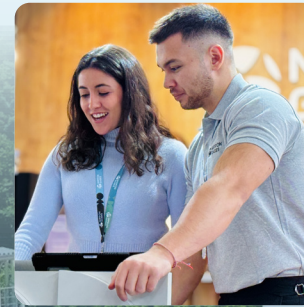




NIPPON SAN SO HOLDINGS



INTEGRATED REPORT 2024

# The Gas Professionals



Strengths of Nippon Sanso Holdings

# Diverse Human Resources

## —The Gas Professionals—

Nippon Sanso Holdings (hereinafter, referred to as “NSHD” or “the Company” interchangeably) employs approximately 20,000 diverse professionals across more than 30 countries and regions worldwide. Our global team is deeply attuned to customers’ needs, equipped with the application expertise and technological capabilities to address their challenges effectively. Guided by our shared Group Philosophy and Vision, our team excels in creating new business opportunities.

By continually leveraging our diverse strengths to generate new value, we strive to remain the preferred choice for our customers.



Strengths of Nippon Sanso Holdings

# Solution Creation Capabilities

In the industrial gases sector, product differentiation is inherently challenging. However, NSHD has carved out a unique value proposition by offering flexible, customized solutions and leveraging our technological expertise to meet the specific needs of our customers. A key example of our solution-driven approach is the Total Gas Center/Site Services initiative, which supports the rapidly evolving electronics industry by maintaining a permanent on-site presence at customers' production facilities, delivering a comprehensive array of gas-related services.

Moving forward, we will continue to develop competitive solutions, including those from our THERMOS brand, by leveraging the collective strengths of our Group in all our business activities.



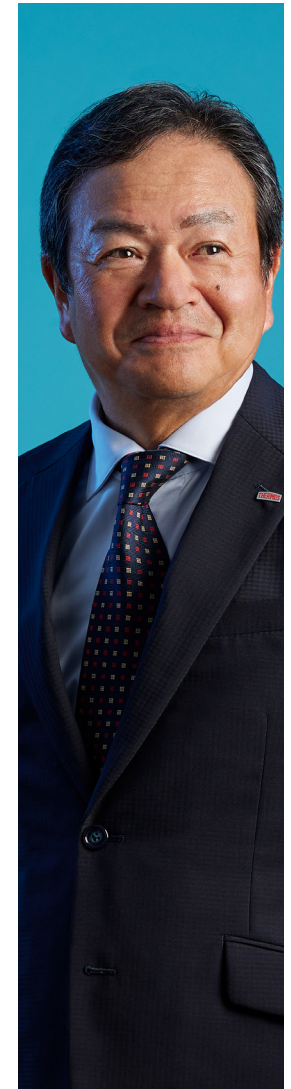
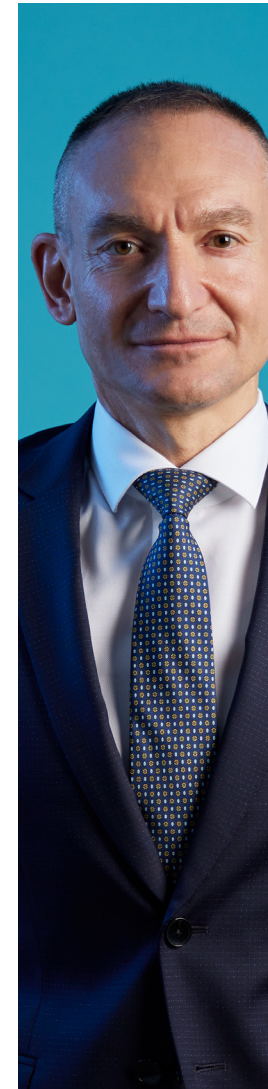
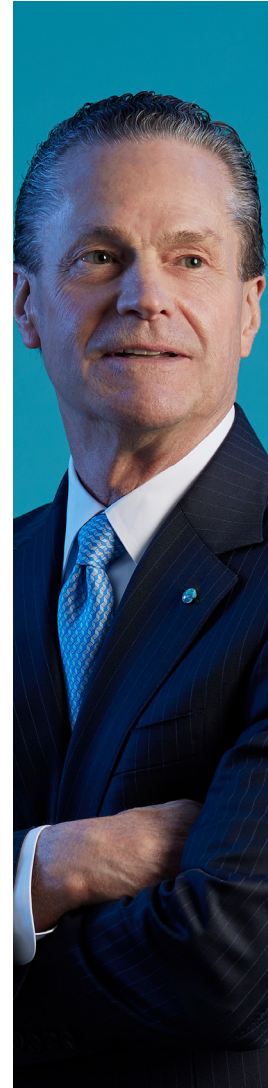
Strengths of Nippon Sanso Holdings

# Think Globally. Act Locally.

M&As are a vital strategy for expanding the industrial gases business on a global scale, with effective post-merger management being crucial to their success. NSHD has expanded its global presence while honoring the initiatives of its operating companies, each deeply embedded within their local communities. This operational approach sets us apart from competitors and is a defining characteristic of NSHD.

At the core of NSHD's strategy are the four global regions overseeing industrial gases and the Thermos business. NSHD serves as a unifying force, streamlining decision-making processes and clearly defining accountability for business execution.

Furthermore, within this management structure, NSHD is committed to achieving Operational Excellence across the entire organization, encompassing both technology and management divisions, as well as Thermos. This approach enables us to systematically disseminate best practices developed in one business segment to other segments, fostering continuous improvement throughout the Company.



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## Group Philosophy

Proactive. Innovative. Collaborative.  
Making life better through  
gas technology.

## The Gas Professionals

## Group Vision

We aim to create social value  
through innovative gas solutions  
that increase industrial productivity,  
enhance human well-being,  
and contribute to a more  
sustainable future.

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## CEO Message

# Toward Further Growth

Building on our core strengths, along with our diverse pool of talent and businesses, we will continue to enhance and expand these attributes to accelerate NSHD's value creation and growth.

**Toshihiko Hamada**  
President CEO



## CEO Message

### Review of FYE2024

#### Profitability Expansion Underpinned through Robust Price Management

Reflecting on FYE2024, the most striking achievement was the success of our product price management. We initially launched our pricing strategy in FYE2022 in response to the sharp rise in energy costs triggered by the Russia–Ukraine crisis, a move that was also highlighted in last year’s integrated report. However, the price management efforts of FYE2024 represent a significant evolution from those earlier initiatives.

In our industry, raising prices risks losing customers to competitors since products like oxygen and nitrogen are difficult to differentiate. In FYE2022, when our Group’s operating companies implemented price management by sharing insights, it felt like overcoming a significant hurdle. This sentiment is largely influenced by the time and experience within a Japanese company, where such actions are more challenging. In contrast, for European and U.S. companies, adjusting prices to reflect cost increases is a standard practice for most products or commodities.

Our price management initiative during FYE2023 was a crisis-driven effort to adopt the European and U.S. approach in Japan, recognizing that continuing with our traditional methods would threaten our business’ survival. To gain acceptance for passing on rising production costs to customers, we focused on helping them understand the impact of escalating energy costs on our manufacturing expenses. This approach laid the groundwork for the following fiscal year.

In FYE2024, our strategy evolved further. As customers reassessed our role as critical industrial infrastructure, ensuring reliable production and supply amid soaring energy costs, we successfully implemented additional price revisions in Japan, the United States, Europe, and Asia. This success demonstrates that many customers now view us as “The Gas Professionals” and recognize the value the NSHD Group provides, which is reflected in our product pricing.

Achieving this success amid unprecedented cost increases has significantly boosted the confidence of our staff in Japan, particularly the employees of Taiyo Nippon Sanso Corporation (TNSC). They have made substantial improvements to the operating income margin in Japan, which was a key focus under our medium-term management plan. This accomplishment has strengthened their confidence as they look toward the future. Our teams in Europe, the United States, and Japan continue to motivate each other through friendly competition. This breakthrough has provided our sales teams with invaluable experience that will drive NSHD’s future growth.

Thanks in part to the success of our pricing initiatives, we have already met several of the financial key performance indicators (KPIs) outlined in our current medium-term management plan (MTP), NS Vision 2026—Enabling the Future, ahead of schedule. While various factors, including favorable foreign exchange rates and pass-through charges linked to cost increases, contributed to reaching our revenue target, we also achieved our core operating income target even after adjusting for the impact of currency fluctuations.

In the past, we supplied large volumes of oxygen to customers in the steel industry, nitrogen to chemical manufacturers, and nitrogen and electronic material gases to semiconductor companies. However, since around FYE2023, supply volumes have softened across most regions, partly reflecting the state of the global economy. Despite this challenging backdrop, the Group’s earnings have continued to grow, largely due to our productivity efforts and effective price management.

With two years remaining in our current MTP, we do not expect a rapid recovery in the global economy. While we will continue to prioritize price management, it is equally crucial that we intensify our Companywide efforts to increase productivity and reduce costs. All these activities are centered around our focus on Operational Excellence, which remains a key pillar of our current MTP.

### Operational Excellence

#### Established a Dedicated Team to Drive Productivity and Corporate Value

In our MTP announced in May 2022, we outlined our productivity enhancement initiatives under the framework of Operational Excellence, with a goal of achieving more than ¥56.0 billion in cost reductions over four years.

Initially, we viewed Operational Excellence as separate from pricing activities. However, with the sharp rise in energy costs, these two areas have become closely intertwined. As a manufacturer of physical products, it is essential that we manage pricing in response to cost increases while simultaneously striving to reduce various operational costs.

Operational Excellence goes far beyond price management. It encompasses all aspects of our operations, from manufacturing to sales, and even back-office functions. Our objective is to enhance productivity across the board. Operational Excellence is not about reducing staff or freezing wages; rather, it involves making strategic investments and fostering innovative solutions that lower costs. Examples include investing in new technologies and equipment, restructuring organizations and systems, and conducting thorough reviews of transportation routes.

In January 2024, we established a dedicated team within NSHD’s Group Corporate Planning Office to actively promote Operational Excellence. This team collaborates with our four global regions and Thermos, sharing successful projects to boost productivity. Notably, Operational Excellence teams were already in place within our Group in Europe and the United States. The mission of the NSHD team is to accelerate the adoption of Operational Excellence in Japan, Asia, and Oceania, where progress has been slower.

The most effective proposals for increasing productivity often come from the front lines, where daily operations reveal the greatest opportunities for improvement. For example, if a cost reduction method being implemented at a plant in Europe proves successful,

## CEO Message



we encourage other regions—such as Japan, Asia and Oceania, or the United States—to evaluate its feasibility in their own operations. This approach highlights the importance of proactive investments to achieve cost reductions.

My emphasis on Operational Excellence stems from its potential to drive not only cost reductions through creative innovations but also to become a core component of our corporate value. Ultimately, I envision Operational Excellence becoming ingrained in our corporate culture, with the added benefit of boosting employee engagement. Cultivating an environment where employees feel comfortable sharing ideas for increasing productivity is crucial. By steadily developing Operational Excellence, we can secure a competitive advantage over other companies in the years to come. Although we have only just begun these activities, we are already seeing promising results.

Thermos operates differently from our four industrial gas regions. It therefore may require a unique approach to productivity. We classify Thermos as a B2C business and our four regional industrial gas businesses as B2B. However, certain products within these

industrial gas regions are directly used by customers, similar to Thermos products. In sectors like total electronics equipment and the growing field of medical equipment, where ergonomic design is crucial, customers prefer products that are lighter, easier to operate, and more resistant to user error. Hence, user perspective is critical to ensure customer usability and demand. In this respect, the industrial gases business can learn much from Thermos, which excels in creating B2C products by actively listening to user feedback and incorporating it into their operations.

### Total Electronics and Carbon Neutrality Unlimited Potential of Industrial Gases Brings a Sense of Responsibility and Pride

As “The Gas Professionals,” one of our key focuses is Total Electronics, a field where the Group is now well-positioned to leverage

its strengths. Over the past 50 to 60 years, hydrogen compounds and gases used for etching and other processes have become indispensable as electronic material gases. We have the experience and expertise in refining and producing these gases, which gives us a competitive edge, particularly in quality control—an essential aspect of semiconductor gases. Our goal is to maintain and strengthen this advantage.

In Japan and Asia, particularly Taiwan, we also develop and supply equipment and technologies necessary for the production of electronic components.

Despite the recent downturn in the semiconductor market, especially in memory production, it's crucial to continue investing during these slow periods to ensure sufficient supply when the market rebounds. Semiconductor and silicon wafer manufacturers often increase investments when production volumes are down, and our operations in Japan and Taiwan are now well-equipped to meet this demand.

Another area of growing importance in electronics is semiconductor lithography equipment. We are experienced in handling the highly specialized apparatus required for refining the liquids used in this equipment. Although this may seem niche within the broader market, it is critical for semiconductor lithography.

Due to the historical development of our business, we are unable to meet every need within the vast electronics market. However, we aim to capture niche demand through our existing technology and expertise; our concept of Total Electronics offers the greatest potential. Our strengths we have cultivated over the years as “The Gas Professionals” allows us to propose comprehensive packages that include industrial gas supply, gas engineering, quality control, and after-sales services—maximizing value for our customers.

In addition to electronics, carbon neutrality presents significant business opportunities. The world consumes enormous amounts of energy, and industrial gases play a crucial role in optimizing its use. We are committed to providing products and solutions in this area with a strong sense of responsibility and pride.

Opportunities for carbon neutrality-related businesses are abundant,



## CEO Message

which is characteristic of a fundamental and versatile product like industrial gases. Each of our operating companies engages in dialogue with customers, and a substantial number of technologies are being developed and supplied across various industries. The widespread adoption of these technologies for CO<sub>2</sub> emission reduction will depend on their contribution to carbon neutrality and their acceptance by the public.

While some factors are beyond our control, it is essential that we continue to explore business opportunities. Just as not all seeds will sprout, some of the solutions we offer may not take hold immediately. This is a natural part of business, and technical support is crucial in nurturing these opportunities. As “The Gas Professionals,” we provide practical advice, such as adjusting the position and angle of oxygen inflow or modifying the absorption layer to enhance CO<sub>2</sub> capture.

Hydrogen holds enormous potential for achieving carbon neutrality in the industrial gases sector, and the Group is actively pursuing related businesses. In the United States, our HyCO business supplies hydrogen and carbon monoxide, separated from natural gas and other sources, through pipelines, and we are expanding this business globally. We are also involved in capturing CO<sub>2</sub> from the hydrogen manufacturing process. In Europe, we are participating in a green hydrogen initiative. However, this doesn't necessarily mean that the Group will build mass hydrogen production facilities from scratch or supply large quantities of green hydrogen independently. Instead, our extensive expertise in industrial gas supply systems allows us to offer superior solutions for large-scale hydrogen production and imports. Significant technical challenges remain in hydrogen transport and storage, and we will leverage our knowledge as “The Gas Professionals” to propose effective solutions.

### NSHD's Identity—What Sets Us Apart from Competitors Building Solutions on Our Unique Strengths

While we have successfully met some of the financial KPIs outlined in our MTP and have experienced steady growth, I believe we have yet to reach the level where we can stand alongside major global peers in Europe and the United States. NSHD is still a developing entity, and it's crucial that we acknowledge the gap between us and our global competitors.

That being said, we are committed to becoming a company that continuously generates value on par with a major global peers. It is vital for our executives and management to consistently strive toward the goal of becoming a true global leader. Complacency with our current status will only hinder our growth.

As NSHD navigates various supply chain challenges, including those caused by global conflicts, we have established a global network of manufacturing sites and expanded our business, positioning ourselves as a competitive player among global corporations. From a sustainability perspective, our environmental, social, and governance (ESG) performance has reached a level comparable to that of major competitors.

However, we possess distinct characteristics that set us apart from larger global peers, such as the management of our four global regions and Thermos. By emphasizing regional autonomy, we have seen stronger employee engagement, particularly at Nippon Gases Euro-Holding, which joined our Group from a major competitor five years ago. This way of management, coupled with strong governance, has led to high performance and favorable evaluations of our overseas operations.

Although we may not match major corporations in terms of scale, we excel in specific areas, such as the semiconductor industry, which is poised for a resurgence in memory demand in the latter half of 2024. This resurgence will likely drive increased demand for electronic material gases, facilities, and equipment.

In the medical field, we are focusing our efforts particularly in Japan and Europe, where aging populations are driving up demand for medical products. We are achieving consistent results across regions with products like oxygen inhalers.

One of our key products in the medical sector is stable isotopes. Positron emission tomography (PET), a leading diagnostic method for cancer, is gaining global traction, and TNSC is the world's largest manufacturer of oxygen isotopes. We supply Water-<sup>18</sup>O, a stable isotope used in PET diagnostic reagents, to over 30 countries. PET is also emerging as a new diagnostic method for Alzheimer's and cardiopulmonary diseases. In countries with aging populations, the medical market is expected to expand significantly, presenting substantial opportunities for the Group's specialized businesses, which have been developed ahead of our competitors.

### Relationship with the Mitsubishi Chemical Group Maintaining Relationships while Prioritizing Minority Shareholders

Some stakeholders may be particularly interested in our relationship with the Mitsubishi Chemical Group. We maintain a strong, collaborative relationship, with a contractual agreement that ensures NSHD's autonomy in governance. While we openly share our current strategies and initiatives with Mitsubishi Chemical, we also have a robust management structure in place to safeguard against conflicts of interest with shareholders outside the parent company. Personally, I have increased my direct engagement with shareholders and investors beyond the parent company. NSHD remains committed to open dialogue with all stakeholders and to incorporating their feedback into our management decisions.

## CEO Message

### Current Priorities as CEO

#### Fostering Talent for Growth and Ensuring Stable Earnings

As CEO of NSHD, my primary focus is on meeting investor expectations and advancing the businesses that define the Group's identity. To achieve this, our most critical asset is our people. We are committed to attracting and developing talent who deeply understand our operating companies' activities and can make informed, timely decisions.

It is a mistake to evaluate each country solely by its business value. For instance, while the European approach to business may be swift and highly profitable, we cannot assume it will be equally effective in other regions. As the holding company, NSHD must make these assessments, and it is crucial to have people who understand these complexities and can provide informed advice.

In the industrial gases sector, where products are manufactured at the point of consumption, we must cultivate and develop talent who understand the local industry landscape and are able to effectively manage regional operations.

To succeed in global management, NSHD must first establish a system that promotes and supports greater diversity. My primary responsibility is to implement this system across our operating companies, thereby strengthening our human capital.

With these priorities in mind, we will explore opportunities in regions where the Group has not yet established a presence, such as South America and Africa.

Our most immediate goal is to steadily increase earnings. While this is a fundamental objective for any company, it remains our central focus. We must also balance future investments, shareholder and employee returns, and debt repayment. By maintaining this balance, we will build a corporate structure capable of sustaining earnings growth over the medium to long term.



Given our ambitious goal of becoming a true global leader, it is crucial to establish a strong foundation for generating stable earnings. Equally important is leveraging our diverse talent and their expertise to continuously enhance our corporate value. These initiatives will remain at the forefront of my efforts moving forward.

September 2024



## CFO Message

During this fiscal year, we will also enhance our focus on cash management and working capital to drive improved financial behavior.

**Alan David Draper**

Senior Executive Officer  
Group Finance and Accounting Office,  
and CFO

## CFO Message

### Financial Overview FYE2024

Nippon Sanso Holdings (NSHD) continued to excel in FYE2024, driven by the outstanding efforts of our approximate 20,000 employees who have delivered another record-breaking financial year. Here are some of the team's key financial achievements compared to the previous year:

- Revenue reached ¥1.255T, increase of 5.8% or 0.7% excluding currency
- Core Operating Income (COI) increased +34.8% from ¥123.1B to ¥165.9B
- Operating income increased +43.9% from ¥119.5B to ¥172.0B
- Net Income attributable to owners of the parent increased +44.9% to ¥105.9B
- Operating Cash flows increased from ¥187.9B to ¥215.9B, an increase of +14.9%
- Adjusted net D/E ratio continued to reduce from 0.81 times to 0.74 times
- Dividend increased for the 10th consecutive year to ¥44 a CAGR of 14%
- Return on Capital Employed after Tax increased 130 bps from 5.4% to 6.7%
- EBITDA margins climbed to 22.2%, up 290 bps from prior year

The positive financial performance was driven by several factors including: effective price management, ongoing dissemination and implementation of best practices, cost reduction efforts, portfolio optimization, and productivity initiatives. The pricing strategies developed over the past few years, emphasizing flexibility, timeliness, efficiency, and effectiveness, will remain crucial for future success. Our expanding productivity program also contributed to our margin expansion. Additionally, we will enhance profitability through our

robust capital project pipeline, increased globalization opportunities, and continued optimization of our business portfolio.

Among the five financial KPIs communicated in our MTP, as of March 31, 2024, our team already exceeded three goals as compared to the final year of our MTP March 31, 2026:

- Revenue
- Core operating income
- Return on capital employed

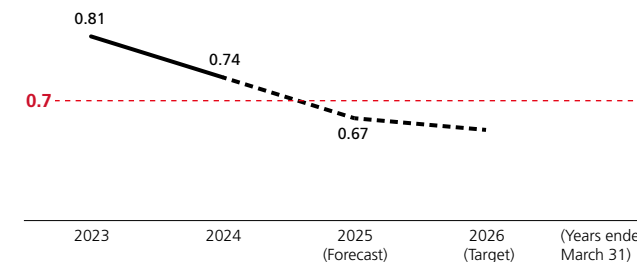
While we have not yet achieved our targeted adjusted debt to equity ratio or EBITDA margins, we are on track to meet our adjusted debt to equity ratio. Consequently, we may opportunistically refinance hybrid debt to clean debt as we did in FYE2024. Though this action will temporarily negatively impact our adjusted debt to equity ratio, it will ultimately improve our overall financial health.

Our goal is to reach an EBITDA margin of 24% for the NSHD Group, with each business unit achieving at least 17%. Although we are making progress, additional efforts are required to meet this target. We are committed to diligently working towards these goals over the next two years. I remain confident in our outlook and our ability to continue to enhance margins and quality of earnings. This will be accomplished through strategic price management, productivity improvements, leveraging best practices, introduction of globalization initiatives, growth in resilient markets, expanding carbon-neutral applications, successful project execution, and increased revenue contributions from key markets such as Electronics.

Additionally, adjusting FYE2026 MTP targets using actual exchange rates from FYE2024, the revised targets for FYE2026 would be approximately JPY 1.1 trillion in revenue and just under JPY 155 billion in adjusted core operating income. Consequently, our FYE2024 revenue of JPY 1.255 trillion and core operating income of JPY 165.9 billion also surpass our MTP FYE2026 targets on a constant currency-adjusted basis.

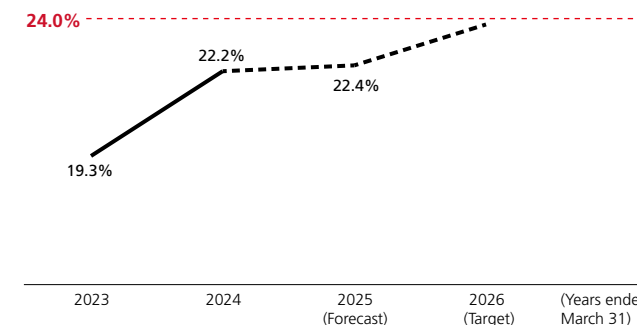
### Adjusted Net D/E Ratio\*

(Times)



\* Adjusted Net D/E Ratio: An indicator of safety (financial soundness) calculated in consideration of this part due to 50% of the amount raised by Hybrid Finance being permitted as "Equity" by rating agencies.

### EBITDA Margin



--- Medium-term management plan NS Vision 2026 planned figure  
(Targets set in Apr. 2022, with planned figures for FYE2026)  
MTP Currency Exchange Assumption USD: ¥115  
EUR: ¥125

## CFO Message

### FYE2025 Budget

As we conclude FYE2024 and begin FYE2025, we remain mindful of the ongoing economic and geopolitical challenges. Despite these hurdles, our management team has demonstrated its ability to grow and enhance profitability in difficult times. We anticipate continued strong performance, aiming for revenue growth of 3.6% and a core operating income growth of 6.6% in FYE2025. We expect the profit growth to be supported by modest price improvements, volume recovery (electronics), portfolio optimization, and a steadfast focus on cost reduction and productivity initiatives.

During this fiscal year, we will also enhance our focus on cash management and working capital to drive improved financial behavior. We have been in the process of updating local employee and management incentive compensation programs to emphasize the importance of working capital. For those programs that did not already include working capital as a key component, we have added it. For those that have already included it, we have increased its weight. This change incentivizes the organization to treat cash flows and the balance sheet with the same diligence as the income statement.

### FYE2026 Outlook

Our guidance for FYE2026 includes the following expectations and we expect to deliver steady margin improvements:

**Revenue Growth:** We anticipate revenue growth of at least 2.5% above the FYE2025 budget/results.

**Core Operating Income (COI):** We expect COI growth of at least 5.0% above the FYE2025 budget/results.

Our sales and COI guidance reflects the minimum targets our NSHD Group management team expects to achieve in FYE2026.

### Capital Structure

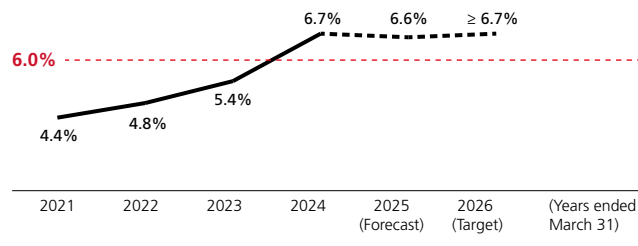
We do not anticipate any significant change in our capital structure.

NSHD has prioritized the equity spread, the difference between return on capital and cost of capital, across the Group's operations. To emphasize capital efficiency and ensure sustainable returns exceeding the weighted average cost of capital (WACC), we introduced after tax return on capital employed (ROCE) as a key performance indicator for business management effective April 1, 2022. Over the past two years, our ROCE has improved by 190 bps to 6.7%.

We will enhance capital efficiency management by optimizing capital management and driving profitability improvement activities, alongside reviewing business strategies. We aim to increase enterprise value by promoting management practices supporting a cost of capital approach in every segment. We remain committed to ensure that growth and strategic projects surpass country-specific hurdle rates as set by the NSHD Global Investment Committee. Additionally, in response to investor requests, we have included further comments on our capital allocation strategy.

#### ROCE\* after Tax

$$\text{ROCE* after Tax} = \frac{\text{NOPAT (Net Operating Profit After Tax)}}{\text{Capital employed (Interest-bearing debt + Total equity attributable to owners of parent)}}$$



--- Medium-term management plan NS Vision 2026 planned figure (Targets set in Apr. 2022, with planned figures for FYE2026)

\* In NS Vision 2026, we set ROCE after Tax as one of our financial KPIs in which the numerator of ROCE has been modified from core operating income to NOPAT.



## CFO Message

### Capital Investment:

NSHD is capital-intensive and requires two main types of investments. The first type involves capital investments that sustain or maintain normal business operations. These investments typically cover ongoing operations, cost reduction activities, safety measures, small growth projects, IT-related expenses, and similar capital needs.

In addition to these essential capital requirements, NSHD also invests in capital projects or acquisitions to support and grow the core business and enhance corporate value. The investments in this category fluctuate depending on market opportunities and our ability to succeed in the marketplace. This capital is prioritized based on financial economics, expected returns, strategic initiatives, the potential to increase the intensity and density of our customer base, and the opportunity to expand our geographical footprint into economically appealing or underrepresented areas.

### Project Prioritization:

Capital projects are assessed and prioritized to ensure that those with the best economic returns are given higher priority over those with lower financial returns. All projects are reviewed through a disciplined approach and approved according to levels of authority granted by the NSHD Board of Directors.

The decentralized authority levels allow small projects that meet the country-specific hurdle rates and economic returns to be approved locally, promoting fast decision-making. Larger projects are approved in accordance with the authorization limits hierarchy, as reviewed and sanctioned by the NSHD Board.

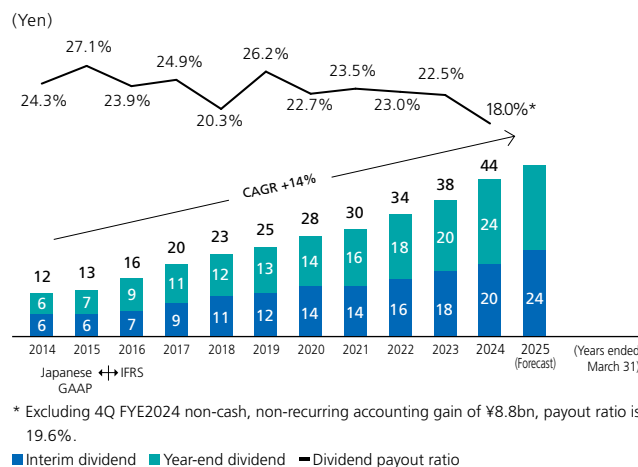
Additionally, the NSHD Global Investment Committee meets at least twice per year to assess and update the hurdle rates by region or country, reflecting the current economic landscape. The committee also conducts a post-project review for any project that falls short of economic expectations. This review includes a root cause analysis of any variances in timing, capital, and returns. The feedback and learnings from these reviews are shared with the leadership team to minimize and avoid similar issues in the future.

### Dividends:

NSHD is committed to paying regular dividends in a stable and reliable manner. Since 2014, NSHD has increased its dividend annually and hopes to maintain this track record. Our target dividend ratio is 20–30% of net income. While debt load and interest rates are high, we will be at the lower end of this scale. As debt is reduced, we aim to move up the scale.

While our target dividend ratio is 20–30%, we recognize the need for flexibility in financial management, including capital investments, acquisitions, and debt reductions. Therefore, there may be temporary periods when the target ratio is not met, but over time, we anticipate the dividend ratio to trend within the targeted range.

### Dividend Trend



### Debt Reduction:

NSHD is committed to improving its financial soundness. We use the debt-to-equity (DE) ratio as our primary external metric for financial health. We aim to continue to improve our DE ratio, providing us with greater flexibility to finance and refinance debt as needed.

In addition to our DE ratio, we will incorporate the financial metrics EBITDA to Debt and EBITDA to Net Debt to further gauge our financial health. Our goal is to enhance these ratios, ultimately aligning our performance with that of our industry peers.

### Share Buybacks:

We do not anticipate or foresee share buybacks or share issuances in the foreseeable future.

## NS Vision 2026 Medium Term

The key focus areas for NS Vision 2026 remain consistent with the previous year. These areas are:

- Sustainability Management
- Exploring New Business toward Carbon Neutrality
- Total Electronics
- Operational Excellence
- DX Initiatives

All five aspects are progressing favorably and here I will dive deeper into Operational Excellence. We expect to accelerate the leveraging of best projects during the second half of our Medium-Term Management Plan (MTP). This will help globalize our organization and identify and prioritize initiatives that enhance cost-effectiveness and efficiency.

To drive this activity, we recently hired a global productivity leader. This role is tremendously important, and I am very excited to have this position filled. It will lead to a step change in our globalization and sharing of productivity initiatives and best practices across the global NSHD Group. His main responsibilities include:

## CFO Message



- Chairing meetings with productivity leader across the NSHD Group
- Utilizing value stream working groups to develop a deep understanding of the best and most successful projects in each region
- Enabling the value stream groups to familiarize themselves with air separation plant operations and distribution aspects related to bulk and package gas production in each business
- Determining those productivity projects that have the highest replication potential
- Driving project replication across regions and into business areas that have not yet adopted these productivity initiatives

Our vision, “We aim to create social value through innovative gas solutions that increase industrial productivity, enhance human well-being, and contribute to a more sustainable future,” is at the core of our five focused fields. We are confident that these focused fields will continue to drive our organization’s performance for many years to come. This confidence is supported through a robust capital project backlog and pipeline which are highly focused in our key fields. As of March 31, 2024, our project backlog is approximately ¥170 billion (this includes projects approved and only those which exceed ¥500 million).

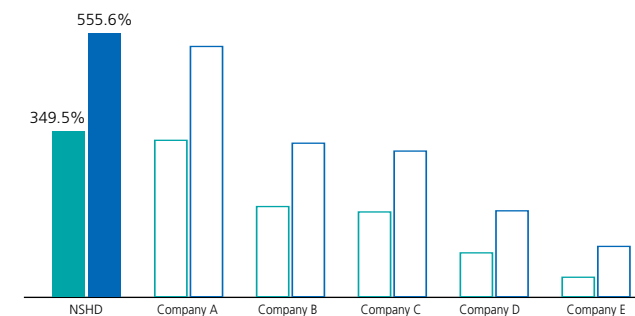
### Closing Remarks

Over the past several years, we increased our transparency and provided more details to the investment community. We will continue to work to enhance external communication which allows for better industry and peer comparisons. Additionally, we increased the number of investor meetings over the past year by about 40%. We will strive to maintain this heightened trend and to increase our attendance at institutionally sponsored investor events as they provide significant access to many investors in a short period.

Lastly, using USD as the currency basis for Total Shareholder Return (TSR), which includes both stock price fluctuations and dividends, NSHD has achieved the highest TSR among all publicly listed global and local Japanese industrial gas companies for the 10-year period from April 1, 2014, to March 31, 2024. This is a tremendous accomplishment for our global team and reflects the hard work, efforts, and progress that we have made over the past several years.

### TSR 10 Years

—Compared to Same-Industry Competitors in Japan and Overseas—



■ USD ■ JPY  
Source: Refinitiv EIKON

Note: Total Shareholder Return (TSR) = Investor’s rate of return for the 10-year period from April 1, 2014, to March 31, 2024; includes both stock price change and dividends earned. Note that the calculation includes reinvested dividends.

## NSHD at a Glance

Since its foundation in 1910, the Nippon Sanso Holdings Group has evolved alongside the growth of industry, expanding our operations to over 30 countries and regions worldwide. We will continue to leverage our accumulated technological expertise, extensive customer base, and deep reservoir of knowledge and experience. Every employee, as part of “The Gas Professionals,” is committed to driving the Group’s global growth.

### Our Journey as “The Gas Professionals”

1910

#### Founding of the Company and the Dawn of Japan’s Industrialization

The Company was founded during a transformative period in Japan’s history, as the nation began shifting its focus from light industry to the development of heavy and chemical industries.

1970s

#### Expansion of Business Fields through New Technology Applications

##### Development of Electronic Material Gases and Market Acquisitions

Recognizing the impending rise of the silicon semiconductor era from earlier integrated circuit manufacturing, the Company was the first to develop electronic material gases, establishing a strong foothold in the Japanese electronics market.

##### Commercialization of the World’s First Stainless Steel Vacuum-Insulated Bottle

Pioneering the use of vacuum and special brazing technologies, the Company was the first in the world to commercialize stainless steel vacuum-insulated bottles. Today, under the THERMOS brand, the Company continues to offer a product lineup that is beloved worldwide.

1980-

#### Aggressive Investment and Large-Scale M&As Overseas

As the Company solidified its position as a leading domestic manufacturer, it began expanding into overseas markets to fuel further growth. Starting with an investment in Singapore in the 1980s, the Company continued to extend its reach across Asia throughout the 1990s. In the 2000s, it established a strong presence in the United States through a series of strategic M&As.

In 2018, the Company further expanded its global footprint by acquiring the European industrial gases business from Praxair, Inc., a leading U.S. industrial gases supplier. This acquisition laid the foundation for the establishment of four global regions.

When pursuing M&As in international markets, the Company placed significant emphasis on respecting the trust that target companies had built locally. It also implemented a management structure that supports local operations.

2020-

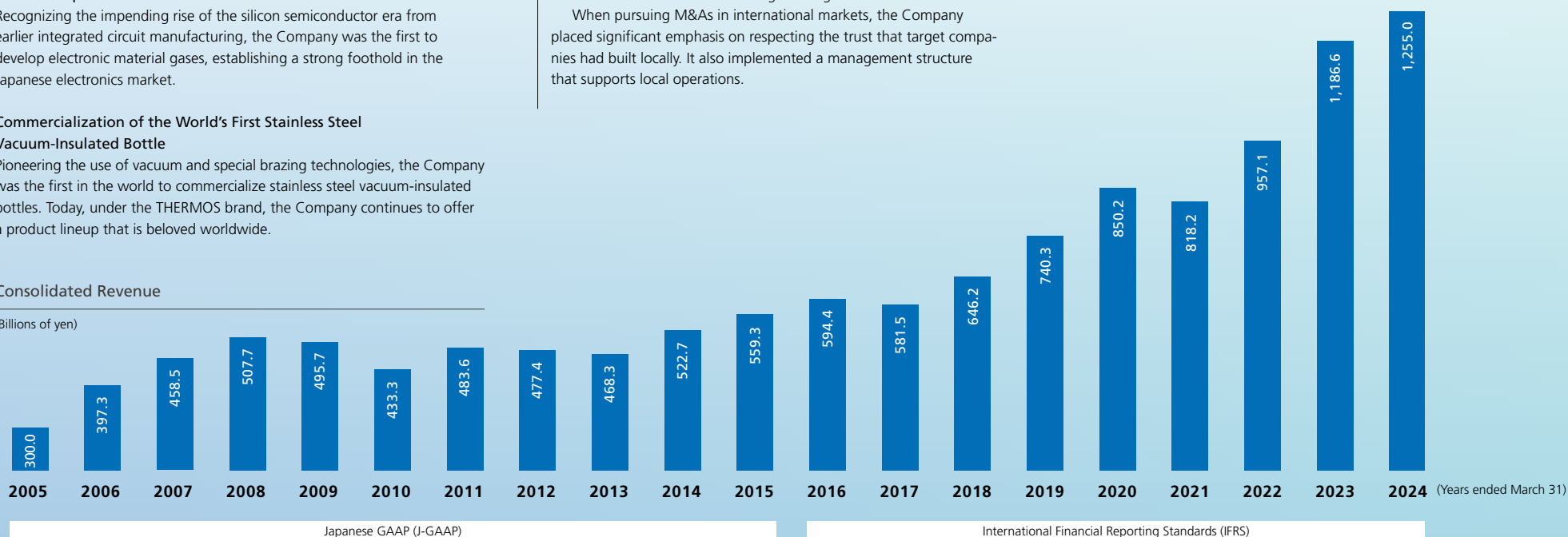
#### Establishment of the Global Region Business Operation Structure

The Company has significantly expanded its international footprint, now operating in over 30 countries and regions worldwide, with more than 50% of its revenue coming from overseas markets.

In October 2020, the Company transitioned to a holding company structure, positioning itself to become a globally competitive enterprise. This new structure drives business growth through four regions—Japan, the United States, Europe, and Asia and Oceania—alongside the Thermos business.

#### Consolidated Revenue

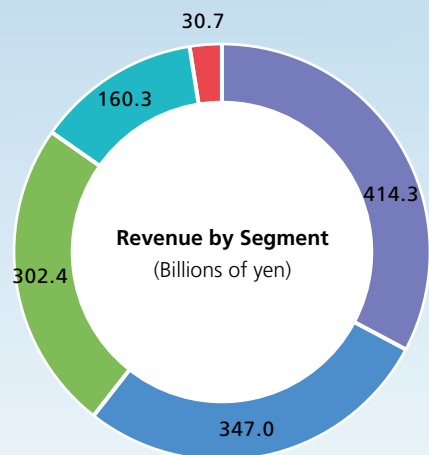
(Billions of yen)



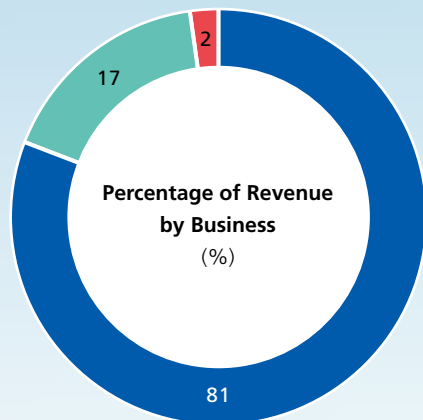


NSHD at a Glance

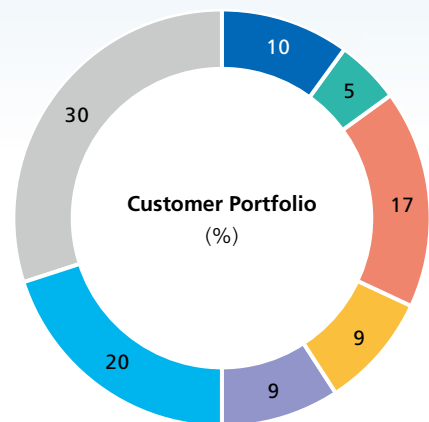
In the industrial gases business, the NSHD Group has established a structure centered around the four global regions—Japan, the United States, Europe, and Asia and Oceania—complemented by the Thermos business. This structure creates a global network for the entire Group. We aim to strengthen our competitiveness in each region by enhancing business operations across the Group in close coordination with our regional operating companies.



Japan United States Europe  
Asia and Oceania Thermos



Industrial gases Electronics Thermos



Steel and metals Automobiles and other transportation equipment  
Electronics Food and foodstuffs Healthcare  
Chemicals and energy Other

Number of Employees by Segment



Core Operating Profit  
¥ **165.9** billion

Overseas Revenue Ratio  
**65.5%**

Industrial Gases Global Market Share Ranking  
**4<sup>th</sup>**

Countries and Regions of Operation  
**32**

Consolidated Number of Employees  
**19,390\***

\* Aggregated from actual figures of the NSHD Group companies as of the end of each fiscal year. Due to differences in the reporting periods, part of the data includes figures as of the end of December.

## Nippon Sanso Holdings' Business Domains

Nippon Sanso Holdings operates across three business domains—the industrial gases business, the electronics business, and the Thermos business—conducting global operations within each domain through its five business segments: Japan, the United States, Europe, Asia and Oceania, and Thermos.

➔ For information about strategy by segment, please see [here](#).



