



Idemitsu
Integrated Report
2024

Idemitsu Kosan Co., Ltd.

2-1, Otemachi 1-chome, Chiyoda-ku,
Tokyo 100-8321, Japan
<https://www.idemitsu.com/en/>



CONTENTS

2 Editorial Policy

Our Values and History

3 Current Facts about the Idemitsu Group

5 The Origin of Management and Management Philosophy

Strategies for and Path to Value Creation

7 Message from the President and CEO

11 Value Creation Process

13 Message from the CFO

17 Initiatives to Enhance the Value of Human Capital

20 Idemitsu Engagement Index

Growth Strategies for Existing Businesses

23 Expanding the International Petroleum Business

24 Strengthening Domestic Networks to Develop Next-Generation Businesses

25 Development of Lubricants: Familiar and Necessary Products

26 In Search of “New Resources” for the Low-Carbon Society

Evolve the Business Platform

27 Developing Human Resources and Improving Productivity to Support DX

28 The Need for Procurement Transformation to Realize Our Vision

Value Creation Initiatives

29 FY2023 Review of Operations

31 Petroleum Segment

32 Basic Chemicals Segment

33 Functional Materials Segment

37 Power and Renewable Energy Segment

38 Resources Segment

Long-term Corporate Value Creation

39 Initiatives towards CN in 2050

41 Taking on Challenges for the Future in the Area of Advanced Materials

43 Research and Development for Creating New Value and New Businesses

45 Intellectual Property Activities

ESG Initiatives

47 Idemitsu Group’s Sustainability Materiality (Key Challenges) of the Idemitsu Group

Environment

49 Climate Change Action

54 Environmental Management

55 Conservation of Biodiversity and Water Resources

57 Initiatives Relating to a Circular Society, Waste and Chemical Substances

Governance

59 Corporate Governance

61 Directors and Audit & Supervisory Board Members

63 Message from Outside Directors

64 Overview of Board of Directors

71 Dialog between Outside Directors

73 Evolving of Risk Management for Supporting Each Business Activity

74 Internal Control

75 Risk Management

78 Compliance

Social

79 Human Rights

80 Initiatives Related to the Supply Chain

81 Implementation of the Human Capital Strategy Embodying Management Philosophy/Vision

82 Expanding DE&I

83 Bringing Out the Full Potential of Each Individual

86 Health & Productivity Stock Selection

87 Safety Initiatives

88 Initiatives & Achievements for Health, Safety, and the Environment

89 Quality

90 Partnership Dialogs with Stakeholders

91 Initiatives for Regional Development and Solutions to Social Issues

92 Corporate Citizenship Activities

Data Section

93 Corporate Profile/Stock Information

94 Primary Financial Data

95 Financial Highlights

96 Non-Financial Highlights

Thoughts embodied in the cover design

This design is inspired by the Vision for 2030, “Your Reliable Partner for a Brighter Future,” and the Vision for 2050, “Shaping Change.” The two circles that are reminiscent of Mobius strips express infinite possibilities, eternity, and positivity while the large and small balls express diversity, reflecting our determination to create new value.

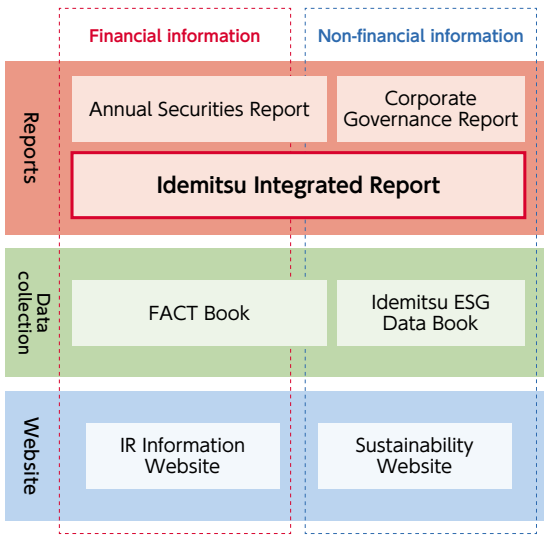


Editorial Policy

This report presents financial and non-financial information along with specific initiatives for FY2023. It was created with a focus on clarifying our growth path to being “Your Reliable Partner for a Brighter Future”, which is our Vision for 2030. It is aimed at enabling a wide range of stakeholders in Japan and other countries to understand the steps we are taking to achieve the sustainable enhancement of our corporate value, that is, the deepening and acceleration of initiatives for existing businesses, the steady advancement of business structure reforms, and the enhancement of human resources development through our businesses.

Please also see the detailed information about our latest initiatives which is available on our website.

Communications media



Scope of the Reporting

As a general rule, this report covers Idemitsu Kosan Co.,Ltd. and our 248 Group companies as of the end of June 2024. When the scope differs, this fact is noted.

Reporting Period

Results for FY2023 (April 1, 2023-March 31, 2024) are included in this report. When the applicable period differs, this fact is noted. Activities since April 2024 are also included.

Publication Information

Japanese version: Published annually since 2001, and the previous edition published in November 2023

English version: Published annually since 2003, and the previous edition was published in March 2023.

Reference Guidelines

We refer to the international integrated reporting framework recommended by the IFRS Foundation, the Task Force on Climate-related Financial Disclosures (TCFD) recommendations, the Ministry of Economy, Trade and Industry’s Guidance for Collaborative Value Creation, the GRI Sustainability Reporting Standards, and ISO 26000.

Disclaimer on Forward-looking Statements

Any plans, projections, or targets contained in this report that are not historical facts are based on decisions and assumptions made by the Company using information currently available. Actual results might differ substantially from forecasts due to various factors. Factors that could affect the results of operations include economic conditions, crude oil prices, petroleum product supply and demand, market conditions, and currency exchange rates, but are not limited to these factors.

On This Publication

In preparing this Integrated Report for this fiscal year, we again cooperated closely and repeatedly discussed matters with each department after receiving approval from the Management Committee. As a result of the above, we declare that the process of preparing this Integrated Report was appropriate and faithful and the content herein is accurate.

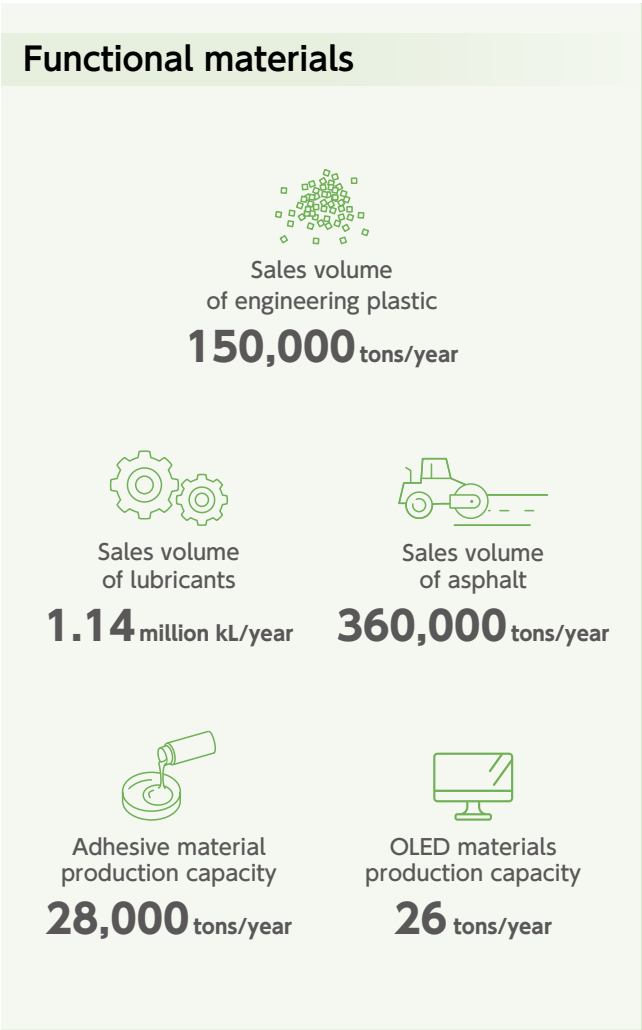
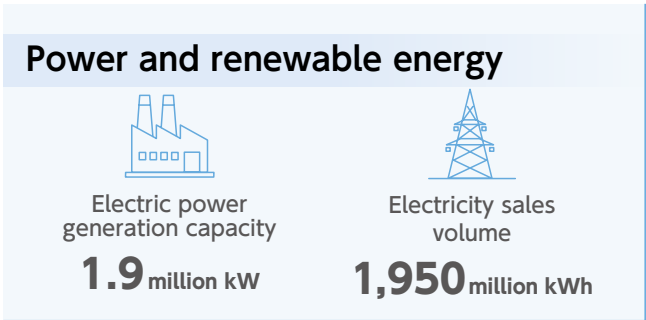
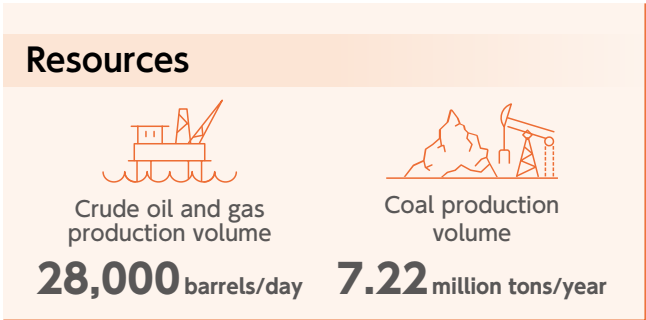
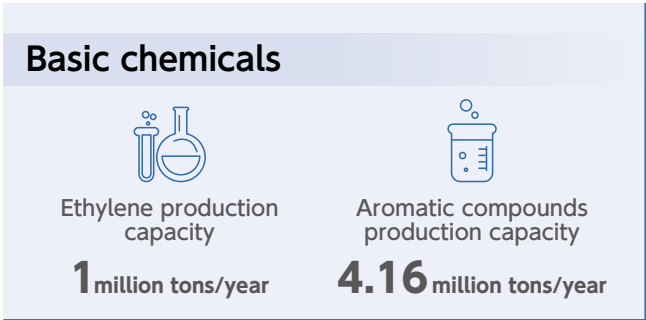
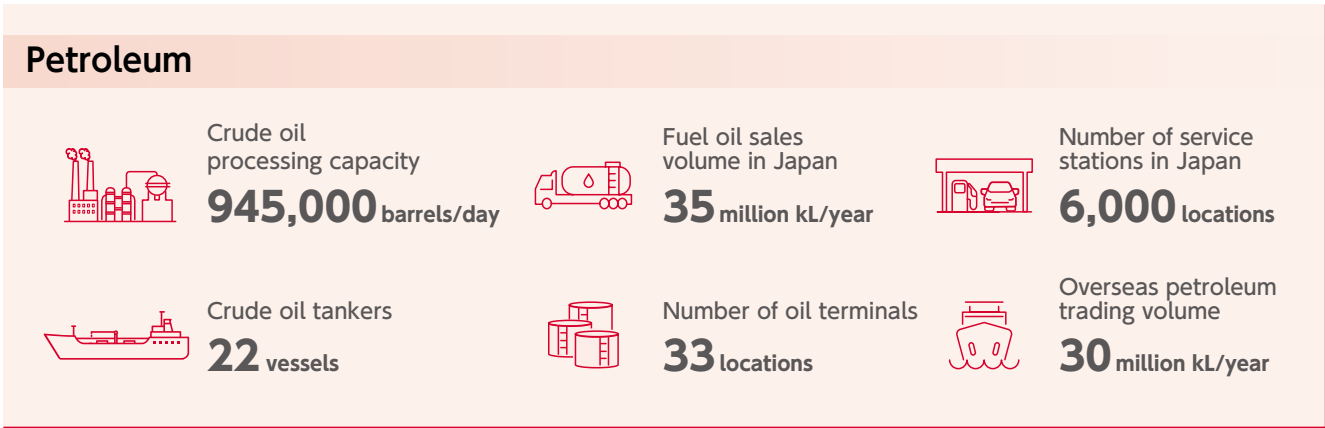
We will continue to value opportunities to engage in dialogue with our stakeholders.

