

Enabling the Future



Integrated Report 2022

Year Ended March 31, 2022

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OUR ROAD MAP

Nippon Sanso Holdings Corporation has formulated a new medium-term management plan, NS Vision 2026, covering the period from FYE2023 to FYE2026. The Company has set both financial and non-financial key performance indicators (KPIs) and has also announced the details of its activities for achieving them. Naturally, these are by no means final goals. With this, the first year of NS Vision 2026, our journey toward realizing our Group Vision to “enhance human well-being and contribute to a more sustainable future” has begun.

Our External Environment (Environment and Society)

The main features of our external environment are of climate impact, economic uncertainty, geopolitical instability, development of a digital society, and diversification of thinking and lifestyles. We are under pressure to respond to these changes.

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.

2050

Realizing carbon neutrality with gas technology

- Further promoting energy savings
- Increasing efficient use of energy
- Promotion of the use of renewable energy and green power
- Carbon capture and offsets

2026

Medium-term management plan NS Vision 2026, ending in FYE2026

Financial KPIs (FYE2026)

Revenue
 ¥975 billion–¥1,000 billion*

Core Operating Profit
 ¥125 billion–¥135 billion*

EBITDA Margin
 Group:
 ≥ 24%

Japan, the United States, Europe, Asia and Oceania, Thermos:

≥ 17%–33%

Adjusted Net D/E Ratio
 ≤ 0.7 times

ROCE after Tax
 ≥ 6%

* Due to uncertainty in the global economy, revenue and core operating profit are shown in a range.

Non-Financial KPIs

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)

Human Resources

Rate of female employees

≥ 22% (FYE2026)

25% (FYE2031)

Compliance

Rate of receiving compliance training

100% (FYE2026)

Rate of female management posts

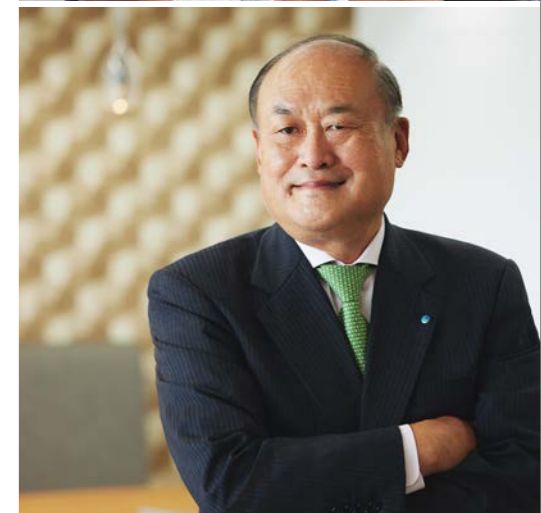
≥ 18% (FYE2026)

22% (FYE2031)



WE ARE NSHD!

The Nippon Sanso Holdings Group has more than 19,000 employees working in 32 countries and regions worldwide. We are working together in a united effort to realize the Group Vision and medium-term management plan slogan, "Enabling the Future."



SECTION 0

OUR ROAD MAP

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 P.1 OUR ROAD MAP

Nippon Sanso Holdings has formulated a new medium-term management plan, NS Vision 2026, covering the period from FYE2023 to FYE2026. We have more than 19,000 employees working in 32 countries and regions worldwide in a united effort to realize the medium-term management plan slogan, "Enabling the Future," and the Group Vision beyond that.

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Under the four geographic hubs and Thermos business structure, we established five focused fields: Sustainability management, exploring new business toward carbon neutrality, total electronics, operational excellence, and digital transformation (DX) initiatives. We will strengthen the Group's comprehensive capabilities and achieve further growth to provide a bright and comfortable future for people, society, and the earth.

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Nippon Sanso Holdings will promote sustainability management through the new medium-term management plan, NS Vision 2026, and has started programs for various sustainability initiatives based on its new materiality. The NSHD Group will continue striving for sustainable growth and further increases in its corporate value with the aim of realizing a comfortable future for people, society, and the earth.

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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 2022 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 lower case (e.g., the company, the group) when describing segment operating companies

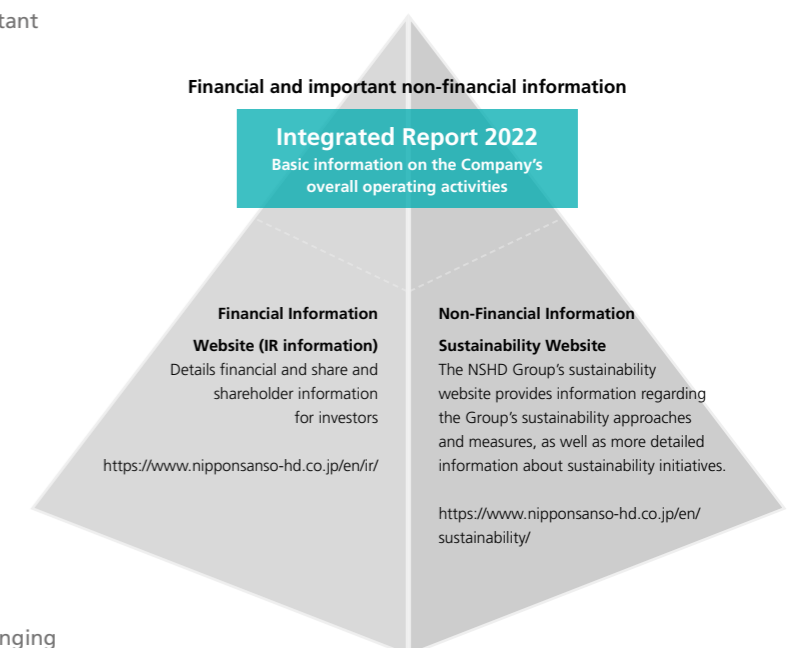
PERIOD COVERED Data in this report is for FYE2022, ended March 31, 2022, although some FYE2023 activities and future issues and targets are also featured.

Disclosure System

This report contains important basic information that Nippon Sanso Holdings Corporation particularly wishes to communicate to stakeholders. In the 2022 version of the integrated report, we have provided more important sustainability information and non-financial information (quantitative data), while our sustainability website covers sustainability approaches and more detailed measures implemented by the Nippon Sanso Holdings Group. For the latest financial information, please refer to the investor relations (IR) information page on our corporate website as before.

Important

Wide-ranging





We have utilized the business network we have built so far with a correct understanding of the respective strengths of each region to establish a system for sharing and developing best practices. We will hone our competitive advantages and enhance the Group's demonstrated value by pursuing operational excellence in our operating companies in each region of the world. Moreover, we are determined to contribute to the realization of a sustainable society through the technologies we have developed to date and further technology innovation going forward.



OUR COMMITMENT

The Nippon Sanso Holdings Group's Resolve

CEO Message

FYE2022— A Year of Facing Challenges

Amid a COVID-19 pandemic that has no end in sight and rising geopolitical tension and division, these are increasingly troubled times. In this situation, I would like to extend my thanks to all of the stakeholders who have supported us. With your help, the NSHD Group achieved extremely good results in FYE2022. This was mainly attributable to a strong recovery in demand, despite COVID-19; a revision of our sales prices in light of high energy costs, which have a significant impact on the production of industrial gases; and our continued efforts to reduce costs and expenses. In Europe and the United States in particular, where we are extremely sensitive to changes in our earnings figures amid unprecedented high electricity and logistics costs, rather than absorbing these in daily operations, we had a strong incentive to negotiate with our customers, and I believe it was this that ultimately led to our strong results. The business environment and trading practices differ from region to region, so simple comparisons are not really appropriate, but it certainly set an example for our operations in Japan and Asia and Oceania.

Although the economy made a strong recovery last year, it is no easy task to restore global supply chains once they have been broken by impacts such as COVID-19. Across the entire Group, we will thoroughly minimize the risk from impacts from the external environment while demonstrating our resilience to capture stable industrial gases demand, which has now bottomed out. We will work to ensure that we generate earnings by providing added value to our customers, which will drive further increases in corporate value.


NS Vision 2026— Our First Medium-Term Management Plan under the Holding Company Structure

The Company announced its new medium-term management plan, NS Vision 2026, in May 2022. The plan describes five focused fields: Sustainability management, exploring new business toward carbon neutrality,

total electronics, operational excellence, and digital transformation (DX) initiatives. Among these, I think “operational excellence” in particular has been facilitated by our transition to a holding company structure, because it allows for the sharing of best practices between regions. This is perhaps the most significant aspect of the transition.

Under the holding company structure, the Group has four geographic hubs—Japan, the United States, Europe, and Asia and Oceania—along with the Thermos business. I consider this to be the optimal structure for the Group’s businesses. Each of these regions and businesses have their respective strengths. For example, Europe excels in the area of corporate governance, while the United States has taken rigorous action to expand its business and increase profits. Australia and Asia are areas with enormous growth potential for industrial gases, and we are expecting increasing business opportunities in this region. In Japan, we have developed R&D, safety technologies, and plant engineering capabilities that we can now deploy in more areas globally. Furthermore, as the Group’s only B2C business, the Thermos business will provide an example for the industrial gases business in terms of its processes, awareness, and ideas on customer service and sustainability initiatives. The ability to pick up on these best practices and deploy them effectively in each region and business is a characteristic strength of the holding company structure. The most important task of Nippon Sanso Holdings is to use this to establish competitive advantages and increase the comprehensive capabilities of the Group.

Nippon Sanso Holdings also played a central role in the process of formulating NS Vision 2026 by conducting proper communication with each operating company. Moreover, the plan was also discussed thoroughly in the Global Strategy Review Committee and the Global Risk Management Committee, two committees that include members from every Group company. To address the tasks of making further increases in profitability and progress on carbon neutrality, it is important that we get a firm grasp of the risks and opportunities related to our businesses and propose strategies, then carefully analyze the risks for those strategies and strengthen our response to them. The two committees provide a forum for deeper discussion on these points. They work together organically to establish business strategies that are effective and powerful from all perspectives. Since these strategies and risk countermeasures



**We want to develop our business,
pursue our vision for the Company,
and contribute to the world through
industrial gases.**

Toshihiko Hamada
Representative Director,
President CEO

are shared between all operating companies, these committees also play a role in promoting operational excellence. Finally, the policies formulated by the two committees are ultimately reported to the Board of Directors, which provides feedback on them. Looking back on the plan formulation process, I feel confident that these committees are functioning effectively as we intended that they should before introducing them. Going forward, we will execute the plan while ensuring effective governance with this structure.

As I have described, NS Vision 2026 was created through an extremely robust process. Through this process, we could see for example that while our profits in Asia are currently small in scale, we have a firm grasp of the business environment in these countries, which have ample room for growth, giving us confidence in their future potential.

On the other hand, until we discussed the setting of numerical targets for non-financial goals, they seemed intangible and ethereal. In our focused field of “sustainability management,” we aim to promote understanding of the concept that ensuring safety is vital to the survival of our business because “selling gases is commensurate with selling safety.” To this end, we had been trying to coordinate with each region, but found it particularly difficult to create key performance indicators (KPIs) for the entire NSHD Group in terms of greenhouse gas (GHG) emission reduction targets, because each country and region has different laws and measures in place. However, Nippon Sanso Holdings has led this initiative, making a supreme effort to communicate with offices in each country while ascertaining and assessing their current statuses, identifying priority tasks going forward, and setting numerical targets. Of course, we do not consider our current non-financial KPIs to be in their final form. I think it is important that we continue to meet the changes occurring in the world, including the United Nations Sustainable Development Goals (SDGs), positively and flexibly and strive constantly to improve our response to them.

Confirmation of Our Current Status Results in an Increase in Profitability

In NS Vision 2026, we provided data on market ranking by region in the industrial gases industry and a comparison of profitability between the leading global companies. As a listed corporation, Nippon Sanso Holdings is obliged to make investments for the future and increase its earning capability, while also making returns to stakeholders. In addition, our measures to improve profitability are not

short-term measures; they are extremely important measures that will have an impact on our future corporate value. To make such improvements, we must have a clear understanding of our current profitability upon which to base our actions. That is why we have listed all the data, including figures that show our weaker areas; we were aiming to create a strong awareness of where we need to make improvements.

A further task that we must accomplish for improving profitability is to review our prices so that they are commensurate with our costs, the value we provide, and economic value of our goods and services. At the same time, as a manufacturing business, the Group should ideally be working hard to reduce its costs; and cost cutting can really only be achieved with technological advances.

Another task we must address is developing equipment and building systems that save energy. For example, even if we were to increase our ratio of green electricity, if our overall energy consumption more than offsets the green energy improvement, not only would our profitability decrease but our environmental impact would also increase. To avoid this, we are working to establish operational excellence in technology, specifically by expanding the use of plants and gas-using equipment and systems developed with leading Japanese technology in Europe, the United States, and Asia. To realize operational excellence, we must also create and implement systems for utilizing human resources. Under the holding company structure, if we can appoint people who understand best practices to handle a wide range of information and share best practices in each region around the world, we will be able to achieve results more quickly.

I have a real sense that shifting to the holding company structure has accelerated the Company’s globalization, and I believe this has also been felt by the employees. I feel that a considerable number of employees would like to work overseas, particularly among the younger generation. Now, as the Group is accelerating its moves to globalize internally, we will work quickly to prepare programs that highlight the appeal of being posted to work in a new country or region, and promote awareness of them among all Group personnel.

Direction for Total Electronics

Electronics is one of the fields with the greatest growth potential during NS Vision 2026. As such, we have made “total electronics” one of the five focused fields in the plan.

Our customers in the electronics field have strict expectations for their own products, and by extension for the purity of the gases we provide. In that sense, they are extremely conservative. I believe they want us to provide high-quality product stably and in large quantities. Meanwhile, while they are very interested in new technologies and processes, their first priority is to ensure reliable supplies of high-quality gases. However, if we stop there, we will never be able to create new value. One of our strategies for the electronics field is to firmly understand what is required of us right now, and having built up trust with our customers based on our performance record, communicate with them with the aim of developing and supplying new products and solutions and expanding our business.

Furthermore, the electronics industry uses enormous quantities of nitrogen gas to ensure safety inside plants and to transport wafers. To meet the demand for nitrogen, the NSHD Group produces and supplies large-capacity air separation units (ASUs), but our development of this business overseas has been slow. By improving this situation through active business alliances with local companies, we will further develop our business in the electronics field.

Moreover, by promoting DX, predicated on rigorous information security, we aim to create a system that can automatically gather information about the amounts of gases used by customers, their purity specifications, and so forth, then rapidly reflect this in the Group’s gas production. This is also related to the focused field of “DX initiatives” in NS Vision 2026, and I would like to see the Company begin working on it in the second half of the plan period.

Realizing Carbon Neutrality by 2050

Appropriate investment decisions and their execution will be an essential part of carrying out NS Vision 2026, and this is one of Nippon Sanso Holdings’ most important roles. Our traditional approach to investment was to use the funds earned by our operating companies and allocate them appropriately according to market conditions. We have many years of experience in this approach, and in some ways it is simple. However, when making capital investments to realize carbon neutrality and providing gas on-site for customers who are promoting carbon neutrality, we need to consider more than just the gas supply apparatus, as the issues of capturing and transporting CO₂ after the gas has been used also arise. By widening the scope of



issues that the Group is engaging with in this way, we start to see differences in investment recovery periods and evaluations compared to our previous investment approach. I think we may encounter new kinds of investment decisions that we have not experienced before. We will have many discussions on such issues regarding investments for environmental measures.

NS Vision 2026 also includes our scenario analysis based on the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD), and in doing so we have broadly responded to the recommendations. However, our specific actions in this area are decided and driven by the Company itself. Looking ahead, the Group Sustainability Management Office will lead the deeper conversation about our response to the risks and opportunities we have identified in relation to climate change.

Another of the focused fields in NS Vision 2026 is “exploring new business toward carbon neutrality.” At this stage, however, our exploration is just beginning. Initially, we will treat the initiatives of our European operation as best practice, since they are the most advanced in this area, and then expand them to other regions and business units.

Realizing a carbon-neutral society is no easy task, technologically or economically. As such, currently many of our customers are not able to transition directly to a carbon-neutral state. Helping these customers to make a start by reducing their GHG emissions is the idea behind exploring new business toward carbon neutrality during the period of the medium-term management plan.

However, carbon neutrality is not something that the NSHD Group can promote alone; we must always think about it in terms of our engagement with customers. As we deepen our customer relationships, we will be able to better understand their issues and how best to resolve them, enabling the customer and the NSHD Group to advance toward realizing the customers’ targets through a beneficial relationship. However, since we must basically make a proposal regarding the customer’s existing processes, our proposals will be custom-made systems that rely on the Company’s technological capabilities and engineering. Producing a number of high-quality proposals as “The Gas Professionals” will enable us to sell industrial gases and equipment to supply them, as well as new equipment for reducing CO₂ emissions. By accumulating these kinds of deals as quick wins, and appealing to customers based on our knowledge and performance record, we will drive this strategy forward with accelerating speed.

The NSHD Group’s industrial gases business has always delivered value through the process of resolving issues identified through communication with customers. Rather than simply selling products, we use invisible assets

(value) to deliver results. In this sense, exploring new business toward carbon neutrality is actually the essence of the industrial gases business.

In the Thermos business, we will continue to flexibly combine vacuum-insulation technology and metal processing technology with our unique lifestyle comfort concept to create discerning products for inspired lifestyles. At the same time, we will continue working to reduce environmental impact throughout the entire product life cycle.

Today, the world is working to achieve carbon neutrality by 2050. It is difficult to clearly define the image of a society that has realized this in the future. However, on the road to reaching this goal, everything that we have come to know will change. Taking a prescriptive approach to how things should be could stifle new ideas with the potential for significant future developments.

What we can say, however, is that as a company we want to be able to contribute to the world through the industrial gases business and the Thermos business, to make a better society in 2050 and beyond.

Corporate Governance and Expectations of Outside Directors

Nippon Sanso Holdings is a listed company with a majority owner, so protecting the interests of minority shareholders is also an important priority. We have been particularly conscious of this, and have now brought our corporate governance into line with Japan’s Corporate Governance Code. However, even if we faithfully follow the Code to the letter, that will not lead directly to the growth of the Company. Without a firm commitment to corporate governance by the company that implements it, it will be meaningless.

If governance does not function effectively, resulting in a serious compliance incident, the impacts will go beyond a deterioration in corporate value and share price and actually hamper future growth by impeding fund procurement and acquisition of human resources. In this way, corporate governance is extremely important for both financial and non-financial aspects. The responsibility for setting up and implementing corporate governance lies with Nippon Sanso Holdings, and the Board of Directors plays an especially important role. In order to fulfill this role and contribute to society, the Board of Directors must actively incorporate a wide range of knowledge and information from a management perspective while also taking into consideration society overall. Now, Katsumi Nagasawa,

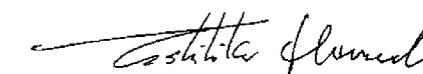
who has management experience in the manufacturing industry, and Masako Miyatake, who is an expert on international law, have been appointed as outside directors, and we expect them to contribute significant insights. Moreover, we continue to include the presidents of our operating companies in the United States and Europe on the Board of Directors in order to have a global perspective. Looking ahead, global society is expected to change even more rapidly and to become even more complex. To respond to these trends and enhance our multidirectional risk assessment, we will promote countermeasures such as strengthening our understanding of international law.

Our Vision for the Future

Every country has different tasks that must be done, or should be done. The nature of the tasks may also differ depending on the state of industrial development. Fortunately, industrial gases are certain to be used by all industries in every country. In other words, there are many opportunities for the NSHD Group to contribute to industry. To meet this challenge, we will communicate carefully with our customers, and with our stakeholders, aiming to provide both social value and economic value to advance society through business. Moreover, we will make full use of best practices in our global business activities as we continue to increase our corporate value, operating our businesses with all our full capabilities. At the same time, we will continue to pursue our ideal form as a corporation by further enhancing our governance structure. As a result, we will be able to increase our corporate value, which is the greatest contribution we can make to our shareholders and investors.

Based on this policy, the Group will continue to create value, aiming not only to achieve its current targets but also aiming for developmental growth by exceeding successive targets in the future.

September 2022



Leveraging our strong cash generation to reduce debt and invest in the future while also returning profits to shareholders

Alan David Draper

Executive Officer,
Group Finance and Accounting Office, and CFO

Overview of FYE2022

On behalf of the NSHD executive team, I would like to express our deepest appreciation and thanks to the approximately 20,000 hardworking and dedicated employees engaged in 32 countries and regions around the world for an excellent year. Our employees are our greatest asset, and their strong performance is evident in the results delivered this past year. On a year-on-year basis, sales increased 17.0%, core operating income (COI) increased 17.7%, operating income increased 13.9%, and net income attributable to owners of the parent increased 16.1%. COI and operating income both exceeded ¥100 billion for the first time in Company history. All segments contributed to this improvement in both sales and profit. Our Group companies generated strong operating cash flows of nearly ¥150 billion. This strong cash generation allowed us to fund capital projects and investments totaling just over ¥75 billion, to pay dividends of around ¥14 billion to our shareholders, and to make debt payments of over ¥50 billion. Debt reduction remained a priority throughout the year. We successfully reduced our adjusted net debt-to-equity (D/E) ratio to 0.94, which is below the 1.01 target set at the beginning of last year. All five major segments contributed to the solid growth and cash generation. Our Company is well positioned financially to invest in the future growth of our business. As further evidence of our improved financial health, Rating and Investment Information, Inc. (R&I) recently announced an upgrade to our long-term debt issuer rating to A from A-

R&I and JCR Credit Ratings

As of May 2022:

Rating and Investment Information, Inc. (R&I)

Long Term Bond	A
Subordinate Bonds and Loans	BBB+

Japan Credit Rating Agency, Ltd. (JCR)

Long Term Bond	A+
Subordinate Bonds and Loans	A-

Current Year Targets and Outlook

Looking forward to FYE2023, sales are expected to contract from ¥957 billion to ¥950 billion, which is a reduction of -0.7%, or ¥7 billion. This comparison is not on a consistent basis due to different foreign currency exchange rates and unprecedented pass-through charges and surcharges that

occurred in FYE2022. After adjusting the base year (FYE2022) for energy pass-through charges, surcharges, and foreign currency, our sales growth on a comparable basis is expected to increase just over 2.5%. We expect solid sales growth in the United States, Asia and Oceania, and Thermos and modest growth in Europe and Japan. The entire organization is focused on improving profitability through pricing efforts, productivity, and cost reduction initiatives along with cost and inflation recovery activities. Our team's hard work and focus will enable COI next year to grow at an accelerated 4.2% and on a constant-currency basis, 4.9%. There is no need to adjust for pass-through charges and surcharges as these do not impact the absolute COI figures. As we look to the macroenvironment, we are concerned with the uncertainty and mounting risks. The main risks are the Russia-Ukrainian crisis, China's zero-COVID policy, energy crisis, and rising inflation and interest rates. Our team is working diligently to manage controllable factors and we remain committed to achieving these targets under the current environment.

As evidenced over the last few years, our Company has a proven, successful, diversified, and resilient business model. Our Company generates solid cash flows in both strong and soft economic conditions. Looking to FYE2023, we expect to increase our operating cash flows to approximately ¥169 billion, an increase of approximately ¥20 billion. The main drivers of the increase are improved operating income performance and more disciplined working capital management. The strong cash flows will enable us to invest in the future of our business through cost reduction and productivity projects, capital growth projects, and acquisitions. It is anticipated that we will spend nearly 60% of our operating cash flow on investments to strengthen and improve our Company's financial performance. In addition, we will continue to reduce debt and will strive to attain a targeted adjusted net D/E ratio at a more favorable rate of 0.86.

Medium-Term Plan (MTP)

I am delighted to participate in NS Vision 2026, Enabling the Future. Over the past year, the organization has been working diligently to prepare and refine strategies, stress test assumptions, and prepare actions plans to achieve established goals. The executive team has focused on reviewing, guiding, and driving the teams toward attainable targets. As I look across the segments and the significant number of strategic opportunities that lie ahead, I am very excited about our Company's future, and I am confident that our medium- and long-term outlook is bright. The management team

clearly understands the targeted objectives, and everyone is aligned with the five main strategies in NS Vision 2026: sustainability management, exploring new business toward carbon neutrality, total electronics, operational excellence, and DX initiatives. In addition to the main strategies, each operating segment also has key tasks, activities, and objectives that will propel them towards their strategic goals.

Two of the metrics that will be focused upon during the MTP are ROCE after tax and EBITDA. We changed the calculation of the ROCE metric to an after-tax basis to allow better comparability with our global peers. In addition, more emphasis and attention will be placed on EBITDA and related margins, allowing a more comparable analysis across the industrial gases industry. Given our debt position, we will continue to use the adjusted D/E ratio through the end of this MTP.

NS Vision 2026 builds on the past achievements of each operating unit. The main key performance indicators are revenue, COI, EBITDA margins, adjusted net D/E ratio, and ROCE after tax. Our revenue target is ¥975–1,000 billion, COI target is ¥125–135 billion, EBITDA for the Group is expected to exceed 24%, adjusted net D/E ratio to be below 0.7, and ROCE after tax to be at or above 6%. While the calculated revenue growth is about a 1% compounded annual growth rate (CAGR), the underlying growth on a consistent basis as normalized for foreign currency, pass-through charges, surcharges, and expected portfolio restructure of underperforming low-profit businesses results in a CAGR of 2.6% at ¥975 billion of revenue to 3.3% at ¥1,000 billion of revenue, respectively. During the MTP, our management

team will focus on low-profitability businesses and restructure them to achieve improved profitability or exit those that are neither profitable nor a strategic fit in the NSHD Group. Our MTP considers and excludes the estimated impact of these changes. In addition, COI is expected to grow significantly to between ¥125 billion and ¥135 billion, which, adjusting for foreign currency, is 5.2% to 7.3% CAGR, respectively. The pass-through charges, surcharges, and reorganization of low-profit business has little impact on COI comparability. Our NSHD 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 strategies that will help us achieve a strong core operating income growth rate. The successful execution of our five MTP strategies of sustainability management, exploring new business toward carbon neutrality, total electronics, operational excellence, and DX initiatives will enable us to achieve outsized income growth.

We will continue to evaluate capital projects with critical financial and commercial criteria to help ensure project internal rates of return are compared to regional hurdle rates so we are investing in solid economically and financially based projects for our shareholders. As evident in our MTP investment forecast of ¥433.0 billion over the next four years, this is a sizable increase in capital investment compared to what we have spent over the last several years. The reasons for the increased spend above the rates of the past few years are as follows: The NSHD Group has an improved financial situation

and soundness as a result of our significant debt reduction; capital investments over the past few years were influenced by fiscal constraints and belt tightening due to the unprecedented COVID-19 pandemic; and there are a significant number of carbon neutral and DX project opportunities that the Group will undertake during the next four years. In addition to capital investment, we will also continue to explore acquisition opportunities across Europe and the United States, allowing us to further expand our geographic footprint and improve our customer density in given regions.

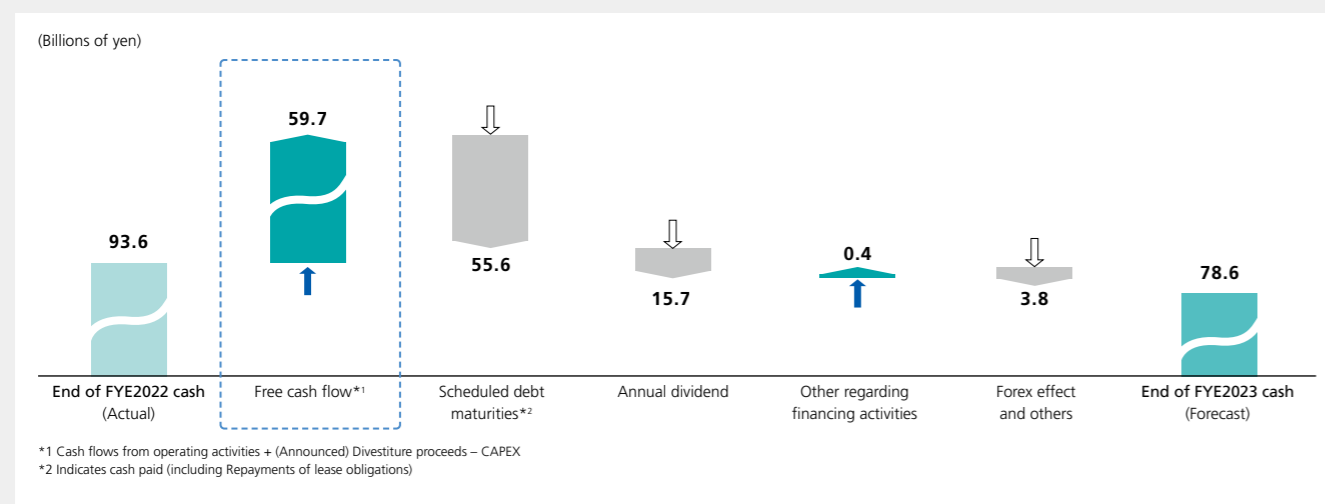
Capital allocation is a critical function of the Nippon Sanso Holdings executive team. Our capital allocation approach is consistent with the past. The operating cash flows generated through our business units will be used to pay down debt, to fund capital investment, and to return shareholder value through dividends. We expect our cash flow allocation to be approximately 60% for investments with the remaining 40% to be used for debt payment and dividends. Our adjusted net D/E ratio will be at or below 0.7 at the end of the MTP period, reflecting an anticipated conversion of a ¥100 billion of hybrid debt to clean debt during this period. This will be a sound financial accomplishment ensuring NSHD remains on track to build upon our solid financial foundation. Dividend payments will be a continued focus of our team. We will strive to maintain stable and reliable dividend payments based on business growth similarly to the way we have successfully managed this over the past eight years at a CAGR of approximately 14%.

Closing Remarks

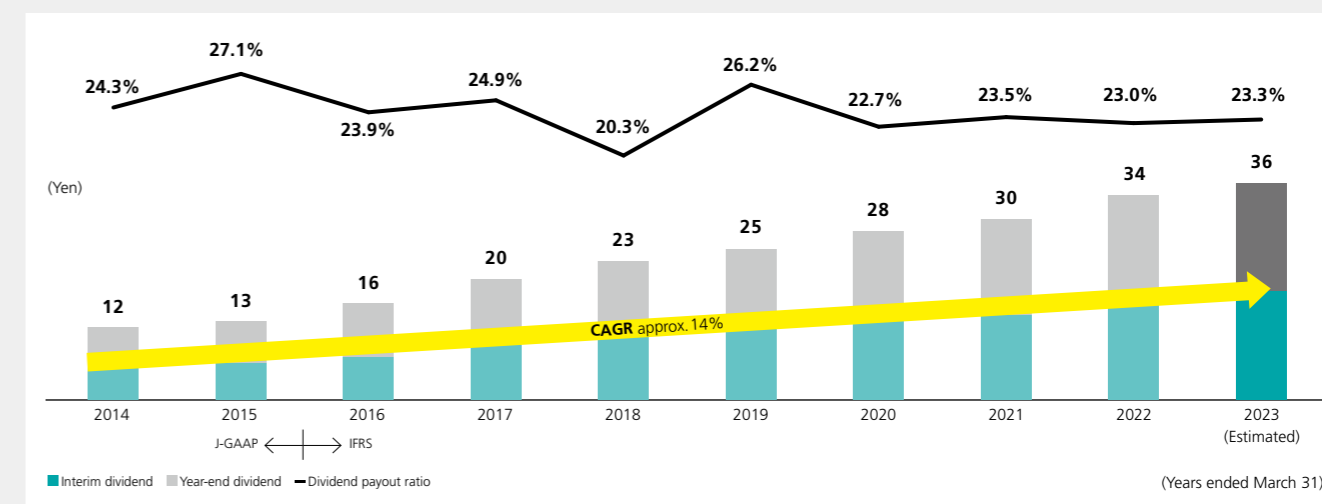
It is essential that we provide the investment community with valuable insight into the performance of our business. During the MTP, we will introduce financial initiatives with the objective of improving our external reporting to the financial community and providing better comparability with other companies within the industrial gases industry.

In the MTP, NS Vision 2026, the NSHD Group has an appropriate blend and balance of business targets that are achievable, motivating, and challenging. Activities will be prioritized based on their ability to yield prompt benefits. The entire NSHD Group is excited to focus and deliver on the tangible and challenging opportunities ahead of us and to deliver positive results for shareholders, employees, and society.

Cash Flow Forecast

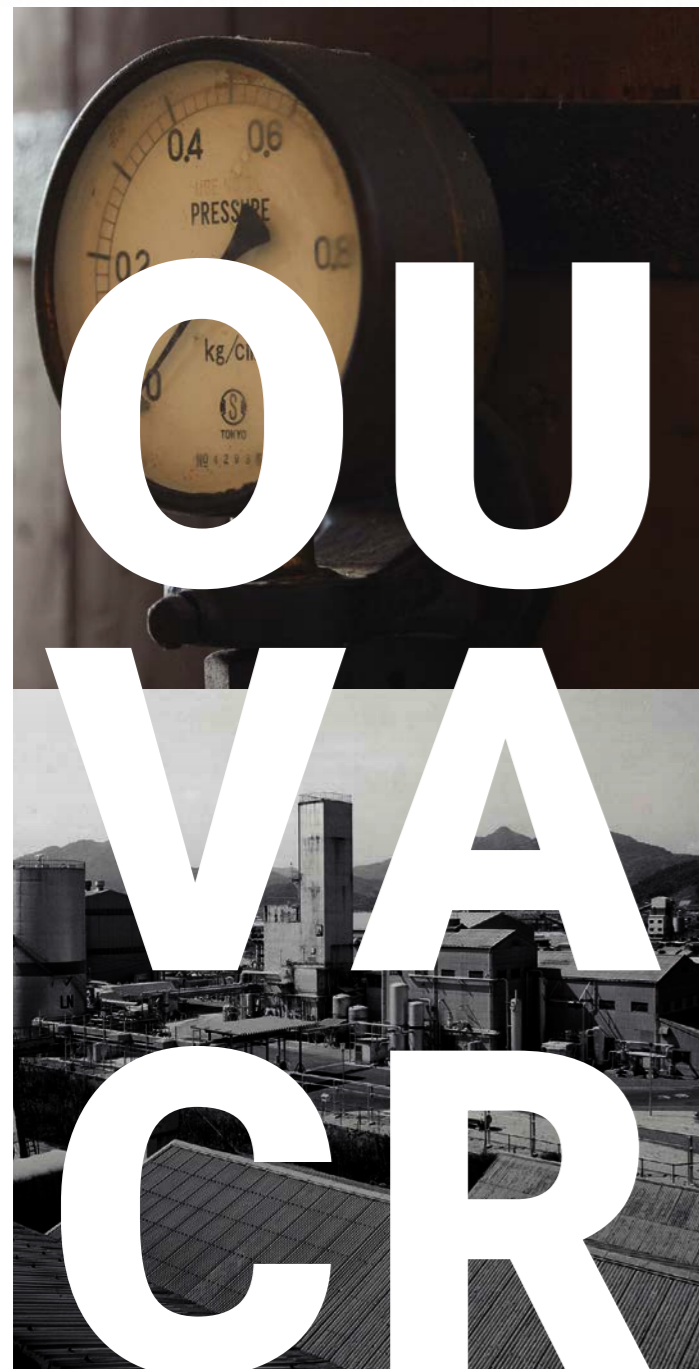


Dividend Trend





The Nippon Sanso Holdings Group operates in four geographic hubs: Japan, the United States, Europe, and Asia and Oceania. To build a more competitive operating structure comparable with other global gas majors, in October 2020 the Group transitioned to a pure holding company structure. This new structure enables us to delegate authority to regional operating companies for swift decision-making and appropriate allocation of management resources. We have also created a structure that enhances the comprehensive capabilities of the Group by clarifying responsibility for business execution and performance, and sharing and enhancing the strengths of each operating company.



OUR VALUE CREATION

The Nippon Sanso Holdings Group's Value Creation

SECTION 2

Our Value Creation Story

Nippon Sanso was established in Japan in 1910. The Company grew in step with the nation's industrial sector, eventually capturing the leading share of the Japanese industrial gases market. Seeking further growth, the Company set its sights on the global industrial gases market, investing in Singapore and the United States in 1980s, and widening its network to include China, Thailand, the Philippines, Taiwan, and Vietnam in the 1990s, followed by India, Indonesia, Australia, Myanmar, Cambodia, and Peru in South America in the 2000s. In the United States, the Company has engaged in aggressive M&As through its local operating company, Matheson Tri-Gas, Inc. Then, in 2018, it began to expand its business in Europe, acquiring a portion of the European industrial gases business of U.S. company Praxair, Inc., and establishing Nippon Gases Euro-Holding S.L.U. In 2020, the Company transitioned to a holding company structure, and in 2022, formulated the medium-term management plan, NS Vision 2026. With this plan, the NSHD Group continues seeking further growth.

▶ 1910

Established Nippon Sanso Ltd.

The Company's founder, Takehiko Yamaguchi, identified the social importance and future potential of producing and supplying oxygen separated from air within Japan. Korekiyo Takahashi, then deputy governor of the Bank of Japan (and later prime minister), showed interest in Mr. Yamaguchi's ideas, and decided along with other officers of the Bank of Japan to make an investment.

- **1918**
Established Toyo Sanso K.K.
- **1935**
Succeeded in producing Japan's first air separation unit (ASU) for manufacturing oxygen
- **1946**
Established Taiyo Sanso Co., Ltd.
- **1964**
Opened the first on-site plant to realize reliable, high-volume gas supplies
- **1970s**
Started early on development of electronic materials gases needed for semiconductor manufacturing, establishing a position in the electronics market
- **1978**
Commercialized the world's first stainless steel vacuum-insulated bottle



ACT Stainless Pot, the world's first stainless steel vacuum-insulated bottle, launched in 1978



Established National Oxygen Pte. Ltd. in Singapore aiming to expand business in ASEAN countries

- **1995**
Merged Taiyo Sanso Co., Ltd. and Toyo Sanso K.K. to launch Taiyo Toyo Sanso Co., Ltd.



Merged U.S. Matheson Gas Products, Inc. and Tri-Gas Inc., to launch current Matheson Tri-Gas, Inc.

Operating company in the United States
Matheson Tri-Gas, Inc.



2008

Established Dalian Changxing Island Taiyo Nippon Sanso Gas Co., Ltd. in China

- **2012**
Acquired Singapore-based industrial gases and welding equipment manufacturer Leeden Limited

2015

Acquired Australian liquefied petroleum gas (LP gas) and industrial gases distributor Renegade Gas Pty Ltd with a view to expanding into the industrial gases market in Australia

2016

Acquired a portion of the U.S. industrial gases business and relevant business assets of French industrial gases supplier Air Liquide S.A.



Operating company in Europe
Nippon Gases Euro-Holding S.L.U.

2019

Acquired the U.S. HyCO business of German industrial gases supplier, Linde AG

2020

Transitioned to a holding company structure and changed the company name. The former name, "Taiyo Nippon Sanso Corporation," was transferred to a newly established operating company in Japan.

2022

Launch of medium-term management plan "NS Vision 2026" (▶ P.30)

2018

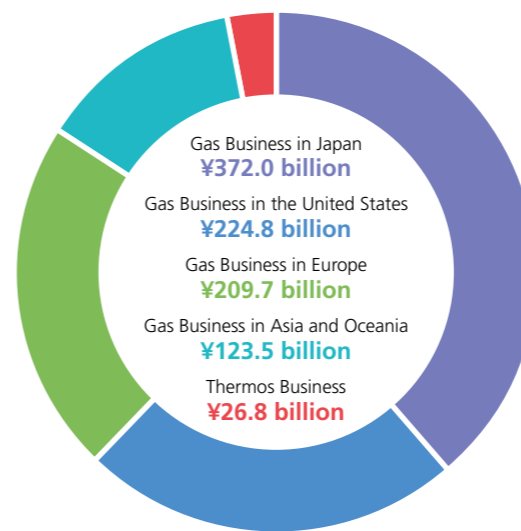
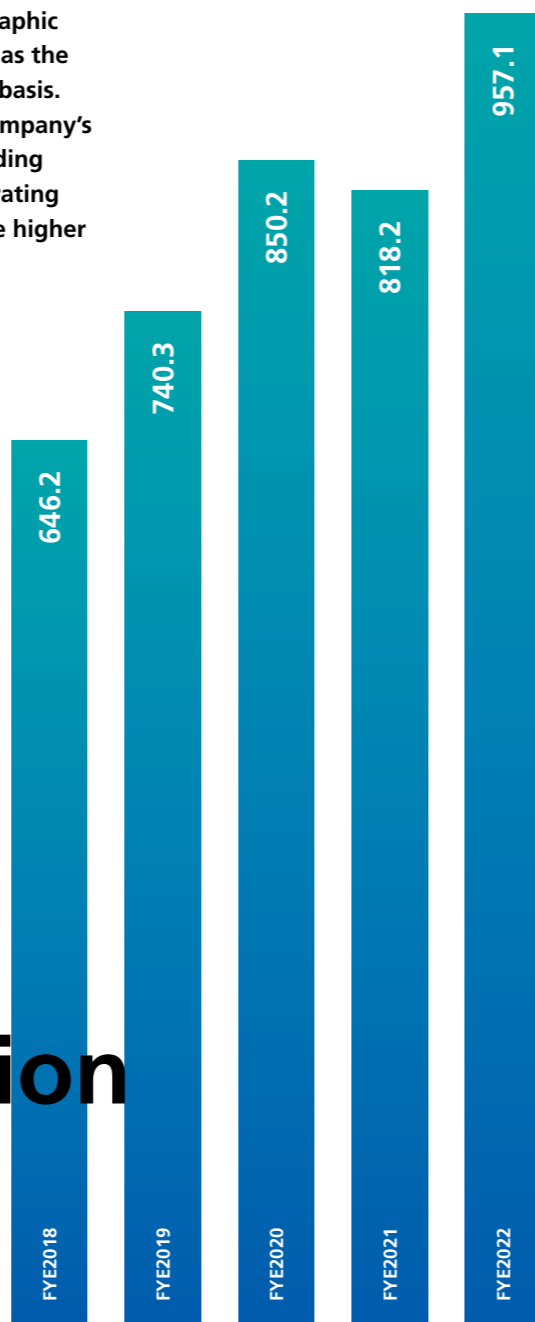
Acquired a portion of the European industrial gases business of U.S. industrial gases supplier, Praxair, Inc.

Leeden National Oxygen Ltd.
(Formerly National Oxygen Pte. Ltd.)

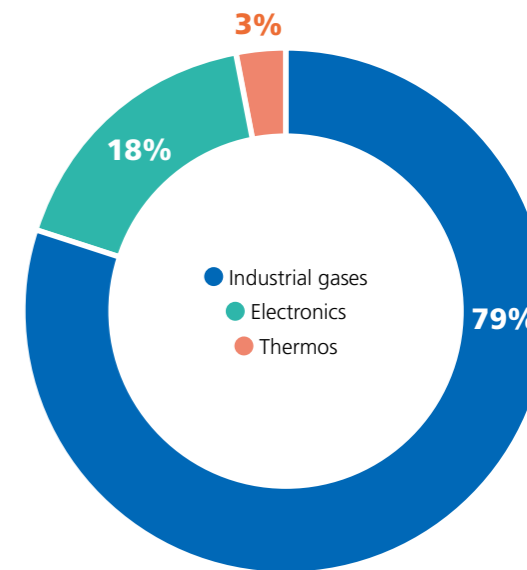
The Company's global expansion which began in 1980s has evolved into a business operation structure comprising a global network of four geographic hubs in Japan, the United States, Europe, and Asia and Oceania, as well as the Thermos business, with more than 19,000 employees on a consolidated basis. Every NSHD Group employee around the world seeks to embody the Company's tagline, "The Gas Professionals," in their daily operations. As a pure holding company, Nippon Sanso Holdings will coordinate with the regional operating companies in each of the four geographic hubs and Thermos to promote higher quality operations and higher earnings across the entire Group.

Revenue

¥957.1 billion



Revenue by Segment



Percentage of Revenue by Business

Operating Profit
¥101.1 billion

Affiliated Companies (Global)
307
(Of which, in Japan)
139

Overseas Revenue Ratio
59.2%

Countries and Regions of Operation
32
Industrial Gases Global Market Share Ranking
4th

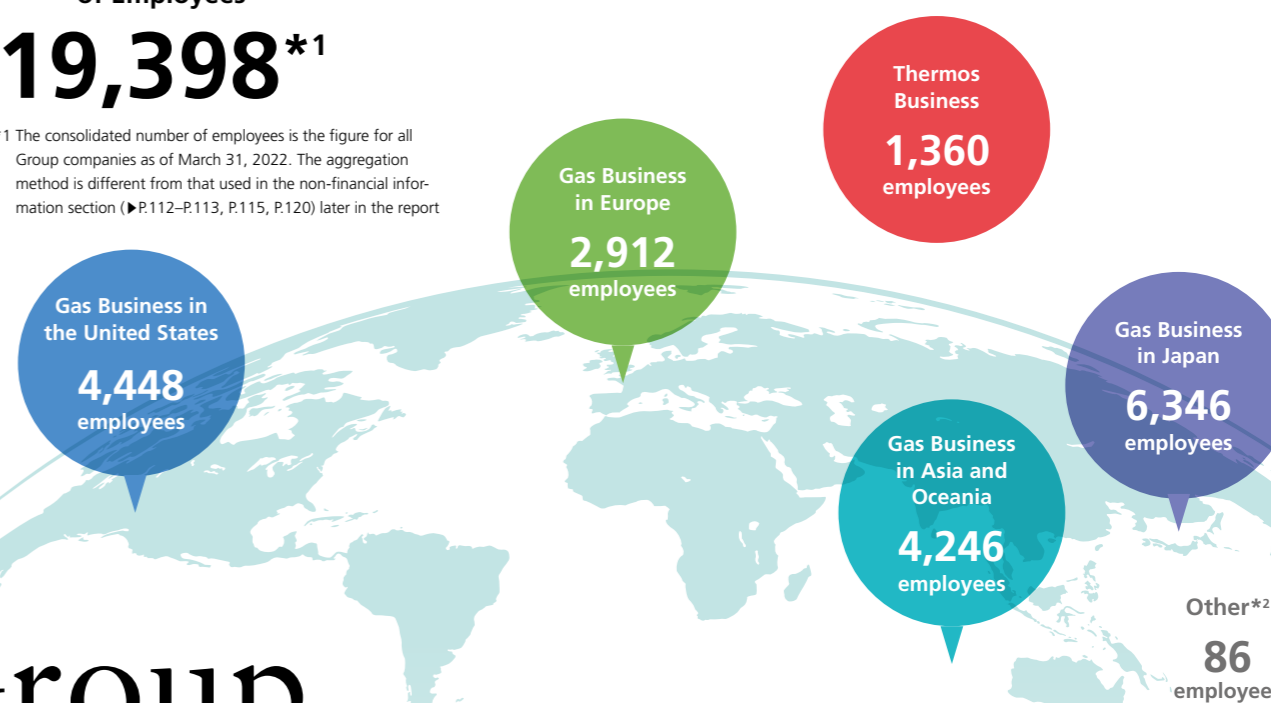
Consolidated Number of Employees
19,398*1

*1 The consolidated number of employees is the figure for all Group companies as of March 31, 2022. The aggregation method is different from that used in the non-financial information section (▶P.112–P.113, P.115, P.120) later in the report

Revenue

Expand Four Geographic Hubs and Thermos

Nippon Sanso Holdings Group



*2 Employees who are assigned to the Group's Corporate Administration Division or Engineering Division and cannot be classified under a specific segment.

Continuing Our Sustainable Growth

Our Direction

The Nippon Sanso Holdings Group around the World

The Nippon Sanso Holdings Group operates in four geographic hubs: Japan, the United States, Europe, and Asia and Oceania. To build a more competitive operating structure comparable with other global gas majors, in October 2020 the Group transitioned to a pure holding company structure. In addition, the Thermos Business supplies THERMOS brand products to over 120 countries worldwide.

Providing a Safe, Reliable Supply of Industrial Gases for All Industries

In its industrial gases business, the Group provides a constant supply of industrial gases 24 hours a day, every day of the year, to a wide range of industries, such as steelmaking, chemicals, automotive, shipbuilding, machinery, food, healthcare, and electronics. We believe that our safe and reliable delivery of industrial gases as “The Gas Professionals” can contribute to the development of these industries as well as to the resolution of social issues.

Introducing Agreeable, Environmentally Friendly Lifestyles in the Thermos Business

In the Thermos Business, product development starts from the concept of sustainability. We consider it our mission to achieve both convenience and environmental preservation, and use our proprietary vacuum-insulation technology to introduce new kinds of lifestyles that are agreeable to people and society and also environmentally friendly. In the Thermos Business, we contribute to energy saving with various technologies and the use of imagination, while providing new value that realizes agreeable lifestyles.

Special Features of Our Structure

Industrial Gases Business Model of Production at the Site of Consumption

Different customers use different types and quantities of our main industrial gases, such as oxygen, nitrogen, and argon, depending on their applications. Therefore, to transport and supply industrial gases safely, reliably, and efficiently, we build a supply network in which the site of production and consumption are contained in a certain geographic area.

Holding Company Operations Connecting Operating Companies at the Four Geographic Hubs

Our regional operating companies have a deep understanding of their local business environment as well as market and customer characteristics. Giving each operating company greater authority helps to achieve fast, agile management and business operation by increasing decision-making speed. Meanwhile, the holding company executes cross-regional measures to encourage leveraging of the comprehensive capabilities of the Group and allocates resources appropriately to operating companies.

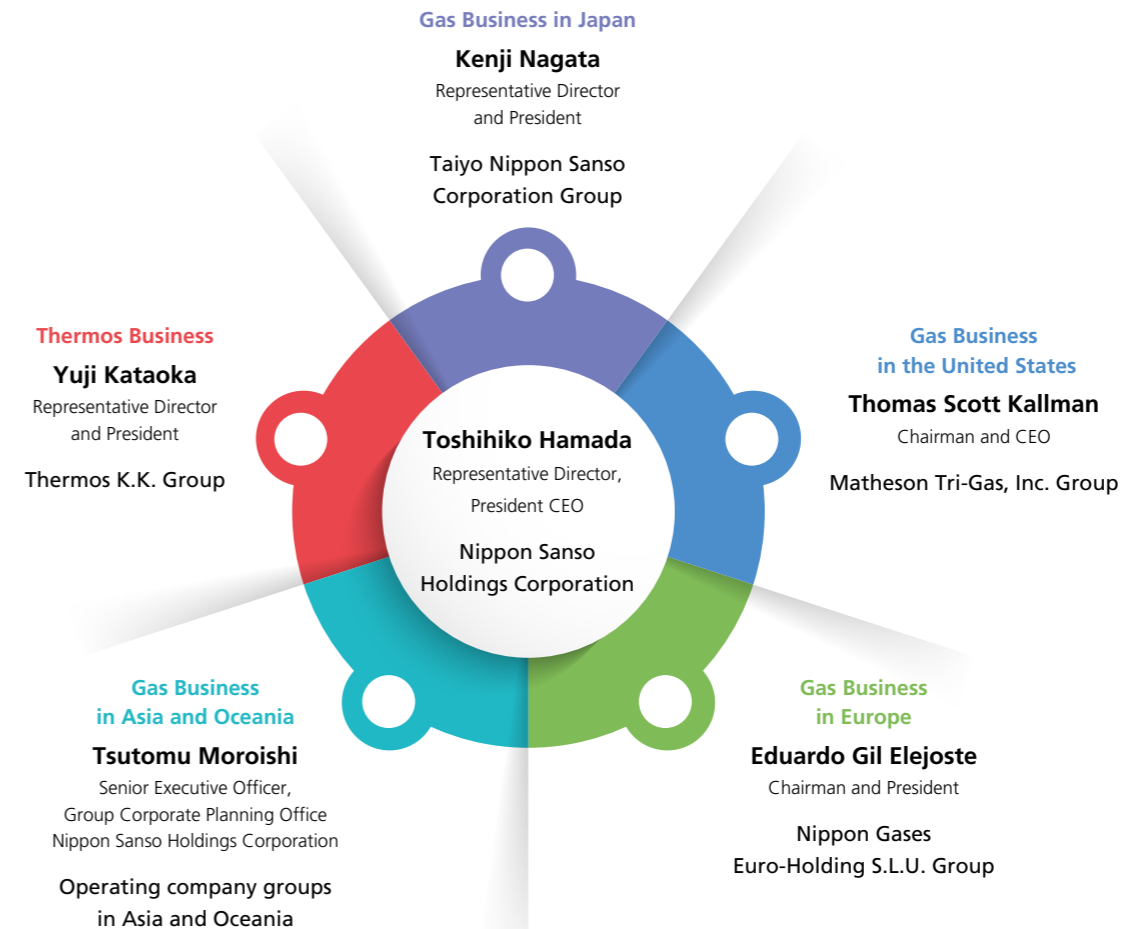
Business Structure Comprising a Global Network of Four Geographic Hubs and the Thermos Business

As a pure holding company, the Nippon Sanso Holdings Group is building a structure for integrating management with the operating companies through the proposal of strategies, enforcement of compliance, and enhancement of the risk management structure covering the entire Group. It will also pursue operational excellence by sharing and developing best practices across all NSHD Group companies.

