

# Nitto Group's Financial Strategy as per the Chief Financial Officer



## CFO Message

### Addressing ESG Head-on to Turn Future-Financial Investment into Financial Outcomes and Boost Corporate Value

#### Yasuhiro Iseyama

Director, Senior Executive Vice President, CFO  
General Manager of Corporate Accounting & Finance Division

## Fiscal 2022 in Review

In fiscal 2022, the Nitto Group was challenged by a multitude of radical changes in the operating environment, including rising prices of raw materials and energy triggered by the Russian invasion of Ukraine and rapid fluctuations in the foreign exchange market on account of interest rate differentials. Despite this, we were able to achieve our self-set operating income target of 140.0 billion yen, setting another record-high profit for the second consecutive year. This also marked the achievement of the profit target for the final year of the mid-term management plan "Nitto Beyond 2023," one year ahead of schedule.

As novel coronavirus infection (COVID-19) began to spread like wildfire, Nitto sharply divided each business into things that will grow or not be preserved to better navigate them. If we look back on fiscal 2022, for things that will grow, we successfully invested in the capacity ramp-up of high-precision substrates for flexible circuit boards for high-end smartphones. We also expended all possible means to ensure a sufficient supply of immunologic adjuvants, which are used to produce COVID-19 vaccines, making a

meaningful contribution to the globally shared social issue of halting viral infection.

For optical films for notebook and tablet computers, we were able to capture the demand mostly for high-end lines, which made a difference in our performance. Meanwhile, we transferred the business of automobile materials that reduce NVH (Noise, Vibration, and Harshness) to another company. This should allow us to shift management resources to the CASE (Connected, Autonomous, Shared, and Electric) market in the power & mobility field.

## The New Mid-term Management Plan "Nitto for Everyone 2025"

Now that we have achieved the targets laid out in the "Nitto Beyond 2023" ahead of schedule, we began working on a new mid-term management plan, "Nitto for Everyone 2025," from fiscal 2023, under which we aim to become an "irreplaceable top ESG company" for society.

ROE (return on equity attributable to owners of the parent company) is the financial indicator that the Nitto

Group monitors most carefully. Being conscious of capital cost in management, our goal here has been to target ROE 10% or higher, but we have raised the bar to shoot for 15% by fiscal 2025, the final year of the new plan. Operating income is a key indicator of business growth, and our target here is 170.0 billion yen or 17% in operating margin. Using 500.0 billion yen of cash flow that should be generated from operating activities over the coming three years, we plan to make growth investments totaling 480.0 billion yen.

The financial department is urging each business sector to manage their business with the balance sheet in mind, rather than focusing solely on profit and loss. As part of this, we began monitoring return on invested capital (ROIC) about five years ago. They set a hurdle rate by taking various considerations into account, such as how their competitors are doing in this regard, and are working to clear the hurdle thus established.

This has just begun, but we are putting more effort into educating and training mid-level employees in each business sector. One of the things that we are doing is organizing annual global conferences and other occasions where senior executives from Group companies gather together, so that they can internalize the basic idea of ROIC and see how it connects to their operations. With each business sector working to enhance ROIC, we hope to reach the ROE target of 15%.

## Allocating Cash Optimally

The order of our priorities in the application of cash remains the same: 1. Capital investment, 2. Cash dividends, 3. M&As, and 4. Share buybacks. Through 1. and 3., we will develop PlanetFlags/HumanFlags and create Niche Top products out of them. In so doing, we will convert ours into a business portfolio that contributes to the environment and humankind.

For shareholder return, which comes in at 2. and 4., we give top priority to stable dividend payments regardless of the ups and downs of our performance, and we conduct share buybacks if and when our finances allow. While following this basic stance, we aim to keep our dividend on equity ratio (DOE) at 4% or higher.

If we wish to transform our business portfolio into one dedicated to being of service to the environment and humankind, we believe that M&As will be a more promising option than ever, and we also expect that the size of M&A deals will trend larger. The financial department will not just check M&A partners before acquisition but do monthly post-acquisition checks of their performance to spot any sign of their performance deviating significantly from the original plan and issue an alert if deemed necessary, so that we can act promptly.

## Investment in Future-Financial Elements

Going forward, the Nitto Group will aggressively allocate its funds and management resources to the achievement of future-financial targets, which should bring us financial value in the future. The question is, how will this end up bearing financial value? Let me briefly explain our rationale.

In addition to the conventional future-financial targets of the new products ratio, CO<sub>2</sub> emissions, and the female leaders ratio, we have set six new indicators in the three categories of the product-related field (PlanetFlags/HumanFlags category sales ratio, etc.), the environment-related field (sustainable materials procurement ratio, etc.), and the human resource-related field (engagement scores, etc.).

While it is relatively easy to visualize the process of investments in the product-related and environment-related fields yielding financial outcomes, human resource-related investments may not be so easy to see. Still, it makes perfect business sense to make proactive investments in this field and foster an organizational culture that encourages individuals and teams to challenge themselves whenever the opportunity arises, because it leads to higher performance in each process of business activities. Furthermore, proactive disclosure of such information on human capital increases expectations for sustainable growth, allows us to raise funds in more advantageous terms, and helps us recruit talented individuals who share ESG values. Although there is some time lag in this process, we believe that these initiatives will bear fruit in the forms of the creation of Niche Top products in the near future and improved performance as epitomized by a higher ROE, which in turn creates a virtuous cycle of increased reinvestments for renewed growth.

## CFO's Roles

Be it ROIC, which is used by business sectors, or ROE, which is pursued by the company as a whole, we shouldn't resort to short-term remedies to just make these indicators look better by, for example, compressing assets that we need for future growth or converting shareholders' equity to debt. The Nitto Group's aim should not be contracted equilibrium but making our presence felt more in society as an "irreplaceable top ESG company" that keeps growing while preserving a solid structure. We will embark on the new mid-term management plan with all our might, with a burning desire to hear our stakeholders say, "Nitto has achieved this impressive growth because they tackled ESG head-on."

# Nitto Group's R&D Strategy as per the Chief Technology Officer

CTO  
Message

Turning Investments in ESG and Future-Financial Elements into Financial Value through Innovation

Yosuke Miki

Director, Senior Executive Vice President, CTO  
General Manager of Corporate Technology Sector



## R&D's Roles in ESG Management

We will not initiate new technological development projects if they are not for the good of the global environment, humankind, or society. Period.—This is our development policy. We set criteria for PlanetFlags/HumanFlags, which are products contributing to the environment and/or human life, and develop technologies and products that meet such criteria. In accordance with our management policy of “placing ESG at the core of management,” we will shift to a business portfolio centered on PlanetFlags/HumanFlags and aim to achieve our target earnings by offering these products.

It may not be obvious in the early stages how some of the investments, be it for the development of technologies and products worthy of the PlanetFlags/HumanFlags name, the fostering of a corporate culture that celebrates its employees in their proactive attempts to develop such technologies and products, or the development of human resources who take such challenges, will improve our performance. However, the Nitto Group regards them as investments in “future-financial value,” and we are allocating our management resources to these areas with a strong determination to convert them into “financial value” without

fail in the near future. The R&D team is expected to play a critical role in converting investments in ESG and future-financial elements into financial value through innovation, which will expedite the shift to a business portfolio centered on PlanetFlags/HumanFlags.

Let me show you how we go about doing this through an example of the oligonucleotide therapeutics business.

## Nitto Group's Innovation Model

Nitto is probably best known as a manufacturer of electronic components, mainly handling intermediate materials, and we are often compared to other players in the electronic components industry. So, some might wonder why Nitto is involved in the pharmaceutical business. We are relatively new to this business, but we are the largest contract manufacturing organization (CMO) of oligonucleotide therapeutics, which now forms one of the core HumanFlags, yielding a high level of profitability.

Curing illnesses by acting directly on human genes, oligonucleotide therapeutics is a burgeoning field, which is partly why only a few commercial oligonucleotide therapeutics have been approved and launched.

Oligonucleotide therapeutics have a repeating structure, with its smallest units being four types of basic compounds called nucleotide monomers. Determining their order or combination itself means designing oligonucleotide therapeutics. To synthesize oligonucleotide therapeutics, you connect four types of monomers to a polymer bead (starting point) one by one through a chemical reaction in a predetermined sequence and repeat the process over and over until a drug is completed by cutting off the polymer bead that you started with. A drug discovery company determines the sequence, and CMOs synthesize them according to the sequence thus determined.

Originally, Nitto had a wealth of technologies for synthesizing polymer particles. The members who conceived this business weren't versed in medical care, but came to know how oligonucleotide therapeutics are manufactured and hit upon the idea that Nitto can contribute to medical care by utilizing its existing technologies. Initiated by this proposal, the project began to gradually take shape through a partnership with an external company until polymer beads suitable for the synthesis of oligonucleotide therapeutics were developed.

Our basic policy is to develop technologies in-house whenever possible, as it helps us enhance our development prowess and maintain it at a high standard. If and when we find a company with useful technology that we cannot possibly have or who possesses superior technology that we may develop but that would take a long time, we will go for joint development or capital alliance. Concerning the commercialization of oligonucleotide therapeutics, we have enhanced functions necessary for contract manufacturing, having acquired two oligonucleotide therapeutics CMOs, an analysis service provider who checks if basic compounds are synthesized in the sequence designed by a drug discovery company, and a business doing aseptic filling of manufactured drugs into containers. That's what it took to get the CMO business into gear.

While we were busy doing all this, we began conceiving a desire to make a daring step into drug discovery, rather than merely manufacturing drugs to given specifications. So,

after ensuring firewall vis-à-vis the contract manufacturing business, we began making earnest development efforts for drug discovery. We have made the most of an alliance with a technology company to equip ourselves with the technology to design oligonucleotide therapeutics.

Our efforts in the drug discovery market once paid off when we received an offer from Bristol-Myers Squibb of the U.S., one of the world-leading biopharma businesses, asking us to license our pipeline (a set of drug candidates under investigation) of liver fibrosis therapy. We accepted their offer and signed a licensing agreement, which earned us an upfront payment at the time of contract, as well as milestone payments (at the time of progress of clinical trials, application for approval, etc.) and royalty income based on sales amount, which leads me to say that the commercialization and monetization of the drug discovery field is steadily progressing.

Another of Nitto's key technologies is the drug delivery system (DDS).

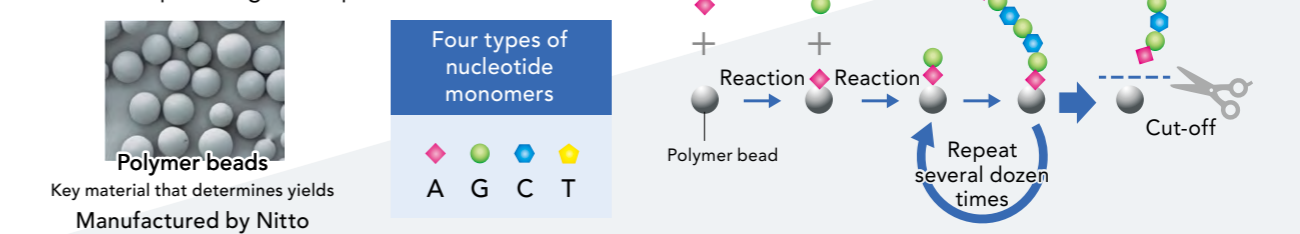
Apart from the efficacy and quality of drugs themselves, one critical challenge associated with drug administration is how you transport a pharmaceutical compound to its target site where a disease originates. This is because no drug is sufficiently effective if it is broken down as soon as it enters the body. Through joint research with a university research institute and other opportunities, we acquired a DDS technology for transporting compounds to the target organs such as liver, lungs, and others.

When used either for the contract manufacturing or drug discovery business, this technology helps to enhance their competitive edge. We can also license a DDS itself out to whoever wishes to use it, as has occurred in several cases and generated earnings.

As I have described so far, by combining diverse approaches, including in-house technological development, joint research with outside institutions, and M&As of companies who possess technologies that we needed, we have been able to create a promising business with diverse revenue models (contract manufacturing, drug discovery, DDS) in the new business domain of oligonucleotide therapeutics.

## Oligonucleotide Synthesis Process

Connect four types of nucleotide monomers to a polymer bead (reaction starting point) one by one through a chemical reaction in a pre-designed sequence



## Corporate Culture that Makes New Business Creation Fun and the Systems that Support It

Based on the two axes of technology and market, the Nitto Group is working to create new businesses by using existing technologies to discover new markets (new application development), honing technologies in existing markets (new product development), and creating new demand (new demand creation), which are collectively referred to as *Sanshin* (three “new”s) Activities.

In the oligonucleotide therapeutics business, we applied the existing technology for synthesizing polymer particles to the pharmaceutical market, which was new to Nitto. After cracking into the market, we have been developing the necessary technologies in-house or introducing them via in-licensing to establish a position solid enough to stand independently in each market sub-segment of contract manufacturing, drug delivery, and DDS. This is exactly what *Sanshin* Activities can do to help us create demand.