Contact for Inquiries

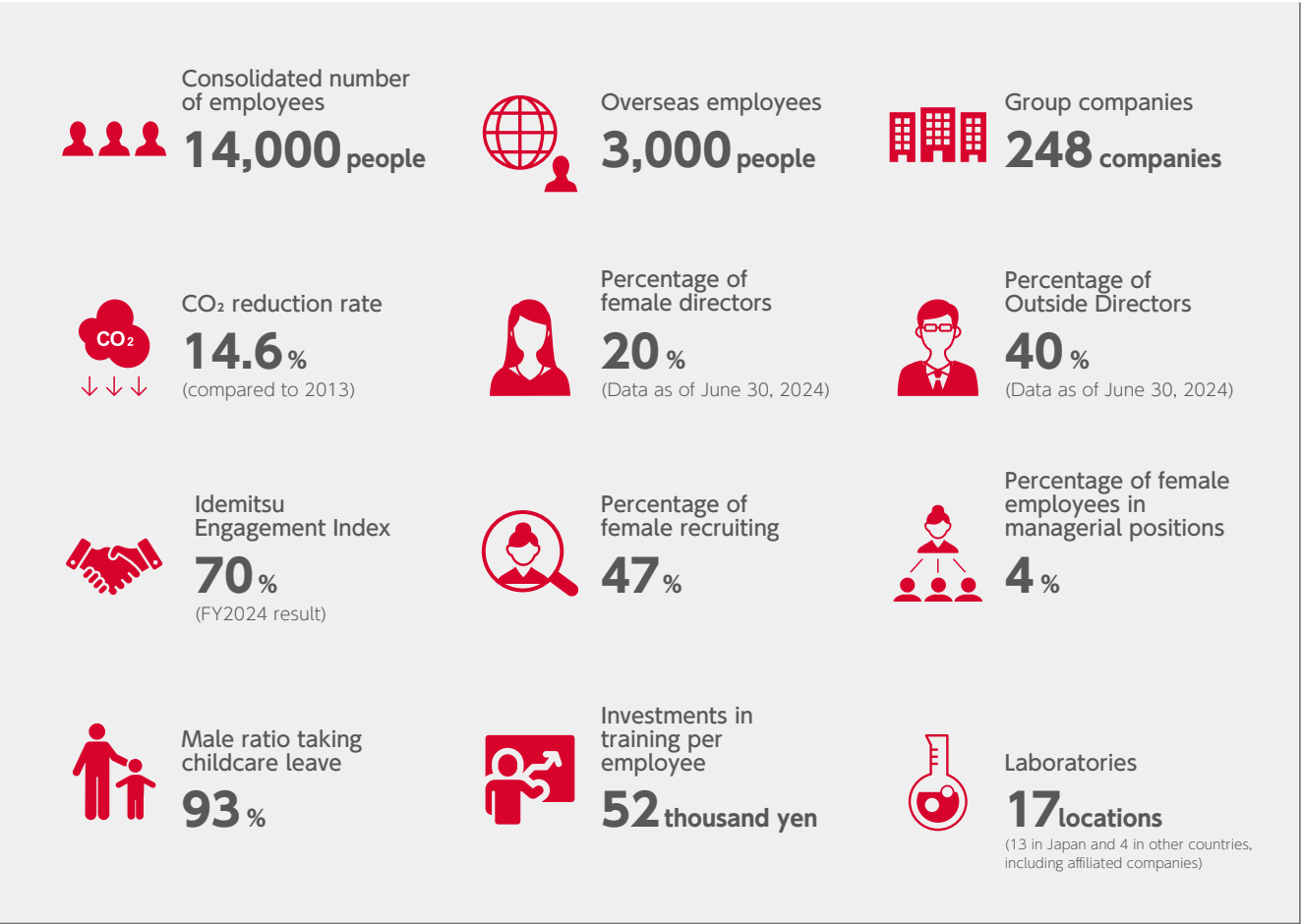
Idemitsu Kosan Co.,Ltd.
For online inquiries



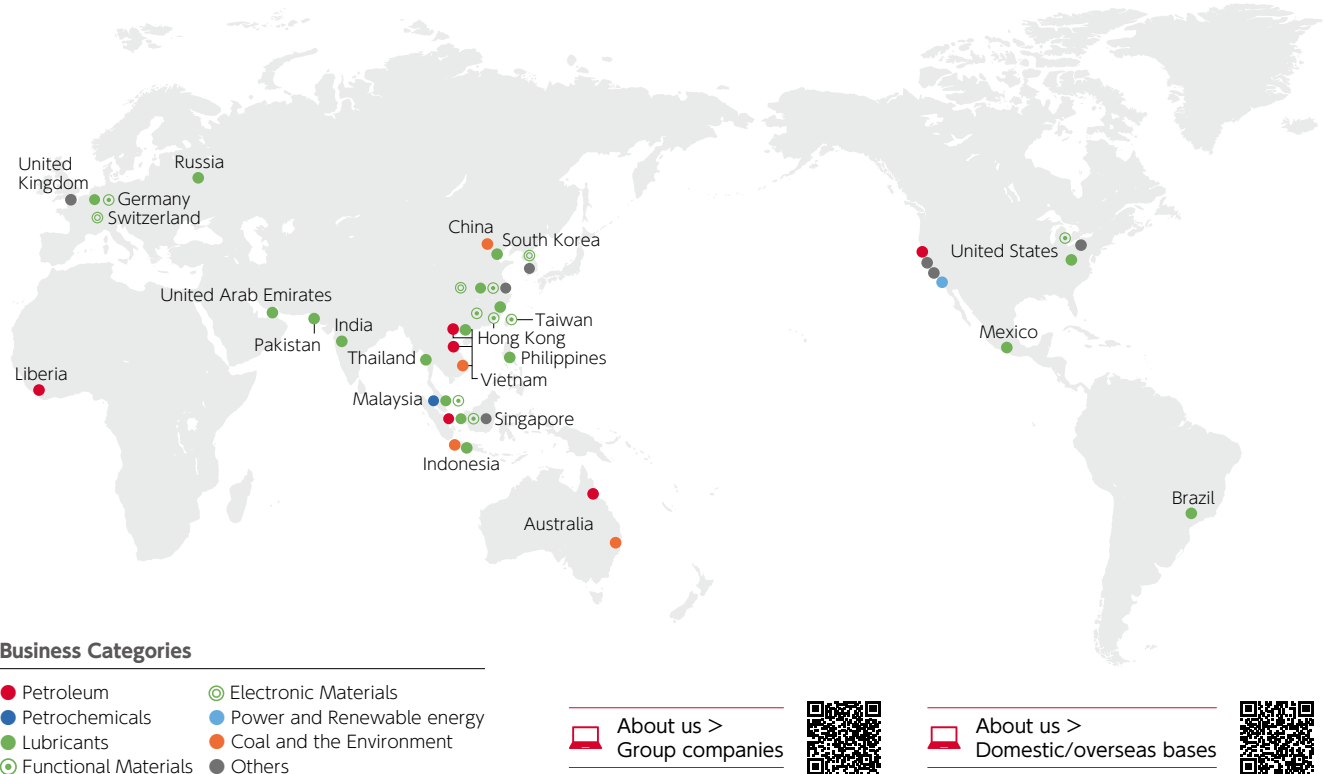
Current Facts about the Idemitsu Group



(Data as of March 31, 2024)



■ Map of Overseas Bases (Data as of June 30, 2024)



The Origin of Management and Management Philosophy

For Idemitsu, our Management Philosophy is a statement of “what is the meaning of our existence?” Our Management Philosophy is also a universal, unshakeable coordinate, like the North Star, and for employees, it is a guide when they are unsure of their judgments, and it represents a vision to which they should aspire at all times. Our Vision changes with the times and the environment, and represents our initiatives to realize a sustainable society that we must connect to the future. Our Action Mindset exists to achieve our Management Philosophy, and we believe that we can come closer to our “Management Philosophy” by following our Action Mindset and moving forward toward our Vision.

人間尊重

The Origin of Management

These are the words of the founder, Sazo Idemitsu, in his own handwriting. We intend to communicate to the world the importance of “Ningen-Soncho (Having respect for human beings),” a key tenet of our history for over a century, and unassailable ideals we continue to pass down.



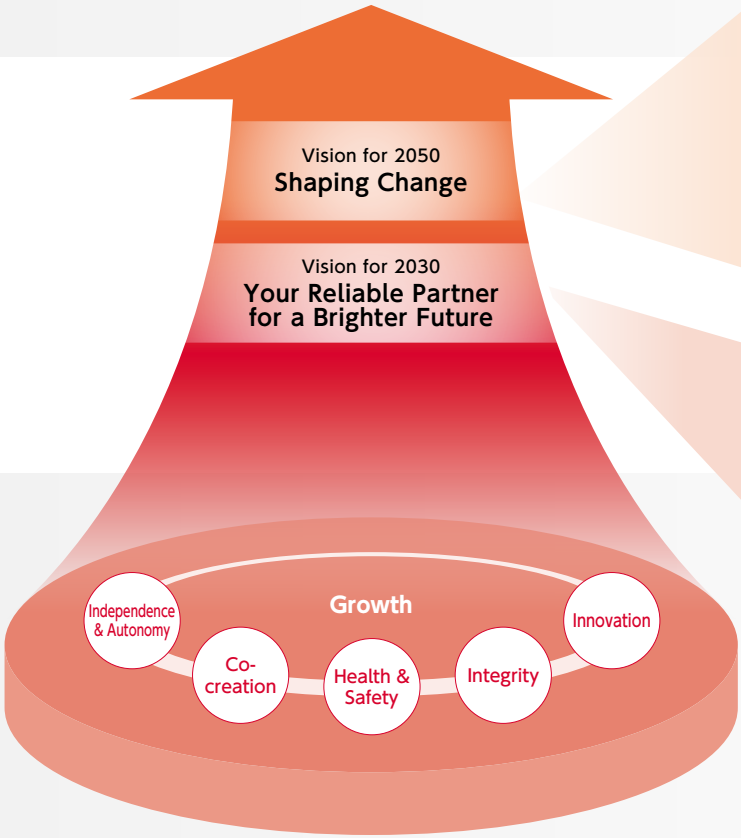
Management Philosophy

Truly inspired

How often do we consider the countries and communities we touch, and how much empathy do we have for the people living there? Are we contemplating what's best for them and then doing our utmost to act in their interests? Each day, we must reflect on our actions; we must strive to do better not only for ourselves, but also for others. When we come together and our efforts are united, we make the impossible possible. With integrity, solidarity, and determination, we will overcome any challenge we face.

Vision

Action Mindset



Vision for 2050 Shaping Change

- We will fulfill our
- Responsibility to support people and their daily lives
 - Responsibility to protect the global environment now and in the future through the implementation of:
 - Energy one step ahead
 - Diverse resource conservation / circulation solutions
 - Smart Yorozyua*
- *Smart Yorozyua: Smart one-stop shop

Vision for 2030 Your Reliable Partner for a Brighter Future

We will contribute to the achievement of a carbon neutral society while fulfilling our responsibility to provide a stable energy supply.

What we have been doing

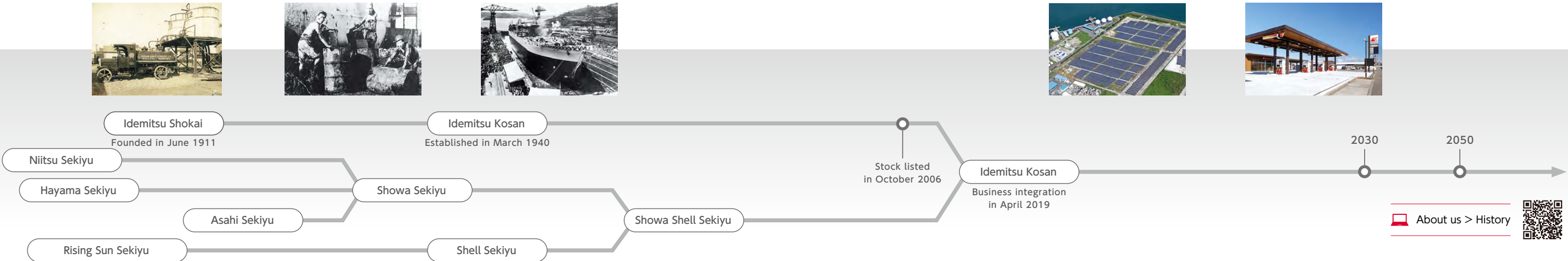
Established in the late 19th century, the petroleum industry has more than 100 years of history. In our history, Niitsu Sekiyu and Hayama Sekiyu, the predecessors of Showa Shell Sekiyu, were established in the 1890s and Idemitsu Shokai, the predecessor of Idemitsu Kosan, was founded in the 1910s. Idemitsu Shokai operated businesses in Japan and overseas with a focus on sales of petroleum products and lubricants. In the postwar reconstruction period, it also entered the

petroleum refining business. We later achieved efficient crude oil transportation by introducing large tankers and began to take advanced environmental measures at our refineries. Meanwhile, we also entered the petrochemicals business and crude oil development and also began to work on the development of alternative energy sources, including coal and geothermal heat.

What we will do

Idemitsu Kosan and Showa Shell Sekiyu integrated with the goal of achieving sustainable growth and building a solid management foundation. We are working to ensure the stable supply of energy and materials by strategically using the assets that the two companies have cultivated, including technology, knowledge, human capital, and infrastructure.