Three Changes Caused by the Transition to a Holding Company Structure

- 1 Delegation of authority for swift decision-making and appropriate management resource allocation
- 2 Clarification of business execution responsibility and results
- 3 Proactive sharing and development of outstanding initiatives by each operating company, strengthening the comprehensive capabilities of the Group

Nippon Sanso Holdings Group Structure



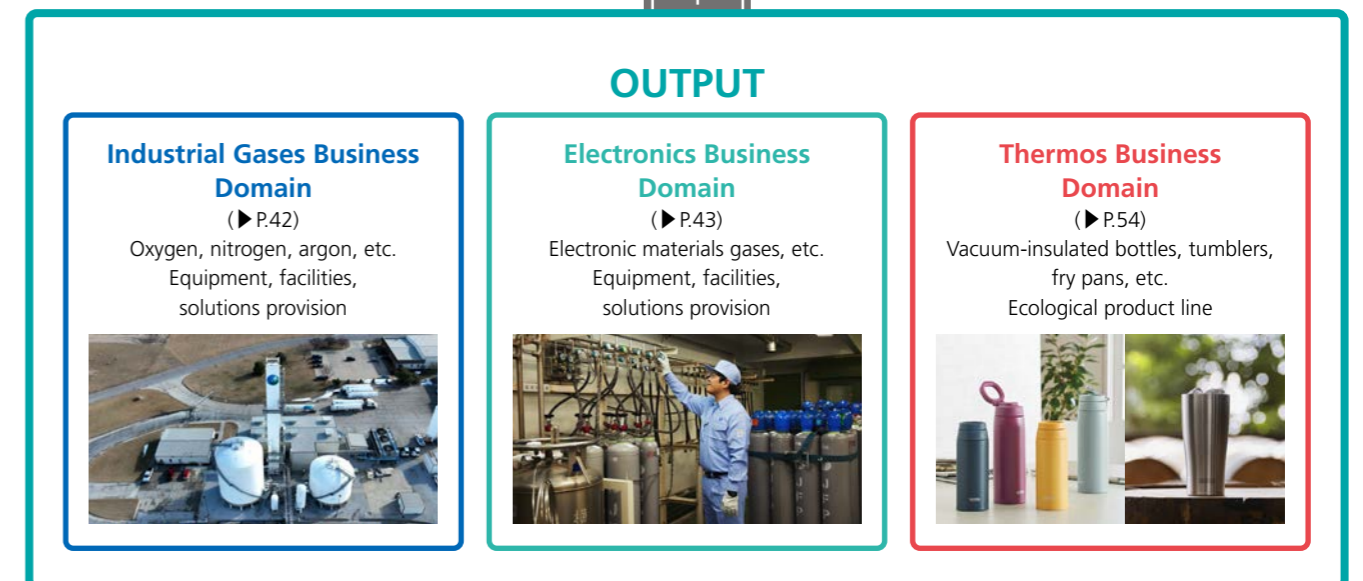
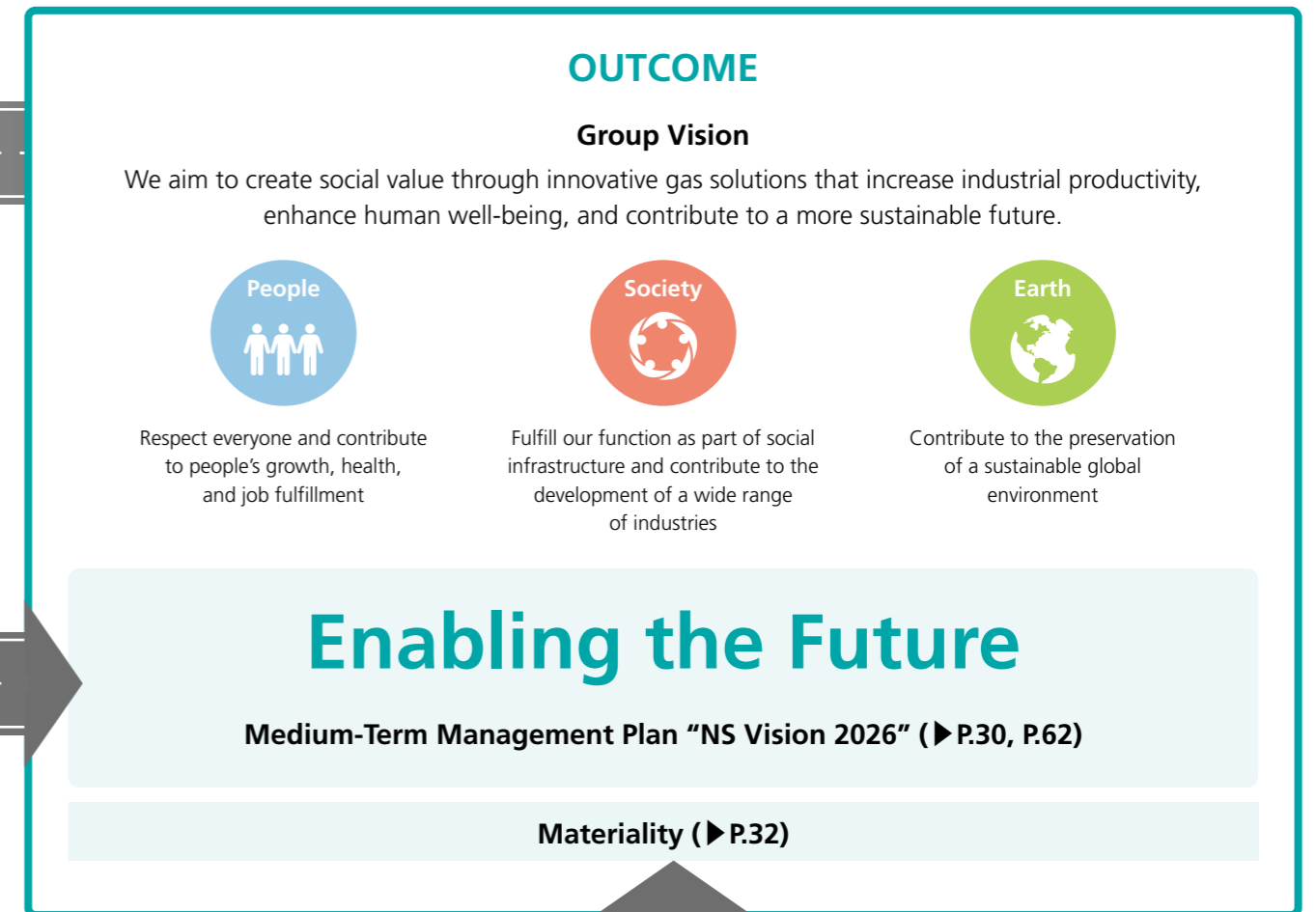
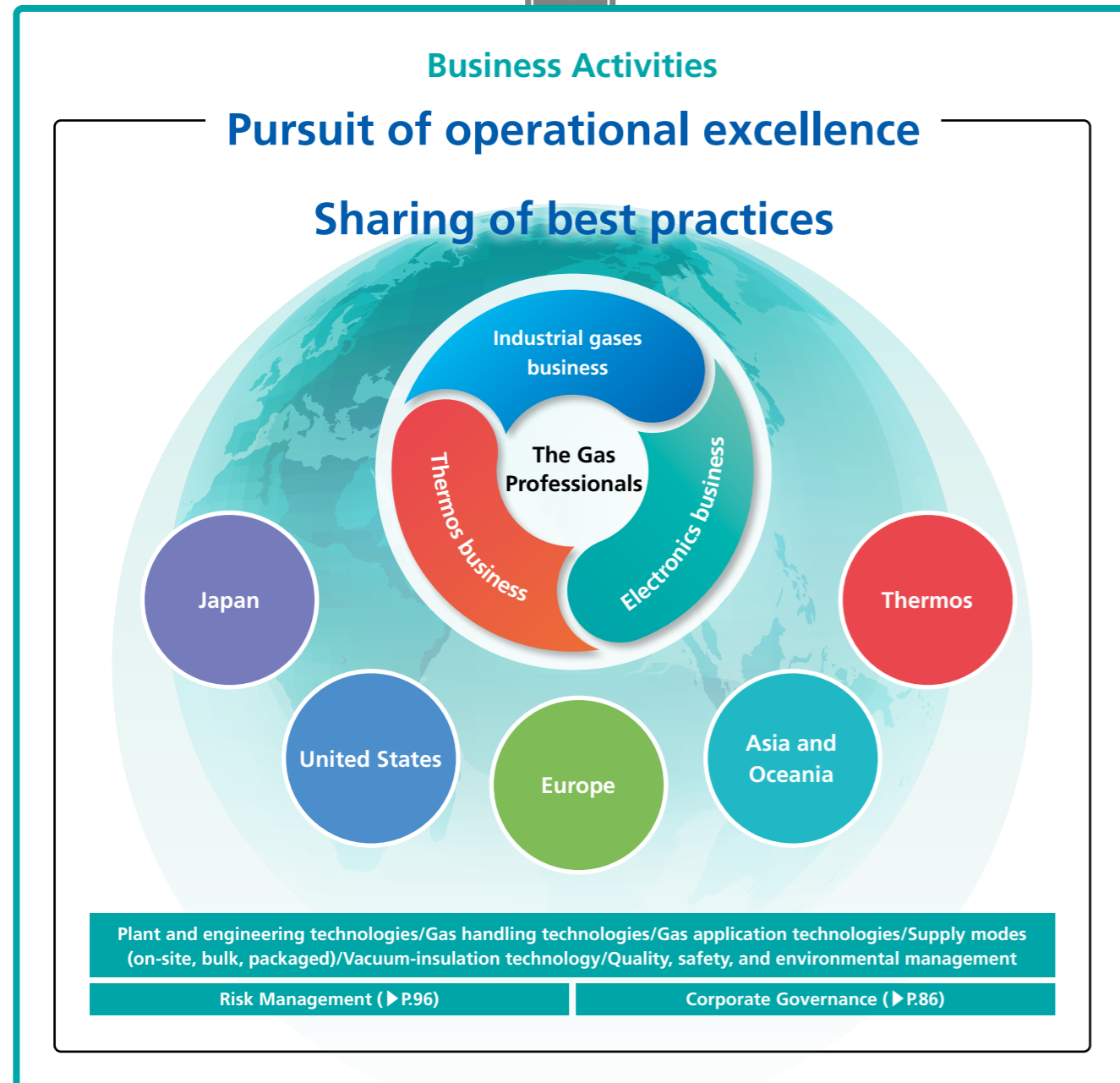
* The Oceania and Asia Management Division has been established within the Group Corporate Planning Office to oversee business promotion for companies in Asia and Oceania.

Our Characteristics and Strengths

Value Creation Story

Under the medium-term management plan NS Vision 2026, the entire Group has reaffirmed its understanding of the external environment. In our business activities, we will share our best practices in each region in pursuit of operational excellence, aiming to deliver both social value and economic value, and thereby increase our corporate value.

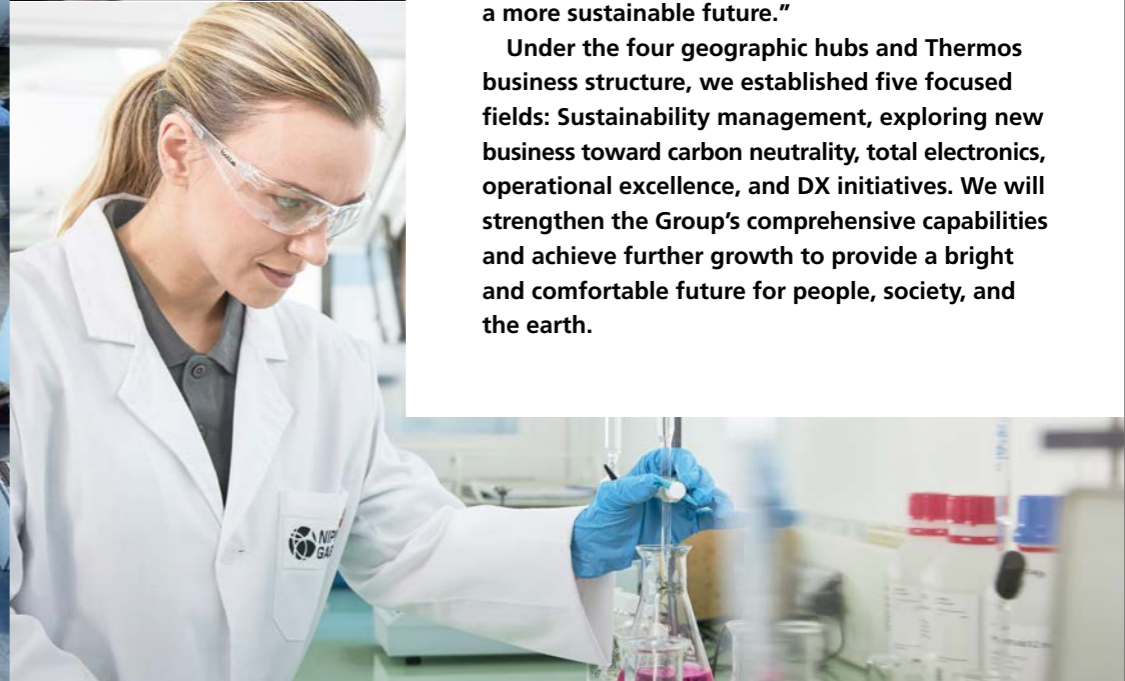
Key Considerations: Environment and Society





We formulated our first medium-term management plan, NS Vision 2026, after the establishment of Nippon Sanso Holdings Corporation in October 2020 with the vision that, "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."

Under the four geographic hubs and Thermos business structure, we established five focused fields: Sustainability management, exploring new business toward carbon neutrality, total electronics, operational excellence, and DX initiatives. We will strengthen the Group's comprehensive capabilities and achieve further growth to provide a bright and comfortable future for people, society, and the earth.



OUR STRATEGY

Medium-Term Management Plan NS Vision 2026



Medium-Term Management Plan

NS Vision 2026

NS Vision 2026 is based on recognition of the current situation and designed to strengthen the Group's comprehensive capabilities and promote its growth through five focused fields, with new financial and non-financial KPIs under the business operation structure of four geographic hubs and the Thermos business.

Key Considerations: Environment and Society



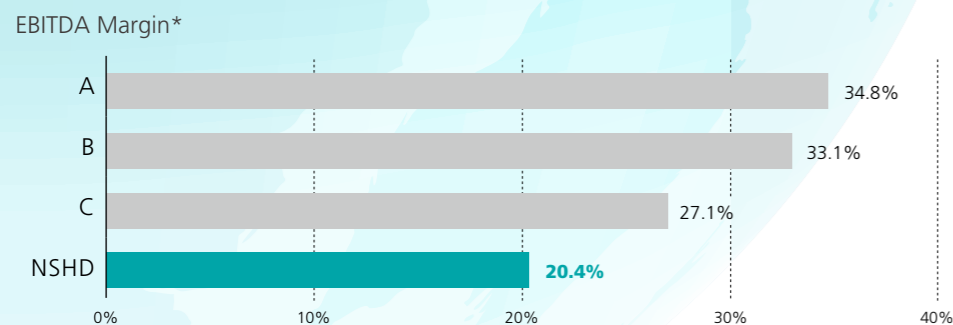
Key Considerations: Industrial Gases Market

Objective: Reliable Acquisition of Business Opportunities

Regional market overview	Japan	The United States	Europe	Asia and Oceania
2019 Industrial Gases Market* (Millions of U.S. dollars)	5,719	21,994	18,519	20,215
2019 Market Ranking	#1	#4	#4	#6
GDP Growth Rate (Assumed)	1.0–1.5%	2.5–3.0%	2.0–2.5%	4.0–4.5%

* Estimation based on "Gasworld Industrial Gas Market Forecast 2020"

Task: Improve Profitability



Source: Refinitiv Eikon most recent fiscal year-end

* The ratio of cash-based profit arising from business activities to revenue. The EBITDA margin has been employed from the current medium-term management plan as an indicator of profitability based on cash flow, excluding the impact of M&A and capital expenditures.

Our urgent task is to strengthen the Group's comprehensive capabilities in order to respond to the changing world and enhance our standing in each region.

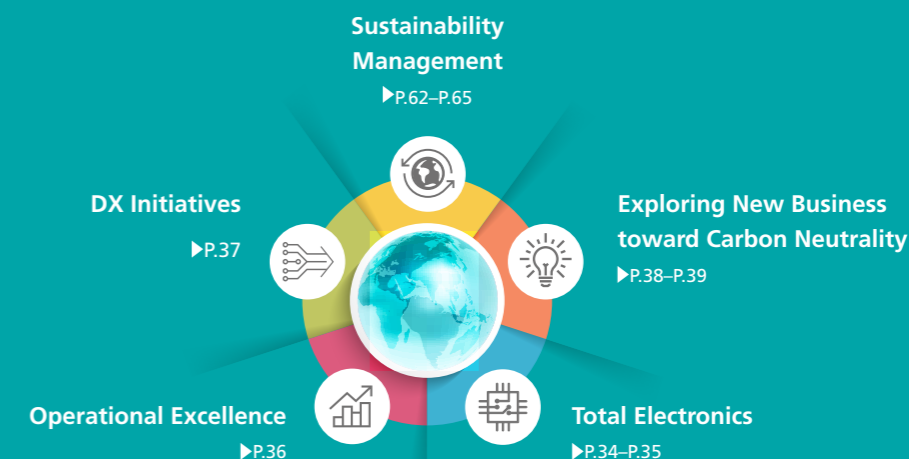
Formulation of Medium-Term Management Plan

NS Vision 2026

Slogan

Enabling the Future

Focused Fields



Business Strategy by Segment

Gas Business in Japan (Taiyo Nippon Sanso Group) ▶P.44	Gas Business in the United States (Matheson Tri-Gas Group) ▶P.46	Gas Business in Europe (Nippon Gases Euro-Holding Group) ▶P.48	Gas Business in Asia and Oceania (Asia and Oceania region business company group) ▶P.50	Thermos Business (Thermos Group) ▶P.52
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Numerical Targets (KPIs)

Financial KPIs (FYE2026)

Revenue
¥975 billion–¥1,000 billion*

Core Operating Profit
¥125 billion–¥135 billion*

EBITDA Margin

Group:
≥ 24%

Japan, the United States, Europe, Asia and Oceania, Thermos:
≥ 17%–33%

Adjusted Net D/E Ratio
≤ 0.7 times

ROCE after Tax
≥ 6%

* Due to uncertainty in the global economy, revenue and core operating profit are shown in a range.

Non-Financial KPIs

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

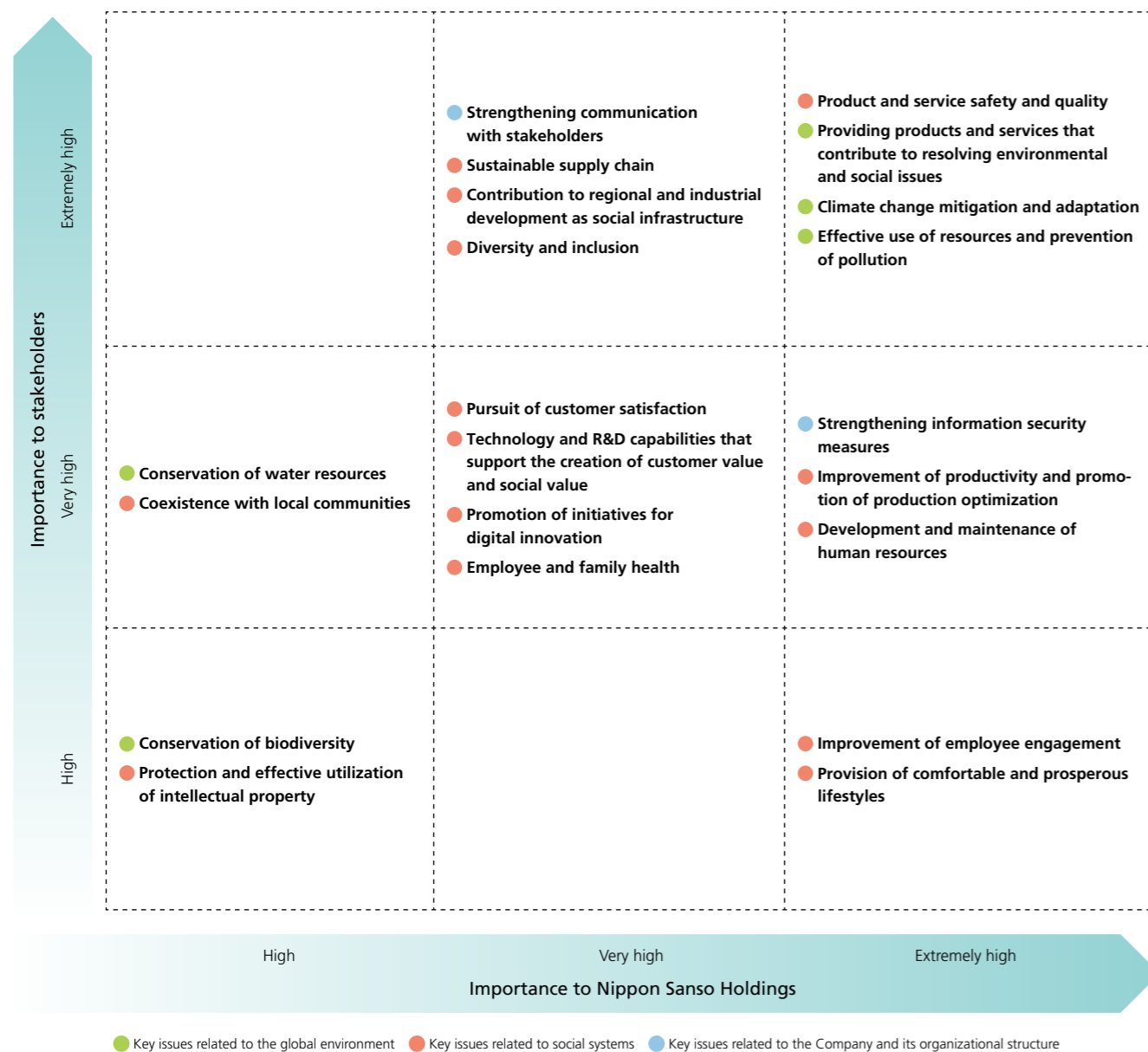
Rate of female employees
≥ 22% (FYE2026)
25% (FYE2031)

Rate of female management posts
≥ 18% (FYE2026)
22% (FYE2031)

Materiality

Reflecting an increasing social awareness of sustainability and global environmental issues as well as the dramatic change in our corporate structure, our materiality, initially formulated in 2015, was revised and obtained approval of the NSHD Board of Directors in December 2021.

Preconditions for the Existence of an Enterprise

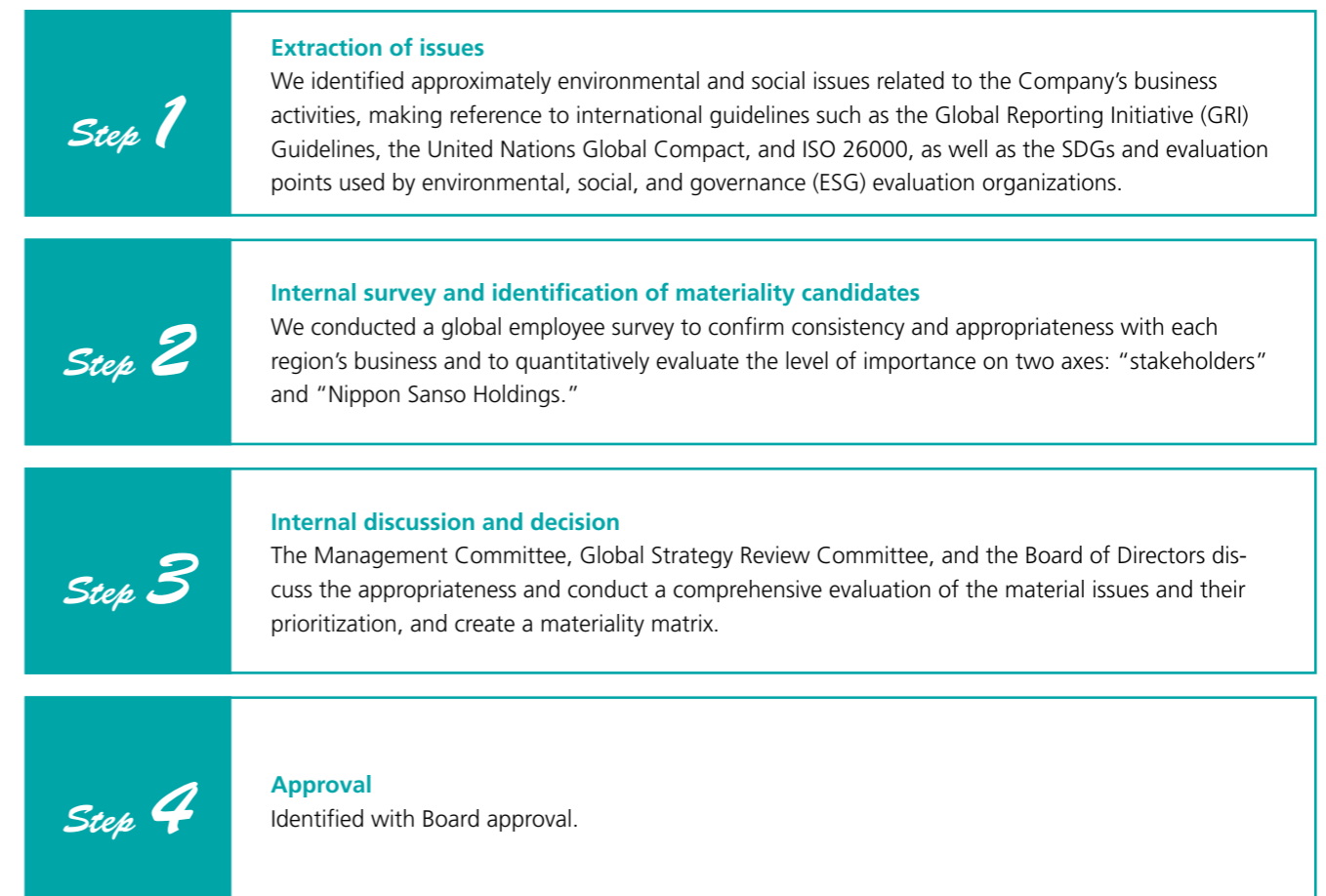


● Key issues related to the global environment ● Key issues related to social systems ● Key issues related to the Company and its organizational structure

Background and Objective for Review of Materiality

- Since 2015, when the previous material issues were identified, social awareness of sustainability and global environmental issues has increased, and the Group's corporate structure has changed dramatically.
- 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 globally.
- We manage and disclose the status of progress on issues that the Group should address (materiality) using the KPIs set out in medium-term management plan NS Vision 2026. This enables us to strengthen and enhance our initiatives to help resolve issues.

Materiality Identification Process



Step 1

Extraction of issues

We identified approximately environmental and social issues related to the Company's business activities, making reference to international guidelines such as the Global Reporting Initiative (GRI) Guidelines, the United Nations Global Compact, and ISO 26000, as well as the SDGs and evaluation points used by environmental, social, and governance (ESG) evaluation organizations.

Step 2

Internal survey and identification of materiality candidates

We conducted a global employee survey to confirm consistency and appropriateness with each region's business and to quantitatively evaluate the level of importance on two axes: "stakeholders" and "Nippon Sanso Holdings."

Step 3

Internal discussion and decision

The Management Committee, Global Strategy Review Committee, and the Board of Directors discuss the appropriateness and conduct a comprehensive evaluation of the material issues and their prioritization, and create a materiality matrix.

Step 4

Approval

Identified with Board approval.

Creating Growth Opportunities to Increase Earning Capability (1)

Total Electronics

Semiconductor manufacturers are expected to grow going forward. To uphold the trust we have built with customers in this industry, we will provide quality assurances, new products, and technology solutions, while promoting further utilization and strengthening of the Group's current resources.



Become a global supplier in the semiconductor ecosystem

- Offer robust/updated quality assurances, new products, and technology solutions
- Leverage and enhance our existing group capability and solutions

Initiatives to Achieve Financial Targets

1

Enhance the Semiconductor Specialty Gases (SSG) business

- Expand product lineup and production capability
- Improve Group SSG quality and responsiveness

2

Group capability enhancement for equipment, ASUs, and engineering

- Leverage group capability for equipment in the electronics business
- Enhance the possibility to acquire on-site business for semiconductor investment
- Expand opportunities to supply semiconductors and photovoltaic cells in Asia

3

DX introduction

- Enhance productivity and semiconductor quality through DX

As the semiconductor market has grown, with customers expanding their businesses on a global scale, the NSHD Group has increased its business area from the United States and Japan to Taiwan, South Korea, China, and Southeast Asia. Furthermore, in 2018 we added the European business, creating a support structure which is able to respond to every region where semiconductor customers are growing.

We are committed to providing high value added products and services by optimizing our supply chains and research and development. We have centralized our response to global customers which is in line with total electronics strategy. In addition, we are supplying products and services based on customer needs in each region, enhancing production and expanding its operations.

In NS Vision 2026, our aim is to become a global supplier in the semiconductor ecosystem by enhancing our production capacity and quality and further optimizing our supply chain in electronic materials gases, which have been at the heart of this strategy. Moreover, as a Group, we will leverage our strength in being able to provide electronics customers with all aspects of ASUs, supply equipment for electronic material gases, and engineering. We will leverage these over a wider range of areas to contribute to improvements in customers' productivity and quality, aiming for further growth.

Case Studies

East Asia: Expanding Production Capacity of Diborane

Diborane (B₂H₆) is an essential material used in the manufacture of all kinds of semiconductors, from highly advanced through to commodity products.

Recently, demand for diborane has risen sharply as customers expanded their production capacity, particularly for semiconductor memory. Accordingly, we have been implementing plans to double our diborane production capacity in Japan, South Korea, and China. We also plan to invest in production capacity aligned with expected demand and favorable trends.

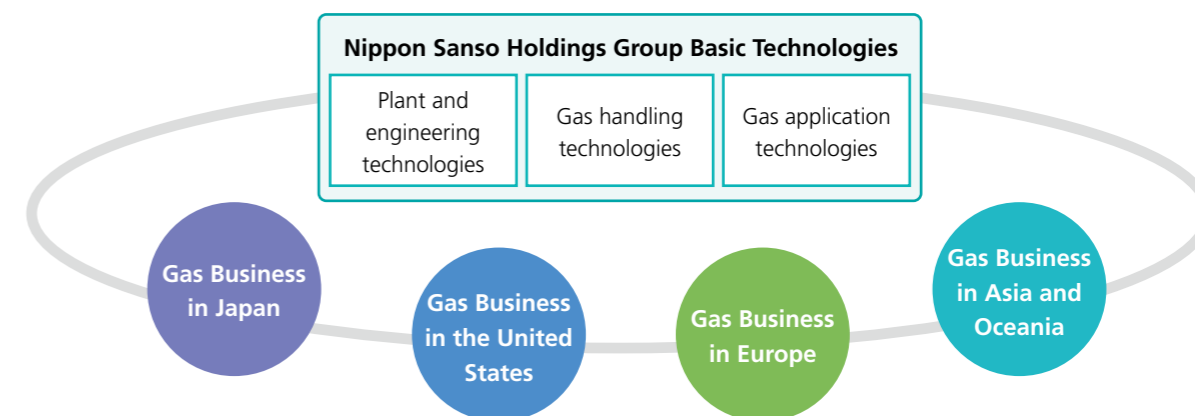


Electronic materials gases production plant in Yangzhou, China

Basic Technologies Supporting Business Expansion

The NSHD Group's basic technologies are vital to promoting NS Vision 2026. These technologies include plant and engineering technologies, which cover design through maintenance of ASUs that produce air separation gases; gas handling technologies, for the continued reliable and efficient production and supply of air separation gases; and gas application technologies, which relate to the application of gases in various fields such as food freezing and metal processing using the gases' special characteristics. We will utilize these technologies and continue with uncompromising research and development to provide optimal solutions that meet a wide range of customers' demands, including electronics customers.

Organizations Related to the Basic Technology System



We are resolving customers' issues and providing new value to meet market needs in every area through the Group's basic technologies.

Creating Growth Opportunities to Increase Earning Capability (2)

Increasing Productivity

Another important task in NS Vision 2026 is to improve profitability. By pursuing operational excellence, an activity for increasing productivity of the entire Group, we will streamline and optimize our overall operations.

Pursuing Operational Excellence

Action Plan

(1) Foster a Groupwide productivity improvement mindset through global operational excellence events
 (2) Target early success by horizontal sharing of best practices across operating companies
 (3) Promote standardization and optimization of operations throughout the Group

▼

Group Goals

Achieve cost reduction effect of more than ¥56.0 billion in total over four years*

* Gross basis

Operational excellence means building a competitive advantage by increasing the results and efficiency of business activities, aiming to achieve sustainable growth and enhance productivity throughout the entire Group.

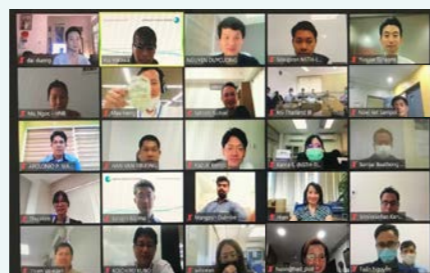
Nippon Sanso Holdings runs operational excellence events, where each operating company shares its initiatives for

increasing results as best practices, helping to cultivate Groupwide awareness of operational excellence. By promoting operational excellence focus and activities across the Group and actively spreading good examples to operating companies, we will improve the Group's overall profit by more than ¥56.0 billion.

Case Studies

Asia and Oceania: Operational Excellence Promotion Activities

In the Asia and Oceania region, we are conducting activities to promote operational excellence known as "Shiba Productivity." For countries that are new participants in Shiba Productivity, an introductory program called Awareness is held, comprising two events: Summer Camp and Fes. At Summer Camp, participants identify and report on inefficiency or waste in their operations, and at Fes they present specific projects that they have undertaken to improve on them. In FYE2022, over 70 employees from six countries attended Awareness. Nippon Sanso Vietnam Joint Stock Company in Vietnam and Nippon Sanso (Thailand) Co., Ltd. in Thailand implemented the projects, which have enabled them to make productivity gains in their operations.



Kick-off meeting for Awareness 2021

DX Initiatives

Action Plan

(1) Focus on digitization and digitalization efforts

DX Initiatives

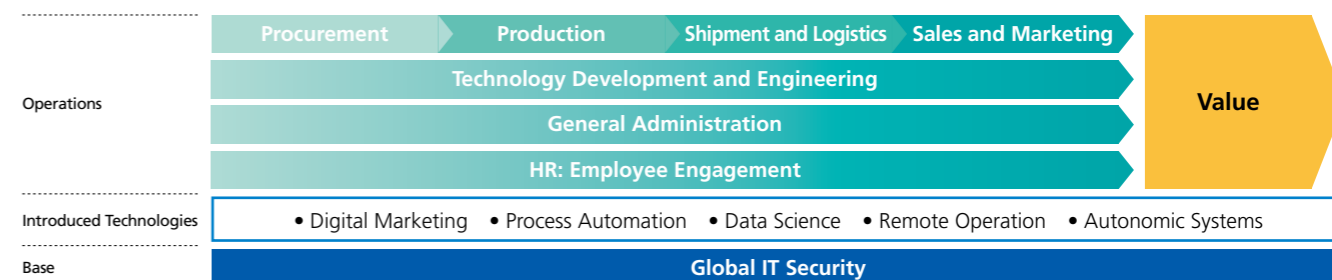
Phase 1: Digitization

Phase 2: Digitalization

Phase 3: DX

(2) Prioritize these three fields: Customer engagement, Operational excellence, Employee engagement
 (3) Initiatives by regional management (4) Dedicated DX organization in the NSHD Group

Route to Value Creation



DX is closely connected with each of the five focused fields in NS Vision 2026. Phase 1 involves converting analog data into digital data. Phase 2 aims to increase efficiency by digitalizing specific business processes, including automating them. Phase 3 aims to create new value for customers by connecting society and systems through digital networks. During the medium-term management plan, we will mainly be focused on Phases 1 and 2. Each operating company will conduct initiatives to improve customer engagement, operational excellence, and employee engagement.

Within the NSHD Group, we will establish a DX organization and promote initiatives such as digital marketing, remote operation, and process automation, aiming to create new value in the future by connecting our entire value chain digitally, from procurement to supply. We also plan to conduct a rapid upgrade of our global IT security system and countermeasures, as these will play an even more important role going forward (▶P.98).

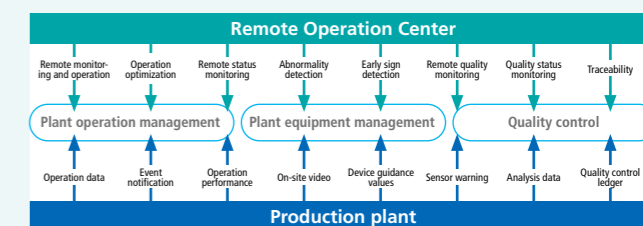
Case Studies

Japan: Building a Remote Operation System for Our Core Production Plant

In Japan, the working-age population is projected to decrease going forward, and securing personnel needed to operate production facilities is a looming issue for business continuity. Meanwhile, rigorous plant operation based on more sophisticated risk evaluation is required, particularly in our ASUs, which are the Group's core production facilities. In this environment, Taiyo Nippon Sanso Corporation will introduce a remote operation system that allows us to maintain operation management with a significant degree of sophistication, thereby enabling improvements in productivity and a plant operation system that realizes effective use of human resources.

We will evaluate this system and aim to realize remote operations of manufacturing plants that strictly adhere to legal requirements. In FYE2024, we plan to open the Remote

Operation Center (tentative name) and gradually expand target plants. This center will be established to handle plant operation management, plant equipment management, and quality control, among others, and will harness digital technology such as the Internet of Things (IoT) and artificial intelligence (AI) in addition to the remote monitoring technology cultivated at the Total Monitoring Center.



Conceptual Drawing of Remote Operation at Core Production Plant

Creating Growth Opportunities to Increase Earning Capability (3)

Realization of a Carbon-Neutral Society

The NSHD Group will contribute to the reduction of GHG emissions in its customers' industries through environmental product offerings and solutions. We will strengthen initiatives to develop the necessary technologies to achieve this goal, and promote stronger collaboration with strategic partners on technologies that we lack. In parallel, we will strive to bolster our communication capabilities to ensure that our various stakeholders understand our initiatives.

Carbon-Neutral Programs

We are implementing two programs aimed at realizing carbon neutrality in 2050: Carbon Neutral Program I (▶P.63), which is aimed at reducing the Company's own GHG emissions, and Carbon Neutral Program II, which aims to help customers lower their GHG emissions by providing them with solutions such as environmental product offerings, equipment, and services. Here, we introduce our provision of solutions under Carbon Neutral Program II.

Exploring New Business Opportunities for a Carbon-Neutral Society

Action Plan

Gain some "quick-win" carbon-neutral projects

- Join or capture carbon-neutral projects in the steelmaking, glass, ceramics, aluminum, and non-ferrous metals markets
- Acquire HyCO projects for a hydrogen society

R&D and strategic partners

- Join various carbon-neutral projects and share knowledge within the Group
- Find potential strategic partners
- Increase resource investment into specialist R&D themes such as combustion technology, etc.

External/internal communication with all stakeholders

- Establish communication platform
- Enhance our presence through proactive efforts such as posting carbon-neutral activities on social media

The NSHD Group has already organized a global carbon-neutral working group to explore new business toward the realization of a carbon-neutral society. We will build up a track record in quick-win projects in fields where we can leverage our industrial gases and supply equipment and our development and engineering capabilities, while also promoting research and development and strengthening collaboration with strategic partners.

We will also establish a communication platform to disseminate information to stakeholders inside and outside the

Group, aiming to capture new business opportunities. To this end, in September 2022 we established a dedicated website for carbon-neutral projects.

Dedicated website for carbon-neutral projects:
"We enable a carbon neutral world"

<https://www.carbonneutralworld.com/>

Case Studies

United States: Long-Term Hydrogen Supply Agreement for Renewable Fuels

Matheson Tri-Gas, Inc. (MTG) signed a long-term supply agreement to meet hydrogen requirements for renewable diesel production for a 75,000 bpd (barrel per day) refinery owned by Vertex Energy with hydrogen from an existing facility as well as newly generated hydrogen from renewable fuels.

MTG has an established long-term track record as a manufacturer and supplier of stable safe hydrogen. In this project, the feedstock for manufacturing hydrogen will not be fossil fuels, but renewable hydrocarbon fuels (including bionaphtha and other biofuels) produced as by-products from renewable fuel manufactured by Vertex Energy, making it possible to manufacture and supply hydrogen with an extremely low carbon footprint.

This agreement will be the first occasion for Nippon Sanso Holdings to establish a HyCO plant that uses renewable hydrocarbon fuel as feedstock, demonstrating the Group's commitment to the supply of industrial gases for commercially sound renewable energy projects toward carbon neutrality. Furthermore, the project also represents a significant

additional dimension for the Group's global HyCO footprint. In the development of the global HyCO business, the NSHD Group will continue to actively explore target customers and projects, undertaking careful scrutiny of their feasibility and economic viability, while continuing to realize business growth and contribute to a carbon-neutral society.



Existing HyCO plant

Case Studies

Japan: Greening the Industrial Furnace Combustion Process

Combustion efficiency can be increased by changing from air combustion to oxygen combustion. The Group's R&D base at Taiyo Nippon Sanso's Yamanashi Solutions Center is developing oxygen combustion technologies for various applications. Oxygen combustion technology involves adding high-purity oxygen to combustion-supporting gas to increase the combustion efficiency using air with an oxygen concentration of 21% or higher. The process produces a higher flame temperature compared to combustion in air, and the nitrogen component in the combustion-supporting gas can be lowered, reducing the amount of energy carried away as exhaust gas. As a result, the technology is used in various combustion applications, such as high-temperature blast furnaces and smelting furnaces, where it helps to save energy and reduce CO₂ emissions. We will apply our strengths in oxygen

combustion technology across a broader range, aiming to convert various kinds of industrial furnaces from air combustion to 100% oxygen combustion.



Oxygen combustion

At a Glance

The three business domains of the NSHD Group are industrial gases, which supports a wide range of industries from basic industries such as steelmaking, chemicals, automobiles, and construction, to domains such as food and medicine; electronics, which contributes to the manufacture of semiconductors and the creation of new technologies; and Thermos, which brightens people's daily lives with the themes of comfort and convenience. These business domains are operated and promoted via five business segments. We aim to accurately grasp the market characteristics of each region while sharing and developing the best practices and strengths cultivated in each region across the Group to strengthen its comprehensive capabilities.

Gas:
 ● Packaged ● Bulk ● On-site
 ● Specialty gases (electronic materials gases, etc.)

Equipment and installation:
 ● Gas-related, plants (supply equipment ASUs, etc.)
 ● Electronics-related (piping installation, impurity removal and purification equipment, etc.)

	Outline of Business	Main Products and Services (Revenue by product for FYE2022)		
Gas Business in Japan	<p>Taiyo Nippon Sanso Group</p> <p>Taiyo Nippon Sanso holds the top share of the Japanese industrial gases market at around 40%. It has the main R&D and engineering functions for the Nippon Sanso Holdings Group, and a structure that enables it to meet customers' demands. The company supports manufacturing with a nationwide supply network and stable operations at highly efficient production plants.</p>	<p>Gases</p>	<p>Equipment and installation, other</p>	<p>By sharing knowledge and technologies advanced at R&D bases in Japan throughout the Group, we have established a structure capable of meeting market needs in every region.</p>
Gas Business in the United States	<p>Matheson Tri-Gas Group</p> <p>Matheson Tri-Gas is building an industrial gases supply network centered on major manufacturing areas such as California, which boasts the largest state economy, as well as Texas and Louisiana, leaders in the petroleum industry. In 2019, we acquired a portion of the HyCO business* from former Linde Gas North America, thereby further expanding our product lineup.</p> <p><small>* The HyCO business separates hydrogen (H₂) and carbon monoxide (CO) from feedstock such as natural gas and supplies it to the petroleum refining and petrochemical industries through on-site operations.</small></p>	<p>Gases</p>	<p>Equipment and installation, other</p>	<p>The Matheson Tri-Gas Group's largest ASU was established to serve the petrochemical industry facing the Gulf of Mexico, where it conducts on-site operations.</p>
Gas Business in Europe	<p>Nippon Gases Euro-Holding Group</p> <p>Nippon Gases Euro-Holding operates in 13 countries, centered in Iberia (Spain and Portugal), Italy, and Germany, and has built a stable and highly efficient business base. The company is developing its business across a wide range of fields to capture growth opportunities, including healthcare in Spain, refrigerants in Italy, and oxygen supplies for aquaculture in Norway.</p>	<p>Gases</p>	<p>Equipment and installation, other</p>	<p>The company maintains a strong focus on productivity to ensure a safe, reliable, and efficient supply, and to reduce GHG emissions during transport.</p>
Gas Business in Asia and Oceania	<p>Asia and Oceania region business company group</p> <p>Our industrial gases business operates mainly in Australia, Southeast Asia, China, and India, while the electronics business is focused mainly in China, Taiwan, and South Korea. The Group has identified East Asia as an important area for its electronics business due to a high concentration of global semiconductor manufacturers.</p>	<p>Gases</p>	<p>Equipment and installation, other</p>	<p>In East Asia, we have built an outstanding supply chain that supplies gases used as materials in the semiconductor manufacturing process with rigorous quality control, safety, and stability.</p>
Thermos Business	<p>Thermos Group</p> <p>Thermos K.K. of Japan is the main company in the group, which ships THERMOS brand products to over 120 countries around the world. The group contributes to energy saving through various technologies and creative capabilities, including vacuum-insulation technology cultivated in the industrial gases business. At the same time, it provides new value through products that realize comfortable lifestyles.</p>	<p>Gases</p>		<p>Vacuum-insulated bottles for cold carbonated drinks allow people to enjoy carbonated drinks by keeping them cool for a longer time.</p>

Three business domains operated and promoted by five business segments

Industrial gases business

Electronics business

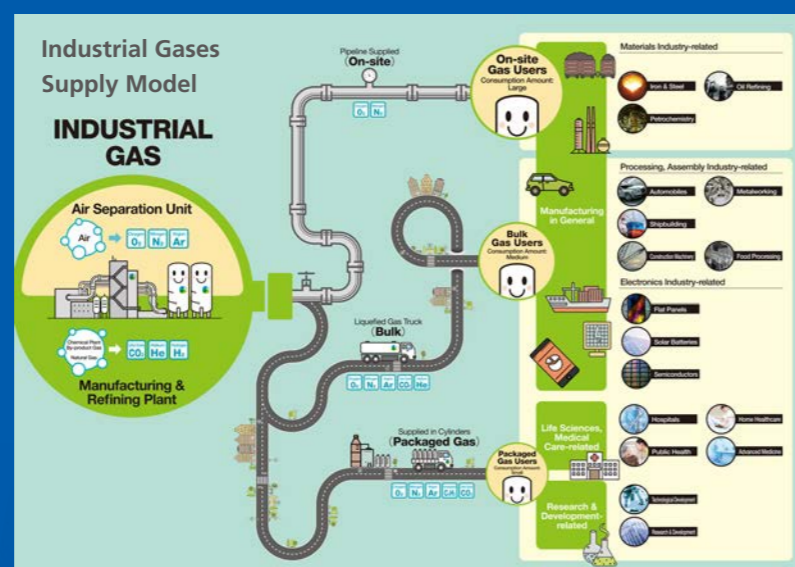
Thermos business

Industrial Gases Business

In the industrial gases business, we supply various industries, such as steelmaking, chemicals, and automobiles, primarily with our mainstay air separation gases, as well as hydrogen and carbon dioxide. We also provide oxygen and other products for medical use. The industrial gases business responds to different needs in each region around the world, with operating companies in each region cultivating and expanding their businesses at the local consumption level and in accordance with the local characteristics and customers. As the holding company, Nippon Sanso Holdings acts as a driver to share and expand best practices in each region, aiming to grow the industrial gases business further.

Reliable Supplier Utilizing the Optimal Supply Methods to Diverse Markets

The industrial gases business supplies essential industrial gases such as oxygen, nitrogen, and argon at the required time, in the required amount, and in a reliable manner using the optimal supply method. Since its foundation in 1910, the Company has used the gas technologies it has developed to supply industrial gases to fields such as materials, chemicals, fabrication, life sciences, food, agriculture, electronics, and energy. As an essential business, we provide powerful support for our customers' industrial activities.



Medical Business

The NSHD Group operates a medical business as a subsegment of the industrial gases business. We supply medical gases such as oxygen, nitrogen, and carbon dioxide (dry ice) to medical and medical-related institutions. Liquid helium at the ultra-low temperature of -268.9°C is used to cool the superconducting magnets in magnetic resonance imaging (MRI) equipment. Furthermore, we also supply medical-related equipment. In addition to supplying medical gases and equipment to medical institutions, we supply home oxygen therapy (HOT) equipment to patients who undergo ongoing treatment at home. Moreover, our liquid nitrogen cryopreservation containers for cell storage are used by advanced research laboratories for induced pluripotent stem (iPS) cells and so forth. The Group is contributing to various medical front lines through the supply of gases and equipment.

FYE2023 Business Plan

The NSHD Group has always responded to customers' needs beyond industrial gases, supplying various gas-related equipment as well as related services and various solutions. Now, we aim to go a step further, leveraging the combined capabilities of the Group to provide value in the form of our "invisible assets," such as knowledge, expertise, and technology. In areas where we can respond technologically but that are not yet noticed by customers, we will continue to actively explore and propose solutions with excellent cost effectiveness, thereby increasing the Group's assets and enabling it to provide customers with optimal individualized solutions. With regard to our initiatives for carbon neutrality, we will also seek to contribute in the same way, by providing resolution strategies for customer issues from the aspect of industrial gases (▶ P.38).

Electronics Business

We supply various electronic materials gases used in the manufacturing processes for semiconductors, LCDs, and solar cells in the electronics industry, as well as bulk gases such as nitrogen used for safety purposes. We also provide equipment related to gas supply. In addition, we offer services such as the installation of piping to maintain the quality of the supplied gases, as well as cylinder exchanges and equipment inspection on customers' sites. Electronic materials gases are manufactured at our plants in Japan, the United States, South Korea, China, Singapore and Europe, and delivered through our global supply network. With this structure, we can provide a reliable supply of high-quality gases to meet the increasingly sophisticated requirements of our customers in the electronics industry, while also meeting customers' demands in terms of ensuring safety.

Electronics Business in Europe

While the European market does not have production of advanced logic device and memory device, several of the Group's customers hold large shares of the global market for power semiconductors, automotive microprocessors, and compound semiconductors, among others, and are continuously investing to expand their manufacturing capacity or build new plants. Moreover, although Europe's share of the global semiconductor market is less than 10%, proposal for a law to support investment in semiconductor manufacturing is under consideration, with the aim of recovering market share over the medium to long term. Several of our global customers have already decided on investments, and the sector is expected to grow going forward in the near future.