## Industrial Gases Business

This is the Company's core business, accounting for 81% of revenue (FYE2024). It plays a critical role in industrial infrastructure by separating essential gases from the air—such as oxygen, nitrogen, and argon—that are vital to a wide range of industries, including steel, chemicals, and automotive manufacturing.

For large-scale plants that consume significant volumes of industrial gases, we employ a unique business model that involves manufacturing on-site. By building a plant near the customer's facility, we ensure a reliable supply of industrial gases via pipeline. Customers use oxygen to enhance combustion efficiency and nitrogen as a safety gas, with growing demand also emerging in life sciences, such as medicine.

We will leverage our close communication with customers—a hallmark of our on-site manufacturing model—to aggressively develop solution-based businesses and strengthen our global presence.

**What Are Industrial Gases? (in Japanese only):**

### Medical Business

The NSHD Group operates a medical business as a subsegment of its industrial gases division. We supply essential medical gases, including oxygen, nitrogen, and carbon dioxide (dry ice), to healthcare and related institutions. Additionally, we provide home oxygen therapy (HOT) equipment for patients requiring ongoing treatment at home. Our liquid nitrogen cryopreservation containers are also utilized by advanced research laboratories for the storage of induced pluripotent stem (iPS) cells and other biological materials.

Through the supply of gases and equipment, the Group is making significant contributions to various medical fields.

### TOPIC

#### Contribution to Human Health

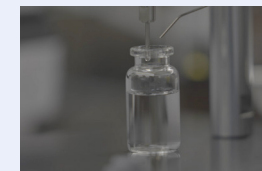
In the medical field, the NSHD Group supplies essential medical gases to hospitals and home healthcare services, as well as liquid nitrogen cryopreservation containers for cell storage and stable oxygen isotopes, which are used as raw materials for reagents in PET diagnostic testing. In Japan, the Group manufactures and supplies Water-<sup>18</sup>O, a stable isotope used in PET diagnostic reagents for oncology and dementia. This product has seen steady growth, driven by increasing public awareness of dementia treatment, and we hold a market share of 40% or more, making us the global leader in sales.

In Europe, we are enhancing the technology used in medical equipment for inhaled nitric oxide therapy in collaboration with Noxtec Development SL, following our acquisition of a majority stake in the company in 2022. Nitric oxide is a potent vasodilator that rapidly lowers blood pressure and shortens therapeutic response times, and the market for inhaled nitric oxide therapy has been expanding rapidly in recent years.

Looking ahead, we aim to further contribute to the healthcare sector by strengthening our medical-related initiatives.

For the story of our development of Water-<sup>18</sup>O, please see [here](#).

**The Development of Oxygen-18:**



Manufacturing Water-<sup>18</sup>O



Medical equipment used for inhaled nitric oxide therapy

## Nippon Sanso Holdings' Business Domains



### Electronics Business

We supply electronic material gases essential for the semiconductor manufacturing process, including etching and film formation used to create circuits on silicon wafers. Additionally, we provide technologies related to quality and security, encompassing supply equipment and handling. This business serves as a key growth engine, contributing 17% of our total revenue.

To meet the needs of semiconductor manufacturers with production sites around the world, we have established manufacturing facilities in Japan, the United States, South Korea, China, Europe, and Singapore. We offer comprehensive solutions, from plant start-up to production and after-sales services. This integrated approach, known as Total Electronics, holds a strategic position within our business, and we are committed to strengthening our initiatives in this area.

➔ Please refer to Feature: Total Electronics

#### TOPIC

#### Total Electronics: A Competitive Advantage in Securing Major Projects in Japan

Rapidus Corporation has selected Taiyo Nippon Sanso Corporation to install gas-related equipment for the pilot line of a new plant in Chitose City, Hokkaido Prefecture, aimed at mass producing next-generation semiconductors.

Our success in securing this project is largely due to our strong reputation among customers, who value our comprehensive capabilities. We are able to meet a wide range of customer needs, including equipment supply, construction, engineering, and on-site services. Our ability to provide integrated solutions that leverage the Group's accumulated technologies, knowledge, and experience has earned us significant approval from our clients.

➔ Please refer to Case Study: Rapidus Project



Total Gas Centers support customers with total solutions

### Thermos Business



Thermos, the NSHD Group's only B2C business, manufactures and sells THERMOS brand vacuum-insulated bottles.

The company's predecessor, Nippon Sanso Ltd., developed the world's first stainless steel vacuum-insulated bottle, inspired by tanker lorries used for transporting industrial gases. In 1989, we acquired the Thermos Company, a well-established brand known for its glass vacuum-insulated bottles originating in Germany, along with its global sales network. We then launched THERMOS as a brand for stainless steel vacuum-insulated bottles, focusing on creating products that prioritize functionality and usability. Our personal bottles, sports bottles with high-performance heat and cold retention, and the Shuttle Chef® series of vacuum-insulated cooking pots have gained widespread popularity in more than 120 countries and regions worldwide.

#### TOPIC

#### Thermos Celebrates 120 Years as a Leading Brand

In 2024, Thermos celebrated its 120th anniversary as a global leader in vacuum-insulated bottles, dedicated to introducing new lifestyles that are not only agreeable to people and society but also environmentally friendly. To commemorate this milestone, we have introduced a new brand purpose, "Creating lifestyles with reliable quality and rich ideas," along with a tagline, "Making your next comfortable moment," to propel the brand into the future.

Our brand purpose reflects the exceptional quality of Thermos products and services and our commitment to enhancing people's lives through innovative ideas that make daily life more comfortable. The tagline embodies Thermos' unwavering determination to continue its journey of innovation and excellence.

Thermos 120th anniversary website (in Japanese only):

➔ Please refer to Why Thermos Is Part of the Nippon Sanso Holdings Group (from Thermos' Perspective).



Thermos 120th anniversary logo

## Medium-Term Management Plan **NS Vision 2026**

Considering the outlook for the external environment and the progress of our strategies to date, we announced the four-year medium-term management plan, NS Vision 2026, in May 2022, which extends through FYE2026.

Under our operational structure of four global regions—Japan, the United States, Europe, and Asia and Oceania—and Thermos, the plan outlines five key strategies aimed at enhancing the Group’s comprehensive capabilities and driving further growth. Our ultimate goal is to contribute to the creation of a brighter and more comfortable future for people, society, and the planet.



Numerical Targets (KPIs)	
<b>Financial KPIs (FYE2026)</b>	
<b>Revenue</b> ¥975 billion–¥1,000 billion*	<b>Adjusted Net D/E Ratio</b> ≤ 0.7 times
<b>Core Operating Profit</b> ¥125 billion–¥135 billion*	<b>ROCE after Tax</b> ≥ 6%
<b>EBITDA Margin</b> Group: ≥ 24%	* Due to uncertainty in the global economy, revenue and core operating profit are shown in a range.
Japan, the United States, Europe, Asia and Oceania, Thermos: ≥ 17–33%	<b>MTP Currency Exchange Assumption</b> USD: ¥115    EUR: ¥125
<b>Non-Financial KPIs</b>	
<b>Environment</b>	
<b>Reduction rate of GHG emissions (Base year: FYE2019)</b> ≥18% (FYE2026)    ≥32% (FYE2031)	
GHG reduced emissions through environmental product offer Lower customer GHG emissions through environmental product offerings and applications > NSHD group GHG emissions (FYE2026)	
<b>Safety Management</b>	<b>Human Resources</b>
<b>Lost time injury rate</b> ≤ 1.6 (FYE2026)	<b>Rate of female employees</b> ≥ 22% (FYE2026) ≥25% (FYE2031)
<b>Compliance</b>	<b>Rate of female management posts</b>
<b>Rate of receiving compliance training</b> 100% (FYE2026)	≥ 18% (FYE2026) ≥22% (FYE2031)

## Medium-Term Management Plan NS Vision 2026

### Medium-Term Management Plan Focused Fields and KPI Achievement Status

In FYE2024, we achieved a significant improvement in profitability, driven by the successful and continuous application of value management. Core operating profit surpassed the target ahead of schedule. Although the yen depreciated more than expected during this period, both revenue and core operating profit exceeded targets even when adjusting for the exchange rate.

Now, as we reach the end of the second year of the medium-term management plan, other financial KPIs are also showing steady progress. However, we aim to see return on capital employed after tax (ROCE after tax) exceed the target, with the goal of reaching a level comparable to that of other major global competitors. To achieve this, we will continue to enhance profitability and business efficiency.

Starting in FYE2025, we will strive to achieve profitability growth that outpaces local GDP in each region, aiming for even higher levels of growth.

➔ For information about financial KPIs, please refer to CFO Message .

#### Status of Progress on Financial KPIs

	FYE2023 (Results)	FYE2024 (Results)	FYE2026 (Targets)
Revenue	¥1,186.6 billion	<b>¥1,225.0 billion</b>	¥975 billion–¥1,000 billion
Core operating profit	¥123.1 billion	<b>¥165.9 billion</b>	¥125 billion–¥135 billion
EBITDA margin	19.3%	22.2%	≥ 24%
Adjusted net D/E ratio	0.81 times	0.74 times	≤ 0.7 times
ROCE after tax	5.4%	<b>6.7%</b>	≥ 6%

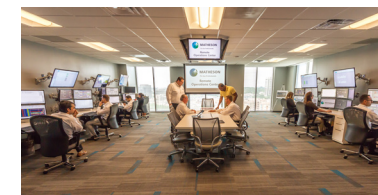
### Aiming for Growth in FYE2025

#### Focus on Growth Drivers

Among the five focused fields outlined in the plan, the electronics business stands out as a key growth opportunity. We are expanding our activities for semiconductor customers in every region by offering customized packages that combine our gas supply capabilities with equipment, construction, and engineering services, all centered on our electronics-related technologies and expertise.

When examining the share of revenue from the electronics business by region, there is significant potential for growth—particularly in Japan, where it accounts for less than 30% of revenue, and in the United States and Europe, where it represents just 10%. Outside of Japan, the product mix is unbalanced. To address this, we will first identify the areas that need strengthening, then anticipate customers' capital investment needs and increases in capacity utilization. This approach will allow us to promote the Total Electronics strategy across the entire Group and grow in line with demand.

Additionally, across all business areas, we will drive reforms through digital transformation (DX) and enhance productivity through Operational Excellence, ultimately maximizing the value we deliver to our customers.



Remote operations utilizing DX

#### Progress on Non-Financial KPIs

We are also making significant strides in our non-financial targets, particularly in the area of Sustainability Management within the five focused fields. In April 2023, our MSCI rating was upgraded from BB to BBB, and our FTSE score also saw an increase. As a result, we were selected for inclusion in the FTSE4Good Index Series and FTSE Blossom Japan Index, which are ESG indexes. We will continue to confidently advance our Sustainability Management efforts.

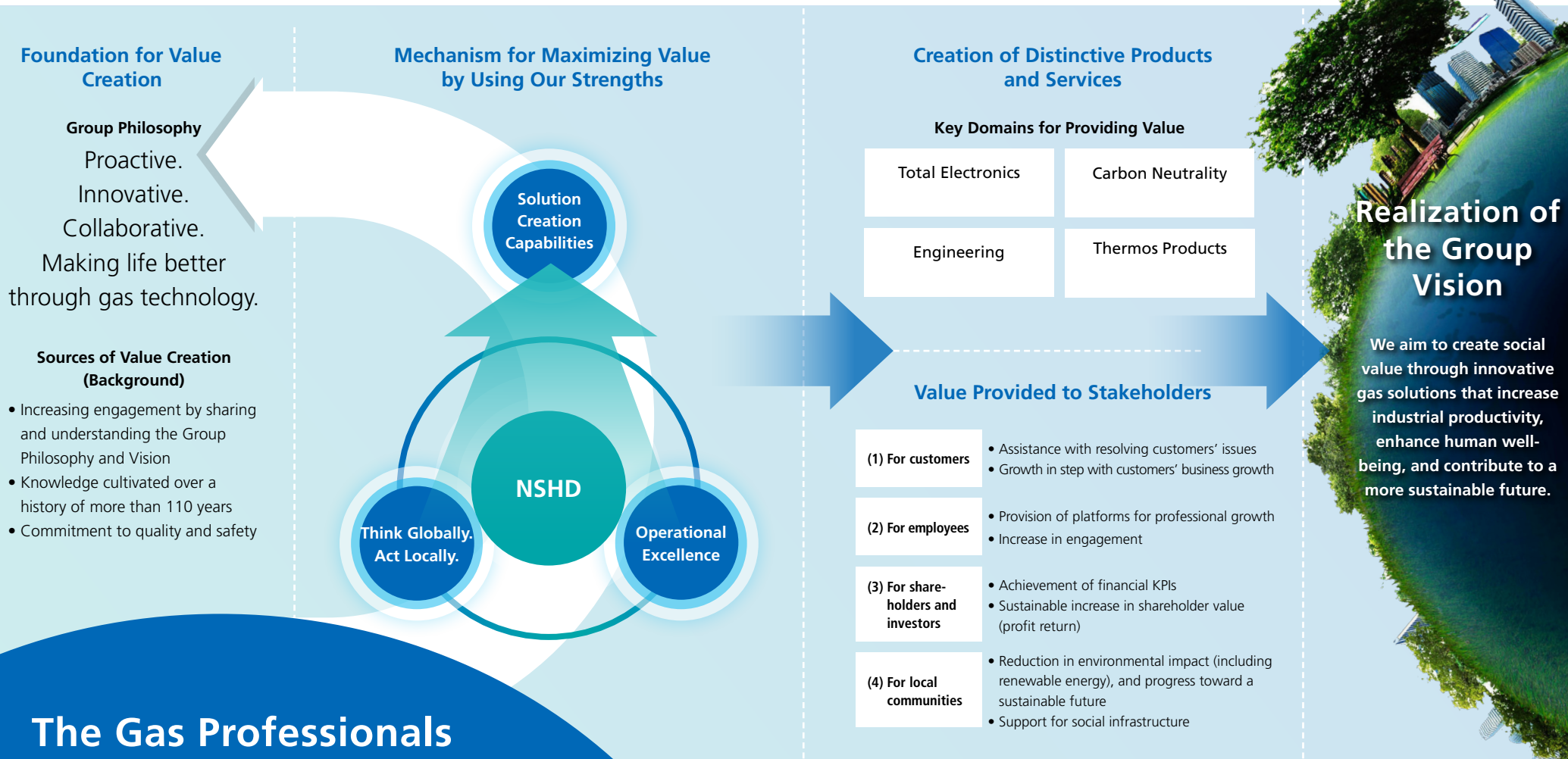
➔ For information about the achievement status of non-financial KPIs, please refer to .

# Leveraging NSHD's Strengths

This section introduces Nippon Sanso Holdings' value creation story through its strengths, and an example of how these strengths are leveraged in the case of Total Electronics.

# Value Creation Process

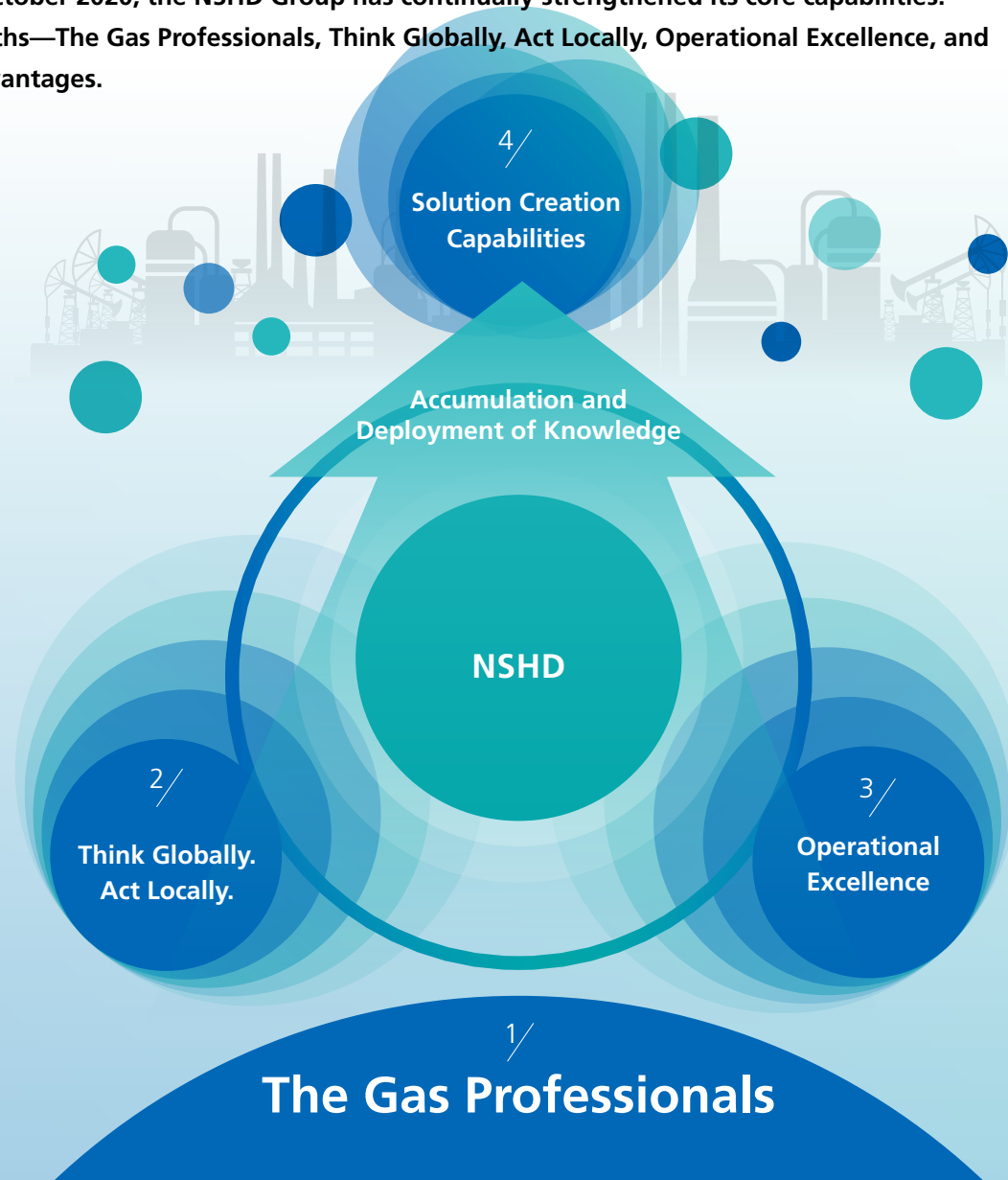
Nippon Sanso Holdings has expanded its business in tandem with the growth of society and its stakeholders. Building on its core values and business activities, the Company will continue to generate profits through a business cycle centered on NSHD’s distinctive strengths, while simultaneously delivering increasing value to its stakeholders.



## Strengths of Nippon Sanso Holdings

Since its foundation and through its transition to a holding company in October 2020, the NSHD Group has continually strengthened its core capabilities. We are committed to developing a cycle that leverages our unique strengths—The Gas Professionals, Think Globally, Act Locally, Operational Excellence, and Solution Creation Capabilities—as we aim to enhance our competitive advantages.

<p><b>1</b> <b>The Gas Professionals</b></p> <p>Our team, across the four global regions, is highly attuned to customer needs and possesses the application expertise and technological capabilities necessary to address customer challenges.</p> <p>They are professionals operating worldwide, harnessing their skills under our shared Group Philosophy and Vision to create new business opportunities.</p>	<p><b>2</b> <b>Think Globally. Act Locally.</b></p> <p>Effective post-merger management is crucial for the global growth of the industrial gases business. NSHD has expanded internationally by respecting the initiatives of its operating companies, which maintain strong connections to their local communities.</p> <p>NSHD plays a central role in the four global regions for industrial gases and the Thermos business, focusing on accelerating decision-making and clearly defining responsibilities for business execution.</p>
<p><b>3</b> <b>Operational Excellence</b></p> <p>In any business, controlling costs while delivering high-quality products at fair prices is crucial. To achieve this, NSHD has established a system for identifying best practices developed across all regions and sharing them globally. By pursuing Operational Excellence, including technology throughout the Company—management divisions and Thermos—we aim to maximize our collective organizational knowledge.</p>	<p><b>4</b> <b>Solution Creation Capabilities</b></p> <p>In the industrial gases field, product differentiation can be challenging. However, NSHD has created unique value by leveraging the Group’s comprehensive capabilities to provide flexible, customized solutions and advanced technological expertise tailored to meet customers’ needs.</p> <p>We will continue to develop competitive solutions and technological innovations, including those of Thermos, by leveraging our strengths in all business activities moving forward.</p>





Feature: **Total Electronics**

# Nippon Sanso Holdings' Progress and Achievements in the Field of Electronics

**NSHD has established a comprehensive support system for customers, encompassing the supply of gases for semiconductor manufacturing, as well as facilities, equipment, peripheral systems, and on-site services. The Group will integrate its resources to deliver these services on a global scale.**

1970s

**Development of the Semiconductor-Related Gases Business**

Following the initial commercialization of silicon semiconductors in the United States, Japan quickly established mass production technologies becoming a global leader in the field. The manufacturing process for silicon semiconductors requires large quantities of gas. Recognizing this need early on, the Company was among the first to initiate R&D on electronic material gases and began supply operations in the 1970s. Additionally, it launched a gas supply equipment business to support this growing industry.

1983-

**Acquired Matheson Gas Products, Inc. in the United States**

The Company had already established a robust gas supply structure for the electronics sector in Japan.

In 1983, the Group further strengthened its position by acquiring Matheson Gas Products, Inc., a U.S. company with a strong track record as a specialty gas manufacturer. This acquisition enabled the Group to expand its full-scale services in the electronics field, both in Japan and internationally, including the establishment of local subsidiaries in Asia to manage electronic material gases.

2017-

**Start of Total Electronics**

Essential elements for manufacturing high-quality semiconductors include electronic material gases, gas cabinets that ensure a safe and high-quality gas supply, exhaust gas processing systems, piping construction, and safety monitoring systems. Additionally, the supply of bulk gases like nitrogen and argon, along with various on-site services, is crucial.

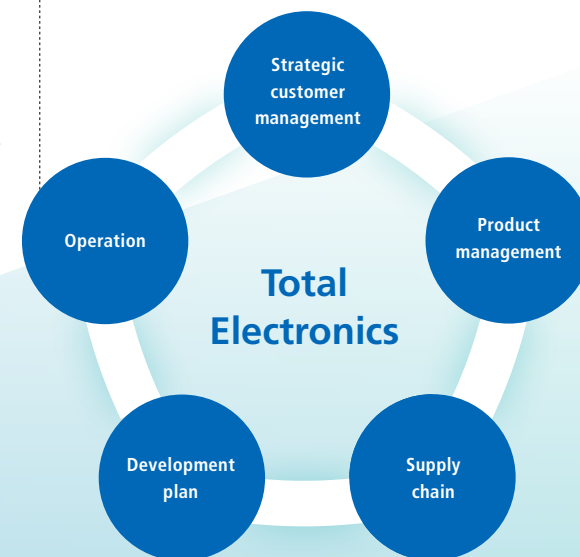
To consolidate Group resources, optimize supply chains, and deliver safe, high-quality solutions to customers expanding globally, the Company launched the Total Electronics initiative. With the integration of Nippon Gases in Europe, the Group further accelerated its global business expansion.

## Present Day

**Providing Total Solutions as a Unified Group**

The electronics industry is advancing rapidly, with constant demand for new technologies. Cutting-edge semiconductor manufacturing requires increasingly larger amounts of energy and materials, intensifying the need for technologies that minimize environmental impact. As a key solution provider within the electronics industry, the Company is committed to promoting technology development across the Group and offering total solutions that integrate safety, quality, and environmental sustainability.

Accumulation and creation of strengths



Total Electronics system

Feature: Total Electronics

# Nippon Sanso Holdings' Total Electronics

Through Total Electronics, we provide total solutions to meet the diverse and unique needs of our customers in the electronics industry, including high-quality materials, bulk gases, and equipment and on-site services.

## What Does "Total" Refer To?

For manufacturing high-quality semiconductors, it is essential not only to have electronic material gases but also to establish a robust supply system and piping infrastructure, including gas cabinets that ensure a reliable, high-quality gas supply. Additionally, facilities and equipment such as safety monitoring systems are crucial. Other necessary components include bulk gas supply systems for nitrogen and argon, along with various on-site services. The NSHD Group is equipped to meet all these needs, providing customers with a comprehensive range of products and services.

Given the flammability or toxicity of most electronic material gases, even the slightest leakage must be prevented. We have proactively leveraged digital technology to enhance our safety measures, contributing to safer semiconductor manufacturing.

### Total Electronics Promotion Structure (Virtual Organization)

#### 01 Strategic customer management

- Focus on strategic customers likely to experience rapid growth
- Promotion of unified Group strategy

#### 02 Product management

- Enhancement of competitive advantage through more robust quality and cost reduction
- Partnership with raw materials manufacturers

#### 03 Supply chain

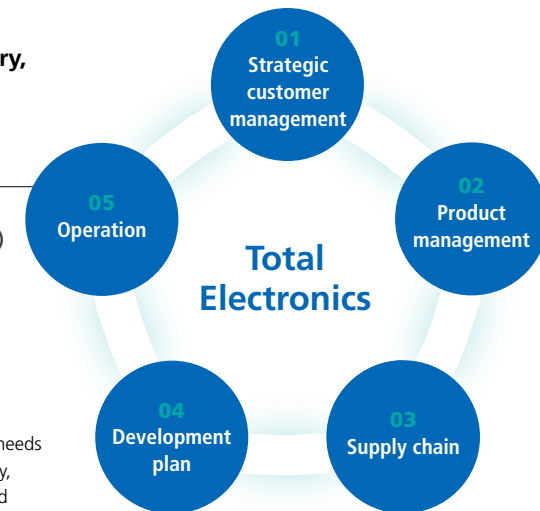
- Optimization of global product procurement

#### 04 Development plan

- Development of next-generation products (gases and equipment)
- Planning of strategic M&As

#### 05 Operation

- Capital expenditure that captures market needs
- Strengthening management of productivity, Environment, Health, and Safety (EHS), and other aspects
- Optimization of gas cylinder logistics



We take into account the regional characteristics of our globally expanding customers and provide them with consistent services and solutions. To support this, we have established a Groupwide Total Electronics promotion structure.

## Total Electronics All over the World

### Europe

We supply a wide range of gases to manufacturers of semiconductors for automotive and communications applications, as well as to solar cell manufacturers. As Europe intensifies its efforts to attract overseas device manufacturers, we plan to expand the production capacity of our electronic material gas plants to meet the growing demand.

### Southeast Asia and India

We supply a full range of gases to front-end processing plants in Singapore and Malaysia. As both countries strive to attract advanced packaging and front-end processing facilities, the Group is leveraging its expertise to make tailored proposals.

### East Asia (South Korea, Taiwan, and China)

We offer services such as gas management to major memory manufacturers and foundries, specializing in the production of semiconductor integrated circuits.

### Japan

As investments in advanced logic, memory, and CMOS image sensors (CIS) increase, we are prepared to offer these customers comprehensive solutions that we have cultivated through long years of experience.

### United States

We supply gases to manufacturers of various devices, including advanced logic devices, and are also expanding our business in semiconductor manufacturing equipment. As new plants are constructed under the CHIPS and Science Act, we will continue to strengthen our electronics business.

Feature: Total Electronics

# Case Study: Rapidus Project

**Nippon Sanso Holdings will identify new business opportunities by leveraging Total Electronics to provide solutions tailored to diverse customer needs.**

**In this case study, we highlight the Rapidus project, for which Taiyo Nippon Sanso Corporation (TNSC), NSHD's Japanese operating company, received an order.**

## Overview of the Rapidus Project

The Rapidus project is a government-backed national initiative aimed at establishing an advanced 2 nm-process semiconductor plant in Chitose City, Hokkaido Prefecture, to nationalize the production of cutting-edge logic semiconductors. TNSC proposed comprehensive solutions for all gas-related products and services required for semiconductor manufacturing, from upstream to downstream, and was selected as the supplier for the construction of a pilot line for the project.



Construction of the Innovative Integration for Manufacturing (IIM) No. 1 Plant has been planned (Conceptual rendering)

### Key Points Leading to the Order

# 01

TNSC has a long history of supporting customers dating back to the early days of semiconductors in the 1970s. The company manufactures and supplies bulk gases such as oxygen and nitrogen—its original core operations—along with specialty materials gases essential for semiconductor production. TNSC has also played a crucial role in addressing customer needs related to the design and construction of cylinder cabinets and supply piping for gas consumption. Additionally, the company has been proactive in developing new concept products that address the growing demand for labor-saving solutions.

Our analysis suggests that TNSC's successful acquisition of the Rapidus project order was due to its strong reputation as a solutions provider, its highly refined product capabilities that consistently meet stringent customer quality requirements, its robust procurement and supply network of national and international suppliers, and its proven expertise in design and construction projects.



Semiconductor material gas supply equipment (Example)

### Challenges and Initiatives as a Gas Supplier

# 02

While semiconductor plants are spread across Japan, from Tohoku to Kyushu, there are few in Hokkaido, leading to limited infrastructure support for semiconductor production in the region. To address this, we have proposed a comprehensive supply system for the high-pressure gases required by the Rapidus project. This includes on-site production of oxygen and nitrogen gases at the plant, as well as plans to supply other gases from Honshu using large-scale ISO containers and similar methods. Preparations for these initiatives are currently underway.

Another significant challenge is securing skilled personnel for on-site high-pressure gas operations. As "The Gas Professionals," TNSC has an extensive track record in managing gas operations at semiconductor plants, which has raised customer expectations. To meet these expectations, we are building a robust organization by drawing on experienced and knowledgeable human resources from liquefied gas plants and Total Gas Centers across Japan.



A Total Gas Center (Iwate Kurozawajiri Gas Center)

### Key Points Going Forward

# 03

Our most critical challenge is to successfully prepare for the start-up of the pilot line by April 2025.

TNSC has consistently delivered high quality and short lead times in large-scale semiconductor construction projects in recent years. We will leverage all our accumulated technologies and experience to ensure this project is completed within the customer's desired time frame. Additionally, to support the customer's vision of coexistence with nature, we will make phased investments in a high-efficiency gas manufacturing plant, aligned with the production scale expansion schedule, to promote energy-efficient gas manufacturing.



**Todd Givens**  
Senior General Manager, Total Electronics,  
Group Corporate Planning  
Nippon Sanso Holdings Corporation



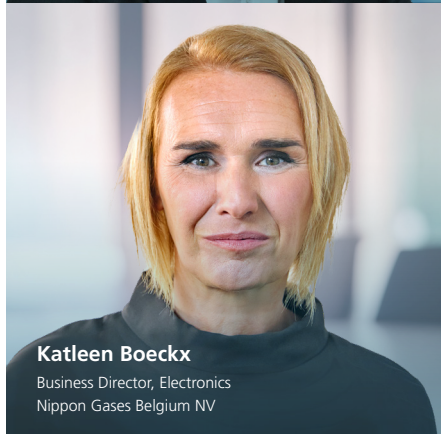
**Hitoshi Maida**  
General Manager, Total Electronics,  
Group Corporate Planning  
Nippon Sanso Holdings Corporation



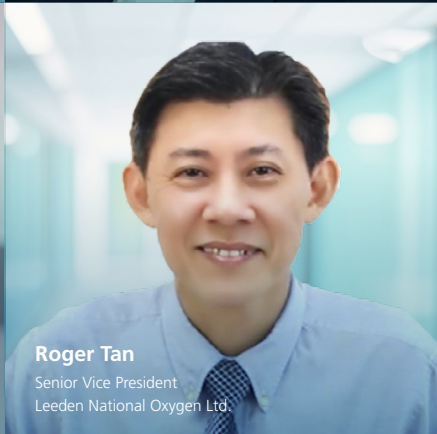
**Hironobu Okura**  
General Manager, Electronics Gases Sales Dept.,  
Electronics Gases Div. Electronics Unit  
Taiyo Nippon Sanso Corporation



**Steven L. Nicholson**  
Director of Sales, Electronics Strategic Accounts  
Matheson Tri-Gas, Inc.



**Katleen Boeckx**  
Business Director, Electronics  
Nippon Gases Belgium NV



**Roger Tan**  
Senior Vice President  
Leeden National Oxygen Ltd.



**Allen Zhen**  
Director  
Taiyo Nippon Sanso Trading (Shanghai) Co., Ltd.

### Roundtable Meeting

## A New Phase for Total Electronics A Perfect Global Scenario

Total Electronics is currently the most exciting and active field among the strengths of Nippon Sanso Holdings. To explore the best way forward for NSHD's Total Electronics, we will examine what kind of relationships we have with customers in the electronics industry and what kind of challenges we are taking on in each region, as well as how to coordinate the Group globally to become the world leader in this field of industrial gases.

### ■ Riding the Wave of European Investment in Electronics

**Todd Givens** ■ Today, I would like us to share our stories as members of the same Group, and have a discussion about how we can cooperate with one another through this meeting. So, let's get started. First, I would like to ask Mr. Okura from Taiyo Nippon Sanso to talk about the current situation surrounding electronics in Japan.

**Hironobu Okura** ■ In Japan, the electronics market has been in something of a slump since around 2022, and demand for semiconductor material gases remains low. However, demand for memory is gradually recovering in other Asian countries, such as Taiwan, China, and South Korea, and we are starting to sense an upturn in Japan as well. We are expecting demand to recover gradually from now.

On the other hand, bulk gas revenue is increasing. While electricity prices have settled slightly, they remain at a high level, and Taiyo Nippon Sanso has worked hard to revise prices in tandem with electricity prices. The results of these efforts have been improved revenue.

**Todd** ■ Roger, how about the situation in Singapore? I imagine it is an extremely unique location geographically.

**Roger Tan** ■ There was some tendency to curb investment among customers in Singapore also, but as with Japan, we are beginning to see a move toward recovery. In the next quarter, we expect to see business results improve among our existing customers.

On the other hand, the semiconductor industry has had a temporary slowdown in manufacturing activity, and price competition is intensifying. We are also seeing the start of local production of specialty gases by our competitors, which is a slight cause for concern.

**Todd** ■ What support do you need from Nippon Sanso Holdings to strengthen the Singapore business going forward?

**Roger** ■ I think that support with procurement is really important to us. We are currently receiving extremely effective support in semiconductor material gases from Taiyo Nippon Sanso Trading (Shanghai). Thank you, Allen.

**Todd** ■ We will need to look at this kind of close cooperation as well as strengthening support from Total Electronics.

How about the Total Gas Center\*1?

**Roger** ■ Naturally, we engage proactively with customers and respond to their requests for quotation. We also require a lot of support from Nippon Sanso Holdings with regard to developing teams to take on projects such as Total Gas Centers. These kinds of projects involve much more than simply delivering gases; they also entail various equipment such as gas purifier for removing impurities, cylinder cabinets for safe supply, and equipment for safely processing exhaust gases. It is very reassuring to know that Nippon Sanso Holdings has all of these technologies and expertise.

**Todd** ■ Do you feel as though you have won the trust of customers in Singapore with regard to supplying bulk gases and the relevant equipment?

**Roger** ■ Recently, I have really felt that we are getting more recognition from customers. We are moving forward with preparations that will enable us to do business with almost all the semiconductor manufacturers in Singapore.

**Todd** ■ Thank you for the summary. Now, let's hear from Katleen at Nippon Gases Belgium about the situation in Europe.

**Katleen Boeckx** ■ In Europe, you won't find any memory or a lot of logic processor manufacturing going on. But in 2022, the European version of the CHIPS Act\*\*2 was enacted, and this has provided some impetus for us. The EU has a clear ambition to double its market share in global semiconductor manufacturing by 2030. This has brought a wave of new investments in Europe, and I have heard there are now 15 announcements of new fabs being constructed.

I think because we have grown so much and really reestablished our image in the market, that we are really being taken seriously. I see it as a result of the effort we have made to increase the types of semiconductor material gases that we can supply, and to improve their quality.

And for our next step, we are aiming to be a total gas solution provider that is able to provide equipment and services. We are really going to need support from Total Electronics and Nippon Sanso Holdings.

**Todd** ■ We at Total Electronics are happy to support you.

**Katleen** ■ That is fantastic. We are currently working with a major semiconductor manufacturing equipment maker who has stated they are interested in some of the equipment made by Taiyo Nippon Sanso and Matheson Tri-Gas.

**Todd** ■ Nippon Gases Euro-Holding's electronics business has a growing presence in Europe. We need to properly communicate that Total Electronics is working together as one with everyone.

Let's move on now and talk about the United States. Steven, how are things going?

**Steven L. Nicholson** ■ Electronics has taken a favorable turn in the United States, and we expect to see a steady increase in new semiconductor fabs. Over the past year or so, semiconductor manufacturers have been making an effort to reduce costs and develop new

suppliers. If fields such as total gas and chemical management\*3 expand going forward, then it will open up more opportunities to promote our products to customers.

For Japanese-made gas purifier and air separation units, we have made improvements in dealing with challenges by using a customer-centric, or "market-in," approach. By appealing to our key accounts in our communications with them, we have made preparations for more active engagement.

**Todd** ■ Nippon Sanso Holdings is also taking steps to strengthen its air separation unit offerings, particularly those with high usability, so to speak. This is a major topic for the management team right now. We have an excellent reputation among customers for electronic material gases and service, so their expectation level regarding air separation units is really high. So, we have to make sure that we are fully prepared.

**Steven** ■ That's great. I would like us to proactively approach our electronics customers and tell them how we have changed what we



are doing. If we could do that, then our approach to communication with customers might also change.

**Todd** ■ I agree. Currently, we have a number of wins, and we are starting to expand on that within the Group.

\*1 See pages 18 and 26.

\*2 A U.S. law supporting investment in semiconductors, its official name is the "CHIPS and Science Act." The Act was passed in 2022 in the United States with the goal of maintaining supply chains in preparation for geopolitical risks or semiconductor shortages.

\*3 A business model for providing a total package from gases and gas-related equipment to services such as inspection, maintenance, safety management and education, product information, and technology information.

## ■ Need to Strengthen Relationships with Customers in R&D

**Steven** ■ Nippon Sanso Holdings has these large teams involved in this business and there could probably be more collaboration to support it. Now, we have opportunities to expand our total gas and chemical management-related business that we haven't really had in the past. That's encouraging, and customers are starting to realize that we have this in our portfolio.

I also think we should not forget to strengthen our relationships with semiconductor manufacturing equipment makers and increase awareness of our work with them. We are focused on next-generation technologies. By cooperating more with semiconductor manufacturing equipment makers and being aware of what is happening, we will be able to focus our efforts on next-generation products in the right place.

**Todd** ■ Most semiconductor manufacturing equipment makers are actually based in the United States. What can we do to support them?

**Steven** ■ I think we need to focus more on connecting our technical personnel with our customers' technical personnel. We can be on the forefront of helping them find solutions. We have capabilities and I think that we need to leverage them more than we are.

**Todd** ■ So, in addition to technical staff, we also need to be leveraging our R&D staff?

**Steven** ■ Exactly.

**Todd** ■ Our R&D Division is asking us, "What should we work on?" We need to think really seriously about that. So, I'm extremely happy to have this feedback, it's quite helpful.

**Steven** ■ Even if the customer is in the United States, I would like to have the R&D teams of both Nippon Sanso Holdings and Matheson Tri-Gas participate and have more regular high-level discussions with those kinds of knowledgeable people.

**Todd** ■ Yes, because we need people to sit in front of the customer, too, right? Unless we get information from the customers, we don't have a clear idea of what we can do for them. So, this is extremely positive feedback.

**Steven** ■ Thank you for that. In parallel, it is essential to know what is happening in other regions. Information security is a priority, but we need to have more regular communication than we are currently having. I am sure that will ultimately lead to benefits for our customers.

**Todd** ■ Thank you for waiting, Allen. Can you tell us about what is currently going on in China? I think the biggest question is, "What can you do to help the affiliates?"

**Allen Zhen** ■ Inside China, there are both global and local customers. Both of these have a lot of trust in our products and services. Our strong reputation is behind our successful business expansion in China.

We are also working on procuring products domestically. We have built close relationships with Chinese manufacturers, and are constantly checking that their products meet our requirements and our customers' requirements.

In comparison with our competitors, we are much stronger in the semiconductor business, and have better supply chains. Customers trust us because we are honest, and we are able to speak very openly with them. However, the Chinese market is extremely competitive, and we will need to gain even greater trust to maintain our current advantage and grow our business in the future.

Taiyo Nippon Sanso Trading (Shanghai) also aims to support Group companies in countries around the world, and contribute to the growth of the electronics business.

## ■ Digital Transformation in Progress

**Todd** ■ I would like to add something to that. In all of Taiyo Nippon Sanso Trading (Shanghai)'s business activities, from supplying gas to installing air separation units, we do extremely high-quality work for our customers. I would like everyone in the Group to know that we have these capabilities, because for Nippon Sanso Holdings, it's a big part of our business. We want to make sure that people know we have a lot of excellent resources.

Mr. Okura, I would like to hear any comment you may have to conclude this excellent discussion.

**Okura** ■ Thank you. As we have been saying, if we take an overall view of Taiyo Nippon Sanso's business from the perspective of a total gas and chemical management or total gas solution provider, I think it is the only company in Japan that can supply gas-related equipment for applications from upstream to downstream. This capability has been recognized in our selection as the supplier for an advanced-process semiconductor plant that is being built in Hokkaido as a national policy. So far, we have installed an air separation unit there, and are currently setting up a gas supply system.

We have also started an independent project in the electronics unit for digital transformation. Our aim is to revise our current structure, which allocates resources by function, such as semiconductor material gases manufacturing, logistics, engineering, semiconductor equipment manufacturing, and sales divisions, to create a system that can allocate resources appropriately when and where they are needed. This initiative will enable us to respond smartly to customers' requests while drafting and executing extremely efficient plans for raw material procurement, production, and shipping.