We will continue to take on challenges to achieve social implementation in various areas, through co-creation and collaboration with diverse stakeholders, aiming to establish a carbon neutral and circular society by 2050.



Message from the President and CEO



For Achieving
the Vision:
“Your Reliable Partner
for a Brighter Future”

Representative
Director,
President and Chief
Executive Officer

Shunichi Kito

What Idemitsu Kosan Aims to Be — Working to Achieve an Energy Transition —

At the Idemitsu Group, we fulfill our responsibility to stably supply energy. At the same time, we are working to achieve an energy transition which will contribute to the realization of a carbon neutral society by 2050.

Looking at the world, we see the various geopolitical risks that are occurring, such as the Russian invasion of Ukraine and the conflict between Israel - Hamas. These risks have again shed light on the importance of energy security. We understand that we must steadily fulfill our mission to ensure the stable supply of the energy supporting people's lives and economic activities, which is therefore extremely important.

We were founded as Idemitsu Kosan. While we deal in petroleum which is an important product, our founder publicly stated that “Our business is to develop human capital, and the petroleum business is the means for that.” He did not say that we would continue to deal in petroleum forever.

More than 50 years before it was said that petroleum would be depleted, we began to work on businesses involving different types of energy that are alternatives to

petroleum and that are in line with the times, including geothermal, solar and biomass energy. In the early days after the founding of Idemitsu Kosan, we began to work on businesses dealing in lubricant oil and other products in overseas countries. At present, as a part of our trans-Pacific strategy, we deal in various types of energy, mainly in Singapore, the west coast of the US, and Australia, and this has become a key feature of our business.

Throughout its history, Idemitsu Kosan has engaged in a wide array of businesses and established a culture of taking on challenges related to energy.

We have been working on businesses involving sources of energy that are alternatives to petroleum by anticipating the future from the perspective of addressing climate change, which is a global issue. In the relatively near future of 2030, important technological innovations will be occurring while there will be remaining demands for conventional energy and materials. I believe that we will realize the energy transition as a main player in throughout the period from a carbon neutral society by 2050.

Vision for 2030
**Your Reliable Partner
for a Brighter Future**

Vision for 2050
Shaping Change

Our Thoughts on Human Capital — Enabling the Company to Be Sustainable by Developing Human Capital —

All of our employees will be “Your Reliable Partner for a Brighter Future”. Throughout the 113 years since our foundation, we have been practicing People-Centered Management. For a company to survive for more than 100 years, it must overcome major environmental changes and various challenges. We develop people through businesses and have been able to overcome the changes and challenges because of the human capital we have developed. It is impossible to predict the changes that will happen in the future, but as long as we have developed human capital, we will be able to manage our businesses in anticipation of the next era, no matter what the environment will be. I think it is important to achieve human capital development by overcoming the challenges we face, one by one.

Accordingly, our slogan is: All employees play a key role. I believe that all employees, from those working on the front lines to the employees supporting them in back-office sections, are fulfilling important responsibilities, and that retaining and cultivating diverse individuals within the company is key to developing our ability to respond to changes in the environment. I myself will also set the challenging

goal of enabling us to remain a main player 10 and 20 years from now and demonstrate my willingness to aggressively take on challenges.

While human capital management has become standard practice now, we have been positioning people as capital in our management since our foundation in 1911. Furthermore, we do not position human capital as a platform but believe it is fully integrated with business management. Success in business and human capital development are two essential elements of management.

While this policy will remain unchanged, we will work on human capital strategies and the disclosure of information in accordance with the demands of the times and society. For example, we have set KPIs including the percentage of managers that are women, the percentage of eligible male employees taking childcare leave. Furthermore, in April 2024, we established the Career Design Department and the Idemitsu Employee Association to support employees' self-directed career development. We will retain and develop diverse human capital by providing support in accordance with the life and career of each employee.

Message from the President and CEO

Our Current Position on the Path to Carbon Neutrality

— Four Businesses to Work on Now —

We are currently reforming the structure of our businesses, taking steps one at a time toward the achievement of carbon neutrality by 2050.

We have accumulated knowledge, technology and infrastructure because we have taken on challenges in a wide range of fields beyond the area of petroleum. Leveraging this knowledge, technology, and infrastructure, we selected 16 projects in November 2022 as new businesses with a high possibility of social implementation. A big step we took in FY2023 was the designation of four key areas by investment screening for the achievement of carbon neutrality. Specifically, we decided to concentrate on blue ammonia, e-methanol, SAF, and lithium solid electrolytes and prioritize them in our investing and allocation of resources.

The important point in the process of narrowing down to these four key areas was determining the time frame. It is very difficult to select and work on only one of the 16 projects. If we build a supply system when there is no demand, users will not use the goods that we supply. We will anticipate the changes in demand as we move toward carbon neutrality and determine when to supply things based on our forecasts. We will thus achieve both the stable supply of energy and the energy transition toward decarbonization without losing sight of the time frame. This is a responsibility that we should fulfill.

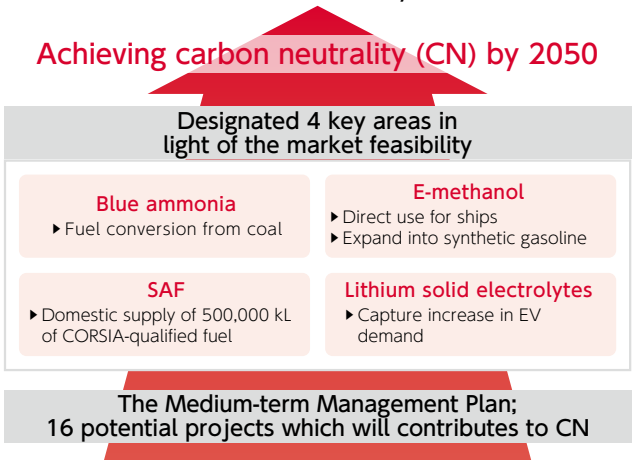
In these new businesses, official assistance such as support from the national government remains necessary until the businesses become economically viable. Partly reflecting this environment, we selected businesses in areas where the formation of a market is believed to be extremely probable and where we can't lose any time in working on them.

Accordingly, it is fully possible that we will work on

businesses other than these four depending on demand and other future trends. Other areas are also extremely important, and research into subjects that may possibly be commercialized by 2030 or 2050 will be lost if not continued. In January 2024, we announced that we will mostly consolidate our R&D bases scattered across 13 locations in Japan by establishing the "Innovation Center (tentative name)", a new integrated research center. We will carefully nurture our research resources mainly at this integrated research center toward the realization of carbon neutrality and a circular society.

We will continue to evaluate and review investments to move toward carbon neutrality. We will identify market demand as well as global trends related to and movement toward carbon neutrality by raising the antenna high and sharpening our senses.

■ Efforts to achieve carbon neutrality



Initiatives to Improve Our Corporate Value

— Fulfilling Market Demand by Enhancing the Capital Efficiency of Existing Businesses —

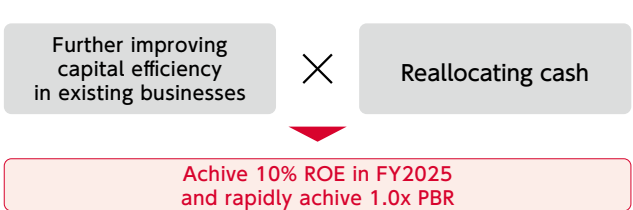
We started to engage in ROIC management that is conscious of the cost of capital and capital efficiency before the Tokyo Stock Exchange published the Action on Cost of Capital-Conscious Management and Other Requests in March 2023. The Board of Directors discussed ways to enhance these initiatives. As a result, as we announced in May 2024, we aim to achieve an ROE of 10% in FY2025 and a PBR of 1.0 as quickly as possible by improving the capital efficiency of existing businesses and reallocating cash.

While the energy transition toward achieving carbon neutrality in the future tends to be the central theme of management, the current five business segments will continue to lead the management of the Group at least until the mid-2030s. I think that enhancing the capital efficiency of existing businesses is also extremely important for achieving the stable

supply of energy and materials that is needed now.

While allocating cash from the cash flow generated by enhancing the capital efficiency of existing businesses to strategic investments for growth and increasing shareholder returns, we will also pursue adequate shareholders' equity and work to continue to enhance our corporate value.

■ Initiatives for FY2025



Evolution of Governance

— Enhancement of the Assessment of the Board of Directors' Effectiveness —

We place importance on corporate governance. Our Board of Directors includes four Outside Directors and two Outside Audit & Supervisory Board Members who provide many different opinions and guidance from a position that is independent of the execution of business.

We assess the effectiveness of the Board of Directors every year. In FY2023, we enhanced this assessment by conducting interviews in addition to the questionnaire survey. Executives discussed each issue that was identified in the assessment and provided feedback at Board of Directors. For example, one issue that was identified was that the positioning of each agenda item and individual project within the overall strategy needs to be clarified. In response, we have set an annual theme for the outside officers meeting and are working to ensure that the overall strategy and positioning of each business are understood.

Moreover, while each business department of the company tended to use its own expertise to complete the process from procurement to manufacturing and sales, it was pointed out that procurement should be discussed from the perspectives of compliance and cost as well.

We therefore established the Procurement Headquarters in April this year and assigned a full-time CPO to lead it. We have thus transformed our structure so that the Procurement Headquarters oversees and manages the procurement operations of the entire company, with a focus on indirect materials, through cross-sectoral cooperation with the business departments.



We will continue to expand our discussion of the structural reform of businesses, human capital strategy, measures to improve the PBR and other issues. In FY2024, we will also intensively discuss DX strategy, enterprise risk management, procurement strategy and other matters as company-wide tasks supporting the foundation of our business.

We will strive to improve the effectiveness of the Board of Directors, aiming to further transform our corporate governance.

Message to Stakeholders

— Opening the Way to a New Era by Collecting the Wisdom of Diverse Human Capital —

We are challenging the extremely difficult task of energy transition. This is not something that can be achieved by a single company or a single industry. Instead, we must approach this task together with diverse partners that transcend the boundaries between companies, industries and countries. To achieve this, we recognize that it is more important than ever to expand opportunities for communication with stakeholders and to disseminate information in real time.

Specifically, we hold events to enable individual investors to better understand our Company, such as visit tours of our business sites and tours for learning about our roots. As for communicating information, we significantly renewed our corporate website in March 2024. We have improved the site's usability and have begun sharing information about the challenges the Idemitsu Group has taken on as it moves toward 2050 while disclosing more information about our businesses. In addition to introductions to our Management Philosophy and businesses, we post a wide range of both financial and non-financial information in real time. We invite you to visit our website.

In this chaotic world where we cannot see what the right answer is, we must collect the wisdom of diverse human capital, rather than being driven by a single set of values. I strongly hope that, to do this, we will remain a group of diverse human capital where all employees are leading players who can take ownership of issues, respect and accept the values of other people they engage with internally and externally and move forward with co-creation and collaboration. As president, I will value and practice teamwork-based management, through which I will make the optimal management decisions by always sharing information with the other members of the management team and working together with them. Our diverse human capital will fully demonstrate their capabilities and open up the way to a new era as "Your Reliable Partner for a Brighter Future." I would like to sincerely invite our stakeholders to increase their insights into our initiatives and respectfully ask for their continued support and cooperation.