The Nippon Gases Euro-Holding S.L.U. Group operates in the European region, supplying electronic materials gases to almost all of the major European customers, mainly in Germany, Italy, and France, where semiconductor manufacturers have a large number of sites.

In 2018, the company joined the Nippon Sanso Holdings Group, which considers the electronics business as a core business, and immediately began working on creating business and technology synergies. On the business front, the

company has been working to optimize the supply chain and widening the use of NSHD Group products.

Our plant in Belgium is the core of the business, and we are working here to improve quality and safety, while expanding our investments to widen the range of products and services to meet growing demand. In addition, we are also making progress to strengthen our warehouse and logistics bases to contribute to the expansion of European market.



Electronic materials gases plant in Belgium

FYE2023 Business Plan

Looking at the business environment, solid demand is expected for electronic materials gases due to continued expansion of production capacity by customers in response to high demand for semiconductors used in next-generation communications, the IoT, data centers, and mobility applications. Our customers' investment plans to boost production capacity are also increasing, and the Company will need to bolster its stable supply systems to meet future growth in demand for electronic materials gases. We have already announced an increase in production capacity for diborane in Japan, South Korea, and China, and will also move to

strengthen production capacity and distribution networks in Europe, the United States, and other regions in line with local demand conditions. At the same time, we will continue to further optimize the procurement and supply chains that we have already developed.

Moreover, we are optimizing and standardizing ASUs for global semiconductor customer's needs at Taiyo Nippon Sanso, this will enhance our capabilities in supporting all semiconductor manufacturers in bulk gas offerings, and in the equipment device business will strengthen supporting capability in Southeast Asia.

Gas Business in Japan

Outline of Business

Since the Company's foundation in 1910, it has produced high-quality industrial gases throughout Japan to contribute to the development of the country's industry, expanding its business by providing the various effects and benefits of these gases. A number of Japanese industries will continue to maintain a strong presence in the global market going forward thanks to their rigorous safety and quality management, and our unchanging mission is to supply the needs of these industries. With our sights on the goal of "Enabling the Future," we will adapt with agility to Japan's changing industrial and business environment, leveraging the full potential of industrial gases to contribute to the development of a wide range of industries and solutions to social issues.

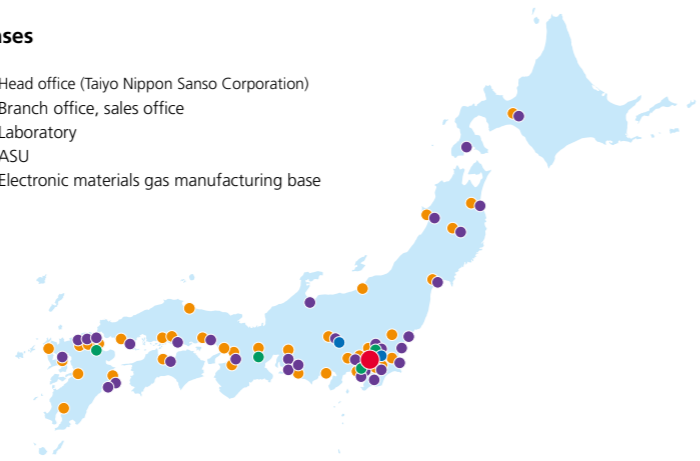
As demand and production activity decline with the maturation of Japan's economy, and the labor force decreases due to the falling birthrate and aging population, the current state of Japan's economy and society means that high economic growth can no longer be expected. Under this environment, in the new medium-term management plan, we have positioned "strengthen core business through profitability improvement" and "growth exploration and expansion" as two strategic pillars for the Gas Business in Japan, and we are aiming to optimize the value of the business by focusing on measures to maximize profitability.

Business History Highlights

- Provided on-site supply (piping) of industrial gases in major industrial areas in Japan
- Provided reliable supply of industrial gases to major Japanese steelmakers
- Developed the Total Gas Center that supplies total gas and services, such as high-quality nitrogen gas and electronic materials gases for the electronics industry in Japan, such as semiconductor and LCD manufacturers
- Built a high-volume production system for Water-¹⁸O stable isotope, which is used as a material for positron emission tomography (PET) testing reagents, using the cryogenic separation method
- Manufacture and delivery of space chambers and test equipment that can reproduce the environment situation of outer space, high vacuum and cryogenics

Bases

- Head office (Taiyo Nippon Sanso Corporation)
- Branch office, sales office
- Laboratory
- ASU
- Electronic materials gas manufacturing base



Results for the Fiscal Year

Japan's manufacturing sector saw strong performance in the electronics-related industry, such as semiconductors. However, temporary halts in plant operations due to semiconductor shortages caused issues for the automotive industry and others. Moreover, although the steel, non-steel, transport equipment, metal processing, chemical, and other industries recovered from the sharp downturn in the previous fiscal year, overall they have made a gradual recovery.

In this environment, Taiyo Nippon Sanso Corporation's revenues from its main product, air separation gases increased year on year, driven by a recovery in production activities in related industries from the impacts of economic stagnation caused by COVID-19 in the previous fiscal year. Furthermore, in the electronics-related field, revenues from electronic materials gases and related equipment and installation increased as a result of customers' operating at full capacity; however, sales of air separation units (ASUs) and cutting and welding equipment for metal fabrication decreased year on year and remained lackluster. Helium sales decreased markedly year on year as a result of the country being forced to apply Japanese shipping restrictions due to the impacts of turmoil in global marine container shipping networks.

As a result of the above revenue was ¥372.0 billion (up ¥30.0 billion year on year), and segment profit was ¥30.9 billion (up ¥1.0 billion year on year).

* Segment classifications were reorganized in FYE2022, and results for FYE2021 have been presented based on the new classification.

History

- 1910 Nippon Sanso was established under the name Nippon Sanso Ltd. (Founding)
- 1918 Toyo Sanso K.K. was established.
- 1935 Completed the first ASU to be produced in Japan
- 1946 Taiyo Sanso Co., Ltd. was established.
- 1954 Started Japan's first liquid oxygen bulk business
- 1964 Started on-site supply business
- 1995 Taiyo Toyo Sanso Co., Ltd. was launched. (Merger of Taiyo Sanso Co., Ltd. and Toyo Sanso K.K.)
- 2004 Taiyo Nippon Sanso Corporation was launched. (Merger of Nippon Sanso Ltd. and Taiyo Toyo Sanso Co., Ltd.)
- 2020 Launched anew as the operating company for Japan following the transition to a holding company structure

Message from Director in Charge of the Gas Business in Japan



Aiming to Maximize the Value of the Business in Japan to Realize "NS Vision 2026."

Kenji Nagata

Member of the Board, Nippon Sanso Holdings Corporation
Representative Director and President, Taiyo Nippon Sanso Corporation

Current Analysis and Future Outlook

Nippon Sanso Holdings launched a new medium-term management plan, "NS Vision 2026," in April 2022, with the slogan "Enabling the Future." The havoc caused by the COVID-19 pandemic for over two years and the Russia-Ukrainian crisis starting in February 2022 have increased uncertainty and opacity in the social and economic environment. However, we are committed to realizing NS Vision 2026, seeing the current uncertainty as a reason to demonstrate the characteristics of the industrial gases business to the fullest, pursuing profitability and aiming to maximize the value of the Gas Business in Japan.

Strategies in the New Medium-Term Management Plan

Air separation gases such as oxygen, nitrogen, and argon are highly versatile, with functions and effects that can be used in all kinds of industry. At the same time, they are also scalable. To maximize the functions and effects of industrial gases, gas separation technologies and related equipment and devices are essential. Through the supply of various industrial gases, the company has developed gases and gas application technologies and equipment, expanding the equipment business through the industrial gases business. Through these initiatives, we realize the Group vision for the Gas Business in Japan, to "demonstrate the full potential of industrial gases and constantly press ahead with our contribution to a wide range of industries and solutions to social issues as The Gas Professionals." Toward realizing NS Vision 2026, the Gas Business in Japan has identified profitability as an area where it must take an even more rigorous approach than before. The Gas Business in Japan has

two strategies, broadly speaking. The first is to strengthen our base business in industrial gases and so forth. Under the iGaaS (industrial Gases as a Service) concept, we propose a solution comprised of gases and relevant services and equipment, which enables us to provide even higher value. In this way, we aim to strengthen our fundamental business and increase our earning capability. Furthermore, we will also generally review our business structure with a view to maximizing profitability by examining which kinds of products and businesses demonstrate the essential character of Taiyo Nippon Sanso and which do not.

For the second strategy, we will develop new value and business domains by realizing innovation inspired by gases. Currently, in advanced forms of gas control technologies we are focusing mainly on 3D printers, the bio field, stable isotopes, and composite semiconductors, and we will also focus on developing new materials gases as well as various equipment and devices to be incorporated into semiconductor manufacturing equipment with a view to leading a total electronics strategy.

Toward Achieving Financial KPIs

The company has set "iGaaS 10:15:20" as its long-term targets through to 2030. "iGaaS 10" is a 10% improvement of productivity, "iGaaS 15" is the achievement of operating profit margin of 15%, and "iGaaS 20" is the realization of 20% of sales from new items, products, and service supply. During the period of the medium-term management plan, we have formulated individual action plans for each business unit to achieve the targets, and we are promoting activities based on these. In addition, we will pursue profits by

appropriately adding to the value provided by products and services through pricing activities. Furthermore, the Taiyo Nippon Sanso Group is conducting measures for improving profit margins, such as minimizing loss and improving efficiency through ROIC management, including improvements in operational productivity and the cash conversion cycle through optimization of Group operations and other measures.

Sustainability Strategy

As a core operating company, Taiyo Nippon Sanso Corporation conducts sustainable business operations predicated on all key elements—environment, safety and quality, employee engagement, and compliance—in our efforts for "Enabling the Future." In terms of the environment, we are focused on reducing GHG emissions in our own business operations and will strive to realize carbon neutrality through industrial gases. In particular, one area where we are making a focused effort to reduce GHG emissions is in developing oxygen combustion burners, which help to increase energy efficiency. We have developed this technology over many years, and in addition to oxygen combustion burners, we are also developing various applications in the fields of hydrogen and ammonia combustion. Another technology is CO₂ capture. By further advancing the gas separation and capture technologies that we have cultivated over a long period, we will respond to the needs for capturing exhaust gas in various industrial furnaces. The functions and effects of industrial gases can be used in all kinds of fields to realize carbon neutrality.

Gas Business in the United States

Outline of Business

Matheson Tri-Gas, Inc. (MTG) was founded in 1927 as a specialty gas supplier and merged with Tri-Gas, an industrial gas supplier, in 1999 to form Matheson Tri-Gas, Inc. The largest U.S. wholesaler of acetylene and a major supplier of nitrous oxide and dry ice, MTG accounts for over 20% of the NSHD Group's net sales. The company operates a nationwide network of ASUs, liquid carbon dioxide plants, and electronic materials gas plants. In the field of electronic materials gas in particular, MTG has a world-class production facility, located in New Johnsonville, Tennessee.

The business strategy foundation is a strong safety culture based on "best practice" process and procedure. This culture is enhanced through the continuous improvement focus of our Quality Strategy, which utilizes Lean Six Sigma methods to drive efficiencies and reduce costs. The combination of best practice process and procedure and continuous improvement efforts positions the company to win new business opportunities in support of its vertical integration and cross-selling growth strategies.

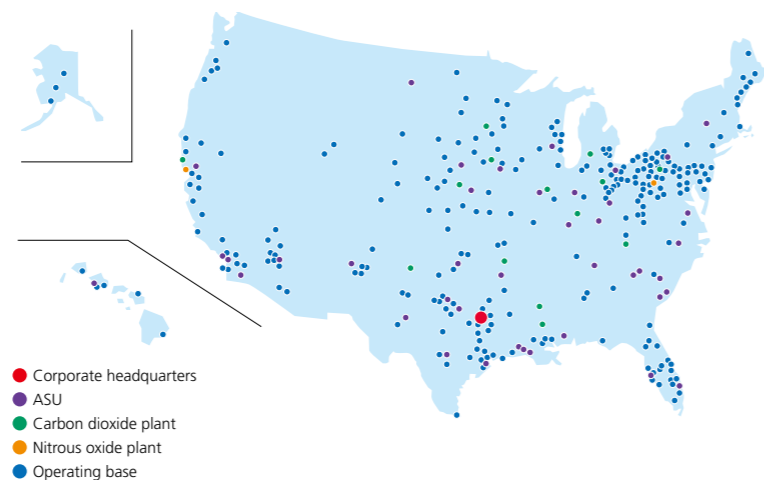
Business History Highlights

- Promoted bulk liquid and packaged gas supply from plants located mainly in the southern United States (1992–2004)
- Expanded bulk gas supply with new and acquired plants in California, Texas, Louisiana, Nebraska, and Iowa (2004–2015)
- Achieved a national supply network in the United States with the acquisition of Air Liquide assets (2016)
- Established supply of on-site hydrogen through the acquisition of Linde's U.S. HyCO business (2019)

History

- 1983 Entered the gas business in the United States after then Nippon Sanso acquired Matheson Gas Products, Inc., which has a proven track record as a specialty gas manufacturer
- 1992 Acquired Tri-Gas, Inc
- 1999 Merger between Matheson Gas Products and Tri-Gas
- 2004 Acquired six ASUs from Air Liquide
- 2006 Acquisition of BOC Helium business and Linweld Inc., one of the largest independent gas distributors in the United States
- 2009 Acquired Valley National Gases, the largest independent gas distributor in the United States, to expand cylinder business area nationwide
- 2010 Acquired Western International, the largest wholesale supplier of acetylene in the United States
- 2014 Acquired Continental Carbonic Products, a major U.S. carbon dioxide manufacturer, and made a full-scale entry into the CO₂ and dry ice market
- 2016 Acquired 18 new ASUs and business assets from Air Liquide
- 2019 Acquired Linde's U.S. HyCO business

Bases



Results for the Fiscal Year

As always, our top priority is the safety of our team, our customers, and our communities. We routinely conduct site safety stand downs to address specific opportunities to improve our safety performance, and in FYE2022 we implemented monthly Senior Manager Safety stand downs to ensure the Safety Imperative message is communicated through our most senior managers to their operations at the site level. The productive dialogue in these discussions has shown very positive results in improving the organization's safety record.

The inflationary pressures on all economies this past year are well known and MTG has put close attention on cost management delivering over a 6% reduction in our controllable cost stack. We have worked hard to secure profits by timely and appropriate cost recovery through surcharge programs and margin preservation through pricing management to offset cost items that are uncontrollable.

Lastly, MTG has placed more focus on ESG priorities, assigning management and a cross-functional team to guide our response to our obligations to protect and improve the environment, meet social responsibilities, and comply with governmental and corporate regulations and guidelines.

As a result of these initiatives, revenue was ¥224.8 billion (up ¥34.8 billion year on year) and segment profit was ¥27.3 billion (up ¥4.1 billion year on year).

Message from Director in Charge of the Gas Business in the United States



We Aim to Foster Groupwide Productivity through the Promotion of Standardization and Optimization of the Group's Operations Based on Shared Best Practices.

Thomas Scott Kallman

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

Current Analysis and Future Outlook

MTG has experienced a period of tremendous growth since 2005, delivering a compounded annual sales growth rate of over 12% and operating profit of over 20% fueled partly by strategic acquisitions and capital projects and partly by our best practice and continuous improvement culture and disciplined implementation of our sales model. Our compounded annual growth rate the last five years has been almost 8% for sales and over 16% for operating profit. We are very excited to continue to strengthen and expand the business by optimizing our current business unit results and engaging the market for new acquisitions and capital project investments that create profitable operating leverage.

Looking ahead, on a fundamental level we are focused on further progress in our safety performance, of course, with the ultimate goal of zero injuries. We are also placing particular focus on product delivery obligations despite supply chain disruptions and nationwide driver shortages in recent years. In both cases, these safety and reliability challenges are receiving intense emphasis from our entire Team. Additionally, close attention to timely and effective price management is a high priority to help sustain our margins despite the erosion due to inflation pressures.

Strategies in the New Medium-Term Management Plan

Among the five focused fields of the new medium-term management plan NS Vision 2026, MTG will place additional weight on sustainability, total electronics, and

operational excellence as areas we can make the most significant contributions. Sustainability management is core to operating in a socially responsible fashion as it impacts our shareholders, customers, communities, teammates, and families. MTG is an important contributor to the NSHD Total Electronics effort and also relies heavily on our Total Electronics teammates in Japan and South Korea for their support in this field to make the NSHD Total Electronics offering especially competitive. Operational excellence is essential to maintaining our competitiveness in the U.S. market. We aim to foster groupwide productivity through the promotion of standardization and optimization of the Group's operations based on shared best practices.

Toward Achieving Financial KPIs

Our business is separated into our Industrial Division and Electronics Division, for which both set safety and quality excellence as the foundation on which the businesses drives profitable growth. In our Industrial Division, close management of cost, price, and contract terms combined with active cross-selling activity allow the best opportunities to achieve our financial KPIs. The Electronics Division also closely manages its costs, pricing, and contract terms but also puts extensive effort into product differentiation to improve competitiveness and justify premium pricing based on increased value our products can provide to the customer. In general, we are committing resources to improve the recruiting process and sales training processes to establish both as true competitive advantages in the marketplace. In addition, we view development of our

on-site and pipeline capabilities to be an attractive longer term opportunity to generate more stable and profitable growth.

Sustainability Strategy

MTG's approach to sustainability is pragmatic and measurable. We continually assess new vehicle technology for performance enhancements that enable safer and more efficient operation. Similarly, we are looking for novel water treatment advancements that could save chemical and water consumption. In the case of power, fuel, and water, we have established baseline measurements against which we can track progress against reduction targets.

By leveraging automation technology to design safety and quality assurance into core business processes (dry ice ops, cylinder filling, plant operations, and logistics), we not only improve efficiencies and quality but more importantly reduce the risk of injury for our team. In support of this effort, we have established a team of automation engineering specialists.

Lastly, compliance with MTG policies and government regulations is supported through required training across the entire organization. Specific training includes adherence to our Code of Conduct, delegation of authority and corporate safety, quality, and HR policies.

Gas Business in Europe

Outline of Business

The business strategy of Nippon Gases Euro-Holding S.L.U. (NGE) is based on the excellence of our people. Our employees work with our customers to help them achieve their business goals, including their sustainability goals. Following our business strategy, in FYE2022 we accelerated and strengthened various initiatives and programs to improve our talent attraction and retention capabilities. Some examples are the extended online learning package, our continuously improved performance process, the “Growing Our Leadership” training, the “Talent Pipeline and to Watch” programs, “Female Sponsoring,” and “Succession Planning.” The excellent results of our recent employee engagement survey show that we are on the right track.

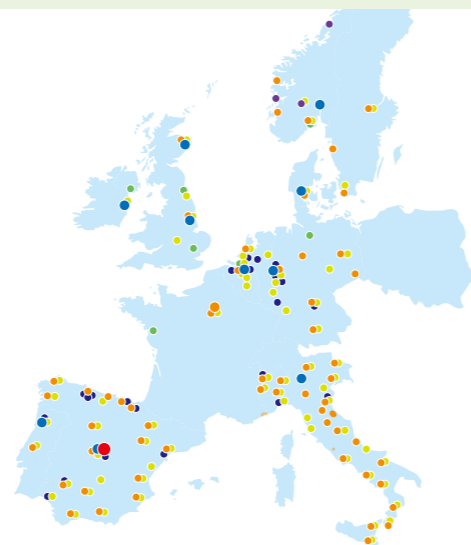
Our strategy of People Excellence, Reinforced Governance, Operational Excellence, Optimized Base Business, and Profitable Growth, builds on our current solid situation, as a company, in Europe: A profitable business, with a sizable market share, a lean, agile, and flat organization, and a highly experienced staff and management. There are differences between the regions, where we do business, in terms of size, assets, employee population, and market share, so that implementation of the strategy may differ to meet our goals. The strategy is European, the execution local.

Business History Highlights

- On-site supply (piping) to several major industrial areas in Europe (Belgium, Germany, Italy, and Spain)
- Growth in bulk supply throughout Europe based on customized applications technology offerings for our customers in many diverse markets
- Recently started up a new ASU in Norway to support the aquaculture industry and a liquid carbon dioxide terminal in Ireland to optimize CO₂ supply chain
- Customer focus and productivity are at the root of our financial results
- Expansion of our health and homecare offering in Italy

Bases

- Head office
- Major company bases
- Sales office
- ASU
- Operational base
- CO₂ terminal



History

In December 2018, our company acquired the industrial gases European operations from the U.S. company Praxair. This included businesses in Belgium, Denmark, France, Germany, Ireland, Italy, Netherlands, Norway, Portugal, Spain, Sweden, and the United Kingdom. We are currently expanding our European operations under the NGE brand.

Results for the Fiscal Year

Our safety performance has received four major awards from the European Industrial Gases Association, including the award for the safest company in Europe. Our company has received this award 9 times in the last 10 years. We have also had an excellent compliance year.

Financially, NGE achieved better results than budgeted. Revenue was ¥209.7 billion (up ¥49.7 billion year on year) and segment profit was ¥26.3 billion (up ¥5.2 billion year on year).

In information technology, we have focused on cybersecurity and DX introducing state-of-the-art technologies. In productivity, we achieved record savings by executing more than 1,000 projects.

As part of the decarbonization strategy of NSHD, NGE has been working on market trends, technologies, competitors, and regulatory reforms. In Operations, sustainability is a cornerstone of our business strategy, strongly increasing the renewable energy share of our consumption. We also reduced the carbon footprint of our logistics operations. All our sites are included in the zero waste program. In engineering, NGE had a strong collaboration with Taiyo Nippon Sanso and Matheson Tri-Gas.

Message from Director in Charge of the Gas Business in Europe



We Will Focus on the Excellence of Our People to Both Optimize Our Core and Our Operational Excellence, while Reinforcing Our Governance.

Eduardo Gil Elejoste

Member of the Board, Nippon Sanso Holdings Corporation
Chairman and President, Nippon Gases Euro-Holding S.L.U.

Current Analysis and Future Outlook

In the summer of 2021, due to an increase in demand of natural gas across the world and tensions related to the supply of natural gas to Europe from the Russia-Ukrainian crisis starting in February 2022, the natural gas price in Europe increased dramatically, with a significant impact on electricity price, which reached record prices above €200/MWh. This energy crisis created an inflationary environment in Europe resulting in a cost stack increase for NGE of more than 20% over our original budget. NGE offset this increase through price increases, surcharges, and productivity actions, negotiating and working closely with our customers to pass through these unprecedented costs and achieving the budgeted operating profit.

The record price of natural gas also caused a large problem for European ammonia producers, causing a shortage of CO₂, a by-product of ammonia production. Our teams negotiated temporary surcharges with our CO₂ customers to cover the increased CO₂ costs during the crisis.

Originally, the unprecedented natural gas and electricity prices in Europe were considered to be of limited duration, with expert analysts predicting a return to “normality” starting April 2022. This hope was destroyed with the Russia-Ukrainian crisis starting in February 2022. Current predictions are that the “abnormal” cost situation will continue in 2023. NGE will continue to work with customers, suppliers, and partners to offset a cost situation significantly higher than expected when the budgets were approved.

Strategies in the New Medium-Term Management Plan

During the new medium-term management plan, we will execute the following strategies:

- Optimize our base business
- Focus on people excellence
- Reinforce governance
- Optimize operational excellence
- Profitably grow more than the market

We will focus on the excellence of our people to both optimize our core and our operational excellence, while reinforcing our governance. This will allow us to grow profitability, ahead of the market, thereby contributing to the slogan of NS Vision 2026, “Enabling the Future.”

Toward Achieving Financial KPIs

We will steadily grow our core operating income from FYE2021 to FYE2026. We will increase profitability indicators such as core operating profit margin and EBITDA margin by FYE2026.

To achieve our goals, we will execute the following strategies:

- Grow our volumes with existing and new customers on their way to carbon neutrality
- Deliver products with decreased overall carbon footprint
- Deliver products to customers with lower cost per tonne, enabling margin expansion
- Through a combination of initiatives to increase productivity and earn customers’ trust, implement pricing strategies that will offset the additional cost to our business

Sustainability Strategy

Our NGE Group vision is that of the NSHD Group: “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.” Accordingly, we will be focusing on the following:

- Climate change, innovation, and technology: Focusing on realizing carbon neutrality and increasing energy renewable sources
- Environment: Managing the use of resources, productivity programs, and waste management programs
- Safest operations
- People: Increasing employee engagement, diversity and inclusion, and community engagement
- Compliance: Ethics and integrity.

Gas Business in Asia and Oceania

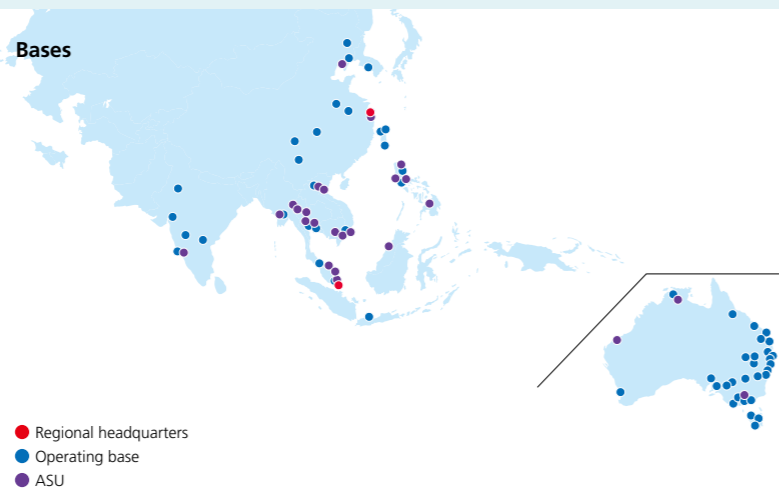
Outline of Business

The Group's business in Asia and Oceania started in earnest from Singapore in 1982. By the 1990s, this initial foray had been followed by expansions into Malaysia, China, South Korea, the Philippines, Taiwan, Vietnam, and Thailand. In the 2000s, we continued expanding into India, Australia, Indonesia, and Myanmar. We have defined China, Singapore, Malaysia, and Thailand as stable markets, which have long histories of industrial development and sufficient build up supporting industries. We will steadily increase the profitability of our existing businesses centered on the bulk gas business, while pursuing sales and investment opportunities in the growth industries of semiconductors, electronic components, biotechnology, and food. We also expect environment-related business opportunities. On the other hand, we see Vietnam and the Philippines as growth markets, where we will steadily execute investments for the future through concentrated investment of management resources, aiming to expand our solid foundation there. East Asia plays an important role in the Group's total electronics business. We will increase our competitive advantage and service level in this region, including enhancing the local manufacturing capacity for semiconductor materials gases, and promote measures to expand the scope of our business.

Business History Highlights

- Contributed to industry development by strengthening industrial gases supply capacity in step with economic development
- Established supply chains since 1990 covering each region in East Asia, where the global semiconductor industry is concentrated
- Centralized information about global electronics users and developed the total electronics system for timely and appropriate proposal and promotion of the required gases
- Developed the industrial machinery and safety equipment business, centered on Southeast Asia
- Responded to increased demand in Australia and Thailand by developing the LP gas business for industrial and consumer use

Bases



History

- 1982 Established National Oxygen Pte. Ltd. in Singapore
- 1993 Established Dalian Nippon Sanso Guangming Gas Co., Ltd. in Dalian
- 1994 Capital participant in Ingasco, Inc. in the Philippines
- 1995 Established Matheson Gas Products Korea in South Korea
- 1996 Established Nippon Sanso Taiwan Inc.
- 1998 Capital participant in Vietnam Japan Gas Co., Ltd. in Vietnam
- 2002 Established Taiyo Nippon Sanso Trading (Shanghai) Co., Ltd. in Shanghai, China
- 2003 Established Shanghai Taiyo Nippon Sanso Gas Co., Ltd. in Shanghai, China
- 2010 Investment in K-Air India Gases Pvt. Ltd. in India
- 2012 Made Leeden Limited of Singapore into a subsidiary
- 2013 Established PT Samator Taiyo Nippon Sanso Indonesia in Indonesia
- 2015 Acquired Renegade Gas Pty Ltd in Australia
- Made Air Products Industry Co., Ltd. in Thailand into a subsidiary
- 2016 Established Taiyo Nippon Sanso Myanmar Co., Ltd. in Myanmar
- Acquired Taiyo Gases Co., Ltd. in Thailand

Results for the Fiscal Year

In Singapore, an increase in demand for semiconductor materials gases and nitrogen gas is expected as large-scale investments in the areas of electronics and chemistry continue. In December 2021, we completed construction and commissioning of a nitrogen gas generator in the chemical and biochemical industries in western Singapore. In Malaysia, to keep pace with increasing local economic growth, we expanded carbon dioxide production and started a dry ice manufacturing business. In Vietnam, we completed an on-site project for a petrochemical manufacturer, expanding our business base even further. In the Philippines, we maintained a solid supply of medical oxygen during the COVID-19 pandemic in response to the request of the national government as a leading manufacturer of liquid oxygen. In Thailand, we installed additional ASUs in Rayong Province and started operations. In Australia, while our LP gas business is expected to continue performing steadily, we also grew sales in our bulk gas and carbon dioxide businesses as part of business diversification. In East Asia, the electronics business continued to see brisk demand from semiconductor-related customers driven by a move toward domestic semiconductor production and an increase in demand for use in data centers. Production increases by major customers also provided impetus, leading to significant growth in sales volume.

As a result of the above, revenue was ¥123.5 billion (up ¥21.4 billion year on year) and segment profit was ¥12.8 billion (up ¥3.9 billion year on year).

Message from Director in Charge of the Gas Business in Asia and Oceania



We Will Continue to Make Aggressive Capital Investments in the Asia and Oceania Region in Line with Its Expected High Growth and Increase in Business Opportunities in the Environmental Field.

Tsutomu Moroishi

Senior Executive Officer,
Group Corporate Planning Office*

* The Oceania and Asia Management Division has been established within the Group Corporate Planning Office to oversee business promotion for companies in Asia and Oceania

Current Analysis and Future Outlook

With the global spread of vaccines from 2021, the economy of the Asia and Oceania region is gradually returning to its pre-COVID-19 condition. GDP growth in China, India, and the five major ASEAN countries is expected to be 5.9% in 2022, a high level compared to the 3.9% growth projected for advanced countries (data as of January 2022). Increase in demand as represented by GDP growth shows a recovery in demand for bulk gas in all countries in the region compared to the previous fiscal year, and the trend has continued to increase since April 2022.

The Gas Business in Asia and Oceania is characterized by the high ratio of the electronics business. The region is currently seeing rapid expansion of the semiconductor industry, which is fueling steady growth in demand for semiconductor materials gases.

The Russia-Ukrainian crisis has caused concerns over the destabilizing of helium sources. However, as stated above, the overall trend is for economic recovery from COVID-19, and we therefore expect continue solid business growth.

In the bulk gas business, despite difference in the degree of growth in each country, overall there is a common trend of continued high-level growth and increasing economic sophistication. In this environment, we expect to see an increase in demand and business opportunities for nitrogen used in electronic components, chemicals, and biotechnology, and carbon dioxide and hydrogen used in environmental applications.

In the electronics business, we will firmly capture demand by conducting timely expansion of manufacturing capacity in regions where there is demand, mainly for products that are differentiated by our technologies and safety features. At the

same time, we will improve distribution services by increasing our warehousing and so forth. We will formulate and promote these strategies by coordinating between each of the Group's regions, and managing operations within the framework of the internal regional organization, East Asia Total Electronics.

As noted above, our policy is to continue to make aggressive capital investments in line with expected high growth and an increase in business opportunities in the environmental field.

Strategies in the New Medium-Term Management Plan

Our comprehensive strategies for the Asia and Oceania region are as follows:

- Develop business with the goal of becoming the main comprehensive gas manufacturer in each country within the region
- Initiate measures for realizing a carbon-neutral society
- Through productivity activities, firmly establish measures for achieving efficient operations
- Establish independent management structure within the region while clarifying responsibility, such as adding management functions to the Singapore regional holding company.

Examples of specific steps to be taken include the following:

- Continue strategic investments aligned with high economic growth within the region and expand business with global customers
- Expand the semiconductor materials gases business by strengthening production capacity, mainly in South Korea, Taiwan, and China
- Propose new products and services to meet new demand, such as the medical field and DX

- Respond to environmental issues through hydrogen supply and efficient use and reuse of carbon dioxide.

Through the above strategies and initiatives, we will increase our presence in the Asia and Oceania region.

Toward Achieving Financial KPIs

To achieve our financial KPIs, we will focus on shortening collection times for accounts receivable. Through continuous efforts to right-size inventory and so forth, we will increase operating cash flow and bolster free cash flow, to enhance our capacity to repay debt. We will be especially rigorous with our management of working capital and continue to monitor fluctuations in working capital at each company in the region.

In other initiatives, we will continue to invest aggressively by allocating investment of operating cash flow within the region.

Sustainability Strategy

In the area of safety, we are aiming to reduce occupational accidents, traffic accidents, and accidents resulting in property damage by over 10% each fiscal year. In the area of quality, we will strive to maintain and promote quality management in line with the Nippon Sanso Holdings Product Safety and Quality Policy. In terms of the environment, we aim to contribute to the development of an environmentally friendly society in every country. For human resources, we will strengthen our regional network while focusing on increasing the human resources development capabilities of each company. In governance, our aim is to maintain the corporate culture of each regional operating company while ensuring rigorous compliance and risk management.

Thermos Business

Outline of Business

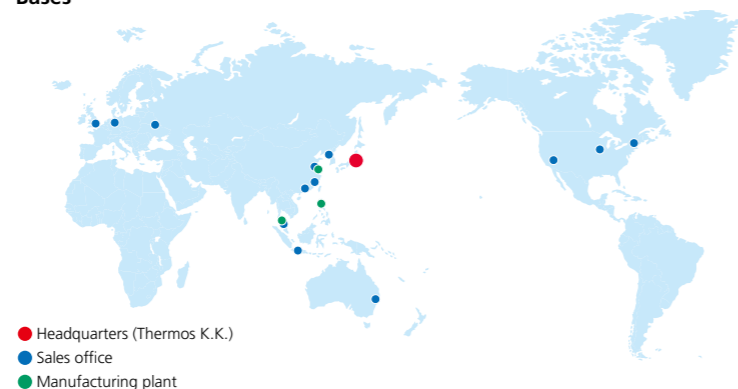
The Thermos Business is operated by Thermos K.K. in Japan and its Group companies. Thermos K.K. has production subsidiaries in Malaysia and the Philippines, and a sales subsidiary in South Korea. Furthermore, we have affiliated companies in China, the United States, and Germany, among others, and through our regional bases we have shipped Thermos brand products to over 120 countries around with world. We develop products and propose lifestyles tailored to the market characteristics of each country, as well as the local customs and cultures.

Compared with the global market for vacuum-insulated bottles, the market in Japan is large in scale but also rather mature. In this environment, Thermos K.K. has created a market for portable vacuum-insulated mugs, and continues to hold a high market share, with the Thermos brand continuing to increase in recognition year by year. In the South Korean market, we established a sales company 10 years ago, and the brand has made steady headway by diversifying sales channels and increasing sales and profits.

Business History Highlights

- Pioneered the stainless steel vacuum-insulated bottle market, and led the shift from glass to stainless steel bottles
- Launched Japan's first sports bottles designed for drinking directly from the bottle for cold drinks. The popularity of these products created a new market
- Strengthened lineup of portable vacuum-insulated mugs (hot and cold use) and used promotions to firmly establish a lifestyle of using personal bottles. The JNL series, which led other companies in weight reduction, became a hit product with cumulative sales over 20 million units
- Launched a portable food container for hot soup, which achieved strong market penetration due to a surge in the popularity of thermal cooking

Bases



Results for the Fiscal Year

Looking at results for FYE2022, sales increased atop growth in our expanded product range of tumblers and frying pans against a backdrop of increased stay-at-home demand due to the spread of COVID-19. On the other hand, sales of our core product, portable vacuum-insulated bottles, were level year on year, with performance not recovering from a sharp drop in 2020 caused by people refraining from going outside and a loss of inbound tourism demand due to the pandemic.

By sales channel, while mass retailers have been reducing the size of their sales floors for lifestyle goods, the company drove sales expansion by focusing on online channel sales, including its direct sales online shop. It also added five direct sales stores, expanding the total number to 19, which contributed to expanding brand recognition by enabling direct contact with consumers.

With regard to products, as we proceed with development of new functional offerings, we have responded to rising demand for carbonated beverages and consumer feedback asking for a way to keep carbonated beverages cold while carrying them around, and in March 2022 we launched a bottle for carbonated beverages for the first time in about 20 years. We also conducted various promotional measures centered on tumblers, frying pans, and vacuum-insulated food containers with the goal of promoting understanding and use of our products by consumers.

In the South Korean market, we proceeded to launch new products tailored to the local market, and also expanded sales by setting up our own website.

As a result, revenue was ¥26.8 billion (up ¥2.8 billion year on year) and segment profit was ¥6.4 billion (up ¥1.2 billion year on year).

History

- 1978 ● Nippon Sanso (the company name at the time) developed the world's first stainless steel vacuum-insulated bottle
- 1989 ● Acquired the Thermos Company of the United Kingdom, the United States, and Canada
Launched the vacuum-insulated cooking pot Shuttle Chef®
- 1998 ● Launched vacuum-insulated sports bottles
- 1999 ● Launched vacuum-insulated portable mugs
- 2001 ● Established Thermos K.K. through a corporate split from Nippon Sanso
- 2009 ● Launched vacuum-insulated food containers
- 2013 ● Launched vacuum-insulated tumblers
- 2014 ● Acquired German high-quality vacuum-insulated bottle brand, alfi
- 2018 ● Launched Thermos brand frying pans

Message from Director in Charge of the Thermos Business



We Will Propose New Lifestyles and Create Markets by Accurately Grasping the Changes to Consumer Lifestyles, Consumption Patterns, and Market Environment Due to the COVID-19 Pandemic.

Yuji Kataoka

Representative Director and President
Thermos K.K.

Current Analysis and Future Outlook

The prolonged COVID-19 pandemic has extended over two years, bringing a significant shift in the mindsets and lifestyle of consumers during that time. These changes appear to be firmly established now. We have adapted our business to these changes in society and the living environment, proposing lifestyles through products and expanding sales of cooking utensils and tumblers. On the other hand, in addition to rising prices for resources and a weakening yen, both exacerbated by the Russia-Ukrainian crisis, we also see stagnation in the Chinese economy as significant risks in our market environment that we must respond to.

Furthermore, as consumer purchasing behavior changes, we will propose abundant living and new lifestyles for the post-COVID-19 and with-COVID-19 scenarios by diversifying our sales channels and offering a wide-ranging product lineup. By empathizing with consumers to develop new products that encapsulate their needs and insights, we will continue to expand sales through directly operated stores and online channels. We will also enhance our mutual communication systems with consumers in a focused effort to cultivate loyal customers.

In our overseas business, we are looking at expanding our sales bases to strengthen the base of the Thermos brand in Southeast Asia. We see rapid recovery from the



Thermos frying pan series

COVID-19 pandemic and increasing our presence as urgent priorities and will address them.

Strategies in the New Medium-Term Management Plan

Under our management vision, "To grow sustainably and become a value-creating company that is trusted by all," we have set as our companywide priorities (1) strengthening proposal capabilities, (2) developing and strengthening human resources, (3) increasing customer satisfaction, and (4) actively engaging with the SDGs. As well as increasing our merchandising capabilities, we will also expand our product range and sales channels to increase customer experience value as we aim to cultivate and expand the Thermos brand. We will propose new lifestyles and create markets that accurately reflect the changes in consumer lifestyles, consumption patterns, and market environment.

Toward Achieving Financial KPIs

Consumers' lifestyles are changing dramatically and their needs are becoming more complex, causing increased uncertainty in the market. We recognize that it is important to educate and develop human resources who can act autonomously in this kind of situation. To this end, we will invest strategically in

personnel education as well as continuing to invest in research and development, advertising and promotion, and sales promotion that are vital to the growth of our core business. We will also proactively invest in development of systems such as DX as a means of reforming our operations. Furthermore, we will work to increase our distribution efficiency to respond to expansion in volume as we grow our earnings. The environment is a challenging one, but we will strive to maintain our operating profit margin through pricing strategies that reflect the Thermos brand's capabilities and merchandising capabilities in the market.

Sustainability Strategy

Based on our corporate philosophy of "Thermos continues to introduce new kinds of lifestyles that are agreeable to people and society and also environmentally friendly," we incorporate an awareness of sustainability into management. We consider the practice of sustainable management and the provision of solutions to social issues through our business to be the very essence of our corporate philosophy, and we will therefore promote ESG activities. In terms of the environment, we will develop energy-saving products that contribute to reducing the environmental load of society through heat insulation technology, as well as promoting the proposal of environmentally conscious lifestyles. In other areas, for example, we will focus on creating workplaces that provide a comfortable work environment and a sense of worth and achievement in their work. Through these activities, we will also contribute to the SDGs, earn the trust of our stakeholders, and increase corporate value, ultimately leading to the growth of the company.



Vacuum-insulated portable mugs

THERMOS

Thermos Business

In 1978, our Company developed the world's first stainless steel vacuum-insulated bottle using vacuum-insulation technology cultivated in the industrial gases business and then began manufacturing and sales operations. In 1989, Nippon Sanso acquired the Thermos business (manufacture and sales of Thermos brand glass vacuum-insulated bottles and so forth) from U.S. company Household International Inc., thereby starting the history of the Thermos brand in the Company. Then, in 2001, Nippon Sanso's household goods business was split off to establish Thermos K.K. Today, the company operates in over 120 countries and regions around the world. Thermos K.K.'s brand concept, "Thermos Magic," expresses our aspiration of creating inspired lifestyles that offer better taste, immediate convenience, and heartwarming comfort by combining our vacuum-insulation technology flexibly with unique lifestyle comfort ideas.

In the Thermos business, we provide a product lineup to offer people delicious taste and convenience in various situations that includes sports bottles and portable mugs. In addition, through these products we propose environmentally friendly lifestyles by saving energy, helping to realize a sustainable society. (▶P.73)

Synergies with Thermos

Nippon Sanso Holdings retains Thermos K.K. in the Group for reasons such as its high profitability and cash flow generation ability. In addition, it is also expected to grow by capturing changes in consumer behavior, such as the trend promoting personal bottles as a way to reduce single-use plastics. Moreover, unlike the industrial gases business, the Thermos business is Nippon Sanso Holdings' sole B2C business, creating a broad range of contact points with general consumers. We operate through almost every sales channel, including retail stores and e-commerce, to provide customers with

opportunities to encounter our products in a range of settings. In the Thermos business, we have established a process for receiving feedback directly from customers and reflecting it in our manufacturing and development. We believe that these ideas can be deployed in the manufacturing, development, and customer service of the industrial gases business. Nippon Sanso Holdings considers Thermos K.K. to be an important member of the Group, and will continue to share best practices between businesses going forward.

Strengthening Brand Capabilities

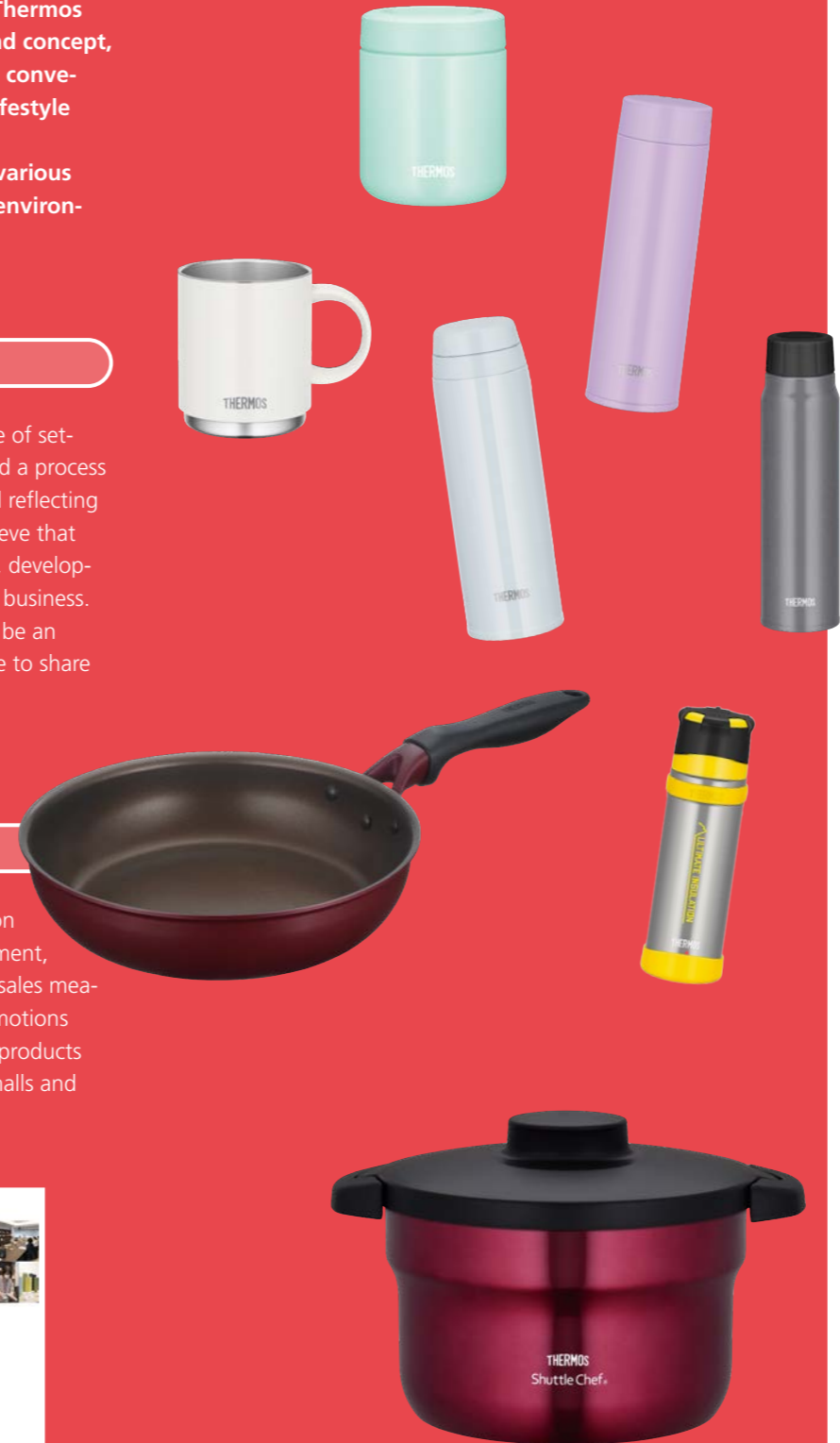
With its corporate philosophy of "Thermos continues to introduce new kinds of lifestyles that are agreeable to people and society and also environmentally friendly," Thermos K.K. has spent many years in product development, marketing, and sales activities to enable customers to have comfortable lifestyles. In addition, our product development has been recognized for its quality and reliability, drawing on the high safety standards cultivated in Nippon Sanso Holdings' gases business to maintain a strong brand image. Moreover, we have earned recognition for strong customer support and replacement parts services that enable long service life of products after purchase, helping to create a reputation for high quality associated with the Thermos brand.

Moreover, as part of its customer relationship management activities, Thermos K.K. operates a membership organization for Thermos fans, called "CLUB THERMOS." The program organizes events for members and original collaboration projects with culinary researchers, and so forth, with the aim

of providing opportunities for direct communication with users. This is useful for new product development, improvement of existing products, and marketing sales measures. We also conduct effective brand image promotions by creating opportunities for customers to handle products directly by opening corporate stores in shopping malls and other locations.



CLUB THERMOS



Interview with a Thermos Product Fan!

Thermos K.K. is an essential member of the NSHD Group, and there are many fans of Thermos products inside the Company as well. We conducted interviews with employees to ask them why they love Thermos products and what they think about the Thermos business.



There are expectations of Thermos as a recognized brand among consumers.

I am José Luis Chesa, external communications director at Nippon Gases Euro-Holding, based at our European headquarters in Madrid. As the person responsible for our brand—and a great enthusiast of it—and because of the environmental commitment in our company's DNA, I am doubly proud to be able to use one of our Thermos products for both coffee and water during my work days in the office. The possibility to avoid wasting resources both material (plastic or paper cups) and energy (constantly reheating coffee), combined with the aesthetic beauty of the Thermos product portfolio, make them a huge attraction for any employee of our group. To this must be added the expected value of such a recognized brand in the consumer: Reliability, quality, and flexibility—able to adapt to any lifestyle and use—while respecting the values of the group to make life better.

José Luis Chesa
External Communications Director,
Nippon Gases Euro-Holding S.L.U.

My family and I can feel the powerful thermal-retention abilities of Thermos products.



I used Thermos products during club activities when I was at school, and I still love using them at home and at work after joining the Company. The 350 ml portable mug sits neatly on my desk, and I have made use of the Soup Jar for brining lunch from home, especially over the past two years when we've been avoiding eating out due to COVID-19. My father also uses a special outdoor bottle for his hobby of mountain climbing. My family and I can feel the powerful thermal-retention abilities of the products. When I see Thermos products used not only in-house as gifts for visitors or our own use when working at our desks but also at the forefront of vacuum-insulated bottles and cooking utensil markets, I feel delighted at their achievements as an employee of the NSHD Group.

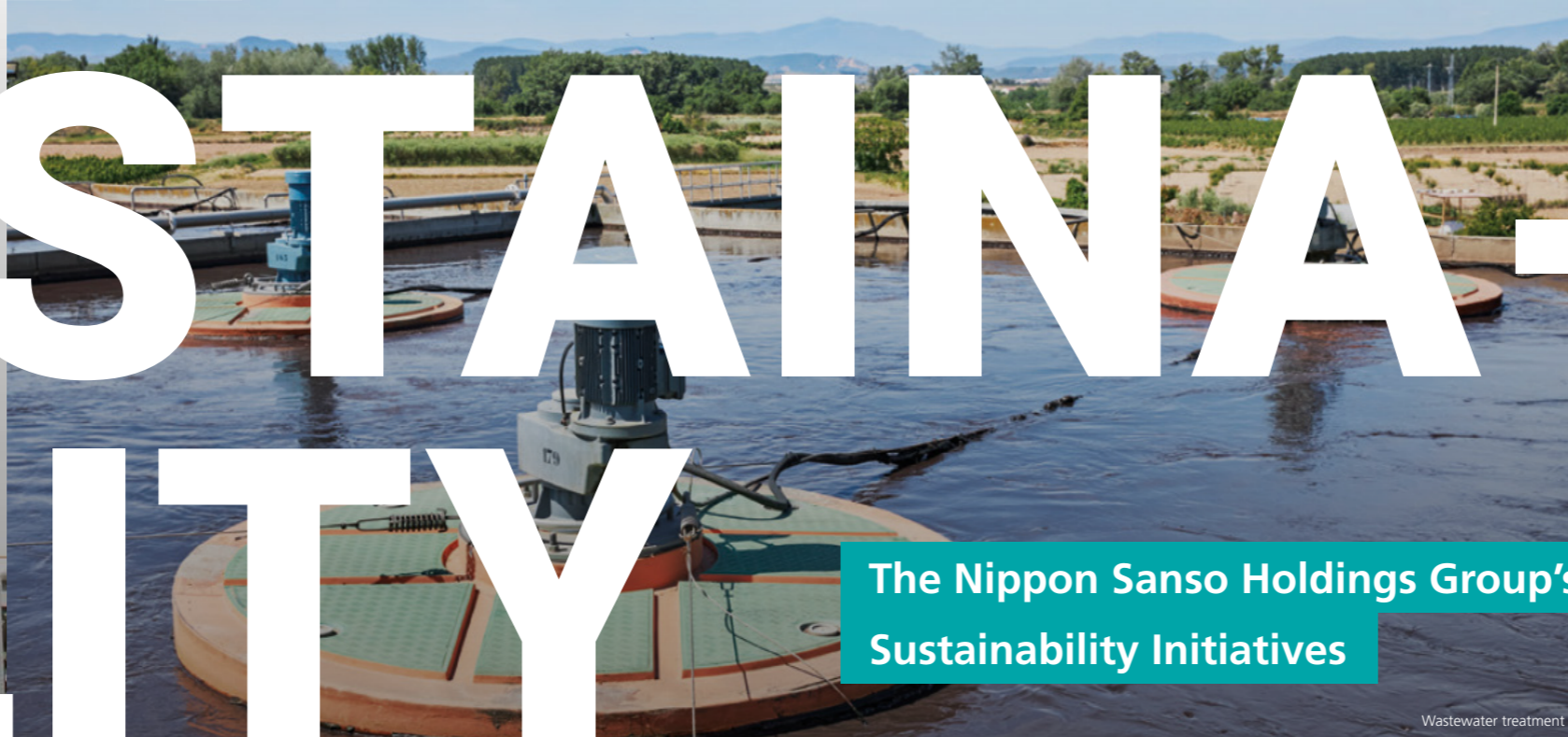
Haruna Yasukuni
Administration Section, Administration Department,
Kyushu Regional Branch
Taiyo Nippon Sanso Corporation



Norwegian marine aquaculture facility



Filling a hydrogen-fueled racing car



Wastewater treatment

The NSHD Group is focusing on sustainability management as one of the focused fields of the medium-term management plan NS Vision 2026. At the same time, we are mindful of our recently revised materiality, and have started programs for various sustainability initiatives. These programs will be conducted by operating companies in each region, while Nippon Sanso Holdings manages their progress status appropriately and proactively discloses it to strengthen and enhance our initiatives for resolving issues.

