japan. In April 2020, we launched a new three-year occupational health plan with the aim of "improving the workplace environment and individuals' daily lives, both in terms of physical and mental well-being." In recognition of these ongoing health and productivity management initiatives, Nitto Denko Corporation and two of its Group companies, Nitto Business Expert Corporation and Nitoms, Inc., were chosen under the 2021

Certified Health and Productivity Management Outstanding Organizations Recognition Program in the large enterprise category. We will continue to work on health and productivity management under the mantra of "All in it together to promote physical and mental well-being."

# **Respecting Human Rights throughout** the Supply Chain

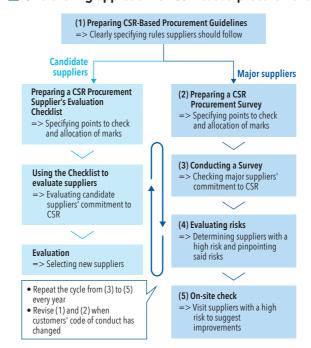
### **CSR-Based Procurement**

Endorsing the Universal Declaration of Human Rights, the Nitto Group has established its own Basic Policy on Human Rights. To prevent human rights infringements not only within the Nitto Group but also throughout its supply chain, we ensure that thorough action is taken in accordance with this Basic Policy.

In more concrete terms, we published the CSR-Based Procurement Guidelines that we expect our suppliers to follow. We ask for their cooperation in sustainability initiatives, including fair trade, compliance with corporate ethics, safety and health, environmental considerations and respect for the human rights of workers, and we have them share the Basic Policy with other players in the supply chain.

Under the CSR-Based Procurement Guidelines, we annually conduct a CSR Procurement Survey with key partners and visit suppliers for a follow-up survey and suggest improvements if deemed necessary. Before going into business with new suppliers, we make it a rule to use the CSR Procurement Supplier's Evaluation Checklist to determine their qualifications.

#### Overarching approach for CSR-based procurement



Through these activities, by 2030, we will select a group of "key suppliers," whose combined volume of business with the Nitto Group accounts for 90% or more of the total purchases of the Group, to assess the business sustainability of the selected suppliers and help them with the improvement process, thus guaranteeing the integrity of our supply chain.

## **Initiatives for Driver-Friendly Logistics** "White Logistics Movement"

In response to the serious shortage of truck drivers in Japan, the government has taken the lead in promoting the the "White Logistics Movement" since 2019 to stabilize logistics and sustain economic growth. From the perspectives of sustainable growth, compliance, and ESG, the Nitto Group sees the improvement of logistics as a management imperative and has since endorsed the campaign's goal as an integral member of the movement.

### What we are doing

- Use of digital tools to streamline logistics
- Combining packages addressed to the same recipient, mixed loading, change of transportation modes, as well as coordinating shipment and production schedules
- Cancellation/suspension of operations in abnormal weather

To begin with, we worked to reduce trucks' standby time at the Onomichi Plant to an average of 30 minutes or shorter in fiscal 2020. As long as logistics services notify us of their estimated time of arrival of their trucks beforehand and we prepare goods to be loaded onto the trucks without delay upon their arrival, the issue can be avoided. In reality, however, many factors hinder this from happening.

We analyzed data on the occurrence of standby time and identified causes that are attributable to customers, production at the plant, logistics, or otherwise. Based on the findings, relevant departments met to discuss solutions to those challenges, and the logistics department closely communicated with carriers for information sharing. As a result, they were able to shorten the average standby time to 25 minutes, which far surpassed the original target. Going forward, they are planning on spreading this initiative to other plants.

Another related project in the form of cooperative distribution was started in May 2020 with a precision equipment manufacturer, who is also a participant in the driver-friendly logistics campaign. To make such a project succeed, it is essential that the two companies closely coordinate the cargo volume and delivery schedule as well as routes. Although the outcomes of the project are still limited, we will build databases of key parameters, including transportation costs, cargo volumes, and destinations, as well as vehicle dispatch plans and results, and loading efficiency. We will share the databases with carriers to expand this initiative in the hope that it will help to reduce CO2 emissions and improve truck drivers' work environments.

# **Environment**

## Reasons for Materiality

Climate change resulting from CO<sub>2</sub> emissions, depletion of resources, and marine pollution by plastics—the global environment is in a state of crisis. For the Nitto Group, it is essential to make eco-friendly efforts, as we emit CO<sub>2</sub> from the consumption of electric power and fossil fuels and consume plastics, organic solvents, water, and other resources for manufacturing (see the illustration below).