Other than this, Nitto has colorful systems to promote commercialization, including Technology *Kuruma-za*, an opportunity to discuss from a company-wide perspective technological issues or how we can set up a new project theme, and “management fund,” an avenue for prompt decision-making on funding to facilitate timely in-licensing of external technologies, something that ordinary investments cannot do. Furthermore, we organize the Nitto Innovation Challenge (NIC), in which we invite ideas for new businesses from across the Group and offer support to promising ones toward their realization.

When developing new businesses, as was the case with oligonucleotide therapeutics, we have to overcome issues and obstacles that we encounter for the first time, such as resolving technological bottlenecks at each phase, securing sales avenues, and discovering partner businesses. This is very different from operations that follow a standardized flow.

An inquiring mind full of curiosity to discover new values, an aspiration to shape a business that serves society, and programs that assist employees in realizing such wishes—When individuals

and the organization join forces in this way, we get the energy to create new businesses.

The aforementioned NIC is an event that inspires such minds and workplace culture. Regardless of their affiliations or job types, if every worker commits to creating Nitto’s new businesses, a corporate culture of employees enjoying the process of new business creation becomes entrenched. Through synergy with *Kuruma-za*, management fund, and other systems, Nitto’s unique future-financial value serves as the driving force and impetus to give rise to new products and businesses.

## Gathering Information for Open Innovation

As I have touched on in my explanation of the commercialization of oligonucleotide therapeutics, we did whatever it took to make it a reality in the process, from launching a new business from one technology to making it profitable, such as joint research with universities and other organizations and acquisitions of businesses with necessary technologies and equipment.

Finding an optimal partner is very important, and we were fortunate to have lucky encounters in commercializing the oligonucleotide therapeutics business. To make these chance meetings inevitable, the Nitto Group built three information collection centers on top of four R&D centers across the globe to have access to quality information on partner candidates and build relationships with individuals and organizations who might become intermediaries.

In China, we monitor government policies and study academia that are closely related to them. In Europe, which is leading the world in formulating environmental regulations, we go the extra mile to gather information in such fields.

In the U.S., where venture companies are particularly active, in 2018, we became a Founding Partner of MBC BioLabs, the largest life science incubator in the country. We have communicated with some 100 new startups each year ever since.

What is often challenging when dealing with startup businesses is the difficulty in determining the potential of their technology or

the “affinity” for working with us by merely reading materials they provide or hearing them talk.

This incubator not only provides a management advisory service and access to funding but also proactively offers support in terms of facilities and equipment. Through the most intense communication in this space and, in some cases, time-limited outsourcing, we carefully determine if their technology has reached the expected level or how beneficial it is for the Nitto Group’s business creation, and decide whether or not to move on to the next step (gaining a minority stake, M&A, etc.). This is how we enhance the chance of choosing the right partners.

## How Nitto Utilizes Intellectual Properties

To ensure that future-financial investments eventually lead to financial outcomes (profit), intellectual property plays the most crucial role. Let me conclude my remarks by walking you through how Nitto works towards monetizing patents and other intellectual properties.

To ensure stable growth of business performance, it is important to set up the next pillar of business early while the current pillar is still contributing sufficiently; in other words, to fill in gaps between peak profits and avoid any drops in performance. The question here is how we optimally allocate limited management resources.

Another thing we are concerned about is how we should stabilize earnings through the effective use of intellectual property. Think of a graph with a horizontal axis representing time and a vertical axis with profit. We can take two different approaches to each peak of business: 1. Maximize earnings, and 2. Make the peak as wide as possible (extend the period they contribute to earnings).

For the first approach, we believe it is most effective to form a robust patent system that raises barriers to entry in order to gain a competitive advantage. By establishing a position as an “irreplaceable entity in the supply chain” that possesses competitive technologies and develops competitive intellectual property, we can find attractive alliance partners with greater ease. If we can establish earnings flow early by having powerful partners

on our side and, on the assumption of the utilization of such partner’s assets, curbing or delaying our up-front investments, we can extend the period before a business reaches its peak as in case 2. above.

To extend the period after the peak was reached for the second approach above, we can allow our competitors to use the Nitto Group’s materials, processes, or business models, which are protected by patents. Several years ago, it was reported that Nitto licensed out its production engineering for large-scale polarizing film to Hangzhou Jinjiang Group Company Ltd. of China. As in this case, it is possible to extend the period of earnings contributions after the peak is hit by utilizing intellectual properties more, including cases of us receiving considerations for engineering support.

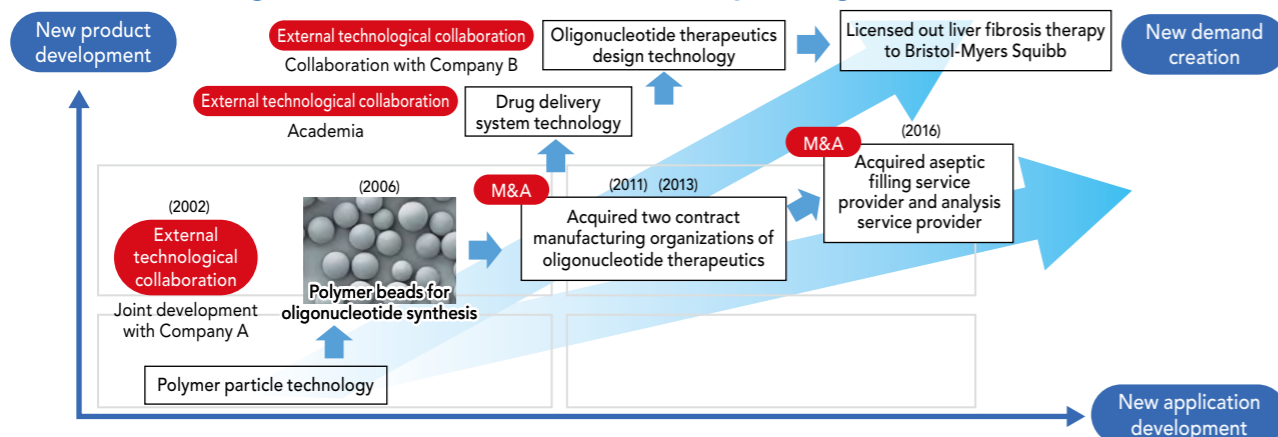
These strategic approaches to intellectual property are applied to the oligonucleotide therapeutics business described earlier. To maximize financial value at the right timing, we use different revenue models, including contract manufacturing and licensing our drug discovery pipeline or DDS technology, on different occasions.

When I say “converting investments in ESG and future-financial elements into financial value through innovation” or “shifting to a business portfolio centered around PlanetFlags/HumanFlags,” you may think them to be very challenging objectives. As I have described so far, however, this is just an extension of what we have long been doing as part of *Sanshin* Activities and the Niche Top Strategy, and it’s not anything special for us.

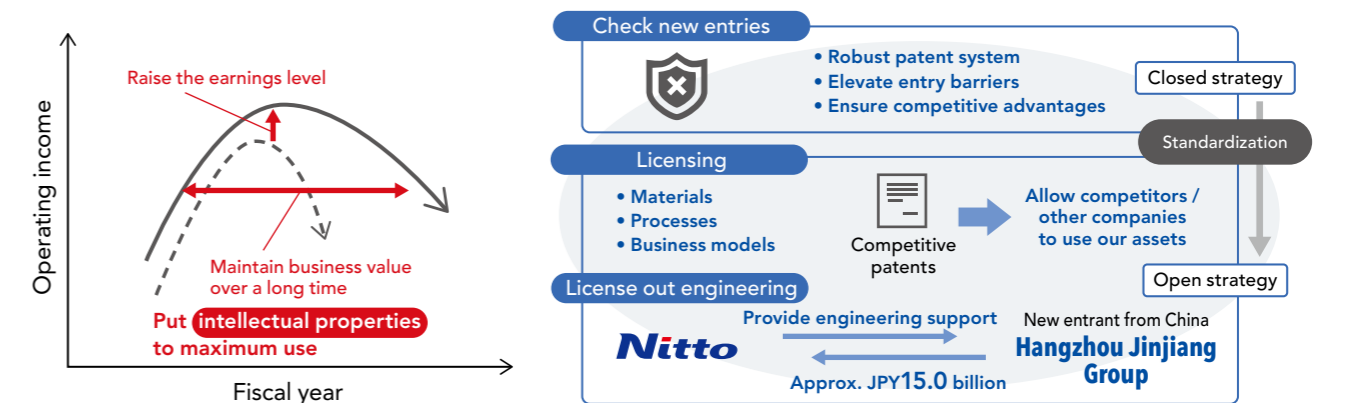
When we began our journey with oligonucleotide therapeutics, we didn’t have the concept of HumanFlags, but our engineers ventured into new technologies and markets until the business started offering some value out of the genuine wish to help those who suffer from illness and contribute to humankind.

Personally, I am profoundly confident in what we can do in this regard, as the resources that we need to achieve all this are available within the Nitto Group. I hope you will keep your eyes on the Nitto Group.

## Enhancing Technological Prowess by Following the *Sanshin* Scheme and through External Collaboration and Expanding Business via M&As



## Putting Intellectual Property with “Future-Financial” Value to Diverse Use to Convert Them to Financial Value



# New Product Development



**Kunio Nagasaki**

Research and Development Division,  
Information Fine Materials Sector

(General Manager,  
Development Strategy Management Department,  
Functional Base Products Sector  
at the time of this talk)

**Hiroyuki Nishii**

General Manager,  
Development Department,  
Medical Division,  
Human Life Solutions Sector

**Teppei Niino**

General Manager,  
Development Department,  
Mobile Printed Circuits Division,  
Information and Communication  
Technology Sector

**Takahiro Nonaka**

General Manager,  
Development Department 4,  
Research and Development Division,  
Information Fine Materials Sector

Round-  
table  
Talk

## Nitto's Initiatives for New Product Development

### Staying Close to Customers to Create New Products "Irreplaceable" for the Global Environment, Humankind, and Society

#### Developing New Products that Adapt to Different Life Cycles

**Nagasaki:** At the basis of the Functional Base Products Sector (FBP) is adhesive tape, and we supply adhesive products for a variety of applications to markets. Product life cycles vary depending on applications. For smartphones, for example, we need to come up with a new model within a short cycle of 1-2 years.

**Nonaka:** We at the Information Fine Materials Sector (IFM) deal in adhesive tape, too, our main products being optical materials for displays, focusing on polarizing films. In the past, we used to release one new product for television sets every six months. As the television market passed its maturity, however, our focus shifted to markets with growth potential, such as displays for automobiles, virtual reality (VR) devices, and organic light-emitting displays (OLEDs). As a result, their life cycle is now between a year and a half and two years.

**Niino:** The life cycle of electronics products is distinctively very

short. Applications of the Information and Communication Technology Sector's (ICT's) offerings can be divided into two: hard disc drives (HDDs) and smartphones. HDDs, in particular, are often used as part of infrastructure, and the need for higher integration or more layers is on the increase in recent years, because of which we are required to release new products in a very short cycle.

**Nishii:** We at the Medical Division utilize adhesion technology to develop medical and hygiene materials and transdermal absorption drugs and use polymerization technology to develop polymer beads for oligonucleotide synthesis, which is then evolved into the contract manufacturing service. It typically takes seven to ten years before products like transdermal absorption drugs or oligonucleotide therapeutics take off, so we need to do preparations and groundwork accordingly.

#### Innovations Brought about by Customer-Oriented Approaches and "DNA"

**Niino:** One of the greatest strengths of the Nitto Group is

customer-oriented approaches. After all, whether we can continue launching new products in a short cycle or keep sales stable depends on how close we are to our customers. We thus value the process of understanding in what directions customers are heading, anticipating their needs, and providing them with optimal solutions.

**Nishii:** In the life science domain, we need to see things from a mid- and long-term perspective and take action in anticipation of what the future holds ten years from now. For the oligonucleotide therapeutics business, we offer a one-stop solution to customers by customizing the process from polymer beads manufacturing, contract oligonucleotide synthesis, to subsequent analysis and formulation. This means that we need to maintain rock-solid customer-oriented approaches even in the short term.

**Niino:** We are able to anticipate needs because we have accumulated experience in exploring new technologies at an early stage and have a corporate and workplace culture of encouraging employees to challenge themselves. Another source of strength is the sheer amount of discussions on shaping the future, for example, frequently visiting customers for hands-on conversations or inviting them to predict the future with us.

**Nonaka:** If it is a technology that takes over 10 to 20 years to develop, sometimes Nitto leads the way so far ahead of others that the market simply follows.

**Nagasaki:** The successful combination of *Sanshin* Activities and customer-oriented approaches has allowed us to respond to detailed needs from the broad market so far. Another unique trait of Nitto that sustains its growth is that we can draw forth necessary technologies at any time from a large stock of technologies that have yet to see the light of day. I believe it will be increasingly important to determine which business will grow from among the broad marketplace and cater to those market segments thoroughly.