As "The Gas Professionals," the Group aims to achieve sustainable growth and further increase its corporate value by providing innovative gas solutions to enhance human well-being and contribute to a more sustainable future.

OUR SUSTAINABILITY

The Nippon Sanso Holdings Group's Sustainability Initiatives



Bottles made in collaboration with the Institute for Raptor Biomedicine Japan

Ideal Sustainability for the NSHD Group

As social issues such as climate change and other environmental problems continue to mount, companies need to relate their businesses to resolving these issues and contributing to society in order to grow sustainably. Moreover, sustainability management has been put forward as one of the focused fields in the medium-term management plan NS Vision 2026. Chief Sustainability Officer (CSO) Takeshi Miki invited stewardship specialist Shizuko Ohmi to discuss the ideal sustainability for the NSHD Group.



Takeshi Miki

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

Shizuko Ohmi

Executive Director
Head of Investment Stewardship
JPMorgan Asset Management (Japan) Limited

The Need to Disclose Non-Financial Information

Miki Thank you for joining me today. You have been involved in ESG for some time, and I've been looking forward to meeting you. Over the past few years, Nippon Sanso Holdings has been strengthening its initiatives on sustainability, but as we have only just gotten started I would be glad to hear your thoughts and reflect them in our targets for the future.

To touch briefly on my own background, I joined the Company in 2017 and was appointed CSO in 2019. I oversee sustainability for the entire NSHD Group.

Ohmi Thank you for inviting me. For my part, I started my career as an analyst in charge of Japanese stocks at a foreign securities company. From around 1997 to 2013, I was assigned to the chemicals industry, and I have been following Nippon Sanso Holdings since it was Taiyo Nippon Sanso Corporation, learning about the Company through plant visits and so forth. I participated in NSHD's perception study* in 2020, and I think that is how I came to be here with you today. Currently, I am head of investment stewardship at JPMorgan Asset Management (Japan). I hope to offer some comments today that reflect various perspectives, including those from Europe and the United States.

Miki Looking back at that 2020 perception study, what was your image of the Company at the time?

Ohmi Taiyo Nippon Sanso, as it was named at the time, showed a proactive desire to expand globally and have a global presence, rather than staying closeted inside Japan, and I felt this was extremely positive. The Company was also expanding its business in tandem with various industries, and its multifaceted nature in that regard drew my attention.

Miki Thank you for sharing that. We also received feedback pointing out that our disclosure of ESG-related information was a little thin, and I felt this when I became head of sustainability. For example, on the environmental front, our raw material for industrial gases is air, which we separate out into oxygen, nitrogen, argon, and so forth. Since we don't use fossil fuels, our operations cause very little pollution to the atmosphere, water, or soil. I think the reason for our apparent lack of disclosure was simply due to the fact that our business doesn't cause a lot of environmental issues to begin with. Furthermore, since the Company is mainly involved in B2B operations, we didn't sense a strong need to appeal to consumers regarding our sustainability.

Ohmi So, in 2020, the Company's volume of disclosure was insufficient, even though the Company was aware of this. As you said, I think many Japanese companies probably had the idea that even if they weren't specifically talking about it, they were doing it. In particular, unlike financial disclosure, non-financial activities are difficult to see from the outside, and so unless a company is actively disclosing that information, people on the outside won't have any way to know about it.

* An interview survey of analysts and fund managers who have participated in a financial results presentation, in which a production company asks for their impressions and requests on behalf of the listed company

Dialogue:
Ideal Sustainability for the NSHD Group

Dramatic Improvement in ESG Management over the Past Few Years

Miki About three years ago, we started promoting the disclosure of our information as a listed company, which has only increased our sense of urgency in needing to advance our ESG initiatives even more. One of the main reasons for this has been the entry of Nippon Gases Euro-Holding S.L.U. into the Group. Europe has an extremely high awareness of sustainability, and the NSHD Group has been invigorated by the joining of our European company as this sparked a change in our thinking.

In 2019, we expressed our support for the TCFD recommendations, and with the transition to a holding company structure in 2020, we revamped our Code of Conduct and various policies. In 2021, we reformed our sustainability systems, and established the Group Sustainability Management Office. Then, with the announcement of our medium-term management plan in 2022, we started our non-financial programs and also became a signatory to the United Nations Global Compact. In the area of governance, in 2021 we welcomed a female outside director aboard and in 2022 two of our five outside directors are women.

Ohmi You've taken a systematic approach I see. I believe that you are at the point of where you have agreed with the TCFD recommendations and are now preparing to start the disclosures. This represents significant progress from two years ago.

Miki We expressed our support in 2019, by we hadn't really prepared scenario analysis at that point, so we have done so now with our new medium-term management plan.

Now that I think about it, at the time we hadn't even disclosed a GHG emission reduction target. We had formulated various internal KPIs but hadn't communicated them externally. Not communicating them is the same as not having them, so this time we have set absolute values for our GHG emission reduction target and announced them publicly. We are also gradually responding to other items required by evaluating organizations.

Ohmi Over the past two years, you seem to have made progress on the environment, social, and governance, but my impression is that you have made particularly good progress on governance. The Board of Directors has also been scaled down, and you have increased diversity by including female and non-Japanese members. Furthermore, at the recent General Meeting of Shareholders you went even further and made the majority of directors outside directors. In a global context, a majority of independent members is considered a given for ensuring transparency and oversight over governance, but in fact few Japanese companies meet this standard. This means that NSHD is quite advanced among Japanese companies. Looking at the environment and social, you have comprehensively disclosed global human resource data, along with a clear description of various policies. In that sense, I believe you have made considerable progress on the environment, social, and governance over these two years.

Expectations for the Group to Unite and Deepen Cooperation to Achieve Its Targets

Miki Despite our progress to date, I think there are still many issues to be addressed. For example, how will we talk about our opportunities? We have declared our goal of becoming carbon neutral and expressed our intention of making a business out of reducing customer GHG emissions.

But, what specifically are we going to do, and how? If we can answer these questions successfully and expand our business, then I think investors will understand and support our efforts.

Ohmi I get the impression that Nippon Sanso Holdings has been highly evaluated on its risk management, but that its overseas competitors have been evaluated higher on their opportunities.

I would like us to take a wider view of domains related to sustainability and eventually focus on other fields as well, so that we can also appeal to investors in fields where we can offer a unique approach.

On the investor side, there is an increasing trend of wanting to look at both the environmental impacts and the positive sides.

Shizuko Ohmi

After positions at S.G. Warburg Securities, Lehman Brothers, and Credit Suisse Trust Bank, joined Amundi Japan in 2003. Assigned head of the ESG Research Division in 2015. In 2020, jointed JPMorgan Asset Management (Japan) Limited. Appointed Head of Investment Stewardship. CMA (Certified Member Analyst of the Securities Analyst Association of Japan).

On the investor side, there is an increasing trend of wanting to look at both the environmental impacts and the positive sides. For example, when themed funds screen for potential investees by focusing on resolving environmental issues, they need to have sufficiently rational reasons. If the investee has defined their environmental contribution, for example, and recorded solid data based on their definition, then we are able to use that as grounds to select that company as one that contributes to the environment. It is extremely important to manage risks properly, but I would like to emphasize that investors are also looking at the business opportunities.

Miki In our new medium-term management plan, we have set out various action programs. The carbon-neutral program is divided into two sections, I and II. In Carbon Neutral Program I, we focused on how far we can reduce the Group's GHG emissions. In Carbon Neutral Program II, we are thinking about how we can grow our business by reducing our customer GHG emissions.

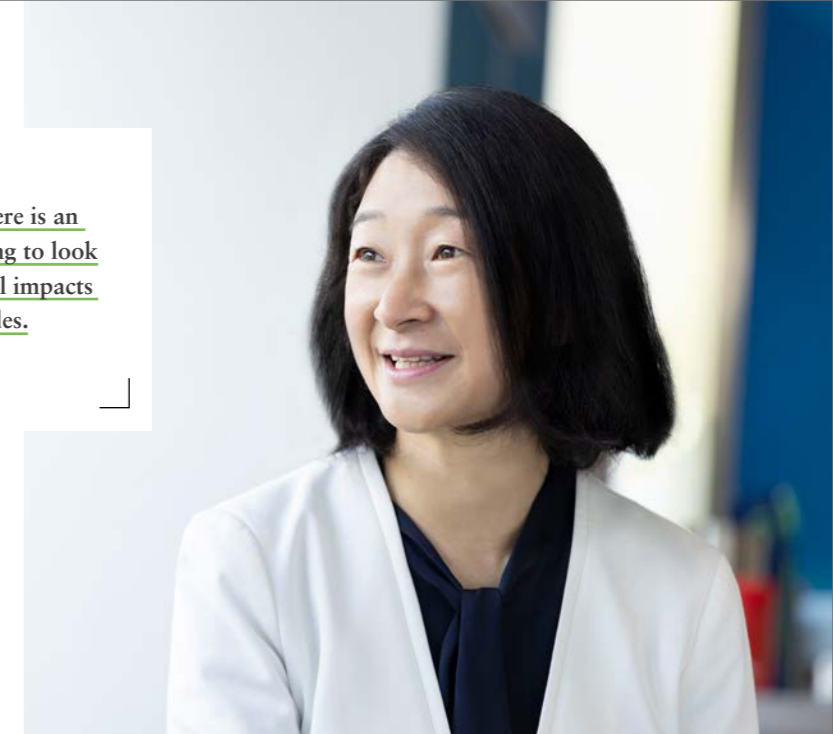
In our business related to hydrogen, which is drawing attention as a form of green energy, we have used some assistance from our Global HyCO business to expand our operations even in Peru. Moreover, with oxygen combustion technology, fossil fuel combustion becomes far more efficient, increasing the concentration of CO₂ and making it easier to capture. I believe there are business opportunities in this area as well. We also have a carbon dioxide gas business, which may lead to expansion of CCUS* as well. For now, one of the points of the new medium-term management plan is to think about what we can commercialize next and try it out.

* CCUS: Carbon capture, utilization, and storage

Ohmi It seems that your past efforts are now beginning to bear fruit. We can sense management's intentions in the clear targets that have been set out for them. I think giving sustainability such an important role in NSHD's business strategy and treating it as an essential aspect shows that the Company has deepened its awareness in this regard.

Miki These days, our discussion has come to focus mainly on carbon neutrality. However, there are a wider range of areas in which we can contribute through sustainability. Through industrial gases, the NSHD Group can contribute to areas such as health through the medical field and to reducing food waste by extending food preservation periods. I would like us to take a wider view of domains related to sustainability and eventually focus on other fields as well, so that we can also appeal to investors in fields where we can offer a unique approach.

Ohmi The Company's disclosure over these two years has really advanced. You have kept your sights firmly on your targets for materiality issues, and in various ways you have prepared platforms for them. I therefore have high expectations that the whole Company working together will produce great results over the coming three years. In addition, you now have a clear global management structure able to properly discuss global sustainability strategies, and while there are no doubt difficulties in terms of being a global company, I am really looking forward to seeing all parts of the Company working together with deeper cooperation to achieve sustainability targets.



Sustainability Initiatives under the Medium-Term Management Plan

As the world seeks solutions to global-scale environmental issues and a host of social issues, sustainability, as represented by the SDGs, is becoming an increasingly important focus for company activities. Given this situation, in creating its medium-term management plan, which starts in April 2022, the Company has revised the materiality (material issues) originally formulated in 2015. (▶P.33)

Launch of Eight Non-Financial Programs

In our new approach to materiality, we have identified three fundamental preconditions for the Company's existence, namely, respect for human rights, safety and security, and corporate ethics, and we have specified 21 material issues. To address these issues, we have created eight non-financial programs that will run across the entire Nippon Sanso Holdings Group. Under the medium-term management plan, we aim to strengthen and enhance our initiatives for promoting these eight programs with the intention of contributing to the realization of a sustainable society. As we promote these initiatives, we will establish KPIs as necessary, both for the NSHD Group and for individual operating companies, to drive our progress.

Materiality	Principal Initiatives	Relevant SDGs	
E	<ul style="list-style-type: none"> Providing products and services that contribute to resolving environmental and social issues Climate change mitigation and adaptation Effective use of resources and prevention of pollution Conservation of water resources Conservation of biodiversity 	<ul style="list-style-type: none"> Development and sales expansion of products that contribute to solutions for environmental and social issues Reduction of GHG emissions Further promotion of energy conservation and efficiency of energy use Promotion of the use of renewable energy and green power Carbon capture and offsets Appropriate waste management and recycling Efficient utilization of water 	
S	<ul style="list-style-type: none"> Safety and Security Product and service safety and quality Respect for Human Rights Sustainable supply chain Diversity and inclusion Development and maintenance of human resources Employee and family health Improvement of employee engagement Contribution to regional and industrial development as social infrastructure Provision of comfortable and prosperous lifestyles Coexistence with local communities Improvement of productivity and promotion of production optimization Technology and R&D capabilities that support the creation of customer value and social value Pursuit of customer satisfaction Promotion of initiatives for digital innovation Protection and effective utilization of intellectual property 	<ul style="list-style-type: none"> Initiatives to ensure safe and reliable supply Reinforcement of quality assurance and management systems Sharing information on workers' and other accidents and best practices Safety education Investment for safety Creation of environments to promote innovation and diversity Embrace and motivate diversified talents Promote cross-regional talent exchanges Enhance successor development plans Health management initiatives Contribution to the medical field Initiatives for resolving social issues Provision of comfortable and prosperous lifestyle Promotion of sophisticated ICT use Strategic acquisition of intellectual property and promotion of use in business 	
G	<ul style="list-style-type: none"> Corporate Ethics Strengthening communication with stakeholders Strengthening information security measures 	<ul style="list-style-type: none"> Rigorous employee education and training Prevent compliance violations Detect compliance violations through disseminating and operating the whistleblowing system Dialogue with shareholders and investment analysts Enhancement of information disclosure Maintenance and improvement of information security systems 	

Reduction of the Group's GHG emissions

Carbon Neutral Program I

Aiming for carbon neutrality in 2050

Realizing carbon neutrality through technological breakthroughs

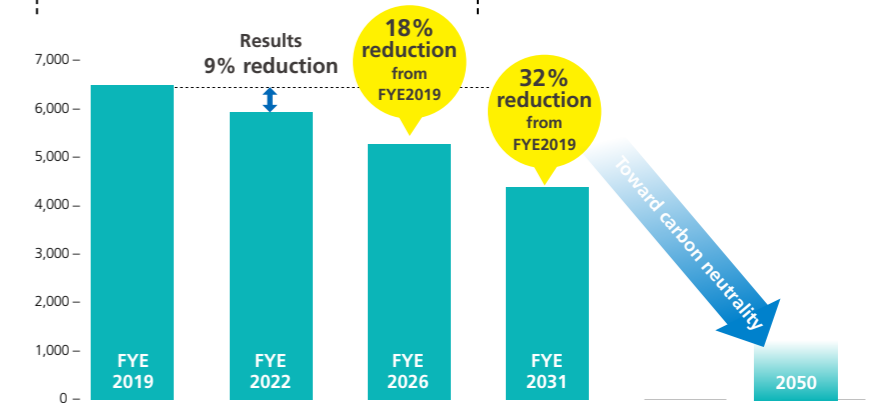
KPI GHG Emission Reduction Targets
 FYE2026: 18% reduction FYE2031: 32% reduction (Base year: FYE2019)

- Further promotion of energy conservation and efficiency of energy use**
 - Replacement of air separation units (ASUs)
 - Reduction of electricity usage through digital solution technologies
 - Streamlining of logistics and review of transport
- Promotion of the use of renewable energy and green power**
 - Switch to electricity companies with low emissions coefficients
 - Purchase green power certificates
 - Introduce renewable energy
- Carbon capture and offsets**
 - Promote CO₂ capture
 - Carbon offset through new technology, forest conservation, and tree-planting activities, etc.

GHG Emission Reduction Targets

GHG emissions (Thousands of tonnes CO₂e)

* Base year: The Gas Business in Europe and the U.S. HyCO business have taken FYE2019 as a base year along with the NSHD Group.
 The figure for the volume of GHG emissions for FYE2019, which is the reference value, shows the actual GHG emissions in FYE2019 plus the following: 1) estimated emissions of the Gas Business in Europe in FYE2019 and 2) estimated emissions of the U.S. HyCO business in FYE2019.



Reduce customer GHG emissions through environmental product offerings and applications

Carbon Neutral Program II

The Group's products and services will help to achieve a reduction in GHG emissions that exceeds the Group's own GHG emissions.

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

Global GHG reduction through NSHD's products and technologies

The main GHG emission reduction contribution initiatives are as follows.

- Oxygen-enriched combustion in blast furnaces
- H₂ and NH₃ combustion in industrial furnaces
- Carbon capture and utilization

Realize a reduction in GHG emissions through environmental products, offerings and applications*

GHG Emission Reduction Contribution		
FYE2022	Total: 6,865 thousands of tonnes CO ₂ e	
	Products and services 3,176 thousands of tonnes CO ₂ e	Industrial gases 3,689 thousands of tonnes CO ₂ e
FYE2021	Total: 5,066 thousands of tonnes CO ₂ e	
	Products and services 2,892 thousands of tonnes CO ₂ e	Industrial gases 2,174 thousands of tonnes CO ₂ e

* Please refer to P.128 for a breakdown of environmental products, offerings and applications

Sustainability Initiatives under the Medium-Term Management Plan

Reduction in waste emissions

Zero Waste Program

Promoting the 3Rs (reduce, reuse, and recycle) and building systems for waste reduction and resource circulation

Promoting the 3Rs of waste processing is a requirement of our times. We will set and pursue KPIs for each operating company to reduce waste emissions and landfill volume. For example, in the Gas Business in Japan, Taiyo Nippon Sanso Corporation will work to halve its industrial waste landfill disposal by FYE2026 under its new Halve Amount of Landfill Disposal (HALD) initiative.

Effective use of water resources

Sustainable Water Program

Conservation of water resources

The NSHD Group has identified “conservation of water resources” as one of its material issues, and aims to conserve water resources in its business activities through the efficient use of water. Specifically, we are working to effectively use water resources and address water risk by reducing the amount of water used in gas production plants and so forth.

Cultivating a culture of safety

Safety First Program

Aim for world-class safety in the industrial gases industry

As a group that handles various gases under high pressure, safety is a fundamental essential for our existence. We are dedicated to continuing safe, stable supplies by further promoting safety in accordance with our motto of “selling gases is selling safety.” As a Group KPI, we will target a lost-time injury rate (number of lost-time injuries per million work hours) of 1.6* or lower, and strive to be a global leader in safety.

* Targeting a reduction of around 40% from the average for FYE2017–FYE2021 (2.53)

KPI Lost-time injury rate: 1.6 or lower (FYE2026)

Specific measures for achieving the target

- Sharing information on workers’ and other accidents and best practices
- Safety capability by using DX, AI, and the IoT
- Safety education/utilizing the Technical Academy
- Investment for safety

At Taiyo Nippon Sanso Corporation, we are also taking the following measures for safety in addition to targeting the lost-time injury frequency rate:

- Reduce workplace accident rate
- Reduce the rate of vehicle accidents while transporting products
- Reduce the number of facility accidents
- CCPS assessment (▶ P.73)

Initiatives for increasing quality and reliability

Quality Reliability Program

Instilling corporate awareness of emphasis on quality and enhance quality and reliability of the Group’s products

As a corporate group dealing mainly in industrial gases, we consider our unwavering quality commitment to be the stable supply of products that underpin a range of industries, and that because our product is an invisible gas, reliability is an essential quality that we must provide. We will promote a culture that emphasizes quality by keeping our important promises to customers and strive to further raise awareness among employees. We will also aim to increase the Group’s quality and reliability by promoting the introduction of automation technologies.

Initiatives for increasing reliability

Instilling corporate awareness of emphasis on quality

- Quality ethics and compliance education
- Quality audit program
- Share information on quality complaints along with measures for remediation and improvement

Promote the introduction of automation technologies

- Automation of test, inspection, and analysis recording
- Digitalization of quality management system

Increase satisfaction of electronic materials gases customers

- Increasing customer satisfaction through the activities of the Semiconductor Specialty Gas Quality Committee

Increase human resource diversification and engagement

Talent Diversity Program

Talent development strategies for sustainable growth

The Group intends to actively accept people of diverse talents, cultures, and values, and to develop them as “The Gas Professionals.” We are making a concentrated Groupwide effort in regard to participation by women in particular and have set KPIs to measure this. We are also promoting cross-regional talent exchanges.

	FYE2022 (Results)	FYE2026 (Targets)
Rate of female employees	20.5%	22.0%
Rate of female management posts	14.8%	18.0%

Compliance penetration and enforcement

Compliance Penetration Program

Compliance training at all operating companies

The Group considers respect for human rights, safety and security, and corporate ethics to be fundamental preconditions for its existence. To promote them thoroughly, we conduct various forms of training to ensure that all employees are aware of compliance and have a correct understanding of it. With a common understanding that the key to establishing compliance is ensuring that all employees receive compliance training, we have set it as a non-financial KPI in the medium-term management plan.

KPI Rate of receiving compliance training: 100% (FYE2026)

List of Non-Financial Programs

	Non-financial programs	Initiative
E	Carbon Neutral Program I	Reduce the Group’s GHG emissions
	Carbon Neutral Program II	Reduce customer GHG emissions through environmental product offerings and applications
	Zero Waste Program	Reduction in waste emissions
	Sustainable Water Program	Effective use of water resources
S	Safety First Program	Reduction in lost-time injury rate, etc.
	Quality Reliability Program	Reduction in number of claims about products, offerings and applications
	Talent Diversity Program	Utilization of diverse talent
G	Compliance Penetration Program	Compliance education and enforcement

Non-Financial KPIs for the Nippon Sanso Holdings Group

Environment	Human Resources
<p>Reduction rate of GHG emissions (Base year: FYE2019)</p> <p>18% (FYE2026) 32% (FYE2031)</p> <p>GHG reduced emissions through environmental product offer</p> <p>Lower customer GHG emissions through environmental product offerings and applications > NSHD group GHG emissions (FYE2026)</p>	<p>Rate of female employees</p> <p>≥ 22% (FYE2026)</p> <p>25% (FYE2031)</p> <p>Rate of female management posts</p> <p>≥ 18% (FYE2026)</p> <p>22% (FYE2031)</p>
Safety Management	Compliance
<p>Lost time injury rate</p> <p>≤ 1.6 (FYE2026)</p>	<p>Rate of receiving compliance training</p> <p>100% (FYE2026)</p>

Reporting Based on the Recommendations of the TCFD

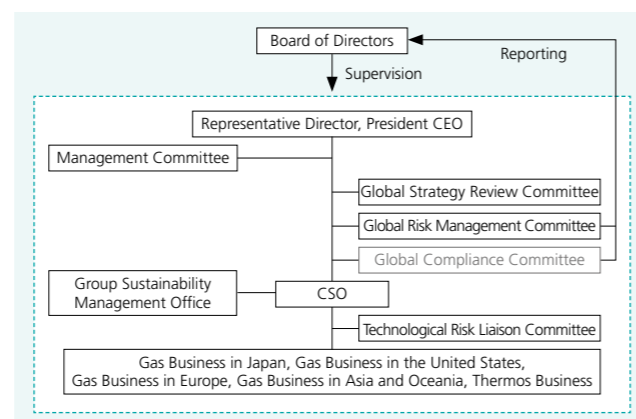
Nippon Sanso Holdings expressed its support for the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD)* in November 2019. The Group has been working to reduce environmental impacts and save energy, and to expand its lineup of products that contribute to reducing GHG emissions. Based on the recommendations of the TCFD, we are steadily carrying out these initiatives and phase in improvements to our relevant information disclosure. Recently, in conjunction with the announcement of NS Vision 2026, we conducted a scenario analysis based on the TCFD recommendations and announced the results. Going forward, we will conduct internal improvement activities and work to increase the corporate value of the entire Group through dialogue with stakeholders.

* 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 (indicators) and targets regarding climate change-related risks and opportunities.

Governance

The Company has established a governance structure for climate change issues, and the entire Group is engaged in initiatives on climate change. Up until now, sustainability initiatives have been promoted under the supervision of the Chief Sustainability Officer (CSO). Moreover, in November 2021, the Company established the Group Sustainability Management to provide general oversight of sustainability activities such as deliberation and formulation of climate change-related strategies and risks.

Governance Structure for Climate Change Issues



Strategy

- Based on the TCFD recommendations, we identified opportunities and risks under the transition scenario (under 2°C scenario) and the physical climate scenario (4°C scenario), then performed an assessment of the opportunities and risks, mainly for the gas business, in each region based on an indicator of “potential for impact” x “magnitude of impact.” Significant negative financial impacts to the Company were considered to be risks, while positive impacts were treated as opportunities.
- For the transition scenario, the Sustainable Development Scenario (SDS) of the International Energy Agency (IEA) was used, and for the physical climate scenario, the Fifth Assessment Report (RCP8.5) of the UN’s Intergovernmental Panel on Climate Change (IPCC) was used as a reference for impact analysis.
- The table below shows the results of our analysis and synthesis of the NSHD Group’s opportunities and risks and their possible impact on our procurement, operations, and products/services.

NSHD Group’s Climate Change-Related Opportunities and Risks, Analysis Results, and Response

Type	Climate change risks	Financial impact	Business risks	Business opportunities	Response/Actions by the NSHD Group
Transition	Policy regulations	Large	<Medium to long term> • Decrease in profits due to increased tax burden	<Medium to long term> • Acquire business opportunities by differentiating through early response	• Increase introduction of renewable energy by power purchase agreement and green power certificates
	Technology	Medium	<Medium to long term> • Decrease in sales of existing products due to screening of low-carbon products	<Short to medium term> • Increase profit margin by energy saving • Increase in demands for existing products that contribute to low carbonization <Medium to long term> • Increase in business opportunities through environmental product offerings and applications that contribute to low carbonization	• Promote the development of environmental product offerings and applications that contribute to low carbonization • Promote energy saving by improving productivity through the introduction of DX technology, etc. (introduction of SAITEKI optimization of delivery)
	Markets	Large	<Long term> • Decrease in sales due to changes in the manufacturing process of the steel and chemical sector • Decrease in sales due to new entrants utilizing by-product O ₂ gas as demand for water electrolysis process expands	<Medium to long term> • Increase in demand for blue and green H ₂ • Increase in demand for green fuels • Increase in demand for CO ₂ capture for CCUS	• Promote the introduction of carbon-free (H ₂ , NH ₃) combustion technology • Expand the use of oxygen combustion • Acquire demand for medium-scale CO ₂ capture in response to CCUS • Expansion of the H ₂ supply business by the H ₂ O business • Increase sales of environmental product offerings and applications that contribute to low carbonization
	Reputation	Large	<Medium to long term> • Investor valuation decline for GHG emitting companies	<Medium to long term> • Continue stable funding by demonstrating contribution to GHG emission reduction	• Disclosure of quantitative data on GHG emission reduction contributions through integrated reports, etc. • Promote disclosure of non-financial information
Physical	Acute	Medium	<Medium to long term> • Plant shutdowns due to disasters caused by abnormal weather • Increase in premiums paid	-	• Promotion of disaster countermeasures • Use of insurance
	Chronic	Small	<Long term> • Narrowing of profit margin due to increase in running costs of air separation units caused by rising temperatures	<Medium to long term> • Increasing demand for medical products to treat diseases	• Replacement of aging air separation units to reduce running costs • Provision of medical oxygen, etc.

Risk Management

We will construct a Groupwide risk management structure, and will identify, assess, and manage climate-related risks.

Climate change risk identification, assessment, and management process

Committees	Risk identification, assessment, and management
<ul style="list-style-type: none"> Global Risk Management Committee Global Strategy Review Committee Technological Risk Liaison Committee 	<ul style="list-style-type: none"> Construction of risk management system in Nippon Sanso Holdings Group companies to enable early discovery of long-term risk, prevention, and rapid response in cases of risk materialization Risk importance determined by occurrence frequency x Financial or strategic impact Annual Global Strategy Review Committee meeting (Chairperson: CEO) to determine financial or strategic impact on business Specific countermeasures for items determined by the Global Strategy Review Committee determined at the Technological Risk Liaison Committee meeting held between Nippon Sanso Holdings and operating companies, then deployed globally

Metrics (Indicators) and Targets

In the medium-term management plan, we will set out indicators and targets to be used for assessing and managing risks and opportunities, then use them to evaluate our progress.

Initiatives	Disclosed details
<ul style="list-style-type: none"> We disclose Scope 1, Scope 2, and Scope 3 GHG emissions (▶P.117). 	<ul style="list-style-type: none"> Sustainability data (▶P.117) Independent assurance report (▶P.129)
<ul style="list-style-type: none"> We disclose non-financial KPIs in our medium-term management plan (▶P.63–P.65). 	<ul style="list-style-type: none"> Eight sustainability programs and non-financial KPIs (▶P.63–P.65)

Signatory to the UNGC

The Company is a signatory to the United Nations Global Compact (UNGC) and was registered as a participating company in January 2022. Nippon Gases Euro-Holding S.L.U. is also registered as a participating company. Companies and organizations that have signed the UNGC observe and practice ten principles related to four areas. In doing so, we will further promote initiatives to make an even greater contribution to a sustainable society.

Four Areas and Ten Principles of the UNGC

Area	Principle
Human Rights	Businesses should Principle 1. support and respect the protection of internationally proclaimed human rights; and Principle 2. make sure that they are not complicit in human rights abuses.
Labour	Businesses should Principle 3. uphold the freedom of association and the effective recognition of the right to collective bargaining; Principle 4. the elimination of all forms of forced and compulsory labour; Principle 5. the effective abolition of child labour; and Principle 6. the elimination of discrimination in respect of employment and occupation.
Environment	Businesses should Principle 7. support a precautionary approach to environmental challenges; Principle 8. undertake initiatives to promote greater environmental responsibility; and Principle 9. encourage the development and diffusion of environmentally friendly technologies.
Anti-Corruption	Businesses should Principle 10. work against corruption in all its forms, including extortion and bribery.



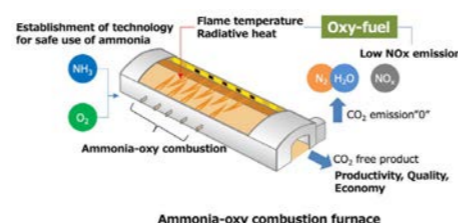
Sustainability Topics

Initiatives toward the Realization of a Carbon-Neutral Society through Hydrogen/Ammonia and Oxygen Combustion Technologies

One of the challenges for realizing a carbon-neutral society is to build a supply chain for green fuels that do not emit CO₂ and develop the technology to use it. Specifically, a key aspect is the efficient delivery of green fuels from their production site to their consumption site, and one method is to make use of hydrogen (H₂) and ammonia (NH₃). By combining this with oxygen combustion technology that Nippon Sanso Holdings has been researching and developing for over half a century, we will contribute to faster social implementation of green fuels.

Japan Development of Fuel Ammonia Combustion Technology for Industrial Furnaces

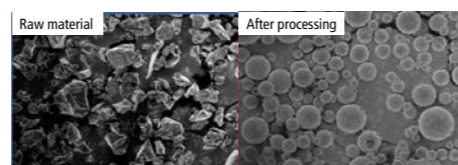
Taiyo Nippon Sanso Corporation has been selected as the contractor for a project commissioned by the New Energy and Industrial Technology Development Organization (NEDO) for development of fuel ammonia combustion technology for industrial furnaces. The aim of the project is to develop ammonia combustion technology for industrial furnaces that are unable to use ammonia in order to contribute to the decarbonization of the industrial sector. Taiyo Nippon Sanso has a track record for various industrial furnaces within and outside Japan, including oxygen burners for glass melting furnaces. The project covers a five-year period from FYE2022 to FYE2026. Taiyo Nippon Sanso is proceeding with development of ammonia-oxygen combustion and oxygen-enriched combustion.



Ammonia-oxygen combustion industrial furnace (glass melting furnace)

Japan Joint Development of Spherical Silica Manufacturing Technology Using Carbon-Free Fuel

Spherical silica is used as a filler for semiconductor sealant. As the scope of semiconductor applications has expanded over the past few years, demands regarding the quality of spherical silica have been increasing. The traditional manufacturing method carries a risk of carbon contamination from fossil fuels, which impairs insulating performance and reduces the reliability of the semiconductor. In February 2022, Taiyo Nippon Sanso Corporation and Admatechs Company Limited developed a melting and spheroidizing technology using carbon-free ammonia-oxygen combustion to enable the production of high-quality spherical silica free from carbon contamination.



Example of samples from spheroidizing technology

Japan Successfully Melting Glass Using a Hydrogen-Oxygen Burner to Drastically Reduce CO₂ Emissions

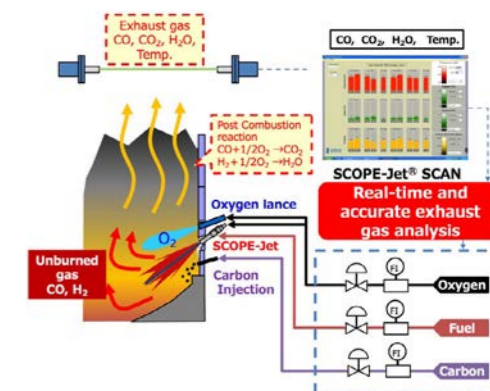
In April 2022, Taiyo Nippon Sanso Corporation successfully conducted a demonstration test with 100% hydrogen combustion to melt glass using a hydrogen-oxygen burner jointly developed with Nippon Electric Glass Co., Ltd. The jointly developed hydrogen-oxygen burner can switch the mix ratio of natural gas and hydrogen as needed. In the demonstration test, it was confirmed that the same melting capability could be obtained with either combustion fueled using 100% hydrogen, or a mixture of both natural gas and hydrogen, or only natural gas. This enables a significant reduction of CO₂ emissions from melting furnaces.



Flame from 100% hydrogen combustion

Japan Highly Efficient Oxygen Usage System SCOPE-Jet® SCAN

Taiyo Nippon Sanso Corporation is working to develop an oxygen burner that can efficiently increase the temperature inside a furnace. The company's product lineup includes SCOPE-Jet®, a burner developed to reduce the rate of power consumption and increase productivity for the electric arc furnace steelmaking industry, which consumes large amounts of electric power, by reducing production time through a higher burner flame temperature created with oxygen. In March 2021, the company developed the new SCOPE-Jet® SCAN, which combines oxygen applications (gas-using equipment and technology) and a laser gas analyzer unit. SCOPE-Jet® SCAN uses real-time analysis values to control the feed amounts of oxygen, fuel, and carbon, increasing the efficiency of oxygen usage, which is also expected to reduce CO₂ emissions. Going forward, the system will be introduced mainly into electric arc furnaces, and the company will work on developing even wider applications.



SCOPE-Jet® SCAN system overview

Europe NGE Signs a Collaboration Agreement with Sarralle toward Decarbonization of the Steel Industry

In December 2021, Nippon Gases Euro-Holding S.L.U. (NGE) announced a business alliance with Sarralle in the provision of engineering services regarding hydrogen burners, among others. Sarralle is headquartered in Spain, and is a leading company in engineering services in the steel industry and others. Under the alliance agreement, NGE will supply burner technologies and Sarralle will work to install them for end users. Hydrogen burners use hydrogen as an energy source instead of natural gas, and are considered an important element for achieving decarbonization of industry. Furthermore, NGE will collaborate with Sarralle to promote project opportunities for the use of hydrogen burners and other industrial gases for the steel and other industries, including provision of gas application technologies.



Initiatives to Promote the Use of Carbon Dioxide Gas

Carbon dioxide gas is used widely for retaining the freshness of food, carbonating beverages, and as a coolant in the form of dry ice and as a welding gas. To achieve a carbon-neutral society, it is necessary to collect CO₂ and use it effectively. The NSHD Group is working to develop such applications. Moreover, we will contribute by building a CO₂ supply chain for CO₂ applications that are seeing increasing demand.

Europe NGE's Liquid Carbon Dioxide Carrier

NGE's carbon dioxide business has a 19% share of the European market, and is the second largest in the region. The company operates three liquid carbon dioxide carrier vessels to connect its 12 carbon dioxide gas plants with markets in every region. The vessels can transport between 1,200–1,800 tonnes of liquid carbon dioxide with each voyage, carrying approximately 300,000 tonnes per year. Furthermore, they are also used as floating storage tanks during maintenance of the companies' storage tanks or plants. Going forward, NGE will continue to accurately comprehend the current and future status of needs by following consumption trends in Europe overall from an overhead perspective as it continues to supply countries with carbon dioxide products as necessary.



Carrier vessel "Froya"

Initiatives to Promote the Use of Carbon Dioxide Gas

Japan Installation of CO₂ Liquefaction System for Demonstration Trial

Taiyo Nippon Sanso Corporation cooperated with Taiheiyo Cement Corporation in the CO₂ liquefaction process for the "Development of Carbon Circulation Technology for the Cement Industry" project of NEDO. In February 2022, the company established a CO₂ liquefaction system at Taiheiyo Cement's Kumagaya Plant. The system will recycle CO₂ emitted in the cement manufacturing process as a resource for reuse as raw material for cement and civil engineering material. Taiyo Nippon Sanso provided technical collaboration on a series of processes for liquefaction of captured CO₂ in a trial demonstration of separating and capturing CO₂ from cement kiln exhaust gas.



Exterior of the CO₂ liquefaction system

Japan Start of Demonstration for Effective Use of CO₂ Captured from Power Plants

Nippon Ekitan Corporation is participating in a demonstration test for making effective use of CO₂ captured from coal-fired power plants jointly conducted with Osaki CoolGen Corporation (a company jointly established by Electric Power Development Co., Ltd. (J-POWER) and The Chugoku Electric Power Co., Inc.) and Sera Saien Co., Ltd. Osaki CoolGen aims to achieve innovative, low-carbon coal-fired thermal power generation by combining an integrated gasification combined cycle (IGCC) power plant with CO₂ separation and recovery. In the demonstration test, CO₂ from an IGCC power plant of Osaki CoolGen, is captured, liquefied, and transported and used to replace CO₂ that has been used for accelerating photosynthesis in a tomato greenhouse. It will contribute to realizing a carbon-neutral society by pursuing the possibilities for effective use of CO₂.



Source: Osaki CoolGen Corporation



Source: Sera Saien Co., Ltd.

United States Use of CO₂ in Wastewater Treatment

In this project, CO₂ was used to treat wastewater instead of a process using acid. The pharmaceutical company CSL Behring LLC used sulfuric acid for wastewater treatment, but the strong acid caused various corrosion issues for equipment. Matheson Tri-Gas, Inc. responded to a request from CSL Behring to propose a wastewater treatment system using CO₂ and run a trial operation. The results far exceeded expectations, and led to a full implementation. As a result, the corrosion issues were completely resolved, while achieving adequate wastewater treatment function.



CSL Behring LLC

Initiatives in the Medical Field

The NSHD Group promotes better quality of life for patients by contributing to testing and treatment through products and services in the medical field, such as homecare medical equipment and medical gases. In response to the rapid spread of COVID-19 in recent years, we have been striving to provide a stable supply of ventilators and provided support for those using medical equipment for the first time, such as producing a helpful pocket guide. We also contribute to advanced medical research with the automated cell cryopreservation system CryoLibrary® in the field of cell cultivation, and stable isotopes such as ¹⁸O used as the raw material for a diagnostic reagent in positron emission tomography (PET), and ¹⁷O, which is used in a new form for magnetic resonance imaging (MRI).

Japan Contribution to Healthy Longevity Using Stable Isotopes

The doubly labelled water (DLW) method is the only international standard method able to measure with high precision the amount of energy expenditure of a subject under free-living activities, using oxygen-18 and heavy water. Taiyo Nippon Sanso Corporation has supported the spread of DLW and researchers around the world through long-term supply of the stable isotopes (Water-¹⁸O and D₂O). In 2021, the results of an international research project into energy expenditure supported by the International Atomic Energy Agency were reported in the prestigious global academic journal *Science* (August 13, 2021 edition), further highlighting this work.

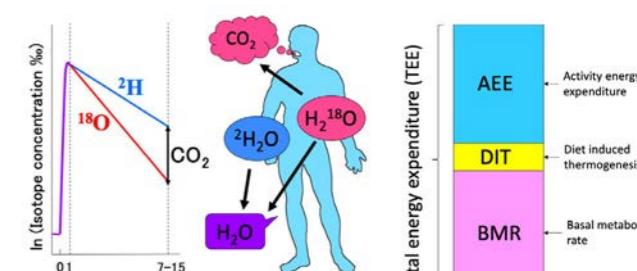


Illustration provided by Dr. Yosuke Yamada of the National Institutes of Biomedical Innovation, Health and Nutrition

Europe Spanish Medical Equipment Manufacturer Joins the NSHD Group

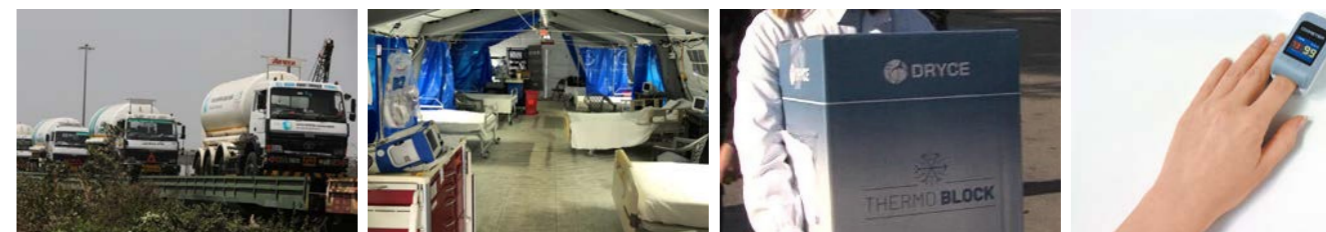
Nippon Gases Italia S.r.l. acquired a majority of the share of the Spanish medical equipment manufacturer Noxtec Development SL. This will enable the two companies to work together on technological improvements of medical equipment used for nitrous oxide treatment. Nitrous oxide has a vasodilatory effect in cardiopulmonary blood vessels, and is currently used to treat pulmonary hypertension. The inhaled nitric oxide therapy market is expected to grow going forward. Both companies have a high level of technology and knowledge related to medical equipment development and medical gases, which they will combine in an effort to further improve the quality of medical equipment and services.



Noxtec Development SL

World The NSHD Group's Contributions in the Global COVID-19 Pandemic

As COVID-19 infections surged globally, the NSHD Group supplied medical oxygen to meet a rapid increase in demand from government requests and so forth. We also strove to secure ventilators and pulse oximeters amid a spike in demand in order to stably supply them to medical institutions. In other areas, we developed cryopreservation containers and provided dry ice for transporting vaccines to support the cold chain and contribute to the medical front lines.



Supply of oxygen to hospitals

Supply of oxygen to sanatoriums

Cryopreservation containers for transporting vaccines

Blood oxygen level meter (pulse oximeter)

Initiatives for Food Issues

The NSHD Group aims to reduce food loss by proposing solutions to customers that use gas application technologies to harness the properties of industrial gases. These include extending the preservation period of food by rapid freezing using liquid nitrogen (-196°C) and injecting nitrogen gas into food packaging to prevent oxidation and extend shelf lives. We not only provide a stable supply of oxygen gas essential to the operation of marine and land-based aquaculture industries but also contribute to highly efficient aquaculture operations with high stock densities and accelerated growth through appropriate control of oxygen levels in water.

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

Nippon Sanso Holdings is also developing gas application technologies for reducing food loss. In Thailand, many local specialty goods such as durians and mangos are exported to other countries. By rapid freezing these specialty goods, using liquid nitrogen, they can now be preserved for long periods without changing their taste, texture, color, or other properties. Fresh produce such as fruit must be harvested within a limited period, and large amounts must be harvested at the same time. Rapid freezing technology using liquid nitrogen enables large quantities of produce to be processed without waste, helping to reduce food loss. Furthermore, 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. Nippon Sanso Holdings will contribute to the resolution of various issues confronting the food industry through gas application technologies such as modified atmosphere packaging (MAP) and liquid nitrogen freezing systems.

Extending Shelf Life

By controlling the composition of the atmosphere inside packaging, changes to the fresh flavor, nutrients, and aroma can be prevented while also preserving the color and preventing deterioration.

Examples of Increasing the Number of Days in Storage	Fish	Pizza	Castella cake
Gas packaging	8 days	21 days	57 days
Atmospheric packaging	4 days	6 days	11 days
Preservation temperature	3°C or lower	3°C	30°C

Minimizing Damage

Nitrogen gas does not pass easily through films, and can be used to protect food from the load weight of other food and shocks during the manufacturing process, transport, and on the sales floor.



Durians, a local specialty

Oxidation Prevention, Bacteria Control, Freshness Preservation

We protect food using the different properties of each gas. For example, nitrogen gas prevents oxidation and carbon dioxide gas slows the increase of bacteria, while oxygen gas prevents meat from changing color (although color changes caused by quality deterioration will still occur).

Retaining Shape and Form

Using packaging that seals the food and the gas only, the original taste and texture of the food can also be preserved without losing its shape.



Rapid freezing system

Effects of food gas packaging

Japan Participating in Open Innovation on Cultured Meat

In October 2021, Taiyo Nippon Sanso Corporation participated in an open innovation platform called the CulNet Consortium, hosted by IntegriCulture Inc. The consortium is a platform aiming to achieve mass production of cell-derived products such as cultured meat. Companies with strengths in various areas, such as culture medium and culture tanks, participate in the platform to promote joint research. Taiyo Nippon Sanso participated with the goal of developing relevant gas application technologies, such as control of dissolved gas and atmospheric gas in the cell cultivation process.



Source: IntegriCulture Inc.

Thermos K.K.'s Initiatives

Thermos K.K. contributes to energy conservation through its insulation and various other technologies and its creative capabilities, while creating new value that realizes comfortable lifestyles, guided by its corporate philosophy of "Thermos continues to introduce new kinds of lifestyles that are agreeable to people and society and also environmentally friendly." Our bottles, tumblers, soup jars, and other products use vacuum-insulation technology to keep food and beverages at the temperature where they taste best. This is convenient for people's lifestyles, and also contributes to reusing resources and reducing waste. We also proactively conduct initiatives with various industries, groups, and local governments aimed at realizing a sustainable society.

Japan Conducting Projects Aimed at Reducing Plastic Waste at Sports Venues

In September 2021, Thermos K.K. concluded an "SDGs Partner" agreement with B.LEAGUE professional basketball team ALVARK TOKYO Co., Ltd. At the team's home games during the 2021–2022 season, the two companies will collaborate on the "Personal Bottle Promotion Project," calling on spectators to bring their own personal bottles to the games in an effort to reduce plastic waste from PET bottles at the venue.



President Kunihiko Hayashi of ALVARK TOKYO Co., Ltd. (left) and President Yuji Kataoka of Thermos K.K.

Japan Cooperation Agreement with Kumamoto City to Work on Preserving Groundwater

In March 2022, Thermos K.K. entered a Cooperation Agreement for Realizing a Sustainable Society through Water with Kumamoto City. Kumamoto City is working to preserve its groundwater and to promote use of personal bottles and reduction of PET bottle waste as initiatives toward achieving the SDGs. Thermos K.K. entered the cooperation alliance with Kumamoto City in order to support these efforts. The company is promoting the use of personal bottles by city residents and producing and selling limited edition original design bottles to promote participation in groundwater preservation activities, as well as conducting a campaign to promote the use of personal bottles at Kumamoto City-organized events.



Limited edition original design bottle

Safety Initiatives

Japan Creation and Use of CCPS Evaluation (High-Pressure Gas Version)

Taiyo Nippon Sanso Corporation has developed its own accident intensity standards, based on the Center for Chemical Process Safety (CCPS) evaluation method* and in consideration of the potential impact of high-pressure gases. The company evaluates accidents in Japan based on a five-level scale and five characteristics: (1) physical injuries, (2) property damage, (3) potential impact of high-pressure gases, (4) environmental impact, and (5) social impact and media coverage. The evaluation results in an overall number of points by which the company quantifies intensity.

* This is a method proposed by the U.S. Center for Chemical Process Safety to prevent process-related accidents and disasters.

Level	Points	Characteristics							
		Physical Injuries	Property Damage	Spewing and Leakage Inert Gases, Flammable Gases	Spewing and Leakage Flammable Gases, Toxic Gases	Spewing and Leakage Specialty High-Pressure Gases	Explosion/Fire, Rupture/Breakage, Other	Environmental Impact	Social Impact and Media Coverage
1	27	Multiple job-site deaths Death of one or more persons off-site	Internal damages of ¥1 billion or more	Potentially fatal leakage Impact on wide area off-site	Potentially fatal leakage Impact on wide area off-site	Potentially fatal leakage Impact on wide area off-site	Potentially fatal Impact on wide area off-site	Environmental response cost of ¥250 million or more	Significant impact on local community Large-scale investigation and monitoring by prefectural governments and police National media coverage lasting several news cycles
2	9	Single job-site death Multiple lost-time on-site injuries	Internal damages of between ¥100 million and ¥1 billion	Leakage with the potential for serious injuries Impact off-site	Leakage with the potential for serious injuries Impact off-site	Leakage with the potential for injuries Impact off-site	Potential for serious injuries Impact off-site	Environmental response cost of between ¥100 million and ¥250 million	Local evacuation required Large-scale investigation and monitoring conducted by prefectural governments and police Brief coverage by national media
3	3	Lost-time injuries affecting one or more persons off-site Lost-time injury affecting one person on-site	Internal damages of between ¥10 million and ¥100 million	Leakage with the potential for minor injuries Leakage with the potential to cause site-wide damage on-site	Leakage with the potential for minor injuries Leakage with the potential to cause damage within the facility	Leakage with no physical injury or property damage (including minor leakage)	Potential for serious injuries Site-wide impact on-site	Environmental response cost of less than ¥100 million	Request to evacuate residents living around the plant as a precautionary measure Investigations and monitoring conducted by the company Local media coverage
4	1	Lost-time accident off-site affecting one or more persons Lost-time accident on-site affecting one or more persons	Internal damages of between ¥2.5 million and ¥10 million	Leakage with no physical injury but potential for property damage or other impact inside the facility	Minor leakage with physical injuries or property damage	-	No physical injury but impact inside the facility	Short-term remedial action required	Long-term investigations or monitoring by the company not needed Brief coverage by local media
5	0.3	First aid required for one or more persons on-site	Internal damages of between ¥250,000 and ¥2.5 million	Minor leakage with no physical injuries or property damage	-	-	Incident with no physical injuries or property damage Explosion or fire: Sound of explosion and/or small fire Rupture or destruction: Sound of rupture sound and/or deformation	-	-

The Nippon Sanso Holdings Group's Human Resource Strategy

The NSHD Group's business is operated through the individual efforts and capabilities of approximately 20,000 employees worldwide. The Group Philosophy and Group Vision are deeply rooted in the Group's regional operating companies and Thermos. By promoting the development of human resources sharing the same values globally, we aim to promote the development of the NSHD Group and the achievement of medium-term management plan NS Vision 2026 together.