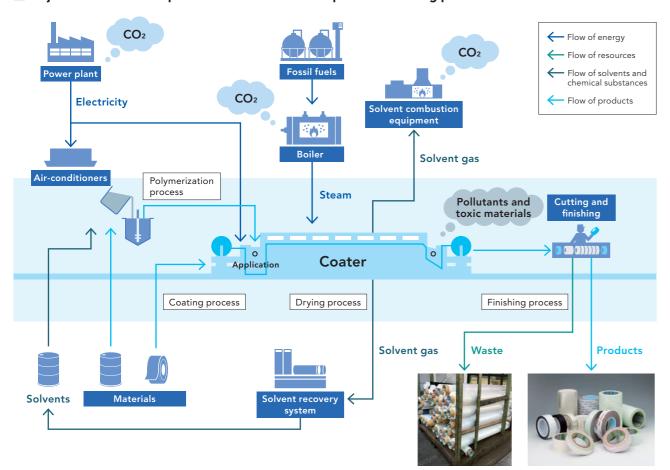
As customers and the public expect private enterprises to make proactive efforts to conserve the environment, environmental awareness constitutes one of the overriding conditions for sustainable business growth. We consider it an integral part of our corporate responsibility to minimize the environmental impact from our manufacturing process in order to confront the crisis facing the global environment.

## ■ Nitto Group's Approaches

In order to fulfill our corporate social responsibility through manufacturing, the Nitto Group discusses environmental challenges and programs at the Corporate Strategy Meeting, thus integrating our environmental activities with our management objectives. In fiscal 2021, we set up the Green Committee to promote environmental programs for the entire Group. Placed under the Committee are three subcommittees: the "Decarbonizing Subcommittee," which works to reduce CO2 emissions by saving, recycling, and recovering energy; the "3R Subcommittee," which works to ensure efficient use of resources by promoting their conservation and cyclic use; and the "Pollution Prevention Subcommittee," which works to reduce the use of chemical substances and the emission of hazardous substances, both of which cause various forms of pollution. Business executing departments and relevant special function departments will work together to achieve the 2030 targets for each project.

We will also be ramping up educational campaigns designed to raise the environmental awareness of each and every employee.

#### ■ Major environmental impact made in the Nitto Group's manufacturing process





\*1 Scope 1 + 2 \*2 Scope 3

### **■** Green Committee Organization Chart



### Reduction in CO<sub>2</sub> Emissions

As climate change heightens the risk of natural disasters globally, private enterprises must act to mitigate these conditions.

The Nitto Group launched its full-scale efforts to reduce  $CO_2$  emissions in 2015 when it set a long-term emissions reduction target. So far, we have spent 5.0 billion yen to save energy for air-conditioning and install LED lights (total between fiscal 2016 and fiscal 2020), which lowered our annual  $CO_2$  emissions to 690,000 tons in fiscal 2020, achieving our original target of "730,000 tons/year by 2025" five years early.

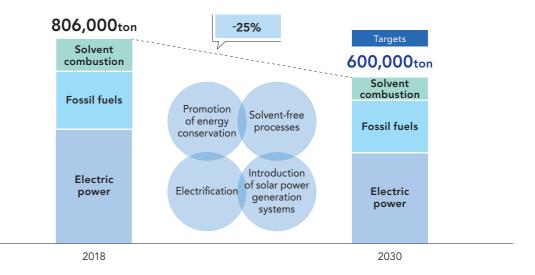
As the next step toward achieving carbon-neutral operations, we have set a new target of reducing annual CO<sub>2</sub> emissions to 600,000

tons/year by fiscal 2030, down by 25% from fiscal 2018.

To achieve this, we will implement a variety of programs, including the promotion of energy conservation at the production process, elimination of  $CO_2$  emitted while combusting solvent gases through the pursuit of solvent-free processes, electrification of the production process (de-fossilized fuel), and introduction of solar power generation systems.

We plan to earmark over 60.0 billion yen for investment in these programs over the coming ten years.

Besides saving and recycling energy, we are redoubling our efforts to develop and implement new technologies, such as carbon recycling technology, to recover and reuse CO<sub>2</sub> from the production process as well as atmospheric CO<sub>2</sub>.



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# **Topics**

## **Initiatives for Supply Chains**

We are accelerating the shift from air to sea transport for international shipping from Vietnam, where the main mode of transport has been air cargo, even for short distances.

In Japan, too, we are achieving steady progress in making a modal shift for domestic transportation, reducing 124 tons of CO<sub>2</sub> emissions in fiscal 2020.

Going forward, we will take whatever action necessary for energy conservation.

We will expedite the reuse of waste-plastics as films (horizontal recycling) and their transformation into high-value-added plastic products (upcycling).