**Nonaka:** I believe that the FBP has had a lot of difficulties because one of its missions is to discover business domains with huge potential from the vast sea of the market. Nitto has made the most of the Niche Top Strategy to build a dominant presence in the display market, which puts us in a position to access the latest news from customers. After all, we cannot hope to develop a product without good cooperative relationships with suppliers.

#### Nitto's Convergence Approach Facilitates PlanetFlags/HumanFlags Development

**Nishii:** The Medical Division converges resources with the Corporate Technology Sector and the FBP. We also have inter-sectoral meeting bodies for development teams and divisions, such as the Technology *Kuruma-za* and the Global Green Committee. It gives Nitto an extra edge to be able to share technology, knowledge, and information at such opportunities.

At the same time, we remain proactive in seeking external collaborations. Our oligonucleotide therapeutics business has expanded via M&As.

**Niino:** To meet the emerging trends in the market, such as 5G, mobility, and AR/VR, we often invite different divisions that have adequate technologies to join hands to conceive solutions for customers. ICT, too, can benefit from technologies held by the FBP or the IFM, and we move forward with our business with help from individual divisions and the Corporate Technology Sector.

**Nagasaki:** Close cooperation among divisions and with the Corporate Technology Sector is another outstanding characteristic of Nitto. Amid the ongoing drive to reduce environmental impact, we are required to offer recyclable products, and the technology that we want to strengthen now above anything else is one for adhesives that can affix things firmly but can be peeled off easily after use. It is quite difficult for a division to pursue such technology along with product development, so we hope to work with the Corporate Technology Sector in this regard.

**Nonaka:** In the case of the IFM, it is particularly important to work closely with suppliers, as it is critical to determine which raw materials to procure. As such, we often provide solutions for customers together with suppliers.

**Nagasaki:** True, in any business, closely collaborating with suppliers is critical. In parallel with the development of PlanetFlags/HumanFlags, we need to work on reducing the environmental impact of raw materials or manufacturing processes themselves.

**Nishii:** For the Medical Division, we are primarily concerned with HumanFlags, but environmental awareness is rising rapidly. Such being the case, at a plant we're planning to build, we will introduce systems for recycling solvents and using renewable energy to perform production without environmental impact.

**Nagasaki:** It is challenging to substitute solvents or relevant equipment with others at short notice, but environmental awareness is definitely changing, and we are positively working on this. I can feel that everyone, including myself, is eager to properly understand, share, and empathize with what ESG management really is.

**Niino:** Since implementing the policy to place ESG at the core of our management, ICT has taken every opportunity to promote ESG by, for example, having people discuss environmental topics in a team. In the beginning, it didn't click for some members, but their understanding has deepened over time. One of our practices in this regard is to utilize the Membrane Division's membrane treatment technology to recycle process liquids used for manufacturing. I think this is a good example of convergence.

**Nonaka:** Yes, the level of awareness has risen considerably overall. I think it's increasingly important to achieve double merits, that is, reducing CO<sub>2</sub> emissions within the Group and at customers' manufacturing processes. To make this happen, we intend to focus on the development of PlanetFlags/HumanFlags based on ESG management.

# Human Resources

## Basic Ideas and Approaches

The Nitto Group considers human resources our most valuable assets. In order to achieve sustainable growth as we constantly create new value, we seek to recruit and retain a diverse workforce in accordance with the Basic Policy on Human Resource Management. At the same time, we develop Nitto Persons on a global basis who practice The Nitto Way, as we create an organization in which employees are encouraged to challenge themselves and are given opportunities to give full play to their ability.

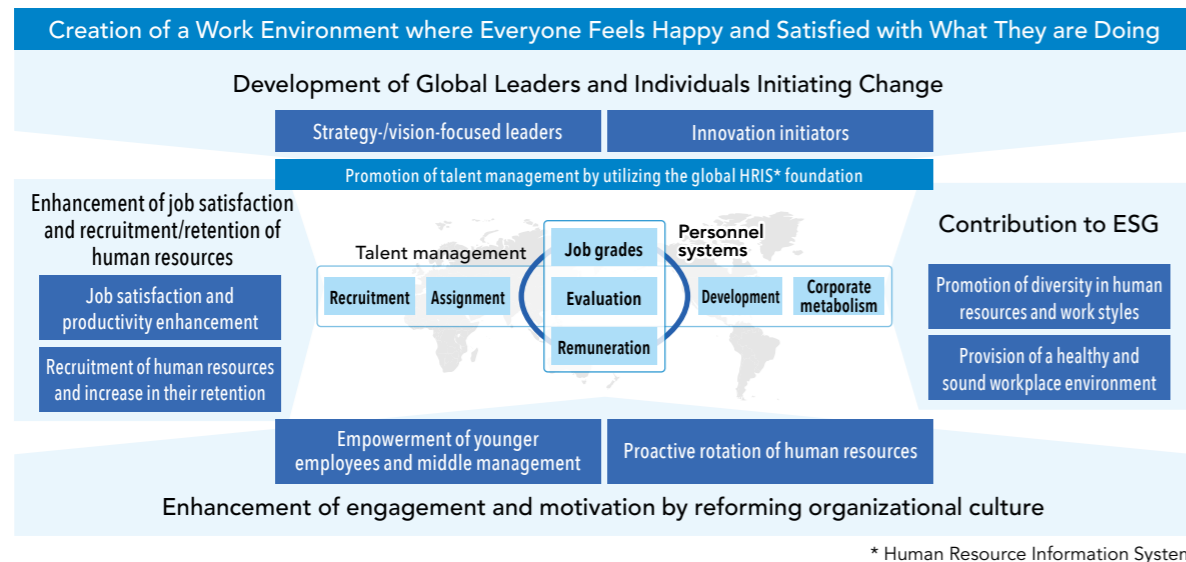
2030 Management Targets	Human resource-related
	<ul style="list-style-type: none"> <li>Female leaders ratio: 30%</li> <li>Engagement scores: 85</li> <li>Challenge ratio: 85%</li> </ul>

### Overall Picture of the Nitto Group's Human Resource Strategy

At the Nitto Group, we manage human resources globally (see figure below). Talent management starts upon employment and continues consistently thereafter. For the development of global/innovation leaders, we select and develop candidates for key global positions based on succession planning, and monitor progress at an annual Human Resource Development Meeting. For the development of senior executives, on the other hand, we provide leadership training overseas to develop leaders

for each geographical region, on top of the Nitto Global Business Academy (NGBA), an avenue to train future global leaders. After they complete a program, we continue to engage in their training with the cooperation of the entire Group. Concerning "job satisfaction," we reviewed the work-from-home system, and are focusing on recruitment branding for "recruitment and retention of human resources." In addition, we continue to develop a wide variety of initiatives, including DE&I activities, Health and Productivity Management, and job postings for employees of all ages in a bid to create a motivating workplace environment.

#### Goals of our Global Human Resource Management



### Recruitment and Development of Employees

#### Enhancement of Recruitment Branding

In order for prospective employees to develop a clearer image of their career path, we began putting more resources into recruitment branding in fiscal 2022. In more concrete terms, we have kicked off a wide array of initiatives, including running of TV commercials, renovation of corporate websites, and public relations through collaboration with YouTubers. We also send out daily information via SNS accounts to reach a global audience.

#### Commencement of Job Postings for International Trainees

To respect employees as individuals and encourage them to autonomously build their careers, we provide them with growth opportunities that they choose for themselves. In fiscal 2022, we offered an international trainee program, in which seven employees, who are mainly in their 20s, were assigned to Europe, the U.S., China, Vietnam, and elsewhere. Also, as part of the efforts to promote human resource rotations, we have started a job-posting system for younger employees in Japan, which specifies skill

requirements to assist applicants in building their careers. In fiscal 2023, we are planning to expand eligibility, eventually offering the system in more countries.

#### Enhancement of Engagement

Working to create a workplace environment and a corporate culture that allows each employee to take full advantage of their individual characteristics and feel satisfied with their job—This is what engagement is about at the Nitto Group. We conduct the Global Engagement Survey once every two years. In fiscal 2022, we promoted a variety of initiatives based on the survey findings from fiscal 2021.

First of all, we had general managers of plants, who also serve as engagement promotion leaders at sites, send a video message about the survey findings of the Group and what they expect from their plants when it comes to engagement. After this, each site began their activities, which are then shared as internal online content or otherwise.

In Japan, we organized various events, including encouraging praise and appreciation amongst employees, promoting DE&I, and a walking event during Nitto Empowerment Month in October. We put together comments collected from a questionnaire on those events and published them as a *Compilation of Words that You Are Happy to Hear*.



results, managing progress in action plans, organizing a management enhancement program, and otherwise, we follow up on the survey until those in the field change their behavior.

Additionally, we make a multi-angle analysis of survey scores and other data that concern human resources to develop "leaders who can anticipate and deliver changes" in a reproducible manner.

#### Health and Productivity Management

To empower human resources, each employee's physical and mental well-being is crucial. As such, in July 2022 the Nitto Group drew up the Good Health Declaration. In fiscal 2022, we organized the walking event, *Teku-teku Torino*, in Japan, for which Nitto was designated by the Japan Sports Agency as a SPORTS YELL COMPANY.

In addition, five companies from the Nitto Group were selected under the 2023 Certified Health & Productivity Management Outstanding Organizations Recognition Program. We will continuously work to expedite health measures and promote the good health of our employees.



#### Career Support for Younger Employees

For more than 30 years, Nitto has administered a buddy program, where every new recruit is assigned a senior colleague who mentors them for a year to provide advice on everything they need to know to succeed at Nitto, both in and outside of their workplace. Furthermore, new employees can avail themselves of career interviews by career advisors, whom they can talk to about things that they would hesitate to share with their colleagues. Young employees can thus gain support both at their workplace and from the company.

#### Enhancement of Leadership

We conduct a multi-angle survey of our Managers and General Managers once every year. By analyzing survey

#### Diversity, Equity & Inclusion (DE&I)

"If women find their workplace comfortable to work in, it should be comfortable for anyone"—Out of this idea came a production line that is friendly to women in 2022. We expect the different perspectives women offer to increase productivity and are planning to spread this initiative to other plants as well.

Furthermore, to develop women leaders, we launched the FLOWER Program. By organizing lectures from senior executives and women's network meetings and offering management skill development training seminars, we support the development of women leaders in terms of their mindset and business skills.

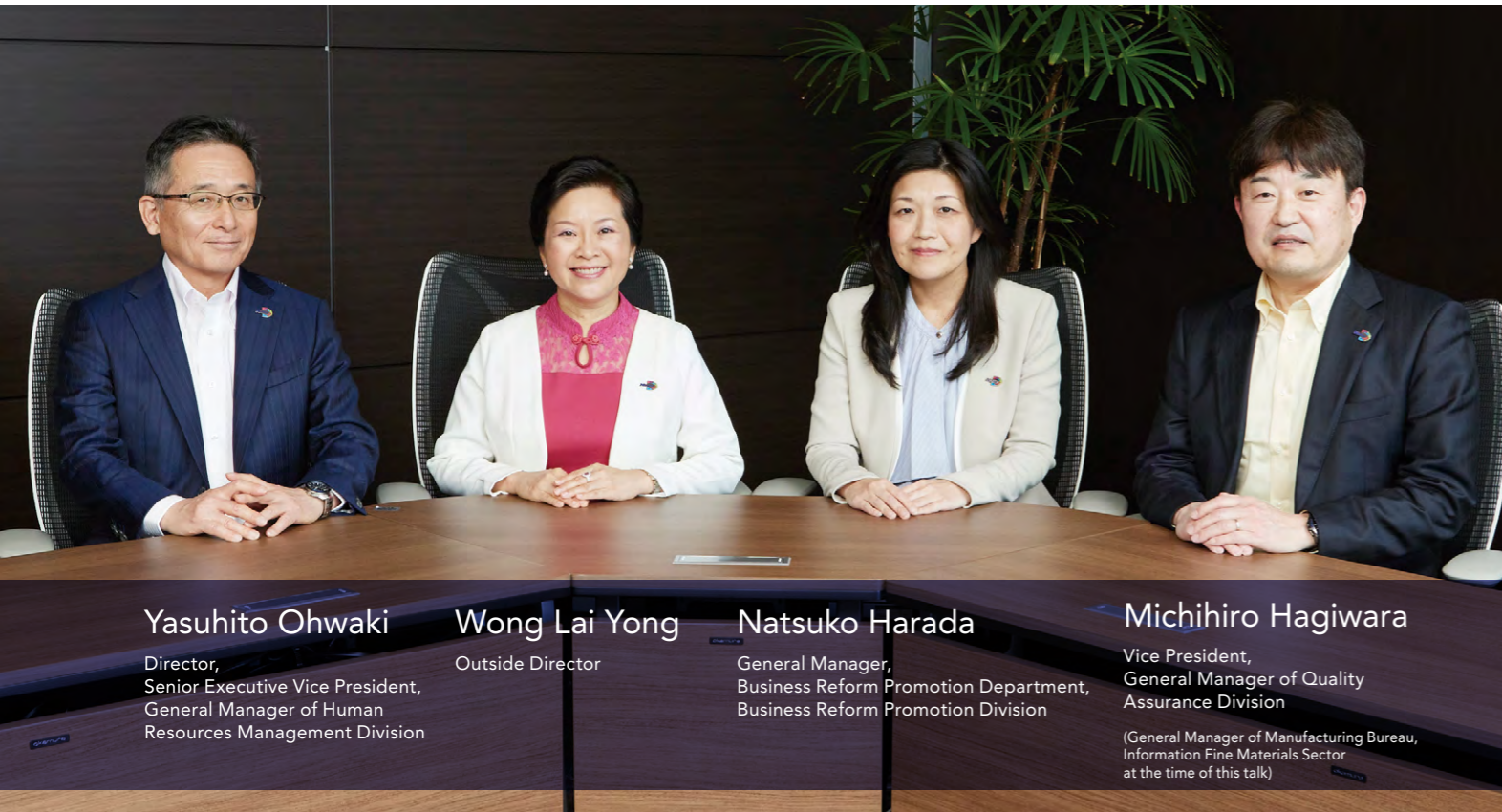
▶ Select initiatives (Read the round-table talk on the next page for details.)