This discussion has impressed on me again the importance of thoroughly sharing Taiyo Nippon Sanso's track record as we expand our business in the semiconductor industry, which has the most advanced global supply chains.

**Todd** ■ Thank you for your valuable input. I would like to invite Mr. Maida from Nippon Sanso Holdings if he has anything to add.

**Hitoshi Maida** ■ As you have all noted, it is extremely important to share information. Listening to feedback from our Group companies enables us to take on various promising initiatives. I would like to see Group companies benefiting from other companies' technologies.

With regard to providing total gas solutions, we still do not have uniform capabilities in every region, so it is not something that can be set up in each region overnight. As such, I think we must steadily continue without Total Electronics initiatives. We may change gradually as we go forward, but I would like to develop our business while tackling a lot of challenges.

There is something that I would like to ask all of you. The theme of this year's integrated report is Nippon Sanso Holdings' strengths. So, amid the increasingly competitive environment in each of your respective regions, I would like to hear where you consider the Group's enduring competitive advantage to lie.

**Roger** ■ I am extremely grateful that we now have many more opportunities for discussion and communication between Group companies than in the past. We are also receiving a lot of support. I think our strength is in coming together as the Total Electronics team and responding as a Group. And another strength is quality, as we provide extremely high-quality products consistently.

**Maida** ■ We certainly hold our own against anyone when it comes to quality. Whichever region we supply from, we are always able to obtain extremely high quality levels across the board, while also ensuring safety of course.

**Katleen** ■ Looking at the Group Philosophy of "Proactive. Innovative. Collaborative.", I think we are putting this into practice. It's not just words, we at Nippon Sanso Holdings are genuinely doing it. We invest properly in R&D, and we cooperate with our customers. There may be cases where we don't make a profit initially, but over the long term, I am certain that we will achieve excellent results.

**Maida** ■ Going beyond words and putting them into action is really doing business according to our principles, isn't it? I think it shows that our Group companies are all moving in the same direction toward our goals.

**Allen** ■ I also have a real sense that we are doing this as "The Gas Professionals." Rather than focusing on being No. 1, it is important for us to support customers properly and conduct business with humility.

**Okura** ■ In Japan, we started supplying gases for semiconductor manufacturing in the 1970s and 1980s. I think we have the longest history in this business. In that sense, we have a strength in terms of brand penetration among customers. And more than anything, we have technologies ranging from air separation units to gas refining equipment, cylinder cabinets, abatement devices, bulk gases, and semiconductor material gases. That is why customers allow us to provide total gas and chemical management. In other words, I think our strength is our ability to do anything.

**Todd** ■ Thank you all for your contribution. We are not only managing daily operations in each region but also making a concerted effort to ensure the steady growth of Total Electronics, and Nippon Sanso Holdings' management has taken on this mission. I am extremely grateful to you for giving up your time for this meeting, and I promise that we will do our best to support you at Nippon Sanso Holdings.

# Supporting Elements for NSHD's Strengths

This section outlines Nippon Sanso Holdings' approach to sustainability, talent strategy, and governance, which underpin and enhance the effective use of its strengths.

 NIPPON  
GASES  
The Gas Professionals

 NIPPON  
GASES  
The Gas Professionals

 NIPPON  
GASES  
The Gas Professionals



## Sustainability Strategy

For more on our initiatives related to sustainability, please refer to here.

Sustainability Topics (Environment):

Sustainability Topics (Society):

Sustainability Topics (Governance):

# Increase in Corporate Value through a Commitment to Sustainability

Nippon Sanso Holdings has been promoting sustainability initiatives for the past few years. Guided by the Group Philosophy and Vision that were set out at the launch of the holding company structure, we have formulated 12 policies for the further promotion of sustainability. Positioning the promotion of sustainability management as one of our most important priorities under our medium-term management plan (MTP), NS Vision 2026, we have reviewed our materiality and started eight non-financial programs, along with setting non-financial KPIs. By strengthening and enhancing our initiatives through the promotion of our eight non-financial programs, we will work to realize both the sustainable increase of corporate value and the resolution of social issues.

Laying the Foundations for Sustainability Management



### History of Sustainability Initiatives

#### April 2015

- Appointment of Chief Sustainability Officer (CSO)
- Formulation of materiality

#### November 2019

Agreement with Task Force on Climate-related Financial Disclosures (TCFD) recommendations, start of disclosure via website, etc.

#### July 2020

Start of NSHD's response to CDP

#### February 2021

Formulation of Group Philosophy, Group Vision, Code of Conduct, and Policy

#### November 2021

Reinforcement of internal sustainability management system

- Establishment of Group Sustainability Management Office

#### December 2021

Revision of materiality

#### January 2022

Signing of United Nations Global Compact

#### May 2022

Announcement of MTP NS Vision 2026

- Establishment and execution of eight non-financial programs
- Setting and disclosure of non-financial KPIs
- Announcement of TCFD scenario analysis results

#### July 2023

Establishment of Sustainable Development Committee

#### April 2024

Appointment of Regional CSOs

### Non-Financial KPIs of NS Vision 2026

#### Environment

Reduction rate of GHG emissions (Base year: FYE2019)

**≥18% (FYE2026) ≥32% (FYE2031)**

GHG reduced emissions through environmental product offer

**Lower customer GHG emissions through environmental product offerings and applications > NSHD group GHG emissions (FYE2026)**

#### Safety Management

Lost time injury rate

**≤ 1.6 (FYE2026)**

#### Compliance

Rate of receiving compliance training

**100% (FYE2026)**

#### Human Resources

Rate of female employees

**≥ 22% (FYE2026)**

≥25% (FYE2031)

Rate of female management posts

**≥ 18% (FYE2026)**

≥22% (FYE2031)

## Sustainability Strategy

### Materiality

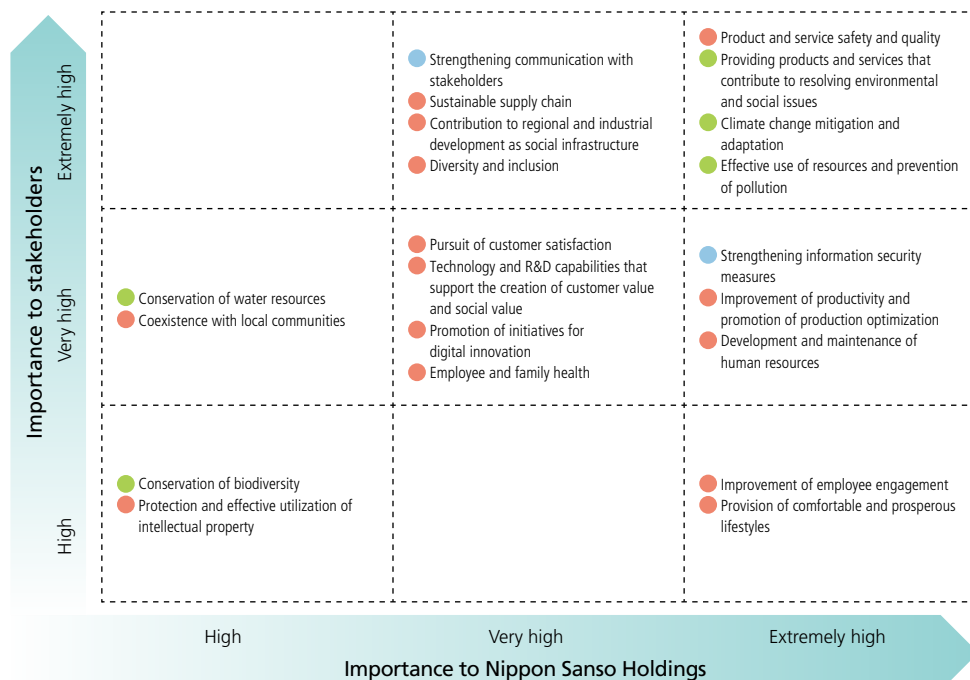
The NSHD Group revised its materiality in FYE2022. We have identified three preconditions that form the premise of our corporate existence, namely respect for human rights, safety and security, and corporate ethics. These three items, together with 21 issues associated with the eight non-financial programs in our MTP, constitute our 24 materiality issues. In revising our materiality, under the holding company structure, we have newly identified priority issues globally with an awareness of regional company business and social contribution initiatives, to clarify the issues that need to be addressed as a Group. We also use the non-financial KPIs set out in the MTP to manage and disclose the status of progress on issues, which enables us to strengthen and enhance our initiatives to resolve issues.

Please see here for information about our materiality identification process.

Materiality:

**Preconditions for the Existence of an Enterprise**  
Respect for Human Rights  
Safety and Security  
Corporate Ethics

NSHD's Materiality Matrix



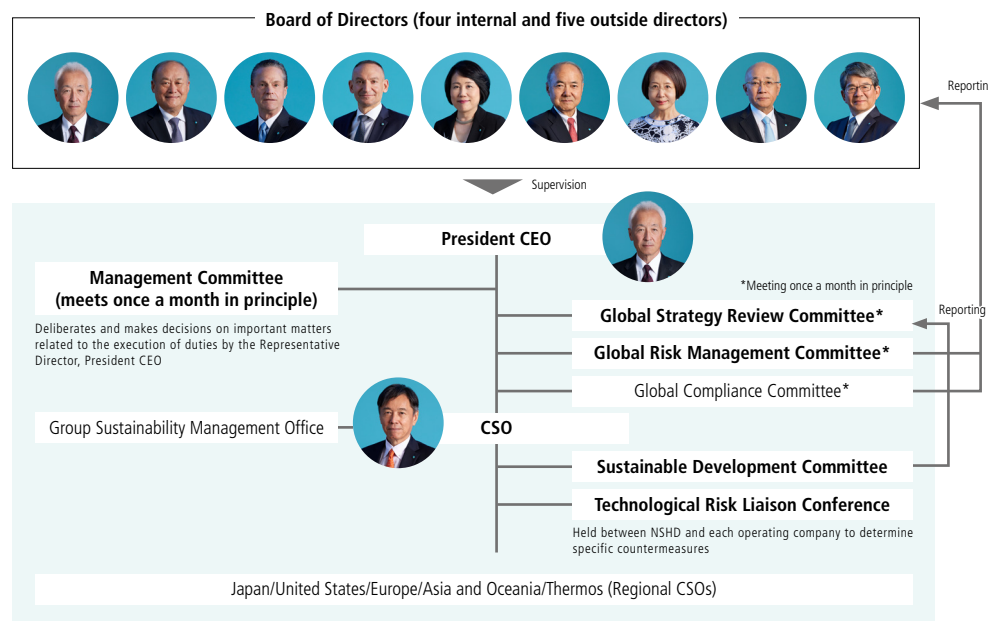
### Sustainability Promotion Structure

In November 2021, the Group established the Group Sustainability Management Office to promote general sustainability activities such as deliberation and formulation of climate change-related strategies and risks. We also established the position of Chief Sustainability Officer (CSO), and are working to coordinate closely with the Group Sustainability Management Office and communicate with each Group company. To enable more solid coordination and sharing of information, we established the Sustainable Development Committee in July 2023, and have assigned Regional CSOs to each region from April 1, 2024.

#### Activity Status of the Sustainable Development Committee (FYE2024)

- Status of progress on non-financial programs
- Establishment of Regional CSOs
- Status of NSHD's ESG rating
- Internal carbon pricing
- Status of response to CDP, etc.
- Status of participation in initiatives

### Sustainability Management and Operation Structure



● Key issues related to the global environment ● Key issues related to social systems ● Key issues related to the Company and its organizational structure

## Sustainability Strategy

For more on the eight non-financial programs, please refer to here.  
**Eight Non-Financial Programs:**

### Progress of Eight Non-Financial Programs

The global movement toward sustainability is gaining momentum, as represented by the Sustainable Development Goals (SDGs) and ESG. Amid discussions on how to address new challenges such as climate change, corporations need to quantify these problems in order to measure progress on resolving them. The NSHD Group has established eight non-financial programs to pursue under sustainability management, one of the key strategies in the medium-term management plan NS Vision 2026. By steadily executing these eight programs, we will advance the Group's sustainability initiatives.

#### (1) Reduce GHG Emissions of the NSHD Group Carbon Neutral Program I

Aiming for carbon neutrality by 2050, and considering international social demands for greenhouse gas (GHG) reduction, NSHD has set the following GHG emission reduction targets. In FYE2024, we achieved a 15.3% reduction, and we are currently making steady progress toward our FYE2026 target.

**Non-financial KPI:**

**GHG emission reduction target (compared to FYE2019)**

18% reduction (target for FYE2026)  
32% reduction (target for FYE2031)

**GHG emission reduction result (FYE2024)**

15.3% reduction

#### (2) Lower GHG Emissions of Customers through Environmentally Friendly Product Offerings Carbon Neutral Program II

We are working toward a goal of recording the GHG reduction contributions that exceed the GHG emissions of the NSHD Group through FYE2026. NSHD reduced GHG emissions by 7,454 thousand tonnes of CO<sub>2</sub>e in FYE2024, meeting the target for the fiscal year.

**Non-financial KPI: GHG emission reduction contribution**

X: Reduction in customer GHG emissions through environmental product offerings and applications

Y: NSHD Group GHG emissions (Scope 1 and Scope 2)  
FYE2026 target: X>Y

**GHG emission reduction result (FYE2024)**

X: 7,454 thousand tonnes of CO<sub>2</sub>e > Y: 5,667 thousand tonnes of CO<sub>2</sub>e

#### (3) Reduce Waste Zero Waste Program

NSHD is keen to reduce waste emissions, landfill disposal, etc., by promoting the 3Rs (reduce, reuse, recycle) of waste disposal at each operating company.

Taiyo Nippon Sanso Corporation (TNSC) is promoting the Halve Amount of Landfill Disposal (HALD) initiative, aiming to half the amount of industrial waste sent to landfill. The company is making steady progress, reducing the amount by 47% in FYE2024 compared to the reference year of FYE2019.

#### (4) Effectively Use Water Resources Sustainable Water Program

The NSHD Group regards conservation of water resources as one of its materialities, and is committed to conserving water resources in its corporate activities through more efficient use of water.

In FYE2024, we conducted a baseline water stress survey using the Aqueduct water risk assessment tool developed by the World Resources Institute (WRI) to identify production plants in areas of high risk for water supply volume. We are taking steps to reduce water intake and consumption at such plants, including increasing the volume of water recycling.

#### (5) Nurture a Safety Culture Safety First Program

For the NSHD Group, which handles various high-pressure gases, safety forms the foundation of its corporate existence. With the mindset that "selling gas is selling safety," we have designated the lost time injury rate as an essential safety KPI for maintaining a safe and reliable supply of gases.

The lost time injury rate for FYE2024 increased to 2.09, however, over the medium to long term, the rate is basically decreasing, and we will continue making a concentrated effort to prevent the occurrence of occupational accidents.

**Non-financial KPI: Lost time injury rate**

1.6 or lower (target for FYE2026)

**Lost time injury rate result (FYE2024)**

2.09

#### (6) Initiatives Aimed at Improving Quality and Reliability Quality Reliability Program

We are steadily implementing a range of measures to promote a quality-oriented culture and further improve the awareness of quality in our employees, as well as introducing automation technologies and other measures to improve quality and reliability.

Currently, we are continuing our quality audit program,\* which began in FYE2023 and is being implemented across the entire NSHD Group.

In addition, the Quality Committee for electronic material gases (SSG-QC) is working to increase customer satisfaction.

\* Each operating company conducts quality audits of applicable business sites in three-year cycles based on the priority audit items set by NSHD.

#### (7) Diversification of Human Resources and Enhancement of Engagement Talent Diversity Program

The NSHD Group proactively welcomes diverse talents, cultures, and values as it strives to train employees into "The Gas Professionals." We are particularly focused on promoting the active participation of women in the workplace, for which we have set KPIs.

In FYE2024, the rate of female employees was 20.2% and the rate of female managerial posts was 15.4%. We will strengthen our efforts even further toward achieving our targets for FYE2026.

**Non-financial KPI:**

**Rate of female employees**

over 22% (target for FYE2026)

over 25% (target for FYE2031)

**Results (FYE2024)**

Rate of female employees: 20.2%

Rate of female managerial posts:

15.4%

**Rate of female management posts**

over 18% (target for FYE2026)

over 22% (target for FYE2031)

#### (8) Permeation and Thorough Implementation of Compliance Compliance Penetration Program

The NSHD Group positions respect for human rights, safety and security, and corporate ethics as preconditions for its corporate existence. Each operating company offers various compliance training courses aimed at getting employees to expand their awareness of compliance and acquire correct knowledge.

With a shared understanding that ensuring all employees take compliance training is the basis for establishing compliance, we have set rate of receiving compliance training as one of the non-financial KPIs in our MTP.

**Non-financial KPI: Rate of receiving compliance training**

100% (target for FYE2026)

**Result (FYE2024)**

99.4% (100% completion rate as of the end of June 2024)

# Feature: Sustainability Strategy Led by “The Gas Professionals”

Within the Nippon Sanso Holding Group’s eight non-financial programs, we are implementing two programs aimed at realizing carbon neutrality in 2050: Carbon Neutral Program I (CNP I), which is aimed at reducing the Company’s own GHG emissions, and Carbon Neutral Program II (CNP II), which aims to help customers lower their GHG emissions by providing them with solutions such as environmental product offerings, equipment, and services. By promoting both CNP I and CNP II, we aim not only to reduce our own GHG emissions but also to contribute to reducing global GHG emissions through the Group’s products and technologies.

## Carbon Neutral Program I

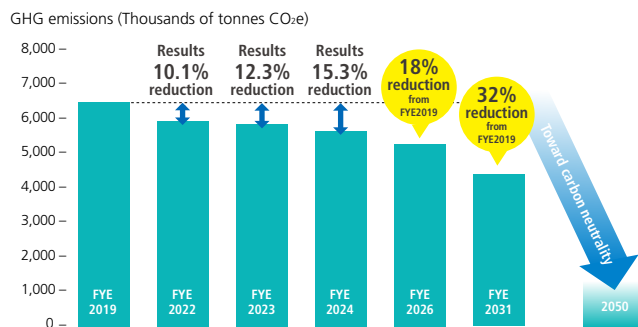
The majority of NSHD’s GHG emissions are Scope 2 emissions, with approximately 80% arising from the consumption of electricity associated mainly with the operation of air separation units (ASUs). We therefore expect to be able to reduce the Company’s GHG emissions by transitioning to green electricity, as this will lower the electricity emissions coefficient. The current status of the electric power emissions coefficient has not improved as initially expected compared with the estimates of organizations such as the International Energy Agency (IEA). However, as a result of proactive initiatives, such as replacing our ASUs and introducing solar power generation, CNP I has been progressing steadily to date.

Going forward, if the emissions coefficient improves, we expect to be able to make further advances under CNP I. We will continue working to reach our target with our own efforts by reducing our GHG emissions and changing to green electricity.

## Carbon Neutral Program II

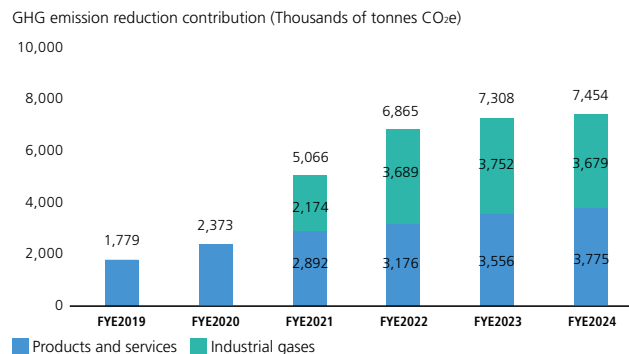
Under CNP II, the NSHD Group aims to contribute to global GHG emission reduction through its products and technologies. By FYE2026, the program aims to achieve a situation where the amount of contribution to GHG emission reduction through environmental product offerings outweighs the Group’s own GHG emissions. The Group is also promoting initiatives to help realize carbon neutrality in 2050, such as contributing to GHG emission reduction through oxygen-enriched combustion in blast furnaces, hydrogen and ammonia combustion in industrial furnaces, and capture and re-use of CO<sub>2</sub>, among other measures.

GHG Emission Reduction Targets



\* FYE2019 reference year: Addition of GHG emissions at U.S. HyCO business, European business, U.S. transportation, Asia and Oceania transportation, U.S. subsidiaries (CCPI: Continental Carbonic Products, Inc., Western: Western International Gas & Cylinders, Inc.) to actual emissions in FYE2019  
 FYE2022: Addition of GHG emissions at U.S. subsidiaries (CCPI, Western)

Reduction in GHG Emissions through Environmental Product Offerings and Applications



Example of Environmental Product Offerings and Applications

Products and services	Overview
Combustion-type exhaust gas abatement system	This system detoxifies global warming gases emitted from semiconductor manufacturing and other equipment.
SF <sub>6</sub> recovery and purification service	This service recovers and destroys sulfur hexafluoride (SF <sub>6</sub> ) used in applications such as insulating gas for high voltages.
New refrigerants	We promote sales of new replacement refrigerants with low global warming potential.
MG Shield®	MG Shield®, which has a low global warming coefficient, is used to replace SF <sub>6</sub> as a cover gas for molten magnesium alloy.
SCOPE-JET®	Oxygen-enriched combustion in electric arc furnaces can reduce electric power usage compared to stand-alone electric operation.
PSA for laser processing	Compared with general pressure-swing adsorption (PSA) equipment on the market, this unit can manufacture nitrogen gas using far less electricity.
Thermos products	Switching from an ordinary pot to a Shuttle Chef® for cooking can reduce fuel and electricity consumption and so forth.
Hydrogen stations	The Company’s hydrogen stations fill fuel cell vehicles, helping to reduce CO <sub>2</sub> emissions.
Industrial gases	Overview
Oxygen-enriched combustion in blast furnaces	Providing a reliable supply of oxygen to blast furnaces helps to reduce CO <sub>2</sub> emissions.
Oxygen-enriched combustion in electric arc furnaces	Oxygen-enriched combustion in electric arc furnaces can reduce electric power usage compared to stand-alone electric operation.
Argon (Ar) welding	Compared to CO <sub>2</sub> welding, Ar welding can shorten welding time and reduce CO <sub>2</sub> emissions.

Feature: Sustainability Strategy Led by “The Gas Professionals”

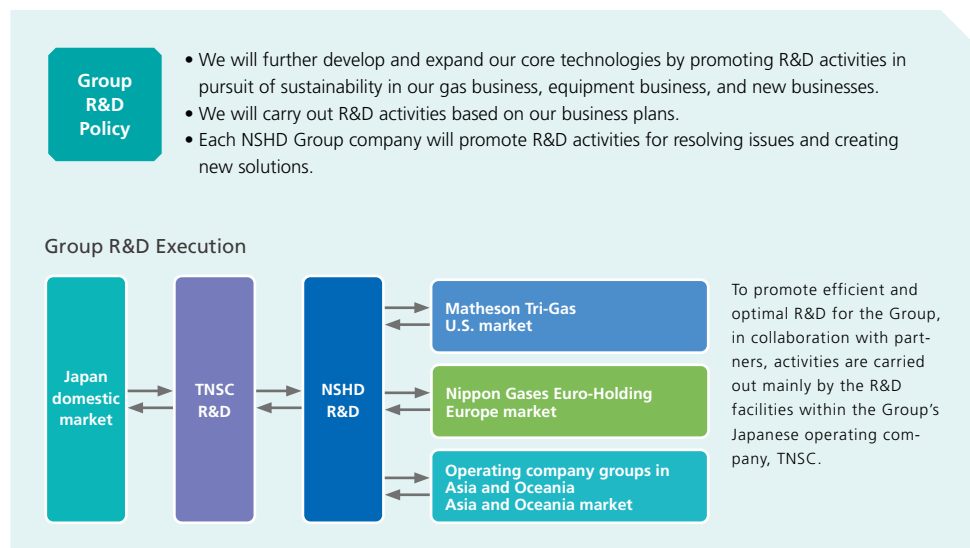
# Value Creation through Group R&D

The Nippon Sanso Holdings Group is engaged in R&D to fully explore the potential of gas in order to continue providing total solutions to meet customers’ needs.

## Group R&D

NSHD is promoting more effective development and operation efficiency gains for the Group overall to create new products and technologies that meet customer needs. To this end, we are strengthening collaboration between our business and research divisions, while integrating and further cultivating the technologies we have developed in Japan, the United States, Europe, and Asia and Oceania, and deploying them appropriately for the characteristics of each market.

In particular, we are striving to further develop and expand our basic technologies, including oxygen combustion technology, gas separation, capture, and refining technology, ASU-related technology, and stable isotope separation technology, with a view to contributing to carbon neutrality and sustainability.



## Initiatives for Energy Saving and CO<sub>2</sub> Emissions Reduction

The NSHD Group continues to make a committed effort to promote CNP I and CNP II. Through our R&D activities, we have created environmental products as well as energy-saving technologies. Going forward, we will contribute to the realization of a carbon neutral society in 2050 through our efforts to create new products and technologies that meet customers’ needs and expand the scope of application of existing products and technologies.

### Plant and Engineering Technologies

Taiyo Nippon Sanso Corporation (TNSC) is working to develop ASUs for manufacturing its mainstay products, which are gases such as nitrogen and oxygen. The company works continuously to improve its processes and develop ASU components, such as adopting a non-fluorocarbon process that eliminates the use of chlorofluorocarbon (CFC) refrigerators that had been necessary in the former manufacturing process, and developing highly efficient equipment that reduces electric power consumption. By encouraging customers to use newly developed equipment to replace existing equipment, we are working to reduce the amount of power consumption both by TNSC and its customers.



Nitrogen generator

By adding to our lineup nitrogen production equipment that can also produce an appropriate amount of oxygen gas for customers who are large users of nitrogen gas and who also use oxygen gas, we can eliminate the need to ship oxygen gas by tanker truck, as had been necessary in the past. In this way, we are contributing to a more reliable supply and greater transportation efficiency.

### Development of CO<sub>2</sub> Capture System

TNSC leveraged its accumulated gas separation and refining technologies to develop and commercialize a CO<sub>2</sub> capture system using the PSA method, which can capture CO<sub>2</sub> at a concentration of 98% or higher from high-concentration CO<sub>2</sub> emission sources such as lime kilns. The PSA method concentrates a specific gas by separating it out and capturing it using the characteristics of adsorption and repeatedly switching between pressurized and depressurized states.

CO<sub>2</sub> capture systems that can capture and condense CO<sub>2</sub> are fundamental systems for CO<sub>2</sub> capture, utilization and storage (CCUS). We will work to refine and improve the system further, while also working to propose solutions including combinations of technologies for CO<sub>2</sub> utilization, such as methanation.



External view of the CO<sub>2</sub> capture system (Illustration)

## Feature: Sustainability Strategy Led by “The Gas Professionals” Value Creation through Group R&D

### Oxygen-Enriched Combustion Technology

Steel, glass, and aluminum are essential to modern life, but their manufacture uses industrial furnaces that produce large quantities of CO<sub>2</sub>. The NSHD Group is helping to reduce the CO<sub>2</sub> emissions of these various industrial furnaces by developing oxygen-enriched combustion technology.

Oxygen-enriched combustion facilitates a higher burner flame temperature than air combustion, while at the same time reducing the volume of exhaust gas, thereby reducing the amount of heat energy lost as exhaust gas, helping to save energy and reduce CO<sub>2</sub> emissions.

For example, TNSC is working to contribute to CO<sub>2</sub> emission reduction by increasing energy efficiency in blast furnaces through oxygen-enriched combustion and reducing electricity consumption inside electric arc furnaces by using SCOPE-JET® to assist heating. The company also proposes and supplies the optimal oxygen burners for each application, such as Innova-Jet® for various type of furnaces, such as heating furnaces and sintering furnaces.



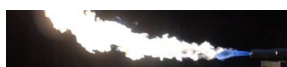
Oxygen burner lance, SCOPE-JET®, for steel manufacturing

### Carbon-Free Combustion Technology

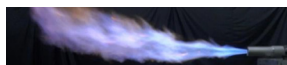
Hydrogen and ammonia combustion use hydrogen or ammonia as energy sources instead of natural gas, and are considered an important element for achieving decarbonization of industry.

The NSHD Group is promoting the development of hydrogen and ammonia combustion technologies in various industries. TNSC successfully conducted a demonstration test with 100% hydrogen combustion to melt glass using a hydrogen–oxygen burner jointly developed with Nippon Electric Glass Co., Ltd. In the demonstration test, it was confirmed that the same melting capability could be obtained as with combustion fueled using 100% natural gas, showing the potential to contribute to a significant reduction of CO<sub>2</sub> emissions from melting furnaces.

In addition, TNSC has been selected as the contractor for a project commissioned by the New Energy and Industrial Technology Development Organization (NEDO) for development of fuel ammonia combustion technology for industrial furnaces. The aim of the project is to develop ammonia combustion technology for industrial furnaces that are unable to use ammonia in order to contribute to the decarbonization of the industrial sector. TNSC is proceeding with development of ammonia–oxygen combustion.



0% hydrogen (natural gas combustion)



50% hydrogen



100% hydrogen

### Intellectual Property

**We will promote intellectual property activities that contribute to the increase of our corporate value.**

NSHD positions intellectual property as a vital asset. In order to contribute to both our business and society through intellectual property activities and to realize global sustainable growth for the NSHD Group, we engage in the creation, protection, and utilization of intellectual property, with a focus on the following two issues.

#### 1. Increase in strategic proposal activities utilizing the intellectual property landscape

The intellectual property division participates from the development planning stage. It promotes initiatives for formulating and executing intellectual property strategies for each theme to support business and development utilizing the intellectual property landscape.

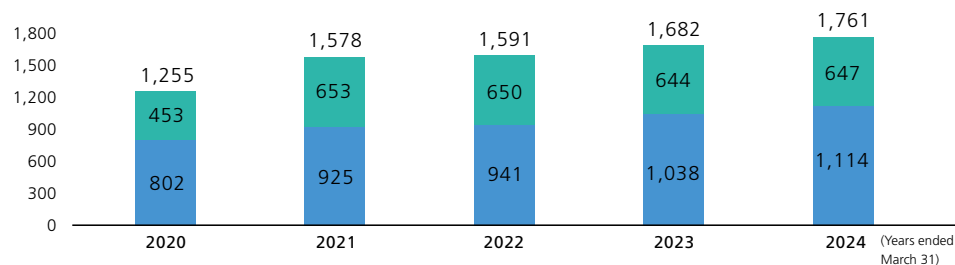
#### 2. Strengthening of the global intellectual property system

We will work to strengthen the system for coordination between regions and bolster our intellectual property capabilities globally through the promotion of mutual utilization of intellectual property owned by the Company.

#### NSHD Patents

Number of patents

■ Japan ■ Overseas \* Figures through FYE2020 represent TNSC patents only.



### Linking Technology Development with Intellectual Property to Protect Business

#### —The Oxygen Stable Isotope Business

NSHD has commercialized Water-<sup>18</sup>O (Water-<sup>18</sup>O stable isotope), which is used as a raw material for PET diagnostic reagents, and currently supplies it in over 30 countries. Water-<sup>18</sup>O has recently shown promise for use in diagnosis of Alzheimer’s and cardiopulmonary disease. We have developed key and supporting technologies for realizing a distillation column for producing Water-<sup>18</sup>O, and have also worked comprehensively and systematically to apply for and obtain patents. Through this business strategy, which cannot be imitated by other companies, along with the plant design and manufacture technologies, and construction and enhancement of a patent network, we have established our global position as No. 1 in production volume of Water-<sup>18</sup>O.

We will continue to promote intellectual property activities for supporting further expansion of the stable isotope business in Japan and overseas, including Water-<sup>17</sup>O, which shows promise in the field of diagnostic reagents for brain disorders.

## Feature: Sustainability Strategy Led by “The Gas Professionals” Value Creation through Group R&D

### Response to Biodiversity

Under the Nippon Sanso Holdings Group Environmental Policy, formulated in 2021, NSHD is working to reduce environmental impact through its products, services, and business activities toward the resolution of environmental challenges including mitigation of and adaptation to climate change, effective use and prevention of pollution of resources, preservation of water resources, and preservation of biodiversity. We have positioned the preservation of biodiversity as one of our materiality issues, including participation in the Keidanren Initiative for Biodiversity Conservation in January 2024. The Company agreed with the message of the Keidanren Declaration for Biodiversity and Guideline, and will continue to promote business activities that help to preserve biodiversity.

In addition, to stem the loss of nature, restore it, and have a beneficial impact on it, we support the pivot to “nature positive,” a target of the Taskforce on Nature-related Financial Disclosures (TNFD)\*1. We participated in the TNFD Forum\*2 in August 2024, and registered as a TNFD Adopter\*3, adopting the TNFD Declaration. Looking ahead, we plan to collate and disclose information on each of the recommended disclosure items in accordance with the TNFD framework, to promote and actively disclose our initiatives on biodiversity.

\*1 An international initiative established for companies and organizations, etc., to appropriately evaluate and disclose how they rely on and impact natural capital and biodiversity in their business activities (launched in June 2021).

\*2 A network that supports the creation of an information disclosure framework by the TNFD, with participation from companies and organizations, etc., that have expertise in diverse fields.

\*3 Companies and organizations, etc., that have registered on the TNFD website their intention to disclose information based on the TNFD recommendations announced in September 2023. The registered companies and organizations, etc., are required make disclosures that adopt the TNFD recommendations based on the information of their 2024 or 2025 accounting year.

### Example of NSHD’s Specific Initiatives

#### Participation in the OIST Coral Project by the Okinawa Institute of Science and Technology Graduate University

NSHD participated as a special partner in the OIST Coral Project by the Okinawa Institute of Science and Technology Graduate University (OIST), which is taking a lead on initiatives to preserve coral in Okinawa and around the world. Through coral reef monitoring using environmental DNA technology established by OIST and R&D driven by genome analysis technology, we will support coral reef conservation activities in Okinawa and around the world.



OIST Coral Project logo

#### Support for Protection of Raptors

Thermos sells original bottles to support activities for the protection of raptors. Part of the sales revenues from these products is used by the Institute for Raptor Biomedicine Japan to protect endangered wildlife such as Steller’s sea eagles, white-tailed eagles, and Blakiston’s fish owls.



Original bottles by Thermos in collaboration with the Institute for Raptor Biomedicine Japan

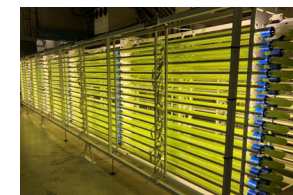
For information about other initiatives (greening and conservation activities), please see here.  
Sustainability Topics (Society):

### Business Activities that Contribute to Biodiversity

By realizing innovations based on gas usage to provide customers with high-value-added solutions, we will continue to explore and expand new business fields. Recently, we have also been focusing on open innovation involving collaboration outside the Company.

In FYE2023, the Company invested in microalgae start-up Algal Bio Co., Ltd., and the two companies started harnessing synergies. Algal Bio was founded on the basis of more than two decades worth of research results from the University of Tokyo. TNSC is jointly working with Algal Bio to improve technologies for the cultivation of microalgae. Algal Bio’s unique algae stock library and cultivation technologies will help with the preservation of biodiversity, and the two companies will also develop technologies for using CO<sub>2</sub> emitted in industrial exhaust gases for cultivation of microalgae and production of useful items.

Through collaboration with partner companies, the Company will accelerate the technology development for effective use of gases and their circular use, as well as practical applications.



Algal Bio Co., Ltd.’s microalgae cultivation system (1 kL)

### Other Contributions to Sustainability

#### Advanced Gas Application Technologies Contribute to Initiatives to Reduce Food Loss

NSHD is also developing gas application technologies for reducing food loss. The Group has a long track record in food technologies, starting in 1962 with research into rapid freezing by a continuous freezer unit. This technology has been refined over many years and commercialized under the Bistranza® brand. In addition, modified atmosphere packaging (MAP) has seen rapid uptake in the food industry. Gases such as nitrogen, oxygen, and carbon dioxide can be injected into packaging of small snacks and cut vegetables to extend their shelf lives, with various ripple effects such as reducing food loss, improving production planning, and expanding transportation range. Furthermore, reducing food waste due to expiration as well as energy used in waste processing ultimately reduces CO<sub>2</sub> emissions.



Liquid nitrogen tunnel freezer Bistranza-FZT

NSHD will contribute to the resolution of various issues confronting the food industry through gas application technologies such as MAP and liquid nitrogen freezing systems.



(Interviewer)

**Takeshi Miki**

Senior Executive Officer, Group Sustainability Management Office, and Chief Sustainability Officer (CSO)

**Masahiro Takeuchi**Executive Officer, Head of the R&D Unit  
Taiyo Nippon Sanso Corporation**Kunihiro Kobayashi**Senior Executive Officer, Head of the Innovation Unit  
Taiyo Nippon Sanso Corporation

Three-Way Conversation

Technological Capabilities  
Supporting Sustainable  
Business Development

**It goes without saying that Nippon Sanso Holdings has achieved its global growth with the appreciation and support of its customers and that NSHD's technological capabilities are extremely important for its further sustainable business development going forward. In this section, Takeshi Miki, Group Chief Sustainability Officer, discussed with two people who are responsible for the development and commercialization of technologies about the sources of the NSHD Group's technological capabilities and what activities they are engaged in to contribute to its business performance.**

### Technology Development Progressing as One with Business

**Miki** ■ Industrial gases are widely used, not only in the manufacturing industry but also in consumer sectors such as food and medicine. This is the source of NSHD's competitive strength, and it is supported by NSHD's capabilities in engineering, its technology proposals, its solutions for the safe and reliable supply of gases, its comprehensive technological capabilities including external alliances, and also its R&D. In this session, I would like to hear from you, Mr. Takeuchi and Mr. Kobayashi, as you are driving development of the Group's technologies and businesses. Could you both start by talking about your roles?

**Takeuchi** ■ As the person responsible for technology development at Taiyo Nippon Sanso, I have the role of leading the entire NSHD Group in this area. The best and most interesting part of this job is how to use our technological capabilities to control gas—an invisible indirect material—with a view to meeting customers' needs. In this regard, I consciously strive to promote technology development with cooperation from the entire Group, without leaning too heavily on a technology perspective and giving thought to future trends in social issues and environmental regulations.

**Kobayashi** ■ My role is to integrate external alliances to the technologies created by R&D to commercialize them as businesses and products. My previous roles included corporate planning, which appeared at first glance to be unrelated to technology. Currently, I am leading business development that will increase our corporate value. In doing so, I utilize the superiority of our technologies, our research, and my own experience. I am also conscious of using complementary external alliances, as well as profitability and the growth potential of the market.

**Miki** ■ The word technology implies more than just R&D. The Group's technological capabilities are formed through the synergy between plant engineering, customer proposal capabilities, and solution provision capabilities. We are creating our own systems for concentrating the knowledge of each respective function and driving development and commercialization.

**Takeuchi** ■ NSHD has a structure that allows technology development and business divisions to systematically share information and exchange opinions as an organization from the development planning stage through to commercialization. This allows us to progress efficiently from product and service design through to supply chain building.



**Kobayashi** ■ Market needs and profitability are naturally important considerations, but our structure also enables guidance and proposals on development from multiple perspectives such as resolving social issues, which encourages dynamic thinking. Through this collaboration, we are now seeing the establishment of a corporate culture that promotes technology development and alliances that can support sustainable business activities Companywide.

#### ■ Contributing in Areas Ranging from Carbon Neutrality to Electronics

**Takeuchi** ■ Reducing greenhouse gas emissions is a global challenge, and our customers also recognize the need to respond. However, a rapid transition to carbon neutrality is difficult both technologically and economically. We are providing custom-made support for customers as they transition their current manufacturing processes to realize carbon neutrality.

For example, we propose oxygen combustion technologies for customers such as steel and glass manufacturers. Switching from air combustion to oxygen combustion increases the combustion efficiency inside their furnaces, reducing fossil fuel consumption while increasing the concentration of CO<sub>2</sub> in the exhaust gas, making it easier to capture. Therefore, we have also developed CO<sub>2</sub> capturing equipment to supply together with the oxygen combustion technology.

In carbon-free oxygen combustion technology, we are currently running successful joint demonstration trials with partners in Japan and Europe using hydrogen and ammonia fuels.

**Miki** ■ In addition to the technologies we have developed to date, we are also leveraging our strengths as the NSHD Group, such as proposal capabilities that utilize our customer relationships, as we steadily make our way toward carbon neutral industries.

Moving on, would you tell me about our technologies and the electronics field?

**Kobayashi** ■ In the electronics field, it is particularly important to provide reliable supplies of gases as well as comprehensive support

through to treatment of exhaust gases from customers' equipment. We have a global supply and support system called Total Electronics that deals with aspects including the quality and delivery of the relevant gas and equipment products. We are demonstrating our technological excellence at all stages of gas manufacture, supply, abatement, and quality control.

**Takeuchi** ■ I would like to talk about the manufacture of diborane gas\*<sup>1</sup> as a topic relevant to electronic material gases. One of the characteristics of the industrial gases supply chain is that it is set up on the site of consumption. In particular, the Group's mainstay electronic material gas product, diborane gas, is essential to a wide range of semiconductor manufacturing, but it is also highly reactive and toxic. This makes companies more likely to opt for supply at the site of consumption. Although we have previously produced diborane gas only in Japan, we are meeting the need for mass production in areas close to semiconductor manufacturing sites in South Korea and China by developing our own manufacturing equipment that doesn't require experienced operators and by strengthening our supply systems.

We will continue to refine our operations to respond to the demands of the semiconductor market globally, while also increasing the capacity and maximizing the efficiency of our production.

**Kobayashi** ■ Additionally, I expect the spread of compound semiconductors, for electric vehicles and power devices that can efficiently manage high voltages and frequencies. The Group supplies compound semiconductor manufacturing systems, which are based on technology for manufacturing LEDs of various colors that has contributed significantly to energy savings. They are also drawing attention as manufacturing systems for power devices.