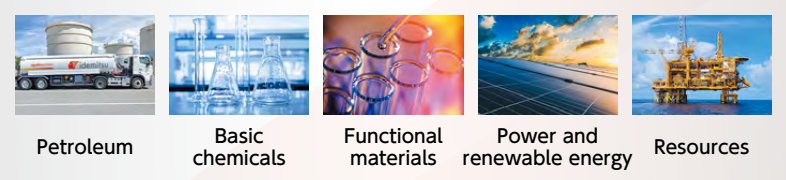
Value Creation Process

Foundation supporting value creation
▶ P.5~6

The Origin of Management 人間尊重 Ningen-Soncho
(Having respect for human beings)
Written by Sazo Idemitsu

Management Philosophy Truly inspired

Accelerating initiatives to achieve the vision (up to FY2025)



Achieve 10% ROE in FY2025 and rapidly achieve 1.0x PBR

Further improving capital efficiency in existing businesses

Reallocating cash

Achieve 2030 GHG reduction targets

Source of Competitiveness

- Human capital**
 - People-centered management
- Intellectual capital**
 - Technological capabilities to meet diverse customer needs
- Manufactured capital**
 - Global business development
 - Manufacturing site assets and supply chain
- Social and relationship capital**
 - Customer base developed over many years of business development
 - Business partners linked by solid trust
- Natural capital**
 - Various types of renewable energy
- Financial capital**
 - Strong financial foundation

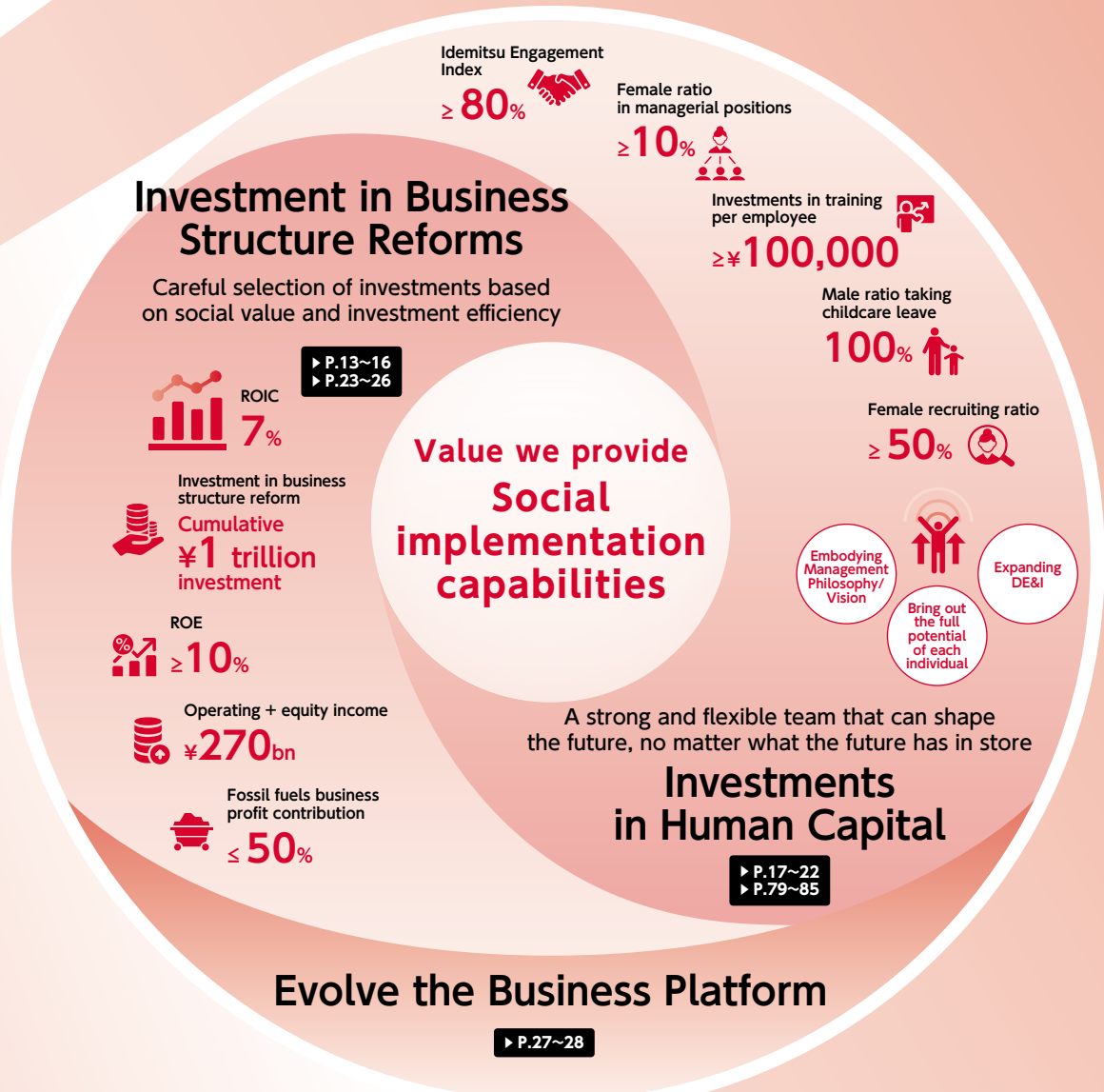
External Business Environment

- Low-carbon and decarbonized society
- Digital and technological advancements
- Rapidly aging society
- Lifestyle changes
- Increased energy and geopolitical risk

List of Materiality (Key Challenges)

- Contribute to CN*1 and circular society
- Contribute to regional society (energy and mobility)
- Maximize employee growth and engagement
- Expanding DE&I
- Acceleration of digital innovations
- Progress in governance
- Ensure the health, safety, compliance and human rights

Vision for 2030 Your Reliable Partner for a Brighter Future



Investment in Business Structure Reforms

Careful selection of investments based on social value and investment efficiency

- Idemitsu Engagement Index $\geq 80\%$ ▶ P.13~16 ▶ P.23~26
- Female ratio in managerial positions $\geq 10\%$
- Investments in training per employee $\geq \text{¥}100,000$
- Male ratio taking childcare leave 100%
- Female recruiting ratio $\geq 50\%$
- ROIC 7%
- Investment in business structure reform Cumulative $\text{¥}1$ trillion investment
- ROE $\geq 10\%$
- Operating + equity income $\text{¥}270\text{bn}$
- Fossil fuels business profit contribution $\leq 50\%$

- Embodiment Management Philosophy/Vision
- Bring out the full potential of each individual
- Expanding DE&I

A strong and flexible team that can shape the future, no matter what the future has in store

Investments in Human Capital

▶ P.17~22 ▶ P.79~85

Evolve the Business Platform

▶ P.27~28

2030 GHG reduction target

- Scope1+2:
Amount of CO₂ emissions 46% lower than 2013
- Scope1+2+3:
CI*5 10% lower than 2020
(2040 CI 50% lower than 2020)

▶ P.49~53

Vision for 2050 Shaping Change

Energy one step ahead

Carbon-free ammonia
Carbon-free hydrogen SAF*2
Synthetic fuel/chemicals CCUS*3

▶ P.39~40

Diverse resource conservation/circulation solutions

Electrification solutions
Bio/life solutions
ICT*4 solutions

▶ P.41~42

Smart Yorozyua

Diverse energy & mobility services

▶ P.24

2050 GHG reduction target

- Scope1+2:
Realization of CN (Net zero CO₂ emissions)
- Scope3:
Aim for carbon neutrality

▶ P.49~53

*1 CN: Carbon Neutrality
*2 SAF: Sustainable Aviation Fuel
*3 CCUS: Carbon dioxide Capture, Utilization and Storage
*4 ICT: Information and Communication Technology
*5 CI: Carbon Intensity

Message from the CFO



Review of FY2023 and Progress of the Medium-term Management Plan

In FY2023, operating + equity income excluding inventory impact was 310.6 billion yen and reached a record high. Profits rose significantly as improved margin from positive time-lag impacts in the Petroleum Segment outweighed a fallback from the coal market price spike observed in the previous fiscal year in the Resources Segment. Overseas trading business also posted a noticeable increase in profits. Accordingly, net income excluding inventory impact was 192.1 billion yen and close to the record high.

We had a promising start in FY2023, the first year of FY2025 Medium-term Management Plan. We are confident in our initiatives to improve the profitability of existing businesses.

For the progress on the Medium-term Management Plan, the Petroleum Segment has promoted restructuring of the group refineries. The Basic Chemicals Segment has considered optimizing ethylene production capacity. The Resources Segment downsized the coal mining business in Australia while examined to acquire interests in rare metal mines. We expect these initiatives will begin contributing to profits after FY2024.

We assume that profits in FY2024 will decline year on year. However, normalizing the impact of high coal prices included in the previous year's results, the actual profit levels are improving and should reach the targets set in the Medium-term Management Plan.

Status of consolidated statements of income

	Results for FY2023	Forecasts* for FY2024 * Announced in May 2024	Difference
Operating + equity income (excluding inventory impact)	¥363.0 billion (¥310.6 billion)	¥185.0 billion (¥185.0 billion)	-¥178.0 billion (-¥125.6 billion)
Net income (excluding inventory impact)	¥228.5 billion (¥192.1 billion)	¥125.0 billion (¥125.0 billion)	-¥103.5 billion (-¥67.1 billion)

Initiatives to Improve Our Corporate Value and Shareholder Value

As explained in Integrated Report 2023, we elevate initiatives to enhance our corporate and shareholder value under the Medium-term Management Plan. We raised our FY2025 ROE target from 8% to 10% to achieve 1.0 PBR rapidly. After many discussions, the Board of Directors reached a decision

that “further improving capital efficiency in existing businesses” and “reallocating cash” were material issues. As such, we will maximize capital efficiency and reduce the cost of capital by transformation to growth businesses.

Initiatives toward FY2025

Further improving capital efficiency in existing businesses

Upward revision of ROIC target
FY2025: Existing businesses 7%
Further earnings improvement
FY2025: Operating + equity ¥230 billion

Reallocating cash

Increased allocation toward existing growth investments
vs. Medium-term Management Plan: +¥50 billion or more
Review of the capital structure, Adequate shareholders' equity
Acquisition of treasury shares: ¥100 billion

Achieve 2030 GHG reduction targets

Achieve 10% ROE in FY2025 and rapidly achieve 1.0x PBR

Further improving capital efficiency in existing businesses

From the perspective of further improving capital efficiency in existing businesses, we have revised the FY2025 ROIC target upward from 5% to 7%, and we have also adjusted the FY2025 profit target (operating + equity income) upward from 190 billion yen to 230 billion yen. Furthermore, we disclosed our individual segments' current ROICs, target ROICs and prioritized issues to show investors how to achieve these targets.

The Petroleum and Basic Chemicals Segments will reduce invested capital by optimizing refining capacities and expand overseas businesses with high growth potential. Moreover, the Vietnam Nghi Son Refinery aims to become profitable in FY2025. It has been operating with a high utilization ratio since its first regular repairs and will cut costs further. The Functional Materials Segment withdrew from unprofitable

businesses and completed its structural reform. It then promotes strategic investments, including M&As, to improve profitability. The Power and Renewable Energy Segment will continue to work on structural reforms by rebuilding overseas business and turning Solar Frontier profitable. The Resources Segment downsized the coal mining business and has reduced its capital investment to an appropriate level. It will therefore transform business portfolio by acquiring interests in rare metal mines, such as lithium and vanadium, while continuing to supply high-quality coal.

The management, business departments, and corporate departments will integrate to achieve the ROIC target of 7% and the profit target (operating + equity income) of 230 billion yen in FY2025. Additionally, we will strive to further improve capital efficiency.

Reallocating cash (Review of the investment allocation and capital structure)

We reviewed the investment allocation plan toward FY2030 to ensure our long-term strategy when considering the restructuring cash allocations under the Medium-term Management Plan. Specifically, as shown in the chart on the next page, after redefining the term of investments we expect to invest 800 billion yen in carbon neutral (CN) investments and 550 billion yen in growth investments, mainly in existing businesses by FY2030. Firstly, we have designated four Key Areas towards CN by 2050 from the 16 projects identified as new business themes for CN investments. The four areas are blue ammonia, e-methanol, SAF, and lithium solid electrolytes. Each of them has already started specific projects.

For example, the blue ammonia business plans to establish an ammonia import base at the Tokuyama Complex, using

existing infrastructure, and then start ammonia supply to facilities in the Shunan Industrial Complex and its surrounding area in 2030. Regarding e-methanol, we became the first Japanese company to buy a stake of HIF Global, a company that develops projects in South America, North America, Australia, and other regions. This investment will promote to build a domestic and global supply chain for e-methanol, which has a wide range of applications as e-fuel, CN fuel, and their raw materials.

The SAF business works towards manufacturing at our Chiba and Tokuyama Complexes. It then plans to establish a domestic supply system with an annual capacity of 500,000 kL by 2030, including supply from overseas projects. Lithium solid electrolytes are key materials for all-solid batteries,

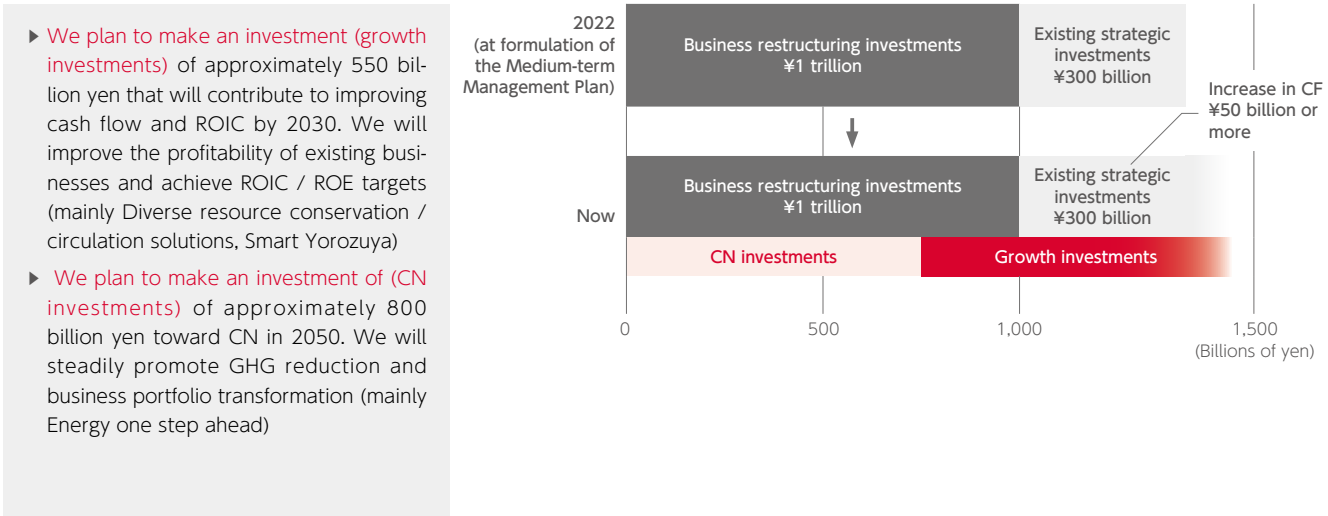
Message from the CFO

regarded as the next generation of batteries. We aim to supply globally our lithium solid electrolytes to facilitate the wider adoption of electric vehicles. Our collaboration with Toyota Motor intends to commercialize in 2027-2028 and to supply widely to the world. Not only CN businesses, we will increase cash allocation towards growth investments focused

on existing businesses to generate short-term cash flow. Furthermore, we will enhance the profitability of our existing businesses and achieve our ROIC and ROE targets by allocating funds to bolster overseas trading functions in the Petroleum Segment and promote M&As in the Functional Materials Segment.