"The Gas Professionals"

Increasing engagement by sharing and understanding the Philosophy and Vision

Nippon Sanso Holdings' Philosophy and Vision



Basic values of health, integrity, and resourcefulness

Health	Integrity	Resourcefulness
<p>Understands the Importance of Occupational Health and Safety: Looks after their own health and helps create positive working environments</p> <p>Displays a Positive Attitude: Has a positive attitude and sees projects and work through to completion</p> <p>Demonstrates Organizational Capabilities: Uses communication to overcome limited personnel levels and maximize teamwork</p>	<p>Earns Customer Trust: Exhibits a dedication to reliable supply and quality assurance and responds with sincerity</p> <p>Exhibits a Well-Formed Character: Maintains an agreeable temperament and promotes mutual trust and respect</p> <p>Endeavors to Fulfill Responsibility to Society: Works to comply with safety, security, and environmental standards, as well as with social norms</p>	<p>Knows the Customer: Responds to customers' expectations and interests</p> <p>Knows Himself/Herself: Works to realize personal goals and acquire knowledge and skills crucial to a professional and strives to act independently</p> <p>Knows Society: Strives to be open, grasp changes, and looks to the future</p>

The Nippon Sanso Holdings Group Philosophy has the tagline "The Gas Professionals." To nurture such professionals with a sense of mission and a desire to contribute to society and the world, it is important to focus on the qualities of health, integrity, and resourcefulness. These values have been inherited by the Company from the time of its predecessor, the former Taiyo Nippon Sanso Corporation. Each operating company will focus on these essential qualities, making reference to its own unique values as well and modifying them into a concept that is easy to understand. Since health, integrity, and resourcefulness are shared by all Group companies, including Thermos, which operates globally, employees say that they find them easy to understand.

Strategy for Improving Employee Engagement

The NSHD Group is making a focused effort to improve employee engagement by sharing and understanding the Group Philosophy and Group Vision. As a group that operates globally, we have taken measures to advance employee engagement such as promoting human resource exchange programs, diversity and inclusion, and improving NSHD's personnel systems. From the perspective of diversity and inclusion, from FYE2023, we have set "rate of female

employees" and "rate of female management posts" as non-financial KPIs for the first time. We will not only strive to expand opportunities for participation by female employees but also to create an organization and systems befitting a global company. In addition, with regard to improving employee engagement, we are currently conducting a global employee engagement survey, the results of which will be reflected in our human resource strategies going forward.

Message from Head of the HR Division

Basic Approach

We are approaching the third year since the COVID-19 pandemic spread around the world. I would like first to express my profound pride and appreciation for the Group's employees worldwide, who have carried out their roles as essential workers during this time and fulfilled the Company's mission to society.

Our new medium-term management plan, NS Vision 2026, started in April 2022. Up until now, our plans have focused mainly on profitability, but this plan adds to that targets related to the SDGs, which are an increasing social concern, as we reaffirm the need for the NSHD Group's business activities to help resolve issues for customers and society in general. To achieve the goals of NS Vision 2026, each operating company has planned a variety of actions, and the execution of these depends solely on the strength of our human resources. Moreover, to leverage this strength, it is important to create an environment that includes respect for human rights, diversity, training systems, and treatment systems, and to build a corporate culture in which people can be confident in their mental health safety.

Furthermore, as I am continually saying, the core quality of human resources is integrity. This is an essential quality underpinning our corporate activities, including aspects such as safety, which is of the highest importance to the Group. Without integrity, we cannot earn the trust of any of our stakeholders, including investors. With integrity providing a foundation, the Group will work toward realizing a comfortable future for people, society, and the earth. To this end, I believe it is essential that we secure, develop, and circulate human resources who are able to accept different regional values, customs, and cultures, as well as diversity in terms of gender, race, and so forth.

Human Resource Exchanges

We are promoting the creation of a human resource exchange system as an action plan under NS Vision 2026. We recognize that human resource exchanges is an extremely effective means of encouraging innovation and increasing work productivity. The Group has already been promoting initiatives to enhance its comprehensive capabilities by sharing the

points where each operating company excels, and this is starting to produce significant productivity gains. To make positive changes in long-ingrained work processes, it is important to share opinions with people who have different values and gain new insights from them. In several projects, such as the drive toward carbon neutrality, the employees of respective operating companies come together via networks to engage in lively discussions. Talented employees throughout the world use both real and virtual formats to exchange views with one another, enabling even better knowledge and results for both companies and individuals. We are therefore working to establish systems for communication to promote exchanges of opinions. Regarding IT security, we have already built an organization that assigns the best people to the right positions across operating companies. We consider the continued assignment of the optimal human resources to each division in every organization of the NSHD Group to be the ultimate human resource exchange.

Work Styles

Another important priority from the perspective of securing diversity and promoting active roles for women is to enhance our systems for creating comfortable working environments. In the non-financial KPIs of the new medium-term management plan, we have included female employees as a rate of female employees and a rate of female management posts. The Group has

a high percentage of female employees and managers in Europe, parts of Southeast Asia, and at Thermos, while the percentage is low in Japan and the United States. We will create an environment, system, and training programs to enable everyone to achieve their fullest potential regardless of gender.

From another perspective, the spread of the COVID-19 pandemic has led to various discussions on productivity, mainly regarding the pros and cons of work style-related matters. In particular, with regard to remote working, each company is thinking about the balance of working remotely and in the office, seeking to find the best approach through trial and error in terms of productivity, innovation, and mental health. NSHD's HR Department will review work styles while sharing best practices with its operating companies, aiming to improve employees' work-life balance and support each company and community in taking measures suitable for their respective situations.

The Group has excellent talented human resources all over the world. I am confident that all employees will commit themselves deeply to the Company's Vision and Mission and carry out their duties toward the achievement of NS Vision 2026, thereby growing as people and contributing to society and the earth, working with pride as "The Gas Professionals," or Thermos professionals.

I believe it is essential that we secure, develop, and circulate human resources who are able to accept different regional values, customs, and cultures, as well as diversity in terms of gender, race, and so forth.



Satoshi Wataru

Senior Executive Officer of Group Human Resources & Corporate Secretariat Office, General Manager of Human Resources and Chief Health Officer (CHO)
Nippon Sanso Holdings Corporation
(Additionally appointed as General Manager of Human Resources and Head of Corporate Unit, Member of the Board, Senior Executive Officer, Taiyo Nippon Sanso Corporation)

Hot Topics in Human Resources

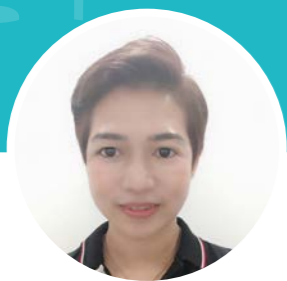
Asia and Oceania

In the Asia and Oceania region, Nippon Sanso Holdings Singapore Pte. Ltd. (NSHS) is the Group’s flagship company in Southeast Asia and is expanding its human resource development initiatives to other operating companies in the area. NSHS aims to build a talent pool* for a diverse team of “The Gas Professionals” by focusing on the development and education of leaders, managers, and employees; employee engagement; and nurturing diverse global talent.

* Securing talent over the medium to long term as well as the mechanism for securing such talent

Next-Generation Leadership Development Program

The next-generation leadership development program started with an online webinar format in April 2021 and is now in its second year. Over a two-year period, approximately 30 next-generation leader participants develop the necessary competencies for leadership using two programs—Nippon Sanso ASEAN+ Leaders Sandbox VR® and C-Suite-LED-Talk Series®. The courses cover business strategy, engineering, safety, compliance, global trends in human resources, as well as the leadership competency model of “Managing Self, Leading Others.” The participants took part in a total of 15 webinars during the first year, which also provided opportunities for discussion regarding measures for responding to a situation of increasing uncertainty, such as the COVID-19 pandemic.



Sudarat Klaipong

Supervisor, Purchasing Section, Admin
Taiyo Gases Co., Ltd.



I want to use the knowledge I have gained from the program to make an even greater contribution to the company.

Participating in the next-generation leadership development program has given me opportunities to acquire core skills to be an effective leader. Through the leadership competency model of “Managing Self, Leading Others,” I have learned various skills that I have applied in my day-to-day work. There were also sessions for me to learn about global trends in the industrial gases industry, which I was able to research on various topics and present to the rest. In addition, I had opportunities to make friends and interact with colleagues in different subsidiaries in the Asia and Oceania region. As a Thai, I have come up against the language barrier, but I am determined to use the knowledge gained from the program to make an even greater contribution to the company. I look forward to progressing my career even further at Taiyo Gases Co., Ltd.



Wilson Tan

Manager, Special Project, Engineering
Nippon Sanso Holding Singapore Pte. Ltd.



I want to grow in step with the organization and take my career to a higher level.

I participated in the next-generation leadership development program with the goal of gaining opportunities for self-improvement and effective networking. In the program, I was able to increase my knowledge by exchanging ideas during discussion sessions, taking part in quizzes, and viewing articles and videos about personal growth. I was encouraged to apply what I learned in my actual work, and this enabled me to acquire the skills needed for a leader to constantly push my own boundaries and maintain reliability. Through the program, I was able to connect with like-minded people and exchange opinions in a direct manner, which I believe will lead to future innovation in the organization. I want to grow in step with the organization and take my career to a higher level.

Europe

Nippon Gases Euro-Holding S.L.U. (NGE) has adopted safety, compliance, and diversity and inclusion as its conduct guidelines. We run programs for supporting women and increasing awareness of the SDGs through NGE’s digital HR tool, PeopleHub. NGE has a strongly rooted awareness that the foundation of its business strategy is “People Excellence.” In FYE2022, we strengthened various initiatives and programs, such as the Women’s Sponsorship Program and succession planning for attracting and retaining talent.

Women’s Sponsorship Program

As a measure to promote diversity and inclusion, NGE launched the Women’s Sponsorship Program in 2020. By promoting the visibility and growth of female managers, we aim to promote career mobility and to advance women to upper management. The first program ran through to May 2022, with 15 participants, each assigned a sponsor from the executive management, including the CEO. The 15 participants were given opportunities for development, networking, and visibility through the PeopleHub programs and through close sharing of information and opinions with their sponsors.



Daniela Savalli

IT JDE Process Specialist
Nippon Gases Italia S.r.l.



Through participation in the program, I was given an opportunity to develop extremely important and useful skills and capabilities for the future.

I was selected as one of a small number of participants for the mentoring program for female employees. I decided to join because I thought it would be a great opportunity for my personal and professional development. I was able to communicate with all of the participants in the program, and received comprehensive support from my sponsor. The sponsors take their roles very seriously and made every effort to help us improve our activities. Through participation in the program, I was given an opportunity to develop extremely important and useful skills and capabilities for the future, such as effective communication, collaboration, and organization. On top of that I gained visibility and expanded my network.



José María Martínez Gallo

European Operations Director
Nippon Gases Euro-Holding S.L.U.



This structured program allowed both mentors and mentees from different nationalities, backgrounds, and fields of expertise to learn from each other, and start building a professional network.

In this program, 15 female participants are assigned mentors through a matching process. This structured program allowed both mentors and mentees from different nationalities, backgrounds, and fields of expertise to learn from each other, and start building a professional network. The main purpose of the program is to increase career mobility and visibility for female employees at NGE, to provide a space for promoting development opportunities, and to increase diversity. Looking at Daniela, who participated in the program, I feel that her ability to communicate effectively with customers and employees improved, enabling resolution of internal conflicts and so forth. We look forward to having people with abundant professional knowledge participate in the program and create an environment where they can develop their skills.

Roundtable Discussion

What Opportunities Do NSHD Group Employees Have in Order to Realize Their Personal Goals through Business?

In the medium-term management plan NS Vision 2026, we have emphasized increasing employee engagement. With the announcement of the plan, we conducted a discussion between five young employees who are actively working in our four geographic hubs and the Thermos business and HR Department Manager Yasukazu Takada of the HR Division at Nippon Sanso Holdings. The participants discussed their ideas regarding their sense of purpose in the workplace and realizing their personal goals through business. They also considered the kind of organizational culture that is needed to increase employee engagement going forward.



What the young employees have learned through their careers

Takada To begin, I would like to ask you to introduce yourselves and tell us about your career up to now. Also, please share some of the challenging experiences or things that you have learned in your career.

Suzuki I joined Thermos as a new graduate in 2012. My first assignment was with the Sales Division, where I was responsible for sales to customers such as home centers, supermarkets, and sports equipment mass retailers. In 2015, I was assigned to the Advertising and Promotion Department, where I was mainly in charge of storefront promotions, using my experience in sales. Ever since then, I've learned to think and plan along the lines of how to capture retail sale spaces as a brand and what message we want to communicate to consumers, rather than simply focusing on one product.

After that, my involvement expanded beyond storefront promotions to include larger projects such as advertising and general promotion. Today, I am the leader of the promotion group, providing a wide range of operation support for public relations, events, trade shows, and so forth. Through my work, I have many opportunities to interact directly with customers. When I can see that our message has really gotten through to consumers as a result of our branding and promotion, I feel a real sense of satisfaction.

Mustakas I have really been looking forward to this meeting. Thank you for having me here. I joined Matheson Tri-Gas (MTG) when it acquired my previous company in the same sector in 2016. This was one of the most significant and meaningful events of my life. After joining MTG, I was in

charge of corporate sales of bulk gases for three years. Since then, I have been working as General Manager of the U.S. Eastern Region, a role in which I am responsible for meeting targets on safety, quality control, compliance, and growth through profitability. The most difficult challenge of my career to date was responding to COVID-19; but I learned various things through the process of facing difficulties, and I am proud that we managed to continue our essential business operations. MTG's corporate culture has a deeply entrenched emphasis on safety. Naturally, we take safety very seriously both as a company and as a team, but when I consider that this also helps indirectly to ensure the safety of each employees' family, then I feel extremely fulfilled in my role.

Dillon I am very happy to meet all of you. After graduating from university in 2011, I worked in a pharmaceutical company for about two and a half years, mainly in manufacturing

cost accounting, where I was responsible for formulating cost models and so forth. After that, I worked as the manager of a production division at another company, before transferring to Supagas Pty Ltd to brush up my accounting skills again, where I worked in management accounting and financial accounting. I didn't have much experience in financial accounting, but Supagas gave me the opportunity, which enabled me to acquire knowledge and build up skills in a new field. In the five years since I started my career at Supagas, the company itself has also grown significantly. When I was interviewed for Supagas, the interviewer made an impression on me by commenting that Supagas is a small fish in a big pond. I interpreted that comment to mean there would be many chances to achieve significant growth. I love being able to put my name on something that I have made and say with pride, "I am the person who made this." I am currently feeling

Roundtable Discussion:

What Opportunities Do NSHD Group Employees Have in Order to Realize Their Personal Goals through Business?

fulfilled in my work in the accounting field, but I would also be keen for the opportunity to be involved in a new field.

Gutiérrez Hello. Thank you for giving me this opportunity to participate. I joined the company eight years ago through an internship while I was a university student. After completing the internship, I spent five years working in the European Bulk Distribution team working in standardization and optimization projects across Europe before moving one year ago to the position I hold now. I currently work in the Packaged Gas Distribution department at Nippon Gases España S.L.U. and I am also responsible for some of our warehouses. As an example of projects I have been involved in the past that aimed to optimize and standardize operations in the logistics field is the installation of onboard computers to save drivers' work hours. In my daily work, I am also involved in projects to reduce costs, improve productivity, and ensure safety. I think I was quite lucky to start my career in the European division, as I was able to meet people from several cultures, share different approaches, and learn from others' experiences, absorbing knowledge in each interaction. As I mentioned before, I started a new position a year ago, and it has been a big challenge for me to lead a new team during the pandemic. However, even when it was difficult to meet in person, we tried to keep our communication as close as possible, and I think we have succeeded in building a robust team.

Realizing personal goals in different ways

Takada Next, I would like to ask you what opportunities you find to realize your personal goals through business in the NSHD Group. What does realizing personal goals mean for you? And do you have an aspiration that you could only realize in the NSHD Group?

Nakamura One of the inherent characteristics of the NSHD Group is that it requires a lot of electric power for air separation. These days, there is strong social interest in the SDGs and in curbing CO₂ emissions. I have had an interest in food crises, having studied genetic engineering related to food at university. The food crisis is also caused in part by climate change, and if we can contribute to reducing CO₂ emissions by reducing the amount of electric power usage, then I think that indirectly we can help to stop food crises from worsening. I feel my personal goals are realized when I see that operations and industrial gas supplies are being conducted smoothly through my plant designs. I can really feel that we are providing powerful support behind the scenes.

Gutiérrez I want to do the kind of work that can provide added value to the company and to society. This means that I need to work as productively and efficiently as possible. Since I handle supplies and logistics, it is important to reduce long

Nakamura In the five years since I joined Taiyo Nippon Sanso Corporation, I have been assigned to the R&D Unit, where my main work is the design of the pre-purification adsorbers in ASUs for factories and plants. Recently, I conducted a series of experiments to obtain a design standard for a new adsorption material. By organizing that data, I also worked on creating a standard that enables the Japanese ASU design teams to make designs more easily. A major challenge for me recently was participating in a joint development project with an outside company. There were two challenging aspects. The first was how to explain the specialist content in an easy-to-understand manner to people from completely different fields. I made a real effort to maintain the quality of the specialist content while observing the responses of the other person to see if they had understood. The second was holding meetings during the pandemic. We held meetings with outside companies online, but it was difficult to read people's expressions, and often I could not tell if they had really understood or not.

Takada Thank you. The COVID-19 pandemic is unprecedented, and I am sure that everyone around the world has been experiencing similar difficulties.

travel distances and CO₂ emissions as much as possible, and we cannot take safety or compliance lightly at all. Moreover, for me it is also relevant to consider the working environment. I believe it is extremely important that my team members feel that they are listened to, respected, valued, and taken into account when they are working. Another key point is that we must never stop learning. I took up a new position in 2021, and I want to keep learning every second of the day and taking on new opportunities. I believe that by doing so I will realize my personal goals.

Dillon To realize my personal goals, I think it is necessary to take all kinds of opportunities to encourage my own growth. I believe that my personal goals should include learning skills, but it is also important to consider growth for the sake of the company. So, it is important that my growth as a professional result in some benefit for the company, and I think that is what it means to realize personal goals in my work. We also need to make sure that supervisors understand this.

Mustakas In my work, I aim to maintain a positive impact on my team and on my customers. One example of this is smiling. I also believe it is important to contribute to the environment and to ensure safety. With regard to customers, I really



feel great when customers see MTG as a partner rather than a simple vendor or supplier. It is very satisfying when we move past the simple relationship of a supplier and have a sense of growing together.

I have three sons. When I look at the medium-term management plan, it talks about sustainability and carbon-neutral initiatives, and when I think about having a positive impact on the future for my children from that perspective, I believe it leads to a sense of realizing my personal goals.

Suzuki My idea of realizing my personal goals is making sure that the Thermos brand is widely recognized by all, thereby realizing Thermos' corporate philosophy of "Thermos continues to introduce new kinds of lifestyles that are agreeable to people and society and also environmentally friendly."

Toward improving employee engagement

Takada The materiality chart (▶ P.32) presenting the key issues that the NSHD Group needs to address includes improvement of employee engagement. What kind of measures should the Group take to improve engagement? I would like to hear your ideas, either for your own company or for the entire Group.

Dillon I think it is extremely important that the supervisors explain clearly to the team what the company's goals and long-term vision are. I also think it is important for the management team to provide a sufficiently clear explanation, and to align employees' goals with those of the company. For example, when assigning new employees, it would be ideal to deploy them taking into account whether their personal goals align with what the company is trying to achieve. That would

Many Thermos products contribute to sustainability, and we believe that customers should not have to compromise on convenience. To communicate to customers that using Thermos products will enable them to realize a convenient lifestyle, I think it is important to have them pick the products up for themselves and try them out first.

Takada Thank you for your answers. I believe that everyone will have a different interpretation of a difficult question like "What does realizing personal goals mean for you?" I think having your own purpose in the workplace, so that you feel that your presence causes things to happen, is also a kind of realization of personal goals, as is realizing the mission that is given to us by the Company in a way—so it seems that it can take various forms.

certainly improve engagement and would also lead to the realization of personal goals.

Mustakas As Mr. Dillon said, the important thing when thinking about employee engagement is to view employees at the level of the individual. It is important to have a culture of valuing connections between individuals, and by caring also about team members' lives outside of work, relationships of trust can be cultivated with them. I think it is really important to show an ability to empathize in the sense of valuing team members as fellow human beings, not only in the context of work. This makes it easier to get team members to come onboard with various initiatives and encourages them to feel passionate about work.

Roundtable Discussion:

What Opportunities Do NSHD Group Employees Have in Order to Realize Their Personal Goals through Business?

Gutiérrez I also agree with these comments. In addition, especially in the last few years I have noticed that in Europe a number of systems have been put in place to promote employee growth. It is also important for management to gain mutual understanding on where targets are to be set. I myself have found that setting agreed targets is extremely effective for increasing my motivation. There is also a wealth of activities in Europe related to diversity. For example, this week the company held interviews for female engineers. They were asked about whether they felt they could work comfortably and whether there are any areas where diversity has yet to advance. I think this is a wonderful initiative that will help to improve employee engagement.

Nakamura Like Ms. Gutiérrez, I am also focusing on diversity. My idea of diversity is to pursue comfort. With regard to engineers, in particular, since there are few women in these roles they tend to be less comfortable for women. As a result, I would also like to see a diversity program like the one described by Ms. Gutiérrez introduced at Taiyo Nippon Sanso. I have seen commercial safety training videos that have gender and generation bias, which made me feel extremely uncomfortable. To prevent this kind of thing, I think it would be good to provide opportunities for everyone to think about

the issues in a discussion format. I believe that would help to achieve the kind of diversity I am thinking about.

Mustakas Recently, MTG hired a female driver. She has been an outstanding team member from the perspectives of safety awareness, work quality, and work ethics. I would like to see more female professionals like her in the industrial gases sector, and I would like to offer them equal opportunities. In connection to what Ms. Nakamura was saying, I think that up until now there has been a chronic bias in thinking that drivers should be male. However, this female driver is also extremely talented, and I think it was an excellent decision of the company to hire her. It is a very good sign.

Suzuki At Thermos, we are also working to increase the ratio of female managers from a perspective of diversity. But looking at people from my generation, I feel that the difficulties lie in being unable to fully return to work after major life events such as marriage and child care, and being unable to advance a career due to the interruption in employee evaluations. To increase the number of female managers, I think it is important to create a system that can cover these points and an evaluation system that will enable them to advance to management positions after returning to the workplace.

Aiming to carry out the medium-term management plan through work

Takada Under the new medium-term management plan, strategies have been created for five Groupwide focused fields and for the four geographic hubs and the Thermos business. How do you all view these strategies? And how do you want to contribute to them through your own work?

Nakamura I have an interest in improving operational excellence. When we deal with other departments, we are often in the dark about how the other department works, and so we are working every day to identify problems and queries. In terms of operational excellence, I would like to make it possible for all divisions to share knowledge and eliminate waste. I think one way that I can contribute directly is through using DX to eliminate waste. For example, we still use a paper-based system for cylinder management, but if we were to adopt easy inventory management using tags, we could reduce waste and labor, and that would improve operational excellence.

Dillon At Supagas, I feel that the price of LP gas is extremely high. Previously, we have been able to forecast price movements to a certain degree, but now this has become incredibly difficult to do. In this environment, I think it is important to consider how to grow while maintaining profit margins. Currently, the high LP gas prices are affecting sales prices. However, it is important to think not only of increasing sales prices but also of reducing costs. If we can reduce costs, then we can eliminate the need to pass high prices on to sales prices, which should help us to be more competitive. It is from this perspective that I want to contribute to realizing the medium-term management plan.

Suzuki Thermos is the only B2C company in the NSHD Group. I feel that I can contribute to the medium-term management plan focused field of sustainability management by increasing recognition of the Thermos brand and products to encourage their use for sustainability activities that fit into daily life. My work is directly related to increasing brand recognition, and so I plan to make an effort in this area.

Mustakas We need to place even more emphasis on collaboration with regard to matters such as providing equal opportunities to employees, developing successors, and contributing to sustainability. Going forward, I think that sharing and implementing best practices will become important in this regard. For example, activities that have succeeded at Thermos could also be applied in MTG's business. Even between different segments, there are bound to be things to learn

with regard to streamlining operations, recovering costs, and human resources. Moreover, having incorporated sustainability concepts, I want to build long-term relationships with customers and take on new projects. I am very proud to be a member of Nippon Sanso Holdings Group.

Gutiérrez Sustainability is a consistent theme throughout the medium-term management plan, so I think that executing the plan will bring good results and lead to our success as a company. The five focused fields of the plan are extremely reasonable. Personally, I believe that I can contribute to achieving the plan through DX. By conducting various forms of analysis and actively utilizing big data, I expect to minimize the impact of soaring energy prices resulting from the recent Russia-Ukrainian crisis, economic crisis, and changes of legislation we have been experiencing the last few months or even years.

Takada Thank you all for sharing your enthusiasm. The contribution and influence of the young employees working on the front lines are vital for achieving our financial and non-financial targets through the five Groupwide focused fields and segment-specific strategies. In February 2021, Nippon Sanso Holdings created a global policy regarding respect for human rights, contribution to local communities, and employment and labor. Based on this policy, I would like to coordinate with the Group's internal operating companies and promote efforts to increase diversity and inclusion, attract and develop talent, and improve employee engagement, which are emphasized in the medium-term management plan as well. In the area of diversity and inclusion, we will implement initiatives centered on further encouraging active participation of women. We will share information between Group HR divisions regarding the best practices of regions that are comparatively advanced in this regard, aiming to support and accelerate their responses. In addition, as part of an effort to attract and develop human resources who can work across regional and business boundaries and drive initiatives to tackle Groupwide issues, we will also focus on creating human resource exchange schemes within the Group. As members of the same NSHD Group, I would like all of us to make an effort to achieve medium-term management plan NS Vision 2026. Please keep up your good work and thank you for participating in today's discussion. I was glad to hear your views.



OUR MANAGEMENT COMMITMENT

Corporate Governance

Nippon Sanso Holdings aims to grow sustainably and increase its corporate value over the long term. We therefore consider that the essence of corporate governance is to consider the position of stakeholders, including shareholders, customers, employees, and local communities, and to ensure transparency and fairness in decision-making. This definition includes leveraging our resources effectively to increase the vitality of management through swift and resolute decision-making. We will operate under a highly effective corporate governance system toward achieving the goals of medium-term management plan NS Vision 2026.



Corporate Governance

Basic Approach to Corporate Governance

Nippon Sanso Holdings' Board of Directors has formulated the Principles of Corporate Governance*, which provide guidance on corporate governance. Realizing the Company's sustainable growth and long-term increase in corporate value, and benefiting all stakeholders, including shareholders, customers, employees, suppliers, and local communities,

involves ensuring the fairness and transparency of decision-making. Moreover, we are working to enhance corporate governance, believing that its essence lies in making effective use of our management resources, and to increase the vitality of management through swift and conclusive decision-making.

Measures to Strengthen Corporate Governance

2015	June	Reduced the number of members as provided in our Articles of Incorporation (from 20 or less to 15 or less); reduced the number of directors (from 16 to 11); and appointed two independent outside directors to speed decision-making
	June–July	Established the position of Chief Compliance Officer (CCO) to ensure effective compliance Established the Internal Controls Office to assist the CCO
	October	Established the Principles of Corporate Governance and disclosure policies
2016	June	Established the Advisory Committee on Appointments and Remuneration (consisting of the Chairman, President CEO, and outside directors) to improve the transparency and objectivity of decisions regarding the appointment and compensation of officers and other personnel Introduced performance-linked executive compensation tied to the results of the medium-term management plan as an incentive for medium-term growth
	June	Reduced the number of directors from 10 to seven (including two independent outside directors) to establish further separation of business execution and supervision, as well as to strengthen the supervisory function of the Board of Directors
2017	February	Appointed a CCO and Regional Chief Compliance Officers (RCCOs) in North America, East Asia, Taiwan, Southeast Asia, India, and Australia to strengthen the Group compliance system; established global compliance management regulations, regarded as a unified Group standard; and held a meeting of the Global Compliance Committee, attended by RCCOs under the GCCO to share information on the status of legal compliance within the Group, the progress of legal actions, and other topics
	June	Established the Technical Academy to serve as an in-house training facility to provide education on security and disseminate technology from the perspective of technology risk management
2018	March	Appointed RCCOs in Europe
	June	Appointed Thomas Scott Kallman (Chairman and CEO, Matheson Tri-Gas, Inc.), who is responsible for the Gas Business in the United States, and Eduardo Gil Elejoste (Chairman and President, Nippon Gases Euro-Holding S.L.U.), who is responsible for the Gas Business in Europe, as directors to strengthen our global management structure for oversight and decision-making from more diverse perspectives
2019	October	Transitioned to a holding company structure and changed company name to Nippon Sanso Holdings Corporation
2020	June	Appointed an additional independent outside director (from two to three independent outside directors), increasing the ratio of outside directors to one-third of the Board of Directors, and thereby diversifying its composition and strengthening its supervisory function
2021	June	Appointed two additional independent outside directors (from three to five directors) to the Board of Directors, increasing the ratio of independent outside directors to a majority, in order to diversify its composition and strengthen its supervisory function
2022		

* Principles of Corporate Governance
https://www.nippon-sanso-hd.co.jp/Portals/0/images/company/governance/nippon-sanso-holdings-corporate-governance-principles_en.pdf

Evaluation of the Board of Directors' Effectiveness

Our Principles of Corporate Governance stipulate that the Board of Directors carry out an annual analysis and evaluation of its overall effectiveness based on self-evaluations by each director, and make a summary of the results public in a timely and appropriate manner. The Board of Directors

continues to conduct analyses and evaluations of its effectiveness and make constant efforts to enhance it. Based on the results of the Board of Directors' effectiveness evaluation for FYE2021, the Board conducted the following main initiatives in FYE2022.

Evaluation Process

1	January	The Board of Directors' Secretariat briefs the directors on the method of Board evaluation, items for evaluation, and schedule for FYE2022.
2	February	Directors submit their evaluations to the Board of Directors' Secretariat.
3	March	The Board of Directors' Secretariat distributes the report on evaluations to the directors.
4	April	The Board discusses the evaluations.
5	May	Based on the above discussions, the Board decides an annual schedule, including details of what is to be discussed on a priority basis by the FYE2023 Board.

Evaluation Items (Overview)

- 1) What the Board was or was not able to effectively engage in during this fiscal year regarding its four responsibilities* laid out in the Principles of Corporate Governance
- 2) What the Board was or was not able to discuss effectively in formulating the new medium-term management plan
- 3) What the Board should discuss and monitor on a priority basis in the next fiscal year
- 4) Composition of the Board
- 5) Activities of the Advisory Committee on Appointments and Remuneration
- 6) Management of Board meetings, support for independent outside directors, training of directors

* (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 gave the self-evaluation that it effectively played the role it was expected to perform. From among the directors, some points were rated highly regarding Board activities in FYE2022, including the following:

- 1) By appointing an American CFO who has work experience in Europe and allowing him to report on business results from a global point of view, it has become possible to understand the status of our Group's management in greater detail.
- 2) With the CEOs of our U.S. and European operations appointed as Board members, we are able to have Board discussions while always being aware of business operations in the United States and Europe.
- 3) By appointing a female director, we have been able to realize Board diversity.
- 4) The Board met five times to discuss formulation of the new medium-term management plan, and each Board meeting was able to conduct useful discussions thanks to voluntary participation in the debate by the representatives of each business segment.
- 5) By setting non-financial KPIs in the medium-term management plan, we were able to show society our posture toward sustainability.

Future Issues

Some directors requested that the following points be discussed further at Board meetings. The Board agreed to conduct further discussions on these points in FYE2023.

- 1) Our Company's role as a holding company should be discussed continuously.
- 2) The Board should continue discussions as to how the Company can contribute to customers and society through its business, including the hydrogen business, regarding the realization of carbon neutrality.
- 3) People experienced in business management should be appointed as independent outside directors.

Matters deemed as future issues in the Board's evaluation will be discussed continuously during the monitoring of the medium-term management plan, to be taken up at three Board meetings a year, and on other occasions.

Corporate Governance Structure

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 geographic hubs 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 multifaceted valuation of a wide range of risks based on expert knowledge informed by close contact with the front lines. We have therefore adopted the "company with an Audit & Supervisory Board" corporate governance model, under which the Board of Directors is responsible for making decisions related to business execution above a certain scale, including M&As and investments, and the Audit & Supervisory Board members themselves audit business activities.

Advisory Committee on Appointments and Remuneration

The Advisory Committee on Appointments and Remuneration consists of the Representative Director, President CEO and five independent outside directors, and is chaired by Akio Yamada (outside director). The committee receives requests for advice from the Board of Directors regarding selection of candidates for directors and Audit & Supervisory Board members, appointment and dismissal of the Representative Director, President CEO and executive officers, selection of the successor to the Representative Director, President CEO, and revision of internal rules regarding remuneration of directors. The committee reports the results of its deliberations back to the Board of Directors. Since the majority of the members of the Advisory Committee on Appointments and Remuneration are independent outside directors, it is able to ensure independence from the parent company in the appointment of management team members, thereby helping to ensure transparency and objectivity in the decision-making of the Board of Directors.

Management Committee

The Management Committee consists mainly of the Representative Director, President CEO and executive officers. Based on the Group's basic policies as determined by the Board of Directors, the committee deliberates and makes decisions on important matters related to the execution of duties by the Representative Director, President CEO.

Audit & Supervisory Board

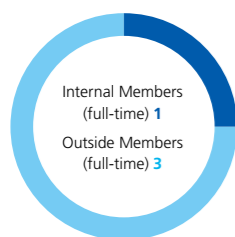
The Audit & Supervisory Board is an independent body entrusted by the shareholders to audit the decision-making process of directors and the state of business execution by management. The board conducts its business in accordance with applicable laws, regulations, the Company's Articles of Incorporation, and other rules. The Audit & Supervisory Board consists of four full-time members, including three outside members (two of whom are independent outside members). Each member of the board engages in audit activities from a neutral and objective perspective, bringing their expertise to the audit process. The board conducts a detailed discussion of the results of its audit activities, making recommendations as necessary and strives to ensure sound management. The Audit & Supervisory Board conducts the following types of activities in accordance with audit policies and plans as determined by the board on an annual basis.

- Attendance at important internal meetings (Board of Directors' meetings, Management Committee meetings, etc.)
- Interviews with directors, executive officers, and other members of senior management
- Inspection of important decision-making documents, etc.
- Audits of Japanese and overseas Group companies

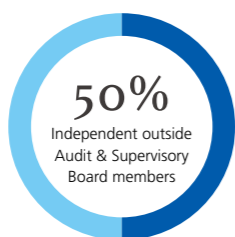
The Audit & Supervisory Board strives to improve the effectiveness of audits through close coordination with the Company's internal audit division, internal control division, and independent auditor. The board also engages in the regular exchange of information and opinions with outside directors.

We have established an independent office for the Audit & Supervisory Board. This office is staffed with full-time employees who assist members of the board in their duties and under their direction.

Audit & Supervisory Board structure

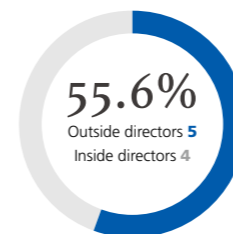


Independent outside Audit & Supervisory Board members as a percentage of total Audit & Supervisory Board members

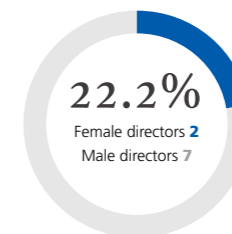


Board of Directors

Outside directors as a percentage of total Board of Directors' members



Female directors as a percentage of total Board of Directors' members



Nippon Sanso Holdings' Board of Directors consists of nine directors, with a majority of five being independent outside directors. This Board structure facilitates appropriate management decisions. Furthermore, two of the directors are non-Japanese and two are women, thereby achieving diversity in its composition. The Board meets monthly to discuss important matters and receive reports on the status of Nippon Sanso Holdings' businesses. The Board also oversees the execution of business by the Representative Director, President CEO.

Global Strategy Review Committee

The Global Strategy Review Committee meets once a year in principle, and consists of the Representative Director, President CEO, the vice president, executive officers, division managers, Audit & Supervisory Board members, and persons designated by the chairperson. Prior to the making of a resolution on the NSHD Group's forecasts for the next fiscal year, the committee confirms the details of each operating company's strategy and deliberates on the optimal allocation of resources across the entire Group. It also formulates the Group's management strategy and manages its progress. The committee formulates the medium-term management plan, sets quantitative and qualitative targets for achieving the plan, and manages operating results through quarterly monitoring. Among items determined by the Global Strategy Review Committee, specific countermeasures for case studies related to technology risk are determined at Technological Risk Liaison Committee meetings and other meetings held between Nippon Sanso Holdings and operating companies, then deployed globally.

Main Items at Meetings Held in FYE2022

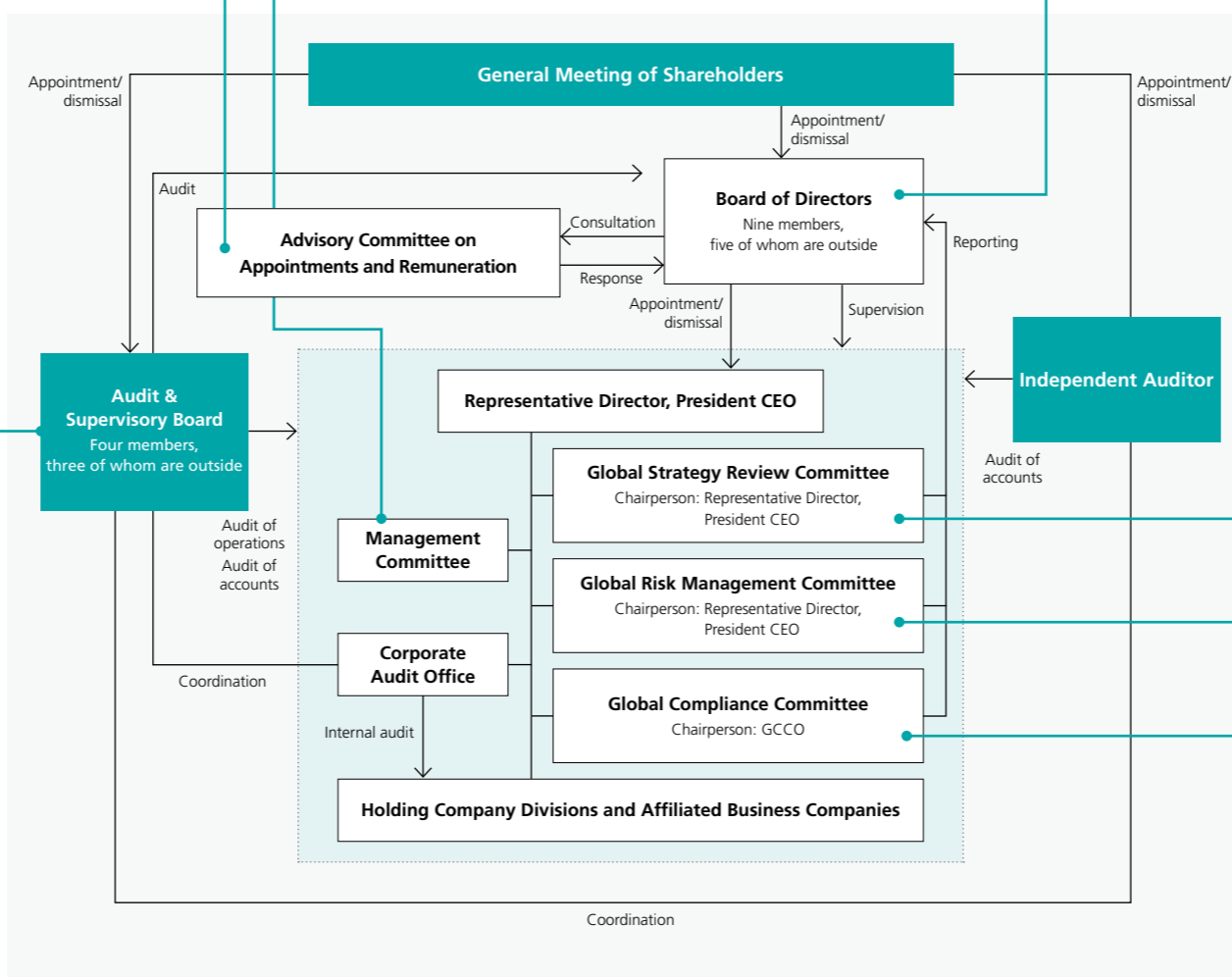
The following Groupwide management issues items were deliberated: Economic and business environment forecasts, financial targets, Group helium strategy, policy on sustainability initiatives, policy on carbon-neutrality-related initiatives, total electronics strategy, and Group R&D initiatives policy. The following operating company management issues were deliberated: Policy for initiatives to achieve forecasts for FYE2023 and policy for initiatives regarding sustainability.

Global Risk Management Committee

The Global Risk Management Committee meets once a year in principle and comprises the Representative Director, President CEO, who chairs the committee, directors, Audit & Supervisory Board members, the CCO, executive officers, division managers, operating company presidents, and the persons in charge of promoting regional risk management. The committee deliberates on the selection of the Group's material risks, matters related to countermeasures, basic policy on risk management for all Group companies, and matters related to regulations and plans.

Global Compliance Committee

The Global Compliance Committee is convened once a year in principle by the GCCO to ensure the effectiveness of the Group's compliance. At the meetings, the Compliance Promotion Policy and compliance promotion activities in each area are shared, and individual issues are discussed as necessary.



Remuneration for Officers

Remuneration for directors and Audit & Supervisory Board members is determined by resolution at the annual General Meeting of Shareholders in line with the total compensation limits for directors and Audit & Supervisory Board members. The amount of remuneration for each director is determined in accordance with the remuneration standard resolved at the Board of Directors by the Representative Director, President CEO, who is delegated by the Board of Directors, while remuneration for each Audit & Supervisory Board member is determined by discussion among the Audit & Supervisory Board members. 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 remuneration

proposed after being consulted by the Board of Directors and the Audit & Supervisory Board and reports the results of its deliberations to the Board of Directors and the Audit & Supervisory Board. Directors' remuneration consists of basic monthly remuneration and performance-linked bonuses, and is reflected in the amount paid to each person.

At its Board of Directors' meeting held on June 17, 2022, the Company decided to add non-financial KPI-linked bonuses to directors' remuneration from July 2022 onward. In addition, directors and outside directors whose main duties are as officers of subsidiaries are paid only the fixed basic monthly remuneration for remuneration as directors of Nippon Sanso Holdings.

Remuneration for Audit & Supervisory Board members, including outside members, consists of base salary.

Type of Remuneration	Ratio	Type of Remuneration	Ratio	Evaluation indicator	Evaluation weight	
Basic monthly remuneration (fixed)	Approx. 6	Basic monthly remuneration (fixed)	Approx. 5	Fixed remuneration by rank	-	
		Performance-linked bonuses (variable)	4	Financial KPI-linked bonuses	The amount of rank-specific remuneration is linked to the degree of achievement of the annual budget targeting the medium-term management plan (consolidated revenue and core operating profit margin) and the degree of earnings growth from the previous fiscal year (consolidated revenue, core operating profit, and profit attributable to owners of parent).	Degree of achievement of budget for each fiscal year targeted in the medium-term management plan
• Consolidated revenue	20.5%					
• Consolidated core operating profit margin	20.5%					
Performance-linked bonuses (variable)*1	4	Non-financial KPI-linked bonuses	1	Linked to the degree of achievement of (certain) non-financial KPIs set in the medium-term management plan	Year-on-year earnings growth	
					• Consolidated revenue	19.6%
					• Consolidated core operating profit	19.6%
					• Profit attributable to owners of parent	19.6%
					• Lost time injury rate	-
					• Rate of receiving compliance training	-

*1 Performance-linked bonuses (variable) = Rank-specific standard amount x Coefficient based on evaluation related to performance-linked bonuses
 *2 Since the medium-term management plan had not been formulated yet for FYE2022, "degree of achievement in the budget of FYE2022 (consolidated revenue and core operating profit margin)" is used to calculate directors' performance-linked bonuses (approved by the Board of Directors' meeting held on June 18, 2021), instead of "degree of achievement of the annual budget targeting the medium-term management plan (consolidated revenue and core operating profit margin)" specified by the Company's internal regulations on remuneration for directors.

Relationship with the Parent Company

We concluded a basic agreement with our parent company, Mitsubishi Chemical Group Corporation (MCG), on May 13, 2014. Under this agreement, MCG committed to respecting our autonomy, supporting and cooperating with us under the MCG Group Management Regulations. In turn, we conduct all business functions independently, including management, finance, sales, and research and development.

In situations where the interests of the parent company conflict with shareholders other than shareholders of the parent company, the directors of Nippon Sanso Holdings act to avoid harm to the interests of the shareholders other than the shareholders of the parent company. We have appointed five independent outside directors and two full-time independent outside Audit & Supervisory Board members.

These individuals oversee the Company to ensure there are no conflicts of interest between the parent company and shareholders other than shareholders of the parent company. Furthermore, we have voluntarily established the Advisory Committee on Appointments and Remuneration*, which ensures independence from the parent company in the selection of a management team. While parent company MCG is a holding company, the Nippon Sanso Holdings Group and Mitsubishi Chemical Corporation, the main operating company of the MCG Group, engage in transactions, totaling ¥5,784 million in FYE2022.

* This is a voluntary committee of the Company that advises the Board of directors on selection of candidates for directors and Audit & Supervisory Board members as well as the appointment and dismissal of the Representative Director, President CEO and other executive officers.

Developing the Next Generation of Leaders

We recognize that fostering the next generation of management personnel is an important issue in our Group governance structure. The Advisory Committee on Appointments and Remuneration has been discussing a development plan for our next generation of managers. Part of these discussions concerns the qualities required of the next generation of management and policies for training. As the Nippon Sanso Holdings Group expands globally, we must develop human resources who have experience not only in Japan but also overseas, and have a thorough knowledge of our business.

We are aware of the small number of female managers in our European operations, and have implemented an active succession program for women to resolve this issue (▶P.77). In October 2020, each of the 15 participants in this 18-month program was assigned a member of management, including the President CEO, as a mentor. Top managers offered their mentees the benefit of experience, advice on overcoming challenges, and more. The program is designed to develop the next generation of managers, and we intend to introduce the program to other regions based on our success in Europe.

Training for Top Management

Facing an even faster pace of global business, we offer ongoing management training programs to foster decision-making skills reflecting the broad-based knowledge and insight required of our top managers. In November 2021, we conducted training for full-time directors, Audit & Supervisory Board members, and executive officers of Nippon Sanso Holdings and Taiyo Nippon Sanso, designed to deepen their

understanding of the latest laws and regulations regarding corporate governance, and to reaffirm the importance of handling their practical operations in accordance with the requirements of the internal control system (risk management) and laws and regulations, bearing in mind specific recent instances of corporate misconduct.

GCCO Message

I believe that what is required of us as we engage in business during this era of extreme uncertainty and risk is integrity.

The era in which we are now living is one in which risks that have been foreseen are unfortunately beginning to materialize. A pandemic caused by an unknown virus and geopolitical risks have come to pass in the form of COVID-19 and the Russia-Ukrainian crisis. Moreover, in this era it is also becoming increasingly complex to make value judgments. The rise of various types of social media, which was considered an effective tool for supporting communication and promoting mutual understanding, also has a darker side as it exacerbates division in society as well. More than anything, this is an era of dramatic transformation. Since the industrial revolution, people have advanced and expanded society with the power of huge amounts of fossil fuel; but in this era, we now have to completely revise this approach from the ground up.

I believe that what is required of us as we engage in business during this era of extreme uncertainty and risk is integrity. This means engaging in our work with integrity, in other words rigorously ensuring compliance, and monitoring the various envisaged risks with integrity, which is to say proper risk management.

At NSHD, rigorous compliance and appropriate risk management are considered the foundation of business management. We are therefore working to educate and create structures for these, and to build systems.

In the area of compliance, we are implementing measures based on thorough education, building and internal promotion of effective internal reporting systems, and active involvement and communication from the top management of each organization as we design our measures at each business entity to suit the characteristics of each region and business. In the area of risk management, recognizing that business strategy and risk management are two sides of the same coin, we have built an enterprise risk management structure, in which NSHD runs the Global Risk Management Committee and shares recognition of important risks, and monitors the risk response by each operating company.

I believe that the integrity of a company is ensured by the integrity of the individuals who work there. My mission as the Chief Compliance Officer (CCO) for the entire NSHD Group is to create systems that eliminate factors that hinder employees' efforts to practice integrity. I believe this will create the kind of corporate culture that empowers people to speak up when they have concerns regarding compliance or risk.



Kazuyuki Futamata
Senior Managing Executive Officer, Group Chief Compliance Officer (GCCO), (Taiyo Nippon Sanso Corporation GCCO), with responsibility for Groupwide internal control

Compliance Promotion

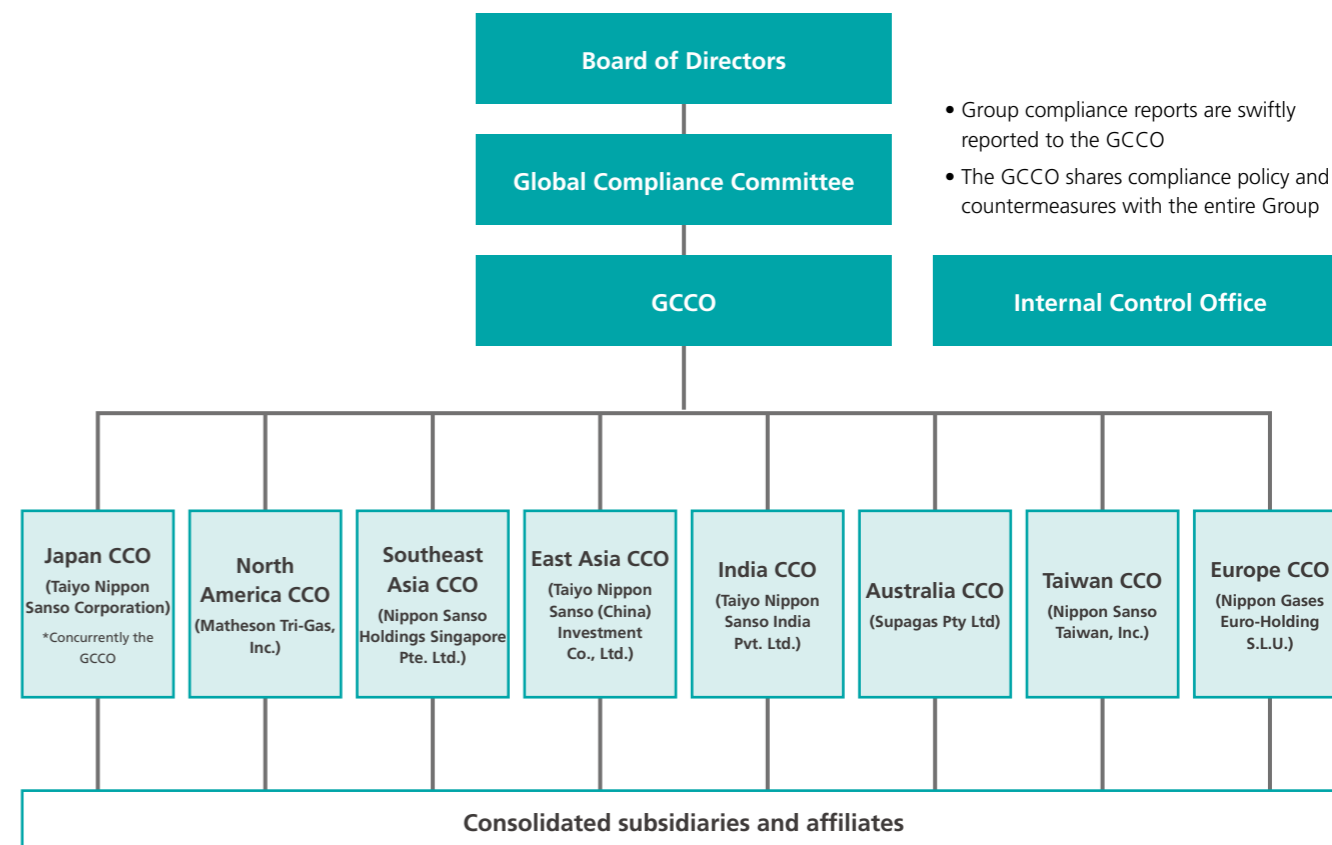
Nippon Sanso Holdings Corporation has determined a basic compliance policy for the Group and established organizations and regulations to ensure its effectiveness. We appointed a Group Chief Compliance Officer (GCCO) for the Company and Regional Chief Compliance Officers (RCCOs) in every region overseas. The GCCO conducts training in line with compliance risks in Japan and overseas, clarifying rules for responding to compliance violations and communicating these rules to all Group companies. The GCCO and RCCOs have the authority to instruct and oversee compliance activities, striving to improve and gain support for compliance across the Group.