The Group supplies essential gases and products for semiconductor manufacturing, but there are countless business opportunities associated with the growth of the semiconductor market. Currently, supply has not been able to keep up. Technological innovation in semiconductors and other areas is progressing daily, and the Group has a pressing challenge to keep pace in its investment decisions.



In the electronics field, I believe that we need to summon the drive to capture the semiconductor market and make concentrated investments to expand our supply system.

\*1 An essential semiconductor material gas in the manufacture of a wide range of semiconductors including logic, memory, and discrete semiconductors. Diborane is highly flammable, volatile, and highly toxic.

#### ■ Stable Isotopes and Technological Advantage in the Healthcare Field

**Kobayashi** ■ One of the fields where we have an intense focus in technology development is healthcare. Medicine is a field that contributes to the creation of societies where people can live better lives, and its importance will increase going forward.

We have been responsible for the stable provision of high-quality medical gases, and have also provided total support for medicine, including the supply of oxygen and peripheral equipment to support

home oxygen therapy. In particular, our mainstay product, Water-<sup>18</sup>O stable isotope, is also used in PET tests for cancer as well as tests for Alzheimer's disease, and we have world's largest supply capability for it.

**Miki** ■ Diagnostic reagents for Alzheimer's disease have been approved in six countries, including Japan, the United States, and China, and insurance covered treatments have started in Japan and the United States. Based on this trend, we can expect to see a growing range of applications for oxygen-18, which is used as a diagnostic reagent. Manufacturing stable isotopes is extremely difficult to do, and our current position as the top manufacturer may be due in some part to holding a strategic advantage in terms of intellectual property.

**Takeuchi** ■ Manufacturing stable isotopes is certainly a field with high barriers to commercialization for our competitors. As such, we have a technological advantage, and can support reliable supplies globally.

We are also participating in a number of projects in the medical field, using our accumulated technologies. One example is a technology for freezing items using liquid nitrogen, where we are developing and deploying a program freezer specially designed for freezing cells while keeping them alive, and a fully automated freezing and storage system to contribute to the field of regenerative medicine.

**Kobayashi** ■ In the medical field, we will bring in new cutting-edge technologies through open innovation with other companies and research institutions as we accelerate our initiatives to bring to market innovative products that make the fullest use of our core technologies. By deploying these globally and swiftly, we aim to develop the medical-related business into a second earnings pillar to follow electronics.

Please see here for additional information on NSHD's journey to becoming a leading manufacturer of oxygen-18.

**The Development of Oxygen-18:**

### ■ Global Development Leveraging External Alliances

**Kobayashi** ■ Historically we have utilized alliances with other companies such as M&As, and this remains another key aspect of business development. For example, we are currently engaged in a metal 3D printer-related project. In this project, shapes are formed by applying heat locally to raw materials such as metal powder or wire, and we are able to apply atmospheric control technologies that we have developed with our welding gases. For this project, we have partnered with U.S. and European 3D printer manufacturers and companies that provide contracted manufacturing services using 3D printers. In doing so, we will incorporate the advanced technologies of our joint partners while contributing our own knowledge and insights to fully leverage the properties of gases and continue technological innovations that will support the future of humanity.

**Takeuchi** ■ Technology development is our job, but we don't simply pursue technologies. As I noted at the start, we have to be constantly attuned to the kinds of issues that our customers are facing and thinking about how our technologies might help to resolve them. Going forward, we will work to create a system for technology development that resolves issues for our customers and society.

**Kobayashi** ■ In the future, the Group will work to maximize its competitive advantages through technological innovation, first through innovation and global internal cooperation in engineering to support it, and by promoting three "Totalizations" including electronics, as mentioned before. I think that we also need to utilize all kinds of resources both internal and external and work in coordination with our global sites.

**Miki** ■ The NSHD Group's technological capabilities lie in its comprehensive capabilities. The affiliation of Nippon Gases Euro-Holding in 2019 and the transition to a holding company in 2020 have accelerated our global expansion. The coordination between our global sites, such as the United States and Europe,

is going to be increasingly important in the future. I would like to see us increase the number of successful cases, such as RASIRC, Inc.\*2 in the United States. As we go forward, we will continue to grow our comprehensive technological capabilities as we work to increase corporate value by developing our sustainable businesses.

\*2 A venture company headquartered in San Diego, United States, RASIRC is a venture company with unique gas and precision manufacturing technologies that use membrane separation technology to provide products such as ultra-high-purity hydrogen peroxide and hydrazine in the semiconductor manufacturing field.



# TCFD Reporting

Details about our reporting based on TCFD recommendations are posted on our corporate website.  
Report in Line with the Recommendations of the TCFD:

**Nippon Sanso Holdings is committed to realizing a comfortable future for people, society, and the planet by engaging in activities to reduce environmental impact, conserve energy, and expand the number of products that contribute to the reduction of GHG emissions. Furthermore, in November 2019 NSHD endorsed the TCFD\* and has since endeavored to improve information disclosure. Going forward, we will strive to enhance corporate value across the Group through not only internal improvement activities but also dialogue with stakeholders while augmenting information disclosure in line with the TCFD recommendations.**

\* The TCFD announced its final recommendations report in June 2017, which recommends that all companies and other organizations disclose information about governance, strategy, risk management, and metrics and targets regarding climate change-related risks and opportunities.

The recommendations of the TCFD include four core elements: governance, strategy, risk management, and metrics and targets. In this report, NSHD has enhanced its disclosure in relation to strategy and metrics and targets.

## Strategy

### Quantification Calculation Result of Main Opportunities and Risks Identified in Scenario Analysis

We have evaluated each of the opportunities and risks based on the metrics of “potential for impact” × “magnitude of impact.” As a result of the evaluation, the following four opportunities and risks were deemed to be “large” or “medium,” and we conducted a quantitative calculation of the financial impacts on the Company’s business for each of them.

Category	Risk/Opportunity	Scenario	Calculation details	Calculation result
Business risk	(1) Decrease in profits due to increased tax burden	1.5°C	Amount of financial impact on the NSHD Group in 2030 due to carbon pricing	¥59.4–92.5 billion
Business risk	(2) Decrease in sales due to changes in the manufacturing process of existing customers in the steel and chemical sectors —Outlook for changes in manufacturing process of the steel sector	Under 2°C	Net sales of oxygen for furnaces of the NSHD Group and its affiliates in 2050	¥30.0 billion (half of the current sales of ¥60.0 billion)
Business risk	(3) Plant shutdowns due to disasters caused by abnormal weather	4°C	Amount of damage to NSHD Group production sites in the event of a 100-year flood by 2050	¥36.0 billion (¥18.0 billion taking into account disaster insurance policies)
Business opportunity	(4) Expansion of blue/green hydrogen demand	1.5°C	Market scale for blue/green hydrogen in 2030 and 2050	¥13–41 trillion (2030) ¥60–218 trillion (2050)

#### Details of Calculation Result

(1) <Risk> Introduction of carbon pricing: Decrease in profits due to increased tax burden  
The NSHD Group aims to achieve carbon neutrality by 2050 and is working to reduce its GHG emissions by 18% in FYE2026 and 32% in FYE2031 compared to the baseline year of FYE2019. The Group’s FYE2031 GHG emissions (Scope 1 and Scope 2) are projected at approximately 4.55 million tonnes. Based on the IEA’s World Energy Outlook 2023 Net Zero Emissions (NZE) scenario, assuming a carbon price of approximately ¥13,000–20,000/t-CO<sub>2</sub>e (US\$90–140/t-CO<sub>2</sub>e) for 2030, the amount of financial impact on the Group due to carbon pricing is estimated at ¥59.4–92.5 billion per year. Our initiatives to achieve further reductions of GHGs will include replacing ASUs, purchasing green energy certificates, and introducing renewable energy.

(2) <Risk> Change in customers’ business activities: Decrease in sales due to changes in the manufacturing process of existing customers in the steel and chemical sectors

Net sales of oxygen for blast furnace–basic oxygen furnace systems by the NSHD Group and its affiliates are estimated at about 5% of the Group’s consolidated net sales (approximately ¥60.0 billion). Considering fluctuations in oxygen demand in the steel sector based on the outlook for steel production by manufacturing method in the IEA’s Energy Technology Perspectives 2020 Sustainable Development Scenario, the net sales of oxygen for blast furnace–basic oxygen furnace systems by the Group and its affiliates in 2050 is estimated at ¥30.0 billion (about ¥30.0 billion less). The steel sector will continue to use oxygen in electric arc furnace and direct reduction ironmaking, which are expected to see an increase in demand going forward, and we will capture these demands.

(3) <Risk> Intensification of disasters: Plant shutdowns due to disasters caused by abnormal weather  
Using the Aqueduct Floods simulation by the WRI, we confirmed the estimated damage to the NSHD Group’s 130 main production sites from the impact of a 100-year flood under the 4°C scenario for 2050. At 17 sites in Japan and overseas, inundation damage of 0.1 m or higher was forecast. Referring to the Manual for Economic Evaluation of Flood Control Investment (Draft) April 2020 edition produced by the Ministry of Land, Infrastructure, Transport and Tourism, we estimated the amount of damage at each site using the formulas for calculating sales opportunity loss (loss due to suspension of operations) and the loss impact on inventory and equipment (depreciable assets) based on the inundation depth. Through this calculation, we estimated the damage for a 100-year flood across all sites to be approximately ¥36.0 billion in total. We have also calculated that applying our current disaster insurance policies can reduce the damage to approximately ¥18.0 billion. Looking at the flood damage risk that we have recognized under the 4°C scenario, we have identified the potential for inundation of major production sites as a material risk. We will continue working on measures such as promoting disaster countermeasures and utilizing disaster insurance.

(4) <Opportunity> Changing market needs: Expansion of blue/green hydrogen demand  
According to the IEA’s “Net Zero Emissions by 2050 (2023 Update),” demand for low-emission hydrogen, such as blue and green hydrogen, is expected to expand, mainly from 2030 onward, increasing from 70 Mt-H<sub>2</sub> in 2030 to 420 Mt-H<sub>2</sub> in 2050. In addition, the IEA’s NZE scenario indicates a range of manufacturing costs for blue and green hydrogen. The combined estimated market for both types together is expected to be ¥13–41 trillion in 2030 and ¥60–218 trillion in 2050. We will continue to expand our hydrogen supply business through the HyCO business to exploit the opportunity presented by the transition to a decarbonized society.

## Metrics and Targets

Internal carbon pricing is one of seven cross-industry metrics. NSHD introduced it from April 2024 to be used as an indicator when making investment decisions. The pricing has been set making reference to the NZE scenario in the IEA’s World Energy Outlook 2023.

Metric	Type of internal carbon pricing	Target GHG emissions	Price
Internal carbon price	Shadow price	Scope 1 and Scope 2	85 US\$/t-CO <sub>2</sub> e

### Initiatives Regarding the United Nations Global Compact

NSHD is a signatory to the United Nations Global Compact (UNGC), and has been registered as a participating company since January 2022.

For more details on the UNGC, please refer to our corporate website.

Participation in Initiatives:

## Valuing People (Human Rights Initiatives)

Nippon Sanso Holdings supports the spirit and meaning of the Universal Declaration of Human Rights, the International Covenants on Human Rights, the Guiding Principles on Business and Human Rights, and the United Nations Global Compact, and is taking steps to promote them.

### Policy Formulation

- We have formulated the [Global Policy on Respecting Human Rights, Contributing to Communities, Employment, Labor, and Health](#). Under the policy, we engage on issues including respect for the dignity and rights of individuals, awareness of human rights and education, privacy protection, prevention of human rights infringement, and human rights due diligence.
- We conduct procurement with an awareness of human rights and occupational safety and health, in accordance with our [Procurement Policy](#) and [Procurement Guidelines](#).
- We have stipulated the [Occupational Safety and Health / Industrial Safety and Disaster Prevention Policy](#), and are working to ensure the safety of employees, subcontractors, and external stakeholders based on the principles of “selling gas is selling safety” and “safety comes first.”
- Under our [Product Safety and Quality Policy](#), we follow the principles of product stewardship to identify the dangers and hazards posed by our products through risk assessments, and strive to mitigate them.

### Education and Awareness-Raising Regarding Human Rights

We conduct training on business and human rights as well as training on unconscious bias for the Company's officers.

### Supply Chain Management

Taiyo Nippon Sanso Corporation (TNSC) is promoting supply chain management based on the company's policies on human rights. Efforts include launching an RBA\* project.

\* The Responsible Business Alliance is a nonprofit corporate coalition comprised of major companies committed to improving the social, environmental, and ethical responsibility of global supply chains. The RBA has a common code of conduct and a range of programs, training, and assessment tools to support continuous improvement.

### Safety Initiatives

The NSHD Group aims to improve employees' sensitivity to risk management through hazard simulation training. The training provides proprietary hazard experience equipment specialized for high-pressure gases, and participants learn about recent accidents.

Furthermore, we are working to increase safety awareness among our customers through Minna Gas Shiru (“Gas Knowledge for Everyone”), a package of services for improving safety comprising safety education videos about high-pressure gases, high-pressure gas hazard experience courses, and an online salon where participants can learn about safety.

Minna Gas Shiru (in Japanese only):



Hazard experience course using virtual reality



Minna Gas Shiru logo

### Initiatives to Promote Diversity

TNSC established the Diversity & Inclusion Office in April 2024, and set about fully promoting diversity and inclusion. These efforts include the launch of training for new recruits on the theme of diversity and inclusion. In July 2024, we formulated the Taiyo Nippon Sanso Declaration on Diversity and Inclusion, and we have been promoting activities even further in accordance with this declaration.

In the Asia and Oceania region, Southeast Asia + India Human Resource Network Meeting 2023 was held, the seventh in this series, with members of the human resource team making announcements regarding women's empowerment and succession planning.

➡ For further details regarding diversity promotion initiatives, please see



Diversity and inclusion training for new recruits



Seventh Southeast Asia + India Human Resource Network Meeting

# Talent Strategy

## Message from Head of the HR Division



### Basic Approach

The industrial gases business forms a critical part of the industry's infrastructure, while the Thermos business provides lifestyle products used daily by people around the world. Integrity is the cornerstone of our human resources, supporting the Group's corporate activities in areas such as respect for human rights, safety and security, and corporate ethics. Without integrity, we cannot earn the trust of our stakeholders, including customers and investors.

In FYE2024, we were able to compare our global engagement survey results with the previous year for the first time, and we found that the entire Group had made collective improvements. This progress is undoubtedly due to various factors; however, I believe that one key driver was employees engaging with integrity in their respective roles, influencing one another positively, and demonstrating excellent teamwork.

Our organizational culture is designed to ensure that we fulfill our social responsibilities as a company, in line with the Group's Code of Conduct. By fostering employee engagement through a shared commitment to the Group's Philosophy and Vision, I believe the Group can make an even greater contribution to society.

### Talent Development Strategy for Continuous Growth

The Group, comprising Nippon Sanso Holdings and its operating companies, operates with a focus on on-site production and consumption of industrial gas products, which emphasizes the autonomy of its operating companies. This same approach is applied to our talent strategy, recognizing that people are our most valuable management resource. While this autonomy enhances the activity of the operating companies, the Group also shares and addresses human resource challenges collectively to align with the broader management strategies that require engagement across the entire Group.

In promoting diversity, securing and developing talent with diverse knowledge, experience, and perspectives is crucial for global growth in the rapidly changing business environment. The medium-term management plan (MTP), NS Vision 2026, particularly emphasizes the active participation of women. In Japan, where progress in this area has been slower, we launched specific initiatives in April to strengthen our organization and personnel, rolling out these initiatives rapidly. Although progress toward achieving the FYE2026 numerical targets has been slower in some regions due to organizational reforms and other factors, we are working to embed individual talent strategies across each region during the MTP period.

Regarding employee engagement, as mentioned earlier, the Group's overall participation rate and scores have improved. However, it is crucial for management to analyze these results, propose measures to enhance the work environment, and implement them in collaboration with the relevant stakeholders. Responses to questions about diversity, in particular, provide valuable insights for future policy proposals, and employee feedback should be incorporated into our initiatives to drive continuous improvement.

Another critical focus is on securing and developing global talents. The opportunities of the electronics business and the carbon neutral field are expected to grow more, while IT security and other areas face increasing threats each year. The entire Group must engage in global talent exchanges and collaboration to seize opportunities and address these challenges effectively.

Additionally, the continued global promotion of Operational Excellence, which involves sharing successful measures and advanced case studies to boost productivity, will have a significant impact. The NSHD holding company functions, which understand and coordinate with each operating company's specific areas, businesses, and human resources, are well-positioned to develop and execute more effective strategies for the entire Group. These functions are carried out by human resources with the desire and capability to act globally, and we will focus on securing and developing such talent, particularly in Japan, including NSHD, where progress has been somewhat slower.

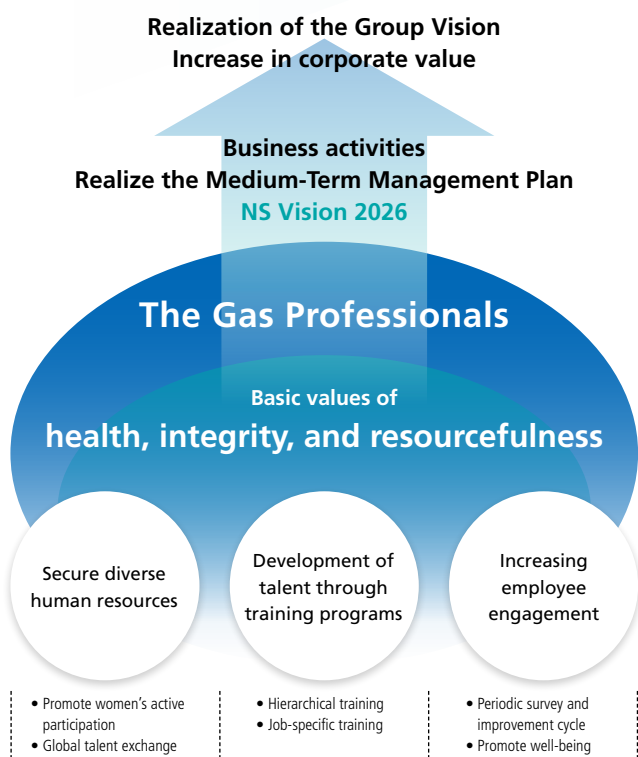
The Group boasts exceptional talent worldwide. We will work closely with our operating companies to create an environment where all employees can deeply commit to the Company's Vision and Mission and fulfill their duties toward achieving the MTP. This will enable them to grow personally, contribute to society and the planet, and take pride in their roles as "The Gas Professionals" or Thermos professionals.

Talent Strategy

# Feature: Creating a System that Will Continue Producing “The Gas Professionals”

The NSHD Group’s business thrives on the collective efforts of approximately 20,000 employees worldwide, each actively showcasing their expertise as “The Gas Professionals.” We are committed to deepening the understanding of our Group Philosophy and Vision across the industrial gases business in the four global regions and within the Thermos Group. By fostering the development of human resources who share these values globally, we aim to drive business growth and enhance our corporate value.

## Overview of NSHD’s Talent Strategy



➡ For details on each initiative, please refer to

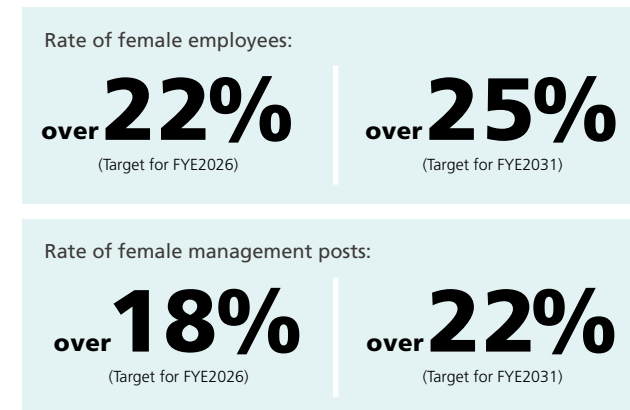
## Toward Achieving Non-Financial KPIs (Human Resources)

The NSHD Group has established eight non-financial programs as part of its sustainability management, a key strategy in the medium-term management plan, NS Vision 2026. In certain countries, including Japan, progress in promoting human resource initiatives—particularly the active participation of women—has been slow, mainly due to workplace and environmental factors, including work styles. To address this, under our Talent Diversity Program, we have set ambitious targets: increasing the Group’s overall rate of female employees to 22% or higher and the rate of female management positions to 18% or higher by the end of FYE2026. As of FYE2024, the rate of female employees stood at 20.2%, and the rate of female management positions was 15.4%. We will continue to intensify our efforts to achieve these targets.

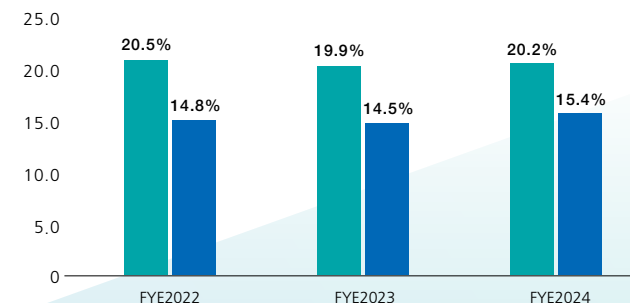
To adapt to a rapidly changing business environment and labor market, and to meet our objectives in the five focused fields and segment-specific strategies outlined in our medium-term management plan, promoting diversity will be essential. We will focus on securing a diverse workforce, including individuals with varied experiences, mid-career hires, and talents of any gender or nationality. Additionally, we will create inclusive working environments that empower all employees to reach their full potential, contributing to sustainable growth.

- ➡ For details on initiatives for ensuring diversity, please refer to
- ➡ For details on initiatives in the four global regions and Thermos, please refer to

## Women’s Participation KPIs



Performance on KPIs for Promoting Women’s Active Participation  
■ Rate of female employees ■ Rate of female management posts



## Talent Strategy

### Feature: Creating a System that Will Continue Producing “The Gas Professionals”

#### Secure Diverse Human Resources

##### (1) Initiatives to Promote Women’s Active Participation

As a key focus of our efforts to diversify our workforce, the NSHD Group has been actively promoting women’s participation across the entire organization. We have set specific KPIs, as previously mentioned, and are implementing initiatives to achieve these targets.

The level of women’s participation varies by region within the Group, influenced by organizational culture, style, and the external environment, including the labor market. Each operating company within the Group takes these contextual factors into account when examining and implementing effective measures. We have established forums for HR departments across the Group to exchange insights on successful initiatives in regions where women’s participation is more advanced, as well as to address challenges faced by

#### Principal Initiatives (Including Ongoing Initiatives)

- Japan:**
- Advance the Promotion Project Team for Women’s Active Engagement to a permanent organization as the Diversity & Inclusion Office
  - Proactively disseminate information via messages from the President CEO and internal newsletters, while implementing unconscious bias training
- United States:** Strengthen recruitment marketing activities communicating the status of female managers and personnel outside the company
- Europe:**
- WING (Women’s IKIGAI Nippon Gases Network)\*1 Project, a network for female employees led by female managers
  - Implement a sponsorship program for female managers
- Asia and Oceania:** Promote the Unity in Diversity Program\*2
- Thermos:** Conduct training for management aimed at cultivating a diversity promotion mindset
- NSHD:** Introduce female personnel active in various divisions worldwide in the Group’s internal newsletter

\*1 A human resource network comprising female employees for conducting women-centered events and training and advancing the presence of women.

\*2 An awareness-raising movement for promoting intercultural understanding and active participation of women.

individual operating companies. This collaborative approach facilitates the discussion of various strategies and ensures a framework for ongoing information sharing.

##### (2) Global Talent Exchange

Talent exchanges are highly effective for driving innovation and enhancing work productivity. In the industrial gases business, which operates on a model of production at the site of consumption, shifting long-established work practices in each country and region requires the exchange of ideas among individuals with diverse values and experiences. The NSHD Group has already seen significant improvements in its overall capabilities by encouraging operating companies to share their best practices with counterparts in other countries and regions, thereby boosting productivity.

Moreover, to address universal challenges that the entire Group must tackle, building networks and organizations that bring together talented individuals from different operating companies—each with specialized knowledge and experience—is essential for creating effective strategies. The NSHD Group has already established such structures for projects in global IT security and carbon neutrality.

These talent exchanges across regions not only benefit immediate business operations but also provide valuable opportunities for employees to develop essential skills such as communication, autonomy, proactivity, and cultural understanding. They also help cultivate the global mindset necessary for future leadership within the Group. Therefore, we will actively promote these exchanges.

#### Example of a Virtual Talent Exchange

Project: Carbon Neutrality Promotion Project

Participants: **33** participants from **10** countries  
(overall, including working group, steering committee, and executive group members)

#### Development of Talent through Training Programs

The NSHD Group’s sustainable growth cannot be realized without the approximately 20,000 employees who are active around the world as “The Gas Professionals.” We are designing systems attuned to local characteristics to keep producing and developing “The Gas Professionals.”

Taiyo Nippon Sanso has a hierarchical training program that provides basic training for all levels, from young employees to directors and audit and supervisory board members. For young employees in particular, basic training starts with a three-month training for new recruits, followed by annual group training together once a year until the fifth year, and we have established an environment that facilitates early acquisition of basic capabilities. In addition to hierarchical training, there are also various programs, such as “selective training,” “elective training,” and “thematic training,” designed to support employees’ skills development.

In Europe, Nippon Gases Euro-Holding has established a hierarchical training program called Growing Our Leadership (GOL). In this program, participants join in actual projects aimed at strengthening their leadership skills and increasing organization productivity, and lead the projects to success under the guidance of management. There is also an event to award projects that deliver notable results, where project members can learn from one another and build networks. In the United States, Southeast Asia, Australia, and other regions, similar leadership training programs are implemented, mainly for people at the management level and above.

In addition to these training programs, each division holds training programs in each region. These cover all aspects of business activities, such as security training and compliance awareness training to ensure that safety is prioritized as the most important aspect in the Company’s operation. Through these efforts, we are working to further develop as “The Gas Professionals.”

## Talent Strategy

### Feature: Creating a System that Will Continue Producing “The Gas Professionals”

#### Increasing Employee Engagement

Since FYE2023, the NSHD Group has conducted an engagement survey for all Group employees to assess their level of engagement with the Company. The survey aims to determine whether the work environment enables diverse talents to reach their full potential and whether the Group Philosophy and Vision have been effectively communicated and embraced.

The survey focuses on cultivating employees who understand the corporate philosophy and goals, and who approach their work with a sense of purpose. It measures employees’ alignment with the Company’s vision, their proactive and voluntary desire to contribute, and their overall well-being (physical, mental, and social health). The FYE2024 survey revealed an overall increase in engagement levels, largely due to actions taken by Group companies to improve engagement following the previous survey. Notably, engagement related to the Group Philosophy and Vision saw significant improvement. We will continue to listen to employee feedback through this survey, creating supportive and comfortable work environments that help them achieve their full potential.

#### Summary

Compared to the results for FYE2023, 12 of the 15 categories in the following table for the FYE2024 survey showed improvement, and the number of categories requiring attention decreased from two to zero.

The Safety category once again presented the best results, consistent with the previous fiscal year. While Leadership and Innovation, which previously required attention in FYE2023, have improved and moved out of the critical level, there is still significant room for further enhancement.

*Pick Up*

#### Sustainable Engagement

In the Sustainable Engagement category, the results indicate that a high level of motivation to achieve goals and a strong sense of belonging to the organization were supported by highly productive work environments and employees’ mental and physical well-being. The percentage of favorable responses (those who answered either “agree” or “tend to agree”) in this category reached 80 points, an increase of 2 points from the FYE2023 results.

Employee Engagement Survey Results\* (pt) NSHD Group average

\* Percentage of favorable responses (the ratio of people who answered either “agree” or “tend to agree”). Full score is 100 points.

	FYE2024	YoY
Sustainable Engagement	80	+2
Corporate Value, Goals and Objectives	76	+8
Company Image	67	+1
Leadership	60	+3
CSV (Creating Shared Value)	78	+1
Innovation	60	+3
Productivity/Speed	71	+1
Quality	74	+3
Safety	85	+1
Immediate Manager	77	±0
Diversity	72	+2
Communication	72	±0
Well-being/Health	78	±0
Talent Management	64	+1
Performance Management	63	+2

#### Overall Strengths and Areas for Improvement of the NSHD Group Seen from the Results

##### Strengths

- Workplace environment with a high level of support for and sympathy with the desired goals and objectives
- Commitment to safety and safety culture
- A climate of high psychological safety

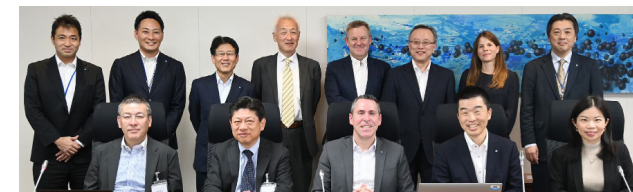
##### Areas for improvement

- Support for the corporate philosophy
- Promotion of diversity
- Clarification of criteria (goals and objectives) by which employees are evaluated

#### Looking Ahead

The NSHD Group has conducted workshops via Zoom to support action plan formulation and enhance the quality of result analysis. These workshops were held over three days and included 94 participants from each region. Participants reported that they felt more confident in accurately analyzing the survey results and believed they could apply what they learned to develop effective action plans aimed at increasing engagement.

Additionally, the Global Human Resource Committee convened in April 2024, with representatives responsible for human resources from the four global regions and Thermos. The meeting involved a broad exchange of opinions on the survey results, and companies focused on promoting well-being shared information about their specific initiatives. Discussions also covered the best approach for the Group to take moving forward. We will continue to make a Groupwide effort to strengthen engagement between employees and the Company, particularly on topics related to enhancing well-being.



Participants at the Global Human Resource Committee



## Four Global Regions and Thermos Talent Strategy

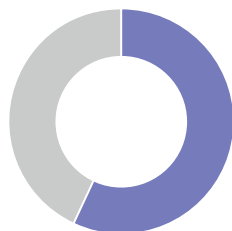
Nippon Sanso Holdings’ four global regions and Thermos each promote talent strategies tailored to the specific characteristics of their businesses, while also aligning with local customs and laws in each country and region. These efforts are guided by overall direction from the holding company. In this integrated report, we present the issues identified from the Employment Engagement Survey results and the corresponding action plans.

### Japan

#### Recognition of Issues

Compared to FYE2023, both the response rate and scores of the Employee Engagement Survey showed an upward trend, indicating growing interest in the survey. Notably, participants gave high scores for safety, which the Company prioritizes as a manufacturer, reflecting the positive impact of employees’ daily initiatives. However, the score for “approach to initiatives for promoting diversity at the company” was relatively low, with many participants providing neutral ratings. This suggests a need to better visualize and communicate the details of our diversity initiatives. To address this, we will implement a range of participatory initiatives, such as training and dialogue sessions, to foster a corporate culture that encourages active participation from diverse talents.

Diversity



**57** pts

Ratio of favorable answers (agree, tend to agree) responses in the Taiyo Nippon Sanso Group  
NSHD Group average: 72 pts

#### Action Plan to Address the Issues

Our initiatives will begin by establishing a foundation where diverse talents can actively participate—essentially, cultivating a corporate culture that embraces inclusivity. We are currently planning specific initiatives such as training on unconscious bias, leadership

development programs for women, and talent development study sessions for management.

We also aim to promote diversity and inclusion in collaboration with all employees, gathering their feedback through direct dialogue in town hall and roundtable meetings.

Additionally, we will advance these efforts by facilitating exchanges and information sharing with counterparts in other overseas regions where similar initiatives are already underway.

#### Initiatives to Ensure Diversity

After one year of activities since its launch in October 2022, the Promotion Project Team for Women’s Active Engagement submitted its recommendations to the president in September 2023. In response, the Diversity & Inclusion Office was established in April 2024 to ensure the prompt and effective implementation of these recommendations. The office includes members from the original Promotion Project Team and works in close coordination with the HR Division, marking the transition into the implementation phase.



Dialogue with TNSC President Nagata

Our goal is to foster a corporate culture where every employee feels motivated and empowered to continue working while respecting each other’s diversity. To support this, we have introduced a mentor system aimed at developing the next generation of female management candidates, addressing the need to increase their numbers.

#### Comment from the Person in Charge

##### Tae Uchikawa

Manager, Diversity & Inclusion Office, HR Dept.  
Taiyo Nippon Sanso Corporation



Full-scale diversity promotion is a new initiative for us, and while there are several challenges to overcome, we are committed to moving forward steadily. We will learn from ongoing and successful actions in other overseas regions. These efforts are closely linked to the individual growth and participation of each employee, as well as the growth of the company, ultimately benefiting our customers and society.

Increasing the ratio of female employees, who remain a minority, is a crucial first step in fostering a new company atmosphere where diverse values are naturally recognized and embraced. We are committed to working together on these initiatives to cultivate the growth and engagement of diverse talents across all genders.

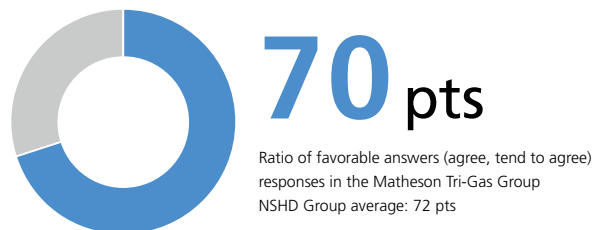
## Four Global Regions and Thermos Talent Strategy

### United States

#### Recognition of Issues

MATHESON was extremely proud that our rate of participation for 2023 increased by nearly 30%. With almost 75% of MATHESON's eligible Teammates responding, we believe that the results were representative and reasonable. MATHESON was equally pleased with the substantial number of personal comments that our Teammates shared in the final, open-ended survey question. I personally read each one of those comments. While our Teammates resoundingly validated our culture of safety, they also let us know that we could improve in areas like communication, community involvement, senior leadership engagement, better business tools, and competitive benefits.

#### Communication



#### Action Plan to Address the Issues

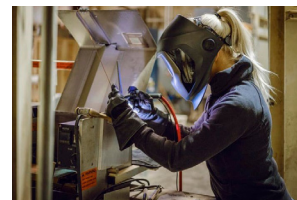
The common themes that we took away from the survey responses both validated current plans and caused us to consider new and alternative strategies. A number of options are currently being evaluated by MATHESON's Executive Committee and me. This involves balancing our operating strategies of safety, quality, and profitable growth against attracting and retaining the top talent in the industry. Some current plans were already underway that were positively responsive to our Teammates' survey feedback. Examples include a re-evaluation of our current time-off programs, the introduction of newer vehicles into our fleet, more and better communication about

the many facets of our current benefits plans, small team leadership training, and philanthropic events benefiting different causes each quarter.

As we look ahead as a leadership team at large, we are excited to launch our first formal succession planning to definitively identify the next generation of MATHESON leaders. We will lean on these leaders to help execute our future strategies in response to the survey.

#### Initiatives to Ensure Diversity

There is a uniqueness to MATHESON's operations and workforce as compared to other NSHD Group companies. Notably, nearly 25% of MATHESON's Teammates are commercial drivers. That field has been, and remains, largely male. That fact, coupled with the fact that a substantial amount of our non-driver jobs attract many fewer female applicants as compared to the representation of females in the U.S. population.



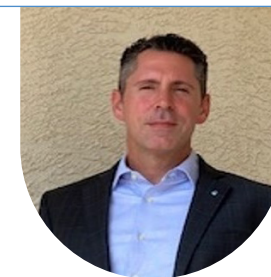
Female employees working in engineering

Nevertheless, MATHESON is seeking to grow the ranks of our female Teammates and we're not satisfied with our progress to date. We recognize that our area of greatest opportunity for improvement is in roles outside of operations, such as accounting, engineering, and human resources. At a meeting conducted in late June, the Senior Leadership Team discussed this topic and challenged themselves to make meaningful and significant improvements in attracting, retaining, and promoting female Teammates. This commitment, along with the introduction of Implicit Bias training and focused recruiting efforts, is expected to have an immediate positive impact.

#### Comment from the Person in Charge

##### John B. Molnar

Senior Vice President,  
Human Resources  
Matheson Tri-Gas, Inc.



The NSHD Global Human Resource Committee (GHRC) was established a few short years ago. The momentum behind this group recently culminated in its first in-person meeting at NSHD headquarters this past April. Together with Mr. Hamada and several NSHD leaders, the GHRC engaged in two highly productive and informative days of meetings where a number of important topics were discussed. This was an incredibly rewarding experience for me and it reminded me that, through the other members of the GHRC, I have an invaluable resource readily available to discuss best practices and benchmark MATHESON's Human Resources offerings against fellow NSHD Group companies. The ability to learn how the GHRC members operate is of particular interest to MATHESON because we are continuously seeking information on our competitors and the chemical and manufacturing industries to ensure that our benefits offerings are no less than highly competitive. My immediate goal is to take the lead on creating a side-by-side comparison of all of the benefits that NSHD Group companies provide to their Teammates from vacation time to wellness programs. Therein, I see an opportunity to harmonize those benefits that we deem to be "core" to all group companies.

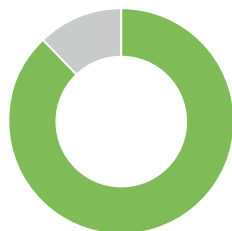
## Four Global Regions and Thermos Talent Strategy

### Europe

#### Recognition of Issues

Having a sustainable engagement rate of 88% in the last survey was a very positive result for us. Having an engaged, enabled, and energized workforce is one of the most important pillars of success of our organization. Our investment over the last years in innovation, communication, and talent development start clearly paying off. Further improvements remain high on our agenda.

#### Sustainable Engagement



**88 pts**

Ratio of favorable answers (agree, tend to agree) responses in the Nippon Gases Euro-Holding Group  
NSHD Group average: 80 pts

#### Action Plan to Address the Issues

Our action plan is focused on pushing innovation forward, accelerating our talent development initiatives, and providing full explanation on the compensation and benefits they are entitled to. We cannot realize these goals without having a strong communication structure in the organization. For this reason, continuously improving communication is the 4th pillar of our action plan. Innovation in all areas of our organization is high on the agenda. Our employees should be made aware of all the innovation projects ongoing, what are the results, and even more important motivated to come with good new projects. Therefore, completing our new European intranet is key here. Another topic we are investigating in this area is rewarding the people for good projects.

Our complete set of leadership trainings (Growing Our Leadership-GOL) is running at full force. Continuous review for improvements

are investigated, tested, and added to the programs. Last but not least, we have noted coming from the employee survey that our employees are not always aware of or fully understand the compensation and benefits of our organization. Together with the communication departments, we are looking for the right tool to bring the information to employees in an easy and understandable way.

#### Initiatives to Ensure Diversity

We believe the most of our HR processes have a link to diversity. Diversity was really started up in our organization around 2010. The biggest realization achieved is that the organization believes in the benefits that working in diversity brings. From recruitment over talent development, salary planning, promotions, and others, we always have an eye on diversity with the regard of improving our organization.



Our Women's Sponsoring Project has shown in the past years to be a strong program for preparing female talent to make the next step in their career. It consists of 16 talented female managers and senior professionals sponsored during 18 months by a senior director of the European Business Team. On regular times, they meet and exchange best practices and learnings. The program is all about getting visibility, working on development actions, and networking. The main results from this successful program are the increase of female population in leadership positions, inspire women in the organization to make the extra step, attract female talent and last but not least, create and promote a diverse culture in terms of gender. New on the agenda for this fiscal year is to organize for managers an unconscious bias training, delivered by Sponsoring participants.

#### Comment from the Person in Charge

##### Wim De Raedt

HR Director  
Nippon Gases Euro-Holding S.L.U.



My focus should be on both improving diversity and maintaining the strong employee engagement on survey results. We are in good shape in regard to diversity, but we still have opportunities for continuous improvement. Focusing on female employees in Operations, filling the retirement gap, and working on increasing female employees in senior leadership positions are the managerial effort, but it is HR that should follow up, suggest new proposals and implement if needed. In regard to the employee engagement survey, also here we have as HR to play a key role. Collect and follow up on the results of the action plans, listening to the voice of the organization and correct where needed is in my responsibility. Last but not least I want to mention that exchange of best practices with NSHD HR and the group companies is a must to improve all regions in both areas.

## Four Global Regions and Thermos Talent Strategy

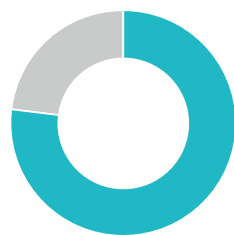
### Asia and Oceania

#### Recognition of Issues

In terms of strengths, our highly energized workforce continues to demonstrate exceptional drive and confidence in sharing diverse views and opinions during decision-making processes. They also appreciate and look forward to future opportunities for interaction with colleagues outside the region.

In terms of areas for improvement, under the Performance Management category, our employees feel that their managers lack the competency to effectively conduct performance discussions, clarify goals, and set targets. There is a notable lack of motivation among employees due to insufficient recognition and feedback from their managers, which is crucial for encouraging good performance. Employees also feel that their total compensation and benefits may be lacking behind the market practices.

#### Performance Management



**77** pts

Ratio of favorable answers (agree, tend to agree) responses at Nippon Sanso Holdings Singapore  
NSHD Group average: 63 pts

#### Action Plan to Address the Issues

Since our managers may lack the ability to engage in meaningful performance review discussions with their employees, we have implemented the “Grow Our Managers” talent development program. This program imparts skills such as Active Inquiry, Active Listening, and SMART goals setting techniques. Additionally, we have collaborated with the HR leads to review the performance appraisal systems and processes in their subsidiaries, incorporating

changes like the implementation of a goal-setting phase and mid-term review, and aligning the performance management cycle with the business cycle.

Concurrently, we are working on the salary review and job grading project, and phase 1 implementation involving our subsidiaries in Singapore and the Philippines. The project also involves a review of employee benefits, including rewards and recognition program for our workforce.