#### Moving toward 2030

Among our management targets for 2030 we have included, a female leaders ratio of 30%, engagement scores of 85, and a challenge ratio of 85%.

This came about as a natural result of our focus on DE&I, one of the drivers for Nitto to make rapid progress and continue to develop globally. We will advance our work environment so that we can empower those who incorporate diversity into the Nitto mindset they have painstakingly developed and constantly take on the challenges of leading progressive initiatives. With diverse employees becoming spontaneously involved in various issues, we will promote our Global Niche Top™ Strategy, one of the sources of our strengths, and achieve "Creating Wonders" at all of our workplaces with *Sanshin* Activities, customer-oriented approaches, and R&D, Production, Sales, and Administration working as one.

# Human Resources



**Yasuhito Ohwaki**  
Director,  
Senior Executive Vice President,  
General Manager of Human  
Resources Management Division

**Wong Lai Yong**  
Outside Director

**Natsuko Harada**  
General Manager,  
Business Reform Promotion Department,  
Business Reform Promotion Division

**Michihiro Hagiwara**  
Vice President,  
General Manager of Quality  
Assurance Division  
(General Manager of Manufacturing Bureau,  
Information Fine Materials Sector  
at the time of this talk)

## Nitto Group's Initiatives for DE&I

Round-  
table  
Talk

### Accelerating the Building of an Attractive Workplace Environment That Motivates Nitto Persons with Diverse Backgrounds

#### Nitto Group's Human Resource Strategy and DE&I

**Ohwaki:** Human resources are vital in the Nitto Group's policy of maximizing corporate value with ESG at the core of its management. The external environment is becoming increasingly diverse, and we must update our values accordingly. We cannot do so without a diverse workforce, and so the entire company is busy developing a diverse workplace environment with help from people from different walks of life. Ms. Wong, how do you find the Nitto Group's initiatives for DE&I?

**Wong:** I'm deeply impressed, to be honest. Other than such keywords as empowerment of women and the ratio of female managers, you have made striking strides in the employment of persons with disabilities and seniors and the empowerment of persons from many different nations. What I find fabulous about Nitto is its serious commitment to investing in human resources rather than merely talking

about numerical targets or nice-sounding words. Having made on-site visits to various plants, I feel it is not too much to say that Diversity, Equity, and Inclusion have been instilled into employees of every gender, age, and nationality and that DE&I has been assimilated into all Nitto Persons' DNA.

#### FLOWER Program and Iki-Iki Production Lines

**Ohwaki:** In April 2022, we started a program designed to develop female leaders. The FLOWER Program, as it is called, provides women with opportunities to think about leadership and imagine how it would feel to take on such a role. Ms. Harada helped us organize the program as a mentor.

**Harada:** The FLOWER Program offers a variety of events, including management skill development training and lecture sessions by senior executives. In my capacity as a

mentor, I had opportunities to speak with junior employees from other sections. As our dialogues deepened, I realized that because I was speaking with junior colleagues from another section, none of which were my direct subordinates, we could discuss things that would be difficult to say in a supervisor-subordinate relationship. Being in a managerial position, I often find myself worrying about this and that, endlessly asking myself, "Is this the best way?" When I candidly shared this feeling with them, they replied by saying, "Oh, you feel the same way, Harada-san." It narrowed the distance between us, allowing us to talk in-depth. I, too, learned a great deal from this experience. One of the lecturers of the training program was Hagiwara-san, who is with us today.

**Hagiwara:** I talked about the worries and emotional turmoil that I had since joining this company halfway through my career. Things like how I overcame difficulties or who supported me and in what way, when I was in trouble. Hearing me speak, my juniors were taken by surprise as they assumed I reached my current position without any difficulties. I was shocked to know that's how they saw me, but I think my stories helped them realize it's not just them; their senior employees have had worries and troubles too. I think this has something in common with Harada-san's stories, doesn't it?

**Harada:** Usually, you don't talk about those things with your subordinates. It's no wonder they assumed I climbed the ladder smoothly to become a leader. I think I was able to convey to them that that isn't the case and I, too, am full of anxieties just as they are; there is nothing special about being a leader, and it is not something that you have to overthink.

**Hagiwara:** I feel the same way. I thought it was most important to convey that it's okay to have diverse leadership figures. If I speak about myself, I don't follow any stereotype about women in my work. Regarding this lecture I organized, our aim was to encourage the audience to think positively about leadership, and I didn't do anything differently because the audience was all female.

**Wong:** I'm glad to know that 80% of the participants in the program got to think positively about leaders. I highly value the FLOWER Program in that it offers generous support, which covers not only skills for management and otherwise but also values and the state of mind, or mindset, so to speak.

**Hagiwara:** Starting from fiscal 2023, we began including female operators in production lines at our Onomichi Plant, which used to have almost exclusively male operators. I hope the addition of new, never-before-seen points of view will help us realize productivity reforms. When configuring production lines, we made all sorts of verifications at each process. For example, when we decided how to transport heavy goods, we didn't jump on the easy solution of using

a power assist but went back to the drawing board to consider whether that job was necessary. We reviewed every little thing on the shop floor like this. At the end of the day, we concluded that a production line women find comfortable to work at was one everyone finds comfortable to work at. It was almost like a paradigm shift. Another finding was that if we could include women to innovate and effectively sustain productivity, then we should begin to see how future-financial elements lead to financial assets.

#### Pitching the Beauty of Nitto Culture Globally

**Wong:** Having attended Board meetings and listened to reports on various activities, I'm convinced that these activities are what makes today's Nitto. At production lines, I'm always impressed to see that great care is taken for the diverse persons to work both safely and with peace of mind. I was also profoundly impressed when I joined Kuruma-za group discussions, where they actively embraced various opinions from younger employees and others. Some of the employees who designed research centers are younger employees. As beautifully depicted by the Vision, "Creating Wonders," every employee thinks for themselves about how they can deliver products of the highest level, and that reminded me of the spirit of One-Nitto.

**Harada:** I, too, think One-Nitto is formed by persons with various backgrounds, respecting each other. That being the case, Nitto's organization is vertically and horizontally congenial. Persons from outside the company often say, "Everyone at Nitto gets along well with each other." I believe such an amicable culture removes psychological barriers and pushes our employees to challenge themselves.

**Ohwaki:** The next step is to foster DE&I into part of Nitto culture and expand and instill it from Japan to the whole world.

**Hagiwara:** I'm now hoping to create opportunities where international human resources can play an active role in Japan. And I want them to come to Japan not just as a member of an overseas subsidiary but to see the world from Japan. If they can communicate the appeals of working in Japan, I believe that the international exchange of human resources will be invigorated.

**Ohwaki:** As Hagiwara-san remarked just now, communicating our appeal will be the key going forward. We need to keep sending messages that make people feel attached to the Nitto culture and want to work with us, hopefully with a sense of belonging. It would be ideal if we have more and more people come on board with us and take on challenges.

# Product Safety/Quality

## Basic Ideas and Approaches

We are aware of the magnitude of impact that the Nitto Group's business activities have on the global society and economies. To deliver well-being and satisfaction to every stakeholder throughout the process, from procurement of raw materials to development, manufacturing, and use of products, we will do our utmost to manufacture top-notch products while pursuing business activities by respecting human rights throughout the supply chain.

### Enhancement of Safety and Quality of Products

#### Bolstering a System for Managing Raw Materials Properly

Using upwards of 4,000 varieties of chemical substances as raw materials, the Nitto Group deems it its essential responsibility to manage them properly and does so by establishing stringent Voluntary Management Regulation. In order to constantly monitor trends in the revision of relevant laws, we work closely with our overseas sites to gather information and prepare and distribute monthly in-house newsletters that cover the latest on chemical substances as a way to encourage updating of such information. In response to the release of the PFAS (per- and polyfluoroalkyl substances) restriction proposal in Europe in February 2023, we will consider substituting relevant raw materials and products with PFAS-free alternatives and submit a public comment to relevant agencies in cooperation with other players in the supply chain and trade organizations.

For raw materials purchased from suppliers, we have long managed the use of prohibited substances by checking their reports. We are currently building a system to manage a greater scope of such checks that includes their manufacturing processes.

#### Continuous Improvement for Higher Quality

By the end of fiscal 2022, we completed the acquisition of IATF 16949 certification, an international automobile quality management system related to "power & mobility," which is one of the three focus domains, at all sites that require it for business.

At production and quality control processes, we have also undertaken an initiative to reduce human errors, which are liable to occur due to human intervention.

By automating the recording of data, that was done by hand up until now, we aim to reduce the burden on operators and improve quality management while fostering a quality-conscious culture as a way to enhance quality governance.

### Improvement of the Workplace Environment

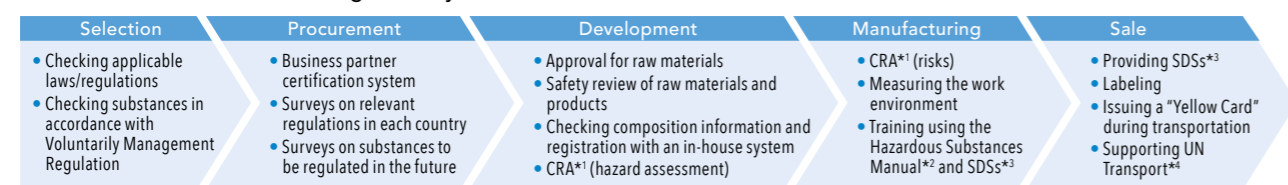
#### Rebuilding a Fire Prevention System

Following the fire that broke out at a South Korean subsidiary in October 2022, a task force was launched to prevent recurrence and rebuild the fire prevention system. We have also tightened the fire prevention rules, which had been structured in conformity with the laws and regulations of each country, and established new strict fire-prevention management standards that go beyond the scope of relevant laws and regulations. We will involve the entire Group in this initiative against fire risks.

#### Initiatives to Eliminate the Risk of Occupational Accidents and Injuries

So far, we have engaged in activities to reduce avoidable risks throughout the Group, whose goal was to prevent occupational accidents and injuries. By the end of fiscal 2022, we were able to complete the reduction of all risks that were deemed material. Going forward, to reduce risks that we find hard to improve with conventional technology, we will install AI-enabled cameras for detecting dangerous behavior or proximity threats at production sites and spread the safety officer program on a global scale (safety training for supervisors; introduced to all employees in managerial positions in Japan by the end of fiscal 2022).

#### Nitto's Chemical Substance Management System



\*1 Chemical Risk Assessment \*2 Nitto's original chemical substance training tool  
\*3 Safety Data Sheets \*4 United Nations Recommendations on the Transport of Dangerous Goods

### 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 throughout the supply chain, we ensure that thorough action is taken in accordance with this Basic Policy.

#### Conducting a CSR Procurement Survey at Group Companies in Japan

In accordance with the CSR-Based Procurement Guidelines, which stipulate rules to be followed on matters such as respect for the human rights of workers, fair trade, compliance with corporate ethics, health and safety, and environmental considerations, we conduct an annual CSR Procurement Survey with suppliers. Based on the survey findings, we assess their risk, suggest improvements to those with high risk, and follow up on their improvement efforts. Up until fiscal 2021, the survey was conducted with only key suppliers of Nitto. Starting from fiscal 2022, the survey is sent to key suppliers of some Group companies in Japan as well. Going forward, we plan to spread this initiative throughout the Group.

#### Commencing Visiting Surveys

After a delayed start due to COVID-19, visiting surveys were carried out in 2022. We visited suppliers, chosen based on the findings of the CSR Procurement Survey, to help them deepen their understanding of the Nitto Group's policy on CSR-based procurement. By making a routine of this, we hope to further improve our CSR-based procurement.