The GCCO and RCCOs have established an internal communication system in Japan and overseas to ensure a system that enables them to report without fear of disadvantage in the event that they discover a compliance violation or potential violation within the NSHD Group.

In addition, the NSHD Group continuously conducts compliance education and training for employees at every level.

The above activities are shared among all CCOs when they come together for the annual Global Compliance Committee meeting, promoting a unified approach to compliance promotion for all regions worldwide.

Compliance Structure



- Group compliance reports are swiftly reported to the GCCO
- The GCCO shares compliance policy and countermeasures with the entire Group

RCCOs Message

The NSHD Group's compliance promotion activities are being conducted in each region under the leadership of the Regional Chief Compliance Officers (RCCOs), who have detailed knowledge of the business as well as the characteristics and status of each region.

For FYE2022, the RCCOs for North America and Southeast Asia will introduce their fundamental philosophies, frameworks, and various measures on promoting compliance.

Message from North America CCO

Approach to compliance in North America and its distinctive characteristics

At Matheson Tri-Gas, Inc. (MTG), we view compliance as key to the success of our business. Compliance provides our workforce with the legal and regulatory boundaries within which we conduct business. Within these legal and regulatory boundaries, our compliance program also provides the ethical framework to make our business decisions. We encourage our team to make ethical decisions within a culture of integrity based on our corporate values and goals. Our culture is driven from the top management and reinforced throughout our management ranks. Each decision we make is set with ethical boundaries to identify what good can come of the decision and, alternately, what harm can come from the decision.

Current compliance-related measures

With NSHD's sustainability focus, we have also now formalized the concepts of ESG into our ethical decision-making process. Overall, MTG's compliance program is detailed and robust. It starts with establishing policies and procedures applicable to all our employees, and is reinforced through

training on the legal and ethical boundaries established by such policies and procedures, providing guidance and support when making decisions within such boundaries, and implementing an anonymous whistleblower system where employees can be uninhibited in reporting potential compliance violations.

We empower our business team to make legal and ethical decisions when managing and mitigating the risks they are presented with. Our compliance goal is to continue to raise ethical awareness while acting within the confines of legal and regulatory boundaries.

Approach to compliance promotion system of Nippon Sanso Holdings Group as a whole

We coordinate all of our compliance efforts with NSHD and its global compliance program. And we continue to learn from other NSHD business groups as we develop our company-wide compliance initiatives. Overall, NSHD compliance has established a detailed compliance framework that all regional businesses will benefit from as we move forward in attaining our overall business goals and objectives.



Stephen Stroud

Executive Vice President-Administration,
Regional Chief Compliance Officer-North America, & General Counsel
Matheson Tri-Gas, Inc.

Message from Southeast Asia CCO

Approach to compliance in Southeast Asia and its distinctive characteristics

Southeast Asia is characterized by its diversity of laws and regulations, local business environments, and cultures spanning seven countries. To help realize integrated management of this diversity, we have put in place a compliance management framework, comprising Prevent, Detect, and Respond pillars. This serves as a basis and a roadmap for establishing compliance at each operating company.

We have been focusing particularly on the Prevent pillar as a baseline for compliance steps and controls for all Southeast Asian operating companies. Based on this, all operating companies conduct a yearly compliance risk assessment to determine priority areas. In view of the limited resources of each company, we centrally develop an annual plan and activities to address these priority areas.

We hold monthly Compliance Community of Practice (CCoP) Meetings with the operating companies' compliance teams, at which we explain and discuss our initiatives to deepen mutual understanding. Moreover, we hold one-on-one meetings with each company, called Compliance Promotion Meetings, every two to four months, to engage closely with each compliance team on an individual level. Furthermore, we hold the Southeast Asia Regional Compliance Networking Meeting each year for compliance representatives to share their compliance promotion efforts and compliance risk assessment results, and to determine compliance risk priority areas, among others. Nippon Sanso Holdings GCCO Kazuyuki Futamata and the Nippon Sanso Holdings' compliance team attend.

In 2019 and 2020, we promoted the celebration of Compliance Awareness Week across Southeast Asia to increase the level of compliance awareness in this region. We developed this into Compliance Development Week in 2021 by bringing business ethics further to the forefront, and we plan to hold a similar event in 2022 as well.

Current compliance-related measures

In line with our focus on business ethics, we recently rolled out the Conflict-of-Interest Policy and the requirement for all

staff to make yearly conflict-of-interest declarations. Staff will acquire skills for making ethical decisions in gray areas by learning to apply the ethical decision-making framework introduced in 2021.

There is a high corruption risk in most of Southeast Asia. We therefore plan to launch an anti-gratification statement this year for operating companies' business partners to sign and to take a strong stand against corruption.

Furthermore, given the current heightened cybersecurity risk, we will include another cyber risk awareness training in FYE2023.

Approach to compliance promotion system of Nippon Sanso Holdings Group as a whole

Under Nippon Sanso Holdings' Global Compliance Management Policy, and as repeatedly emphasized by GCCO Futamata, compliance not only means the observance of laws and regulations, etc., but also includes observance of corporate ethics. Nippon Sanso Holdings' policy emphasizes corporate ethics, which resonates very much with our focus on business ethics in the Southeast Asia region since FYE2022. Nippon Sanso Holdings gives us flexibility to adapt our compliance programs and activities to the needs of this diverse region.

The annual Global Compliance Committee meeting is a great opportunity for Nippon Sanso Holdings to share day-to-day compliance best practices and measures as One Company, One Team.

Mission and Role as an RCCO

The main objective of the compliance promotion system is to ensure the effectiveness of compliance by Nippon Sanso Holdings Group companies in Southeast Asia, and I also consider this to be my mission.

My role as an RCCO is to be a catalyst to help our Southeast Asian operating companies to embrace compliance in line with this mission. It is through these efforts that I will strive to establish trust with all of our stakeholders.



Clara Teo

Legal & Compliance / Regional Compliance Officer
Senior Vice President
Nippon Sanso Holdings Singapore Pte. Ltd.

Risk Management

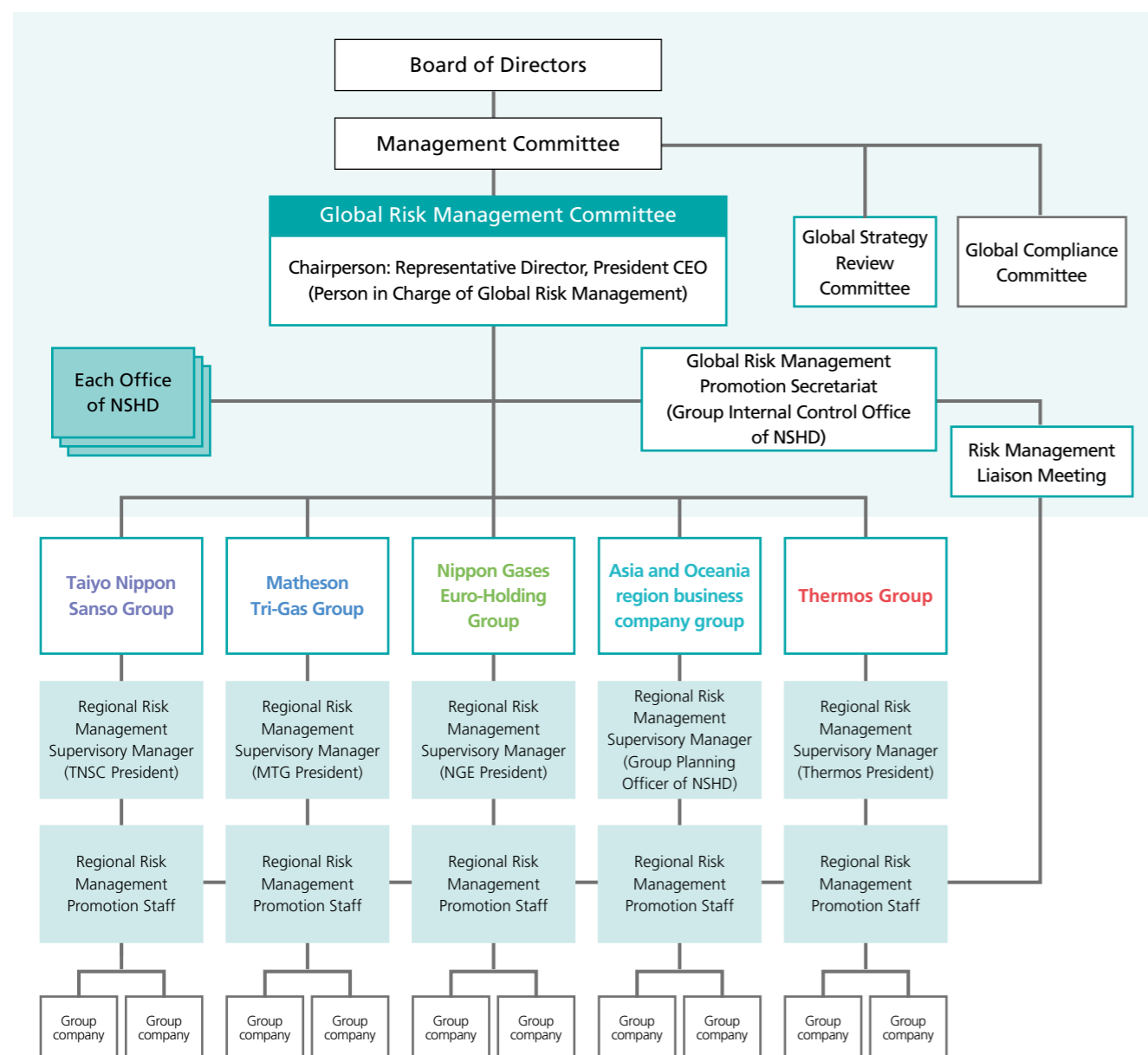
Risk Management Structure

The NSHD Group built a new risk management structure with its transition to a holding company system in October 2020. Our goal was to consider the risks to the overall Group from a management perspective looking at the medium to long term, to clarify the roles and responsibilities in risk management activities, and to optimize the risk management structure for all Group companies.

As the person in charge of global risk management, the President CEO has ultimate responsibility for the preparation and implementation of the Group's risk management structure covering all Group companies.

Furthermore, the presidents of the operating companies are in charge of risk management in their respective regions, and have responsibility for the preparation and implementation of their respective regional risk management structures. They oversee persons in charge of promoting regional risk management, who promote risk management in each region, gather risk information within the Group, and share best practices.

This new risk management structure has increased the effectiveness of our risk management, and under this structure we are promoting activities for reducing the risk of the overall Group.

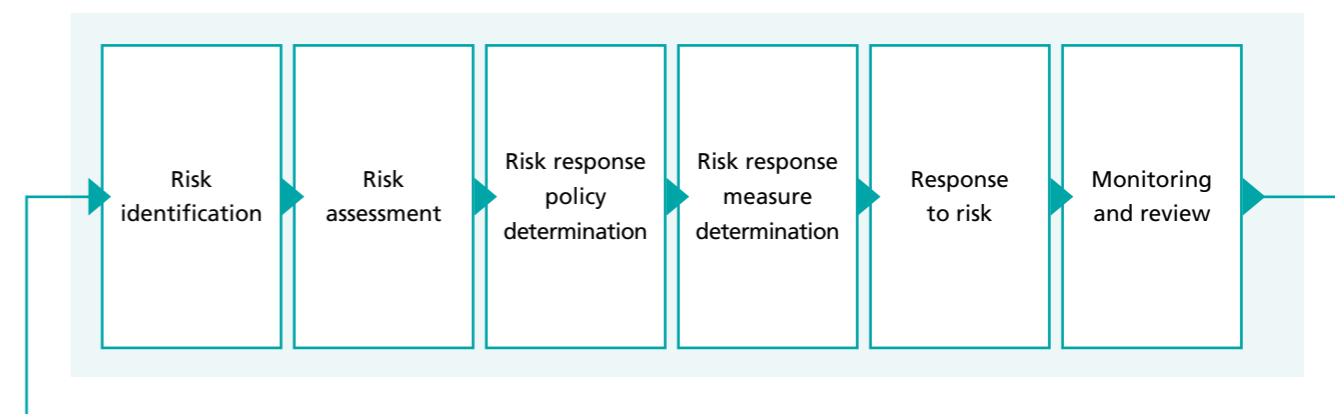


Risk Management Process

The Group identifies and assesses risks by recognizing changes in the business environment and looking at their potential to both increase and damage corporate value.

From the results of this assessment, we identify important risks and conduct risk response and monitoring in accordance with our risk response policy to optimize the risk response across all Group companies.

Our risk management processes include a process for NSHD and its operating companies, and a process for important risks that require a priority organization-level response. Both of these processes comprise the steps of risk identification, risk assessment, risk response policy determination, risk response measure determination, response to risk, and monitoring and review.



The Group's Global Risk Management Committee meets once a year. It liaises with the Global Strategy Review Committee so that the management team can understand the Group's overall business strategy in terms of both risk and opportunity.

The main criteria for selecting the important risks for the Group are as follows:

- Risks that are to be managed from a Group management/all-company perspective with a medium- to long-term view
- Risk that impact the Group's business foundation, or certain important businesses.

In addition, we also base our selection on the NSHD's materiality issues and business strategies, such as the medium-term management plan.

At the Global Risk Management Committee meeting held in February 2022, three important risk themes were identified for the Group:

- Climate change and the decarbonization movement, and global economic and social change

- Maintaining and strengthening the business foundation
- Securing and developing the human resources to support the above two themes.

At the meeting, a lively discussion was held, including the views of individual operating companies on these risks and the perspective of the entire NSHD Group. By sharing risk awareness and promoting risk response as the NSHD Group, we will make our achievement of medium-term management plan NS Vision 2026 a certainty.

Furthermore, the Risk Management Liaison Committee meets twice a year as a complement to the Global Risk Management Committee, with the purpose of confirming risk information and the status of risk response at each operating company and sharing best practices.

Looking forward, NSHD will coordinate with each operating company to promote risk management activities for the entire Group.

Global Information Security Council (GISC)

The council was established in October 2021 to address the increasing importance of cybersecurity as a business risk and the heightened level of cybersecurity threats. A Global IT Security Assessment was recently completed and it evaluates the cybersecurity maturity of our businesses across the world. The result of this assessment allowed us to: Identify best practices, close security gaps, define areas of priority, and develop a long-term strategic security roadmap.

The council will define security standards, controls, and overall governance including identification and tracking of existing threats and incidents. Its operational management activities include the discovery and remediation of vulnerabilities, strengthening of technical solutions, and response to security incidents. Finally, improving cybersecurity culture and behaviors through user awareness initiatives, training, or other campaigns.

Considering the current council structure and the security footprint in the regions, the council will work parallel streams. The first stream relates to global initiatives, where opportunities were identified in terms of standardization or global coordination and the second includes specific regional initiatives based on the security maturity profile and prioritization efforts to mitigate potential risks.



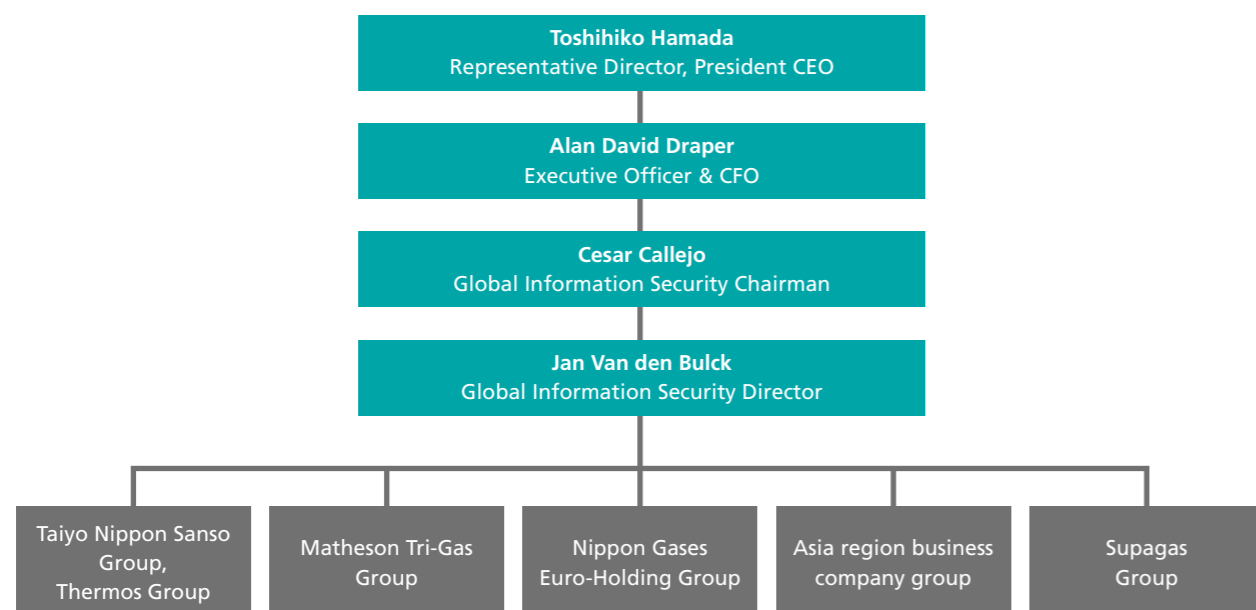
IT security is paramount to a Company's success.

Cesar Callejo

Global Information Security Chairman



NSHD Global Information Security Structure



Reporting lines ensure centralized oversight, but regional engagement to minimize IT security risk.

The scope of the program follows the international risk-based framework from the National Institute of Standards and Technology (NIST) Cybersecurity Framework.

Messages from Outside Directors

Nippon Sanso Holdings' business environment is experiencing a time of great upheaval, and corporate governance is also in a transition period. With the election of two new outside directors at the General Meeting of Shareholders held in June 2022, outside directors now make up a majority on the Company's Board of Directors. Furthermore, there are now two female outside directors, representing increasing progress on diversity. With the formulation of the new medium-term management plan NS Vision 2026, the role of outside directors is set to increase even further. In this section, we spoke with the outside directors.

Supporting and overseeing the progress of the new medium-term management plan is an important mission for outside directors.

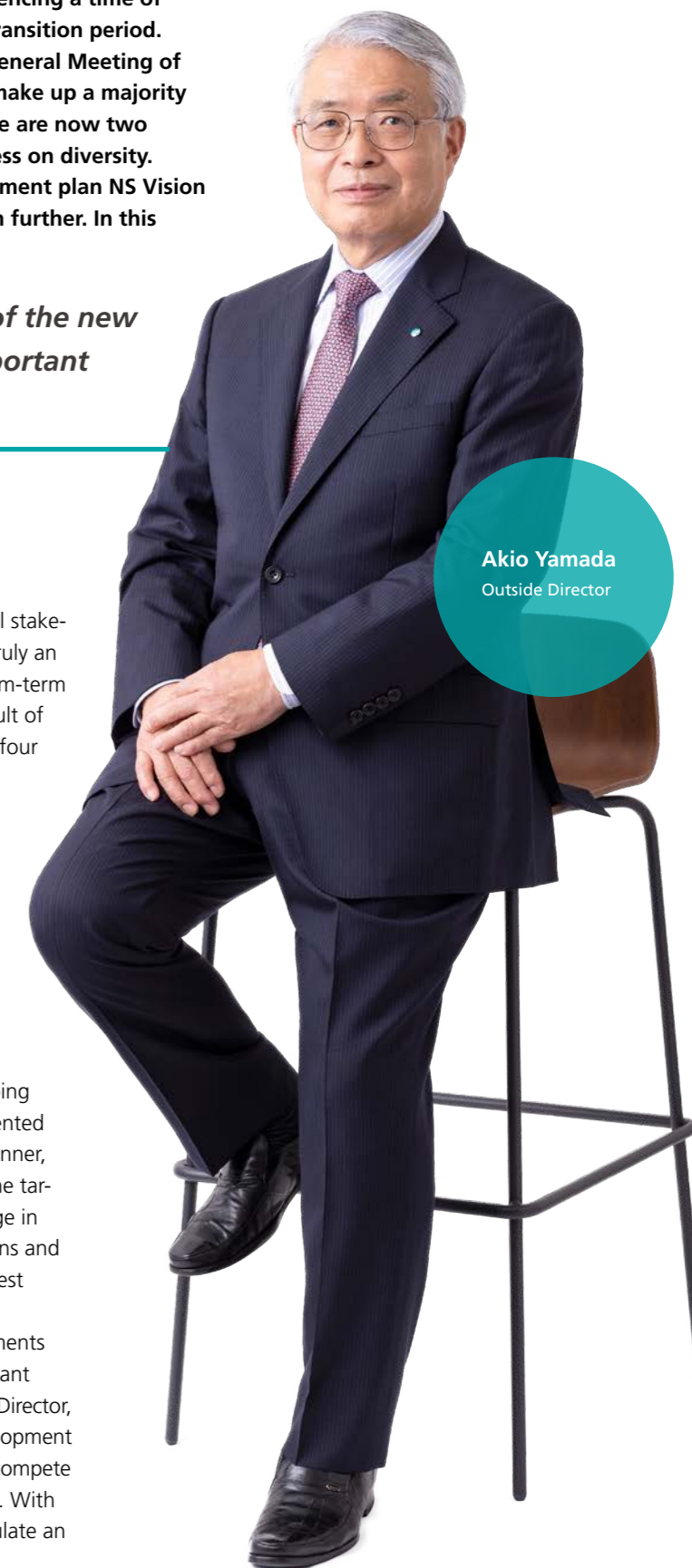
Q What is your opinion of Nippon Sanso Holdings' corporate governance and new medium-term management plan?

A Corporate value is the total sum of value creation by all stakeholders, and Nippon Sanso Holdings' Group Vision is truly an expression of this. The recently announced new medium-term management plan, NS Vision 2026, is the eventual result of multiple discussions between representatives from the four geographic hubs on each theme of the Vision. The Company will incorporate the current social economic issues of each country through its business targets, while simultaneously growing and expanding its business.

Q How do you plan to be involved in the new medium-term management plan in your role as an outside director?

A I believe that an important role for outside directors going forward will be to see whether the five strategies presented in NS Vision 2026 are being executed in a concrete manner, and to support and oversee their progress. To realize the targets, each of the four geographic hubs needs to engage in active discussion about the themes, exchanging opinions and information, making adjustments, and incorporating best practices in the businesses of each company.

In addition, at the Advisory Committee on Appointments and Remuneration, of which I am the chair, our important issues are selection of a successor to the Representative Director, President CEO, introduction of a human resources development program to equip the next generation of managers to compete globally, and promoting active participation by women. With regard to remuneration, I think it is important to formulate an object evaluation standard for non-financial KPIs.



Akio Yamada
Outside Director

The role of outside directors is to provide opinions from a neutral, fair, and objective standpoint.

Q What is your opinion of Nippon Sanso Holdings' corporate governance?

A Japan's Corporate Governance Code was formulated in 2015, when I was appointed outside director of then Taiyo Nippon Sanso Corporation. At the time, the Company showed some of the common issues that tend to occur with merged companies. However, the Company approached the implementation of its corporate governance honestly and correctly in accordance with the Code, and overcame those issues, enhancing and strengthening the function of the Board of Directors. I think the honesty of this approach was commendable.

The role of outside directors is to provide opinions from a neutral, fair, and objective standpoint. I think that opinions from outside directors free from concerns over internal situations and past obligations have contributed to enhancing and strengthening the Company's Board of Directors.

Q What is your opinion of the new medium-term management plan?

A Over the past seven years, the Company has acquired a portion of the European business of Praxair, Inc. and the U.S. HyCO business of Linde AG, becoming a global company in the literal sense of the word. In October 2020, the Company transitioned to a holding company structure. This change in structure is a mark of the Company's growth over these past seven years.

Turning to the future, the Company has announced the five focused fields in the new medium-term management plan. Of these, my particular focus is on "sustainability management" and "exploring new business toward carbon neutrality." These are fields about which the outside directors should have a lot to say. The number of female outside directors has also increased, and we should now see opinions from various different perspectives being offered at Board of Directors' meetings.

With regard to compliance, we are entering an era of tremendous change, where companies are required to commit to sustainability for the sake of human survival, and to provide reliable information about these matters to the world. In the coming era, we will need to consider people and the climate much more than we have in the past. The new medium-term management plan is designed to answer the needs of such an era.



Mitsuhiro Katsumaru
Outside Director

I will work to raise the awareness of female employees in order to increase the number of women aiming for management roles.

Q What is your opinion of Nippon Sanso Holdings' corporate governance?

A At Nippon Sanso Holdings' Board of Directors' meetings, Board members exchange opinions actively, and I feel that governance is working well. I believe that two commendable points are the compliance education and training, and the efforts to create a foundation for strong governance.

In terms of issues to be addressed, if there were a regular meeting only for independent outside directors, I think that we would be able to exchange information and share our thoughts more closely regarding issues related to the activities of management and the Board of Directors, the development of future executive management, and so forth.

Q With the appointment of two new outside directors, they now make up the majority. What is your ideal vision for the Board of Directors?

A I think that accepting two outside directors with completely different fields of expertise has provided Nippon Sanso Holdings with an opportunity to reexamine the administration and supervision of its management structure. Moreover, they may propose innovative ideas and opinions that would not occur to directors promoted from inside the Company. I will also strive to ensure I can give better advice to assist the Company's sustainable growth by taking an overall view of its situation.

Q What is your opinion of the new medium-term management plan?

A The aspect of the new medium-term management plan that I want to focus on is achieving the targets for the ratio of female managers among the Group's non-financial KPIs. I plan to approach this by continuing to make many opportunities to talk with female employees at the Company in person and help to raise their awareness. I think one of my roles is to help increase the number of women aiming for management roles.



Miri Hara
Outside Director

I aim to contribute to governance at Nippon Sanso Holdings by facing difficulties together and making changes together.



Katumi Nagasawa
Outside Director

Q What experience and skills have you acquired?

A I have 40 years of experience working at Hitachi, Ltd., where I was involved from my junior to mid-level years in project management on construction and operation of nuclear power plants. After that, I worked in manufacturing at plants, overseas strategy at the head office, and in management of the electric power division. This has given me a wide range of experience from upstream down to the front line of an electrical equipment manufacturer.

While the products are different, I think the fundamentals of manufacturing and project management are universal, and I believe that I can contribute to governance with regard to business policy and strategy of each business unit of the Nippon Sanso Holdings Group from the perspective of manufacturing management and technology.

Q What is your impression of Nippon Sanso Holdings?

A I have also been involved with the Company as a user of its products. Industrial gases have an inseparable relationship with the manufacturing industry, and has grown up together with Japan's national industries, particularly its traditional heavy manufacturing industries. From this perspective, as the leading Japanese company in the industrial gases field, and one of the four major global players, Nippon Sanso Holdings has a stable management base.

Now, with heavy manufacturing industries in a contraction phase, the Company faces the challenge of shifting to growth fields. However, high-tech industry, such as semiconductors, also requires industrial gases, and these are expected to provide further growth opportunities.

Q What are you excited about in your appointment as an outside director?

A I am sure that as a global company, Nippon Sanso Holdings faces a variety of risks in advancing its business. I think the role of outside directors is to discern the opportunities and risks when executive officers have made a proposal and judge it dispassionately. I hope to make correct judgments based on my experience. Also, I believe that Japan's manufacturing industry is lagging behind on international issues such as the SDGs and sustainability. As a manufacturer that has had to grapple with the same concerns, I aim to contribute to Nippon Sanso Holdings by facing difficulties together and making changes together.

Since Nippon Sanso Holdings has advanced technologies that can help society to decarbonize, as a member of the Company I am determined to help it achieve the targets of its new medium-term management plan.



Masako Miyatake
Outside Director

Q What experience and skills have you acquired?

A After working at a foreign bank, in 2002 I was registered as an attorney and since then I have been working in creating financing schemes and contracts, regulation and corporate compliance advice in the finance industry, and in-court and out-of-court dispute resolution. I have also worked on the front lines of dispute resolution at a U.S. federal court (in St. Louis, Missouri). I have also lectured at Keio University Law School on arbitration, mediation, and negotiation, with the aim of connecting practice with academia. At Nippon Sanso Holdings, I hope to be of service by sharing my accumulated knowledge of global compliance, intra-organizational conflict prevention, and financial practice.

Q What is your impression of Nippon Sanso Holdings?

A I feel that Nippon Sanso Holdings' medium-term management plan and its signing of the United Nations Global Compact really show the Company's commitment to working together for the global environment and building a sustainable society. There have not been so many organizations taking these issues seriously to date. I am certain that Nippon Sanso Holdings has technologies that will be able to contribute to the global environment in its HyCO business and the carbon capture and storage (CCS) project. As a member of such an organization, I feel not only fulfilled but honored to be able to help the Company achieve the targets of its medium-term management plan.

Q What are you excited about in your appointment as an outside director?

A As an attorney, I have experienced the degree to which conflict inside an organization, such as trouble between employees, can hinder a company's productivity and erode worker motivation. I have also spent time researching how to resolve and prevent such conflicts. I hope to share this knowledge with everyone at Nippon Sanso Holdings, which is a global company, and help to invigorate the organization. In addition, as we are now in an era where laws are applied across national boundaries, I also plan to contribute to thinking about compliance from a global perspective.

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

* The self-introductions included in the list of directors, Audit & Supervisory Board members, and executive officers are intended to offer a more personal insight that cannot be gleaned from a career history. The officers wrote freely in reply to questions about their hobbies, recent interests, goals for the coming fiscal year, and favorite or recommended gas (including services and related products).

Members of the Board of Directors



Toshihiko Hamada
Representative Director, President CEO

Number of shares owned:
6,000 shares

Attendance at Board of Directors' meetings:
14 of 14 meetings

Committee assignments:
Advisory Committee on Appointments and Remuneration, Management Committee, Global Strategy Review Committee, Global Risk Management Committee

- April 1981 Joined the Company
- July 2002 Executive vice president responsible for Specialty Gas Technology, Matheson Tri-Gas, Inc.
- October 2005 Deputy general manager of Semiconductor Gas Section of Electronics Division, the Company
- April 2006 General manager of Semiconductor Gas Section of Electronics Division, the Company
- January 2010 Subordinate directly to general manager of Electronics Division and general manager of Business Strategy Promotion Section, the Company
- June 2014 Managing director, Nissan TANAKA Corporation
- June 2016 Senior managing director, Nissan TANAKA Corporation
- June 2017 President and representative director, Nissan TANAKA Corporation
- June 2020 Director, executive vice president of the Company (Aide to the President)
- June 2021 Representative Director, President CEO (current)

Looking back over the past year, the Company's growth has been much greater and more dynamic than my own. Also, I feel that I haven't made enough effort on my personal growth. Since I can't do any exercise that has a high risk of injury or accident, my entire exercise consists of walking during my commute. These days I enjoy observing the trees and flowers in my neighborhood and feeling the seasons, growing plants at home, and spending time with my grandchildren. Recently, when I see any small children, not only my grandchildren, I am struck by how amazing mothers are. I wish I had been more sensitive to this some 30 years ago.

Members of the Board of Directors



Eduardo Gil Elejoste
Member of the Board,
Chairman and President,
Nippon Gases Euro-Holding S.L.U.

Number of shares owned:
0 shares

Attendance at Board of Directors' meetings:
13 of 14 meetings

Committee assignments:
Global Strategy Review Committee, Global Risk Management Committee

- April 1981 Joined Argon S.A.
- January 1992 Director of Marketing, responsible for Spain and Portugal, Argon S.A.
- September 1996 Director of Business Development, responsible for Europe, Praxair España, S.L.
- January 2000 Director of Marketing, responsible for Europe, Praxair Euroholding S.L.
- October 2004 CEO, Germany, Praxair Euroholding S.L.
- January 2006 CEO, Germany and Benelux, Praxair Euroholding S.L.
- April 2008 CEO, Praxair España S.L. (now Nippon Gases España S.L.U.); CEO, Praxair Portugal S.A.
- December 2016 President, Praxair Euroholding S.L.
- December 2018 Chairman and President, TNSC Euro-Holding S.L.U. (now Nippon Gases Euro-Holding S.L.U.) (current)
- June 2019 Director of the Company (current)

I have spent my entire professional life working in the industrial gases business, in which I landed straight after finishing my mechanical engineering studies and my military service. I studied engineering because in my hometown, a very industrial town, the engineering school had an extremely strong reputation and solid prestige. As an engineering student, I was sent to the artillery division in the military, where I finished my service as a second lieutenant. Until I was offered my first general management assignment (in Germany in 2004), my whole career had been spent in sales and marketing. I was fortunate to be assigned, over the years, jobs in liquid applications, specialty gases marketing, packaged gases marketing, overall marketing for Spain and Portugal, and finally overall marketing for Europe. My hobbies include golf, hiking, building model ships, reading (fiction and non-fiction), and chess.



Kenji Nagata
Member of the Board,
Representative Director and President,
Taiyo Nippon Sanso Corporation

Number of shares owned:
11,500 shares

Attendance at Board of Directors' meetings:
14 of 14 meetings

Committee assignments:
Global Strategy Review Committee, Global Risk Management Committee

- April 1981 Joined the Company
- June 2013 Executive officer, general manager of North Kanto Branch
- April 2016 Executive officer, deputy general manager of Industrial Gases Division, general manager of Gases Business Unit, and general manager of Product Management Unit
- June 2016 Senior executive officer, deputy general manager of Industrial Gases Division, general manager of Gases Business Unit, and general manager of Product Management Unit
- April 2017 Senior executive officer, and general manager of Industrial Gases Division
- June 2018 Senior managing executive officer, director, and general manager of Industrial Gases Division
- October 2020 Director of the Company, and representative director and president of Taiyo Nippon Sanso Corporation (current)

What I want to strive toward in FYE2023 is "mass activity," which is one of the key concepts in the *Yozai Kanri* (preparatory material management) approach that the Company is currently implementing. My mass activity is to increase dialogue with those on the front line, which has been difficult to accomplish as a result of the COVID-19 pandemic. I want to hear about a variety of things, such as the new medium-term management plan and workplace issues, and to talk about them. In my personal time, my habit is to spend days off walking with my wife and our dog in various parks. I was never particularly fond of animals, but we started to keep a dog about two years ago at my daughter's request. Since then, I've become quite affectionate of our family dog, but I'm still afraid of large dogs if they approach me at the dog run.

Number of shares owned:
2,300 shares

Attendance at Board of Directors' meetings:
14 of 14 meetings

Committee assignment:
Advisory Committee on Appointments and Remuneration

- April 1967 Joined General Secretariat of Japan Fair Trade Commission
- June 2000 Secretary general, Japan Fair Trade Commission
- December 2003 Commissioner, Japan Fair Trade Commission
- April 2009 Senior advisor to Jones Day
- June 2010 Audit & Supervisory Board member, Daiichi Sankyo Co., Ltd.
- March 2014 Audit & Supervisory Board member, The Yokohama Rubber Co., Ltd.
- June 2014 Director, Watahan & Co., Ltd.
- June 2015 Outside director of the Company (current)
- March 2018 Chairman, Fair Trade Institute (current)

I joined Japan's Fair Trade Commission in 1967, and have been involved in numerous operations. The commission has a strong image as the regulatory agency in charge of dealing with collusion and cartels, but it is really an economic agency involved in various activities for maintaining and promoting a competitive environment for the Japanese economy. We believe that there cannot be growth without competition. Since retiring, I have had roles as an audit & supervisory board member at Daiichi Sankyo Co., Ltd. and The Yokohama Rubber Co., Ltd., and teaching competition law at Doshisha University. I also participated in a study group with academics and corporate law experts in Kyoto, and participated in a working group for thinking about the growth of Japanese companies with managers of listed companies in Tokyo.



Akio Yamada
Member of the Board
(Outside Director)



Thomas Scott Kallman
Member of the Board,
Chairman and CEO, Matheson Tri-Gas, Inc.

Number of shares owned:
0 shares

Attendance at Board of Directors' meetings:
13 of 14 meetings

Committee assignments:
Global Strategy Review Committee, Global Risk Management Committee

- July 1981 Joined BOC Group, plc
- January 2000 Vice president, general manager responsible for Eastern Region, BOC Group, plc
- January 2005 Executive vice president responsible for Industrial Gas Group, Matheson Tri-Gas, Inc.
- January 2008 Senior executive vice president and COO, Matheson Tri-Gas, Inc.
- June 2009 President and COO, Matheson Tri-Gas, Inc.
- January 2013 President and CEO, Matheson Tri-Gas, Inc.
- June 2017 Chairman, President, and CEO, Matheson Tri-Gas, Inc.
- April 2019 Chairman and CEO, Matheson Tri-Gas, Inc. (current)
- June 2019 Director of the Company (current)

I have been in the industrial gas industry for over 40 years and have performed in both operating and sales positions. My principle goal is to continue to reduce and ideally eliminate injury to members of our Team. One example of how we are pursuing this goal is we have committed resources to achieve automation of tasks that involve significant repetitive material handling. Commercially, we believe our integrated portfolio of products gives Matheson a competitive advantage that can be leveraged in the form of cross-selling to Customers who have a need for multiple product categories. Longer term, we are motivated by the challenge to continue to optimize the capital investments made in expanding our production network and reducing the carbon intensity of our operations.

Number of shares owned:
1,500 shares

Attendance at Board of Directors' meetings:
14 of 14 meetings

Committee assignment:
Advisory Committee on Appointments and Remuneration

- April 1978 Appointed as a public prosecutor assigned to Tokyo District Public Prosecutors Office
- July 1989 First secretary of Embassy of Japan in Germany
- April 2005 Assistant vice minister, Ministry of Justice (responsible for general policy integration)
- December 2010 Superintending prosecutor, Takamatsu High Public Prosecutors Office
- June 2012 Superintending prosecutor, Hiroshima High Public Prosecutors Office
- July 2014 Resigned from superintending prosecutor position
- October 2014 Registered as an attorney
- June 2015 Outside director of the Company (current)
- March 2017 Director of Shimano Inc. (current)

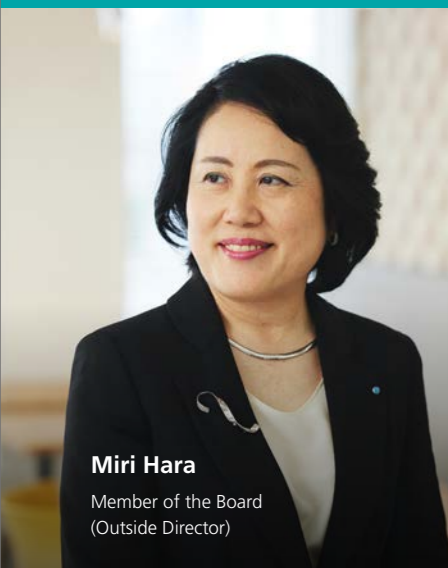
I was formerly involved in policy creation in Japan's Ministry of Justice. Implementing new policies requires new language for persuading people around you. I have worked on general anti-crime measures with the slogan "making Japan the world's safest country again" and have assisted legal system reforms in Asian countries with the slogan "supporting law and order in Asia." Now, as an individual, I am searching for a slogan to encourage Japanese society facing the challenges of low growth and super aging.



Mitsuhiro Katsumaru
Member of the Board
(Outside Director)

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

Members of the Board of Directors



Miri Hara
Member of the Board
(Outside Director)

Number of shares owned:
0 shares

Attendance at Board of Directors' meetings:
10 of 10 meetings

Committee assignment:
Advisory Committee on Appointments and Remuneration

June 1988 Director, Hara Estate K.K. (current)
October 2017 Founder and partner, Tax Corporation Yokohama Benten Accounting, Inc. (current)
June 2020 Outside director, SECOM Co., Ltd. (current)
June 2021 Outside director of the Company (current)

At university, I majored in management and accounting. After marrying and raising children, I obtained a tax accountant qualification and established a tax accounting office. Subsequently, I was appointed as the first female director of SECOM Co., Ltd. In 2021, I also became the first female director of Nippon Sanso Holdings, and in 2022, the number of female outside directors has increased to two. We will combine our strengths to provide a female perspective to help the Company.



Katsumi Nagasawa
Member of the Board
(Outside Director)

Number of shares owned:
0 shares

Committee assignment:
Advisory Committee on Appointments and Remuneration

April 1980 Joined Hitachi, Ltd.
April 2006 General manager of Nuclear Power Business Development & Management Division, Nuclear Systems Division, Power Systems Group, Hitachi, Ltd.
October 2008 Vice president of Hitachi Power Systems America, Ltd. (now Mitsubishi Power Americas, Inc.)*
October 2010 General manager of Global Business Division, Power Systems Company, Hitachi, Ltd.
January 2011 General manager of Global Business Division, Power Systems Company, Hitachi, Ltd. and CSO of Hitachi-GE Nuclear Energy, Ltd.
April 2012 Corporate officer for Hitachi, Ltd.; General manager of Hitachi Works, Power Systems Company, Power Systems Group, Hitachi, Ltd.
April 2014 Managing corporate executive officer, President & CEO of Power Systems Company, Power Systems Group, Hitachi, Ltd.
April 2016 Managing corporate executive officer, CEO of Nuclear Business Unit, Hitachi, Ltd.
April 2017 Senior corporate officer for Hitachi, Ltd., general manager of Global Nuclear Business Division, Nuclear Business Unit, Hitachi, Ltd.
April 2019 Chairman of the Board, Hitachi-GE Nuclear Energy, Ltd.
April 2020 Outside director, Sugino Machine Limited (current)
June 2022 Outside director of the Company (current)

* The nuclear power-related business of the former Hitachi Power System America, Ltd. was transferred to Hitachi America, Ltd.

Today, I feel that both the world and myself as an individual are changing. As I approach my mid-60s, looking ahead 10 to 15 years from now, I want to take on challenges in new fields that I have not experienced. Partly because of COVID-19 countermeasures, my only hobby is playing golf with my wife. It has also been an excellent opportunity for us to revisit our relationship. Familiar gases for me would be hydrogen generated by nuclear reactors and nitrogen for preventing it from combusting. While recognizing the hazardous nature of hydrogen, we are looking at using it with human wisdom together with technologies and nuclear power.



Masako Miyatake
Member of the Board
(Outside Director)

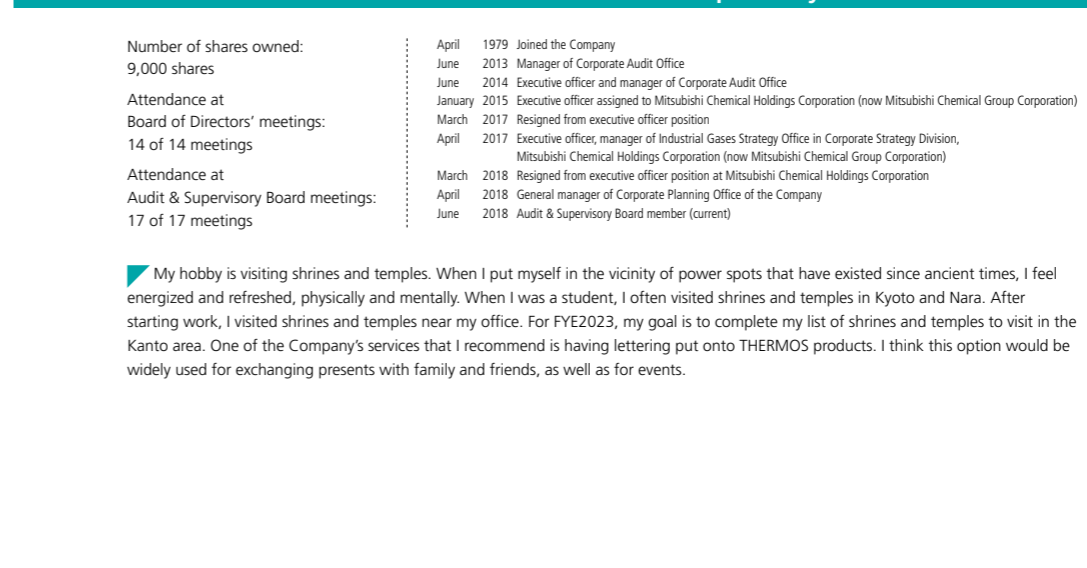
Number of shares owned:
0 shares

Committee assignment:
Advisory Committee on Appointments and Remuneration

April 1983 Joined The Chase Manhattan Bank N.A. (now JPMorgan Chase Bank, N.A.)
October 2002 Registered as an attorney (Deregistered in 2011 to study abroad and reregistered in 2014)
October 2002 Joined Koga & Partners
June 2004 Joined Asahi & Koma Law Offices (now Nishimura & Asahi)
November 2014 Joined Nakano Law Office
November 2014 Reconciliator, Dispute Reconciliation Center for Nuclear Damage Compensation regarding Fukushima Nuclear Plant, Ministry of Education, Culture, Sports, Science and Technology (current)
April 2015 Conciliation Commissioner, Tokyo Family Court (current)
April 2018 Joined Blakemore & Mitsuiki (current)
December 2018 Deputy Secretary-General, Japan International Dispute Resolution Center (current)
March 2019 Outside director, SUMIDA CORPORATION (current)
April 2021 Professor, Keio University Law School (current)
June 2022 Outside director of the Company (current)

My life's work as a lawyer has been in conflict resolution and conflict prevention within organizations. I search for effective resolution for conflict through a combination of trial, mediation, arbitration, and negotiation. I believe that coaching and an ombudsman system with mediation skills are effective means for realizing conflict prevention and increasing communication inside an organization, and have been making an effort to promote the spread of these methods. My hobbies are dancing and opera. I decided on the slogan "hydrogen gas will save the earth."

Audit & Supervisory Board Members



Junzo Tai
Audit & Supervisory Board Member

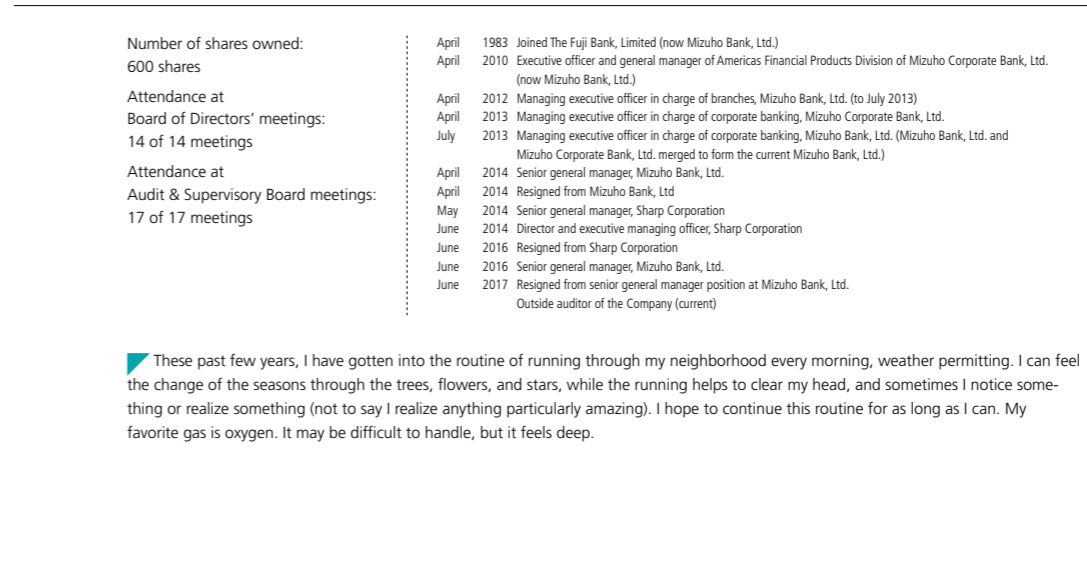
Number of shares owned:
9,000 shares

Attendance at Board of Directors' meetings:
14 of 14 meetings

Attendance at Audit & Supervisory Board meetings:
17 of 17 meetings

April 1979 Joined the Company
June 2013 Manager of Corporate Audit Office
June 2014 Executive officer and manager of Corporate Audit Office
January 2015 Executive officer assigned to Mitsubishi Chemical Holdings Corporation (now Mitsubishi Chemical Group Corporation)
March 2017 Resigned from executive officer position
April 2017 Executive officer, manager of Industrial Gases Strategy Office in Corporate Strategy Division, Mitsubishi Chemical Holdings Corporation (now Mitsubishi Chemical Group Corporation)
March 2018 Resigned from executive officer position at Mitsubishi Chemical Holdings Corporation
April 2018 General manager of Corporate Planning Office of the Company
June 2018 Audit & Supervisory Board member (current)

My hobby is visiting shrines and temples. When I put myself in the vicinity of power spots that have existed since ancient times, I feel energized and refreshed, physically and mentally. When I was a student, I often visited shrines and temples in Kyoto and Nara. After starting work, I visited shrines and temples near my office. For FYE2023, my goal is to complete my list of shrines and temples to visit in the Kanto area. One of the Company's services that I recommend is having lettering put onto THERMOS products. I think this option would be widely used for exchanging presents with family and friends, as well as for events.



Akihiro Hashimoto
Audit & Supervisory Board Member
(Outside Auditor)

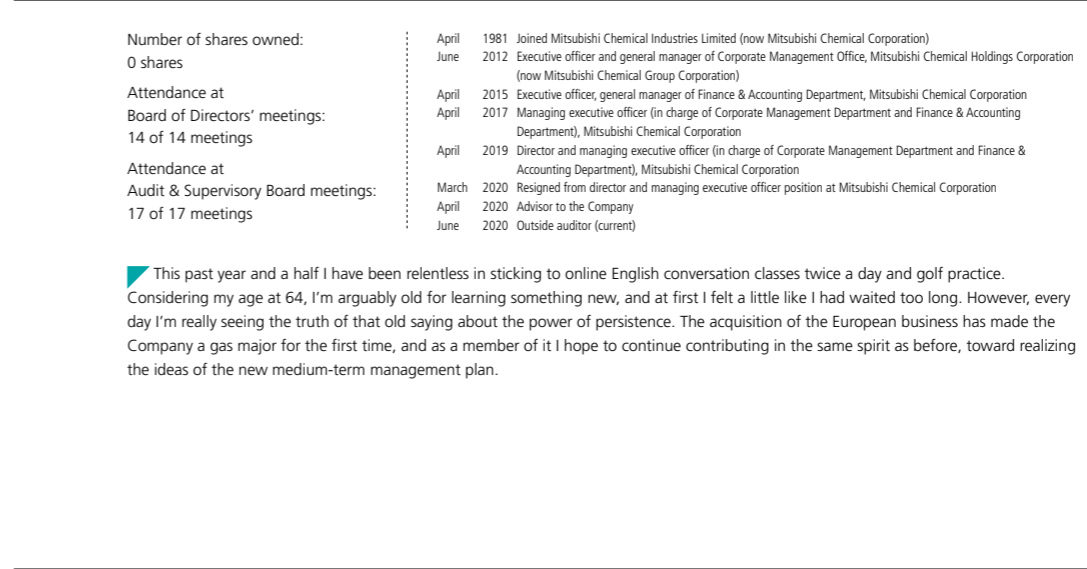
Number of shares owned:
600 shares

Attendance at Board of Directors' meetings:
14 of 14 meetings

Attendance at Audit & Supervisory Board meetings:
17 of 17 meetings

April 1983 Joined The Fuji Bank, Limited (now Mizuho Bank, Ltd.)
April 2010 Executive officer and general manager of Americas Financial Products Division of Mizuho Corporate Bank, Ltd. (now Mizuho Bank, Ltd.)
April 2012 Managing executive officer in charge of branches, Mizuho Bank, Ltd. (to July 2013)
April 2013 Managing executive officer in charge of corporate banking, Mizuho Corporate Bank, Ltd.
July 2013 Managing executive officer in charge of corporate banking, Mizuho Bank, Ltd. (Mizuho Bank, Ltd. and Mizuho Corporate Bank, Ltd. merged to form the current Mizuho Bank, Ltd.)
April 2014 Senior general manager, Mizuho Bank, Ltd.
April 2014 Resigned from Mizuho Bank, Ltd.
May 2014 Senior general manager, Sharp Corporation
June 2014 Director and executive managing officer, Sharp Corporation
June 2016 Resigned from Sharp Corporation
June 2016 Senior general manager, Mizuho Bank, Ltd.
June 2017 Resigned from senior general manager position at Mizuho Bank, Ltd. Outside auditor of the Company (current)

These past few years, I have gotten into the routine of running through my neighborhood every morning, weather permitting. I can feel the change of the seasons through the trees, flowers, and stars, while the running helps to clear my head, and sometimes I notice something or realize something (not to say I realize anything particularly amazing). I hope to continue this routine for as long as I can. My favorite gas is oxygen. It may be difficult to handle, but it feels deep.