#### Initiatives to Ensure Diversity

“Unity in Diversity” represents our commitment to developing human resources initiatives that transform our workplace into not just a better place to work but a great place to work, where employees feel a sense of belonging.

Our engagement surveys have shown that our workforce is highly energized and engaged. From a human resource strategy perspective, we consistently prioritize talent and leadership development. Leveraging the seven core procedures from our Human Resources Competency Model, we collaborate with business leaders and HR teams to standardize HR practices through the implementation of HR toolkits. We are adopting a system perspective to promote the integration of HR practices and processes, enabled by our Human Resource Management System. Moving forward, we aim to transform HR processes from manual to digital, aligning with our organizational direction of promoting sustainability, going green, and reducing waste.



Female employees of Taiyo Nippon Sanso India plant trees to commemorate World Environment Day

#### Comment from the Person in Charge

##### Pauline Loo

Senior Vice President  
Nippon Sanso Holdings Singapore  
Pte. Ltd.



We are implementing a Human Resource Management System to automate key human resources processes such as Performance Management, Succession Planning, and Individual Development Planning. This initiative stems from the corporate belief that our workforce is our most valuable asset. Feedback from engagement surveys has shown that our employees value the opportunity to collaborate as one team, both within and beyond the region. We plan to work closely with the human resources division at NSHD to facilitate talent mobility within and beyond the Southeast Asia and India region.

Effective communication platforms enabled by technology are essential for creating a productive, safe, and innovative work environment. To support this, we have established structured communication channels such as the Annual Learning Festival for our workforce in Southeast Asia and India, etc.

With our structured talent and leadership development programs, “Grow Our Managers” and “Grow Our Leaders,” we remain committed to providing our workforce with career development opportunities to maximize their potential at the NSHD Group.

## Four Global Regions and Thermos Talent Strategy

### Thermos

#### Recognition of Issues

In the recent Engagement Survey, we observed a higher response rate and increased interest from our employees. We believe that the introduction of work-from-home options, flexible working hours, enhanced housing support, and workplace relocation systems contributed to the positive evaluation of our work-style reforms, particularly in supporting employees with parenting responsibilities. Additionally, the strong alignment with our company policies of “commitment to quality” and “provision of customer satisfaction” has positively impacted the evaluation of our long-term quality improvement initiatives. However, we recognize that there are areas needing attention, specifically in leadership and innovation. As a result, our 2024 action plan will focus on enhancing our innovation environment and strengthening leadership across the organization.

#### Leadership



**53 pts**

Ratio of favorable answers (agree, tend to agree) responses at Thermos  
NSHD Group average: 60 pts

#### Innovation



**53 pts**

Ratio of favorable answers (agree, tend to agree) responses at Thermos  
NSHD Group average: 60 pts

#### Action Plan to Address the Issues

A key focus of our medium-term management plan is “nurturing and strengthening talent” (transforming individuals into valuable assets!). For FYE2025, our objectives include promoting women’s participation and reviewing human resource systems to drive work-style reforms. We will advance these initiatives alongside the five themes of the Companywide Operational Excellence Project, which was launched in June 2024. Additionally, we will encourage manager-level employees to engage in close dialogue with management to reduce the psychological distance between leadership and staff, thereby strengthening our organizational capabilities.

#### Initiatives to Ensure Diversity

As part of our initiative to create a company where everyone can actively participate, we are conducting training specifically for female managers. Promoting the active participation of women is a key focus of our medium-term management plan. We have been working to increase the motivation of female employees and support their active involvement within the company. Additionally, to strengthen the ranks of female leaders, we have introduced training programs aimed at developing female employees who aspire to management roles, as well as training for all managers to cultivate a mindset that promotes diversity.



Training to develop female employees who aspire to management roles

Next, we will implement Career Design Training for young and mid-career employees and Career Development Support Training for line managers. These programs aim to create an environment where employees can work positively with their immediate managers by

sharing their career aspirations, work values, and professional goals, thereby fostering mutual understanding and trust. We will also actively utilize IT to enhance career visualization and support employees in charting their career paths.

#### Comment from the Person in Charge

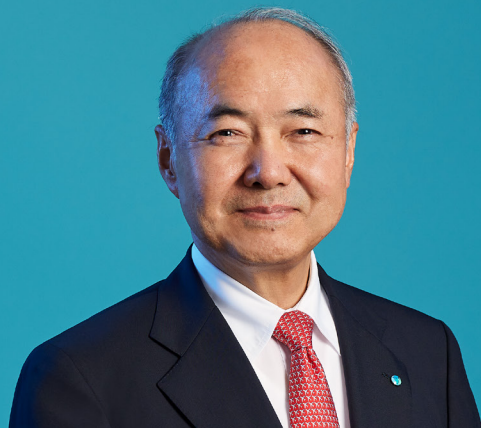
##### Koji Kajita

General Manager, Administration  
Thermos K.K.



In 2024, Thermos celebrated its 120th anniversary with the announcement of the new tagline, “Making your next comfortable moment,” emphasizing the importance of increasing convenience for all stakeholders, including employees. Given that our company has a higher ratio of female employees, we have already implemented numerous initiatives to support women’s active participation in the workplace. To further enhance these efforts, we plan to learn from the successful strategies in Europe and the United States, where female participation is more advanced, and incorporate those practices into our own initiatives. Many companies view talent strategy as a key management priority, and while it presents significant challenges, we believe that the development of talent is directly tied to the growth of the organization. With this in mind, we are committed to addressing this issue proactively and with determination.

## Messages from Outside Directors



We have a structure in place to discuss the issues that need to be discussed.

**Katsumi Nagasawa**  
Outside Director

### Full-Fledged Operation of the Outside Directors Opinion Exchange Meeting

The first job of an outside director is to develop a succession plan for the next President CEO, and develop the successor. Outside directors do not execute business, so they are never able to fully understand the Company's business in detail. For this reason, their most important mission is to select a trustworthy President CEO and select top management who will execute business appropriately.

In addition, we should also conduct checks on various management decisions, not using the internal logic of the Company, but rather from the perspective of shareholders or other external parties. In this regard, it is assumed that an environment will be provided in which the outside directors can say anything and exchange their opinions freely with respect to important themes. That is why we have established the Outside Directors Opinion Exchange Meeting. After a one-year trial, starting in April 2023, we began full-fledged meetings in April 2024.

There is not enough time to talk about all the issues in Board of Directors' meetings and meetings of the Advisory Committee on Appointments and Remuneration. However, to say that we cannot discuss something due to lack of time is to lose sight of our original purpose. When I proposed that we make some time, everyone agreed. This is not a forum for deciding anything. Its first function is a place where we

can speak freely. The lineup of outside directors from FYE2024 has a well-balanced skills matrix, with the addition of Hideo Nakajima, who is an expert in finance and compliance, and Katsuhito Yamaji, who has been involved in manufacturing. The five outside directors' multifaceted and objective perspectives and their direct exchanges of opinions make the meetings both rich and productive.

In parallel with this, we have decided on a schedule up to March 2025 laying out clearly what issues Nippon Sanso Holdings needs to discuss, and where and how they should be discussed. We have designed the structure to enable the Advisory Committee on Appointments and Remuneration and the Outside Directors Opinion Exchange Meeting to cover all of the issues between them, to ensure that all issues are discussed. For example, the urgent issue of promoting diversity in terms of women's active participation will be discussed in meetings of the Advisory Committee on Appointments and Remuneration. In addition, among the high-priority agenda items, promoting women's active participation is the only one that we have decided to discuss twice.

NSHD has another space where opinions can be freely exchanged. It started with a proposal of President CEO Hamada to have a directors' lunch meeting, held when the top management from Matheson Tri-Gas and Nippon Gases Euro-Holding are in Japan for their quarterly visits. This meeting is truly interesting. The discussion is extremely lively, with diverse

Please refer to the following for messages from outside directors Miri Hara, Masako Miyatake, Hideo Nakajima, and Katsuhito Yamaji.

#### Messages from Outside Directors:

members including President Nagata of Taiyo Nippon Sanso and us outside directors all exchanging information about topics such as the nature of the gas business and our thoughts on global human resources.

The main theme of this integrated report is NSHD's strengths. In the area of corporate governance, I believe that one of the Company's strengths is that it has an open environment where people can talk about anything, that issues that should be discussed are being discussed, and that it has established the structure to support this.

#### What It Means to Move People as an Outside Director

The most interesting part of management is starting a project and promoting it without fearing failure. However, that doesn't mean that we proceed blindly. It is vital to gather as much information as possible, clarify the risks, and make preparations in advance. On this point, the role of outside directors is to question the executive team and ask, "Has this point been discussed?" Having been thus questioned, the executive team moves autonomously to think about countermeasures. This is how risks are mitigated. It is in this way that the diverse skills matrix of the five outside directors best demonstrates its efficacy.

It goes without saying that outside directors do not execute business. Provided that management is functioning properly, their role is basically to ask, "What is happening with this?", and at times to give recommendations based on their experience. The proposal of specific countermeasures in response to this is the role of the executive team. Depending on the issue, we may wait for a certain period of time and then repeat the question. This is the power to move people. It is an effective way to steer a company onto a better course.

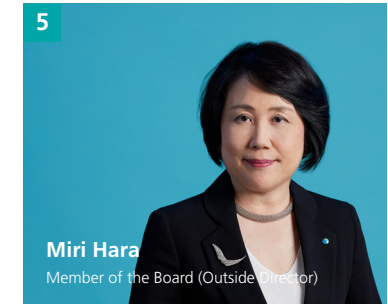
I mentioned that during FYE2025, promoting women's active participation will be brought up for discussion twice at meetings of the Advisory Committee on Appointments and Remuneration, but there will be an interval of half a year between the first and second time. An officer with responsibility for promoting women's active participation will be present at the meetings. So, we will have high expectations for a report on the progress of this matter at the second meeting.

If there is no substantial progress to report, what will we do? We will wait a little time, and then ask persistently, "What is happening with promoting women's active participation?" This is one of the methods employed by outside directors to manage progress.

# Members of the Board of Directors, Audit & Supervisory Board Members, and Executive Officers

A career summary and message from each officer can be viewed here.  
Members of the Board of Directors, Audit & Supervisory Board Members,  
and Executive Officers:

## Members of the Board of Directors



## Executive Officers

**Tsutomu Moroishi**  
Senior Executive Officer

**Takeshi Miki**  
Senior Executive Officer

**Alan David Draper**  
Senior Executive Officer

**Yutaka Okuda**  
Senior Executive Officer

**Kazuhiko Nishikawa**  
Executive Officer

**Koichiro Kubo**  
Executive Officer

**Masayoshi Omichi**  
Executive Officer

**Teiichiro Sawa**  
Executive Officer

## Audit & Supervisory Board Members



## Skills Matrix

The Company believes that members of the Board of Directors shall be composed of diverse individuals with the knowledge and experience required for corporate management in order for the Board of Directors to function more effectively. Accordingly, the fields of particular importance to the Group management are defined as Corporate Management, Financial Affairs & Accounting, Legal Affairs & Risk Management, Sales & Marketing, Development & Technology, and Production & Procurement. The knowledge and experience acquired by all of the officers through their career and in their expert areas comprise the necessary skills for the Group to promote sustainability management. The Company will strive to further enhance the effectiveness of the Board of Directors, assigning personnel with such knowledge and experience in the right places at the right time.

	Name	Positions / Career highlights	No. of years in position	Corporate management	Financial affairs & accounting	Legal affairs & risk management	Sales & marketing	Development & technology	Production & procurement	Overseas assignment	Business experience at other companies	Independence	
Members of the Board of Directors	1	Toshihiko Hamada	President CEO	4	●			●	●		●		
	2	Kenji Nagata	Member of the Board Representative Director and President, Taiyo Nippon Sanso Corporation	6	●			●			●		
	3	Scott Kallman	Member of the Board Chairman and CEO, Matheson Tri-Gas, Inc.	5	●			●			●	●	
	4	Raoul Giudici	Member of the Board Chairman and President, Nippon Gases Euro-Holding S.L.U.	0	●			●			●	●	
	5	Miri Hara	Member of the Board (Outside Director) Representative Certified Public Tax Accountant, Tax Corporation Yokohama Benten Accounting, Inc. Outside director, SECOM CO., LTD.	3		●						●	●
	6	Katsumi Nagasawa	Member of the Board (Outside Director) Former managing corporate executive officer, Hitachi, Ltd. Outside director, Sugino Machine Limited	2	●				●	●	●	●	●
	7	Masako Miyatake	Member of the Board (Outside Director) Visiting Professor, Keio University Law School Special Counsel, Blakemore & Mitsuki	2			●				●	●	●
	8	Hideo Nakajima	Member of the Board (Outside Director) Former Secretary General, Japan Fair Trade Commission Special Advisor, White & Case LLP / White & Case Law Offices	1		●	●				●	●	●
	9	Katsuhito Yamaji	Member of the Board (Outside Director) Former managing executive officer and director, Yamaha Motor Co., Ltd. Outside Director, ENSHU Limited	1	●				●	●	●	●	●
Audit & Supervisory Board Members	1	Satoshi Wataru	Audit & Supervisory Board Member Former senior executive officer of Group Human Resources & Corporate Secretariat Office, Nippon Sanso Holdings Corporation	1	●	●							
	2	Akihiro Hashimoto	Audit & Supervisory Board Member (Outside Auditor) Former Managing Executive Officer in charge of Corporate Banking, Mizuho Bank, Ltd.	7	●	●					●	●	●
	3	Kentaro Akashi	Audit & Supervisory Board Member (Outside Auditor) Former Managing Executive Officer, Mizuho Securities Co., Ltd. / Former Chairman of Mizuho Securities Asia Limited, in charge of Global Investment Banking Business	0	●	●					●	●	●
	4	Kohei Ichiya	Audit & Supervisory Board Member (Outside Auditor) Former General Manager, Finance Department, Mitsubishi Chemical Holdings Corporate Staff, Inc. (now Mitsubishi Chemical Group Corporation)	0		●					●		

Note: Details on the definition of table headings

Positions and career highlights are as of July 1, 2024.

Corporate management: Experience serving as CEO, executive, or executive officer of a listed company or CEO of a local subsidiary of a global company Experience working in other companies: Experience working outside of the NSHD Group's companies or the parent company Group's companies



# Corporate Governance

## Basic Approach

Nippon Sanso Holdings' governance is characterized by rapid decision-making and appropriate allocation of management resources. This is achieved by delegating authority to the operating companies in each of the four global regions and the Thermos business, which support an industrial gases business model that produces gases on the site of consumption. As a group that has global business operations, supervision of management decisions and business execution requires a multi-faceted valuation of a wide range of risks based on expert knowledge informed by close contact with the front lines.

The Company has adopted the organization of a company with Audit & Supervisory Board, and has a Board of Directors comprising internal directors with a thorough knowledge of the Company's business and independent outside directors who have diverse skills and experience. The Board of Directors discusses management strategy, capital expenditure, M&As, and so forth, makes decisions on the Company's business execution, and supervises its business execution. Moreover, Audit & Supervisory Board members, who are independent

from the management organization, exercise their own authority to audit the process of decision making by directors and the status of management execution.

### History of Changes in NSHD's Corporate Governance

June 2015	Appointed two independent outside directors (two of 11 directors)
October 2015	Formulated Principles of Corporate Governance and Disclosure Policy (now IR Policy)
June 2016	Established Advisory Committee on Appointments and Remuneration Introduced performance-linked remuneration for directors
June 2019	Appointed two directors of foreign nationality (heads of U.S. and European businesses)
October 2020	Transitioned to holding company structure
June 2021	Increased independent outside directors to three (three of nine directors; one female outside director)
June 2022	Increased independent outside directors to five (five of nine directors; two female outside directors)
June 2024	Revised remuneration for directors (added KPIs for non-financial KPI-linked bonuses for directors, etc.)

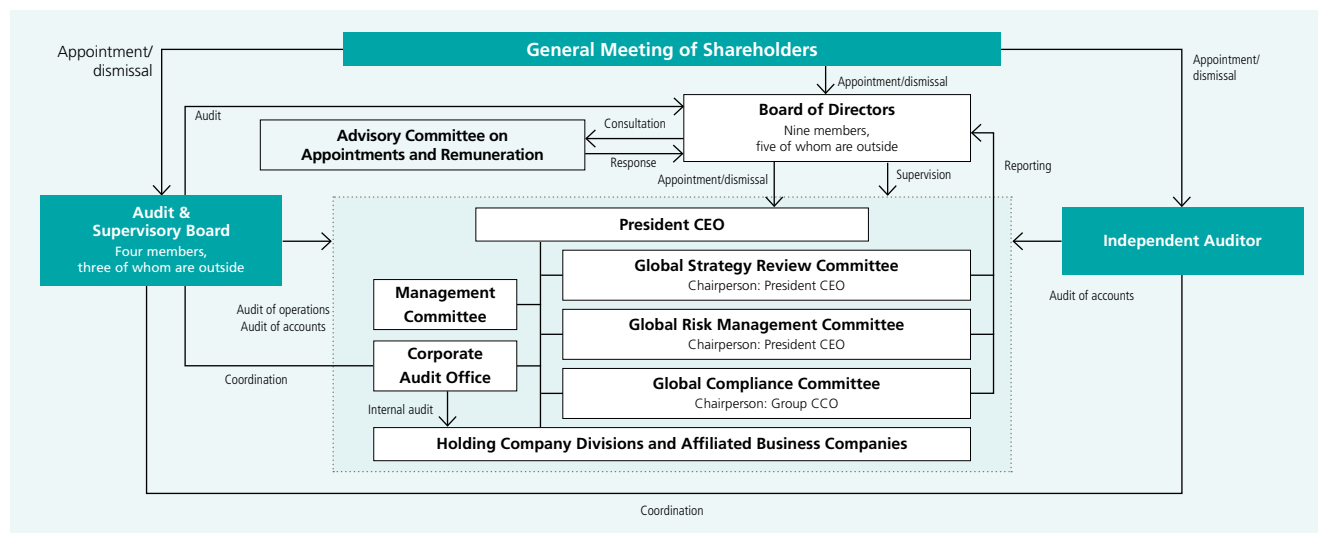
## Evaluation of the Board of Directors' Effectiveness

Our Principles of Corporate Governance require the Board of Directors to conduct an annual analysis and evaluation of its overall effectiveness, based on self-evaluations from each director, and to publicly disclose a summary of the results in a timely and appropriate manner. The Board of Directors consistently carries out these analyses and evaluations and makes continuous efforts to enhance its effectiveness. Below is a summary of the results from the FYE2024 analysis and evaluation of the Board's effectiveness, along with the key initiatives planned for FYE2025.

### Evaluation Process

- (1) Evaluated officers: Board directors (nine persons)
- (2) Evaluation method: Each director was asked to fill out a questionnaire in which evaluation items were listed and submit it to the Secretariat of the Board of Directors after entering their evaluations. The Secretariat compiled and anonymized the evaluations of the directors in a report and distributed the report to all directors. The Board met to discuss the evaluations and decided on matters to be improved during FYE2024.

### Corporate Governance Structure



### Evaluation Items (Overview):

- What the Board of Directors was or was not able to discuss effectively regarding the following points identified as the challenges of FYE2024 based on the results of the effectiveness evaluation conducted in FYE2023
  - The Company's role as a holding company should be discussed continuously.
  - The Board should continue discussions as to how the Company can contribute to customers and society through its businesses, including the hydrogen business, regarding the realization of carbon neutrality.

Please refer to the following for detailed information about each committee and annual schedules for the Board of Directors, the Audit & Supervisory Board, and the Advisory Committee on Appointments and Remuneration.  
**Corporate governance:**

## Corporate Governance

- (ii) Areas where the Board was or was not able to effectively function during FYE2024 regarding its four responsibilities\* laid out in the Principles of Corporate Governance
- (iii) What the Board should discuss and monitor on a priority basis in FYE2025
- (iv) Status of discussions on human capital management
- (v) Activities of the Advisory Committee on Appointments and Remuneration
- (vi) Composition of the Board of Directors
- (vii) Dialogue with shareholders and investors
- (viii) Operation of the Board of Directors' meetings, support for outside directors, and training for directors

\* Four responsibilities of the Board: (1) Supervise the overall business and its management, (2) establish and maintain internal control systems, (3) choose, appoint, and dismiss the President CEO and other management personnel, evaluate them, and decide their level of remuneration, and (4) decide business strategy and take on important executive decisions

### Results of the Evaluation

The Board of Directors gave the self-evaluation that it effectively played the role it was expected to perform in FYE2024. From among the directors, opinions such as follows were received regarding Board activities in FYE2024:

#### (1) Points identified as challenges for FYE2024

- (a) The Company's role as a holding company\*<sup>1</sup>
  - It is considered constructive/productive to hold discussions for each specific challenge (for example, strengthening a global legal structure, developing global human resources, sharing best practices among Group companies, and promoting women's active participation).
  - The Board of Directors should accumulate specific roles to be fulfilled through discussions about matters to be resolved or reported in Board meetings and explore roles to be further enhanced and roles that have not been identified based on "roles that have emerged" at some stage.

#### (b) The realization of carbon neutrality\*<sup>2</sup>

- Exhaustive discussions have not been conducted.
- I think there are a huge number of projects for carbon neutrality, but it is vital to wisely select projects according to the Company's resources and technological capabilities.
- In addition to examination of individual projects, we have room to consider, in terms of organizational structure and business operation, in which order of priority we should work in the medium to long term on technological development to achieve carbon neutrality and promotion of innovation.

#### (2) Areas other than (1) (Points identified as challenges for FYE2024) above

- Through the replacement of two directors, the Board of Directors' skills matrix has been further broadened by having multiple members with corporate management experience while retaining existing skills, resulting in the Board being able to hold wide-ranging and deep discussions on business risks and other matters.
- Investor relations (IR) activities and the state of dialogue with investors and analysts including feedback were shared in Board meetings, which contributes to the effective functioning of the Board. In addition, descriptions in the integrated report are also easy to understand and are improved each year by reflecting feedback of opinions of shareholders, investors, etc., that is also shared in Board meetings.

\*<sup>1</sup> Although the "role as a holding company" was not discussed as an individual agenda, discussions on this theme were conducted through deliberations and reporting on issues. The common understanding is that an operating company is responsible for businesses and a holding company is responsible for strategy formulation and governance.

\*<sup>2</sup> Regarding our contribution to decarbonization through our businesses, we have established the Carbon Neutral Working Group as a collaboration across Group companies to provide customers with products and services that contribute to the environment. During FYE2024, the Board of Directors reviewed and approved an agreement to supply oxygen to 1PointFive, LLC, which promotes the direct air capture business in Texas, the United States to collect CO<sub>2</sub> directly from the air.

### Future Challenges

Following the evaluation of the effectiveness and discussions of the Board of Directors, the Board will discuss the themes mentioned below in FYE2025.

- (i) The Company's role as a holding company
- (ii) How the Company can contribute to customers and society through its businesses in order to realize carbon neutrality.
- (iii) Promotion of women's active participation, and advancement of diversity in human resources including exchange of human resources among Group companies
- (iv) Verification of progress made thus far on the medium-term management plan in anticipation of the next medium-term management plan

Please also see here for information about the Board of Directors' Effectiveness.  
**Evaluation of the Board of Directors' Effectiveness:**

### Relationship with the Parent Company

NSHD, having Mitsubishi Chemical Group Corporation (MCG) as its parent company, belongs to a corporate group led by MCG (MCG Group). The MCG Group's business is composed of specialty materials, industrial gases, pharmaceuticals, methyl methacrylate (MMA) and its derivatives, and basic materials and polymers. The NSHD Group is positioned as an entity in the industrial gases segment. Being the only one operating an industrial gases business in the MCG Group, the Company Group does not compete with other companies in the MCG Group, and as of this moment does not expect to do so in the future.

NSHD concluded a basic agreement with the MCG on May 13, 2014. The basic agreement stipulates that the MCG, under its Group Management Regulations, respects our autonomy and is committed to supporting and cooperating with us. Accordingly, we make our own business decisions and do not require MCG's approval for any matters. The basic agreement also includes provisions on maintaining the Company's stock listing.

## Corporate Governance

When there is a conflict of interest between our parent company and our other shareholders, our directors act in a way to avoid harming the interest of the latter. We have five elected independent outside directors, who constitute a majority in the 9-member board, and two elected full-time, independent outside Audit & Supervisory Board members. These 10 independent individuals exercise oversight to ensure that conflicts of interest will not arise between the parent company and other shareholders. Furthermore, we have voluntarily established the Advisory Committee on Appointments and Remuneration that advises the Board of Directors on the nomination of candidates for directors and Audit & Supervisory Board members, as well as the appointment and dismissal of the CEO and other executive officers. The committee is composed of six members—the president and five independent outside directors—and is chaired by an independent outside director. This ensures our independence from the parent company on management appointments.

### Remuneration for Officers

The total amount of remunerations for directors and Audit & Supervisory Board members was approved, respectively, at the General Meeting of Shareholders. The specific amount of remuneration for

each director is determined by the President CEO, who is authorized by the Board of Directors, based on a remuneration standard approved by the Board. Meanwhile, remuneration for each Audit & Supervisory Board member is decided through internal discussions among the members of the Audit & Supervisory Board.

We have established the Advisory Committee on Appointments and Remuneration, which comprises multiple independent outside directors and the President CEO, and is chaired by an outside director. The committee deliberates the appropriateness of proposed remuneration after being consulted by the Board of Directors and the Audit & Supervisory Board, and then reports its findings to both boards.

Directors' remuneration comprises several components: basic monthly remuneration, which is fixed based on rank; performance-linked bonuses, which vary according to company performance; and non-financial KPI-linked bonuses, which are tied to the achievement of certain non-financial indicators outlined in the medium-term management plan.

Outside directors, however, receive only the fixed basic monthly remuneration. Remuneration for Audit & Supervisory Board members, including outside members, consists solely of a base salary.

### Succession Plan

Within the NSHD Group's governance structure, we place significant emphasis on preparing the next generation of leaders. The Advisory Committee on Appointments and Remuneration has thoroughly deliberated on the essential qualifications for future managers, the selection process, training policies, and the identification of potential candidates. The committee is actively advancing specific initiatives to support this effort.

Given the NSHD Group's presence in 32 countries and regions worldwide, we are committed to developing human resources with deep expertise in our distinctive industrial gases business model, which focuses on production at the site of consumption, and a comprehensive understanding of the industry structure in each region and the ability to manage operations with a global perspective.

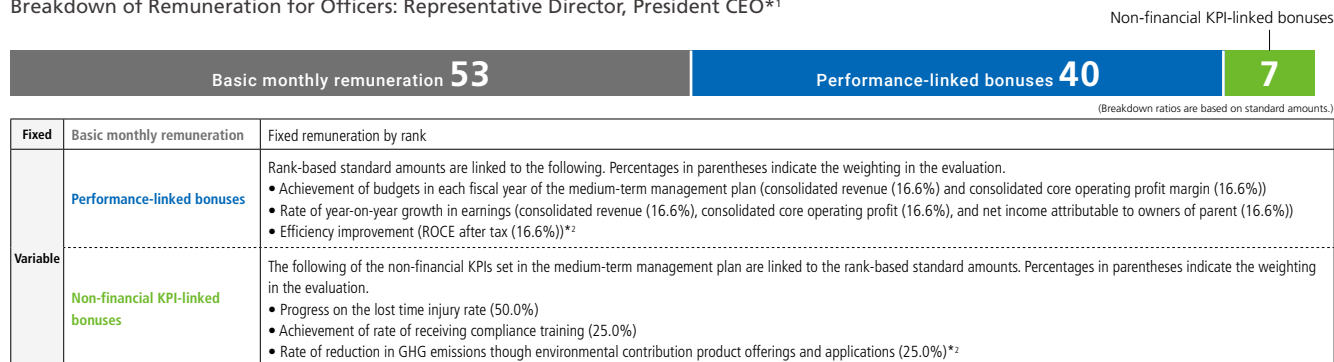
### Senior Management Training

To accelerate global business development, NSHD has established a training system designed to enhance the capabilities of senior management. This system aims to refine the decision-making abilities of our leaders by equipping them with diverse perspectives and knowledge expected at the highest levels of leadership. Below is an overview of the training programs we have implemented over the past three years.

- August 2022 Latest trends in information security and economic security
- April 2023 Prevent corruption globally
- January 2024 Business and human rights
- August 2024 Risk management by teaching officers about recent misconduct cases

Eligible participants include directors, Audit & Supervisory Board members, and executive officers of NSHD and Taiyo Nippon Sanso. We will continue to deliver timely training initiatives to further elevate the caliber of the Company's management team.

Breakdown of Remuneration for Officers: Representative Director, President CEO\*1



\*1 Remuneration for directors who mainly serve as officers of subsidiaries consists of basic monthly remuneration (82%), performance-linked bonuses (15%), and non-financial KPI-linked bonuses (3%). Furthermore, their performance-linked bonuses are linked to all indicators and their non-financial KPI-linked bonuses are linked to Rate of reduction in GHG emissions through environmental contribution product offerings and applications. And from July 2025, amounts linked to and calculated according to the degree of achievement of each target will be paid to directors.

\*2 Payments of monetary amounts linked to and calculated according to the degree of achievement of indicators added in or after July 2024 ("ROCE after tax" and "Rate of reduction in GHG emissions through environmental contribution product offerings and applications") will be made from July 2025 to directors.

# Compliance

The Nippon Sanso Holdings Group has established a basic compliance policy and continually updates its organizational structures and rules to ensure effective implementation. The Group Chief Compliance Officer (GCCO) oversees all compliance-related matters, while Regional Chief Compliance Officers (RCCOs) are appointed in each region to coordinate and execute compliance promotion activities on a global scale. In the FYE2024 report, we have introduced messages from the RCCOs of Australia and Taiwan, following the insights shared by the RCCOs of East Asia and Europe in last year's report.

## GCCO Message



**As we continue to expand our business, it is extremely important to ensure fair business practices.**

### **Kazuhiko Nishikawa**

Executive Officer, Taiyo Nippon Sanso Corporation GCCO,  
with responsibility for Groupwide internal control

### **NSHD's Approach to Promoting Compliance**

The NSHD Group recognizes that compliance is as fundamental to business activities as safety and quality. To address compliance violations, we are building a culture of skepticism, establishing mechanisms for prevention, and creating a system that encourages speaking out.

Our compliance structure is led by a Group Chief Compliance Officer (GCCO) and supported by Regional Chief Compliance Officers (RCCOs) in each of our regions: the United States, Europe, East Asia, Southeast Asia and India, Australia, Taiwan, and Japan. This structure allows us to tailor compliance initiatives to the unique characteristics of each region's business operations. By providing region-specific compliance risk training, we ensure that our programs are relevant and effective for our employees.

We have also clarified the rules for handling compliance violations and communicated these guidelines across all Group companies. Whistleblower systems have been established in every region, ensuring that individuals can report actual or potential compliance violations without fear of retaliation.

For the past two years, we have conducted an annual compliance awareness survey among all our employees worldwide. The results reveal variations in awareness across different regions and companies, which underscores the need for ongoing efforts to elevate the overall level of compliance awareness throughout the Group.

To achieve sustainable growth and enhance corporate value in a diversifying global society, the NSHD Group must maintain rigorous compliance and risk management. We are committed to increasing

compliance awareness at the individual level and embedding it deeply within our corporate culture.

### **Compliance Committee to Share Initiatives and Challenges between Regions**

The NSHD Group's GCCO and RCCOs convene annually at the Global Compliance Committee (GCC) to share updates on compliance promotion activities and discuss challenges faced in each region. At last year's GCC meeting, we engaged in meaningful discussions on topics such as "initiatives to ensure fair business practices" and "compliance training content and post-training follow-up." Given that the NSHD Group operates in four global regions—Japan, the United States, Europe, and Asia and Oceania—it is crucial to uphold fair business practices as we continue to expand. The GCC also facilitated a valuable exchange of information regarding language barriers and effective platforms for compliance training. These discussions empower RCCOs to lead compliance initiatives autonomously within their regions, thereby strengthening the internal control functions of the entire NSHD Group.

For more on our compliance promotion structure, please refer to here.

**Compliance:**

## Compliance

### Australia CCO Message

**Richard Seneviratne**  
In-House Counsel  
Chief Compliance Officer,  
Australia Supagas Pty Ltd



“**We all share a common interest and a unified approach and desire to continuously improve our respective businesses via ongoing compliance reform and education.**”

#### Approach to Compliance in the Oceania Region and Its Distinctive Characteristics

Supagas operates across all states and territories in Australia with additional supply to countries in the Oceania region. We supply LPG and industrial, hospitality, and medical gases to customers ranging from international customers to individuals. During the COVID-19 lockdowns, the importance of Supagas supplying these products and related services was acknowledged by the Australian government recognising Supagas as a provider of essential goods and services.

Supagas’ ethos of “Yes we can” drives everything that we do, including sales, customer service, deliveries, innovation, and compliance.

Australia is a melting pot of people from different backgrounds, cultures, and languages. On top of that, as with our sister companies around the world, Supagas provides products and services that may be classified as, and related to, dangerous goods. Compliance needs to address those realities.

#### Current Compliance-Related Measures

At Supagas, we conduct risk assessments on compliance risk areas in the business. These assessments include consideration of the following:

- Likelihood of the risk occurring.
- Damage to the business, including possible company and personal fines, imprisonment, prosecution, legal fees, loss of future contracts/tenders, and reputational damage.
- Measures that can be taken to address the risk.
- Government and legal emphasis and treatment.
- Changes in laws, court cases, regulator guidance, and legal advice (internal and external).
- Best practice as would be expected of a listed company/large proprietary company.
- The products and services that we supply and how they could affect our employees, contractors, and members of the public.
- Community expectations.

From those deliberations, policies and training are created and updated. The law is ever changing, and compliance needs to be abreast of and keep pace with those changes. That is why even though we conduct reviews in accordance with internal timelines, reviews are also conducted on an earlier as-and-when required basis when there are changes to laws, court decisions, or regulator guidance.

Compliance training is conducted via a variety of measures to ensure maximum penetration, understanding, and educational benefit. For example, competition and consumer (antitrust) training is conducted as follows:

- Computer-based training for all applicable staff. This training package was developed internally by the compliance and training teams, and is continuously updated and refreshed.
- Further to that, an external legal expert provides in-person training to the management team yearly.
- I then also conduct in-person/Microsoft Teams sessions with all sales staff and customer service officers so they have the opportunity to ask questions and share insight.

In addition, we have amalgamated policies on Supagas’ SharePoint Compliance page for ease of access. I include an example screenshot below.

This page contains the Supagas Compliance Policies. These policies are part of the Supagas Integrated Management System (IMS) which is a group of management processes that prescribe the activities necessary for Supagas and its employees to operate and maintain our facilities safely and reliably, in compliance with all local mandatory regulations for health, safety and the environment.

The IMS also includes policies and processes to ensure Supagas and its employees compliance with all legal, financial and employment legislation.

Document Number	Document Name	Document Number	Document Name
NAT-ADP005	Bullying, Harassment and Discrimination in the Workplace Policy	NAT-ADP004	Local Content Policy and Principles
NAT-ADP006	Personal Grievance and Complaints Policy	NAT-ADP010	Finance Policy
NAT-ADP007	Employment Records Policy	NAT-ADP019	Company Credit Card Policy
		NAT-ADP023	Purchasing Policy

## Compliance

### CCO Message

#### Approach to the Compliance Promotion System of NSHD Group as a Whole

I value the support, exchange, and sharing of ideas and cooperation shown by the members of the NSHD compliance team and my fellow RCCOs worldwide. While laws may differ from country to country, it is interesting to note that issues Supagas and I face here in Australia are also faced in other parts of the world. We all share a common interest and a unified approach and desire to continuously improve our respective businesses via ongoing compliance reform and education.

#### Mission and Role as an RCCO

Put simply, my mission and role are to know and understand the risks that Supagas faces, Supagas' obligations, and to educate, empower, and engage the Supagas team to meet the standards required of us. I do not take this duty and responsibility lightly. By fulfilling my role, the Supagas team is equipped with the necessary knowledge and understanding to live "Yes we can" safely, legally, and competently.

## Taiwan CCO Message

### KC Lin

Chief Compliance Officer, Taiwan  
Nippon Sanso Taiwan, Inc.



“**Compliance with laws and regulations, commitment to corporate social responsibility, and corporate ethics all need to be maintained and improved continuously.**”

#### Approach to Compliance in Taiwan and Its Distinctive Characteristics

The NSHD Group operates three companies and has roughly 240 employees in Taiwan. These companies are located in the same city and primarily serve the semiconductor industry. The Group's business scope includes gas / machine import and export, manufacturing, and sales; a logistics bonded warehouse; and a gas piping construction project. Complying with the latest relevant laws and regulations and making timely and appropriate business decisions are common in daily operations.

We encourage all employees to act honestly and fairly and with high ethical values in order to gain trust from customers and from society. This is a core foundation of our company that everyone from frontline staff to management must embody in their day-to-day operations. We place utmost importance on compliance awareness.

#### Current Compliance-Related Measures

Based on NSHD's medium-term management plan, NS Vision 2026, over the previous two years we have implemented a number of training programs, including those with a focus on recognizing and avoiding bribery; the Fair Trade Act; the Personal Data Protection Act;

the Trade Secrets Act; and ensuring a better working environment.

We emphasize the purpose and function of the Group's Code of Conduct and whistleblowing system to every employee with each training. In addition, we implement IT security awareness training. Furthermore, business-related regulations are confirmed and shared regularly, and relevant plan-do-check-act (PDCA) cycles are carried out when necessary. Through these activities, all employees have a strong understanding of, and are able to further their awareness of, compliance, so that we can ensure the business operations of each company comply with the relevant laws and regulations.

#### Approach to the Compliance Promotion System of NSHD Group as a Whole

We follow the NSHD basic compliance policy and medium-term management plan to formulate and implement compliance activities. We also have in place a whistleblowing system to prevent and detect compliance violations at an early stage.

In addition, through the Global Compliance Committee and Compliance Liaison Meeting, we can ensure the direction of forward execution, also sharing and learning between RCCOs. In doing so, we are able to promote and deliver the correct concepts to every employee in the region in a more effective manner.

#### Mission and Role as an RCCO

Compliance with laws and regulations, commitment to corporate social responsibility, and corporate ethics all need to be maintained and improved continuously.

In fulfilling the role of RCCO, it is extremely important to ensure that all business in the region is within the legal and reasonable scope, whether it is compliance with government laws, company regulations, or international standards. This needs to be strongly emphasized to all employees, as it is important they have a keen awareness and deep understanding of the importance of compliance and consensus. As an RCCO, I will move forward and work diligently toward achieving this.

## Compliance

### Example: Compliance Week

NSHD holds Compliance Week events to raise awareness of compliance among employees and promote compliance-related initiatives. For the integrated report covering FYE2024, we will introduce examples of the event from Europe, Southeast Asia, and India.

#### Europe

Nippon Gases Euro-Holding S.L.U. (NGE) held its third Compliance Week from March 18 to 22, 2023, aiming to reinforce everybody's commitment to compliance. This event is held every two years as part of the compliance program for Europe. The theme this time was "How to stay compliant in relationships with third parties."

- Slogan:** "Stay compliant, stay ahead."
- Participants:** 3,283 (over a total of 444 meetings)
- Content:** Through the meetings, NGE employees (including managers and directors) thought deeply about themes with colleagues, customers, suppliers, and business partners to reaffirm the nature of ethical and honest business practices.
- Result:** **Increase in employee compliance awareness**
- In FYE2024, the compliance violations that occurred were quickly resolved without serious impact.
  - After Compliance Week, in June 2023 the Code of Conduct was recertified and training was completed for all employees.

#### Looking Ahead

In light of the success of Compliance Week, NGE is now busy preparing for compliance training (scheduled for September 2024), which will focus on antimonopoly laws, data protection, bribery prevention, human rights, and email management. Moreover, in FYE2025 NGE will engage in ambitious new targets, such as raising interest in compliance at its majority-stake joint ventures, revising relevant processes from a compliance perspective, and approving a governance model for the adoption of artificial intelligence.



Images created to raise awareness of Compliance Week

#### Southeast Asia and India

Nippon Sanso Holdings Singapore Pte. Ltd. (NSHS) kicked off the Southeast Asia (SEA) and India region (SEA+I) annual Compliance Week in July 2023 with the theme, "Comply or Else ...", bringing home the message that there are consequences for non-compliance. Over the ensuing few months, SEA+I group companies hosted their own Compliance Week events with the same theme and program to educate staff on compliance concepts and strengthen the compliance culture of their organizations.

- Slogan:** "Comply or Else..."
- Participants:** 2,038
- Content:** Regional President and CEO Helder Teixeira opened the first day of each group company's Compliance Week. This was accompanied by training (classroom learning and quizzes) on three core topics: 1) Code of Conduct & Whistleblowing, 2) What Is Compliance and Why Is It Important?, and 3) Anti-Bribery and Anti-Corruption.
- Result:** **Achievement of a non-financial KPI (100% participation rate in compliance training)**
- At most of the group companies, the compliance team and human resource partners cooperated to achieve a participation rate of 100% or virtually 100%.

#### Looking Ahead

Compliance Week is an excellent opportunity for all employees to come together and learn about compliance, acquiring a lot of knowledge about compliance while having fun. Participants gave positive feedback on the event, and we are glad that our Compliance Week has served its purpose of promoting compliance in an enjoyable way. We will strengthen this initiative in the hope that it can instill a greater commitment to compliance that will remain with participants long after the Compliance Week.



A group photograph of participants on the last day of a group company's Compliance Week

# Risk Management

Please refer to the following for details on the risk management structure.  
**Risk Management:**  
**Business Risks:**

The Nippon Sanso Holdings Group is enhancing the effectiveness of its risk management and actively promoting risk reduction activities under a newly established risk management framework.