#### Organizing Partnership Meetings

The Nitto Group seeks to maintain good communication with its business partners and, as such, in November 2022, the first partnership meeting focusing on CSR-based procurement was held online. During the meeting we communicated the Nitto Group's policies and stance towards the four issues of CSR-based procurement, human rights due diligence, life cycle assessment (LCA), and initiatives for chemical substance management, and asked our business partners for their understanding and cooperation in this regard. On this occasion, we underscored our intention to work on the four issues from the perspective of CSR-based procurement, with all players in the supply chain uniting as one.

#### Establishment of a Management System for Human Rights Due Diligence

Some of the raw materials that the Nitto Group purchases involve human rights-related risks, such as conflict minerals. In fiscal 2022, we completed building an internal control system that assesses and identifies raw materials with elevated human rights risk and takes measures accordingly.

We also ask suppliers dealing in raw materials with elevated human rights risks to investigate their places of origin and respond to a survey concerning their human rights policies, thus seeking their understanding of and cooperation with our considerations for human rights in raw materials procurement. We will remain committed to procuring raw materials with due consideration given to human rights.

#### Launch of the Supply Chain Committee

With a view toward sustainable procurement in the supply chain, in November 2022, we established the Supply Chain Committee, which is a cross-sectional team responsible for addressing risks upstream of the supply chain. While coping with clear and imminent risks, they are working to enhance their ability to foresee and handle potential risks.

#### Increasing Logistics Efficiency

The Nitto Group regards the improvement of logistics in its supply chain as one of its key managerial issues and is working to increase its efficiency while reducing its impact on the environment.

#### Our Approach to the 2024 Issue of Logistics in Japan

We are working proactively to prepare for the "2024 Issue\*" by collaborating with partner companies. At present, we are singling out long-distance, long-hour trucking routes of 400 km or more per service. We believe that this will lead us to not only improve the workplace environment but also further promote a modal shift. We are also asking all Nitto sites to reduce the standby time of shipping trucks to 30 minutes or less. In fiscal 2022, six of our sites fulfilled this target. The average standby time, too, has been reduced to 14.2 minutes (19.6 minutes in fiscal 2021). We will spread this initiative to our Group companies going forward.

\* Issues that may arise from a limitation on truck drivers' annual overtime in 2024 as part of workstyle reform

#### Reducing Paper Consumption and CO<sub>2</sub> Emissions

We are working together with partner companies to reduce paper-based delivery forms. With the introduction of delivery labels, our annual paper consumption was reduced by 55%. Also underway is a drive to reduce CO<sub>2</sub> emissions via modal shifts, etc., which resulted in a year-on-year reduction of 65 tons in fiscal 2022.

# Environment

## Basic Ideas and Approaches

No manufacturing business can avoid impacting the environment through the use of energy and resources or the emission of CO<sub>2</sub> and waste, and it is necessary to reduce such pollutants through initiatives to achieve sustainability. We at the Nitto Group have established the Global Green Committee as an avenue for emission management integrated with businesses and are taking various measures accordingly. In order to preserve this beautiful planet Earth for future generations, we are working hard to reduce the environmental impact to zero throughout the supply chain.

2030 Management Targets	Environment-related
	<ul style="list-style-type: none"> <li>CO<sub>2</sub> emissions: 470,000 tons/year *1</li> <li>Waste plastics recycling ratio: 60%</li> <li>Sustainable materials procurement ratio: 30%</li> </ul>

\*1 Scope 1+2

## Environmental Initiatives

### Global Green Committee

As part of the efforts to achieve the management targets for 2030, we set up the Green Committee in 2021. By applying technology to change the status quo, we explored the possibility of solving material issues for sustainability (materiality), including decarbonization, the 3Rs (Reduce, Reuse, Recycle), and the prevention of pollution. In 2022, the scope of its activities was expanded to align environmental initiatives with business and promote activities throughout the globe under the new name of the Global Green Committee.

With the three axes of business divisions, regional headquarters, and functional departments cooperating in an organic manner, the Nitto Group is making a concerted effort to promote environmental practices.

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

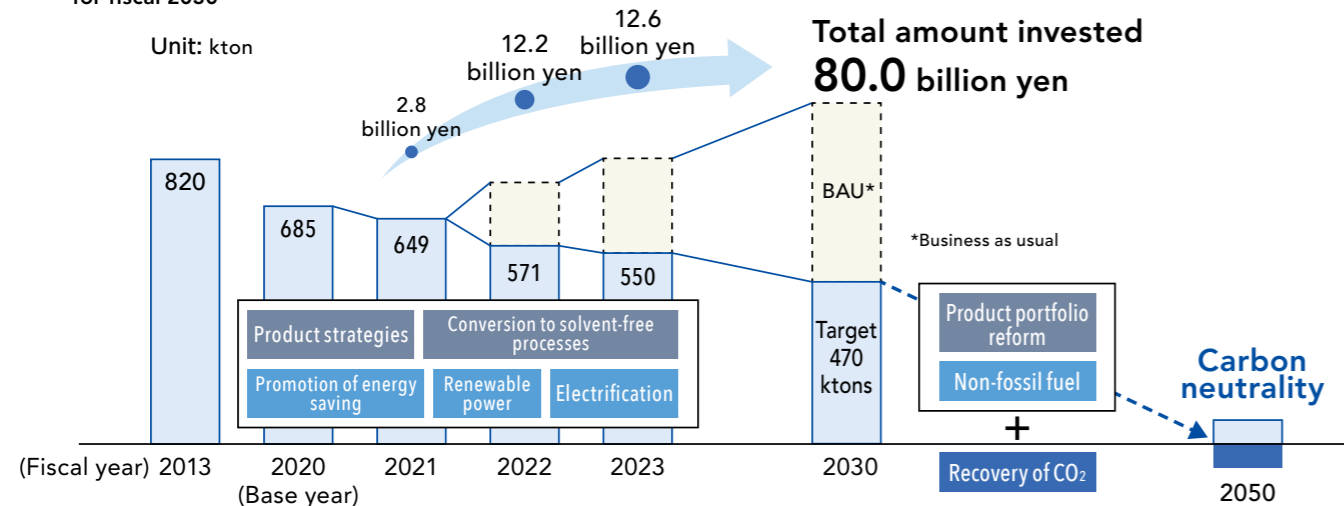
### Nitto Group Carbon Neutral 2050

In May 2022, the Nitto Group made the Carbon Neutrality Declaration to kick off its effort to achieve carbon neutrality by fiscal 2050 (Scope 1+2). To achieve this self-set goal, we updated our interim goal for fiscal 2030 to 470,000 tons/year and earmarked 60.0 billion yen for environmental investment over the coming ten years.

To follow up on this, prepare for the expected business expansion and to accelerate the achievement of goals, we increased the scale of environmental investment by 20.0 billion yen, making it an aggressive investment of 80.0 billion yen.

In fiscal 2022, we were able to reduce CO<sub>2</sub> emissions (Scope 1+2) to 571,000 tons, thus achieving the target reduction of 650,000 tons by a large margin. As we aggressively reduced energy consumption by way of solvent-free solutions and energy conservation while converting power sources to renewable energy, we have been able to significantly accelerate the renewable energy conversion rate from 17% to 38%, with CO<sub>2</sub> emission reductions amounting to 56,000 tons. In fiscal 2023, we plan to reduce our CO<sub>2</sub> emissions to 550,000 tons or less.

### Initiatives for Decarbonization in Line with our Targets for fiscal 2030



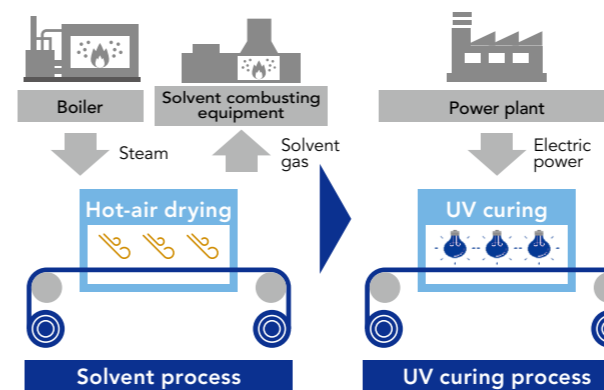
### Initiatives to Achieve Solvent-Free Processes

Organic solvents that we use for manufacturing processes require significant energy for the drying process and need to be recovered and treated within the processes, with the result that CO<sub>2</sub> is emitted along the way due to consumption of energy.

In order to ultimately reduce the volume of solvents used to zero, the Nitto Group is working to establish technologies for solvent-free solutions, such as ultraviolet (UV) curing and water-based adhesives at manufacturing processes, thus steadily replacing current products with solvent-free products that meet customer needs.

In fiscal 2022, we made an investment decision to introduce a solvent-free mass-produced coater to the Nitto Shiga Plant.

### Conversion to a solvent-free manufacturing method



### Increasing the Use of Renewable Energy

In 2005, the Nitto Group began introducing solar power generation systems for self-generated power, and is scheduled to complete their installation by 2025.

By the end of 2022, such systems were introduced and became operational in Japan and abroad, generating a total of 8MW and 6MW of electric power, respectively, making the ratio of electric power generated in-house to total power consumption 1.2%.

Korea Nitto Optical Co., Ltd. successfully reduced CO<sub>2</sub> emissions by 980 tons per annum by installing a 1.6MW solar power generation system not only on rooftops but also on carports.



Solar carport at Korea Nitto Optical

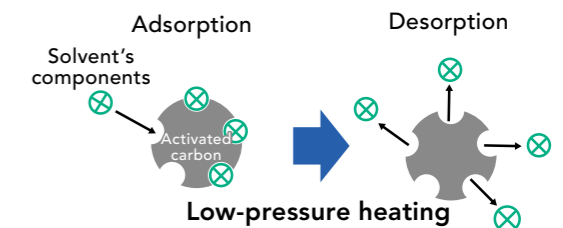
### Initiatives to Reduce the Amount of Solvents Combusted

Nitto Belgium NV faces the challenge of curbing CO<sub>2</sub> emissions caused by the combustion of organic solvents.

They recover solvents by having organic solvents in emissions adsorbed by activated carbon and then heated. By heating organic solvents under low pressure, energy can be saved.

Nitto Belgium NV became the first in the world in the tape industry to introduce energy-saving solvent recovery equipment, which they expect will help them reduce their energy consumption by 30%.

### Solvent adsorption/desorption

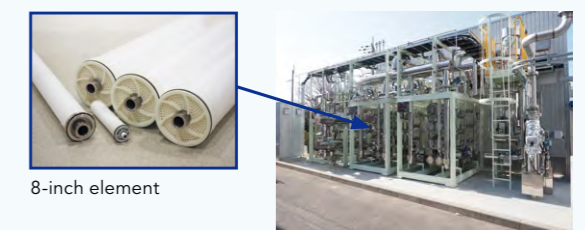


Nitto Belgium NV's energy-saving solvent recovery equipment

### Technological Development for Carbon Neutrality by 2050

The Nitto Group is working on negative emission technologies, which recover and remove CO<sub>2</sub> whose emission is unavoidable at manufacturing processes.

In March 2023, we introduced demonstration equipment that uses our separation membranes to separate and recover CO<sub>2</sub> at our Shiga Plant. Going forward, we aim to increase the efficiency of the technologies so that we can offer them as a broader solution to climate change issues, rather than using them in-house only.



8-inch element



Demonstration equipment at the Nitto Shiga Plant



■ Construction of a Carbon-Neutral Office

Nitto's first ZEB\*1-certified office building, LINCS, was completed within the premises of the Toyohashi Plant in November 2022. Utilizing renewable energy while saving energy, LINCS reduces the energy consumption rate by 105%, for which it received the ZEB certification and the highest rating of BELS\*2 certification.

LINCS is our first zero-emission office and serves as a hub for our initiatives to realize the Nitto Group Carbon Neutral 2050.

\*1 An abbreviation for Net Zero Energy Building

\*2 An abbreviation for Building Housing Energy-efficiency Labeling System



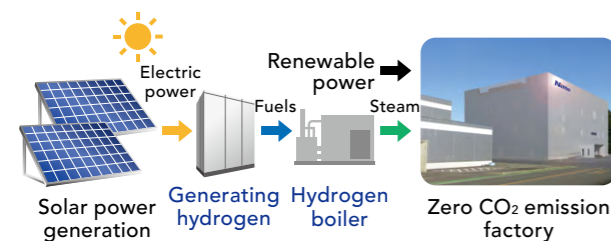
LINCS at the Toyohashi Plant

■ Using Hydrogen to Phase out Dependence on Fossil Fuels

At the Nitto Group's plants, fossil fuels are combusted in boilers to generate steam, which is used for the plants' heating systems and manufacturing processes, emitting a large amount of CO<sub>2</sub>.

To reduce dependence on fossil fuels, we began implementing hydrogen technology at the Nitto Tohoku Plant. This is the first system in the Nitto Group that uses electricity generated by a 1,500kw solar power generation system to produce green hydrogen, which is then used in a hydrogen boiler to produce steam. We will roll out this technology throughout the Group and contribute to the implementation of hydrogen technology in society. We are also aiming to build a zero-emission plant that uses no fossil fuels.