Investment allocation (FY2023-2030)

Reviewed our FY2023-2030 strategic investments based on a timeline in light of screening and increase in CF during the Medium-term Management Plan period

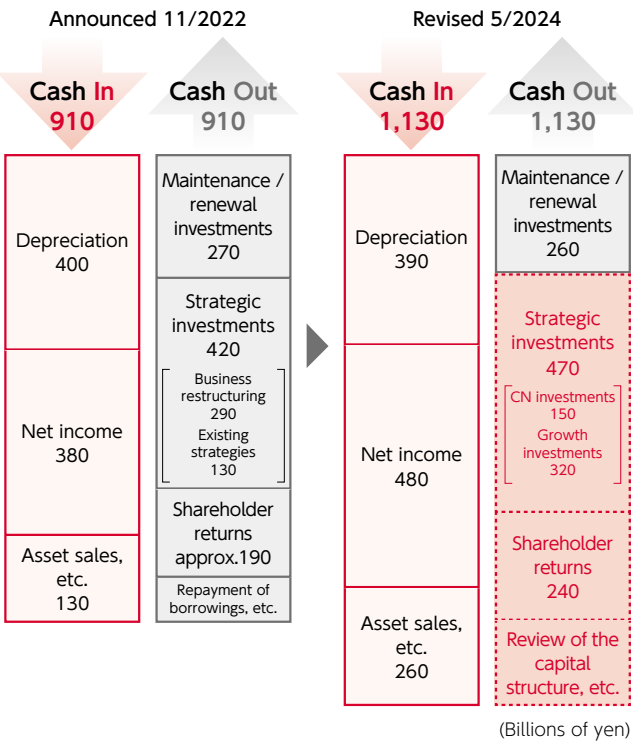


We reviewed the cash flow during the Medium-term Management Plan period in light of the investment allocation to FY2030 and the upward revision of the profit plan until FY2025. As a result, cash inflow is expected to increase by 220 billion yen to 1,130 billion yen, compared to our original plan.

Accordingly, we will allocate 470 billion yen for strategic investments, an increase of 50 billion yen compared to our original plan, with a focus on growth investments in existing businesses, including M&As.

Due to the upward revision of net income, returns to shareholders are expected to increase by 50 billion yen to 240 billion yen, compared to our original plan. From the perspective of reducing the cost of capital, we have decided to optimize our financial structure by acquiring an additional 100 billion yen in treasury shares, in addition to our shareholder returns policy, under the premise of maintaining our current credit rating and ensuring financial stability. Of this amount, 50 billion yen has already been resolved and announced to be used for purchasing in the market by March 2025.

3-year Cash flow allocation (FY2023-2025)



Shareholder Returns

In FY2023, we increased the dividend per share from 24 yen to 32 yen (after adjusting for the impact of the stock split). At the same time, we set this level as the lower limit, and established a downward rigidity for dividends. There is no change to the shareholder returns policy for the Medium-term

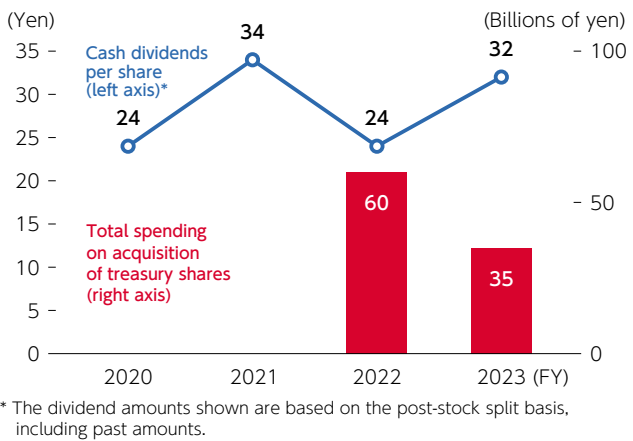
Shareholder returns policy

Total payout ratio of at least 50% of cumulative net income excluding inventory impact in FY2023-2025

Dividends	32 yen per share and set this with this as the minimum
Acquisition of treasury shares	Acquisition of treasury shares : Execute in a flexible manner while monitoring the stock price

Management Plan, which is to "provide shareholder returns with a total return ratio of at least 50% of net income, excluding inventory impact for a cumulative 3-year period." We will flexibly implement acquisition of treasury shares, taking into account the share price level.

Trend in shareholder returns (to FY2023)



Engagement with Various Stakeholders

We will continue to engage in more in-depth dialog with our shareholders and investors than we have ever done before. We will work to improve our corporate value by incorporating the opinions we receive through dialog at events such as financial results briefings, the General Meeting of Shareholders, and one-on-one meetings on our business or financial strategies in a timely manner. We will continue to engage in interactive dialog and further expand information disclosure and communication to meet the market's expectations for our Company.

In the previous year's report, the low ratio of individual shareholders was identified as one of the issues in shareholder composition. To address this, in FY2023 we conducted a stock split, introduced lottery benefits, and held tours of our business sites. These measures were designed

to increase the number of our shareholders and investors who understand and relate to our business activities and medium- to long-term strategies. Consequently, we have seen steady increase in both the number and ratio of individual shareholders. We will continue to utilize the "Idemitsu Connect" website exclusively for shareholders and increase opportunities for two-way communication with individual shareholders and investors. We would like to give details of our specific initiatives clearly.

We will continue to enhance our disclosure through various tools, including this report, to spread information to a wide range of investors and increase opportunities for dialogue. We appreciate your continued understanding and support for our group's management strategies and business activities.

Initiatives to Enhance the Value of Human Capital



Director,
Executive
Vice President

Masahiko Sawa

Initiatives for Human Capital Management

On September 15, 1945, just one month after the end of World War II, our founder, Sazo Idemitsu, brought together employees at the Head Office and made the following declaration. “We have lost our business, and debts remain. However, Idemitsu Kosan’s human resources include 800 people working overseas. They are the only capital we have and they will create our future businesses. Because we respect people at Idemitsu Kosan, we must not dismiss them hastily in the postwar chaos.”

We have been saying that people are important since long before the term “human capital management” was coined. Furthermore, we believe that the purpose of our business is to develop people who serve society and are respected, and business is the means for doing this.

Our predecessors have been diligently developing our petroleum refining and sales business model after the war, but now this business has entered a phase of major change. In pressing forward with the business structure reforms, we will go back to the ideas of “people are capital” and “people-centered

management”, which we have cherished since our foundation. We will renew our commitment to the human capital strategy with a belief that we can address any difficulties as long as our employees have been fully engaged and developed.

Our human capital strategy consists of three pillars: embodying the Management Philosophy/Vision, expanding DE&I, and bringing out the full potential of each individual.



Embodying Management Philosophy/Vision

The “Truly inspired” Management Philosophy and our Vision for 2030 and 2050 are our compass as we promote business structure reforms. We have been implementing various initiatives believing that the most important first step is sharing the Philosophy and Vision with employees, ensuring they are aligned with the Philosophy and Vision, and then enabling each one of them to work with autonomy and a sense of ownership.

We hold semi-annual townhall meetings as a forum for direct dialogue between the President and other senior leaders and employees. Many employees participate in these

meetings and engage in lively discussions. These forums are used to explain the Management Philosophy and Vision, whenever the opportunity arises. As a result of these initiatives, the degree of awareness of the Management Philosophy has reached 99.3%, while resonance has reached 78%.

However, we are facing issues with embodying the Management Philosophy and challenge toward change beyond the organization, which are highlighted in the elements of the Idemitsu Engagement Index (Idemitsu EI).

The issue is that while employees know and are aligned

with the Management Philosophy, this knowledge and alignment are not reflected in their daily actions. Employees engage exclusively in existing operations in their own organization and the number of challenges they take on beyond the boundaries between organizations is limited. In

1. Evolution of HR Systems Emphasizing the Revision of Evaluation Items and the Action Guideline

The current HR systems and Action Guideline were formulated and established when Idemitsu Kosan and Showa Shell Sekiyu integrated their businesses in 2019, under the policy of hammering out new concepts and applying the strengths of the two companies. While the current Action Guideline and evaluation criteria for personnel assessment comprehensively express the values we want to cherish, there are concerns that the terminology is too general, failing to reflect our company’s unique values, and that these contents tend to be ambiguous. We believe that because the Action Guideline and evaluation criteria for personnel assessment were established before the formalization of the Management Philosophy, their connection to the Management Philosophy has become tenuous.

We seek employees who are able to clarify what they want to do and what they want to be, think out actions, mobilize the strengths of diverse team members, follow through on actions taking ownership of them, and continue to take on challenges without fearing failure. We will redefine the evaluation items and the Action Guideline based on the Management Philosophy, and we plan to have the new systems. We believe this will lead to people’s daily actions more directly embodying the Management Philosophy.

Expanding DE&I

To create new value, it is essential that we utilize the strengths of diverse people and combine their wisdom. We need to create an environment where people who are considered minorities, including females, LGBTQ+ people, foreign nationals and people with disabilities, are able to demonstrate their capabilities to achieve their own career plans, leading to their personal development.

At Idemitsu Kosan, we have been focusing our efforts on building an environment which permits everyone to demonstrate their capabilities, with their individual characteristics and values respected regardless of attributes such as job rank, gender, employment status, nationality, and presence or absence of disabilities, by valuing a perspective that considers equity. Since October 2021, these activities have been led by the DE&I Committee, which is an advisory body to the president. As a result, we were able to achieve our targets for three key performance indicators (KPIs) linked to executive compensation : 47% of new hires being women, 4% of managers being women and 93% of eligible male employees taking childcare leave. These are significant improvements from the

such circumstances, progress will not be made in the development of employees who are necessary for business structure reforms. We are working on the following two initiatives to address these problems.

2. Activities of the Idemitsu Employee Association

Aiming to energize communication between management and employees and promote cross-departmental activities, we established the Idemitsu Employee Association in FY2024, and it began its activities in July. Several full-time administrative officers have been assigned to the Employee Association. They implement and analyze employee engagement surveys, plan and hold townhall meetings, and create other opportunities to collect opinions from individual employees in each workplace, thus creating opportunities for employees to make suggestions directly to management. A feature of the Idemitsu Employee Association is that, unlike a labor union, executives, including general managers, also participate in its activities, and all employees work as one to carry out these activities.

In addition, we have enhanced the employee stock ownership plan to enable more employees to possess company shares. Our goal is to enable employees to participate in management more voluntarily and proactively as shareholders. We expect this to produce synergies with the activities of the Idemitsu Employee Association.

Through these initiatives, we will enable each employee to increase their understanding to take ownership, so that the Management Philosophy and the Vision will become more entrenched and people’s actions will embody it to a greater degree.

previous fiscal year. In addition, external organizations’ evaluations of our initiatives are higher than ever before. For example, we received a PRIDE INDEX 2023 gold rating and have been selected to be a Nadeshiko Brand for two consecutive years.

Currently, 13% of our employees and 4% of our managers are female, which is not satisfactory. In FY2024, we will further expand the targets of our program providing in-house mentoring from senior leaders to female employees, which commenced last fiscal year. At the same time, Teijin Limited and Ricoh Co., Ltd., will join us in the cross-mentoring program we launched last year with Tokio Marine & Nichido Fire Insurance Co., Ltd., further enhancing our activities.

In areas other than the enhancement of female participation and advancement in the workplace, we will continue to promote initiatives to expand DE&I, such as the installation of universal toilets and shower rooms for LGBTQ+ people and personnel exchanges aimed at increasing opportunities for staff members who are overseas nationals to work actively within our company.