## Risk Management Structure

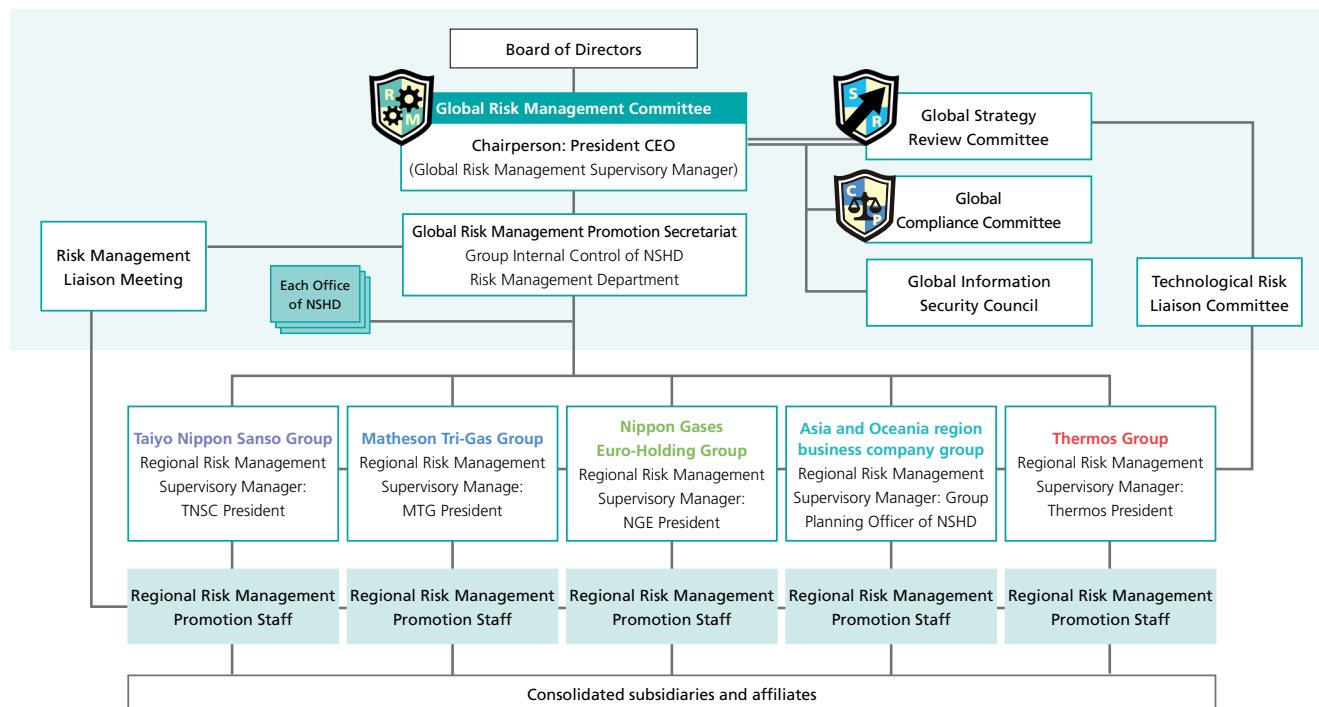
Following its transition to a pure holding company structure in October 2020, NSHD established a comprehensive, Companywide risk management framework with a global perspective. At the core of this framework is the Global Risk Management Committee, which is designed to optimize risk management activities by clearly defining roles and responsibilities across the Group and assessing management risks from a medium- and long-term perspective.

## Characteristics of the Risk Management Structure

A key feature of the NSHD Group's risk management structure is the integrated operation of the Global Risk Management Committee and the Global Strategy Review Committee.

By jointly discussing business risks and opportunities from multiple perspectives and sharing insights on operational risks and responses, the Group is driving Operational Excellence across its global operations.

Risk Management Structure



## Creation of Emblems for the Committees

To foster a sense of collaboration and unity, the Group has created emblems for its committees.

The Global Risk Management Committee and the Global Strategy Review Committee work in tandem, complementing each other to guide business operations and ensure the Company successfully attains its medium-term management plan, NS Vision 2026.



### Global Risk Management Committee

The emblem of the Global Risk Management Committee, evoking an image of supporting the Group's management.



### Global Strategy Review Committee

The emblem of the Global Strategy Review Committee, evoking an image of the Group's proactive management.



## Risk Management

### Global Risk Management Committee

On February 22, 2024, NSHD convened a meeting of the Global Risk Management Committee, chaired by President CEO Toshihiko Hamada. During the meeting, the committee identified and shared insights on risks influenced by changes in the external environment over the past year and engaged in a detailed discussion on key risk themes.

### Sharing of Risk Recognition and Risk Response

During the Global Risk Management Committee meeting, each operating company presented its top 10 risks, as well as the specific risks most critical to its business activities. Additionally, each department within NSHD reported on risks that require a coordinated response across the Group.



While risk perceptions may vary depending on the business environment, the committee seeks to enhance the Group's overall risk management by gaining a deeper understanding of these differences and the underlying factors, while examining risks from multiple perspectives.

#### Key Risk Themes for NSHD

##### 1. Changes in external and internal environment

Geopolitical risk, supply chains, laws and regulations, carbon neutrality

##### 2. Maintain and reinforce core business

Corporate governance at joint venture companies, Strengthen coordination with technology development

##### 3. Secure and train human resources who will support the aforementioned endeavors

Shortage of human resources, succession planning

The Global Risk Management Committee identified the key risk themes for NSHD, leading to a dynamic discussion.

In the current fiscal year, we will highlight discussions on strengthening coordination with technology development.

### Excerpt from the Discussion on Strengthening Coordination with Technology Development



Technological capabilities are fundamental to our business as an industrial gas manufacturer. It is crucial that we expand our engineering and R&D functions, which are currently concentrated in Japan, to enhance our technological capabilities and maximize our competitive advantages.

To achieve this, we should engage in a comprehensive discussion across the entire NSHD Group about the global allocation of resources.

**Director Nagata**



We need to identify the engineering and R&D requirements of each operating company and share information about competitors on a global scale.

**Director Kallman**



For the NSHD Group to effectively compete with major global players and ensure long-term survival, we will promptly initiate specific discussions based on today's conversation.

**President CEO Hamada**

### From President CEO Hamada

The Global Risk Management Committee collaborates closely with the Global Strategy Review Committee to align on risk recognition in our business operations. This partnership makes the committee a crucial body for executing our strategies effectively. I expect the committee to thoroughly understand the risk perceptions and responses at each operating company and leverage this knowledge to drive business forward.

Effective risk management is essential for enhancing the corporate value and reputation of the NSHD Group. I strongly encourage each operating company to continue taking these responsibilities seriously as they advance their business initiatives.



## Information Security

**We handle sensitive and confidential data and promise our customers to deliver the highest quality products in a dependable and consistent, uninterrupted supply. We therefore recognize the importance of information security in protecting confidential data and our operations from being adversely affected by information security incidents.**

### Our Information Security Policies and Practices

- We adopt a risk-based approach to identify, assess, and mitigate the potential threats and vulnerabilities that may affect our data and systems.
- We implement appropriate technical, administrative, and physical security controls to protect our data and systems from unauthorized or malicious actions, such as encryption, identity management, backup, firewall, endpoint protection, and incident response.
- We educate and train our employees on the importance of information security and their roles and responsibilities in ensuring the security of our data and systems.
- We monitor and review our information security performance and effectiveness on a regular basis and implement continuous improvement measures to enhance our security posture.

### Our Information Security Commitment

Nippon Sanso Holdings will continue to evolve its information security framework to stay up to date with the latest technological developments and to safeguard the company from new and emerging cybersecurity threats. The information security program will focus on the following key areas:

- Keeping the NSHD information security framework updated according to public frameworks, as new versions of ISO 27001, NIST 800-53, and NIST CSF are released
- Ensuring continued compliance with local regulations, and passing external audits and assessments from our customers, partners, and regulators.
- Maintaining all Group companies' high cybersecurity ratings, monitored by external security ratings platforms
- Minimizing the cybersecurity risk in our production facilities by applying our information security policies and practices to operational technology systems and by leveraging state of the art security tools.
- Monitoring technological developments (such as Artificial Intelligence) to assess potential risk of usage or benefits from applying new technology to enhance our information security capabilities.

### Conclusion

Information security is a core value and a strategic priority for our company, and we are committed to maintaining and improving our information security standards and practices. We believe that our information security framework not only protects our data and systems, but also enhances our reputation, competitiveness, and growth in the market.

For more details on the structure and specifics of the Global Information Security Council, please visit our website.  
**Global Information Security Council (GISC):**

## Appropriate Taxation

**In all countries and regions where we operate, we comply with laws and regulations to fulfill our tax obligations.**

Nippon Sanso Holdings and its subsidiaries act with integrity in every country and region where we have a business presence. Every policy that governs our business activities, including our taxation policy, is aimed at strictly complying with all applicable laws and regulations.

In each country and region where NSHD has a business presence, the NSHD Group is committed to addressing the interests of various stakeholders by ensuring timely filing of tax returns and payment of appropriate tax amounts, as well as by implementing effective tax governance programs that ensure we take a transparent approach to adhering to laws and regulations about tax management.

Through this approach, the NSHD Group is able to pay all relevant taxes in accordance with applicable laws and regulations while maintaining a transparent, constructive, and cooperative relationship with various tax authorities around the world.

## Dialogues with Stakeholders

At Nippon Sanso Holdings, we engage in dialogues with investors, shareholders, and other stakeholders in accordance with our IR Policy and Code of Conduct.

### Basic Approach

NSHD recognizes the importance of accountability in its corporate activities. We are committed to maintaining transparency and fostering an open attitude toward both internal and external stakeholders at all times. This includes providing timely and appropriate information disclosure. Additionally, NSHD values feedback and constructive criticism regarding our disclosures, ensuring that we communicate sincerely and integrate this feedback into our corporate activities.

### NSHD's Key Stakeholders



### Investors and Shareholders

In line with our IR Policy, we engage in constructive dialogue with market participants—including shareholders, investors, potential investors, and securities analysts—while adhering to the principles of fair disclosure. Our goal is to achieve sustainable growth and enhance corporate value over the medium to long term. We are committed to strengthening our IR activities by providing fair, timely, and accurate information about our management and business operations. Additionally, we work to enhance corporate value by communicating market participants' feedback and assessments to the Board of Directors and management, ensuring these insights are reflected in our business strategies.

#### Main Activity Results (Last Three Years)

Item	Unit	FYE2022	FYE2023	FYE2024
IR briefings	Times	6	6	6
Total number of discussions with domestic and overseas institutional investors and securities analysts (number of ESG-related discussions)	Events	365 (14)	324 (23)	461 (19)
IR briefings for individual investors (cumulative number of live and on-demand video views)	Times	3 (3,485)	2 (3,858)	3 (4,402)
Number of people attending the General Meeting of Shareholders	People	25	55	58

### Other Stakeholders

In line with our social responsibility and relationships with stakeholders, the NSHD Code of Conduct includes a dedicated section on "Accountability & Respect for Stakeholders." The President CEO has made significant efforts to instill and reinforce this awareness among Group employees. NSHD recognizes the importance of addressing various social and environmental issues, including those aligned with the SDGs, which are closely related to our business activities. By identifying and focusing on our materiality, we are committed to taking proactive steps to resolve these issues.

As a result of actively promoting external disclosure of our sustainability approach and initiatives, NSHD has improved in its external evaluations.

#### Major External Evaluations

	2020	2021	2022	2023	2024	Final evaluation score
FTSE	2.2	3.0	3.2	3.5	3.7	June 2024
MSCI	B	B	BB	BBB	—	March 2024
CDP (Climate Change)	B	A-	B	A-	—	February 2024
CDP (Water Security)	A-	B	A-	A-	—	February 2024

# Strategy by Segment

This section outlines the business strategies for Japan, the United States, Europe, Asia and Oceania, and Thermos.

# Business Characteristics of Each Segment

For more financial information, please refer to our results briefing materials.

Investor Relations:

Business:

## Characteristics of Each Segment (Business Operation Structure of Four Global Regions and Thermos)

	FYE2024 (Billions of yen)	Breakdown of Sales by Industry (FYE2024: Cumulative basis)	Segment Strategy	Business Environment* * Key considerations as of the start of FYE2025
Japan	Our aim is to maximize value by focusing on measures to optimize profitability, along with an emphasis on “strengthening core business through profitability improvement” and “growth exploration and expansion.”  Revenue: <b>414.3</b> Segment operating profit: <b>42.9</b> Segment operating profit margin: <b>10.4%</b>	<ul style="list-style-type: none"> <li>● Steel and metals ..... 8%</li> <li>● Automobiles and other transportation equipment ..... 4%</li> <li>● Electronics ..... 28%</li> <li>● Food and foodstuffs ..... 2%</li> <li>● Healthcare ..... 10%</li> <li>● Chemicals and energy ..... 24%</li> <li>● Other ..... 24%</li> </ul>	<b>Growth Strategy</b> <ul style="list-style-type: none"> <li>• Expansion of the solutions business field through development of new products and services</li> <li>• Creation of business opportunities related to carbon neutrality</li> <li>• Develop business in domestic and overseas growth markets (electronics, stable isotopes, and biotech)</li> </ul> <b>Business Changes</b> <ul style="list-style-type: none"> <li>• Review low-earnings businesses</li> <li>• Cash flow creation through working capital improvement</li> </ul>	<b>Anticipated Opportunities</b> <ul style="list-style-type: none"> <li>• Equipment and installation projects in electronics business</li> <li>• Demand for electronic material gases for next-generation semiconductors</li> <li>• Demand for gases and equipment that contribute to better productivity and energy savings</li> </ul> <b>Concerning Risks</b> <ul style="list-style-type: none"> <li>• Impact of increased fuel and raw material prices on earnings</li> <li>• Supply chain disruption due to raw material shortages and procurement difficulties</li> <li>• Increase in labor expenses due to labor shortages and labor hour regulations</li> </ul>
United States	Matheson will anchor its strategy on competitive advantages related to our vertically integrated product structure and proven success cross-selling these products and services to maximize profits and to create tangible value for our Customers.  Revenue: <b>347.0</b> Segment operating profit: <b>50.0</b> Segment operating profit margin: <b>14.4%</b>	<ul style="list-style-type: none"> <li>● Steel and metals ..... 8%</li> <li>● Automobiles and other transportation equipment ..... 10%</li> <li>● Electronics ..... 7%</li> <li>● Food and foodstuffs ..... 13%</li> <li>● Healthcare ..... 8%</li> <li>● Chemicals and energy ..... 13%</li> <li>● Other ..... 41%</li> </ul>	<b>Growth Strategy</b> <ul style="list-style-type: none"> <li>• Leverage the advantages of vertical integration: expand sales to existing Customers and secure new Customers based on our broad range of products and services</li> <li>• Capitalize on product line extensions: further exploit cross-selling successes through solutions related to our welding fuel gases and dry ice capabilities</li> <li>• Create value through product applications: provide expertise in optimizing use of our products with application support for metal fabrication and cold chain operations</li> </ul>	<b>Anticipated Opportunities</b> <ul style="list-style-type: none"> <li>• Increased demand for electronics gases due to the CHIPS and Science Act and growth of AI</li> <li>• Additional On Site and Pipeline project development focus on CCUS</li> <li>• Sharp sales improvement in liquid CO<sub>2</sub> and dry ice in markets we have added new capacity</li> </ul> <b>Concerning Risks</b> <ul style="list-style-type: none"> <li>• Changing international and political environments potentially impacting economic growth</li> <li>• Shortage of technical and engineering resources to support product application business development</li> <li>• Impact of ongoing inflation on our core cost-drivers</li> </ul>
Europe	Nippon Gases aims to grow further through its strategic pillars, namely People and Operational Excellence, Optimised Base Business, Reinforced Governance and Profitable Growth.  Revenue: <b>302.4</b> Segment operating profit: <b>53.2</b> Segment operating profit margin: <b>17.6%</b>	<ul style="list-style-type: none"> <li>● Steel and metals ..... 17%</li> <li>● Automobiles and other transportation equipment ..... 1%</li> <li>● Electronics ..... 3%</li> <li>● Food and foodstuffs ..... 17%</li> <li>● Healthcare ..... 12%</li> <li>● Chemicals and energy ..... 20%</li> <li>● Other ..... 30%</li> </ul>	<b>Growth Strategy</b> <ul style="list-style-type: none"> <li>• Focus on resilient markets, optimise base business</li> <li>• Invest in application technologies</li> <li>• Evaluate marketing mix and product portfolio</li> <li>• Efficiently allocate resources to business needs</li> </ul>	<b>Anticipated Opportunities</b> <ul style="list-style-type: none"> <li>• Increase in gas demand as the European economy recovers</li> <li>• Business development through marketing activities and new business creation, including resilient markets and electronics</li> <li>• Carbon neutrality investment projects (such as biomethane and hydrogen)</li> </ul> <b>Concerning Risks</b> <ul style="list-style-type: none"> <li>• Current trends of European economy, which might be affected further by geopolitical tensions and trade wars</li> <li>• High volatility in energy prices</li> <li>• Supply shortages due to disruption of supply chains, including ammonia plant shut down and subsequent tight CO<sub>2</sub> market</li> </ul>

## Business Characteristics of Each Segment

### Characteristics of Each Segment (Business Operation Structure of Four Global Regions and Thermos)

	FYE2024 (Billions of yen)	Breakdown of Sales by Industry (FYE2024: Cumulative basis)	Segment Strategy	Business Environment* * Key considerations as of the start of FYE2025
Asia and Oceania	NSHD aims to be a major supplier of industrial gases with a diverse lineup of products, while efficiently operating its businesses in compliance with laws and regulations and constantly working to improve productivity.  Revenue: <b>160.3</b> Segment operating profit: <b>15.9</b> Segment operating profit margin: <b>9.9%</b>	<ul style="list-style-type: none"> <li>● Steel and metals ..... 3%</li> <li>● Automobiles and other transportation equipment ..... 5%</li> <li>● Electronics ..... 40%</li> <li>● Food and foodstuffs ..... 2%</li> <li>● Healthcare ..... 3%</li> <li>● Chemicals and energy ..... 25%</li> <li>● Other ..... 22%</li> </ul>	<b>Growth Strategy</b> <ul style="list-style-type: none"> <li>• Acquire large-scale on-site projects, expand production capacity in ASUs</li> <li>• Expand new products and sales areas</li> <li>• Win opportunities in global HyCO business</li> <li>• Management: Move to new management structure</li> </ul>	<b>Anticipated Opportunities</b> <ul style="list-style-type: none"> <li>• Increase in electronic material gases demand due to area-wide resurgence in demand and growth in the semiconductor market</li> <li>• Continued firm demand in Southeast Asia and India</li> </ul> <b>Concerning Risks</b> <ul style="list-style-type: none"> <li>• Soaring electricity costs in Southeast Asian countries</li> <li>• Impact from trade friction</li> <li>• Chronic shortage of drivers in the Australian labor market</li> </ul>
Thermos	In the Thermos business, we are a pioneer in vacuum-insulated bottles. We propose ideas for new lifestyles and develop products in tune with the customs and cultures of people living in unique markets in countries around the world.  Revenue: <b>30.7</b> Segment operating profit: <b>5.5</b> Segment operating profit margin: <b>18.1%</b>	<b>Breakdown of Sales by Region</b> (FYE2024: Cumulative basis) <ul style="list-style-type: none"> <li>● Japan ..... 84%</li> <li>● Asia ..... 16%</li> </ul>	<b>Growth Strategy</b> <ul style="list-style-type: none"> <li>• Strengthen new product development, and, expand directly operated stores and e-commerce business</li> <li>• Strengthen interactive communication with Thermos users</li> <li>• Improve THERMOS brand awareness and maximize brand equity</li> </ul>	<b>Anticipated Opportunities</b> <ul style="list-style-type: none"> <li>• Demand for economization as prices increase for bottled beverages</li> <li>• Demand from foreign tourists visiting Japan</li> <li>• Attention and interest in sustainable products amid heightened environmental awareness</li> </ul> <b>Concerning Risks</b> <ul style="list-style-type: none"> <li>• Higher prices for raw materials and energy due to the weak yen</li> <li>• Increase in labor costs at overseas manufacturing plants</li> <li>• Rising logistics costs</li> </ul>



## Strategy by Segment: Japan

### Market Position and Business Strengths

Over **40%**

(Market share in Japan)

- Founded in 1910
- Employees: About **6,000**
- R&D: **5** bases,  
Plant engineering: **1** base
- Bulk gas production: **34** bases
- Electronic material gases production: **4** bases
- Total Gas Centers: **17** bases
- Supply gas and meet customer needs with extensive sales and operational network and through more than **220** partner companies

### Business Environment (Opportunities and Risks)

#### Opportunities:

- Stronger demand as new production facilities are commissioned for electronics market
- Opportunities to supply electronics material gases for domestic next-generation semiconductor production
- Avoidance of procurement risk and increase in profitability for rare gases (neon, krypton, xenon) by moving production to Japan
- Expansion of carbon neutrality-related demand, such as CO<sub>2</sub> capture and reuse as a global warming countermeasure
- Expansion of fields for oxygen combustion applications as an energy-saving measure

#### Risks:

- Impact on earnings due to price increases for fuel, raw materials, etc.
- Concern regarding destabilization of helium gas procurement
- Increase in labor expenses due to labor shortages arising from the working population decline and regulation of labor hours

### Key Aspects of Sustainability

#### Safety

- Conduct hazard simulation training at the Technical Academy and increase technological and security capabilities through TNSC Technical Seminars

#### Environment

- Growth in sales of products that help the environment exceed our own GHG emissions
  - Oxygen combustion burners, hydrogen and ammonia combustion burners
- Reduce our own GHG emissions
  - Improve performance of ASUs, introduce solar power generation systems, and consider introduction of green electricity

#### Diversity and Inclusion

- Established the new Diversity & Inclusion Office
- Conduct proactive recruitment activities to hire diverse human resources
- Promote health and productivity management and the creation of workplaces that are comfortable for diverse human resources

### Short-Term Initiatives

**TNSC works tirelessly to improve productivity, increase margins, and advance the development of new products with "Profitability" as its slogan.**

- Rigorously implement price management of products corresponding to increases in fuel and raw material prices and labor expenses
- Continuously implement initiatives to increase productivity and reduce costs in each division
- Shift management resources to core and growth businesses, optimal business portfolio

### Future Initiatives

#### Sustainability

##### Diversity and Inclusion

- Promote awareness of using systems that enable diverse work styles and foster a corporate culture for them
- Conduct dialogues, training, and other initiatives to promote understanding of the need to support diversity and inclusion, and encourage active participation of women

##### Safety

- Enhance virtual reality-based experience content of crisis situations with the aim of doubling participants in Technical Academy courses by FYE2026

#### Maintain and Improve Profitability

##### Optimal Business Portfolio

- Monitoring of business portfolio based on capital efficiency

##### Electronics

- Organize a production system to respond to recovery in domestic semiconductors, and strengthen marketing and supply chains
  - Develop distinctive products for semiconductor customers and expand sales

##### R&D

- Focus on R&D and delve deeper into untapped markets for realizing a carbon neutral society
- R&D into new materials for electronics market

##### Innovation

- Launch projects to improve potential and practicality of developing new products and businesses in fields that could emerge as new core businesses

#### Operational Excellence

- Promote advanced control and automation of production plants through DX
- Streamline tanker truck transportation using customer inventory data
- Improve business with advanced digitalization of order systems

### Position in Final Year of NS Vision 2026

01

#### Strengthen core business: Profitability improvement

Enhance profitability by rationalizing and optimizing existing base business

02

#### Growth strategy: Exploration and expansion

Start new business lines by advancing development in new materials for semiconductor, production processes and related equipment, stable isotopes, and carbon neutral fields

## Segment Top Message: Japan



### Market Position and Business Strengths

Taiyo Nippon Sanso Corporation holds the top share of the Japanese industrial gases market at around 40%. The greatest strengths of our business are in-house manufacture of ASUs for producing industrial gases, self-operation of the plants, and Japan's largest industrial gases network for transporting and selling gas. Alongside this, we also have outstanding gas control and handling technologies and analysis technologies for handling gases safely, securely, and stably. Furthermore, our three main research laboratories lead our efforts to create and launch new applications and services with our basic technologies to fully realize the potential and functions of gas.

### Initiatives in Japan

Under the current medium-term management plan, we are focusing on measures to maximize profitability, with two main strategies being "strengthening core business through profitability

improvement" and "growth exploration and expansion." Looking ahead to 2030, the year of our long-term target of achieving industrial gases as a service (iGaaS), we are working to increase operational efficiency and productivity through DX, thorough price management, and promoting the development of new, niche-leading products and services through innovation. In addition, we are of course working to augment our capabilities in the area of CO<sub>2</sub> capture- and reuse-related technologies as countermeasures for global warming, a new mainstream trend, and to reduce GHG emissions within the Group through the use of renewable energy. Moreover, we are also working to ensure safety and security, maintain quality, and ensure compliance, with a strong awareness that these are fundamental to the Group's survival. In other efforts, we are aiming to foster a corporate culture that allows diverse people to contribute their talents. We have established a new Diversity & Inclusion Promotion Department inside the HR Division to promote the creation of an in-house culture and systems that provide comfortable workspaces and enable people to fully leverage their individual strengths and abilities, while respecting the diversity of individual employees' values and life stages.

### Issues to Be Addressed for Increasing Earnings Capability

Our measures for TNSC's materiality issue of increasing profitability are to increase productivity and implement rigorous price management. Our initiatives for increasing profitability include promoting advanced control and automation of plant operations, streamlining tanker truck transportation using customer inventory data, increasing the efficiency of construction work through the use of tablet devices, and advanced digitalization of our systems for receiving orders. In price management, we are continuously engaged in robust activities to accurately communicate the prices of our products and services to customers and reflect their value accurately in pricing. Along with this, we also work to improve working capital and generate cash flow in order to increase the efficiency of invested capital, leading to business growth investments and business continuity investments for performing our duty of reliable supply, and human

resource investments for increasing growth opportunities and engagement of employees.

### Outlook for the Business Environment

With the risk of energy and materials price increases due to geopolitical events, we are experiencing growing demand from society to become carbon neutral. On the other hand, there is a consensus forming with regard to the Japanese economy that society and the economy should be driven by gradual inflation. In this social environment, the number of workers is declining, while labor rates are increasing for construction and transportation due to labor hour regulations, a trend which is expected to continue. In this business environment, we see a substantial opportunity to contribute to value by providing gas applications that help our customers to reduce GHG emissions and increase their productivity. We will seize this opportunity to further promote our business.

### Approach to Growth Opportunities

Driven by the flow of semiconductor manufacturing back into Japan, capital investment is surging, particularly in the field of next-generation power semiconductors, which are a strength of domestic manufacturers, and the field of advanced logic semiconductors, where even further miniaturization is taking place. In this operating environment, we are achieving strong growth by supplying total solutions, ranging from base gases such as nitrogen, to specialty materials gases, supply equipment, and piping installation. In the field of carbon neutrality, we will contribute to reducing customers' GHG emissions by supplying products that help the environment for various industries and fields, including hydrogen and ammonia burners based on oxygen combustion technology. Through this industrial gas value creation model, we will pivot from cost reduction management under the previous deflationary environment to added-value maximization management under the coming environment of mild inflation.



## Strategy by Segment: United States

### Market Position and Business Strengths

9%

(Market share in the United States)

- Matheson works to grow our share in key markets through vertical integration by establishing infrastructure and capabilities to serve both packaged gas and bulk liquid customers. We enhance our position with the value added by our applications engineering expertise. We also look to supplement this growth with special focus on strategic products such as acetylene, nitrous oxide, and key semiconductor gas mixes all supported by a nationwide network summarized below.
- More than **300** locations and over **4,500** employees in the United States
- Over **100** production facilities including ASUs, on-site generators, liquid carbon dioxide plants, dry ice plants, HyCO installations, nitrous oxide plants, and major industrial, specialty, and electronics cylinder fill plants
- Over **100,000** customer accounts served by over **2,000** delivery vehicles and rail cars

### Business Environment (Opportunities and Risks)

#### Opportunities:

- Electronics gases demand growth supported by the U.S. CHIPS Act
- Continued growth in the food processing industry and related demand for liquid nitrogen, liquid carbon dioxide, dry ice and food freezers
- Further development of the metal fabrication market sector related to automation and lasers

#### Risks:

- Significant increases in core costs of wages, power and fuel
- Economic slowdown related to geopolitical developments both in the U.S. and abroad
- Construction cost inflation in key U.S. growth markets

### Key Aspects of Sustainability

#### Environment

- Relentless effort to identify cost-effective renewable energy sources
- Continued drive to deploy new, more fuel-efficient distribution equipment
- Efforts to participate in commercially viable carbon neutral capital projects

#### Diversity and Inclusion

- Emphasis placed on gender recruiting
- Social media communications highlighting our diversity culture trends
- Mentoring program to develop diverse high potential team members
- Social media communication campaigns highlighting women in our workplace

### Short-Term Initiatives

- Complete the implementation of cylinder asset tracking system
- Expand sales and engineering capabilities for on-site and pipeline business
- Establish the Metal Fabrication and Food Processing applications groups

### Future Initiatives

#### Sustainability

- Continue targeting distribution mileage reduction aimed at fuel savings and related CO<sub>2</sub> emissions
- Compete for large-scale oxygen plant projects that support direct air capture and clean hydrogen
- Implement operating practice and equipment improvements that increase overall power efficiencies

#### Maintain and Improve Profitability

- Enhance inventory management to minimize idle assets and reduce capex
- Sustain effective cost and price management to offset ongoing inflationary pressures
- Further intensify already strong driver recruiting program to reduce expenses related to outside contract carriers

#### Operational Excellence

- Comprehensive program to reduce waste at all levels in our operations
- Expand Green Belt coverage to increase number of cost reduction projects
- Explore more extensive automation to support operations safety and cost reduction

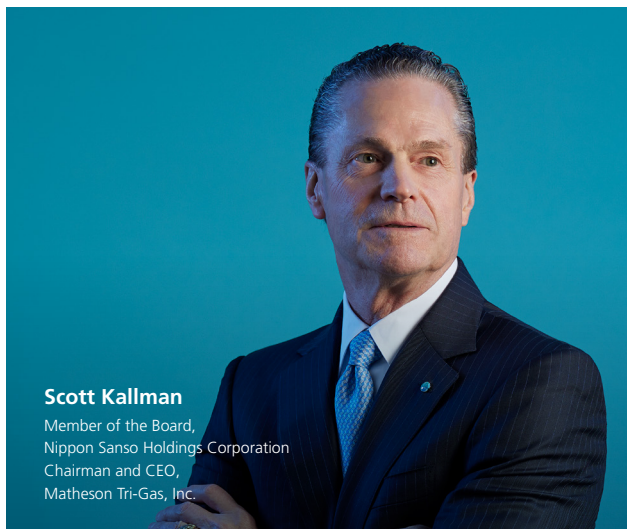
Position in  
Final Year of  
NS Vision  
2026

01  
Industry benchmark for  
Safety, Quality,  
and Profit  
Growth

02  
A major  
supplier to  
the metal  
fabrication,  
cold chain/food  
processing, and  
semiconductor  
market sectors

03  
Sustainability  
program that  
delivers  
profit growth  
and related  
shareholder  
value

## Segment Top Message: United States



**Scott Kallman**  
Member of the Board,  
Nippon Sanso Holdings Corporation  
Chairman and CEO,  
Matheson Tri-Gas, Inc.

### Market Position and Business Strengths

The U.S. consists of diverse regional economies and industries. One of the high growth regions is the southern Gulf Coast and Sun Belt. Matheson has established an East Coast to West Coast network of liquid air gases production facilities. Complementing this network is a South to North network through the states of Texas into Oklahoma and Arkansas also producing liquid air gases, liquid carbon dioxide, and dry ice. All through these regions are key growth industries such as metal fabrication, major chemical works, multiple food processors, and cold chain operations. All are existing and potential Customers for our gases, equipment, and applications technology.

### Initiatives in the United States

As always, the starting point for all of our market initiatives is the Safety of our operations and Quality of the products and services we supply. This is evidenced by numerous annual industry safety awards and our 99% plus on time delivery rate.

Carbon neutrality is an area of emphasis with special focus on plant power efficiencies, water conservation, and ongoing investment in more fuel efficient distribution equipment including the expansion of our railcar fleet to reduce carbon emissions related to truck operations. We also have a major carbon neutral project underway to enable the direct air capture of carbon dioxide.

In addition, research and development of new products and the expansion of production capacity in support of NSHD Total Electronics are key areas of activity. As is always the case, cost reduction and effective price management are the basis to improving our overall quality of earnings. Over the past 20 years, all this has resulted in a double-digit sales and operating income compounded annual growth rates.

### Issues to Be Addressed for Increasing Earnings Capability

We will continue to drive the fundamentals of Safety and the Quality of our products and services which positions the organization for profitable growth. We view Safety as the implementation of best practice process and procedures. We view Quality as delivering on commitments to our Customers and the continuous improvement of best practices.

This continuous improvement results in efficiency gains that ultimately reduce costs. These cost reductions are leveraged to secure new business and drive overall profitable growth. Critical to earnings growth in the coming year in addition to cost and price management is focus on securing new business by creating value for our Customers through gas applications technology and the timely completion and start-up of major capital projects currently under construction.

### Outlook for the Business Environment

Slowing but continued inflation keeps pressure on the need to reduce costs and manage pricing. We anticipate softer volumes from the existing Customer base to continue in the near term increasing the need to drive new business development. Immediate growth opportunities will be led by our package gas business and related metal fabrication applications. Also, cryogen and dry ice sales to the food processing space often using freezers manufactured by our wholly-owned subsidiaries of MBI Cryogenics and Cryogenic Systems Equipment will be big contributors. Lastly, additional medium term growth is expected from the completion of new capital projects.

Helium supply chains will require close management due to ongoing geopolitical risks related to the war between Ukraine and Russia.

### Approach to Growth Opportunities

Near term Matheson is well positioned to pursue metal fabrication in the Midwest, Texas and the Gulf Coast markets along with food processing and freezing equipment throughout the U.S.

Additionally, in support of the Focused Fields of NS Vision 2026 Sustainability Management and Exploring our HyCO and ASU capabilities can deliver technical solutions that can help mitigate significant carbon dioxide emissions. We continue to work to identify new projects which will contribute to GHG reduction in the form of oxy-fuel burner applications and additional direct air capture installs.

To further develop our electronics business, we have projects underway to significantly expand production capabilities for specific key products.

## Strategy by Segment: Europe

### Market Position and Business Strengths

**9%**

(Market share in Europe)

\* 12% for countries where we have a business presence

- Business presence in **13** European countries
- Network for supplying each region in Europe  
CO<sub>2</sub> carrier (ship for transporting liquefied carbon dioxide): **3** vessels  
Pipelines: **14** lines  
Trucks: More than **1,000**
- Number of customers:  
About **150,000** companies
- Operational production facilities: **195**
- Number of employees:  
About **3,200**

### Business Environment (Opportunities and Risks)

#### Opportunities:

- Increase in gas demand as the European economy recovers
- Business development through marketing activities and new business creation
- Carbon neutrality investment projects (such as biomethane and hydrogen)
- Growth in resilient industries, such as food & beverage and healthcare
- Leveraging NSHD's expertise in Electronics

#### Risks:

- Current trends in the broader European economy
- High volatility in energy prices
- Supply shortages due to disruption of supply chains
- Ammonia plants shut down due to rising natural gas prices, tighter supply-demand conditions for CO<sub>2</sub>
- Geopolitical tensions and subsequent economic effects

### Key Aspects of Sustainability

#### Safety

- Ongoing safety education, such as "Safety First: Everyday, Everywhere"

#### Environment

- Our GHG emissions have decreased by 30.2% from the base year (FYE2019). Energy-saving measures, such as reducing ASU power consumption and installing solar panels
- Carbon neutrality support projects for customers in aluminium, non-ferrous metals, glass, and steel (electric arc furnaces) industries
- R&D projects related to green hydrogen
- Promotion of refrigerants with low Global Warming Potential (GWP)

#### Diversity and Inclusion

- Continue to strengthen diversity and inclusion
- Promote "Women Sponsorship Programs"

### Short-Term Initiatives

- Disciplined price management to mitigate impact from cost increases
- Strengthen project replication and training in productivity improvement activities
- Increase sales in resilient markets, such as food & beverage, healthcare, and the environment
- Fast response to the demand for carbon neutral-related products. Focus on greening combustion biomethane, green hydrogen, CO<sub>2</sub> capture.
- Strengthening of Engineering capabilities and broadening of on-site product-line

### Future Initiatives

#### Sustainability

- Educational training related to the environment, safety, and quality
- Promote renewable energy use (purchase EAC\* for electricity)
- Acceleration of carbon neutral measures
  - (1) Oxy-fuel combustion technology
  - (2) Biomethane-related business
  - (3) Green hydrogen production projects
  - (4) CO<sub>2</sub> capture opportunities
- Continuous monitoring of governance guidelines, compliance policies
- Continue to promote women sponsorship programs, community engagement programs, and young employee communities

#### Maintain and Improve Profitability

- Timely and strong price management in response to cost trends
- Expand in electronic material gas sales and resilient markets
- Relentlessly pursue operational excellence
- Leverage DX (process automation, transportation, production planning, etc.)
- Diversify sources of CO<sub>2</sub> from fossil fuels to natural or biogenic origin

\* Energy Attribute Certificates: Certificates related to environmental attributes such as power generation methods and energy sources

### Position in Final Year of NS Vision 2026

01

Optimize core businesses

02

Organizational systems that focus on outstanding human resources

03

Strengthen governance

04

Pursuit of Operational Excellence

05

Acquire application technologies that satisfy requirements of customers

## Segment Top Message: Europe



### Market Position and Business Strengths

Nippon Gases Euro-Holding (hereinafter, NGE), part of Nippon Sanso Holdings Corporation (NSHD) since December 2018, is the fourth largest industrial gases company in Europe, with a market share around 9%, which has slightly increased in FYE2024. Operating in 13 countries and organised in 5 business regions, NGE leverages a vast network including pipeline enclaves, more than 150 producing sites, over 1,000 trucks, and 3 CO<sub>2</sub> carriers. NGE serves over 150,000 customers and more than 350,000 homecare patients. Committed to innovation, collaboration, and sustainability, NGE upholds the highest safety standards recognised by leading industrial gases associations.

### Initiatives in Europe

In the past fiscal year, NGE has advanced its commitment to sustainability management, exploring new business opportunities towards

carbon neutrality, and enhancing operational excellence. These efforts are aligned with our core management plan to drive progress, sustainability, and innovation.

#### Sustainability and Carbon Neutrality

Our dedication to a carbon neutral world is embodied in the NSHD Group's strategy. We've made significant progress internally and with our customers to reduce carbon emissions. Key partnerships and strategic mergers and acquisitions have catalysed our decarbonisation efforts. Taking accelerated steps to be able to leverage generative artificial intelligence, we innovate solutions for our clients, and streamline our internal processes for greater efficiency.

#### Human Resources and Community Engagement

This year, we finalized the design of our much treasured learning paths for different collectives with the kick off of "Inspiring Our Leadership" training. Our HR best practices have received the prestigious Award Cegos with Equipos & Talento\* in the Strategy and Transformation category.

Our community engagement initiatives reached a historic peak, with over 600 employees participating in various projects.

\* A human resources media for personnel responsible for corporate personnel, selection, training, and human resource management.

#### Digital Transformation and Innovation

Our firm commitment to digitalisation is made evident in our advanced remote control and monitoring projects, in our combustion and other applications analysis tools designed to improve operational efficiency, as well as in our human resources and other functional processes. These innovations are part of our broader strategy to drive digital excellence across the company.

#### Healthcare Innovations

In the healthcare sector, we have acquired Noxtec Development to enhance our healthcare services with this exceptional expertise. Our collaboration has led to the creation of state-of-the-art medical

devices that significantly improve the quality of life for our users. Additionally, HomeMedicine, our e-Healthcare subsidiary, specialises in providing telemedicine services aimed at monitoring patients with complex clinical needs anytime, anywhere.

Through these initiatives, NGE continues to enable a sustainable future, foster innovation, and ensure excellence in all aspects of our operations.

### Issues to Be Addressed for Increasing Earnings Capability

To further increase NGE earnings capability from next year onwards, several key items need addressing.

#### Enhancing Productivity and Efficiency

Optimising efficiency reduces greenhouse gas emissions and costs. Our productivity programmes aim to reduce waste, improve plant performance, and minimise product losses and unscheduled shut-downs. Establishing the Cost Reduction Group in our European Operations has been pivotal in promoting process optimisation, ensuring more efficient use of natural resources.

#### Energy Crisis Contingency and Cost Management

We have successfully implemented strong contingency measures to address the recent energy crisis, including close collaboration with customers, suppliers, and other stakeholders.

Our continued improvement in operating cash flows and working capital provide a solid foundation for future profitability.

#### Sustainable Development Integration

Integrating sustainable development projects into our operations remains crucial. These initiatives enhance our supply chain efficiency and align with our long-term environmental goals—ultimately contributing to better financial performance.

## Segment Top Message: Europe

### Outlook for the Business Environment

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The external business environment for NGE is characterised by both significant challenges and promising opportunities—increasing cyber threats and the dynamic geopolitical landscape, including potential conflicts and economic uncertainties, present substantial risks.

Concurrently, we see the potential of the ongoing global push for decarbonisation, the expanded role of hydrogen, and the rise of artificial intelligence, which will be reshaping industries.

Interest rates may remain high for longer than anticipated, pressuring small companies' liquidity. Additionally, the slow recovery of industrial production and the uncertain impact of new European chips legislation add to the complexity.

In this VUCA environment, NGE is in a position to thrive: the decarbonisation trend offers excellent growth opportunities and the aging population presents new avenues in healthcare. By embracing servitization and leveraging AI, we aim to deliver innovative solutions and maintain our competitive edge in a rapidly evolving market.