Proactive use of green hydrogen at the Nitto Tohoku Plant



■ Scope 3 – Reducing CO<sub>2</sub> emissions throughout the Supply Chain

To achieve carbon neutrality for society as a whole, it is essential to manage and reduce CO<sub>2</sub> emissions throughout the supply chain, not just within the company.

To reduce Scope 3 emissions, it would be necessary to collect lots of data from a broad range of sources, from procurement and transportation to customer use and disposal. To complete the Scope 3 emissions calculation process by fiscal 2025, we will continue visualizing where in the global supply chain CO<sub>2</sub> is emitted.

To help customers reduce their CO<sub>2</sub> emissions, we teamed up with a university to develop a guideline for carbon footprints, thus establishing a unified calculation method.

More Efficient Use of Resources

Shaping a Circular Society

The Nitto Group has set several goals concerning the efficient use of resources for 2030, including a waste plastics recycling ratio of 60% or over and a reduction in total waste disposed of. In fiscal 2022, the waste plastics recycling ratio was 46% and total waste disposed of was 145,000 tons (down by 8% per unit of sales vs. fiscal 2021). In fiscal 2022, we added a new quantitative goal of a sustainable materials procurement ratio of 30% or over.

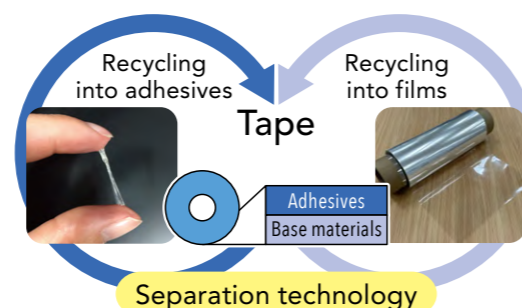
■ Development of Recycling Technology (Decomposing Waste into Mono-Materials)

Adhesive tapes, one of the mainstay products of the Nitto Group, use multiple components, such as films and adhesives, and need to be separated into mono-materials for recycling.

Having completed the development of basic technology in fiscal 2022, we will introduce a demonstration unit to study its practical use for mass production in fiscal 2023.

The Nitto Group will dedicate itself to achieving the target waste plastics recycling ratio of 60% or over by 2030, while promoting horizontal recycling of films and adhesives.

Technology for separating tape into mono-materials



■ Using Recycled Process Materials

The Nitto Group is intent on the in-house recycling of waste generated from the manufacturing process. In the past, PET (polyethylene terephthalate) films and other materials used in the adhesive tape manufacturing process were disposed of. By controlling the quality of those PET films and reusing them as film base materials, we can recycle them into adhesive tapes for packaging. By making positive use of recycled materials, we are also reducing total waste disposed of.

Recycling case



■ Using Sustainable Materials

Many of the products from the Nitto Group use fossil-derived raw materials. To deliver eco-friendly products to our valued customers, we proactively use sustainable raw materials, such as recycled and biomass materials, as main and secondary materials, including film base materials and adhesives for tapes and packaging materials. Our goal is to raise the ratio of sustainable materials procured within the Group to 30% or higher by 2030.

Products using sustainable materials



Example of products using biomass and recycled materials (Nitoms)

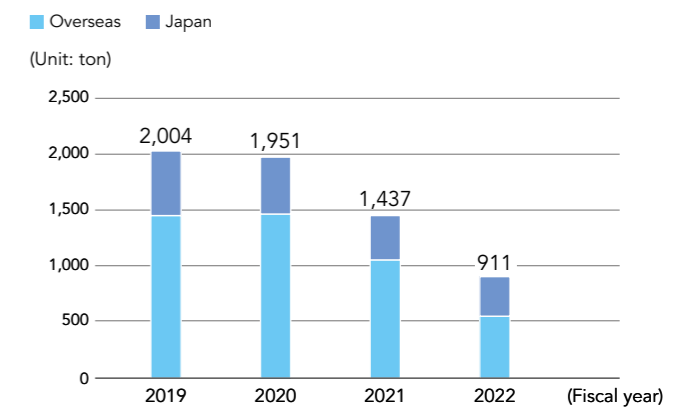
Reduction of Pollutants and Hazardous Substances

Efforts to Reduce VOC Emissions

VOCs (volatile organic compounds) can cause PM2.5 and photochemical smog, and curbing their emissions is crucial.

The Nitto Group is working to reduce VOCs on a global scale. In fiscal 2022, we slashed VOC emissions by 53% (vs. fiscal 2020) by changing process solvents and increasing solvent recovery efficiency. We will further reduce environmental impact by making more processes solvent-free and curbing the use of hazardous substances based on voluntary management standards.

Annual VOC emissions



# Environment



**Makoto Kawauchi**

General Manager,  
Business Management Division,  
Information Fine Materials Sector

**Kazuki Tsuchimoto**

Executive Vice President, CIO,  
General Manager of Production  
Division

**Takeshi Nishibe**

Deputy General Manager,  
Environmental Control Department,  
Production Division

**Hiroyuki Kondo**

General Manager,  
Industrial Products Division,  
Functional Base Products Sector

Round-  
table  
Talk

Initiatives to Reduce CO<sub>2</sub> Emissions

## A Clear-cut Goal and Strong Will to Decarbonize Society

### Accelerating Group-Wide Initiatives to Achieve Carbon Neutrality

**Nishibe:** Global warming is taking a toll on the whole world, and the sense of urgency is rapidly growing, so there's no time to waste. The other day, the Intergovernmental Panel on Climate Change (IPCC) set a new, unprecedentedly high goal for 2035. It is apparent that businesses are expected to assume ever-increasing social responsibility.

**Kawauchi:** There is extremely urgent demand in this regard from end-users, who are leading the environmental considerations in this industry. We take this as a good opportunity for Nitto, as it should help us accelerate our initiatives for decarbonization and development of environmentally friendly products, which should happen regardless, given the prospect that this is going to be a

far-reaching trend in this industry.

**Kondo:** We have thus far marketed our tape with the catchphrase, "Organic solvent-free tape friendly to the planet and people," but we need to show quantitative data as to how much CO<sub>2</sub> this tape can reduce going forward. Yet, no matter how high numerical contributions to the environment are, the fact is that that alone cannot help us retain competitive advantages, which indicates the importance of adding value as the icing on the cake.

**Tsuchimoto:** So far, each division has been addressing environmental friendliness individually, but solvent-free or recycling technologies pose common challenges for many businesses. So, we have established a Group-wide organization, Global Green Committee (GGC), and declared the Nitto Group Carbon Neutral 2050, in an attempt to share the policies throughout the Group and make concerted efforts to promote relevant activities.

### Decreasing CO<sub>2</sub> Emissions to 470,000 tons with Nitto's Collective Wisdom and Technology by Fiscal 2030

**Nishibe:** The goal of the Nitto Group is to decrease CO<sub>2</sub> emissions to 470,000 tons a year by fiscal 2030. We deliberately worked out this number in response to global demand, a goal set by backcasting from our self-set goal of achieving carbon neutrality by 2050 with achievability in mind.

**Kawauchi:** The goal of 470,000 tons is not a number given by the company, but is a well-documented number devised after many *Kuruma-za* sessions by relevant divisions and senior executives. It's the number that we can proudly announce to the public. It is also a strong statement of our intent to achieve the number by cutting off the retreat with our backs to the wall. Personally, I sensed that this declaration catalyzed a change in everyone's mind.

**Kondo:** Disclosing the absolute amount of CO<sub>2</sub> emissions gives clarity and reality to the goal, compared to merely giving a reduction ratio, and so carries greater weight. It denotes a strong intent never to emit anything more than 470,000 tons, even when our business grows in scale. Because our top manager confirmed that we will place ESG at the core of our management and develop products worthy of recognition as PlanetFlags/HumanFlags that cater to customers' needs, we can explain our goal to our customers with confidence.

**Nishibe:** By prioritizing initiatives to transition to solvent-free products, save energy by process improvement, and create energy by solar power generation, we have slashed CO<sub>2</sub> emissions by approximately 30,000 tons since the establishment of the GGC. I think I can say that, partly because of this achievement, everyone's attitude has changed within the Group, which in turn adds to the speed of such initiatives. Meanwhile, we have increased the amount of investment for decarbonization from the original 60.0 billion yen to 80.0 billion yen, as we have had several factors since then that would increase CO<sub>2</sub> emissions, including growth of new businesses, the review of the business portfolio, and M&A deals.

**Tsuchimoto:** We decided that it was inevitable to add to our investment in order to pursue more concrete measures and achieve the goal as soon as possible without drawing in the reins. In addition to strengthening the three basic approaches, we have begun taking new approaches, such as electrification and use of hydrogen fuels. We also believe it important to convey the company's commitment to this cause to employees.

**Kondo:** My reaction to all this is that it's a game changer that will profoundly alter the way we manufacture. It's important to take this transition positively and enjoy the process. After our solvent-free tape was awarded in 2019, the attitude toward solvent-free solutions began to change among those on the shop floor. Recycling and reuse of resources is another area where

customer demands are high. The Toyohashi Plant began recycling plastics themselves around 2005, and a task force has been formed to examine ways to further reduce environmental impact across multiple divisions. On the customers' side, it takes time before they can change the materials they use. It is thus important to win customers' understanding and cooperation in order to develop and spread products contributing to the environment. Furthermore, should the regulations be tightened all of a sudden, we cannot act properly if we are not ready. So, we are convincing them to work closely with their customers in preparation for regulatory changes and tighter environmental standards in the future.

**Kawauchi:** At Nitto, we are contributing to the reduction of waste by combining products that used to be provided separately to help customers to shorten processes and by removing secondary materials. By adding new values together with superior product functions, we can grasp more business opportunities and boost our production efficiency.

### Decarbonizing the Entire Supply Chain

**Nishibe:** The current Nitto Group Carbon Neutral 2050 is for Scope 1 + 2. We will need to expand our activities to cover Scope 3, namely, the entire supply chain. To make this a reality, we are currently gathering reliable data from across the globe through cooperation with relevant sections.

**Kondo:** Lately, customers often ask us to provide data on our products' carbon footprint (CO<sub>2</sub> emissions). Nitto plays a key role in the value chain. As such, we shouldn't sever the bonds within. Providing accurate data is essential. If a material has a small amount of CO<sub>2</sub> in its carbon footprint, it adds that much more value to the final products our customers provide.

**Kawauchi:** Because Nitto is a manufacturer of intermediate materials, many of our projects simply cannot be accomplished without help from raw material suppliers. Working hand in hand with suppliers, we would like to fulfill the role expected of us throughout the supply chain and take the lead in steadily navigating environmental activities.

**Tsuchimoto:** The approach of involving every player in the supply chain to contribute to decarbonization is very important for a sustainable company. If we make light of this, we could easily lose the trust of society. True, we made a carbon neutrality declaration, but we still have a long way to go before we are equipped with the technologies and programs to reduce CO<sub>2</sub> emissions to virtually zero by 2050. While we must prepare for "inevitable CO<sub>2</sub> emissions," which will eventually occur down the road, the Nitto Group is eagerly developing negative emission technologies for separating, storing, and converting CO<sub>2</sub>. These technologies will surely help us solve issues of our own and society.

Let us all unite to achieve carbon neutrality by all means and, by aggressively involving customers and suppliers, act responsibly to preserve this beautiful planet for future generations.

# Business Strategies by Segment

## Summary of Overall Business

The economic environment in fiscal 2022 saw a rise in energy and primary commodity prices triggered by Russia's military invasion of Ukraine. In addition, the sharp monetary tightening aimed at curbing inflation, particularly in the United States, caused some banks' bankruptcy, financial instability spread. In China, COVID-19 transmission and protective measures such as urban lockdowns were implemented. The global economy experienced a significant slowdown in growth rates in major regions. In the foreign exchange market, the yen depreciated sharply due to the widening interest rate differential between Japan and the United States.

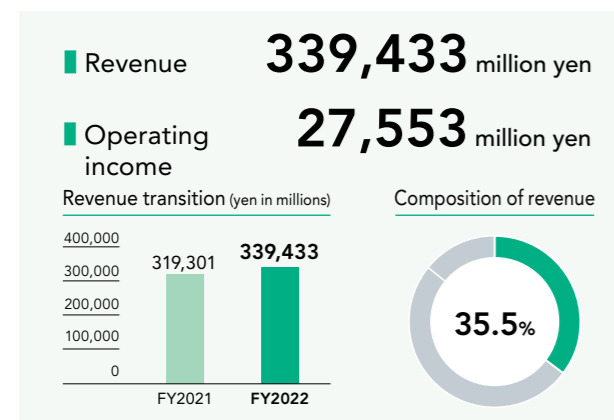
Under this circumstance, demand of products for high-end smartphones, which the Group is focusing on, and products for automotive displays, in which remarkable evolution has been seen in recent years, increased. Demand for automotive materials increased moderately with a recovery in automobile production. Meanwhile, demand of products for high-end laptops and data centers, which had been strong, declined from the third quarter due to the

## Summary of Operations by Segment

### Industrial Tape

For Functional Base Products, revenue increased from the previous fiscal year. In automotive materials, the impact of semiconductor shortages eased, and demand increased due to a recovery in automobile production. On the other hand, demand for process materials of semiconductors and ceramic capacitors used in electronic equipment declined due to deteriorating market conditions. In addition, the Group reduced the impact of rising raw material and transportation costs due to rising crude oil prices offset by sales prices and rationalization. In the automotive materials business, the Group agreed to transfer a portion of NVH (Noise, Vibration, Harshness) business to Parker Corporation and recorded an impairment loss on a portion of the related assets.