Masahiro Osada
Audit & Supervisory Board Member
(Outside Auditor)

Number of shares owned:
0 shares

Attendance at Board of Directors' meetings:
14 of 14 meetings

Attendance at Audit & Supervisory Board meetings:
17 of 17 meetings

April 1981 Joined Mitsubishi Chemical Industries Limited (now Mitsubishi Chemical Corporation)
June 2012 Executive officer and general manager of Corporate Management Office, Mitsubishi Chemical Holdings Corporation (now Mitsubishi Chemical Group Corporation)
April 2015 Executive officer, general manager of Finance & Accounting Department, Mitsubishi Chemical Corporation
April 2017 Managing executive officer (in charge of Corporate Management Department and Finance & Accounting Department), Mitsubishi Chemical Corporation
April 2019 Director and managing executive officer (in charge of Corporate Management Department and Finance & Accounting Department), Mitsubishi Chemical Corporation
March 2020 Resigned from director and managing executive officer position at Mitsubishi Chemical Corporation
April 2020 Advisor to the Company
June 2020 Outside auditor (current)

This past year and a half I have been relentless in sticking to online English conversation classes twice a day and golf practice. Considering my age at 64, I'm arguably old for learning something new, and at first I felt a little like I had waited too long. However, every day I'm really seeing the truth of that old saying about the power of persistence. The acquisition of the European business has made the Company a gas major for the first time, and as a member of it I hope to continue contributing in the same spirit as before, toward realizing the ideas of the new medium-term management plan.

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

Audit & Supervisory Board Members



Kazuya Kobayashi
Audit & Supervisory Board Member
(Outside Auditor),
Part-Time Audit & Supervisory Board Member,
Taiyo Nippon Sanso Corporation

Number of shares owned:
0 shares

Attendance at
Board of Directors' meetings:
14 of 14 meetings

Attendance at
Audit & Supervisory Board meetings:
17 of 17 meetings

- April 1985 Joined The Fuji Bank, Limited (now Mizuho Bank, Ltd.)
- April 2012 Executive officer, general manager of Corporate Banking Division No. 13, Mizuho Corporate Bank, Ltd. (now Mizuho Bank, Ltd.)
- April 2014 Managing executive officer, head of Investment Banking Unit, Mizuho Financial Group, Inc. Managing executive officer, head of Investment Banking Unit, Mizuho Bank, Ltd.
- April 2016 Managing executive officer in charge of Specific Business of Global Corporate Company, Mizuho Financial Group, Inc. Managing executive officer, head of Global Corporate Division, Mizuho Bank, Ltd.
- April 2017 Senior general manager, Mizuho Financial Group, Inc.
- March 2019 Resigned from senior general manager position at Mizuho Financial Group, Inc.
- April 2019 Audit & Supervisory Board member (full-time), Mizuho Human Service Co., Ltd.
- March 2020 Resigned from Audit & Supervisory Board member (full-time) position at Mizuho Human Service Co., Ltd.
- April 2020 Senior general manager, Mizuho Financial Group, Inc. (current)
- June 2020 Resigned from senior general manager at Mizuho Financial Group, Inc.
- October 2020 Audit & Supervisory Board member of Taiyo Nippon Sanso Corporation (current)

▶ This is my second year as an Audit & Supervisory Board member, and there is still a lot that I have yet to see of the industrial gases business, both globally and locally. I strive to dig down to the root of each matter that I encounter in audits, analyzing and discussing them so that I can make useful proposals to the Company. In my personal life, I am really into voice training, which I started three years ago, and recently feel as though I have finally grasped the idea of projecting my voice from my abdomen. I'm hopeless at it but I love it.

Executive Officers



Tsutomu Moroishi
Senior Executive Officer

- April 1984 Joined the Company
- November 1991 Assigned to the Thermos company (USA)
- November 2001 Corporate planning Department, President office, Administrative Division
- April 2006 General manager of Secretariat Office (in charge of project promotion)
- April 2013 General manager of Corporate Communications Department, Corporate Administration Division
- April 2014 General manager of Project Department, Corporate Planning & Global Operations Division

- November 2014 Deputy general manager of Corporate Planning & Global Operations Division
- June 2015 Executive officer, deputy general manager of Corporate Planning & Global Operations Division
- June 2018 Executive officer, general manager of Global Operations Division
- October 2020 Executive officer, general manager of Group Corporate Planning Office
- June 2021 Senior executive officer, general manager of Group Corporate Planning Office (current)

▶ After a two-year blank period due to the pandemic, in FYE2023 I am anxious to take as many opportunities as possible to meet in person with people at overseas operating companies and talk with them about the medium-term management plan and business growth strategies.

In my time off, I go to concerts with friends from my junior high school days and play golf with high school friends and my family. Also, once I started looking after some tropical fish that my son left at our house, I found that I quite enjoy it, and my next small project is to install a carbon dioxide additive device for the water weed.

- April 1986 Joined the Ministry of International Trade and Industry (at the time) Head of Energy Conservation Measures Department, Head of Product Safety Department, Head of Chemical Control Department
Also served as head of Examination Department, Patent Office, Deputy Assistant Minister of the Minister's Secretariat (in charge of Industrial Safety), and others
- July 2017 Retired from the Ministry of Economy, Trade and Industry
- December 2017 Joined the Company, General manager of Technological Affairs Division
- June 2018 Executive officer, deputy general manager of Technological Affairs Division
- June 2019 Executive officer, general manager of Technological Affairs Division, Chief Sustainability Officer (CSO)
- October 2020 Executive officer, general manager of Group Technological Affairs & Environment Office, CSO, Nippon Sanso Holdings Corporation; Executive officer, general manager of Technological Affairs Unit, project leader of KAITEKI Promotion Project, Taiyo Nippon Sanso Corporation

- April 2021 Executive officer, general manager of Group Technological Affairs & Environment Office, CSO, Nippon Sanso Holdings Corporation; Senior executive officer, head of Technological Affairs Unit, project leader of KAITEKI Promotion Project, Taiyo Nippon Sanso Corporation
- June 2021 Senior executive officer, general manager of Group Technological Affairs & Environment Office, CSO, Nippon Sanso Holdings Corporation; Senior executive officer, head of Technological Affairs Unit, project leader of KAITEKI Promotion Project, Taiyo Nippon Sanso Corporation
- November 2021 Senior executive officer, general manager of Group Sustainability Management Office, CSO, Nippon Sanso Holdings Corporation; Senior executive officer, head of Technological Affairs Unit, project leader of KAITEKI Promotion Project, Taiyo Nippon Sanso Corporation (current)

▶ I wouldn't go so far as to call it a hobby, but I do enjoy listening to music and watching or playing sports. I often watch YouTube at home. Recently, I check the channels of Kaze Fujii and Shingo Katayama. I also enjoy watching comedy. My favorite four-character idiom is *fukusen kaishu* (revealing something that was foreshadowed). I don't have a favorite gas, in particular, but I do feel that there may still be much for us to learn about gas. For example, it would be amazing if we were able to achieve in-vivo imaging using ¹⁹O! I would like to see the Company create something that creates a buzz. That might be my target for FYE2023!

Executive Officers



Kazuyuki Futamata
Senior Managing Executive Officer,
Taiyo Nippon Sanso Corporation GCCO

- April 1980 Joined Mitsubishi Chemical Industries Limited (now Mitsubishi Chemical Corporation)
- April 2003 Director, manager of Human Resources Operations Center, Alpstaff Inc.
- June 2011 Executive officer, general manager of Human Resources Division, Mitsubishi Chemical Corporation; Executive officer, general manager of CEO's office, Mitsubishi Chemical Holdings Corporation (now Mitsubishi Chemical Group Corporation)
- April 2013 Executive officer, Mitsubishi Rayon Co., Ltd. (now Mitsubishi Chemical Corporation) (responsible for Internal Control Division)
- April 2015 Executive officer, Mitsubishi Rayon Co., Ltd. (responsible for Human Resources, General Affairs, Information Systems, and Internal Control divisions); Executive officer, general manager of Human Resources Office, Mitsubishi Chemical Holdings Corporation (now Mitsubishi Chemical Group Corporation)

- April 2017 Director and managing executive officer, CCO (responsible for Human Resources, General Affairs, and Internal Control divisions), Mitsubishi Chemical Corporation
- January 2019 Joined the Company, Managing executive officer, Chief Compliance Officer (CCO) (Taiyo Nippon Sanso Corporation GCCO), with responsibility for groupwide internal control
- June 2019 Director and managing executive officer, CCO (Taiyo Nippon Sanso Corporation GCCO), with responsibility for groupwide internal control (current)
- June 2021 Managing executive officer, CCO (Taiyo Nippon Sanso Corporation GCCO), with responsibility for groupwide internal control (current)

▶ I have served as CCO for the entire Group since 2019. In my previous role at Mitsubishi Chemical Corporation, I experienced being in charge of personnel, information, and electronics-related business (including being stationed in Singapore), and of overseas operations (China). I also worked in the area of internal controls. Guided by my creed, "fortune is unpredictable and changeable," I work to promote compliance and risk management with an awareness that "what happens out in the world can definitely happen in the Company too." I revitalize myself by going to see Japanese traditional puppet theater called "BUNRAKU," the Takarazuka Revue, and live musicals.

- September 1993 Senior Accountant, Lumsden & McCormick, LLP
- September 1996 Internal auditor, Praxair, Inc.
- April 1999 Financial analyst, Praxair, Inc.
- June 2000 Finance manager Global Supply Systems, Praxair, Inc.
- June 2002 North Region, controller, Praxair, Inc.
- May 2004 Director of Revenue and Volume, Praxair, Inc.

- June 2005 Director of Accounting and Operations Controller, Praxair, Inc.
- March 2009 Finance director & global controller, Praxair Surface Technologies
- December 2014 VP Finance, IT, & Operational Excellence, Praxair Surface Technologies
- April 2017 VP Finance, Praxair Euroholding S.L.
- December 2018 CFO, TNSC Euro-Holding S.L.U. (now Nippon Gases Euro-Holding S.L.U.)
- October 2020 Executive officer & CFO of the Company (current)

▶ I started my professional career in public accounting, where I earned my certified public accounting license in the State of New York. The next company I joined in 1996 was an industrial gases company, and I have been in the industrial gases business ever since. Throughout my career, I have been afforded the opportunity to live in three different countries on three different continents, each with distinctive cultures, characteristics, and wonderful people. I enjoy every new challenge that comes along. My goal is to always bring past experiences, learnings, and knowledge forward with me to strengthen the Group. In my personal time, I enjoy cooking, reading, traveling, and watching American football. I am an avid fan and supporter of my hometown football team, the Buffalo Bills!



Alan David Draper
Executive Officer



Satoshi Wataru
Senior Executive Officer,
Member of the Board,
Senior Executive Officer,
Taiyo Nippon Sanso Corporation

- April 1985 Joined the Company
- August 2008 General manager of Finance Department, General Affairs Division
- June 2015 Executive officer, deputy general manager of Human Resources Department
- June 2016 Executive officer, general manager of Human Resources Department
- April 2017 Executive officer, general manager of HR Division, general manager of Corporate Planning Office, CHO
- October 2020 Executive officer, general manager of Group Human Resources & Corporate Secretariat Office, general manager of Human Resources Department, CHO, Nippon Sanso Holdings Corporation; General manager of Human Resources Department, Member of the Board, senior executive officer, Taiyo Nippon Sanso Corporation

- April 2021 Executive officer, general manager of Group Human Resources & Corporate Secretariat Office, general manager of Human Resources Department, CHO, Nippon Sanso Holdings Corporation; General manager of Human Resources Department, Member of the Board, senior executive officer, Taiyo Nippon Sanso Corporation
- June 2021 Senior executive officer of Group Human Resources & Corporate Secretariat Office, general manager of Human Resources Department, CHO, Nippon Sanso Holdings Corporation; General manager of Human Resources Department and Head of Corporate Unit, Member of the Board, senior executive officer, Taiyo Nippon Sanso Corporation (current)

▶ I joined the Company in 1985, and have experience working in information systems, personnel, plant operations, secretarial duties, finance, and various other management-related roles. The Company and society have both changed dramatically over these past decades, but I don't think that the social mission of industrial gases has changed at all. Looking ahead, I hope to continue carrying out my duties without losing my sense of mission and sincerity for supporting the lives of people. In my own time, I am a railway enthusiast. I really value spending time with many friends talking about work and about our hobbies and so on, while enjoying a meal (and a drink) and having fun listening to music.

- April 1986 Joined Kokusai Electric Co., Ltd. (now Hitachi Kokusai Electric Inc.)
- February 1998 Joined Nippon Philips Co. Ltd. (now Philips Japan, Ltd.)
- January 2006 General manager of Legal Affairs Department, Philips Japan, Ltd.
- June 2008 Joined the Company, deputy general manager of Legal Affairs Department, General Affairs Division
- April 2012 General manager of Legal Affairs Department, General Affairs Division

- July 2015 General manager of Legal Affairs Department
- October 2020 Officer of Group Legal Office, Nippon Sanso Holdings Corporation; General manager of Legal Affairs Department, Taiyo Nippon Sanso Corporation
- June 2022 Executive officer, Officer of Group Legal Office, Nippon Sanso Holdings Corporation; General manager of Legal Affairs Division, Taiyo Nippon Sanso Corporation

▶ I joined the Company as a mid-career hire in 2008. Before that, I worked for electronics manufacturers in Japan and Europe, and I've always worked in legal affairs since I was young. When I was a child, I loved watching professional baseball, and last year my team won the championship, so I've been having a bit of baseball fever. I subscribed to a music streaming service recently, and I'm interested in listening to various genres and finding new artists that I like.



Yutaka Okuda
Executive Officer,
Executive Officer,
Taiyo Nippon Sanso Corporation

Skills Matrix of Corporate Officers

We believe that for the Board of Directors to function effectively it must consist of a diverse team of directors who have a broad range of knowledge and experience in corporate management. To this end, we have defined the knowledge and experience that play important roles in Group management across eight categories: (1) Corporate management, (2) Finance and accounting,

(3) Legal and risk management, (4) Sales and marketing, and (5) Development and technology. We will strive to enhance the effectiveness of the Board of Directors further by assigning people with knowledge and experience in these categories to the right places at the right time.

Name	Positions	Classification Committee positions	Corporate management	Finance and accounting	Legal and risk management	Sales and marketing	Development and technology	Experience working overseas	Experience working in other companies	Independence
Toshihiko Hamada	Representative Director, President CEO	Member of the Advisory Committee on Appointments and Remuneration								
Kenji Nagata	Member of the Board, Representative Director and President, Taiyo Nippon Sanso Corporation									
Thomas Scott Kallman	Member of the Board, Chairman and CEO, Matheson Tri-Gas, Inc.									
Eduardo Gil Elejoste	Member of the Board, Chairman and President, Nippon Gases Euro-Holding S.L.U.									
Akio Yamada	Member of the Board (Outside Director)	Independent outside director Chairman of the Advisory Committee on Appointments and Remuneration								
Mitsuhiro Katsumaru	Member of the Board (Outside Director)	Independent outside director Member of the Advisory Committee on Appointments and Remuneration								
Miri Hara	Member of the Board (Outside Director)	Independent outside director Member of the Advisory Committee on Appointments and Remuneration								
Katsumi Nagasawa	Member of the Board (Outside Director)	Independent outside director Member of the Advisory Committee on Appointments and Remuneration								
Masako Miyatake	Member of the Board (Outside Director)	Independent outside director Member of the Advisory Committee on Appointments and Remuneration								
Junzo Tai	Audit & Supervisory Board member									
Akihiro Hashimoto	Audit & Supervisory Board member (Outside Auditor)	Independent outside director								
Masahiro Osada	Audit & Supervisory Board member (Outside Auditor)									
Kazuya Kobayashi	Audit & Supervisory Board member (Outside Auditor)	Independent outside director								

* Details on the definition of table headings

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

* The chart does not present all of the officers' knowledge and experience.

11-Year Financial and Non-Financial Summary

(Millions of yen)


	Japanese GAAP					IFRS						
	2012.3	2013.3	2014.3	2015.3	2016.3	2016.3	2017.3	2018.3	2019.3	2020.3	2021.3	2022.3
Revenue	—	—	—	—	—	594,421	581,586	646,218	740,341	850,239	818,238	957,169
Net sales	477,451	468,387	522,746	559,373	641,516	—	—	—	—	—	—	—
Selling, general and administrative expenses	125,526	125,503	138,052	149,151	182,051	161,169	165,071	178,690	204,789	242,129	233,276	259,204
Core operating profit* ¹	—	—	—	—	—	47,456	54,736	60,033	65,819	90,337	87,251	102,710
Operating profit	31,067	24,884	31,489	35,297	43,362	48,925	53,664	59,862	66,863	93,921	88,846	101,183
Profit attributable to owners of parent	—	—	—	—	—	29,030	34,740	48,919	41,291	53,340	55,214	64,103
Profit (loss)	21,200	(2,071)	20,194	20,764	25,845	—	—	—	—	—	—	—
Total equity attributable to owners of parent	—	—	—	—	—	320,457	351,576	386,457	406,602	409,344	513,164	628,714
Total equity	219,611	224,253	298,475	341,207	337,974	—	—	—	—	—	—	—
Total assets	—	—	—	—	—	787,505	924,281	931,047	1,771,015	1,751,732	1,836,294	1,977,026
Total assets	607,024	615,820	731,677	782,357	783,248	—	—	—	—	—	—	—
Interest-bearing liabilities	241,121	253,424	278,063	266,276	274,424	266,215	359,528	326,959	1,005,402	998,389	949,242	929,217
Net interest-bearing liabilities* ²	206,524	228,681	219,727	212,855	223,638	215,492	304,308	274,968	945,782	898,384	858,183	835,520
Cash flows from operating activities	45,986	33,964	56,716	58,615	81,555	73,347	74,596	83,199	98,685	150,084	149,231	148,760
Cash flows from investing activities	(32,748)	(37,225)	(55,295)	(30,583)	(82,130)	(74,252)	(147,082)	(52,088)	(754,969)	(62,629)	(59,686)	(70,858)
Cash flows from financing activities	(23,536)	(8,181)	27,884	(33,866)	(1,825)	(2,385)	80,777	(39,859)	664,925	(46,242)	(103,159)	(77,946)
Free cash flow	13,238	(3,261)	1,421	28,032	(575)	(905)	(72,486)	31,111	(656,284)	87,455	89,544	77,902
Cash and cash equivalents	34,596	24,743	58,336	53,420	50,785	50,723	55,220	51,991	59,620	100,005	91,058	93,697
Capital expenditures* ³	31,452	31,715	32,532	35,201	53,611	52,657	43,796	62,569	76,657	81,017	74,697	82,036
Investment and loans receivable* ²	8,035	5,672	35,749	5,710	32,941	25,507	102,034	4,556	691,126	733	1,361	2,080
Depreciation and amortization	30,471	29,400	33,507	35,568	44,864	39,696	40,048	43,266	56,111	83,798	86,380	92,435
Amortization of goodwill	2,472	2,719	3,668	4,959	7,352	—	—	—	—	—	—	—
Research and development costs	3,458	3,177	3,170	3,430	3,348	3,238	3,323	3,255	3,494	3,389	3,315	3,569
Profit (EPS) (Yen)	53.33	(5.25)	49.42	47.98	59.72	67.08	80.28	113.04	95.42	123.26	127.59	148.13
Annual dividends per share (Yen)	12.0	12.0	12.0	13.0	16.0	16.0	20.0	23.0	25.0	28.0	30.0	34.0
Dividend payout ratio (%)	22.5	—	24.3	27.1	26.8	23.9	24.9	20.3	26.2	22.7	23.5	23.0
Core operating profit margin (%)	6.5	5.3	6.0	6.3	6.8	8.2	9.2	9.3	9.0	11.0	10.9	10.6
Operating profit margin (%)	—	—	—	—	—	8.0	9.4	9.3	8.9	10.6	10.7	10.7
EBITDA margin* ⁴	—	—	—	—	—	—	—	16.0	16.5	20.5	21.2	20.4
Overseas revenue ratio (%)	24.3	27.6	31.4	35.0	44.4	40.7	40.8	43.3	47.9	55.5	56.1	59.2
Selling, general and administrative expenses / revenue	26.3	26.8	26.4	26.7	28.4	27.1	28.4	27.7	27.7	28.5	28.5	27.1
Return on equity (ROE) (%) ⁵	10.8	(1.0)	8.4	7.0	8.2	9.1	10.3	13.3	10.4	13.1	12.0	11.2
Return on capital employed (ROCE) ⁶	7.0	5.5	6.2	6.2	7.4	8.1	8.4	8.4	6.2	6.4	6.1	6.8
ROCE after Tax* ⁷	—	—	—	—	—	—	—	6.1	4.5	4.6	4.4	4.8
Net debt-to-equity (D/E) ratio (Times)	1.03	1.12	0.80	0.67	0.71	0.67	0.87	0.71	—	—	—	—
Adjusted net D/E ratio (Times)* ⁸	—	—	—	—	—	—	—	—	1.54	1.45	1.15	0.94
Share price (March 31) (Yen)	584	638	812	1,639	1,068	1,068	1,302	1,611	1,686	1,601	2,104	2,331
Price earnings ratio (PER) (Times)	10.95	—	16.43	34.16	17.88	15.92	16.22	14.25	17.67	12.99	16.49	15.74
Number of employees (Consolidated)* ⁹	11,588	11,468	12,955	13,142	14,127	14,107	15,860	15,345	18,974	19,341	19,155	19,172
Gas Business in Japan	—	—	—	—	—	—	—	5,985	6,171	6,292	6,295	6,465
Gas Business in the United States	—	—	—	—	—	—	—	4,820	4,916	4,724	4,534	4,406
Gas Business in Europe	—	—	—	—	—	—	—	—	2,589	2,794	2,884	2,912
Gas Business in Asia and Oceania	—	—	—	—	—	—	—	3,161	4,026	4,195	4,114	4,102
Thermos Business	—	—	—	—	—	—	—	1,379	1,272	1,336	1,328	1,287
Female employees as a percentage of the total labor force (Consolidated) (%)	—	—	—	—	—	—	—	17.8	19.1	19.6	20.1	20.5
Employee turnover rate (Consolidated) (%)	—	—	—	—	—	—	—	7.6	6.2	6.1	5.7	7.1
Energy consumption (TJ)* ¹⁰	—	—	—	44,620	47,599	47,599	62,516	67,613	72,014	109,512	104,142	117,586
Waste generated (including valuable materials) (Tonnes)* ^{11, 12}	—	—	—	—	—	2,834	2,917	2,910	3,023	3,762	14,715	14,352
Water withdrawal (Ten thousands of m ³)	—	—	—	791	816	816	1,014	1,092	1,362	3,002	4,335	4,591
GHG emissions (Scope 1) (Thousands of tonnes CO ₂ e)* ¹³	—	—	—	—	—	—	9	19	14	1,061	987	1,087
GHG emissions (Scope 2) (Thousands of tonnes CO ₂ e)* ¹³	—	—	—	—	—	—	3,363	3,838	4,056	4,747	4,664	4,834
GHG emissions (Scope 3) (Thousands of tonnes CO ₂ e)* ^{13, 14}	—	—	—	—	—	—	—	3,671	3,634	3,667	4,341	3,408

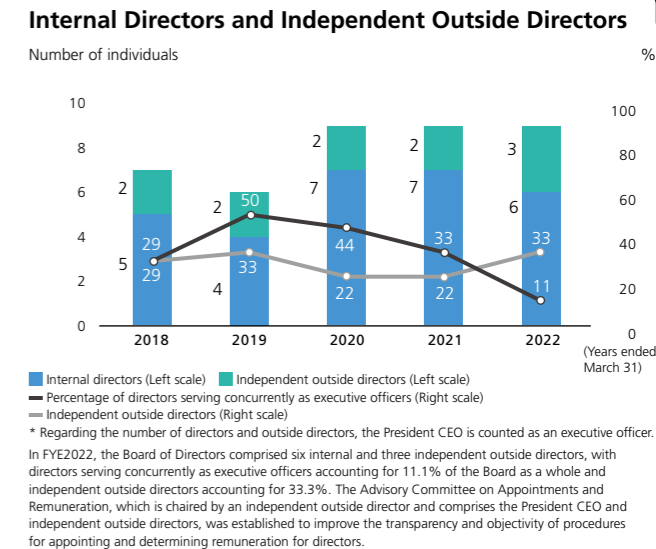
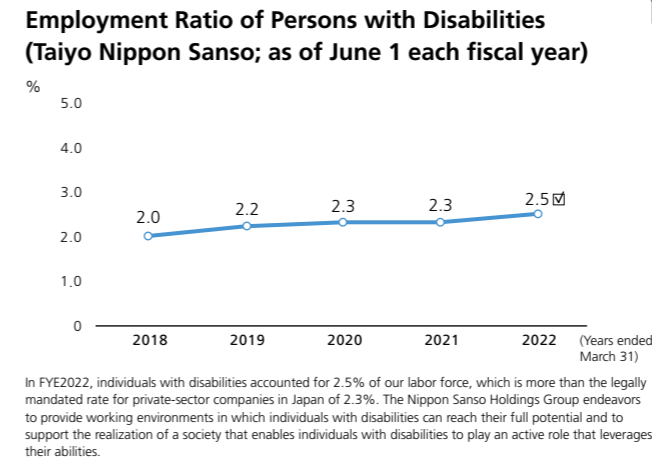
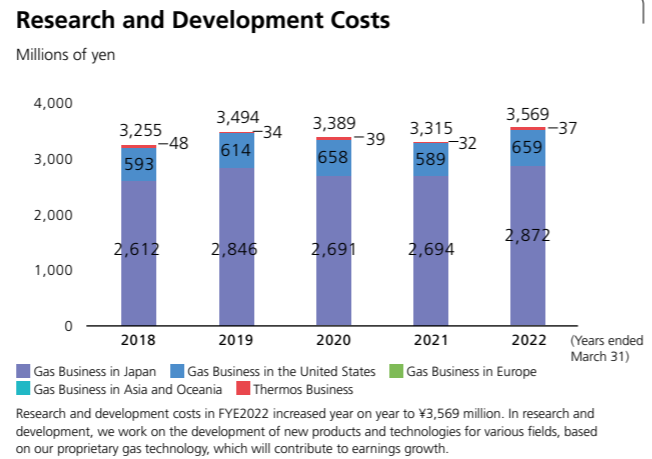
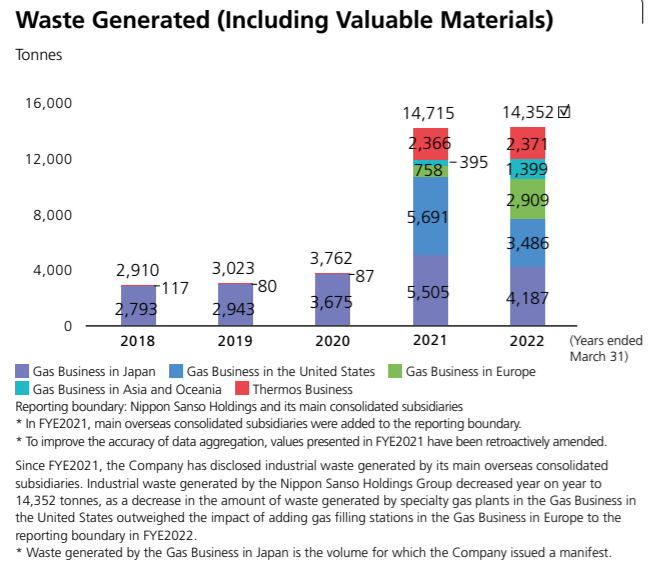
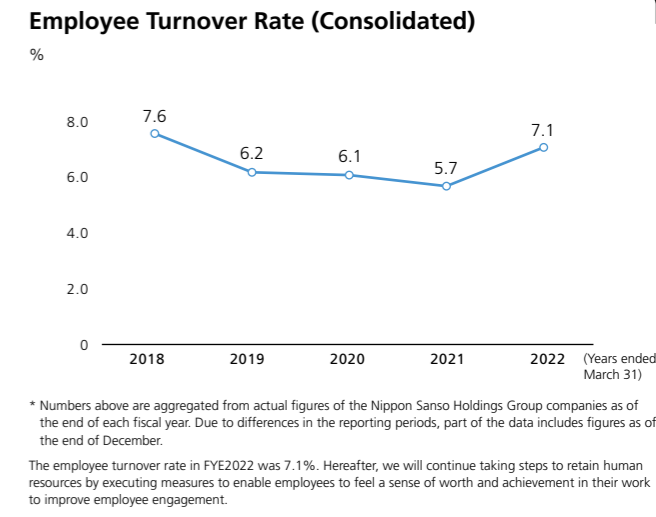
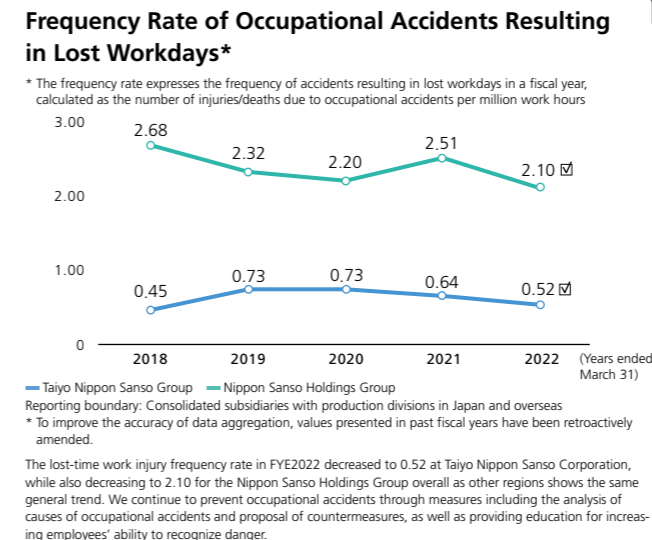
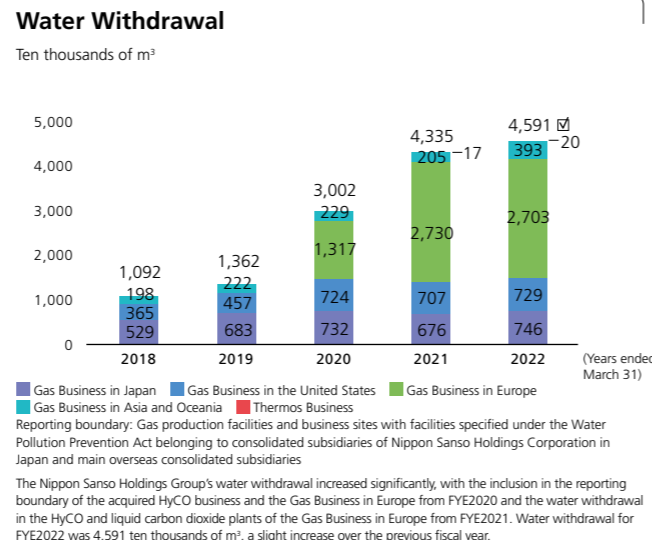
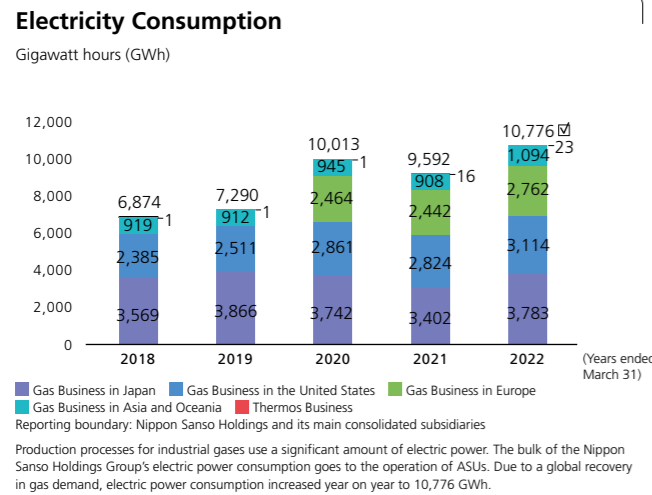
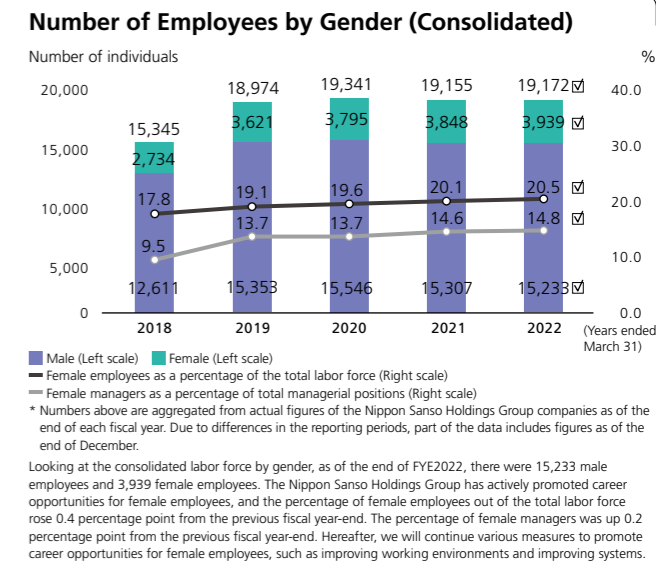
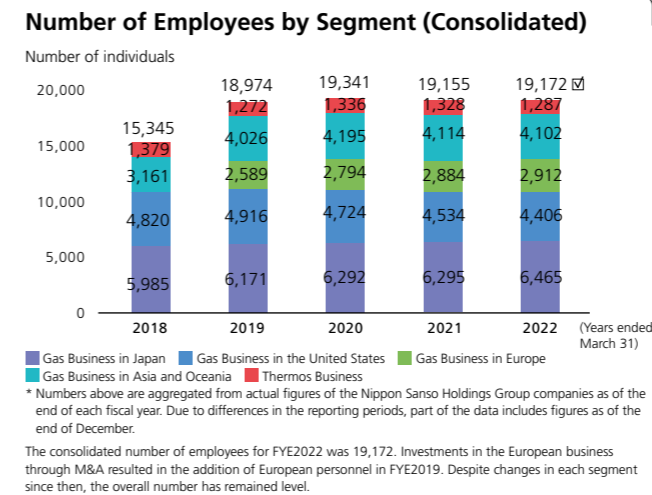
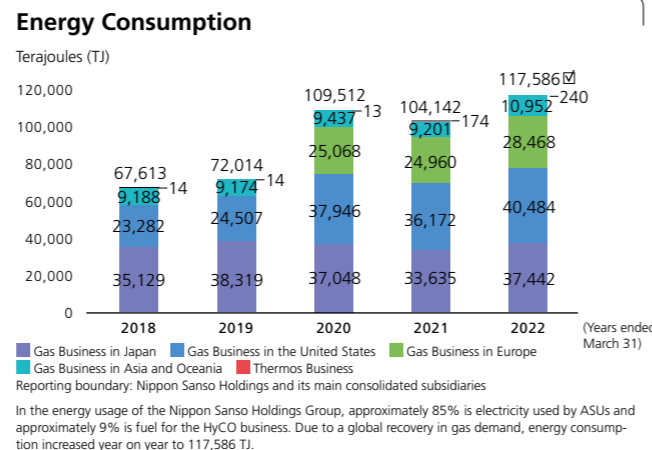
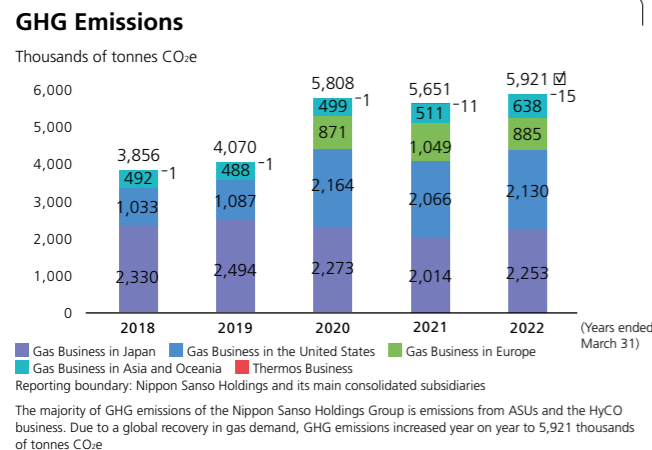
*1 Core operating profit is calculated by subtracting losses (non-operating items) produced by non-recurring factors from operating profit. Non-recurring factors include structural reform charges, including costs associated with business downsizing or withdrawal; special severance payments; losses due to disasters or major accidents; and other factors such as the disposal of idle assets. *2 The standard changed in FYE2019 compared to previous fiscal years. *3 The figures are based on construction, in accordance with the presentation in the annual securities report. *4 Earnings before interest, tax, and depreciation and amortization. *5 Return on equity (ROE) is calculated as profit attributable to owners of parent divided by average shareholders' equity. Average shareholders' equity is the average of shareholders' equity at beginning of period and shareholders' equity at end of period; where shareholders' equity is calculated as net assets - non-controlling interests. *6 Return on capital employed (ROCE) = Core operating profit / (outstanding interest-bearing debt + equity attributable to owners of parent). *7 Return on capital employed (ROCE) after tax = Net operating profit after tax (NOPAT) / (outstanding interest-bearing debt + equity attributable to owners of parent)*. *8 Adjusted net D/E ratio = (Net interest-bearing debt - equity-type debt) / (equity attributable to owners of parent + equity-type debt). Equity-type debt is debt procured through hybrid financing that has been recognized as equity credit by ratings agencies (50% of the procured amount); hybrid financing is a form of debt financing that has features resembling equity, including 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. *9 From FYE2018, we aggregated the actual results as of the fiscal year-end of each Group company. Due to differences in the fiscal year-ends, the aggregated data includes some results as

of December 31. To reflect a revision of this aggregation method, we have retroactively revised the figures presented in the previous fiscal year for FYE2018 to FYE2020. *10 The energy of the consumed fuels is calculated based on the gross calorific values specified in Japan's Act on the Rational Use of Energy. Purchased electricity and purchased steam are converted into primary energy amounts. *11 Beginning FYE2021, main overseas consolidated subsidiaries are included in the reporting boundary for the amount of waste generated. *12 To improve the accuracy of data aggregation, values presented in FYE2021 have been retroactively amended. *13 GHG emissions in Japan are calculated using emission factors provided in Japan's Act on Promotion of Global Warming Countermeasures (for electricity, up until FYE2021 the basic emission factors for each electricity provider and from FYE2022 the adjusted emission factors for each provider). For GHG emissions overseas, Scope 1 emissions are calculated using emission factors set forth in Japan's Act on Promotion of Global Warming Countermeasures. Scope 2 emissions are calculated using country-specific emission factors published by the IEA. However, for electricity in Europe, beginning FYE2021 a separate emission factor for each electricity provider is used, and emissions are calculated making reference to the Guarantee of Origin. Furthermore, from FYE2022, emissions from electricity use at Taiyo Gases Co., Ltd. and 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. *14 Due to a revision of the aggregation method, figures presented in previous fiscal years have been retroactively amended.

For information about the reporting boundaries for environmental data, please refer to Non-Financial Highlights (▶P.114).

Non-Financial Highlights

Indicators with  mark have been assured by KPMG AZSA Sustainability Co., Ltd.



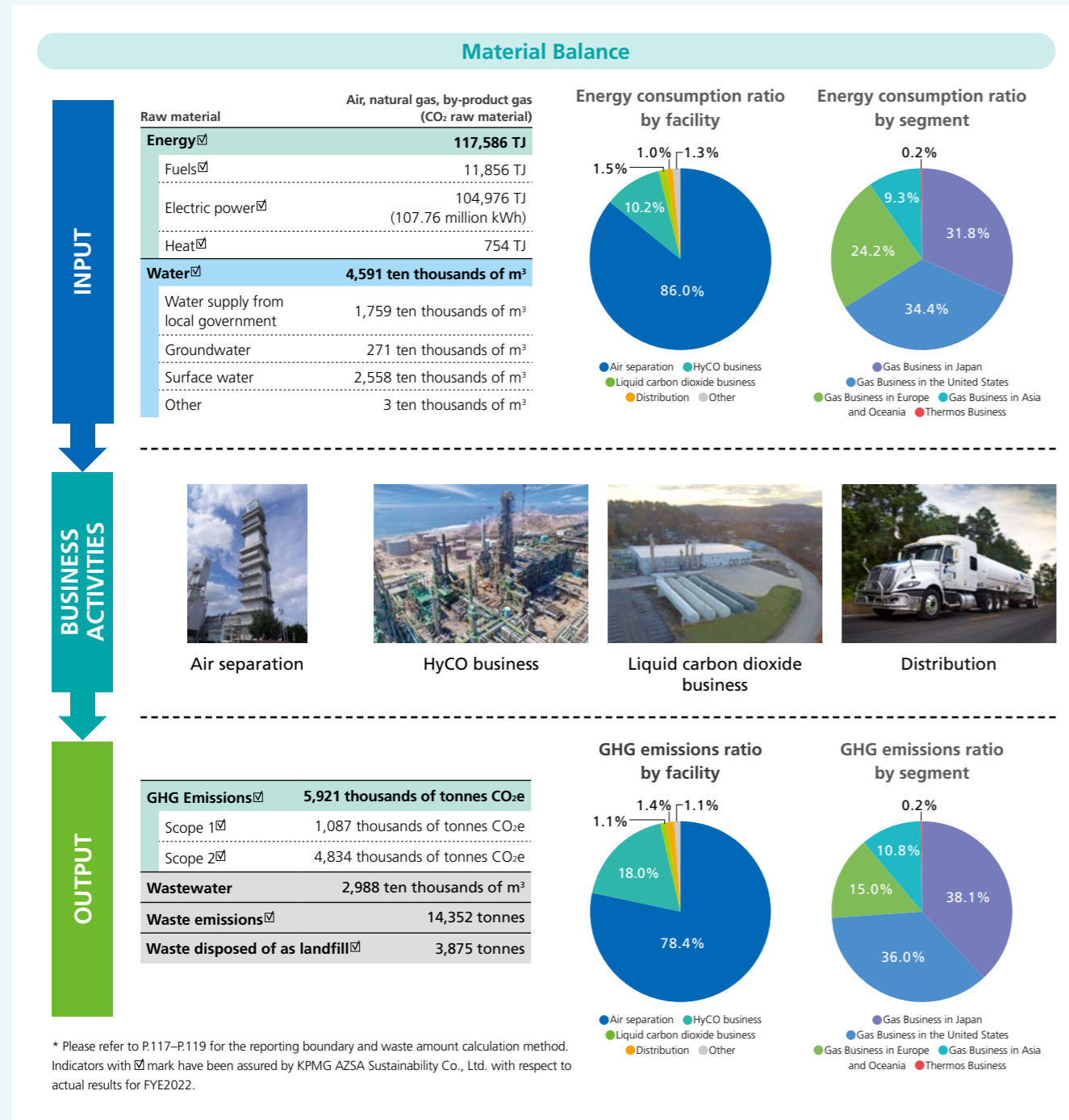
GHG emissions: GHG emissions in Japan are calculated using emission factors provided in Japan's Act on Promotion of Global Warming Countermeasures (for electricity, up until FYE2021 the basic emission factors for each electricity provider and from FYE2022 the adjusted emission factors for each provider). For GHG emissions overseas, Scope 1 emissions are calculated using emission factors set forth in Japan's Act on Promotion of Global Warming Countermeasures. Scope 2 emissions are calculated using country-specific emission factors published by the IEA. However, for electricity in Europe, beginning FYE2021 a separate emission factor for each electricity provider is used,

and emissions are calculated making reference to the Guarantee of Origin. Furthermore, from FYE2022, emissions from electricity use at Taiyo Gases Co., Ltd. and 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.

For information on main subsidiaries, please see Sustainability Data (▶ P.122).

Sustainability Data

Material Balance and Environmental Contribution of the Nippon Sanso Holdings Group



Environment

Unit	FYE2020	FYE2021	FYE2022	
Greenhouse Gas (GHG) Emissions				
GHG Emissions Scope 1 <input checked="" type="checkbox"/>	Thousands of tonnes CO ₂ e	1,061	987	1,087
GHG Emissions Scope 2 <input checked="" type="checkbox"/>	Thousands of tonnes CO ₂ e	4,747	4,664	4,834
GHG Emissions Scope 3—Total for the Following Categories* <input checked="" type="checkbox"/>	Thousands of tonnes CO ₂ e	3,667	4,341	3,408
Category 1 Purchased goods and services	Thousands of tonnes CO ₂ e	883	883	897
Category 2* Capital goods	Thousands of tonnes CO ₂ e	65	44	42
Category 3 Fuel- and energy-related activities not included in Scope 1 and Scope 2	Thousands of tonnes CO ₂ e	276	248	276
Category 4 Upstream transportation and distribution (Including transportation services whose cost is borne by the Company)	Thousands of tonnes CO ₂ e	40	37	39
Category 5 Waste generated in operations	Thousands of tonnes CO ₂ e	N/A	2	1
Category 6 Business travel	Thousands of tonnes CO ₂ e	1	1	1
Category 7 Employee commuting	Thousands of tonnes CO ₂ e	3	3	3
Category 8 Upstream leased assets	Thousands of tonnes CO ₂ e	N/A	N/A	N/A
Category 9 Downstream transportation and distribution	Thousands of tonnes CO ₂ e	N/A	N/A	N/A
Category 10 Processing of sold products	Thousands of tonnes CO ₂ e	N/A	N/A	N/A
Category 11 Use of sold products	Thousands of tonnes CO ₂ e	1,583	2,436	1,466
Category 12 End-of-life treatment of sold products	Thousands of tonnes CO ₂ e	N/A	N/A	N/A
Category 13 Downstream leased assets	Thousands of tonnes CO ₂ e	N/A	N/A	N/A
Category 14 Franchises	Thousands of tonnes CO ₂ e	N/A	N/A	N/A
Category 15 Investments	Thousands of tonnes CO ₂ e	816	687	683

Reporting boundary: Scope 1 emissions and Scope 2 emissions represent Nippon Sanso Holdings and its main consolidated subsidiaries. For information on Scope 3 emissions aggregation, please refer to P.126-P.127.

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

GHG emissions in Japan are calculated using emission factors provided in Japan's Act on Promotion of Global Warming Countermeasures (for electricity, up until FYE2021 the basic emission factors for each electricity provider and from FYE2022 the adjusted emission factors for each provider). For GHG emissions overseas, Scope 1 emissions are calculated using emission factors set forth in Japan's Act on Promotion of Global Warming Countermeasures. Scope 2 emissions are calculated using country-specific emission factors published by the IEA. However, for electricity in Europe, beginning FYE2021 a separate emission factor for each electricity provider is used, and emissions are calculated making reference to the Guarantee of Origin. Furthermore, from FYE2022, emissions from electricity use at Taiyo Gases Co., Ltd. and 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 P.126-P.127 for calculation method for Scope 3 emissions.

Indicators with mark have been assured by KPMG AZSA Sustainability Co., Ltd. for FYE2022.

* Due to a revision of the aggregation method, figures presented in previous fiscal years have been retroactively amended.

GHG Emission Reduction Contribution

6,865 thousands of tonnes CO ₂ e*1	
Products and services*2	Industrial gases*3, **4
3,176 thousand of tonnes CO ₂ e <input checked="" type="checkbox"/>	3,689 thousand of tonnes CO ₂ e <input checked="" type="checkbox"/>

Indicators with mark have been assured by KPMG AZSA Sustainability Co., Ltd.

*1 For details on the reporting boundaries and calculation methods, please refer to P.128, "Calculation Methods for GHG Emission Reduction Contribution."

*2 GHG emission reduction contribution for products and services is calculated in accordance with the Guidelines for Quantifying GHG Emission Reductions of Goods or Services through Global Value Chain (Ministry of Economy, Trade and Industry).

*3 GHG emission reduction contribution from the use of industrial gases

*4 GHG emission reduction contribution through industrial gases includes the reduction contribution of consolidated subsidiaries in Japan, Europe, Asia and Oceania, and certain affiliated companies.

Sustainability Data

Unit			FYE2020	FYE2021	FYE2022
Contributions to Environmental Protection through Products					
GHG Emission Reduction	Products and Services ☑	Thousands of tonnes CO ₂ e	2,373	2,892	3,176
Contribution	Industrial Gases ☑	Thousands of tonnes CO ₂ e	—	2,174	3,689

See P.128 for details about reporting boundaries and the calculation methods.

Energy Usage				
Energy Consumption ☑	Terajoules	109,512	104,142	117,586
Electric power	Terajoules	97,483	93,400	104,976
Fuels	Terajoules	11,378	10,004	11,856
Heat	Terajoules	651	738	754

Reporting boundary: Nippon Sanso Holdings and its main consolidated subsidiaries

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. Purchased electricity and purchased steam are converted into primary energy amounts.

Environmental Impact				
Nitrogen oxide (NOx) emissions ☑	Tonnes	3.2	1.8	2.0
Sulfur oxide (SOx) emissions ☑	Tonnes	1.4	1.0	1.1
Particulate emissions ☑	Tonnes	0.1	0.1	0.1
Volatile organic compound (VOC) emissions ☑	Tonnes	10	5	8
Releases of substances designated under the Pollutant Release and Transfer Register (PRTR)* ☑	Tonnes	21	8	10

Reporting boundary: Consolidated subsidiaries in Japan, including Taiyo Nippon Sanso Corporation

* Due to a revision of the aggregation method, figures presented in previous fiscal years have been retroactively amended.

Water Usage					
Water Withdrawal ☑	Ten thousands of m ³	3,002	4,335	4,591	
Breakdown of sources of fresh water withdrawn	Water supply from local government	Ten thousands of m ³	1,496	1,472	1,759
	Municipal water	Ten thousands of m ³	429	490	576
	Industrial water	Ten thousands of m ³	1,067	982	1,183
	Groundwater	Ten thousands of m ³	276	258	271
	Surface water	Ten thousands of m ³	1,230	2,602	2,558
	Other	Ten thousands of m ³	—	3	3

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

Result of Water Stress Level Survey Results

The NSHD Group conducts a survey on water stress over all of its production sites in order to apprehend the risks related to use of water resources and facilitate more effective response to water risks. Using the Aqueduct water risk evaluation tool developed by the World Resources Institute, we surveyed water stress at 119 sites, with the following results.