### Approach to Growth Opportunities

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NGE is positioned to seize numerous growth opportunities, focusing on profitable expansion through key strategic pillars. Central to our strategy is a commitment to people excellence and leadership, whereby investing in our talented workforce, we attract and retain top-tier assets and customers, ensuring a solid foundation for future growth.

Collaboration and best practice sharing are also pivotal. Enhancing regional collaboration within Europe and not only in Europe will mitigate silo effects\* and leverage collective expertise, driving innovation and efficiency.

Technological development is paramount. In order to stay ahead, we are accelerating advancements in Engineering, IT, Operations (automation) and Gas Applications. Partnering with third parties will enhance our competitiveness and responsiveness to customer needs.

In sustainability, we are pioneering projects in green hydrogen, biogenic CO<sub>2</sub> supply, and large-scale carbon capture. Our circular economy initiatives further our commitment to reducing our overall carbon footprint.

In Electronics, we have expanded production capacity at our Oevel Plant in Belgium, to provide high-quality electronics gases and chemicals—crucial for industry growth. Through these efforts, NGE is harnessing growth opportunities and driving sustainable development.

\* A phenomenon where an organization becomes divided internally and ceases to collaborate.

## Strategy by Segment: Asia and Oceania

### Market Position and Business Strengths

#### Developing the industrial gases business and electronics business in a four subsegment structure

- Operations in **12** countries and regions
- The Sub-segment structure has been in place officially.  
The structure of each Sub-segment accountable for its own performance by region and business has started officially in April 2023.
  - Southeast Asia + India Subsegment
  - China Industrial Gas Subsegment
  - East Asia Electronics Subsegment
  - Oceania Industrial Gas Subsegment
- Average annual growth rate of **10%** over past 10 years
- Over **4,000** employees in the region
- Operating more than **25** ASUs, as well as carbon dioxide plants, nitrogen plants, and hydrogen plants
- Special gas production bases: **6** facilities
- Special gas supply services: **3** sites

### Business Environment (Opportunities and Risks)

#### Opportunities:

- Area-wide recovery in demand in the semiconductor market and new business opportunities for electronic material gases in advanced semiconductors for generative AI
- Continued firm demand in Southeast Asia and India (electronics, infrastructure, and automotive industries, etc.)
- Firm demand in the Australian LPG market over the medium term

#### Risks:

- Risks associated with insufficient price management to counter rapidly rising electricity costs in Southeast Asian countries
- Impact on regional economies from U.S.–China trade friction
- Cost increase due to chronic shortage of drivers in the Australian labor market

### Key Aspects of Sustainability

#### Safety

- Conduct risk simulations, review daily operations from a safety perspective

#### Environment

- Reduce power consumption through plant efficiency improvements and installation of solar panels
- Propose ways to improve fuel efficiency for customers with electric arc furnaces and glass melting furnaces where GHG emission reduction is a challenge

#### Diversity and Inclusion

- Host Women Empowerment network meetings, hold internal events for International Women's Day
- Fostering NSHD Group awareness through the engagement survey report

#### Compliance

- Compliance training, internal control training, labor law training, and more

### Short-Term Initiatives

#### Australia

- Manage procurement costs and price
- Expand business portfolio through related equipment and device sales, maximize synergy with existing businesses
- Expansion of business area through acquisition of businesses related to LPG and industrial gases

#### Southeast Asia and India

- Build regional networks and promote collaboration
- Manage price and work to increase productivity

#### East Asia

- Tap into regional demand for specialty gases and optimize production plants in the electronics business

### Future Initiatives

#### Sustainability

##### Safety

- Improve safety indicators, including those for occupational accidents, by 10% annually

##### Quality

- Thoroughly manage quality based on Group quality management standards

##### Environment

- Utilize oxygen combustion, argon welding, etc.

#### Maintain and Improve Profitability

- Concentrate investment in in-house products, such as electronic material gases and growth sectors (collaboration in Japan, enhancing supply capacity, and efficient factory operations)
- Explore new businesses for a carbon neutral society

#### Operational Excellence

- Thoroughly control costs, including working capital management (enhance business operations in terms of both price management and cost controls)
- DX strategy (unify IT security levels and promote labor-saving and cost reductions through automation)

#### Human Resources

- Strengthen human resource functions of each company through development of regional networks led by subsegments

#### Governance

- Strengthen compliance and risk management while preserving organizational culture of individual companies

### Position in Final Year of NS Vision 2026

01

Become an industrial gases supplier with a diverse product lineup, and become a major player in each country and region

02

Conduct efficient and disciplined operations through activities to enhance productivity

03

Strong growth in revenue while improving the operating profit margin

04

Rebuild our business platform

## Segment Top Message: Asia and Oceania



### Market Position and Business Strengths

In this region, we have built supply chains to enable reliable supply of products to major electronics customers in China, Taiwan, and South Korea, so electronics represents a particularly large share of net sales in this region. We have production bases with strong regional superiority, mainly in Southeast Asia, where we are meeting industrial gases demand for a broad range of customers through sales strategies that make use of gas applications and other means. In Australia, we are gradually realizing a business structure that expands our LPG sales network across the entire country.

### Initiatives in Asia and Oceania

The Asia and Oceania region is divided into four subsegments, each of which is responsible for its own earnings. This structure began full operation in April 2023. Each subsegment has been delegated

decision-making authority to create a business operation structure that works with speed.

In our initiatives for FYE2024, we increased revenue through continued pricing activities in Southeast Asia, in which we steadily passed electricity cost increases in each country through to our sales prices. We also won several gas supply contracts for large-scale gas users, such as electronics customers in the region. In Australia, where the LPG business is a mainstay, LPG sales volume declined slightly from the previous year, however, we secured profits due to a decrease in contract prices, while we are also working to improve profitability from products other than LPG business, such as by increasing our carbon dioxide supply capacity. Electronics sales decreased sharply following inventory adjustments and capital expenditure postponement by customers in East Asia, but demand is expected to recover gradually from the end of the fiscal year onward.

Starting from FYE2025, we assigned sustainability officers in each subsegment as we transitioned to a structure that will promote sustainability aspects including security, the environment, and human resources.

### Issues to Be Addressed for Increasing Earnings Capability

In Southeast Asia, we have set up project teams under the subsegment structure to increase the efficacy of our pricing activities through measures such as proposing optimized strategies for each country. In initiatives for increasing productivity, we are focusing not only on efficient plant operations in the manufacturing sector but also widening our target to include operations such as sales, management, logistics, and IT. At the same time, we are regularly sharing the status of progress throughout the region to further promote penetration of this activity. In one example involving liquid gas supply in Vietnam, we are promoting an initiative to deliver gases from the optimal plant to minimize transport distances. In Australia, we are promoting digitalization that contributes directly to operational efficiency, such as introducing a portal system to help reduce labor time on both the receiving and ordering sides.

### Outlook for the Business Environment

There is a risk of impacts to the Chinese, Taiwanese, and South Korean semiconductor industries from geopolitical tensions, such as the intensifying confrontation between the United States and China, and excessive competition due to the emergence of local suppliers. On the other hand, specialty gas demand is expected to increase with a full-scale recovery of semiconductor demand and new demand for use in generative AI. In South Korea, we will steadily expand our production capacity for diborane and other products. Furthermore, the Asian industrial gases market has the greatest diversity among our four global regions, and we are expecting new gas demand from various customers and industries. While securely capturing these growth opportunities, we will also focus on uncovering new demand through the proposal of gas applications.

### Approach to Growth Opportunities

To ensure our growth going forward, we will focus on capturing gas demand in the semiconductor electronic components and electronic devices industries, where demand is growing, leveraging our capabilities in high-quality product supply and total support. Furthermore, by reinforcing the capacity of our production facilities and building robust supply chains, we will expand the scope of our business activities in Asia and Oceania, which is expected to experience higher growth than other regions. In the field of carbon neutrality, the Company will build on its core technologies in four areas where it has strengths (combustion, hydrogen production, CO<sub>2</sub> capture, and oxygen production) and promote efforts to explore new business opportunities by participating in global working group activities from this region as well.

# Strategy by Segment: Thermos

## Market Position and Business Strengths

- Nissan Thermo K.K. established in 1980 in Japan
- Approximately **300** employees
- Bases in **16** countries worldwide, including Japan
- Manufacturing plants in Malaysia, the Philippines, and China
- THERMOS brand is available in over **120** countries worldwide
- Customer satisfaction about **96%** for our best-selling JNL series of portable vacuum-insulated mugs
- Launch more than **150** new products every year, with a new product sales ratio of about **25%**
- The Thermos Group produces **37** million products per year globally

## Business Environment (Opportunities and Risks)

- Opportunities:**
- Increase in savings mentality among consumers due to rising bottled beverage prices (stronger demand for stainless steel bottles)
  - Recovery in foreign tourist demand due to increase in foreign visitors to Japan
  - Growing environmental awareness among consumers (more attention on sustainable products)

- Risks:**
- Higher prices for raw materials and energy due to yen depreciation
  - Increase in labor costs at overseas production plants
  - Rising logistics costs and a shortage of logistics personnel

## Key Aspects of Sustainability

- Safety**
- Continuously improve through product safety reviews and new product assessments
  - Safety training for all employees

- Environment**
- By optimizing the production division, reduced waste by 363 tonnes and water usage by 21,198 m<sup>3</sup> by December 2023
  - Reduction in paper usage through shift to electronic catalogs: Reduction of approximately 2.72 million sheets (converted to A4 sheets)

- Diversity and Inclusion**
- Educational activities for female managers
  - Promote employment of people with disabilities

- Quality**
- Hold quality improvement meetings twice a year for major overseas factories
  - Conduct quality audits

## Short-Term Initiatives

- Japan**
- Introduce dedicated brand areas to main sales outlets nationwide and hold brand promotion events, etc.
  - Strengthen lineup of products with growing markets and expand target users for sports bottles
  - Increase brand recognition and market share in the kitchenware products market
  - Strengthen interactive communication with consumers
  - Launch products in new categories
- South Korea**
- Expand consumer touch points and increase brand capabilities by augmenting sales channels
  - Launch large-volume tumblers for growth markets and enter the frying pan market
- Southeast Asia**
- Enhance brand recognition using sales promotions based on 120th anniversary commemoration
  - Strengthen the e-commerce business, which is growing in the region
  - Expand B2B businesses such as corporate gifts

## Future Initiatives

- Sustainability**
- Safety**
- Safety training for all employees, thorough checks of safety devices, and proper operation of production equipment
- Quality**
- Disclose customer opinions received by customer service department
  - Continue quality audits
- Diversity**
- Employ people with disabilities, promote women into management positions, etc.
- Environment**
- Reduce energy consumption, and defective products (waste) through efforts to improve efficiency in plant production
  - Collect used stainless steel vacuum-insulated bottles at directly operated stores
- Maintain and Improve Profitability**
- Increase new product development and revise pricing
  - Expand number of directly operated stores and increase sales through online channels
  - Expand kitchenware products and launch products in new categories
- Operational Excellence**
- Strengthen activities to improve productivity centered on production plants (reduce raw material procurement costs, review production processes)

## Position in Final Year of NS Vision 2026

We aim to achieve sustainable growth and become a value-creating company trusted by everyone.

01

Improve customer satisfaction, brand value, and product competitiveness

02

Deepen and expand core businesses, product lineup, and sales channels

03

Develop and strengthen human resources



## Segment Top Message: Thermos



**Yuji Kataoka**  
Representative Director and President,  
Thermos K.K.

### Market Position and Business Strengths

The Japanese market in FYE2024 saw the removal of travel restrictions and recovery of inbound tourism demand due to the end of the COVID-19 pandemic. As a result, Thermos saw strong sales of its mainstay portable mugs and sports bottles. Kitchenware products, centered on frying pans, also continued to gain market share. Thermos' lifestyle proposals through its overall product lineup are winning approval among a wide range of consumers. Overseas, we are expanding both online and offline sales channels in South Korea, where we are boosting our brand capabilities and growing our business.

### Initiatives in Thermos

This year marks the 120th anniversary of the THERMOS brand. To ensure that the brand remains popular among customers, we have formulated a new brand purpose, "Creating lifestyles with reliable

quality and rich ideas" and tagline, "Making your next comfortable moment." Using our 120th anniversary as a springboard, we will embark on the following four action plans. The first is to conduct measures such as establishing dedicated brand areas and expanding brand promotion events in major sales outlets nationwide. The second is to strengthen our lineup of products that have growing markets and broaden their user bases. The third is to increase brand recognition in the kitchenware market, such as frying pans. Last, the fourth is to use directly operated stores and e-commerce to launch limited-edition products on a limited-term basis and strengthen interactive communication with consumers.

By launching products in new categories this year, we aim to propose new value in lifestyles to customers and expand our business.

### Issues to Be Addressed for Increasing Earnings Capability

Amid ongoing impacts on earnings from protracted yen weakness and high raw material prices, maintaining and increasing earnings capability is an ongoing issue. We will continue to launch strategic new products and review pricing. Moreover, as a cost reduction measure, we stepped up activities for increasing productivity, mainly at overseas production sites, and will continue to reduce raw material procurement costs and review production processes.

To boost earnings capability even further, we will promote operational improvements for each division, while also setting themes for cross-divisional initiatives, bringing together knowledge and ideas from each division to make optimal use of management resources. We will fine-tune our processes for product development and quality inspections and aim to reduce indirect expenses.

### Outlook for the Business Environment

With continued high prices driven by the weak yen and rising raw material prices, there are concerns that conditions for private-sector consumption will grow even harsher. However, the resulting changes in consumer mindset present an opportunity from Thermos' perspective.

As higher prices for PET bottle and canned beverages drive consumers to look for ways to save money, we expect to see an increase in demand for water bottles. Moreover, further growth in environmental awareness is also expected to drive an increase in opportunities to make use of bottles as consumers grow more conscious of making sustainable product choices.

Risks to be monitored include an impact on earnings from product cost increases driven by continued yen weakness and high raw material prices. In addition, customer services could also be impeded by changes in the logistics environment due to the so-called "2024 Problem" of driver shortages due to the introduction of overtime regulations.

### Approach to Growth Opportunities

Thermos has provided the comfort of food and beverages kept hot or cold through products that use vacuum-insulation technology for many years. Now, as the company marks the 120th anniversary of its brand, it seeks to provide even greater comfort to customers' lifestyles by launching products in new categories. The expansion of new products will drive business growth.

At the same time, our used stainless steel vacuum-insulated bottle collection service at directly operated stores is now entering its second year, and by further increasing the number of shops offering collection, we will promote resource recycling of our products to help realize a circular society. As we work toward the realization of a carbon neutral society, we will widen the scope of measurement for GHG emissions, and formulate and implement measures to reduce them. By taking responsibility and action for reducing our impact on the global environment, we aim to increase our corporate value.

# Corporate Data

## Company Overview (As of March 31, 2024)

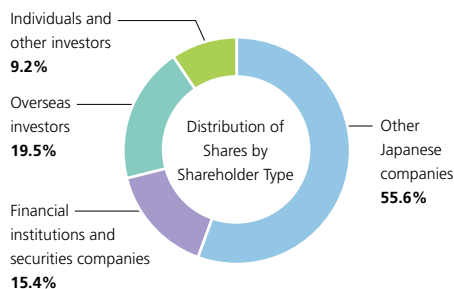
**Company name:** Nippon Sanso Holdings Corporation  
**Date founded:** October 30, 1910  
**Paid-in capital:** ¥37,344 million  
**Head office:** 1-3-26 Koyama, Shinagawa-ku, Tokyo 142-0062, Japan  
**Number of employees:** 19,533  
**Independent public accountants:** Ernst & Young ShinNihon LLC  
**Stock exchange listing:** Tokyo Stock Exchange Prime Market

**Transfer agent:** Mizuho Trust & Banking Co., Ltd.  
 2-8-4 Izumi, Suginami-ku, Tokyo 168-8507, Japan  
 Tel (toll free in Japan): 0120-288-324  
**Contact:** Investor Relations, Group Finance and Accounting Office,  
 Nippon Sanso Holdings Corporation  
 Tel: +81-3-5788-8512

## Share and Shareholder Information (As of March 31, 2024)

### Status of Shares

Number of shares authorized: 1,600,000,000  
 Number of shares issued: 433,092,837  
 Number of shareholders: 14,449



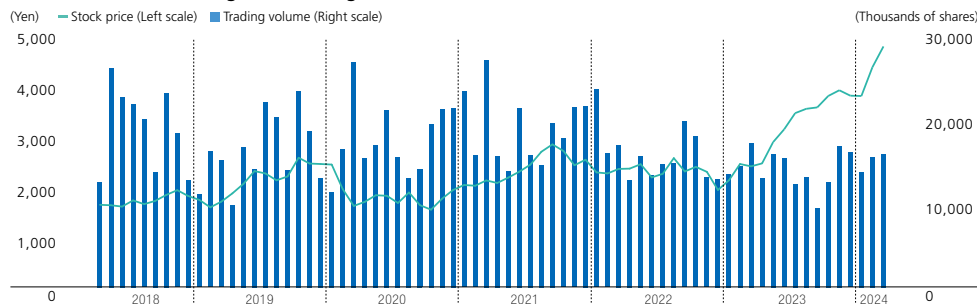
### Major Shareholders

(10 Largest Shareholders, Shares Held Rounded Down to the Nearest Thousand)

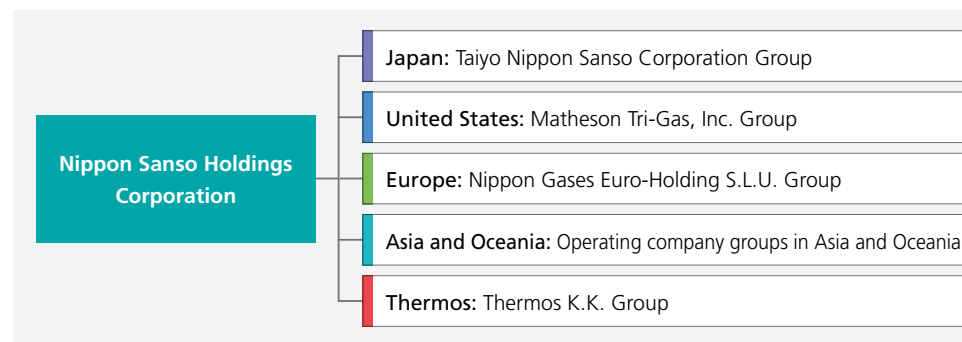
	Thousands of shares owned	Percentage of total (%)
Mitsubishi Chemical Group Corporation	218,996	50.59
The Master Trust Bank of Japan, Ltd. (trust account)	29,632	6.85
Client shareholding association of Taiyo Nippon Sanso Corporation	16,706	3.86
Custody Bank of Japan, Ltd. (trust account)	11,422	2.64
Meiji Yasuda Life Insurance Company	9,006	2.08
Mizuho Bank, Ltd.	4,332	1.00
THE BANK OF NEW YORK MELLON 140044	3,393	0.78
State Street Bank West Client – Treaty 505234	3,179	0.73
Ibiden Co., Ltd.	3,004	0.69
JP MORGAN CHASE BANK 385632	2,806	0.65

\* Our company holds 187,000 treasury shares.  
 The shareholding ratio is calculated based on the total number of issued shares, excluding treasury shares.

## Common Stock Price Range and Trading Volume



## Group Organization (As of March 31, 2024)



## Main Affiliated Companies (As of March 31, 2024)

**Taiyo Nippon Sanso Corporation**  
 1-3-26 Koyama, Shinagawa-ku, Tokyo 142-8558, Japan  
 Tel: +81-3-5788-8000

**Matheson Tri-Gas, Inc.**  
 909 Lake Carolyn Parkway, Suite 1300, Irving, TX 75039, U.S.A.  
 Tel: +1-972-560-5700

**Nippon Gases Euro-Holding S.L.U.**  
 Calle Orense, 11-9o E-28020 Madrid Spain  
 Tel: +34-91-453-72-00

**Matheson Gas Products Korea, Co., Ltd.**  
 94, Eumbongmyeon-ro, Eumbong-myeon, Asan-si, Chungcheongnam-do, South Korea 31443  
 Tel: +82-41-539-7400

**Shanghai Taiyo Nippon Sanso Gas Co., Ltd.**  
 No.1959, Zhuanxing Road, Xinzhuang Industry District, Shanghai, P.R. China  
 Tel: +86-21-6442-2966

**Taiyo Nippon Sanso Trading (Shanghai) Co., Ltd.**  
 1601, New Bund International Square, No.90 Qirong Road, Pudong New Area, Shanghai China  
 Tel: +86-21-5835-8700

**Nippon Sanso Taiwan, Inc.**  
 5F-1 No. 1 Sec. 3 Gongdao 5th Road, East Dist., Hsinchu City 30069, Taiwan, R.O.C. (TFC ONE Building)  
 Tel: +886-3-572-6588

**Nippon Sanso Ingasco, Inc.**  
 One Corporate Center, 23rd Floor, Dona Julia Vargas Avenue, Corner Meralco Avenue, Ortigas Center, Pasig City 1605, Philippines  
 Tel: +63-2-8626-1504

**Nippon Sanso Vietnam Joint Stock Company**  
 No. 33, Road 3A, Bien Hoa Industrial Zone II, Bien Hoa City, Dong Nai Province, Vietnam  
 Tel: +84-251-3836706-09

**Nippon Sanso (Thailand) Co., Ltd.**  
 282 Bangbon 3 Road, Kwaeng Nongkhaem, Khet Nongkhaem, Bangkok 10160, Thailand  
 Tel: +66-2-445-5010

**Nippon Sanso Holdings Singapore Pte. Ltd.**  
 8 Jurong Town Hall Road, #23-03/04, The JTC Summit, Singapore, 609434  
 65-6804-6230

**Leeden National Oxygen Ltd.**  
 1 Shipyard Road, Singapore, 628128  
 Tel: +65-6266-4868

**Taiyo Nippon Sanso India Pvt. Ltd.**  
 A-201, ICC Trade Towers, Senapati Bapat Road, Pune, India 411016  
 Tel: 91-20-30237000

**Supagas Pty Ltd**  
 5 Benson Road, Ingleburn, NSW 2565, Australia  
 Tel: +61-2-8788-4444

**Thermos K.K.**  
 21F Mita NN Bldg., 4-1-23 Shiba, Minato-ku, Tokyo 108-8450, Japan  
 Tel: +81-3-5730-0130

## Awards

### Japan

#### Confirmation as a 2024 Certified Health & Productivity Management Outstanding Organization (“White 500”)

Nippon Sanso Holdings Corporation and Taiyo Nippon Sanso Corporation (TNSC) have been confirmed as a 2024 Certified Health & Productivity Management Outstanding Organization (Large Enterprise Category) (“White 500”) for four consecutive years under the recognition program operated by the Ministry of Economy, Trade and Industry (METI) and Nippon Kenko Kaigi.



#### Confirmation as a 2024 Sports Yell Company, and Acquisition of “Eruboshi” Certification (Two Stars)

TNSC has been recognized for the fourth consecutive year as a “Sports Yell Company” by the Sports Agency, which recognizes companies that are promoting the implementation of sports among the working-age generation and are actively involved in promoting sports activities to improve the health of their employees, with the aim of fostering a social atmosphere conducive to sports. In addition, TNSC acquired for the first time the two-star rating under the “Eruboshi” Certification system based on the Act on Promotion of Female Participation and Advancement in the Workplace.



### United States

#### MTG Received CGA Awards

The Compressed Gas Association (CGA) presented Matheson Tri-Gas (MTG) with the CGA Fleet Safety Excellence Award for Cylinder Gas Transportation. MTG received this award by achieving an industry-leading low accident rate for more than three million miles of cylinder gas transportation.



#### Received 2023 Environment and Energy Award in Tennessee

The MTG New Johnsonville, Tennessee Electronic and Specialty Gas site was recognized as the recipient of the Tennessee Chamber of Commerce and Industry Association 2023 Environment and Energy Award for Outstanding Achievement in Solid Waste Management. The Tennessee Chamber of Commerce and Industry's 2023 Environment and Energy Awards is designed to recognize businesses and industries that have demonstrated outstanding achievement in environmental protection and enhancement as well as proactive and innovative energy projects.



### Europe

#### Received the Cegos Equipos & Talento Award

The Cegos Equipos & Talento Awards were created by Cegos, a company that provides training and human resource development services in more than 50 countries worldwide, to award HR initiatives that are diverse and achieve outstanding results. The awards have three categories, and Nippon Gases Euro-Holding (NGE) was awarded in the Transformation Strategy category.



#### NGE Received Two Awards at EIGA's 2023 Awards

During the Annual General Meeting of the European Industrial Gases Association (EIGA), NGE received six awards in Zero Accident Site Award, honoring our relentless focus on safety. In addition, Nippon Gases Iberia received EIGA's Environmental Award for its reforestation projects in Spain and Portugal.



### Operating Company Groups in Asia and Oceania

#### Australia: Awarded Canstar Blue for 4 Consecutive Years

Supagas set a new record by winning the “Most Satisfied Customers” award in Canstar Blue's national LP Gas category for the fourth consecutive year. The company received five stars in five of the six evaluation categories: overall satisfaction, value for money, customer service, bill and cost clarity, delivery service, and ease of sign-up/purchase.



#### Taiwan: Awarded by the Environmental Protection Department of the Executive Yuan

Nippon Sanso Taiwan regularly practices internal and external emergency drills every year to address various risks, such as toxic product leaks, transportation incidents, factory fires, and earthquake evacuations, etc. For these efforts, the company received the award of the “National Environmental Incident Case Study Seminar and Outstanding Operation Management Joint Defense Organization” award from the Minister of the Environmental Protection Administration of the Executive Yuan.



## Editorial Policy



We strive to guarantee management transparency and believe in the importance of building relationships of trust with stakeholders through dialogue. Accordingly, in this report we place a priority on ensuring that stakeholders understand our overall value creation process.

Since FYE2017, we have published an annual integrated report. The purpose of this report is to provide financial information, including that related to corporate strategies and operating conditions, and non-financial information, such as that related to environmental protection and social contribution initiatives and to corporate governance. Information has been selected with consideration to relevance to give shareholders, investors, and other stakeholders an accurate overall understanding of the Nippon Sanso Holdings Group, its operating activities, and its approach to value creation. In editing the report, we have referred to the IFRS Foundation's *Integrated Reporting Framework*, and the *Guidance for Integrated Corporate Disclosure and Company-Investor Dialogue for Collaborative Value Creation*, published by the Ministry of Economy, Trade and Industry (METI).

### Reporting Boundary

In the 2024 report, we have focused on communicating the business activities and initiatives in each specific region of operations. To describe the activities of the individual companies or groups, we have applied the following expression standard. Furthermore, the terms "Nippon Sanso Holdings Group" or "the Group" may be used for convenience to refer to Nippon Sanso Holdings and its Group companies. These terms may also be used in cases where there is no beneficial purpose in identifying a specific company.

### Expression Standard

- Formal names (e.g., Nippon Sanso Holdings Corporation): Used primarily in the formal titles of corporate officers, executive officers, and employees
- Truncated formal names (e.g., Nippon Sanso Holdings): In principle, used as the basic way of expressing company names

- Acronyms (e.g., NSHD): Used as a simple expression to allow the reader to identify a particular company in the context (e.g., in dialogue)
- Generic expressions (e.g., the Company, the Group): Capitalized to describe Nippon Sanso Holdings or the Nippon Sanso Holdings Group, and used with lowercase (e.g., the company, the group) when describing segment operating companies

### Period Covered

Data in this report is for FYE2024, ended March 31, 2024, although some FYE2025 activities and future issues and targets are also featured.

### Disclosure System

This report contains important basic information that Nippon Sanso Holdings Corporation particularly wishes to communicate to stakeholders. In the 2024 edition, we have utilized links to our corporate website and guidance to relevant pages in an effort to increase the usability of the report.

## Editorial Note

### Publication Process of This Report

In publishing Integrated Report 2024, the Group worked as one under the Production Committee led by CFO Alan David Draper, gathering and collating information on initiatives in each business and region for the entire Group while keeping in mind our daily conversations with shareholders and investors, the results of investor survey questionnaires, and feedback and requests received from a wide range of stakeholders. We have again held numerous discussions this year to identify NSHD's strengths and redefine its value creation process.

### Nippon Sanso Holdings Corporation Integrated Report Production Committee

**Head:** Alan David Draper

**Sub-head:** Takeshi Miki, Yutaka Okuda, Koichiro Kubo, Masayoshi Omichi, Yasukazu Takada

**Arranger:** Hiroaki Hijino, Mamoru Kai, Mitsuhiko Toda, Asami Takai, Yoshiyuki Shibata, Shingo Noguchi, Toshifumi Abe, Yuji Sakuramoto, Kouji Makino, Ryuichi Ishikawa, Tomoki Nakamura, Yukitoshi Tasaka, Yusuke Tanaami, Yoshiyuki Hagihara, Hitoshi Maida, Kayo Ushio, Katsumasa Suzuki

**Secretariat:** Keita Kajiyama, Takayoshi Umehara, Soichiro Momiyama, Kohei Baba

### People Who Helped to Produce This Report (in no particular order)

**Nippon Sanso Holdings Corporation**  
Tsutomu Moroishi, Kenji Koyama, Momo Katayama, Hisanori Goto, Miri Hara, Katsumi Nagasawa, Masako Miyatake, Hideo Nakajima, Katsuhito Yamaji, Kazuhiko Nishikawa, Cesar Callejo, Jan Van den Bulck  
**Taiyo Nippon Sanso Corporation**

Hironobu Okura, Masahiro Takeuchi, Kunihiro Kobayashi, Tae Uchikawa

**Matheson Tri-Gas, Inc.**

John B. Molnar, Steven L. Nicholson

**Nippon Gases Euro-Holding S.L.U.** Wim De Raedt

**Nippon Gases Belgium NV** Katleen Boeckx

**Nippon Sanso Holdings Singapore Pte. Ltd.**

Pauline Loo

**Leeden National Oxygen Ltd.** Roger Tan

**Nippon Sanso Taiwan Inc.** KC Lin

**Supagas Pty Ltd** Richard Seneviratne

**Taiyo Nippon Sanso Trading (Shanghai) Co., Ltd.**

Allen Zhen

**Thermos K.K.** Koji Kajita

### Editorial Note

Thank you for reading Integrated Report 2024 to the end.

We have reached the halfway point of our four-year medium-term management plan, NS Vision 2026, which covers the period to FYE2026. In producing the integrated report this year, we have been mindful of showing our stakeholders clearly what the NSHD Group has been doing to increase its corporate value, even amid the various unforeseen changes in the business environment since the announcement of the medium-term management plan. Our aim has been to produce a report that is interesting to read all the way through.

As you read about the Company's governance, sustainability, and compliance, as well as its business growth, the initiatives of approximately 20,000 team members whose daily activities provide customer solutions, and how we communicate with each other across regions and business fields, we hope that this report will give you a sense of the Company's culture and passion, and encourage your further interest in it.

We aim to enhance our integrated reports through communication with our readers in various forms. We therefore ask for your continued honest feedback and support.

Finally, a large number of NSHD Group members have contributed directly and indirectly to the production of this integrated report. We would like to thank you all sincerely for your cooperation.

### Keita Kajiyama

General Manager, Investor Relations,  
Group Finance and Accounting Office,  
Nippon Sanso Holdings Corporation

# Data Section

This section presents trends in both financial and non-financial indicators,  
along with sustainability data.

## Performance Highlights

### Overview of Business Results for FYE2024

In FYE2024, the Nippon Sanso Holdings Group faced a highly unpredictable business environment due to several global factors, including geopolitical tensions in Ukraine and the Middle East, trade friction between the United States and China, worldwide price increases, yen depreciation, and the fluctuating status of the semiconductor industry, which is one of the Group's key customers.

Amid these challenging conditions, shipment volumes of air separation gases (oxygen, nitrogen, and argon) supplied on-site, particularly for customers in the steel, chemical, and oil refining industries, saw a decline. However, the Group implemented rigorous price management strategies, including passing on cost increases to sales prices, and undertook various initiatives to enhance productivity.

As a result, the Group achieved revenue of ¥1,255.0 billion, core operating profit of ¥165.9 billion, operating profit of ¥172.0 billion, and profit attributable to owners of parent of ¥105.9 billion in FYE2024.

The impact of foreign exchange rates was significant, with the Japanese yen depreciating against the U.S. dollar from ¥136.00 to ¥145.31 (+¥9.31, or +6.4%) and against the euro from ¥141.62 to ¥157.72 (+¥16.10, or +10.2%). Consequently, overall revenue and core operating profit benefited by approximately ¥59.8 billion and ¥7.5 billion, respectively.

### Consolidated Business Performance for FYE2024

	Unit	FYE2023	FYE2024	YoY
Revenue	Billions of yen	1,186.6	1,255.0	+68.4 (+5.8%)
Core operating income* <sup>1</sup>	Billions of yen	123.1	165.9	+42.8 (+34.8%)
Core operating income margin	%	10.4	13.2	+2.8
EBITDA margin* <sup>2</sup>	%	19.3	22.2	+2.9
Adjusted net D/E ratio* <sup>3</sup>	Times	0.81	0.74	(0.07)
ROCE after Tax* <sup>4</sup>	%	5.4	6.7	+1.3

\* Please see the following for notes.

(Forex rate (full-term) / Average Forex rates)

	Unit	FYE2023	FYE2024	YoY
USD	Yen	136.00	145.31	+9.31
EUR	Yen	141.62	157.72	+16.10

### Figures of Revenue and Income (Loss) by Reportable Segment for FYE2024

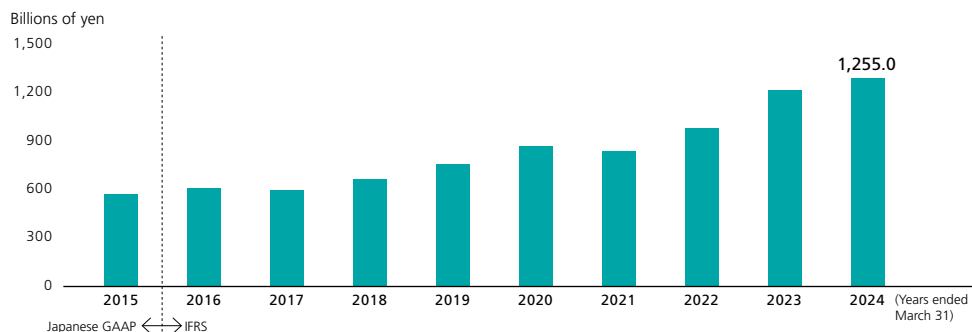
Reportable segment (Unit: Billions of yen)	Revenue		Segment income* <sup>5</sup>		YoY factors for increase / decrease
	FYE2023	FYE2024	FYE2023	FYE2024	
Japan	420.4	414.3	31.6	42.9	Shipment volumes of air separation gases and LP gas decreased / Revenue increased due to price revision and effective price management activities / Shipment volumes for electronic material gases were soft / In equipment and installation, revenue increased in relation to both industrial gases and electronics / Revenue decreased due to the conversion from a consolidated on-site subsidiary responsible for a certain customer to a joint operation / Revenue decreased due to the impact of deconsolidation of a subsidiary responsible for residential-use LP gas business
United States	303.0	347.0	37.0	50.0	Shipment volumes of air separation gases decreased / Revenue increased due to price revisions, effective price management, and the impact of the weak yen / In equipment and installation, revenue was flat year on year in relation to industrial gases and increased in relation to electronics
Europe	272.8	302.4	34.9	53.2	Shipment volumes of air separation gases decreased / Revenue increased due to price management effects and the impact of the weak yen / In equipment and installation, revenue increased due to brisk sales of gas-related and medical-related equipment
Asia and Oceania	159.9	160.3	15.4	15.9	Shipment volumes of air separation gases decreased / Revenue increased due to price management effects against a background of the weak yen and cost increases, etc. / Electronics-related sales decreased sharply due to soft demand for both gases and equipment
Thermos	30.1	30.7	6.0	5.5	Profits decreased as manufacturing costs rose due to rising raw materials costs, driven by price increases, and the weak yen (Japan) Revenue increased due to favorable sales of portable mugs and sports bottles (Overseas) Sales were flat year on year
Adjustments	0.0	0.0	(2.0)	(1.7)	
Total	1,186.6	1,255.0	123.1	165.9	

## Performance Highlights

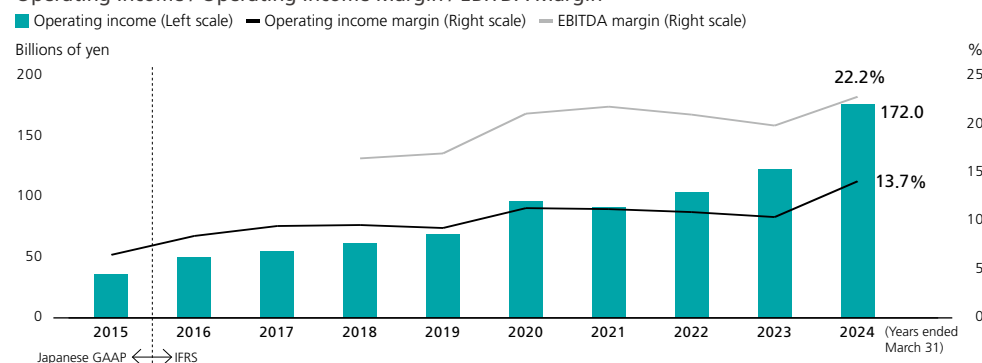
### Main Financial Indicators (FYE2015 to FYE2024)

\* Up to FYE2015, results are presented under Japanese accounting standards (Japanese GAAP), and from FYE2016 onward, results are presented under International Financial Reporting Standards (IFRS).

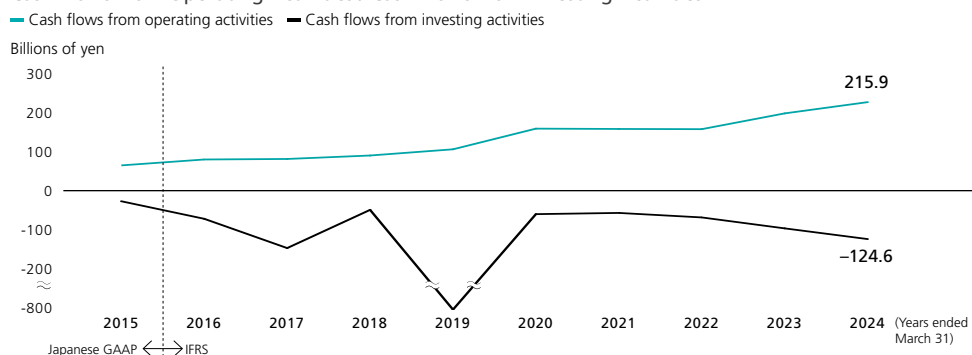
#### Revenue



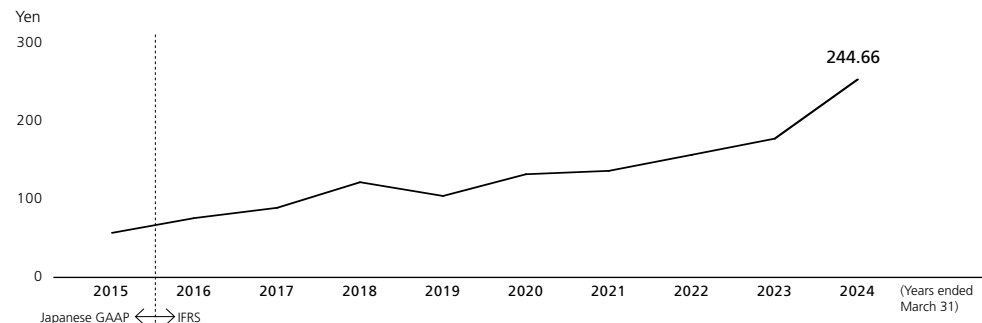
#### Operating Income / Operating Income Margin / EBITDA Margin



#### Cash Flows from Operating Activities / Cash Flows from Investing Activities



#### Basic Earnings per Share (EPS)



\*1 Core operating income is calculated as operating income excluding certain gains and expenses attributable to non-recurring factors (non-recurring items\*).

\* Non-recurring items are costs of structural reform (cost for withdrawal or downsizing business operations and special retirement allowances), losses caused by disasters or serious accidents, and other gains and expenses (such as disposal of idling assets).

\*2 Indicator that shows profitability based on cash flow, excluding the impact of M&A and CAPEX. Calculation formula: Earnings Before Interest Taxes, Depreciation and Amortization (Core operating income + Depreciation and amortization) / Revenue

\*3 Indicator of financial soundness. Calculation formula: ((Interest-bearing debt – Equity-type debt\*1) – Cash and cash equivalents) / (Equity attributable to owners of parent + Equity-type debt\*1)

\*1 Equity-type debt: The amount of debt procured by hybrid finance that has been recognized as equity credit by rating agencies. In this fund procurement, rating agencies have recognized equity credit for 50% of the procured amount.

\*2 Hybrid finance: A form of debt financing that has features resembling equity, such as voluntary deferral of interest, extremely long-term redemption periods, and subordination during liquidation or bankruptcy procedures. This kind of financing does not cause stock dilution, and a certain ratio of the funds procured in this way can be recognized as equity credit by rating agencies provided that certain conditions are met.