As a result of the above, revenue increased by 6.3% to 339,433 million yen and operating income decreased by 27.1% to 27,553 million yen.



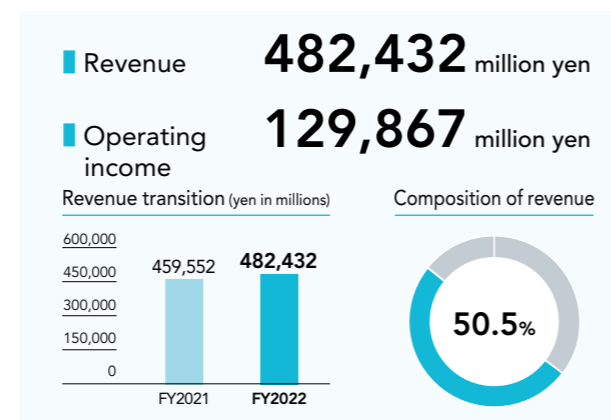
### Optronics

In Information Fine Materials, revenue increased from the previous fiscal year. Demand of optical films for automotive applications, on which the Group is focusing, increased, while demand of optical films for TV and high-end laptops declined due to deteriorating market conditions.

In addition, optical films for Virtual Reality (VR) expanded its manufacturing capacity for future business expansion. The Group recorded loss related to a fire at its consolidated subsidiary Korea Optical High Tech Co. Ltd., occurred on October 4, 2022.

In Flexible Circuits Boards, revenue increased from the previous fiscal year. In high-precision substrates for high-end smartphones, result was driven by an increase in the number of models installed, while demand for CIS (Circuit Integrated Suspension) for data centers decreased due to an adjustment in HDD (Hard Disk Drives) market.

As a result of the above, revenue increased by 5.0% to 482,432 million yen and operating income increased by 34.4% to 129,867 million yen.



### Human Life

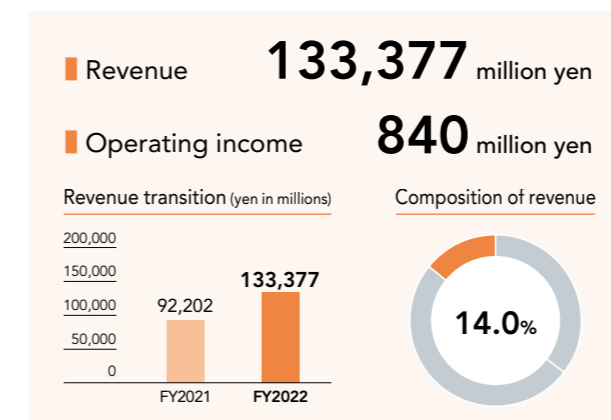
In Life Science, revenue increased from the previous fiscal year. Along with the expansion of oligonucleotide therapeutics market, demand for oligonucleotide contract manufacturing and polymer beads for oligonucleotide synthesis (NittoPhase™) increased. On the other hand, demand of immunologic adjuvants for COVID-19 vaccines declined as new orders stopped from the second quarter of the fiscal year due to a slowdown in worldwide demand for vaccines. In development of oligonucleotide therapeutics, the Group continues to engage in clinical trials of idiopathic pulmonary fibrosis and intractable cancer drugs.

In Medical Products, demand for transdermal absorption drugs and surgical tapes recovered from sluggish demand caused by COVID-19.

Sales of Membrane (high-polymer separation membrane) increased compared to the previous fiscal year. In particular, demand for industrial applications increased.

The Personal Care Materials business was launched under the new organization, Advanced Film Solutions Division, integrating the personal care component business of Mondipac acquired in July 2022 and the existing hygiene material business. The functional films for hygiene products, our main products, are being developed for use in baby care, adult diapers, feminine care, and other applications.

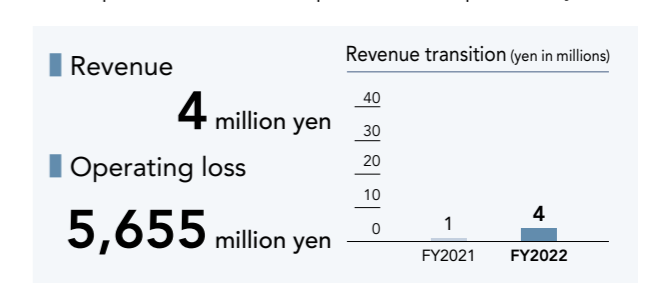
As a result of the above, revenue increased by 44.7% to 133,377 million yen and operating income decreased by 88.4% to 840 million yen.



### Others

Please note that this segment includes new products that have not generated sufficient revenue yet. As a major subject, the Group started shipment of Active Optical Cable, for VR headset applications in the fourth quarter of the fiscal year.

As a result of the above, revenue increased by 143.4% to 4 million yen and operating loss amounted to 5,655 million yen. (operating loss of 5,932 million yen was reported in the same period of the previous year)



\*The percentage is not shown because it is a small percentage of the total, as most of the businesses do not yet have sufficient sales revenue.



## Nitto's unique tape technology contributes to customers in reducing the environmental impact of their products and processes

### Overview

The Industrial Tape segment is comprised of manufacturing process materials, which not only have the ability to stick but also to be removed neatly using heat, porous materials, which allow air and sound to penetrate but not water, insulating materials, which have growing demand due to automotive electrification, and double-sided tape, which is widely used for electronic devices and other applications. The core technologies based on adhesion, coating, and polymer function control technologies contribute to reduce the environmental impact of customers' products themselves as well as their manufacturing processes.

The multifaceted technologies allow us to cater to a broad range of markets and offer a variety of products that meet the needs of customers in different industrial sectors. Leveraging these unique strengths, we have cemented relationships with customers over the years as we worked closely with them and repeatedly designed products that meet their specific needs. We will continue pursuing customer-oriented approaches through *Sanshin* Activities to create new sought-after demand for environmentally-friendly products and otherwise.

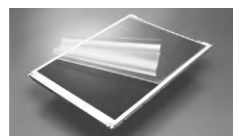
### Technology and Products

#### For manufacturing processes

- Nitto offers adhesive tape that temporarily fixes workpieces at the semiconductor and electronic component manufacturing process (shave/cut). Once done with the process, it can be peeled off easily with minimal adhesive residue by applying heat or irradiating ultraviolet (UV) rays.



- We also supply surface protection adhesive tape for office automation equipment, metal, plastic, Low-E glass, and other housing and automobile materials.

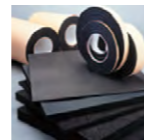


#### For mobility products (automobiles, aircraft)

- Offered for use in automobiles are a broad range of products that contribute to the advancement of mobility, including sealing materials that are airtight, watertight, and sound-insulating, insulating paper that play an essential role in motors of electric vehicles (EVs), and pressure control parts for lamps and electronic units.



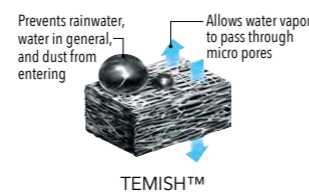
Pressure control part



EPTSEALER™ sealing material

#### For home appliances, automobiles, healthcare, and semiconductors

- Leveraging technologies for filming, adhesion coating, functional material provision, and surface modification, we have created products with superior thermal/chemical resistance, insulation, and low-friction properties, which are for a myriad of markets, including home appliances/electronics, automobile components, medical/healthcare, and semiconductors.



TEMISH™



NITOFロン™

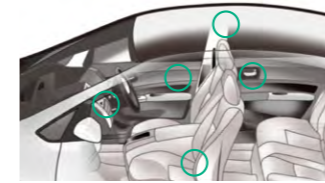
#### Industrial/mobile applications

- Double-sided tape for mobile applications, HDD tapes with low outgassing
- Double-sided tape for industrial applications, barcode labels for production management and individual management
- Sealant materials for touch panels, tape for housing/construction, masking tape, etc.



### Low VOC Double-Sided Tape

Sample application



CO<sub>2</sub> emissions through the life cycle:

**-41%**

(Product No. 5603WE, compared with the company's current products, CO<sub>2</sub> emitted between the stages of extraction of resources and manufacturing as calculated by the company)

VOC emissions:

**-90%**

(Product No. 5603WE, compared with the company's current products, as measured by the company)

Using solvent-free adhesives, Nitto's Low VOC double-sided tape incorporates both superior environmental performance, which contributes to reducing CO<sub>2</sub> emissions and VOC emissions throughout the life cycle, and outstanding adhesion performance. With its worldwide customer base for applications to fix automotive interior materials, we expect this outstanding tape to find a wide range of applications for mobile devices.

#### Bio Based Adhesive Tape with Recycled Films

CO<sub>2</sub> emissions throughout the life cycle:

**-45%**



Made from recycled films and adhesives using biomass materials, this functional double-sided tape for fixing materials reduces CO<sub>2</sub> emissions while maintaining superior adhesive performance.

### Mid- and Long-Term Strategies

#### Future Outlook

As demand for semiconductor and electronic process materials promises further growth, we will focus on materials that require special manufacturing. For example, Power Semiconductors that function under high voltage demand tape that can be used in processes with severer conditions than before.

In the mobility field, the expansion of the CASE market is gathering pace. This is particularly so for "E (Electric)," with the prospect that approximately 50% of automobiles manufactured worldwide will be electric by 2030.

Nitto offers high-performance, oilproof, and heat-resistant insulating materials for use in drive motors, one

of the core components of EVs' powertrains, driving their growth with a high market share. With regard to lithium-ion batteries and fuel cells used in EVs, we are expanding the business of pressure control parts and protective adhesive sheets, which help to enhance their safety. Meanwhile, we are developing new materials in response to the need for enhanced safety.

For "C (Connected)," we offer a variety of panel materials for in-vehicle displays, whose functions keep expanding. For "A (Autonomous)," we have begun releasing new materials and technologies for maintaining sensors' functions, as well as pressure control parts for electronic devices for enhanced safety, which should see wider adoption. Nitto will remain committed to the realization of a future mobility society.

For applications of engineering plastics for home appliances, automobiles, healthcare, and semiconductors, there has been a change in the external environment: tightening of regulations on per- and polyfluoroalkyl substances (PFAS) in Europe, the U.S., and elsewhere. We will work closely with our customers to prepare for compliance with these new regulations while recommending alternative materials that will not be affected by them and that will hopefully lead to new business.

For industrial and mobile applications, we will spur their growth while prioritizing decarbonization efforts. A prominent example is the "Low VOC double-sided tape," a fiscal 2021 PlanetFlags certified product whose sales we will continue promoting. At the same time, we will positively differentiate our technologies and products by utilizing "bio based adhesive tape with recycled films," which has recently been certified as PlanetFlags, and recycled materials to help our customers in their attempt to achieve decarbonization throughout the life cycle of their products. Together with solvent-free technology, which is being worked on throughout the Group, Nitto seeks to reduce the environmental impact of our customers and ourselves.

### Investment for Growth

We will intensively allocate our resources to the sales expansion of strategic products in our target domains, namely, power & mobility, digital interface, and human life. While investing in capacity ramp-up, we will maintain and replace aging equipment and revamp them to enhance their safety and environmental performance (reuse of resources and energy, etc.) and reduce costs through increased efficiency. We will also increase productivity by eliminating/consolidating product numbers.

Another area of focus is recruitment of human resources for product development. In the mobility field, we sold part of our reinforcing/vibration-damping material business in April 2023, which allowed us to reallocate the surplus resources to emerging priority businesses.



Business Strategies  
by Segment

## Optronics

### Supporting a secure and accessible lifestyle and a sustainable circular society (information fine materials) One-of-a-kind technology to support the data business through contribution to the environment (circuit materials)

#### Overview

The Optronics segment is comprised of information fine materials, such as optical films, and circuit materials, including CIS (Circuit Integrated Suspension) and high-precision substrates. One of the biggest advantages of our information fine materials is the technology that allows us to develop optical products out of various functional films, working closely with customers from their product design stage to make suggestions, while our circuit materials stand out for their technology, reliability, and profitability as attested by the 100% global market share for CIS and high-precision substrates.