	High	Medium-high	Medium	Medium-low	Low
Japan	0 (0/24)	0 (0/24)	1,834 (6/24)	4,675 (15/24)	488 (3/24)
The United States	840 (5/44)	305 (3/44)	1,469 (13/44)	490 (4/44)	4,122 (19/44)
Europe	752 (7/29)	0 (0/29)	9,521 (8/29)	249 (3/29)	16,489 (11/29)
Asia and Oceania	270 (3/20)	115 (1/20)	724 (5/20)	797 (6/20)	1,805 (5/20)
Thermos	0 (0/2)	0 (0/2)	0 (0/2)	84 (1/2)	111 (1/2)
Overall	1,862 (15/119)	420 (4/119)	13,548 (32/119)	6,295 (29/119)	23,015 (39/119)

- FYE2022 data
- Conducted a water stress survey using the Aqueduct water risk evaluation tool
- Reporting boundary: Production sites with ASU, HyCO, or liquid carbon dioxide facilities with annual water withdrawal of 20,000 m³ or more and Thermos

Unit		FYE2020	FYE2021	FYE2022
Waste				
Waste generated* ¹ ☑	Tonnes	3,762	14,715* ⁵	14,352
Waste disposed of as landfill* ² ☑	Tonnes	284	7,152	3,875
Hazardous waste generated* ³ ☑	Tonnes	197	1,799* ⁵	2,015
Waste recycled* ⁴	Tonnes	2,381	4,885* ⁵	7,623

Reporting boundary: Nippon Sanso Holdings and its main consolidated subsidiaries

Beginning FYE2021, main overseas consolidated subsidiaries are included in the reporting boundary. Waste generated by the Gas Business 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 We consider waste collected to be the amount of resources recycled. *⁵ To improve the accuracy of data aggregation, values presented in FYE2021 have been retroactively amended.

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 phosphorous emissions in wastewater. The total amounts of COD, nitrogen, and phosphorous emissions for all five sites amount to less than one tonne each.

GHG Emissions				
GHG Scope 1 + Scope 2 ☑	Thousands of tonnes CO ₂ e	5,808	5,651	5,921
Gas Business in Japan	Thousands of tonnes CO ₂ e	2,273	2,014	2,253
Gas Business in the United States	Thousands of tonnes CO ₂ e	2,164	2,066	2,130
Gas Business in Europe	Thousands of tonnes CO ₂ e	871	1,049	885
Gas Business in Asia and Oceania	Thousands of tonnes CO ₂ e	499	511	638
Thermos Business	Thousands of tonnes CO ₂ e	1	11	15

Energy Consumption				
Total ☑	Thousands of gigajoules	109,512	104,142	117,586
Gas Business in Japan	Thousands of gigajoules	37,048	33,635	37,442
Gas Business in the United States	Thousands of gigajoules	37,946	36,172	40,484
Gas Business in Europe	Thousands of gigajoules	25,068	24,960	28,468
Gas Business in Asia and Oceania	Thousands of gigajoules	9,437	9,201	10,952
Thermos Business	Thousands of gigajoules	13	174	240

Electricity Consumption				
Total ☑	Millions of kWh	10,013	9,592	10,776
Gas Business in Japan	Millions of kWh	3,742	3,402	3,783
Gas Business in the United States	Millions of kWh	2,861	2,824	3,114
Gas Business in Europe	Millions of kWh	2,464	2,442	2,762
Gas Business in Asia and Oceania	Millions of kWh	945	908	1,094
Thermos Business	Millions of kWh	1	16	23

Water Withdrawal				
Total ☑	Ten thousands of m ³	3,002	4,335	4,591
Gas Business in Japan	Ten thousands of m ³	732	676	746
Gas Business in the United States	Ten thousands of m ³	724	707	729
Gas Business in Europe	Ten thousands of m ³	1,317	2,730	2,703
Gas Business in Asia and Oceania	Ten thousands of m ³	229	205	393
Thermos Business	Ten thousands of m ³	—	17	20

Waste Generated (Including Valuable Materials)*¹				
Total ☑	Tonnes	3,762	14,715* ²	14,352
Gas Business in Japan	Tonnes	3,675	5,505	4,187
Gas Business in the United States	Tonnes	—	5,691	3,486
Gas Business in Europe	Tonnes	—	758	2,909
Gas Business in Asia and Oceania	Tonnes	—	395	1,399
Thermos Business	Tonnes	87	2,366* ²	2,371

*¹ Beginning FYE2021, main overseas consolidated subsidiaries are included in the reporting boundary. Waste generated by the Gas Business in Japan is the volume for which the Company issued a manifest.

*² To improve the accuracy of data aggregation, values presented in FYE2021 have been retroactively amended.

Society

Unit	FYE2020	FYE2021	FYE2022	
Employees and Diversity (Consolidated)				
Employees* ☒	Number of individuals	19,341	19,155	19,172
Gas Business in Japan	Number of individuals	6,292	6,295	6,465
Gas Business in the United States	Number of individuals	4,724	4,534	4,406
Gas Business in Europe	Number of individuals	2,794	2,884	2,912
Gas Business in Asia and Oceania	Number of individuals	4,195	4,114	4,102
Thermos Business	Number of individuals	1,336	1,328	1,287
Employees by gender				
Male ☒	Number of individuals	15,546	15,307	15,233
Female ☒	Number of individuals	3,795	3,848	3,939
Employees by age group (Composition ratio)				
20s and below	%	16.8	16.6	16.4
30s	%	24.8	24.6	25.0
40s	%	29.0	28.6	30.1
50s and above	%	29.4	30.2	28.5
Years of consecutive service				
Overall average	Years	12.4	11.3	11.4
Men	Years	12.7	11.7	11.5
Women	Years	11.5	9.5	11.1
Average age	Years	41.0	42.3	44.2
New hires	Number of individuals	2,095	1,893	2,917
Employee turnover rate	%	6.1	5.7	7.1
Female employees as a percentage of the total number of employees ☒	%	19.6	20.1	20.5
Female managers as a percentage of total managerial positions ☒	%	13.7	14.6	14.8

* 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.

Employees and Diversity (Non-Consolidated)				
Employees	Number of individuals	—	81*	86*
Employees by gender				
Male	Number of individuals	—	66	71
Female	Number of individuals	—	15	15
Female employees as a percentage of the total number of employees	%	—	18.5	17.4
Female managers as a percentage of total managerial positions	%	—	4.1	3.6

* Includes employees working concurrently for Taiyo Nippon Sanso Corporation (47 employees in FYE2021, 49 employees in FYE2022)

Unit	FYE2020	FYE2021	FYE2022	
Employees, Diversity, and Work-Life Balance (Registered employees of Taiyo Nippon Sanso Corporation)				
Employees	Number of individuals	2,024	2,065	2,075
Employees by gender				
Male	Number of individuals	1,775	1,789	1,784
Female	Number of individuals	249	276	291
Employees by age group (Composition ratio)				
20s and below ☒	%	18.9	19.5	19.8
30s ☒	%	19.7	20.1	20.3
40s ☒	%	29.6	27.6	25.7
50s and above ☒	%	31.8	32.9	34.2
Years of consecutive service				
Overall average	Years	17.9	17.8	17.8
Men	Years	18.5	18.5	18.6
Women	Years	13.8	12.9	13.3
Average age ☒	Years	41.9	42.3	42.4
New hires ☒	Number of individuals	109	102	85
Employee turnover rate*1 ☒	%	3.1	2.8	3.3
Companywide employee training hours*2				
New employee training hours	Hours	31,200	32,160	16,320
Employee training hours	Hours	13,897	17,716	21,504
Unions members ☒	Number of individuals	1,146	1,195	1,214
Union members as a percentage of the total number of employees ☒	%	56.6	57.8	58.5
Layoffs*3 ☒	Number of individuals	0	0	0
Female employees as a percentage of total number of employees	%	12.3	13.4	14.0
Female managers as a percentage of total managerial positions	%	1.5	1.5	1.5
Employment ratio of persons with disabilities (as of June 1 of each fiscal year) ☒	%	2.3	2.3	2.5
Number of employees reemployed after retirement ☒	Number of individuals	64	74	82
Employees using childcare leave systems ☒	Number of individuals	7	16	19
Men ☒	Number of individuals	0	6	6
Women ☒	Number of individuals	7	10	13
Employees using nursing care leave or long-term nursing care leave ☒	Number of individuals	0	0	0
Usage rate for annual paid leave*4 ☒	%	62.5	60.2	61.5
Employees using volunteer leave system ☒	Number of individuals	0	0	0

*1 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

*2 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

*3 Employees leaving the Company for reasons attributable to the Company (dismissals)

*4 The number of new days granted in the reporting year is the numerator. The number of days used in the reporting year is the denominator. The denominator does not include the number of days carried over from the previous fiscal year.

Sustainability Data

Unit	FYE2020	FYE2021	FYE2022	
Others (Consolidated)				
Expenditures on social contribution initiatives	Millions of yen	49.4	109.7	84.5

* Data is calculated on a consolidated basis from FYE2021.

Occupational Health and Safety				
Frequency rate of occupational accidents resulting in lost workdays (Number of injuries / fatalities due to occupational accidents per million work hours)				
Nippon Sanso Holdings Group (Including Taiyo Nippon Sanso Group) ☒	—	2.20*	2.51*	2.10
Taiyo Nippon Sanso Group ☒	—	0.73	0.64	0.52

* To improve the accuracy of data aggregation, values presented in past fiscal years have been retroactively amended.
Reporting boundary: Consolidated subsidiaries with production divisions in Japan and overseas

Reporting Boundary

Main consolidated subsidiaries

Consolidated subsidiaries in Japan including Taiyo Nippon Sanso Corporation (International Carbon Dioxide Co., Ltd. added from FYE2022); Matheson Tri-Gas, 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.

Beginning FYE2021, environmental data includes the HyCO plant and liquid carbon dioxide plant of Nippon Gases Euro-Holding S.L.U. and its consolidated subsidiaries, Top Thermo Manufacturing (Malaysia) Sdn. Bhd. and Vacuumtech Philippines Inc.; and from FYE2022, data was added from Nippon Gases Euro-Holding S.L.U. and its subsidiary filling sites, Leeden Gases Sdn. Bhd., and Matheson Gas Products Korea Co., Ltd.

Governance

Unit	FYE2020	FYE2021	FYE2022	
Activities of Committees				
Management Configuration	Number of individuals	9	9	9
Internal directors	Number of individuals	7	7	6
Independent outside directors	Number of individuals	2	2	3
Directors serving concurrently as executive officers	Number of individuals	4	3	1
Percentage of directors serving concurrently as executive officers	%	44.4	33.3	11.1
Independent outside directors as a percentage of total Board of Directors' members	%	22.2	22.2	33.3
Female directors as a percentage of total Board of Directors' members	%	0.0	0.0	11.1
Term of appointment	Years	1	1	1
Frequency of Board of Directors' meetings	Times	12	11	14
Attendance at Board of Directors' meetings	%	99.1	98.0	98.4
Attendance of independent outside directors at Board of Directors' meetings	%	100.0	100.0	100.0
Number of directors attending less than 75% of Board of Directors' meetings	Number of individuals	0	0	0
Audit & Supervisory Board members	Number of individuals	4	4	4
Internal Audit & Supervisory Board members	Number of individuals	1	1	1
Independent outside Audit & Supervisory Board members	Number of individuals	2	2	2
Independent outside Audit & Supervisory Board members as a percentage of total Audit & Supervisory Board members	%	50.0	50.0	50.0
Female Audit & Supervisory Board members as a percentage of total Audit & Supervisory Board members	%	0.0	0.0	0.0
Frequency of Audit & Supervisory Board meetings	Times	16	16	17
Attendance at Audit & Supervisory Board meetings	%	92.2	100.0	100.0
Attendance of independent outside Audit & Supervisory Board members at Audit & Supervisory Board meetings	%	89.6	100.0	100.0
Number of Audit & Supervisory Board members attending less than 75% of Audit & Supervisory Board meetings	Number of individuals	1	0	0
Average age of directors and Audit & Supervisory Board members	Years	64.3	64.8	65.8
Number of executive officers*	Number of individuals	22	7	6
Female executive officers as a percentage of total executive officers	%	0.0	0.0	0.0

* Figures for FYE2021 represent executive officers of Nippon Sanso Holdings (including the President CEO). Figures for FYE2020 and earlier represent executive officers of Taiyo Nippon Sanso Corporation (including the President CEO).

Sustainability Data

Unit		FYE2020	FYE2021	FYE2022
Activities of Committees				
Advisory Committee on Appointments and Remuneration				
Members	Number of individuals	3	3	5
Internal directors	Number of individuals	1	1	2
Independent outside directors	Number of individuals	2	2	3
Frequency of meetings	Times	11	6	10
Attendance	%	100.0	100.0	100.0
Management Committee				
Members	Number of individuals	17	13	13
Frequency of meetings	Times	16	6	11
Attendance*1	%	97.1	100.0	100.0
Investment Committee				
Members*2	Number of individuals	12	15	15
Frequency of meetings	Times	2	1	3
Attendance*1	%	100.0	93.3	93.3
Global Strategy Review Committee				
Members	Number of individuals	—	17	17
Frequency of meetings	Times	—	1	1
Attendance	%	—	100.0	100.0
Global Risk Management Committee				
Members	Number of individuals	—	17	18
Frequency of meetings	Times	—	1	1
Attendance	%	—	100.0	100.0
Global Compliance Committee				
Members*3	Number of individuals	20	20	8
Frequency of meetings*4	Times	0	0	1
Attendance	%	—	—	87.5

*1 Average attendance rate *2 Excluding additional attendees and Secretariat *3 Excluding attendees and Secretariat from FYE2022 *4 Not held during FYE2020 or FYE2021 due to COVID-19

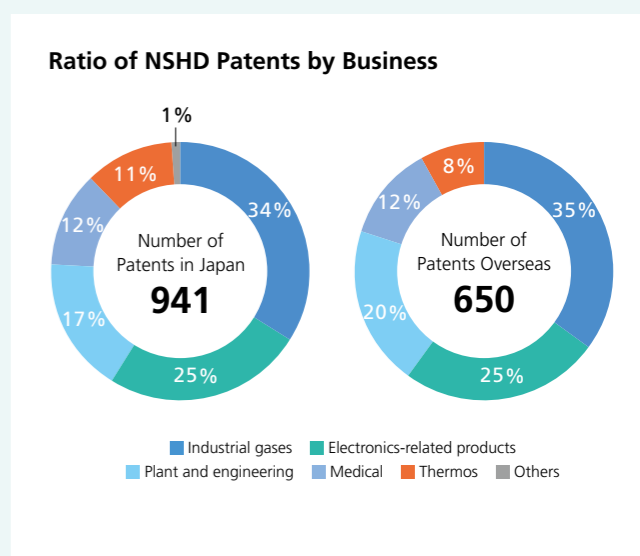
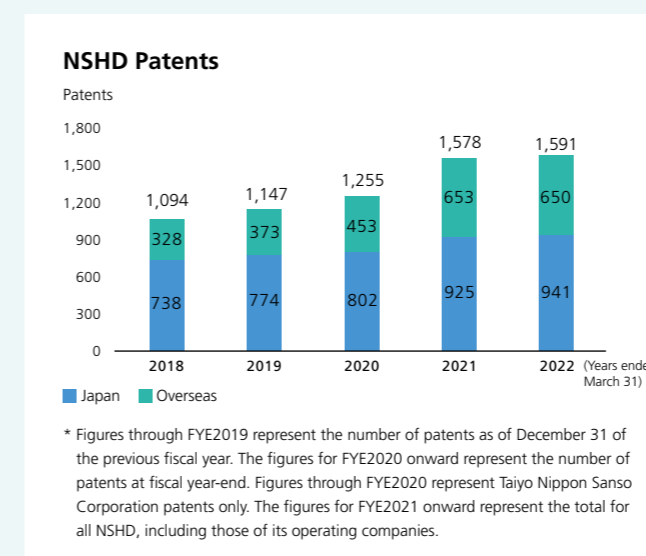
Remuneration for Officers				
Remuneration for directors (excluding outside directors)				
Total	Millions of yen	255	263	200
Basic remuneration	Millions of yen	162	169	141
Corporate political contributions	Millions of yen	93	94	59
Remuneration for Audit & Supervisory Board members (excluding independent outside members)				
Total	Millions of yen	25	27	28
Basic remuneration	Millions of yen	25	27	28
Remuneration for independent outside directors				
Total	Millions of yen	102	100	108
Basic remuneration	Millions of yen	102	100	108
Remuneration for independent auditors				
Total	Millions of yen	198	210	222
Remuneration for audit services	Millions of yen	195	209	218
Other remuneration for independent auditors	Millions of yen	3	1	4
Others				
Anti-takeover measures	—	Not adopted	Not adopted	Not adopted
Code of ethics	—	Adopted	Adopted	Adopted
Policy on transparency of tax affairs	—	Adopted (Internal)	Adopted (Currently disclosed on the Company website)	Adopted (Currently disclosed on the Company website)
Corporate political contributions*	Millions of yen	0.0	0.0	0.2
Violations of rules for the prevention of corruption	Number of violations	0	0	0
Monetary penalties incurred as a result of violations of guidelines for the prevention of corruption	Millions of yen	0.0	0.0	0.0

* Reporting boundary is consolidated from FYE2022.

Intellectual Property and Research and Development

Unit		FYE2020	FYE2021	FYE2022
Intellectual Property				
Registered patents				
Total	Patents	1,255	1,578	1,591
Japan	Patents	802	925	941
Overseas	Patents	453	653	650

* Figures through FYE2020 represent Taiyo Nippon Sanso Corporation patents only. The figures for FYE2021 onward represent the total for all NSHD Group operating companies combined.



Research and Development				
Research and Development				
Total	Millions of yen	3,389	3,315	3,569
Gas Business in Japan	Millions of yen	2,691	2,694	2,872
Gas Business in the United States	Millions of yen	658	589	659
Thermos Business	Millions of yen	39	32	37

Calculation Methods for Scope 3 GHG Emissions

Referenced Guidelines

Our Scope 3 GHG emissions are calculated based on the Corporate Value Chain (Scope 3) Accounting and Reporting Standard issued by the GHG Protocol.

For emission factors, we used the emission factor database Ver. 3.1 provided in the Green Value Chain Platform, the Inventory Database for Environmental Analysis (IDEA v2) for supply chain GHG emissions accounting, and information included in MilCA Ver. 2, a life-cycle assessment software developed by the Japan Environmental Management Association for Industry.

Reporting Boundary

Unless otherwise specified, the data covers Nippon Sanso Holdings and its consolidated subsidiaries in Japan, including Taiyo Nippon Sanso Corporation.

Calculation Method by Category

Category 1 Purchased goods and services	Calculated by multiplying the amounts of products and services in physical or monetary units purchased by Taiyo Nippon Sanso Corporation by the respective emission factor for each type of product or service. However, emissions from transport and shipping services and from oxygen, nitrogen, and argon purchased from Taiyo Nippon Sanso's consolidated subsidiaries or affiliates are included in the reporting boundary of Scope 1 or 2, or categories 4 and 15 of Scope 3, and are therefore deducted from the procured amounts used for this calculation.
Category 2 Capital goods	Calculated by multiplying the amounts of capital investment during each reporting fiscal year by an emission factor per price of capital goods.
Category 3 Fuel- and energy-related activities not included in Scope 1 and 2	This category includes emissions associated with the extraction, production, and transportation of purchased fuels and those consumed in the production of electricity and steam that are purchased by the Group. Fuels: Calculated by multiplying the amount purchased during the fiscal year by an emission factor for each fuel type. Electricity and steam: Calculated by multiplying the amount purchased from outside the Group by the upstream emission factor for each purchased energy reflecting electricity transmission loss.
Category 4 Upstream transportation and distribution (Including distribution services whose cost is borne by the Group)	Calculated by subtracting the CO ₂ emissions from logistics subsidiaries, which are included in Scope 1 emissions, from the CO ₂ emissions reported for Taiyo Nippon Sanso Corporation and Nippon Ekitan Corporation as specified shippers in accordance with the Act on Promotion of Global Warming Countermeasures. CO ₂ emissions related to transportation and distribution of products for which Taiyo Nippon Sanso Corporation and Nippon Ekitan Corporation bear the transportation costs are included in this category.
Category 5 Waste generated in operations	Calculated by multiplying industrial waste output by the emission factors for each waste type (including transportation stages).
Category 6 Business travel	Calculated by multiplying the number of employees of consolidated subsidiaries in Japan, including Taiyo Nippon Sanso Corporation by the emission factor (0.13 tonnes of CO ₂ /person/year).
Category 7 Employee commuting	Taiyo Nippon Sanso Corporation employees: For train commuters, the annual payment for commuter passes is multiplied by an emission factor per transportation expense. For car commuters, the round-trip distance is multiplied by the annual number of commuting days and an emission factor per person-kilometer for passenger car. Employees of Japanese consolidated subsidiaries: The number of employees is multiplied by the annual number of commuting days, and multiplied by the emission factor per commuting day.

Category 8 Upstream leased assets	Since the amount of applicable lease assets is negligible, emissions in this category are not calculated.
Category 9 Downstream transportation and distribution	The emissions associated with the transportation of sold products whose cost is borne by Taiyo Nippon Sanso Corporation and Nippon Ekitan Corporation fall within category 4 as the Group basically bears the cost of transporting products.
Category 10 Processing of sold products	The Taiyo Nippon Sanso Group's main product group is gas, and since it is difficult to rationally calculate the GHG emissions associated with the processing of these products, the emissions are not calculated.
Category 11 Use of sold products	The amount of CO ₂ emissions generated from the use of propane gas (LP gas), liquid carbon dioxide gas, and dry ice, and from use of electricity for the operation of its ASUs during the service life, which were sold to customers outside of the Taiyo Nippon Sanso Group.
Category 12 End-of-life treatment of sold products	The Taiyo Nippon Sanso Group's primary products are gases (oxygen, nitrogen, and argon). After use, these gases return to the atmosphere and do not become waste. Furthermore, since the gas containers are loaned, and therefore the amount of waste from sold is negligible, emissions in this category are not calculated.
Category 13 Downstream leased assets	Since the amount of applicable lease assets is negligible, emissions in this category are not calculated.
Category 14 Franchises	As the Group does not have any businesses in this format, there are no emissions in this category.
Category 15 Investments	Calculated by multiplying the GHG emissions of each of the eight affiliates of Taiyo Nippon Sanso Corporation in Japan that produce gas by the Company's shareholding ratio (as of the fiscal year-end). The eight companies' GHG emissions are based on their actual emissions in the reporting period.

Calculation Methods for GHG Emission Reduction Contribution

We include the following products and services sold by consolidated subsidiaries of Nippon Sanso Holdings and certain affiliated companies in the calculation of GHG emission reduction contribution. The calculation method per product or service is as follows. The CO₂ emission factors used for electricity are 0.453 t-CO₂/MWh in Japan, 0.402 t-CO₂/MWh in Europe, and the emissions factors published by the IEA for each country in Asia and Oceania.

Environmental product offerings and applications	Calculation method for GHG emission reduction	Calculation period		
		FYE2020	FYE2021	FYE2022
Products and services	Contribution to GHG emission reduction through products and services using the Nippon Sanso Holdings Group's proprietary technologies			
Combustion-type exhaust gas abatement system Reporting boundary: Consolidated subsidiaries in Japan	An average processing capacity of 0.6 L/min for nitrogen trifluoride (NF ₃) gas per one combustion-type exhaust gas abatement system was assumed, and this value was multiplied by the number of such systems that were installed in FYE2019 and FYE2022, the number of operating hours per year, and the global warming potential (GWP) of NF ₃ to calculate the GHG emission reduction contribution. The amount of CO ₂ emissions from fuel used in combustion equipment was deducted.	○	○	○
SF₆ recovery service Reporting boundary: Consolidated subsidiaries in Japan	The volume of sulfur hexafluoride (SF ₆) gas recovered in FYE2022 was multiplied by its GWP to calculate GHG emission reduction contribution.	○	○	○
SCOPE-JET® Reporting boundary: Consolidated subsidiaries in Japan	Based on actual observed values at two electronic furnace manufacturers who had introduced SCOPE-JET®, the electricity-saving effect per volume of jet oxygen (kWh/Nm ³) was calculated. The ratio of the number of plants that have introduced SCOPE-JET® to the total number of electric furnace manufacturing plants was multiplied by the volume of crude steel products by electric furnaces in Japan in FYE2022, and the resulting number was assumed to be the production volume of crude steel contributed by the electricity saving from SCOPE-JET®. The amount of oxygen consumed by SCOPE-JET® in the production of this crude steel, and the amount of electricity saved per volume of oxygen were multiplied by the CO ₂ emission factor for electricity to calculate the GHG emission reduction contribution. The amount of the CO ₂ emissions generated during the manufacture of the oxygen was deducted.	○	○	○
MG Shield® Reporting boundary: Consolidated subsidiaries in Japan	The amount of SF ₆ gas whose use was avoided through use of MG Shield® sold in FYE2022 was multiplied by the gas' GWP to calculate the GHG emission reduction contribution.	○	○	○
New refrigerants Reporting boundary: Consolidated subsidiaries in Europe	We calculated the amount of reduction contribution by assuming a 7% per year leakage rate of new refrigerants sold from FYE2016 to FYE2022, and multiplying leakage amount by the difference between the GWP of alternative refrigerants and the GWP of new refrigerants. The reduction contribution assumes annual leakage of 7% from equipment sold in the preceding fiscal year, continuing at the same rate in the next fiscal year.	—	○	○
Nitrogen gas supply system for laser processing (PSA) Reporting boundary: Consolidated subsidiaries in Japan	The annual power consumption of Taiyo Nippon Sanso Corporation's conventional air compressor was compared with that of the energy-saving type nitrogen gas supply system to calculate the annual electricity saving from using the energy-saving type system. The annual electricity saved was multiplied by the CO ₂ emission factor for electricity and the cumulative number of units sold from FYE2013 to FYE2022 to calculate the GHG emission reduction contribution.	○	○	○
Shuttle Chef® Reporting boundary: Consolidated subsidiaries in Japan	The amount of electric power usage saved per year from using Shuttle Chef® when cooking was multiplied by the CO ₂ emission factor for electricity and the total number of units sold over the three years from FYE2020 to FYE2022 to calculate the GHG emission reduction contribution.	○	○	○
Hydrogen station Reporting boundary: Consolidated subsidiaries in Japan	The annual CO ₂ emissions, which include emissions during the manufacture of the hydrogen, emitted by fuel cell vehicles (FCVs) filled with hydrogen at hydrogen stations sold or operated by Taiyo Nippon Sanso Corporation and operated during FYE2022 was compared with the annual CO ₂ emissions of gasoline cars to calculate the GHG emission reduction contribution.	○	○	○
Industrial gases	Contribution to GHG emission reduction through industrial gases produced and supplied by the NSHD Group			
Oxygen-enriched combustion in blast furnaces Reporting boundary: Consolidated subsidiaries in Japan and Europe, and affiliated companies in Japan	We calculated the GHG emission reduction contribution as the difference between the amount of CO ₂ emissions in the production of crude steel using 100% coke and the production of crude steel via pulverized coal combustion based on crude steel production by the eight steel companies to whom the NSHD Group supplied oxygen in FYE2022. This calculation method is described in "The Impact of Oxygen on Reducing CO ₂ Emissions in Blast Furnace Ironmaking" (July 2011) by Dr. Michael F. Riley. We deducted the amount of CO ₂ emitted during the production of oxygen and the pumping of gas into the blast furnace.	—	○ (Japan)	○ (Japan and Europe)
Oxygen-enriched combustion in electronic furnaces Reporting boundary: Consolidated subsidiaries in Europe and Asia and Oceania	Based on actual observed values at two electronic furnace manufacturers who had introduced oxygen burners, the electricity-saving effect per volume of jet oxygen (kWh/Nm ³) was calculated. The amount of the reduction was calculated by multiplying the amount of oxygen transmitted to the customer by the electricity reduction per volume of oxygen for the oxygen burner, but the CO ₂ emissions coefficient for electricity. The amount of CO ₂ emission generated in manufacturing the oxygen has been deducted.	—	—	○
Argon (Ar) welding Reporting boundary: Consolidated subsidiaries in Europe	We calculated the contribution to the reduction of overall CO ₂ emissions from using Ar-CO ₂ mixed gas as a welding gas, based on actual values when performing CO ₂ welding and Ar-CO ₂ mixed gas welding using welding equipment. The calculation was based on the differences in welding speed and CO ₂ emissions to the atmosphere. Specifically, we calculated the contribution as the difference in CO ₂ emissions released directly when conducting CO ₂ welding and Ar-CO ₂ mixed gas welding with regard to the CO ₂ generated in both methods, adding the reduction effect of lower electric power consumption due to increased welding speed with mixed-gas welding. The impact of reduced electricity consumption was calculated by multiplying the amount of electricity consumption saved due to mixed gas welding by the CO ₂ emissions coefficient. The amount of CO ₂ emissions generated in the manufacture of Ar is deducted from the contribution to reduced CO ₂ emissions.	—	—	○

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, 2021 to March 31, 2022 included in its Integrated Report 2022 (the "Report") for the fiscal year ended March 31, 2022.

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 Goi Plant of Chiba Sanso Center Co., Ltd. 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 Control

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 Control 1, we maintain a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

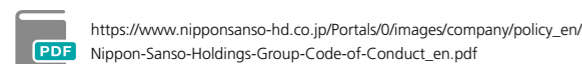
/s/ Kazuhiko Saito
Kazuhiko Saito, Partner, Representative Director
KPMG AZSA Sustainability Co., Ltd.
Tokyo, Japan
September 16, 2022

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.

Policies

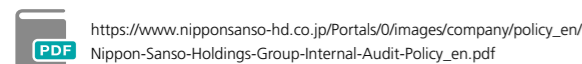
Code of Conduct

We contribute to the creation of value of our customers in all industries through innovative gas solutions and to the realization of an affluent and sustainable society through the creation of a harmonious relationship between people and the earth based on the Group Philosophy, “Proactive. Innovative. Collaborative. Making life better through gas technology.” We act honestly and fairly with high ethical values toward the goal that we can gain trust from society and make continuous progress.



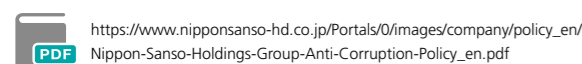
Internal Audit Policy

Our mission is to contribute to the realization of our group companies’ philosophy and vision and the achievement of business targets. Through internal audit activities, we endeavor to add value to our group companies’ operations or make improvement proposals, thereby contributing to securing sound and appropriate business operation and improving business efficiency.



Anti-Corruption Policy

We aim to prevent any form of corruption including bribery and anticompetitive acts and to establish and maintain fair trade practices in accordance with the Code of Conduct of the Nippon Sanso Holdings Group.

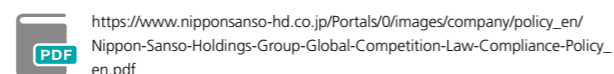


Global Competition Law Compliance Policy

In many countries and regions in which we conduct business activities, laws and rules that are generally called competition laws prohibit anticompetitive acts using a dominant position in the market, cartels, anticompetitive M&As, and other anticompetitive acts to ensure fair and free competition. In some countries and regions, laws of such countries and regions may be applied and enforced even on an act conducted outside the countries and regions if such act affects the market in the countries and regions.

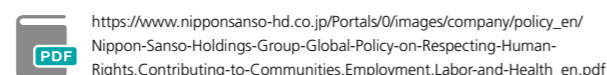
We understand that compliance with such competition laws contributes to the benefit not only of consumers but also of the entire society, will respect the competition laws,

and endeavor to ensure fair and free competition. We provide to our officers and employees necessary education on the importance of compliance with competition laws.



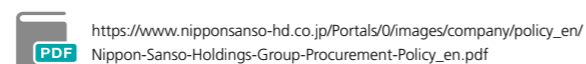
Global Policy on Respecting Human Rights, Contributing to Communities, Employment, Labor, and Health

We support 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 we shall fulfill our social responsibilities as a business entity through the promotion of respect for human rights in the workplace and creation of adequate working environments.



Procurement Policy

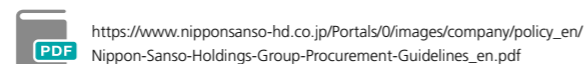
We are addressing the resolution of environmental and social issues based on the Group Philosophy, “Proactive. Innovative. Collaborative. Making life better through gas technology.” We believe resolving these problems and realizing a sustainable society requires joint efforts with a wide range of suppliers, and established the below procurement policy. We will comply with this policy and contribute to realization of a sustainable society.



Procurement Guidelines

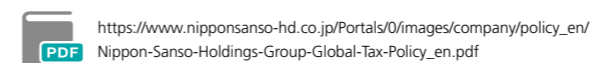
We are addressing the various issues we are facing, including global warming, exhaustion of resources, energy, and human rights that threaten the continuance of sustainable natural and social environments based on the Group Philosophy, “Proactive. Innovative. Collaborative. Making life better through gas technology.” We believe this approach cannot be completed by a sole effort of our group; it can only be achieved by sharing perceptions and cooperating broadly with our suppliers.

Based on this standpoint, we have established the Nippon Sanso Holdings Group Procurement Policy to promote our suppliers’ understanding and cooperation and have created the Nippon Sanso Holdings Group Procurement Guidelines on matters that we would like our suppliers to address with us.



Global Tax Policy

We understand that it is our social responsibility to comply with the tax laws and regulations of, and contribute through tax payments to the development of, all the countries and regions we operate in. Therefore, we are committed to addressing the interests of various stakeholders through legal compliant, timely, and appropriate tax payments and proper and highly transparent tax management to ensure such compliance and tax payment.



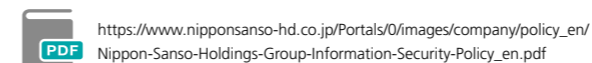
Investor Relations (IR) Policy

We engage in constructive dialogue with market participants (including shareholders, investors, and securities analysts) based on the concept of fair disclosure to realize sustainable growth and medium- to long-term corporate value improvement. In addition, we endeavor to enhance our IR activities by providing fair, timely, and appropriate explanation and disclosure of accurate information, including the status of management and business operation, and to utilize for enhancing corporate value by communicating the requests and assessment by the market participants to the management to reflect them in business management.



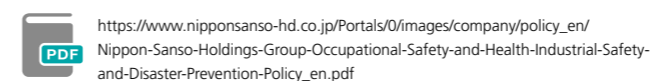
Information Security Policy

We recognize that information management is a material factor for internal control. This policy on information security is established to protect our group companies and our customers from loss of social credibility, business disruption, or the like, caused by information leakage or falsification, to be complied with by all employees.



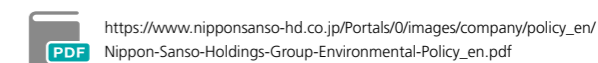
Occupational Safety and Health / Industrial Safety and Disaster Prevention Policy

We earnestly work on securing industrial safety for our business continuity, sound development, and corporate value enhancement based on the idea of putting the safety of our employees including contract employees, contractors, and external stakeholders first. We also ensure the safety and health of all individuals involved in our businesses by eliminating personal injuries, diseases, and accidents during business activities in our workplaces.



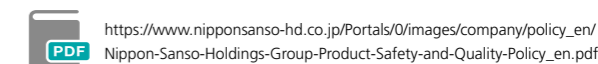
Environmental Policy

We address the reinforcement of sustainability management and contribute as “The Gas Professionals” to both the development of a globally sustainable society and the resolution of global challenges. We will technically contribute to the resource-recycling society and to the development of a sustainable society by harmonizing with the environment and endeavoring to reduce environmental impact in our business activities under the direction of top management.



Product Safety and Quality Policy

We, “The Gas Professionals” at the Nippon Sanso Holdings Group, recognize that social responsibilities are not only to comply with the applicable laws and regulations of each country and region and respect international standards but also to provide a reliable supply of various kinds of products and services including industrial gases safely and securely. This reliable supply is the source of trust and we fulfill the mission to supply these products and services for the long term in accordance with the concept of product stewardship and by giving full attention to human and environmental aspects.



Intellectual Property Policy

Recognizing that intellectual properties are important corporate assets, we work on acquiring, protecting, and using intellectual properties in order to contribute to businesses and society through intellectual property-related activities and to realize our group companies’ global growth. Based on the philosophy of legal compliance, we also respect other companies’ intellectual property rights and pay attention not to infringe them.



Corporate Data

Company Overview (As of March 31, 2022)

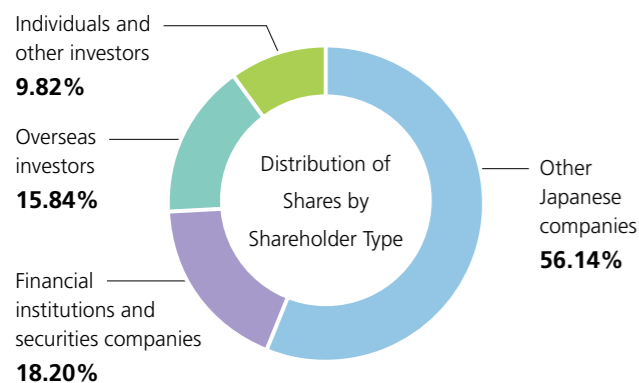
Company name: Nippon Sanso Holdings Corporation
Date founded: October 30, 1910
Paid-in capital: ¥37,344 million
Head office:
 1-3-26 Koyama, Shinagawa-ku, Tokyo 142-0062, Japan
Number of employees: 19,398
Independent public accountants:
 Ernst & Young ShinNihon LLC
Stock exchange listing: Tokyo

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, 2022)

Status of Shares

Number of shares authorized: 1,600,000,000
 Number of shares issued: 433,092,837
 Number of shareholders: 18,240



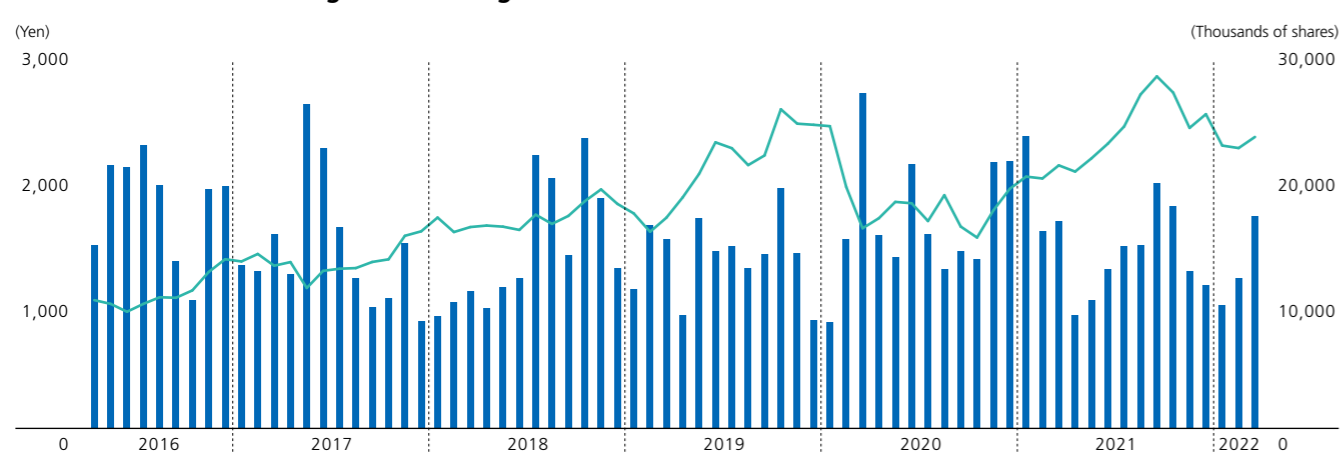
Major Shareholders

(10 Largest Shareholders, Shares Held Rounded Down to the Nearest Thousand)

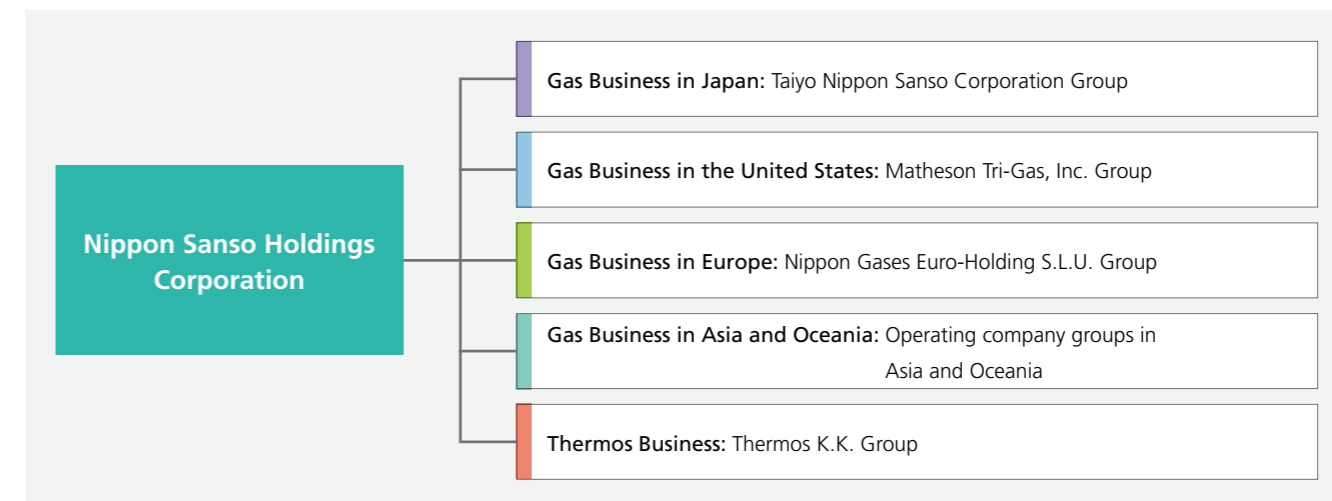
	Thousands of shares owned	Percentage of total (%)
Mitsubishi Chemical Holdings Corporation	218,996	50.59
The Master Trust Bank of Japan, Ltd. (trust account)	30,798	7.11
Client Shareholding Association of Taiyo Nippon Sanso Corporation	17,085	3.95
Custody Bank of Japan, Ltd. (trust account)	13,377	3.09
Meiji Yasuda Life Insurance Company	10,007	2.31
Mizuho Bank, Ltd.	8,182	1.89
The Norinchukin Bank	3,500	0.81
Shareholding Association of Nippon Sanso Holdings Corporation	3,180	0.73
JP MORGAN CHASE BANK 385632	3,167	0.73
IBIDEN CO., LTD.	3,004	0.69

* Our company holds 184,000 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, 2022)



Main Affiliated Companies (As of March 31, 2022)

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.
 Orense, 11, 9th Floor,
 Madrid 28020, 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.
 3rd Floor, No. 2 Bldg. BaoWu Tower 1859,
 Expo Boulevard, Shanghai, P.R. 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

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
 91-20-30237000

Supagas Pty Ltd
 5 Benson Road, Ingleburn, NSW 2565,
 Australia
 Tel: +61-2-8788-4444

Thermos K.K.
 Mita NN Bldg., 4-1-23 Shiba, Minato-ku,
 Tokyo 108-8450, Japan
 Tel: +81-3-5730-0130

Awards

Japan

Designated as a 2022 Health & Productivity Management Outstanding Organization (Large Enterprise Category) (“White 500”)
Nippon Sanso Holdings and Taiyo Nippon Sanso Corporation were recognized as corporations that implement particularly outstanding health and productivity management by Nippon Kenko Kaigi.



Taiyo Nippon Sanso’s Yamaguchi Branch Received the Minister of Economy, Trade and Industry Award

Taiyo Nippon Sanso Corporation’s Yamaguchi Branch received the Minister of Economy, Trade and Industry Award at the 58th National High Pressure Gas Safety Convention. The award was presented in recognition of the long-term track record of the branch and its contribution to safety activities, including safety seminars for customers. At the same convention, the Kanto Branch of Nissan Tanaka Corporation and the Toga Office of Nippon Tansan Gas Co., Ltd. also received the High Pressure Gas Safety Institute Chairman’s Award.

Shunan Sanso Received the Governor’s Award for Excellent High Pressure Gas Business Site

Shunan Sanso Co., Ltd. received the Yamaguchi Prefectural Governor’s Award for its excellent long-term track record and safety systems and measures.

Nippon Ekitan’s Keiyo Branch Received a Letter of Thanks from the Governor of Chiba Prefecture

Nippon Ekitan Corporation received a letter of thanks for its work in delivering and retrieving carbon dioxide gas bottles at a chicken farm that experienced an outbreak of a highly pathogenic form of avian influenza in Chiba Prefecture during FYE2020.

United States

Matheson Tri-Gas, Continental Carbonic Products, and Western International Gas & Cylinders Received Awards at the 2021 Safety Awards

Matheson Tri-Gas, Inc., Continental Carbonic Products, Inc., and Western International Gas & Cylinders, Inc. received awards at the 2021 Safety Awards hosted by the Compressed Gas Association.



Europe

Nippon Gases Euro-Holding Received Four Awards at the European Industrial Gases Association (EIGA) 2021 Awards

Nippon Gases Euro-Holding S.L.U. received the EIGA Cat1 Safety Award 2021, the EIGA Environmental Award for its CO₂ recovery in the Netherlands, the EIGA Safety Innovation Award 2021 (Contractor Safety) for its remote safety observation system in Italy, and the EIGA Peter Jackson Award 2021 (Best Improving Organization) for the initiatives of Nippon Gases Norge AS.

Nippon Gases Euro-Holding Earns a Gold Medal in the Sustainability Survey of EcoVadis of France

Nippon Gases Euro-Holding earned a high “gold” rating, placing it in the top 5% of surveyed firms, after a comprehensive evaluation in the four areas of Environment, Ethics, Human and Labor Rights, and Sustainable Procurement, in a 2021 survey by EcoVadis, an international ratings organization with a focus on corporate sustainability activities.

Nippon Gases Italia Received a Letter of Thanks from the Italy Japan Foundation

Nippon Gases Italia S.r.l. received a letter of thanks from the Italy Japan Foundation for its efforts to cooperate with many medical institutions right from the start of the COVID-19 pandemic, supplying medical equipment and services, and helping to maintain a cold chain for vaccine supplies.

Acquired “efr certification” for Care for Employees and Work–Life Balance

Reflecting its care for employees and work–life balance, the UN-recognized entidad familiarmente responsable (efr) certification was awarded to Nippon Gases Spain, Portugal, and Oximesa by Fundación Masfamilia. The efr certification is a management model that is concerned with the reconciliation of personal, family, and work life, without losing sight of productivity and results and, therefore, competitiveness.

Nippon Gases UK Receives International Safety Award

Nippon Gases UK Limited was awarded a distinction in the International Safety Awards by the British Safety Council. The awards recognize organizations that have demonstrated a commitment to occupational health, safety, and well-being. The Distinction level award, the highest available, recognizes the hard work and dedication of all at the site to both maintaining and improving the safety culture.

Operating Company Groups in Asia and Oceania

Nippon Sanso Holdings Singapore Receives “COVID-19 Ambassador Division” Award

Nippon Sanso Holdings Singapore Pte. Ltd. received the COVID-19 Ambassador Division award in the FYE2022 Duty of Care Awards held by the International SOS Foundation. The award recognized the company’s programs for promoting best practices in preserving employee safety, health, and welfare.

Leeden National Oxygen Receives the Outstanding Performance Award

Leeden National Oxygen Ltd. was presented an Outstanding Performance Award from ITW Orbital Cutting & Welding in recognition of its excellent sales performance.

Leeden National Oxygen the Sole Recipient of the Pinnacle Award

Leeden National Oxygen Ltd. was the sole recipient of the uvex Pinnacle Award. The award is presented by uvex as the highest honor to its distributors, and Leeden National Oxygen received it in recognition of its strong performance and sales.

Editorial Note

Publication Process of This Report

In publishing “Integrated Report 2022,” 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.

Overview of the Seven Planning Meetings

Main Participants at the Meetings

- Nippon Sanso Holdings Corporation
Integrated Report Production Committee
Head: Alan David Draper
Sub-head: Satoshi Wataru, Tsutomu Moroishi, Takeshi Miki
Arranger: Kenji Koyama, Yutaka Okuda, Yasukazu Takada, Akiko Kamata, Koichiro Kubo, Yukitoshi Tasaka, Satoshi Suzuki, Masahisa Nagai, Yoshiyuki Hagihara, Kouji Makino, Toshifumi Abe, Yuji Sakuramoto, Mamoru Kai, Ryouichi Ishikawa, Takuya Shinoduka, Yoshiyuki Niwa, Toru Nomura, Yu Yasumi, Mitsuhiro Toda, Yoko Sugiyama, Takeyoshi Sakuma, Masahiro Hirochi, Yuto Onai
Secretariat: Keita Kajiyama, Takayoshi Umehara, Soichiro Momiyama
- Edge International, Inc.

Main Discussion Themes

- The NSHD Group’s sustainability
- The NSHD Group’s human resources
- The new medium-term management plan, NS Vision 2026
- Business strategies in each region based on the new medium-term management plan
- The NSHD Group’s governance

Editorial Note

Thank you for taking the time to read Integrated Report 2022 in its entirety. Last year, the Company published its integrated report as Nippon Sanso Holdings for the first time after shifting to the holding company structure. This is only the second integrated report, and we have worked to reflect the feedback and impressions that we received from our stakeholders regarding the previous report. Accordingly, we have included not only input from management, the Company’s approach to society, and business strategies but also enhanced the content to make the report as interesting to as many readers as possible.

In particular, in May 2022 we announced NS Vision 2026, our first four-year medium-term management plan under the holding company structure. This integrated report is designed to help readers gain a deeper understanding of the NSHD Group’s overall direction through the medium-term management plan by including the Company’s identification of material issues, its analysis of risks and opportunities, various business strategies, and financial and non-financial targets.

People Who Helped to Produce This Report (in no particular order)

JPMorgan Asset Management (Japan) Limited	Shizuko Ohmi
Nippon Sanso Holdings Corporation	Kazuyuki Futamata
Nippon Sanso Holdings Corporation	Cesar Callejo
Taiyo Nippon Sanso Corporation	Takashi Oono
Taiyo Nippon Sanso Corporation	Takuya Kawabe
Taiyo Nippon Sanso Corporation	Tomoki Nakamura
Taiyo Nippon Sanso Corporation	Takayuki Fujimoto
Taiyo Nippon Sanso Corporation	Shigemasa Yamazumi
Taiyo Nippon Sanso Corporation	Haruna Yasukuni
Taiyo Nippon Sanso Corporation	Tomoe Nakamura
IMI Co., Ltd.	Kazuyuki Kajitani
Nippon Ekitan Corporation	Yoshihiro Nitta
Matheson Tri-Gas, Inc.	Gus Mustakas
Matheson Tri-Gas, Inc.	Stephen Stroud
Matheson Tri-Gas, Inc.	Tony Bradshaw
Nippon Gases Euro-Holding S.L.U.	José Luis Chesa
Nippon Gases Euro-Holding S.L.U.	José María Martínez Gallo
Nippon Gases Italia S.r.l.	Daniela Savalli
Nippon Gases Italia S.r.l.	Paolo Ronzi
Nippon Gases España S.L.U.	Cristina Gutiérrez Domenech
Nippon Sanso Holdings Singapore Pte. Ltd.	Hitoshi Ishihara
Nippon Sanso Holdings Singapore Pte. Ltd.	Wilson Tan
Nippon Sanso Holdings Singapore Pte. Ltd.	Clara Teo
Supagas Pty Ltd	Kane Dillon
Taiyo Gases Co., Ltd	Sudarat Klaipong
Nippon Sanso Thailand	Nobutoshi Hayashi
TAIYO NIPPON SANSO INDIA	Monil Singh
Thermos K.K.	Hirokazu Ootomo
Thermos K.K.	Shota Suzuki
Thermos K.K.	Hisao Minoshima
Thermos K.K.	Shunsuke Yoshiyuki

This report would not have been possible without the cooperation of many colleagues in the NSHD Group who assisted directly and indirectly with its production, and I would like to take this opportunity to thank them.

I hope that this report will help in some way to give our many stakeholders a sense of the tremendous potential of the NSHD Group.

Looking ahead, I aim to enhance the integrated report even further so as to deepen stakeholders’ understanding of the NSHD Group through various forms of dialogue. I ask for your continued feedback and support for these efforts going forward.

Keita Kajiyama

General Manager, Investor Relations, Group Finance and Accounting Office, Nippon Sanso Holdings Corporation