\*4 Indicator of capital efficiency. Calculation formula: Core operating income after tax (+ Dividend received) [NOPAT] ((Core operating investment income/loss from Equity in earnings (losses) of affiliated companies included in Core operating income) × (1 – Effective tax rate) + Investment income / loss from Equity in earnings (losses) of affiliated companies included in Core operating income + Dividend received) / (Interest-bearing debt – Total equity attributable to owners of parent)\*1 [Capital employed]

\*1 The average of the amounts at the end of the comparative fiscal years of the previous and current fiscal years is used. Note that return on capital employed (ROCE) had been disclosed and utilized until FYE2022. However, for the purpose of comparability with our peers, ROCE after Tax is disclosed and utilized from FYE2023. Calculation formula: ROCE = Core operating profit / (Outstanding interest-bearing debt + Equity attributable to owners of parent\*2)

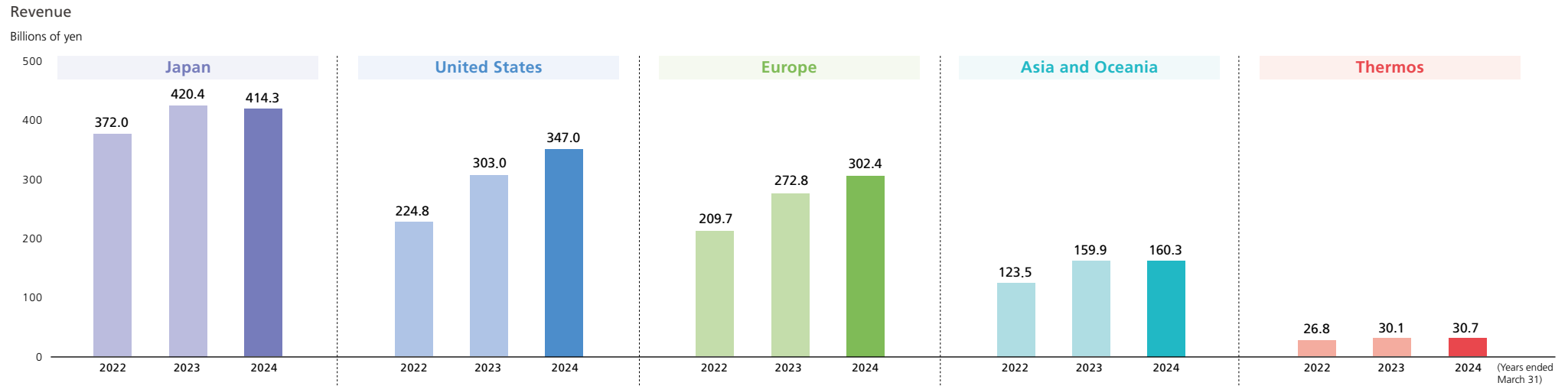
\*2 Equity attributable to owners of parent is calculated as net assets – non-controlling interests.

\*5 Segment income represents core operating income, which is calculated by excluding from operating income certain gains or losses attributable to non-recurring factors such as losses arising from business withdrawal or downsizing.

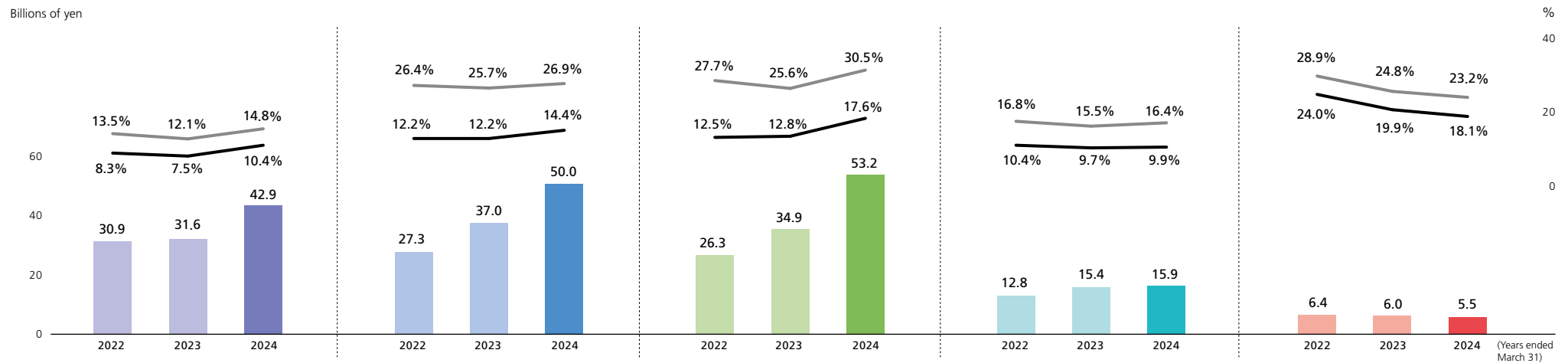
## Performance Highlights

Please also see here for an overview of the business in each segment.  
Business Segment:

### Performance by Segment (FYE2022 to FYE2024)



### Core Operating Income / Core Operating Income Margin / EBITDA Margin





# Performance Highlights

Indicators with  mark have been assured by KPMG AZSA Sustainability Co., Ltd.

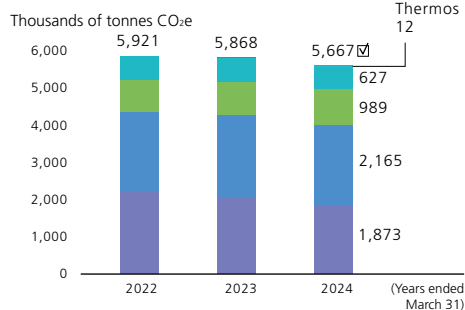
Please see here for detailed data.  
**Sustainability Data:**

## Main Non-Financial Indicators (FYE2022 to FYE2024)

■ Japan ■ United States ■ Europe ■ Asia and Oceania ■ Thermos  
Reporting boundary: Nippon Sanso Holdings and its main consolidated subsidiaries

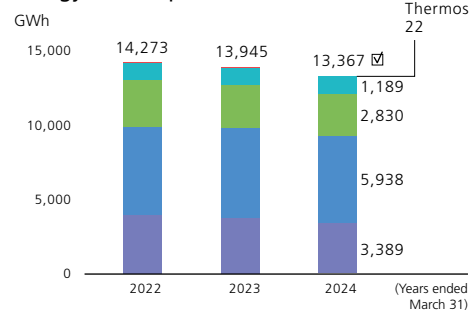
### Environment

#### GHG Emissions



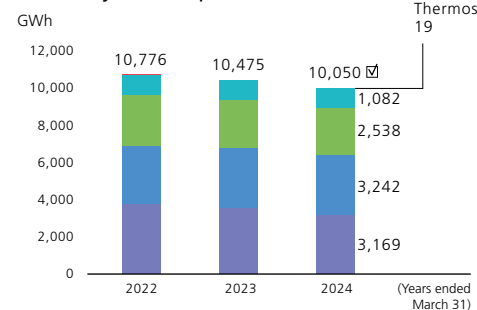
\* The reporting boundary includes the joint operation JFE Sanso Center Co., Ltd.

#### Energy Consumption



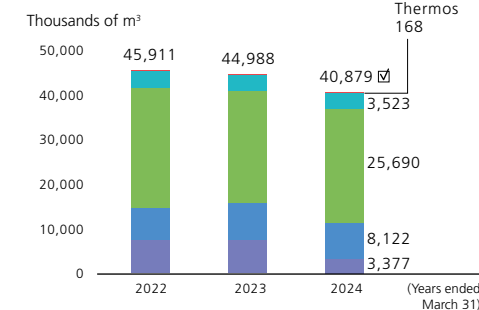
\* The reporting boundary includes the joint operation JFE Sanso Center Co., Ltd.

#### Electricity Consumption



\* The reporting boundary includes the joint operation JFE Sanso Center Co., Ltd.

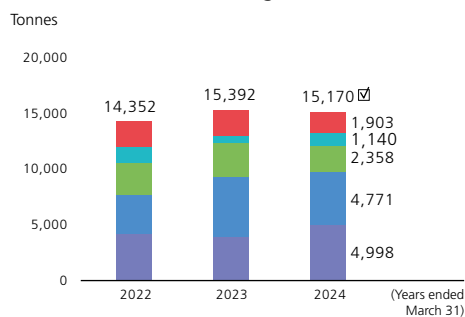
#### Water Withdrawal



Reporting boundary: Gas production plants operated by consolidated subsidiaries of Nippon Sanso Holdings in Japan, business locations with facilities specified under the Water Pollution Prevention Act, and main overseas consolidated subsidiaries

### Environment

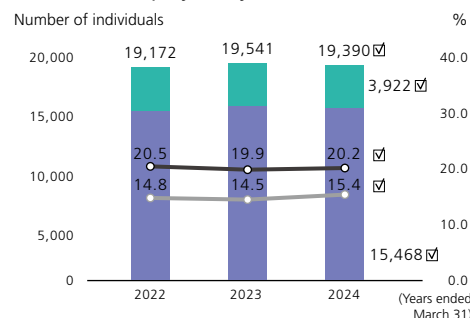
#### Waste Generated (Including Valuable Materials)



\* Waste generated by the consolidated subsidiaries of Nippon Sanso Holdings in Japan is the volume for which the Company issued a manifest.  
\* Due to restrictions on availability of information, information for the dry ice production and sales base of Matheson Tri-Gas, Inc. (formerly a business site of Continental Carbonic Products, Inc.) is not included among the aggregated total.

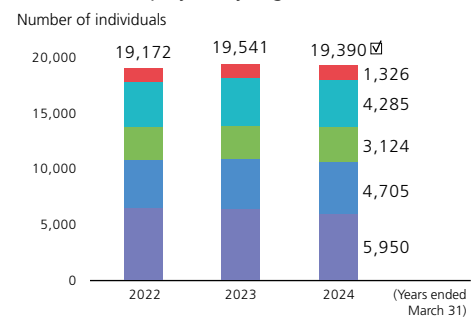
### Society

#### Number of Employees by Gender (Consolidated)



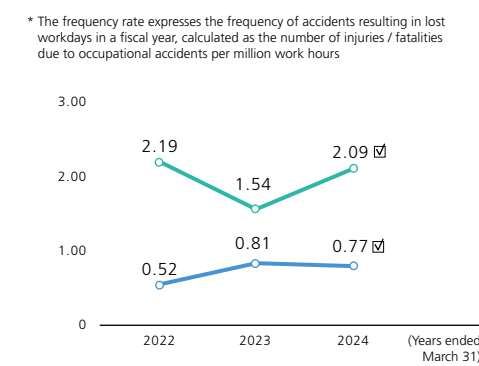
\* Numbers above are aggregated from actual figures of the Nippon Sanso Holdings Group companies as of the end of each fiscal year. Due to differences in the reporting periods, part of the data includes figures as of the end of December.

#### Number of Employees by Segment (Consolidated)



\* Numbers above are aggregated from actual figures of the Nippon Sanso Holdings Group companies as of the end of each fiscal year. Due to differences in the reporting periods, part of the data includes figures as of the end of December.

#### Lost Time Injury Rate\*



\* The frequency rate expresses the frequency of accidents resulting in lost workdays in a fiscal year, calculated as the number of injuries / fatalities due to occupational accidents per million work hours  
Reporting boundary: Consolidated subsidiaries with production divisions in Japan and overseas  
\* To improve the accuracy of data aggregation, values presented in previous fiscal years have been retroactively amended.

GHG emissions: GHG emissions in Japan are calculated using emission factors provided in Japan's Act on Promotion of Global Warming Countermeasures (for electricity, the adjusted emission factors for each electricity provider; for city gas, chilled water, and hot water, substitute values from FYE2024). Scope 1 GHG emissions overseas are calculated using emission factors set forth in Japan's Act on Promotion of Global Warming Countermeasures. However, from FYE2024, Scope 1 emissions in Europe have been calculated using the DEFRA emission factors of the United Kingdom. Overseas Scope 2 emissions are calculated using country-specific emission factors published by the IEA. However, for electricity in Europe, a separate emission factor for each electricity provider is used, and emissions are calculated making reference to the Guarantee of Origin. Furthermore, emissions from electricity use at Top Thermo Manufacturing (Malaysia) Sdn. Bhd. are calculated using emissions coefficients for each electricity provider, while emissions from electricity use in the United States, China, Taiwan, and Singapore are calculated using published grid coefficients for each country.

## Sustainability Data

## Environment

	Unit	FYE2022	FYE2023	FYE2024
<b>Greenhouse Gas (GHG) Emissions</b>				
GHG Emissions Scope 1 <sup>㊦</sup>	Thousands of tonnes CO <sub>2</sub> e	1,087	1,103	<b>1,062</b>
GHG Emissions Scope 2 <sup>㊦</sup>	Thousands of tonnes CO <sub>2</sub> e	4,834	4,765	<b>4,605</b>
GHG Emissions Scope 3—Total for the Following Categories <sup>㊦</sup>	Thousands of tonnes CO <sub>2</sub> e	3,408	3,341	<b>3,499</b>
Category 1 Purchased goods and services	Thousands of tonnes CO <sub>2</sub> e	897	911	<b>917</b>
Category 2 Capital goods	Thousands of tonnes CO <sub>2</sub> e	42	67	<b>53</b>
Category 3 Fuel- and energy-related activities not included in Scope 1 and Scope 2	Thousands of tonnes CO <sub>2</sub> e	276	261	<b>236</b>
Category 4 Upstream transportation and distribution (Including transportation services whose cost is borne by the Company)	Thousands of tonnes CO <sub>2</sub> e	39	36	<b>37</b>
Category 5 Waste generated in operations	Thousands of tonnes CO <sub>2</sub> e	1	1	<b>1</b>
Category 6 Business travel	Thousands of tonnes CO <sub>2</sub> e	1	1	<b>1</b>
Category 7 Employee commuting	Thousands of tonnes CO <sub>2</sub> e	3	3	<b>3</b>
Category 8 Upstream leased assets	Thousands of tonnes CO <sub>2</sub> e	N/A	N/A	<b>N/A</b>
Category 9 Downstream transportation and distribution	Thousands of tonnes CO <sub>2</sub> e	N/A	N/A	<b>N/A</b>
Category 10 Processing of sold products	Thousands of tonnes CO <sub>2</sub> e	N/A	N/A	<b>N/A</b>
Category 11 Use of sold products	Thousands of tonnes CO <sub>2</sub> e	1,466	1,382	<b>1,391</b>
Category 12 End-of-life treatment of sold products	Thousands of tonnes CO <sub>2</sub> e	N/A	N/A	<b>N/A</b>
Category 13 Downstream leased assets	Thousands of tonnes CO <sub>2</sub> e	N/A	N/A	<b>46</b>
Category 14 Franchises	Thousands of tonnes CO <sub>2</sub> e	N/A	N/A	<b>N/A</b>
Category 15 Investments	Thousands of tonnes CO <sub>2</sub> e	683	679	<b>814</b>

Reporting boundary: Scope 1 emissions and Scope 2 emissions represent Nippon Sanso Holdings and its main consolidated subsidiaries. They also include the joint operation of JFE Sanso Center Co., Ltd. For information on Scope 3 emissions aggregation, please refer to [here](#).

Scope 1 emissions: Direct emissions occurring from sources owned or controlled by the company

Scope 2 emissions: Indirect emissions from the use of electricity, steam, and heat

Scope 3 emissions: Indirect emissions other than Scope 2 emissions

Calculation methods: GHG emissions in Japan are calculated using emission factors provided in Japan's Act on Promotion of Global Warming Countermeasures (for electricity, the adjusted emission factors for each electricity provider; for city gas, chilled water, and hot water, substitute values from FYE2024). Scope 1 GHG emissions overseas are calculated using emission factors set forth in Japan's Act on Promotion of Global Warming Countermeasures. However, from FYE2024, Scope 1 emissions in Europe have been calculated using the DEFRA emission factors of the United Kingdom. Overseas Scope 2 emissions are calculated using country-specific emission factors published by the IEA. However, for electricity in Europe, a separate emission factor for each electricity provider is used, and emissions are calculated making reference to the Guarantee of Origin. Furthermore, emissions from electricity use at Top Thermo Manufacturing (Malaysia) Sdn. Bhd. are calculated using emissions coefficients for each electricity provider, while emissions from electricity use in the United States, China, Taiwan, and Singapore are calculated using published grid coefficients for each country. Please refer to [here](#) for calculation method for Scope 3 emissions. From FYE2024, Scope 3 Category 13 has been calculated.

Indicators with <sup>㊦</sup> mark have been assured by KPMG AZSA Sustainability Co., Ltd. for FYE2024.

	Unit	FYE2022	FYE2023	FYE2024	
<b>Contributions to Environmental Protection through Products</b>					
GHG Emission Reduction Contribution	Products and services <sup>㊦</sup>	Thousands of tonnes CO <sub>2</sub> e	3,176	3,556	<b>3,775</b>
	Industrial gases <sup>㊦</sup>	Thousands of tonnes CO <sub>2</sub> e	3,689	3,752	<b>3,679</b>

For information on the reporting boundary and the method of calculation, please refer to [here](#).

## Sustainability Data

## Environment

	Unit	FYE2022	FYE2023	FYE2024
<b>Energy Usage</b>				
Energy Consumption <sup>☒</sup>	GWh	14,273	13,945	<b>13,367</b>
Electric power	GWh	10,776	10,475	<b>10,050</b>
Fuels	GWh	3,293	3,269	<b>3,095</b>
Heat	GWh	204	201	<b>222</b>

Reporting boundary: Nippon Sanso Holdings and its main consolidated subsidiaries. They also include the joint operation of JFE Sanso Center Co., Ltd. The energy of the consumed fuels are calculated based on the gross calorific values specified in Japan's Act on the Rational Use of Energy.

<b>Environmental Impact</b>				
Nitrogen oxide (NOx) emissions <sup>☒</sup>	Tonnes	2.0	2.6	<b>3.2</b>
Sulfur oxide (SOx) emissions <sup>☒</sup>	Tonnes	1.1	1.1	<b>0.7</b>
Particulate emissions <sup>☒</sup>	Tonnes	0.1	0.1	<b>0.1</b>
Volatile organic compound (VOC) emissions <sup>☒</sup>	Tonnes	8	5	<b>13</b>
Releases of substances designated under the Pollutant Release and Transfer Register (PRTR) <sup>☒</sup>	Tonnes	10	8	<b>13</b>

Reporting boundary: Consolidated subsidiaries in Japan, including Taiyo Nippon Sanso

<b>Water Usage</b>					
Water Withdrawal <sup>☒</sup>	Thousands of m <sup>3</sup>	45,911	44,988	<b>40,879</b>	
Breakdown of sources of fresh water withdrawn	Water supply from local government	Thousands of m <sup>3</sup>	17,589	18,161	<b>13,434</b>
	Municipal water	Thousands of m <sup>3</sup>	5,757	6,332	<b>5,881</b>
	Industrial water	Thousands of m <sup>3</sup>	11,832	11,829	<b>7,552</b>
	Groundwater	Thousands of m <sup>3</sup>	2,710	2,366	<b>2,377</b>
	Surface water	Thousands of m <sup>3</sup>	25,582	24,440	<b>25,047</b>
	Other	Thousands of m <sup>3</sup>	30	21	<b>22</b>

Reporting boundary: Gas production plants operated by consolidated subsidiaries of Nippon Sanso Holdings in Japan, business locations with facilities specified under the Water Pollution Prevention Act, and main overseas consolidated subsidiaries

<b>Waste</b>				
Waste generated* <sup>1</sup> <sup>☒</sup>	Tonnes	14,352	15,392* <sup>5</sup>	<b>15,170*<sup>5</sup></b>
Waste disposed of as landfill* <sup>2</sup> <sup>☒</sup>	Tonnes	3,875	5,052* <sup>5</sup>	<b>3,926*<sup>5</sup></b>
Hazardous waste generated* <sup>3</sup> <sup>☒</sup>	Tonnes	2,015	2,000* <sup>5</sup>	<b>1,735*<sup>5</sup></b>
Waste recycled* <sup>4</sup>	Tonnes	7,623	7,975* <sup>5</sup>	<b>9,481*<sup>5</sup></b>

Reporting boundary: Nippon Sanso Holdings and its main consolidated subsidiaries

Waste generated by consolidated subsidiaries in Japan is the volume for which the Company issued a manifest.

\*1 Includes valuable materials \*2 Includes residue after intermediate treatment outside the Group company \*3 Includes specially controlled industrial waste

\*4 The amount of waste collected is included in the amount of resources recycled. \*5 Due to restrictions on availability of information, information for the dry ice production and sales base of Matheson Tri-Gas, Inc. (formerly a business site of Continental Carbonic Products, Inc.) is not included among the aggregated total.

<b>Others</b>				
Number of environmental violations	Incidents	0	0	<b>0</b>
Amount of fines paid for environmental violations	Millions of yen	0	0	<b>0</b>

The figures for chemical oxygen demand (COD) emissions, nitrogen emissions in wastewater, and phosphorus emissions have been omitted from disclosure since the amounts of these emissions have been immaterial. The Nippon Sanso Holdings Group uses water primarily for indirect cooling, and its impacts on water quality are therefore not large. Taiyo Nippon Sanso and its Japanese subsidiaries have five business sites that are subject to restrictions on the concentration of COD, nitrogen, and phosphorus emissions in wastewater. The total amounts of COD, nitrogen, and phosphorus emissions for all five sites amount to less than one tonne each.

	Unit	FYE2022	FYE2023	FYE2024
<b>GHG Emissions</b>				
GHG Scope 1 + Scope 2 <sup>☒</sup>	Thousands of tonnes CO <sub>2</sub> e	5,921	5,868	<b>5,667</b>
Japan	Thousands of tonnes CO <sub>2</sub> e	2,253	2,054	<b>1,873</b>
United States	Thousands of tonnes CO <sub>2</sub> e	2,130	2,251	<b>2,165</b>
Europe	Thousands of tonnes CO <sub>2</sub> e	885	916	<b>989</b>
Asia and Oceania	Thousands of tonnes CO <sub>2</sub> e	638	632	<b>627</b>
Thermos	Thousands of tonnes CO <sub>2</sub> e	15	15	<b>12</b>

<b>Energy Consumption</b>				
Total <sup>☒</sup>	GWh	14,273	13,945	<b>13,367</b>
Japan	GWh	3,978	3,757	<b>3,389</b>
United States	GWh	5,917	6,106	<b>5,938</b>
Europe	GWh	3,180	2,889	<b>2,830</b>
Asia and Oceania	GWh	1,171	1,167	<b>1,189</b>
Thermos	GWh	27	26	<b>22</b>

<b>Electricity Consumption</b>				
Total <sup>☒</sup>	GWh	10,776	10,475	<b>10,050</b>
Japan	GWh	3,783	3,552	<b>3,169</b>
United States	GWh	3,114	3,249	<b>3,242</b>
Europe	GWh	2,762	2,585	<b>2,538</b>
Asia and Oceania	GWh	1,094	1,066	<b>1,082</b>
Thermos	GWh	23	23	<b>19</b>

<b>Water Withdrawal</b>				
Total <sup>☒</sup>	Thousands of m <sup>3</sup>	45,911	44,988	<b>40,879</b>
Japan	Thousands of m <sup>3</sup>	7,464	7,445	<b>3,377</b>
United States	Thousands of m <sup>3</sup>	7,293	8,464	<b>8,122</b>
Europe	Thousands of m <sup>3</sup>	27,029	25,136	<b>25,690</b>
Asia and Oceania	Thousands of m <sup>3</sup>	3,929	3,744	<b>3,523</b>
Thermos	Thousands of m <sup>3</sup>	196	199	<b>168</b>

<b>Waste Generated (Including Valuable Materials)*<sup>1</sup></b>				
Total <sup>☒</sup>	Tonnes	14,352	15,392* <sup>2</sup>	<b>15,170*<sup>2</sup></b>
Japan	Tonnes	4,187	3,909	<b>4,998</b>
United States	Tonnes	3,486	5,415* <sup>2</sup>	<b>4,771*<sup>2</sup></b>
Europe	Tonnes	2,909	3,068	<b>2,358</b>
Asia and Oceania	Tonnes	1,399	602	<b>1,140</b>
Thermos	Tonnes	2,371	2,398	<b>1,903</b>

\*1 Waste generated by the consolidated subsidiaries of Nippon Sanso Holdings in Japan is the volume for which the Company issued a manifest.

\*2 As with the reporting boundary for "Waste" on the left, Matheson Tri-Gas, Inc.'s dry ice production and sales base (formerly a business site of Continental Carbonic Products, Inc.) is not included among the aggregated total.

## Sustainability Data

## Society

	Unit	FYE2022	FYE2023	FYE2024
<b>Employees and Diversity (Consolidated)</b>				
Employees* ㊦	Number of individuals	19,172	19,541	<b>19,390</b>
Japan	Number of individuals	6,465	6,391	<b>5,950</b>
United States	Number of individuals	4,406	4,532	<b>4,705</b>
Europe	Number of individuals	2,912	3,013	<b>3,124</b>
Asia and Oceania	Number of individuals	4,102	4,267	<b>4,285</b>
Thermos	Number of individuals	1,287	1,338	<b>1,326</b>
Employees by gender				
Male ㊦	Number of individuals	15,233	15,651	<b>15,468</b>
Female ㊦	Number of individuals	3,939	3,890	<b>3,922</b>
Employees by age group (Composition ratio)				
20s and below	%	16.4	15.7	<b>15.3</b>
30s	%	25.0	25.0	<b>25.3</b>
40s	%	30.1	27.0	<b>26.2</b>
50s and above	%	28.5	32.4	<b>33.0</b>
Years of consecutive service				
Overall average	Years	11.4	11.6	<b>11.2</b>
Men	Years	11.5	11.8	<b>11.1</b>
Women	Years	11.1	11.4	<b>11.3</b>
Average age	Years	44.2	44.1	<b>44.1</b>
New hires	Number of individuals	2,917	3,161	<b>3,020</b>
Employee turnover rate	%	7.1	6.9	<b>4.2</b>
Female employees as a percentage of the total number of employees ㊦	%	20.5	19.9	<b>20.2</b>
Female managers as a percentage of total managerial positions ㊦	%	14.8	14.5	<b>15.4</b>

\* Aggregated from actual figures of the Nippon Sanso Holdings Group companies as of the end of each fiscal year. Due to differences in the reporting periods, part of the data includes figures as of the end of December.

<b>Employees and Diversity (Non-Consolidated)</b>				
Employees	Number of individuals	86*	88*	<b>91*</b>
Employees by gender				
Male	Number of individuals	71	72	<b>72</b>
Female	Number of individuals	15	16	<b>19</b>
Female employees as a percentage of the total number of employees	%	17.4	18.2	<b>20.9</b>
Female managers as a percentage of total managerial positions	%	3.6	3.6	<b>3.7</b>

\* Includes employees working concurrently for Taiyo Nippon Sanso Corporation (FYE2022: 49 persons; FYE2023: 47 persons; FYE2024: 41 persons)

	Unit	FYE2022	FYE2023	FYE2024
<b>Employees, Diversity, and Work-Life Balance (Registered Employees of Taiyo Nippon Sanso Corporation)</b>				
Employees	Number of individuals	2,075	2,086	<b>2,110</b>
Employees by gender				
Male	Number of individuals	1,784	1,780	<b>1,794</b>
Female	Number of individuals	291	306	<b>316</b>
Employees by age group (Composition ratio)				
20s and below	%	19.8	20.2	<b>20.1</b>
30s	%	20.3	20.5	<b>21.3</b>
40s	%	25.7	24.2	<b>22.6</b>
50s and above	%	34.2	35.1	<b>35.9</b>
Years of consecutive service				
Overall average	Years	17.8	18.7	<b>18.4</b>
Men	Years	18.6	19.4	<b>19.3</b>
Women	Years	13.3	14.0	<b>13.7</b>
Average age	Years	42.4	42.7	<b>42.7</b>
New hires	Number of individuals	85	88	<b>100</b>
Employee turnover rate* <sup>1</sup>	%	3.3	3.7	<b>4.5</b>
Companywide employee training hours* <sup>2</sup>				
New employee training hours	Hours	16,320	27,360	<b>23,680</b>
Employee training hours	Hours	21,504	24,052	<b>25,042</b>
Union members	Number of individuals	1,214	1,232	<b>1,275</b>
Union members as a percentage of the total number of employees	%	58.5	59.1	<b>60.4</b>
Layoffs* <sup>3</sup>	Number of individuals	0	0	<b>0</b>
Female employees as a percentage of total number of employees	%	14.0	14.7	<b>15.0</b>
Female managers as a percentage of total managerial positions	%	1.5	1.8	<b>2.4</b>
Employment ratio of persons with disabilities (as of June 1 of each fiscal year)	%	2.5	2.5	<b>2.5</b>
Number of employees reemployed after retirement	Number of individuals	82	86	<b>99</b>
Employees using childcare leave systems	Number of individuals	19	39	<b>46</b>
Men	Number of individuals	6	21	<b>28</b>
Women	Number of individuals	13	18	<b>18</b>
Employees using nursing care leave or long-term nursing care leave	Number of individuals	0	0	<b>18</b>
Usage rate for annual paid leave* <sup>4</sup>	%	61.5	67.0	<b>70.4</b>
Employees using volunteer leave system	Number of individuals	0	0	<b>0</b>

\*<sup>1</sup> Employee turnover rate is the number of employees leaving the Company during the fiscal year (including mandatory-age retirees and excluding personnel transferring to other Group companies) divided by the number of employees at the end of the fiscal year \*<sup>2</sup> Reporting boundary: Training hours of Taiyo Nippon Sanso Corporation employees and Taiyo Nippon Sanso Group employees who took training held by Taiyo Nippon Sanso Corporation \*<sup>3</sup> Employees leaving the Company for reasons attributable to the Company (dismissals) \*<sup>4</sup> The number of new days granted in the reporting year is the denominator. The number of days used in the reporting year is the numerator. The denominator does not include the number of days carried over from the previous fiscal year.

## Sustainability Data

## Society

	Unit	FYE2022	FYE2023	FYE2024
<b>Others (Consolidated)</b>				
Expenditures on social contribution initiatives	Millions of yen	84.5	78.3	<b>103.0</b>

<b>Occupational Health and Safety</b>				
Lost time injury rate (Number of injuries / fatalities due to occupational accidents per million work hours)				
Nippon Sanso Holdings Group (Including Taiyo Nippon Sanso Group) ☒	—	2.19* <sup>1</sup>	1.54* <sup>1</sup>	<b>2.09</b>
Taiyo Nippon Sanso Group ☒	—	0.52	0.81	<b>0.77</b>
Number of fatalities (Consolidated)				
Employees	Number of individuals	0	0	<b>1</b>
Contractors	Number of individuals	1	0	<b>0</b>
Number of participants in hazard simulation training* <sup>2</sup> , * <sup>3</sup>				
	Number of individuals	826	978	<b>1,058</b>

Reporting boundary: Consolidated subsidiaries with production divisions in Japan and overseas

\*<sup>1</sup> To improve the accuracy of data aggregation, values presented in past fiscal years have been retroactively amended.

\*<sup>2</sup> Hazard simulation training is experiential training conducted by the Technical Academy of Taiyo Nippon Sanso in accordance with NSHD's Occupational Safety and Health / Industrial Safety and Disaster Prevention Policy. The training is designed to eliminate occupational accidents by raising employees' safety awareness and knowledge, and their sensitivity to hazards. Employees of associates are also included in the scope of data collection.

\*<sup>3</sup> From FYE2024, values presented in past fiscal years have been retroactively amended.

## Supplementary Notes Regarding the Reporting Boundary

## Main consolidated subsidiaries

Consolidated subsidiaries in Japan including Taiyo Nippon Sanso Corporation; Matheson Tri-Gas, Inc.; Western International Gas & Cylinders, Inc.; Nippon Gases Euro-Holding S.L.U. and its consolidated subsidiaries; Leeden National Oxygen Ltd.; Leeden Gases Sdn. Bhd.; Nippon Sanso Ingasco, Inc.; Nippon Sanso Ingasco Philippines, Inc.; Nippon Sanso Ingasco Clark, Inc.; Nippon Sanso (Thailand) Co., Ltd.; Ayutthaya Industrial Gases Co., Ltd.; Taiyo Gases Co., Ltd.; Nippon Sanso Vietnam Joint Stock Company; Taiyo Nippon Sanso India Pvt. Ltd.; Shanghai Taiyo Nippon Sanso Gas Co., Ltd.; Suzhou Taiyo Nippon Sanso Gas Co., Ltd.; Dalian Changxing Island Taiyo Nippon Sanso Gas Co., Ltd.; Dalian Taiyo Nippon Sanso Gas Co., Ltd.; Yangzhou Taiyo Nippon Sanso Semiconductor Gases Co., Ltd.; Matheson Gas Products Korea Co., Ltd.; Nippon Sanso Taiwan, Inc.; Taiyo Nippon Sanso Engineering Taiwan, Inc.; Fu Yang Gas Co., Ltd.; Supagas Pty Ltd; Nippon Sanso Myanmar Co., Ltd.; Top Thermo Manufacturing (Malaysia) Sdn. Bhd.; Vacuumtech Philippines Inc.

\* From FYE2024, data from the joint operations JFE Sanso Center Co., Ltd. and Sakai Gas Center, Inc. are not included.

## Sustainability Data

### Governance

	Unit	FYE2022	FYE2023	FYE2024
<b>Activities of Committees</b>				
Management Configuration	Number of individuals	9	9	<b>9</b>
Internal directors	Number of individuals	6	4	<b>4</b>
Independent outside directors	Number of individuals	3	5	<b>5</b>
Directors serving concurrently as executive officers	Number of individuals	1	1	<b>1</b>
Percentage of directors serving concurrently as executive officers	%	11.1	11.1	<b>11.1</b>
Independent outside directors as a percentage of total Board of Directors' members	%	33.3	55.6	<b>55.6</b>
Female directors as a percentage of total Board of Directors' members	%	11.1	22.2	<b>22.2</b>
Term of appointment	Years	1	1	<b>1</b>
Frequency of Board of Directors' meetings	Times	14	11	<b>12</b>
Attendance at Board of Directors' meetings	%	98.4	100.0	<b>100.0</b>
Attendance of independent outside directors at Board of Directors' meetings	%	100.0	100.0	<b>100.0</b>
Number of directors attending less than 75% of Board of Directors' meetings	Number of individuals	0	0	<b>0</b>
Audit & Supervisory Board members	Number of individuals	4	4	<b>4</b>
Internal Audit & Supervisory Board members	Number of individuals	1	1	<b>1</b>
Independent outside Audit & Supervisory Board members	Number of individuals	2	2	<b>2</b>
Independent outside Audit & Supervisory Board members as a percentage of total Audit & Supervisory Board members	%	50.0	50.0	<b>50.0</b>
Female Audit & Supervisory Board members as a percentage of total Audit & Supervisory Board members	%	0.0	0.0	<b>0.0</b>
Frequency of Audit & Supervisory Board meetings	Times	17	14	<b>15</b>
Attendance at Audit & Supervisory Board meetings	%	100.0	100.0	<b>100.0</b>
Attendance of independent outside Audit & Supervisory Board members at Audit & Supervisory Board meetings	%	100.0	100.0	<b>100.0</b>
Number of Audit & Supervisory Board members attending less than 75% of Audit & Supervisory Board meetings	Number of individuals	0	0	<b>0</b>
Average age of directors and Audit & Supervisory Board members	Years	65.8	66.1	<b>65.2</b>
Number of executive officers	Number of individuals	6	7	<b>6</b>
Female executive officers as a percentage of total executive officers	%	0.0	0.0	<b>0.0</b>

	Unit	FYE2022	FYE2023	FYE2024
<b>Activities of Committees</b>				
Advisory Committee on Appointments and Remuneration				
Members	Number of individuals	5	6	<b>6</b>
Internal directors	Number of individuals	2	1	<b>1</b>
Independent outside directors	Number of individuals	3	5	<b>5</b>
Frequency of meetings	Times	10	12	<b>9</b>
Attendance*1	%	100.0	100.0	<b>100.0</b>
Management Committee				
Members	Number of individuals	13	12	<b>13</b>
Frequency of meetings	Times	11	12	<b>15</b>
Attendance*1	%	100.0	100.0	<b>99.5</b>
Investment Committee				
Members*2	Number of individuals	15	15	<b>15</b>
Frequency of meetings	Times	3	2	<b>2</b>
Attendance*1	%	93.3	93.3	<b>96.5</b>
Global Strategy Review Committee				
Members	Number of individuals	17	17	<b>16</b>
Frequency of meetings	Times	1	1	<b>1</b>
Attendance	%	100.0	100.0	<b>100.0</b>
Global Risk Management Committee				
Members	Number of individuals	18	18	<b>18</b>
Frequency of meetings	Times	1	1	<b>1</b>
Attendance	%	100.0	100.0	<b>94.4</b>
Global Compliance Committee				
Members*2	Number of individuals	8	8	<b>7</b>
Frequency of meetings	Times	1	1	<b>1</b>
Attendance	%	87.5	100.0	<b>100.0</b>

\*1 Average attendance rate \*2 Excluding additional attendees and Secretariat

## Sustainability Data

## Governance

	Unit	FYE2022	FYE2023	FYE2024
<b>Remuneration for Officers</b>				
Remuneration for directors (excluding outside directors)				
Total	Millions of yen	200	152	<b>147</b>
Basic remuneration	Millions of yen	141	102	<b>91</b>
Corporate political contributions	Millions of yen	59	47	<b>46</b>
Non-financial KPI-linked bonuses	Millions of yen	—	3	<b>9</b>
Remuneration for Audit & Supervisory Board members (excluding independent outside members)				
Total	Millions of yen	28	28	<b>28</b>
Basic remuneration	Millions of yen	28	28	<b>28</b>
Remuneration for independent outside directors				
Total	Millions of yen	108	129	<b>135</b>
Basic remuneration	Millions of yen	108	129	<b>135</b>
Remuneration for independent auditors				
Total	Millions of yen	222	206	<b>233</b>
Remuneration for audit services	Millions of yen	218	205	<b>229</b>
Other remuneration for independent auditors	Millions of yen	4	1	<b>4</b>
<b>Others</b>				
Anti-takeover measures	—	Not adopted	Not adopted	<b>Not adopted</b>
Code of ethics	—	Adopted	Adopted	<b>Adopted</b>
Policy on transparency of tax affairs	—	Adopted (Currently disclosed on the Company website)	Adopted (Currently disclosed on the Company website)	<b>Adopted (Currently disclosed on the Company website)</b>
Corporate political contributions	Millions of yen	0.2	0.0	<b>0.0</b>
Violations of rules for the prevention of corruption	Number of violations	0	0	<b>0</b>
Monetary penalties incurred as a result of violations of guidelines for the prevention of corruption	Millions of yen	0	0	<b>0</b>
Rate of receiving compliance training	%	—	99.7	<b>99.4*</b>

\* 100% completion rate as of the end of June 2024

## Intellectual Property and Research and Development

	Unit	FYE2022	FYE2023	FYE2024
<b>Intellectual Property</b>				
Registered patents				
Total	Patents	1,591	1,682	<b>1,761</b>
Japan	Patents	941	1,038	<b>1,114</b>
Overseas	Patents	650	644	<b>647</b>

\* Sum of patents at all operating companies. From FYE2023, the figure includes the consolidated subsidiaries of each operating company.

<b>Research and Development</b>				
Research and Development				
Total	Millions of yen	3,569	3,515	<b>4,466</b>
Japan	Millions of yen	2,872	3,054	<b>3,895</b>
United States	Millions of yen	659	429	<b>529</b>
Thermos	Millions of yen	37	31	<b>41</b>

## Sustainability Data

### Independent Assurance Report

#### Independent Assurance Report

To the Representative Director, President CEO of Nippon Sanso Holdings Corporation

We were engaged by Nippon Sanso Holdings Corporation (the “Company”) to undertake a limited assurance engagement of the environmental and social performance indicators marked with ☑ (the “Indicators”) for the period from April 1, 2023 to March 31, 2024 included in its Integrated Report 2024 (English version) (the “Report”) for the fiscal year ended March 31, 2024.

#### The Company’s Responsibility

The Company is responsible for the preparation of the Indicators in accordance with its own reporting criteria (the “Company’s reporting criteria”), as described in the Report.

#### Our Responsibility

Our responsibility is to express a limited assurance conclusion on the Indicators based on the procedures we have performed. We conducted our engagement in accordance with the ‘International Standard on Assurance Engagements (ISAE) 3000, Assurance Engagements other than Audits or Reviews of Historical Financial Information’ and the ‘ISAE 3410, Assurance Engagements on Greenhouse Gas Statements’ issued by the International Auditing and Assurance Standards Board. The limited assurance engagement consisted of making inquiries, primarily of persons responsible for the preparation of information presented in the Report, and applying analytical and other procedures, and the procedures performed vary in nature from, and are less in extent than for, a reasonable assurance engagement. The level of assurance provided is thus not as high as that provided by a reasonable assurance engagement. Our assurance procedures included:

- Interviewing the Company’s responsible personnel to obtain an understanding of its policy for preparing the Report and reviewing the Company’s reporting criteria.
- Inquiring about the design of the systems and methods used to collect and process the Indicators.
- Performing analytical procedures on the Indicators.
- Examining, on a test basis, evidence supporting the generation, aggregation and reporting of the Indicators in conformity with the Company’s reporting criteria, and recalculating the Indicators.

- Visiting the Mie Plant of Taiyo Nippon Sanso JFP Corporation selected on the basis of a risk analysis.
- Evaluating the overall presentation of the Indicators.

#### Conclusion

Based on the procedures performed, as described above, nothing has come to our attention that causes us to believe that the Indicators in the Report are not prepared, in all material respects, in accordance with the Company’s reporting criteria as described in the Report.

#### Our Independence and Quality Management

We have complied with the Code of Ethics for Professional Accountants issued by the International Ethics Standards Board for Accountants, which includes independence and other requirements founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behavior. In accordance with International Standard on Quality Management 1, we design, implement and operate a system of quality management including policies or procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

/s/ Kazuhiko Saito

Kazuhiko Saito, Partner, Representative Director

KPMG AZSA Sustainability Co., Ltd.

Tokyo, Japan

September 12, 2024

Notes to the Reader of Independent Assurance Report:

This is a copy of the Independent Assurance Report and the original copies are kept separately by the Company and KPMG AZSA Sustainability Co., Ltd.





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