## **Efficient Use of Resources**

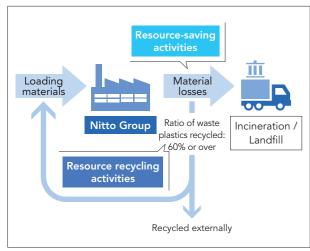
Earth offers bountiful natural resources, such as oil, minerals, and water, but they are ultimately finite. We believe it a critical mandate for any private enterprises to put such limited resources into efficient use.

So far, the Nitto Group has introduced truck scales to its sites in Japan to tighten resource management to reduce emissions through enhanced productivity and recycling of waste.

In fiscal 2020, the total waste disposed the Nitto Group amounted to 128,000 tons (up by 1.2% per unit production from fiscal 2019), which was below the 3.0% reduction target. This was primarily because of lower productivity due to fluctuations in orders caused by new product launches and the disturbances created by COVID-19.

Going forward, we are looking to establish stable manufacturing practices immune to external factors, while at the same time promoting resource-saving activities by using Material Flow Cost Accounting (to be detailed in the next section).

We have also set new 2030 targets for the cyclic use of resources, which include a generated waste-plastics recycling ratio of 60% and over and aggressive use of recycled materials as raw materials.



Recycling waste-plastics

## **Resource-Saving Activities**

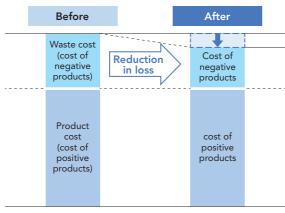
Material Flow Cost Accounting (MFCA) is a method of environmental management accounting. From the flow of materials (raw materials, secondary materials, etc.) at the production process, the volume and monetary value of materials are visualized to minimize materials loss, resulting in waste reduction.

The methodology of MFCA and its application across supply chains are defined in ISO 14051:2011 and ISO 14052:2017, respectively, and Nitto has contributed greatly to its standardization process as a lead

In February 2021, ISO 14053:2021, a more practical version with a lower barrier to entry, was published, and we are planning to utilize this new standard to further spread MFCA within the Nitto Group.

At the Membrane Division, where those on the shop floor took the lead in implementing MFCA ahead of others, they successfully slashed the "cost of negative products" at the ultra-high performance RO membrane formation process by nearly 10%.

We believe that MFCA will help us to save more resources once more divisions have advanced to the implementation phase to visualize the flow of materials with greater clarity.



Using MFCA for efficient use of resources

### **Efforts to Promote Cyclic Use of Resources**

### Recycling Wastewater

Besides using water resources efficiently, we attach a great deal of importance to recycling water so that the impact on our business activities is minimal should water supply be restricted due to abnormal weather or otherwise.

At the Shiga Plant, we are recycling wastewater by combining technologies for evaporative concentration and volume reduction with our proprietary technology of ultra-high pressure reverse osmosis (RO) membrane treatment. Having set the target recycling ratio at 90% for fiscal 2022, we are heading for our ultimate goal of "zero wastewater generated from processes." The knowledge gained in this regard is shared with other plants.

Meanwhile, at the Onomichi Plant, a water recycling facility using similar technologies was completed in October 2020 and subsequently went into operation. It is now possible to recycle 100% of wastewater from production processes, to establish a new model of water recycling. Also, the risk of suspended production due to restricted water supply, as was seen during the 2018 western Japan heavy rain disaster, has been reduced.



Water recycling facility at the Onomichi Plant

### Development of Mono-Material Technology

Because one of our mainstay products is adhesive tape, it is necessary to decompose it into mono-materials to promote horizontal recycling. So far, we have verified a variety of techniques for the separation process. In fiscal 2021, we aim to establish the separation process, recycle films, verify their quality, put the entire process into practical application, and increase its scale on a commercial basis.

## **Emissions-reduction of Pollutants and Hazardous Substances**

To minimize the impact on the work environment and the environment surrounding our plants, we are making efforts to reduce emissions of organic solvents and hazardous substances.

Nitto Denko Corporation began its programs to reduce toluene emissions in 2016, treating solvent gases and preventing leakage from

In fiscal 2020, atmospheric toluene emissions were 190 tons, a reduction of 400 tons from fiscal 2016. We have recently expanded the scope of such activities to include the entire Nitto Group and now monitor volatile organic compounds (VOCs), on top of toluene. We have also drawn up reduction targets and action plans for 2030.

By expediting the introduction of solvent-free processes, identifying hazardous substances according to stricter standards than what laws/regulations dictate, and regulating their use, the Nitto Group will strive to further reduce its environmental impact.