Review of My Activities as an Advisor to the DE & I Committee

I have been supporting activities for enhancing corporate values through fostering a corporate culture and encouraging employees to take more pride in their work by leveraging the diversity of every individual as an advisor to the DE&I Committee since October 2022.

To date, we have implemented initiatives, such as the identification of management challenges related to the promotion of DE&I, the trial of a program recommending that employees take childcare leave, regardless of gender, establishing workplace rules that encourage everyone to actively participate in the company and enable them to become entrenched, and employee participation initiatives soliciting the opinions of employees, which will be reflected in HR system reforms.

We also promoted the transition from D&I to DE&I, focusing our efforts on building an organization based on “Equity”. Our DE&I initiatives have been progressing steadily in recent years, permitting us to see changes in each employee’s awareness of diversity.

We are striving to transform into an organization which continues to innovate without being constrained by existing values. To do this, we respect the diverse characteristics and values of individuals, never tolerating discrimination based on



job rank, employment status, age, gender, educational background, place of origin, nationality, disability, or other attributes, enabling each employee to fully demonstrate their capabilities, proactively leverage their diverse perspectives and values, and create synergies. For example, we actively utilize senior employees, have enhanced the recruitment of mid-career and foreign national employees, and set a female recruiting ratio target of 50% or more.

We will continue to steadily advance these steps, and I am confident that our company will reach our goals.

Bringing Out the Full Potential of Each Individual

The initiatives that we have taken to date have led to increased resonance with the Management Philosophy/Vision and expanding DE&I, which are among the three pillars of our human capital strategy. On the other hand, we understand that issues remain in bringing out the full potential of each individual. The factor analysis of the Idemitsu EI indicate that the number of employees who advised that “I have a reasonably good idea of my possible career paths in this company” barely surpassed 50%, although it increased from the previous year, and we take this result seriously.

We will enable each employee to think about the career path they want to follow. Acknowledging that our career support has been overly focused on professional careers, we will implement various initiatives under our policy of supporting overall development, which incorporates both the personal and professional aspects of people’s lives. This is because we believe that professional development is only one part of a person’s life, and that helping people develop fulfilling lives, including their work, will enable every employee to be more engaged and to grow. We believe this will directly contribute to our being more competitive.

An example of a conflict between people’s personal lives and professional careers are the transfers where employees have to change where they reside. We have enhanced communication between supervisors and employees to understand each individual’s wishes, discussing at an early stage before transfers how the transfer will help shape their career and other matters. We have also increased relocation allowances and allowances paid to employees living apart

from their families when they return home.

In April 2024, we established the Career Design Department, an organization that is independent of the Human Resources Department. The mission of this department is to promote autonomous career development (i.e., career design) for all generations, propose diverse career paths, offer skill development programs, create opportunities for cross-border learning, and provide career consulting. We will strengthen our support of individuals through a comprehensive system that enables employees to envision their careers by themselves instead of the company doing so, with the support of their supervisors and career consultants.

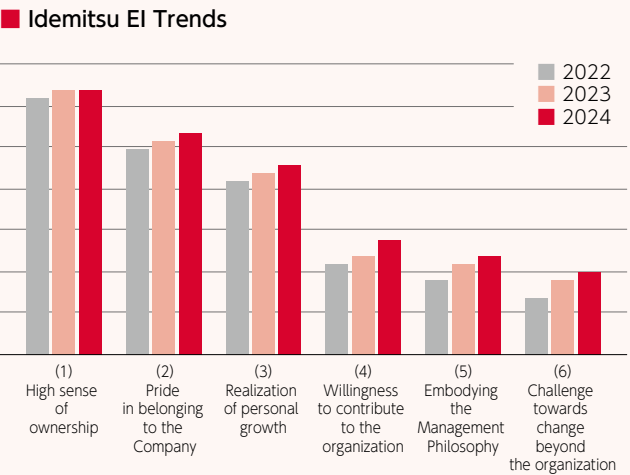
The Idemitsu Employee Association provides all employees with opportunities to participate voluntarily in discussions for the creation of a better company and a better organizational culture. We hope that creating opportunities for discussions over departments will enable employees to develop personally from a company-wide perspective.

We will also expand the scale of our Job festivals, in which all of the company’s departments share information about their jobs and career opportunities, to enable company-wide interaction. We will continue to enhance the content of these festivals, prompting employees to think about their own careers.

We will continually review our progress in the three pillars of our human capital strategy—Embodying the Management Philosophy/Vision, Expanding DE&I, and Bringing out the full potential of each individual—with KPIs including the Idemitsu EI and take initiatives to improve.

Idemitsu Engagement Index

The Idemitsu Engagement Index (EI) is composed of six elements: (1) High sense of ownership, (2) Pride in belonging to the Company, (3) Realization of personal growth, (4) Willingness to contribute to the organization, (5) Embodying the Management Philosophy, and (6) Challenge towards change beyond the organization. It is an index for measuring the progress of the human capital strategy from the perspective of employees. It was 67% in FY2022, 69% in FY2023, and 70% in FY2024 (FY2025 target: 75%).



Elements (1) through (3) have been rated high enough to be called our strengths. We understand, however, that improving (4) through (6) is an urgent task. We have analyzed the specific factors that should be addressed to help improve all elements and are implementing measures accordingly.

1. Factors That Impact the Idemitsu EI

To clarify the factors that impact the Idemitsu EI, we conducted significant analysis and found that the following six questions account for 74% of the contribution.

Category	Question
Career Opportunity	I believe I have the opportunity for personal development and growth in this company.
	I have a reasonably good idea of my possible career paths in this company.
Company Values, Goals, and Strategy	Our Code of Conduct is the guideline for my day-to-day judgments and behaviors in my work.
	I have a clear understanding of the goals and objectives of my department.
Creativity and Initiative	I am satisfied with my efforts and achievements for the work I am currently assigned to.
	I feel encouraged to come up with new and better ways of doing things.

Blue : 75% or higher, a level that can be called our strength

2. Issues and Measures in the Career Opportunity Category

The results for the two questions in this category were contrasting.

2-1. Provision of Opportunities for Growth

Many employees feel that the Company provides opportunities for them to improve their capabilities and achieve personal growth, which is our strength. In FY2023, we began to hold the Job festival where all departments gather to introduce their jobs. In 2024, approximately 1,100 people participated in the festival. This event is an opportunity to learn about other departments and think about one’s own career. More than 90% of participants’ provided positive feedback about the event. A cumulative total of 82 employees have utilized experience in a secondary job in-house through which employees are allowed to spend 20% of their time working in other departments while continuing to fulfill their current role. This system contributes to diversifying individual careers and the prevention of departments becoming isolated. In April 2024, we commenced a program in which employees volunteer to receive training to acquire needed skills. As of July-end 2024, more than 400 employees have applied for the training program. We are committed to providing opportunities for external learning programs and healthy interdisciplinary competition to develop individuals who can lead with flexible thinking that is not constrained by internal norms.

2-2. Career Development in the Company

In contrast, only 51% of employees answered that they can envision their future career at our company, and we recognize this as a significant challenge. In April 2024, we established the Career Design Department as an organization independent of the Human Resources Department. The Career Design Department has five key missions: raising awareness of autonomous career development, offering diverse career paths, providing skill development programs for those interested, facilitating opportunities for cross-border learning, and offering career consulting. In 2024, we started encouraging employees to create Career Design Sheets to outline their personal development vision and enhanced the support provided by supervisors and in-house career consultants.

3. Issues and Measures in the Company Values, Goals, and Strategy

3-1. Action Guideline

In 2019, when the new company was established through management integration, we developed the Action Guideline before implementing the Management Philosophy in 2021. The Action Guideline has grown from its core concept and consists of five elements: independence & autonomy, innovation, co-creation, integrity, and health & safety. Competency evaluation items in personnel evaluations have also been set based on the Action Guideline. Compared to the Management Philosophy, the Action Guideline is expressed in words that are used generally and does not display the unique qualities of Idemitsu Kosan. We seek employees who clarify the things that they want to do, think out issues, mobilize the capabilities of diverse team members, follow through on actions with ownership of them, and continue to take on challenges without fearing failure. While 66% of employees now support the current Action Guideline, we will redefine the Action Guideline and personnel evaluation criteria within the current fiscal year based on the Management Philosophy, "Truly inspired." The revision of our HR systems in FY2025 will reflect this. Through this initiative, we would like to develop as many employees who can embody the Management Philosophy, "Truly inspired," as possible.

3-2. Understanding the Goals and Strategies of Our Departments

Many of our employees have a short-to medium-term perspective and understand the goals and strategies and policies of the departments that they are a part of, which is another strength. On the other hand, they do not have a sufficient understanding of the policies of the entire company or other departments. This isolation phenomenon is a great barrier to the cross-departmental activities that will be necessary in the future. Aware of this problem, we established the Idemitsu Employee Association in April 2024 as an organization that is independent of the Company. With full-time administration officers as organizers, the Idemitsu Employee Association promotes the planning of employee interaction between departments, with employees' voluntarily making



Explanatory meeting for employees held by the Employee Association

suggestions to management, the planning and analysis of employee engagement surveys, townhall meetings and other opportunities for direct dialogue with top management. The Idemitsu Employee Association is fully funded by the Company and involves management. At the same time, measures were taken to increase the participation of employees in the employee stock ownership plan to 90%. It is hoped that more employees will take actions beyond the framework of their departments by having ownership in the Company.

4. Issues and Measures in the Creativity and Initiative Category

4-1. Sense of Achievement in Work and Aptitude

We believe that the degree of satisfaction with initiatives and achievements in work is dependent on employees' aptitude for the operations that they are responsible for (to what degree they can demonstrate their skills and capabilities) and the sense of achievement that is developed as a result. We also examine the correlation between these elements. In 2020, we introduced the career challenge system, under which employees volunteer to try out different types of jobs. To date, about 90 people have transferred jobs via this system. We intend to expand the career challenge system and the experience a secondary job in-house. At the same time, we will steadily implement the Career Design Department's measures to support employees' self-directed career planning.

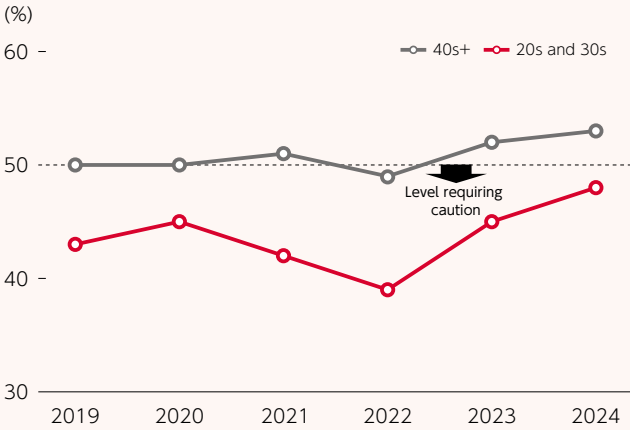
4-2. Adherence to Precedent and Productivity

The score for the questions, "I feel encouraged to come up with new and better ways of doing things." is 69%, which is a moderate score. Some employees feel stressed by adhering to precedent, the culture of *nemawashi* (behind-the-scenes maneuvering), and A challenge we face is that some employees feel stress from factors not reflected in quantitative metrics like total working hours, overtime, or paid leave utilization — specifically, the tendency to follow precedents, a culture of behind-the-scenes coordination, and an effectively multi-layered approval process. Regarding the activities to improve productivity by 30%, which we launched in 2023, the rate of improvement has been in the 15% range. We will push forward with the activities to improve productivity by 30% by FY2025, the final year of the current Medium-term Management Plan.

5. Inclusion of Diversity and Growth of the Organization

The analysis of six issues that greatly impact the Idemitsu EI has revealed a problem, that employees in their 20s and 30s, among others, find it difficult to envision their future career. To solve this problem, it is important that employees feel their personal growth and gain a sense of achievement through their work. To that end, we would like to build an environment where the values of individuals are respected and they can demonstrate their unique qualities without being bound by a rigid organizational culture. Through this initiative, we would like to enable young employees to work with confidence, enthusiasm, and the desire to do their best and achieve great things at Idemitsu. We accept the diverse values and opinions of our individual employees and want to enable young employees to be enthusiastic, creating new energy and building a foundation for new businesses, including those aimed at achieving carbon neutrality.