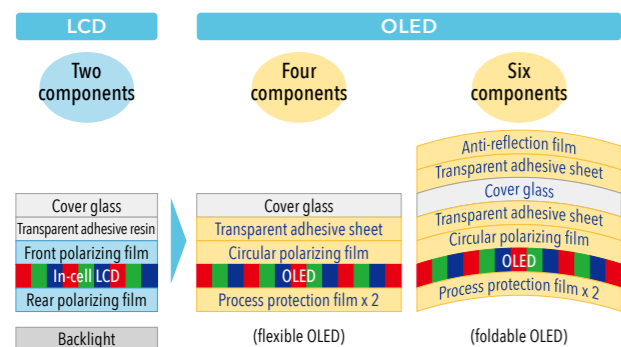
#### Technology and Products

##### Information Fine Materials: Optical films, etc.

###### • Products for optical displays

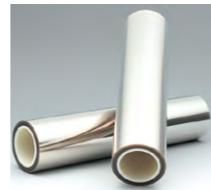
In addition to our long-time mainstay polarizing films, we have a wide spectrum of products for use in displays, including process protection films for organic light-emitting displays (OLEDs) and transparent adhesive sheets. Offering solutions that combine different products, we facilitate the optimization of customers' production processes.

##### Where Nitto's Products Are Used: By Panel Technology



###### • Transparent conductive films

Beyond the application for touch panels, we are expanding the range of applications for the non-display market, such as auto-dimming sunroofs. Designed with proprietary sputtering technology, Nitto's transparent conductive films feature enhanced functions.



Dimming sunroof

##### Circuit Materials: Electronic printed circuit boards



CIS  
Thin-film metal base board

FPC  
Flexible printed circuit board



High-precision substrates  
Substrates for smartphones

### Mid- and Long-Term Strategies

#### Future Outlook

Nitto's information fine materials are currently enjoying a high market share in displays for smartphones and tablet computers. Our next goal is to establish a solid position in the fast-expanding metaverse market. To do so, we will dedicate resources to developing technologies that meet the demand for higher-definition displays, while strengthening our production system for a stable supply.

As self-driving technology evolves and designability improves, demand for uniquely-shaped or larger in-vehicle displays is increasing. Meanwhile, for non-display applications for automobiles, we are seeing increasing opportunities for us to leverage our technological prowess, such as sputtering technology. For us to respond proactively to such emerging applications and changes in the market, we will accelerate technological development.

For circuit materials, we expect CISFLEX™, the leading brand of circuit integrated suspensions for hard disk drives (HDDs), to see its demand grow further as the data-driven/intelligent society expands more. As demand from data centers, where high-capacity HDDs are indispensable, is expected to expand further, we will focus on developing technologies that add to the capacity of HDDs.

With regard to high-precision substrates, we are busy working on a one-of-a-kind technology that will lead to the next innovation with added value (technology innovation for high-speed transmission and higher reliability) beyond "conductivity" by taking advantage of our superior core technologies such as miniaturization, thin films, and mechanical properties.

We will remain focused on developing proprietary technologies by combining element technologies that

we have cultivated in the HDD market. Based on the technologies thus developed, we will design novel products and transform our product portfolio into one geared toward emerging markets such as semiconductors and sensing devices.

#### Investment for Growth

For information fine materials, we are reallocating more human resources from existing technologies to the development of new technologies. For the growing market, we have invested in the production line for polarizing films for VR (virtual reality) goggles, which commenced mass production in 2023.

We continue making environmentally-responsive efforts by making our production process solvent-free and carbon-neutral. By focusing on the development of eco-friendly products using recycled materials and biomass materials, we are dedicating ourselves to the realization of a sustainable society. On the equipment front, a solvent-free UV coater that emits significantly less CO<sub>2</sub> compared to conventional machines will become operational at the Nitto Shiga Plant in 2025.

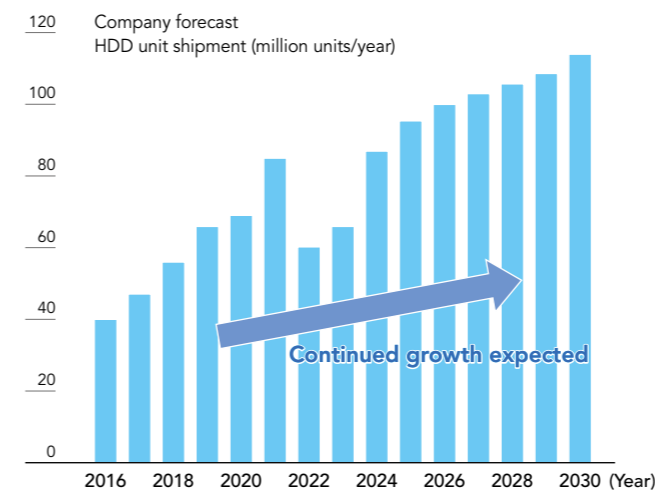
Furthermore, to establish a robust supply system immune to the ever-changing external environment, as in recent years, we will capitalize on the expansion of our sites in Vietnam and Chengdu, China, in order to reinforce the present Business Continuity Plan (BCP).

For circuit materials, because many of our existing models have a high market share, we have a greater responsibility to provide a stable supply. In response to the requests to expand production for the HDD and mobile device markets, we are aggressively making capital expenditures, thus boosting production to secure sufficient capacity. In 2023, in addition to the expansion of the plant in Vietnam, a new building was completed at the Nitto Kameyama Plant for a planned launch of a new product. We will continue ramping up capacity to ensure business continuity while searching for a new mode of manufacturing through process innovation.

On the environment front, we will collaborate with ministries and agencies concerned and relevant foreign agencies to forge ahead with decarbonization and waste reduction. At the same time, we will make forward-looking investments in the development of eco-friendly products by bringing about product innovation and environmental innovation simultaneously.

To promote DE&I, we are making greater efforts to develop human resources. The Nitto Kameyama Plant has worked on DE&I from an early stage, and they are planning to expand the scope of such initiatives, which we implemented in fiscal 2021 and 2022, with a focus on the empowerment of women to include diversity from fiscal 2023. Their goal is to set a leading model for the Nitto Group and make theirs the most fulfilling place of work.

#### Long-term Trends in HDDs for Data Centers





Business Strategies by Segment

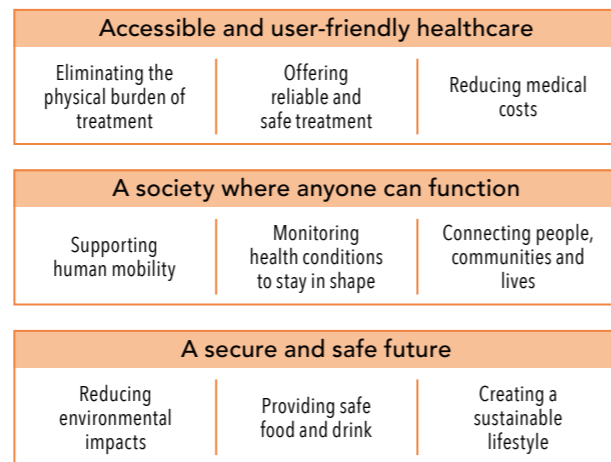
# Human Life

## For coexistence with the global environment, better living, and a fulfilled life

### Overview

The “Human Life” segment is comprised of life science (oligonucleotide contract manufacturing, oligonucleotide therapeutics discovery/development, etc.), membranes (polymer separation membranes), and personal care components (hygiene materials and other functional films). This new reportable segment takes the three approaches of “accessible and user-friendly healthcare,” “a society where anyone can function,” and “a secure and safe future.”

In fiscal 2022, we acquired a personal care component business from Mondi plc, which earned us a new business base in Germany. Building on this foothold, we will further strengthen the Human Life segment.



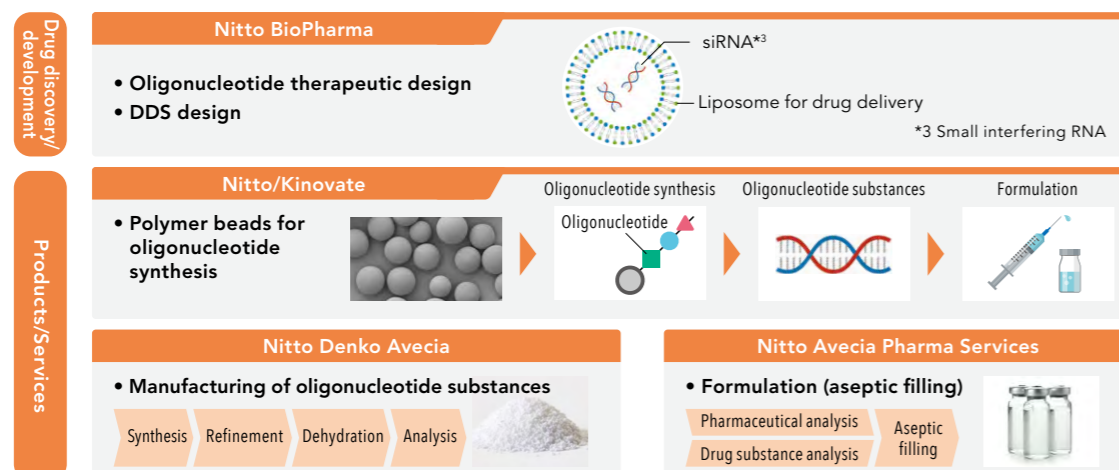
### Technology and Products

#### Life Science

Discovery/development of oligonucleotide therapeutics, contract manufacturing, etc. For development, Nitto’s strength lies in its core technologies of oligonucleotide

therapeutic discovery/development and DDS design\*<sup>1</sup>, and for manufacturing, it is in the synthesis of polymer beads\*<sup>2</sup> (market leader) and bulk oligonucleotide therapeutics.

\*1 Drug delivery system: assisting oligonucleotides in functioning in the body  
\*2 NittoPhase™



#### Membranes (Polymer Separation Membranes)

Production and sale of separation membranes for a variety of water treatment applications both in Japan and abroad. Nitto’s competitiveness here lies in the ability to design products that treat water to the level of quality customers want using proprietary simulation technology.



The RO membrane purifies water by filtering out impurities.



Example application of membrane treatment technology—recovering liquid discharge from production processes

#### Personal Care Components

Development of new functional materials for wearable devices that are applied directly to the body, and production and sale of non-woven fabrics, functional films, and other hygiene materials for paper diapers and masks



Diaper-related products



Face masks, non-woven fabrics, etc.

### Mid- and Long-Term Strategies

#### Future Outlook

With the prospect of continuously strong growth, the oligonucleotide therapeutic market is attracting much attention. In a bid to meet growing demand, the Nitto Group will put a new plant into service in the U.S. and Japan in or after fiscal 2023, thus boosting capacity for oligonucleotide contract manufacturing and manufacturing of polymer beads (NittoPhase™). Alongside this, we aim to consolidate our one-and-only, irreplaceable position in the market by developing and implementing new production technologies that assist customers in addressing social issues such as reducing environmental impact. As for new businesses, we are working on a plan to commercialize the disease prevention/diagnosis business, and will accelerate our efforts for an early product launch.

For discovery/development of oligonucleotide therapeutics, we are conducting clinical trials in patients with hepatic cirrhosis, pulmonary fibrosis, and KRAS-driven tumors by taking advantage of DDS technology, one of our core technologies. We will further our expertise in DDS technology to apply it to the development of new drugs, while promoting the DDS technology licensing business, with which other companies may access Nitto’s DDS to solve their issues.

For the membrane product business, we are contributing to solving environmental and water-related problems

around the world by supplying safe tap water to regions in need of water and recovering/reusing factory effluents. Amid the ongoing move toward carbon neutrality, we anticipate that customers’ demands for effluent treatment will be extremely diverse. As such, we aim to be the niche top creator in the effluent treatment market by strengthening our ability to customize solutions to individual projects, thus positively differentiating ourselves from others.

For the personal care component business, in addition to the existing baby care component business, we aim to expand into the adult diaper business, which is expected to grow further. For the technical film business, we will transform our product portfolio by bringing this product to other businesses, including mobility, life science, and mobile devices. For the non-woven fabric business, being conscious of the environment, we will develop products using biodegradable materials to boost our contribution to a sustainable environment and society.

### Investment for Growth

We will advance existing businesses and create new businesses through partnerships with external parties. To accelerate these activities, we will practice talent management on a global scale to develop individuals capable of building a solid relationship of trust with external parties.

For the life science business, a new plant with a capacity large enough to fulfill expanding demand will start operation in fiscal 2023 at our Massachusetts site in the U.S. Using renewable energy, the new plant features a circular system that recycles solvents. We also gained a minority stake in a start-up business developing biomaterials in a bid to create new business opportunities in the field of environmental contributions. We will drive our environmental initiatives further by replacing acetonitrile (solvent), one of the key raw materials for oligonucleotide manufacturing, with a bio-based alternative.



New plant in Massachusetts, U.S. / Oligonucleotide contract manufacturing

New plant in Miyagi, Japan / Manufacturing NittoPhase™

In the membrane product business, we will enhance our technological prowess and ramp up production capacity by investing in production equipment. Also, in a bid to achieve ZLD (Zero Liquid Discharge) at our production sites and build a resource recycling plant, we will make substantial capital expenditures designed to reduce environmental impact by, for example, recovering and reusing wastewater and liquid discharge and recovering CO<sub>2</sub> by separating exhaust gas.