Percentage of employees who can envision their career at the Company



TOPICS

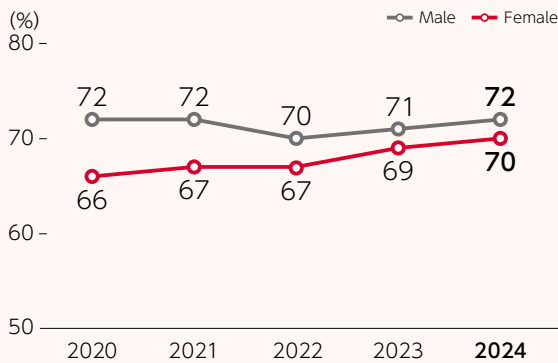
Employee Engagement Survey

Placing emphasis on maximizing the growth and engagement of people, we conduct an employee engagement survey once a year to analyze employees' engagement, mutual trust, and unity, and to grasp the culture and state of our organization. The results of the survey are fed back to management and all employees. Then they are analyzed in detail, and specific action plans are formulated and implemented based on the feedback received. The results of this analysis and initiatives are then confirmed in the next year's survey. This is the PDCA (Plan, Do, Check, Act) cycle.

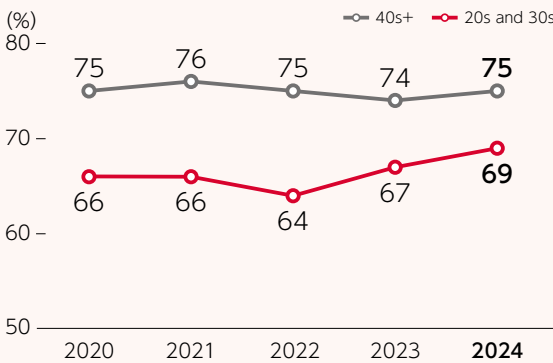
Overview of FY2024 Employee Engagement Survey

Survey period : Late July–early August 2024
Scope : A total of 12,070 people at Idemitsu and 31 affiliates and subsidiaries in Japan and overseas
Response rate : 96.5%
Features of the FY2024 survey : The engagement score for the entire company, which we use as an indicator, improved from 71% to 72%. The gap in the scores between people with different attributes (especially gender and age group), which has been an issue, has been shrinking gradually over the past five years (see the figures below). This year, career opportunities improved, which we believe is a result of career-related measures to help individual employees demonstrate their capabilities and achieve greater personal growth, such as the establishment of the Career Design Department. Based on the survey results, our senior leaders and employees (Idemitsu Employee Association) will engage in dialogue to identify fundamental issues and take appropriate actions.

Engagement score (gender)



Engagement score (age group)



Growth Strategies for Existing Businesses

Executive Officers discuss short to medium-term initiatives to fulfill our vision as quickly as possible.

Expanding the International Petroleum Business

Primarily based in Singapore, our international petroleum business, is supplying petroleum products and developing new low-carbon businesses, with a focus on the the Asia-Pacific region.

Geopolitical risks as well as the frequency and severity of environmental changes are increasing globally. In this environment, stable energy supply is becoming increasingly crucial in Japan and around the world. We will utilize the supply chain we have built through our trading business to contribute to the stable supply of petroleum products and further promote the global expansion of the petroleum business. As nations aim to establish low-carbon societies, energy policy discussions are shifting towards the practical aspects of the energy transition. To capture business opportunities capitalizing on this trend, we strive to develop operations in countries and regions where low-carbon efforts are progressing. In FY2023, we focused on renewable fuels and carbon credits in the



United States.

We will continue to seek opportunities within this environment to increase the profitability and supply stability of the petroleum business while looking to expand new businesses that contribute to a low-carbon society.

Initiatives in the International Petroleum Business

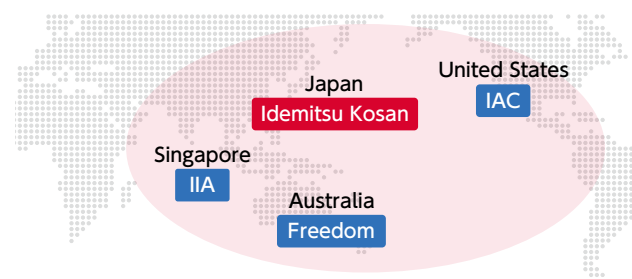
We have established a supply chain linking petroleum product supply from our refineries in Japan to our sales base and customers in the Asia-Pacific region.

Since domestic demand for petroleum in Japan peaked in 1999, we have actively exported petroleum products through Idemitsu International Asia Pte. Ltd. (IIA), based in Singapore, and expanded sales channels. As a result, our overseas petroleum sales volume reached a record high of 30 million kL in FY2023.

Additionally, through our group companies such as Idemitsu Apollo Corporation (IAC) on the west coast of the United States, and Freedom Energy (Freedom) in Australia, we are engaged in local communities through our petroleum wholesale and retail business. We supply energy and generate profits in various regions through stable sales channels.

Demand in Asia is expected to expand at an annual rate of 1.3% until 2030, driven by economic development. To meet this expanding demand, we will respond to customer needs utilizing the trading business foundation we have established.

International trading network



Establishing a Business Foundation that Contributes to Carbon Neutrality (CN)

While developing the supply chain in our international petroleum business, we have built relationships with customers and gained expertise in business operations. By leveraging this foundation, we are currently developing supply chains for sustainable aviation fuel (SAF), biofuels, synthetic fuels, and carbon credits, with the goal of providing "energy one step ahead." Specifically, in Singapore, we are taking advantage of its location as an international hub for marine fuel and carbon

trading and contributing de-carbonization by supplying bio-bunkers for VLCCs as well as carbon-offset marine fuel. In California, we have been actively developing our renewable diesel business.

We will continue to supply low-carbon energy to meet customer needs and expand our efforts to utilize our trading functions and sales network to establish a business foundation that will contribute to CN.

Strengthening Domestic Networks to Develop Next-Generation Businesses

Our domestic petroleum business works with over 1,000 dealers nationwide to steadily provide the energy and services needed by local communities. We have a network of around 6,000 service stations. In April 2021, we began transitioning these service stations to a new brand name, apollostation. By the end of 2023, all of the stations had changed to the apollostation brand. We will collaborate with our dealers to further enhance our nationwide network of service stations. We aim to ensure that the apollostation brand remains a trusted choice of customers.

In the domestic petroleum business, we are working on the social implementation and evolution of "energy one step ahead" and Smart Yorozuya (one-stop shop) to achieve a carbon-neutral society by 2050. We aim to accelerate the



establishment of a supply chain for carbon-neutral energy and the development of various energy and mobility centers.

Implementation and Evolution of "Energy One Step Ahead"

We have fulfilled our responsibility to protect people's lives and the global environment by providing a stable supply of energy that is ahead of the times. We have begun selling Idemitsu Carbon Offset fuel to customers and are proposing low-carbon solutions using carbon credits to reduce CO₂ emissions, which is difficult during the transition to a decarbonized society. Additionally, we are working to establish stable supply chains for SAF (sustainable aviation fuel), biodiesel and biofuel oil, including raw material procurement, production, distribution and supply. In Hokkaido, we have begun selling Idemitsu Biodiesel 5, a B5 diesel fuel that meets our stringent quality control standards.

We are promoting its adoption by utilizing our network of authorized dealers. Looking ahead to 2030, we are also conducting demonstration experiments to incorporate "hydrogen," "ammonia," and "synthetic fuels" into our portfolio of advanced energy solutions.



Implementation and Evolution of Smart Yorozuya

We are transforming our apollostation service stations nationwide into lifestyle support hubs. Our slogan is, "Various a! in this town." We have developed various services, including the provision of diverse energy sources and a wide range of mobility options. We also actively promote our official Drive On app to strengthen the connection between apollostation and our customers. We have opened the first apolloOne shop, which only offers a car-wash and coating service to customers. We aim to open 250 apolloONE shops by FY2030. We have also launched a car rental service named Carsta Rent-a-Car by Idemitsu. This service provides unmanned operation and dynamic pricing to accommodate various needs and is expanding its electric vehicle charging network. We are gradually expanding the service based on the results of demonstration experiments being conducted at eight business sites.

As part of our efforts to move toward a decarbonized society,

we are developing the Type Green environmentally friendly service stations using domestic timber. We aim to open 30 Type Green service stations by FY2050.



apolloONE

Development of Lubricants: Familiar and Necessary Products

Our lubricants business was the first business started by Sazo Idemitsu, the founder of the Company. The business has continued for more than 110 years since the Company's foundation and is the oldest business the Company is engaged in. The lubricants business is characterized by a strong end-to-end value chain that includes research, sales and after-sales service. The business is also capable of developing tailor-made products to meet customers' needs by leveraging the technologies developed taking advantage of years of research and experience. As electric vehicles become more prevalent around the world, we are developing lubricants for them. We are also proactively working on development projects in new fields, unconstrained by current frameworks, for the development of a CN society. Within the Group, the lubricants business has achieved the most significant progress in international expansion. Approximately 60% of its sales are from overseas. Across 16 countries, the business has 3,400 employees, including both Japanese and foreign nationals. Spearheading overseas expansion, the business is tasked with increasing people's recognition of the Idemitsu brand globally. Lubricants are essential materials in all industries, including

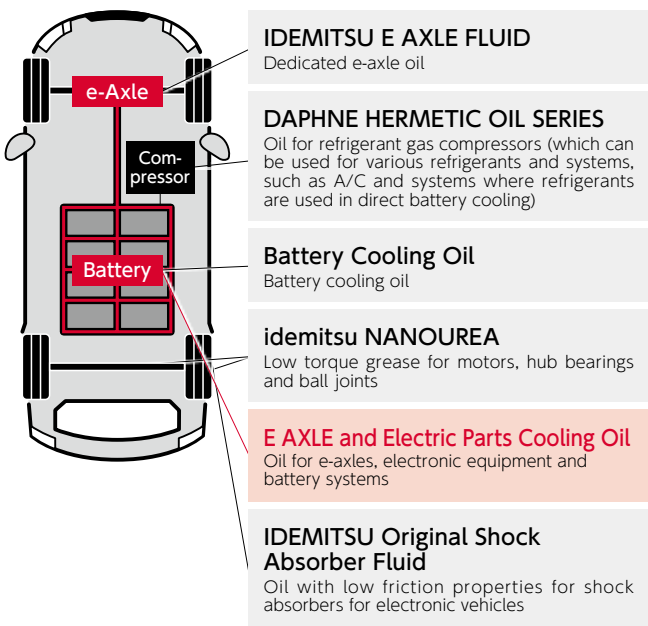


Senior Executive Officer
Yoshiaki Terasaki

manufacturing industries. They play an unsung role in supporting people's everyday lives. To help customers choose the product that best suits the conditions and needs of their business sites, we post guidelines for selecting suitable oil on our website. Please consult these guidelines. We will continue to focus on stable supply, quickly understand customer needs, and develop high-quality, distinctive products to contribute to the enhancement of everyday life.

Developing a New Oil for Electric Vehicles

The electrification of automobiles is being promoted to create a carbon-free society, leading to a worldwide increase in EVs and HEVs. In response to this trend, we have developed E AXLE and Electric Parts Cooling Oil, an oil that can be used for e-axle drive units, electronic equipment and battery systems. This oil is expected to help reduce the number of parts by simplifying cooling loops, making more interior space available and standardizing oil types. As automobiles become more automated and electrified, motors are becoming faster and more powerful. We have developed idemitsu NANOUREA, a special urea grease designed for ultra-high speed and high-temperature environments. This product has excellent heat resistance, quietness, low-temperature properties and fretting wear resistance. Our unique manufacturing process has enabled these revolutionary performance characteristics. The product can be used in automobiles, home appliances and robots. We provide comprehensive support for electric vehicle technology through a product lineup with six categories of products tailored to these applications.



In Search of “New Resources” for the Low-Carbon Society

Our resources business has been actively engaged in the development of various energy sources to meet the energy demands of the times. Our businesses, stretching from the exploration and production of oil and gas in Europe and Asia and coal production in Australia to the supply of geothermal power in the southern part of Japan, have significantly contributed to society by providing energy security. Moreover, these businesses have enhanced the Group's capital asset efficiency and consequently upgraded the corporate value. Looking ahead, our ambition is to develop new resources that will meet the evolving needs of a carbon-neutral society by leveraging our technological capabilities and expertise. This implies a transition to a more decarbonized business portfolio by shifting more toward green resources (sustainable energy or advanced energy solutions) from brown resources



Representative Director, Executive Vice President
Atsuhiko Hirano

(fossil fuels), while promoting a circular economy in collaboration with business partners and customers.

Shift toward a Decarbonized Business Portfolio

In Southeast Asia, where robust economic growth is anticipated, we will continue to pursue development of natural gas fields to meet the high demand of lower carbon footprint energy than coal. In addition, we will leverage our subsurface assessment technology to advance Carbon dioxide Capture and Storage (CCS) opportunities in the region, centered on the management of CO₂ emissions from gas-fired power plants.

In addition to our high-quality coal supply chain business, we intend to start the supply of black pellets, which will provide a decarbonized solution to traditional coal users. Furthermore, our business platform in Australia will be fully utilized for our move into the critical minerals sector and to the ammonia and hydrogen businesses.

Expanding Our Renewable Energy Resource Portfolio

We have a track record of contributing to the supply of decarbonized renewable energy through our geothermal power plant. In Kokonoe-machi, Oita Prefecture, we began providing geothermal steam to the local utility company in 1996 and started a binary power plant in 2017. Geothermal power in Japan is a vital energy source as a baseload power source for year-round stable and sustainable energy supply unaffected by season or weather. In Yuzawa, Akita Prefecture, we are commencing construction of a new geothermal power plant after having engaged in dialogue with the local community. We have several prospective projects that are under review/assessment as we actively pursue surveys and exploration activities with our business partners. We are dedicated to advancing the development of geothermal energy, a 100% domestic and decarbonized renewable energy resource.



A geothermal project in Kokonoe-machi, Oita Prefecture

The Executive Officers responsible for digital transformation and procurement discuss the company-wide DX and procurement strategies that underpin the business's foundation.

Developing Human Resources and Improving Productivity to Support DX

We are promoting digitalization to achieve business structure reforms. Our goal is "Shaping Change." Responding to the change in the structure of energy and industry, we are working to transform the quality of work and business models by rebuilding IT infrastructure and utilizing a variety of digital tools. The key to this change is the power of people. We believe that it is crucial to cultivate talented people for digital transformation. Our goal is for many employees to be able to naturally use digital technology in their work. We are actively implementing and utilizing generative AI. We utilize generative AI in a wide range of tasks, from everyday operations to research, for everything from PoC* to full-scale implementation.

Through these activities, we aim to enhance productivity



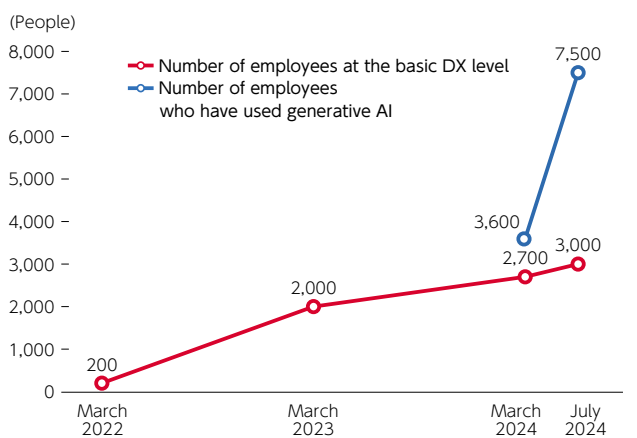
and job satisfaction and build a solid foundation for transformation.

* PoC: Proof of Concept

Nurture Personnel to Support DX

To ensure that all employees can independently utilize digital technology, we are systematizing the necessary knowledge and skills and developing training programs based on that system. We categorize employees into three proficiency levels: basic (able to understand fundamental knowledge and ways of thinking), core (able to lead the implementation of digital transformation to address issues), and expert (able to develop strategies). We aim to provide basic-level training to 10,000 employees, core-level training to 3,000 employees, and expert-level training to 450 employees by 2030. Since FY2023, we have been providing e-learning training programs. In July 2024, 3,000 employees were at the basic level. We have introduced practical hands-on training for employees aiming to take the core training course. These human resources development programs have increased productivity improvement activities utilizing digital transformation at each worksite.

■ Trend in the number of employees at the basic level and the number of employees who have used generative AI



Productivity Improvement Activities

We aim to accelerate decision-making and increase the sophistication and efficiency of operations. We promote the transformation of work styles and operations leveraging digital technology.

An example of the transformation of work styles is the growing utilization of generative AI. In FY2023, we introduced the Idemitsu version of generative AI and AI-equipped office tools throughout the Company. We also conducted seminars and shared case studies. As of July 2024, approximately 7,500 employees were using them, with the productivity of more than 80% of regular users increasing. Certain departments are trying to use generative AI with internal data. Departments are increasing productivity by utilizing generative AI according to their needs.

Business sites are increasingly utilizing no-code or low-code system development tools for business improvement activities. Employees at non-IT business sites are creating their own apps, increasing the efficiency of business. As of July 2024, the number of employees creating their own apps had reached approximately 600.

We closely collaborate with business departments to visualize current operational and information flows and identify bottlenecks or redundancies. We then implement digitalization to transform our operations. We strive to create a platform that centrally manages domestic and international data, promoting data visualization across businesses and expediting decision-making.

The Need for Procurement Transformation to Realize Our Vision

We are reshaping our business portfolio to achieve our Vision for 2050, "Shaping Change." With the scope of procurement expanding, we must rebuild our strategy and transform procurement. We also need to adjust to various changes in the business environment, including inflation, labor shortages, and the changes in the structure of industry. When considering potential large-scale disasters, ESG issues and economic security, the importance of sustainable procurement and the management of the entire supply chain is increasing. Society as a whole will have to share the cost of achieving carbon neutrality and a circular economy. We need to move forward with DX to adapt to the changing laws, regulations and social norms and create an environment where our employees and



partners can confidently purchase products, while enhancing the competitiveness of our procurement.

Procurement Transformation Activities

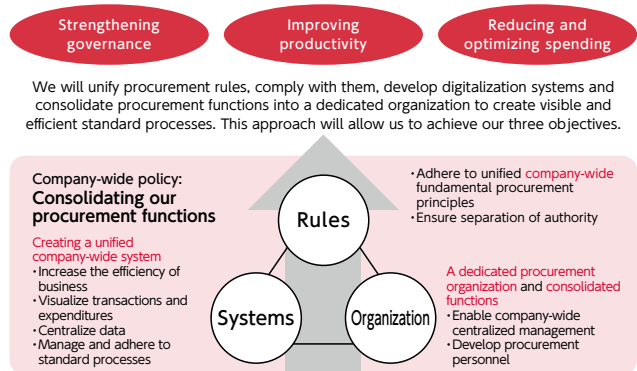
Our procurement transformation activities are focused on (1) transforming procurement operations, (2) building a supply chain management system and (3) advancing strategic procurement. We started to transform procurement beginning with Idemitsu Kosan Co., Ltd.'s domestic business. We aim to extend this initiative to all Group companies globally by 2030.

We started an organization to accelerate these activities and steadily facilitate the transformation. In April 2024, we set up the Procurement Headquarters to lead this initiative, appointing managers from each department of the Company to also serve as members of the headquarters. In July, we appointed a Chief Procurement Officer (CPO).

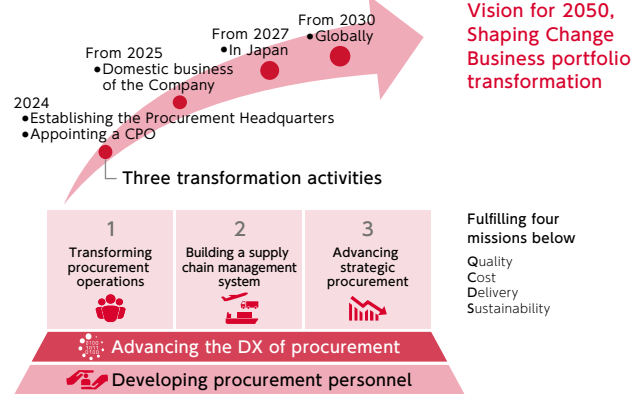
1. Transforming procurement operations

We will review procurement operations across the Company to strengthen the governance of procurement operations, improve productivity and reduce and optimize spending. First, we will focus on indirect materials, including those used in construction work, unify procurement rules, introduce a common system and consolidate functions. We will advance digital transformation and strive to automate assessments using AI technology.

■ Objectives of transforming procurement operations



■ Procurement transformation activities



2. Building a supply chain management system

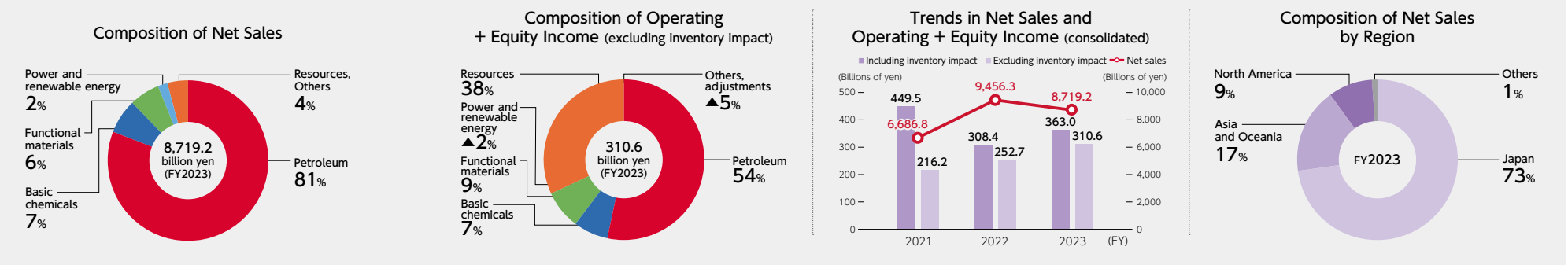
We are dedicated to managing our supply chain to ensure continuous and stable procurement, which is essential for the stable supply of our products. We will promote green procurement and supply chain visualization to achieve the sustainability of our procurement.

3. Advancing strategic procurement

As we move into the social implementation phase of our business portfolio transformation initiatives, we will engage in strategic procurement, focusing on addressing procurement risks. We will also work to deepen our relationships with business partners and undertake initiatives to maximize the benefits for both parties as partners depending on categories of procurement.

FY2023 Review of Operations

Idemitsu Kosan is developing five businesses in the domains of energy and materials. We will contribute to the realization of a sustainable society while fulfilling our social mission of providing a stable supply of energy, and will continue to strengthen the competitiveness of existing businesses and transform our business portfolio.




Trends in Net Sales and Operating + Equity Income

Manufactured Capital (as of March 31, 2024)

Petroleum Segment

P.31



Group refineries

Domestic	Location	Crude oil processing capacity (10 thousand barrels per day)
Hokkaido Refinery	Tomakomai City, Hokkaido	15.0
Chiba Complex	Ichihara City, Chiba Prefecture	19.0
Aichi Complex	Chita City, Aichi Prefecture	16.0
Yokkaichi Refinery (Showa Yokkaichi Sekiyu Co., Ltd.)	Yokkaichi City, Mie Prefecture	25.5
Keihin Refinery (TOA Oil Co., Ltd.)	Kawasaki City, Kanagawa Prefecture	7.0
Yamaguchi Refinery (Seibu Oil Co., Ltd.)	Sanyo-Onoda City, Yamaguchi Prefecture	12.0
Total		94.5*


Overseas

Location	Crude oil processing capacity (10 thousand barrels per day)	
Nghi Son Refinery (Nghi Son Refinery and Petrochemical LLC)	Thanh Hoa, Vietnam	20.0
Total		20.0

* The total processing capacity when adding the capacity of Fuji Oil Company, Ltd., with which Idemitsu has concluded a petroleum products trading agreement, is 1.09 million barrels per day (bpd).

Basic Chemicals Segment

P.32



Mainstay chemicals production capacities*1

Domestic	Chemical product	Production capacity (tons/year)
Olefins	Ethylene	997,000
	Paraxylene	836,000
	Mixed xylene	938,000
Aromatics	Benzene	1,020,000
	Styrene monomer	550,000
	Cyclohexane	240,000

Group petrochemical bases


Domestic	Location	Overseas	Location
Chiba Complex	Ichihara City, Chiba Prefecture	Idemitsu SM(Malaysia) Sdn. Bhd.	Johor, Malaysia
Tokuyama Complex	Shunan City, Yamaguchi Prefecture	Petrochemicals(Malaysia) Sdn. Bhd.	
Aichi Complex	Chita City, Aichi Prefecture	Idemitsu Chemicals(M) Sdn. Bhd.	
Hokkaido Refinery	Tomakomai City, Hokkaido	Nghi Son Refinery (Nghi Son Refinery and Petrochemical LLC)	Thanh Hoa, Vietnam
Showa Yokkaichi Sekiyu Co., Ltd.	Yokkaichi City, Mie Prefecture		
Seibu Oil Co., Ltd.	Sanyo-Onoda City, Yamaguchi Prefecture		
TOA Oil Co., Ltd.	Kawasaki City, Kanagawa Prefecture		

Trends in Net Sales and Operating + Equity Income

(Billions of yen)	2021	2022	2023
Net sales	563.5	666.9	601.6
Operating + equity income	8.2	10.1	22.0

Functional Materials Segment

P.33 ▶ 36



Production bases (including Group companies)


	Domestic	Overseas
Lubricants	Chiba (Ichihara), Kanagawa (Kawasaki, Yokohama), Fukuoka (Moji), Hyogo (Kobe)	China, Taiwan, Thailand, Vietnam, India, Indonesia, USA
Electronic Materials	Shizuoka	South Korea, China
Advanced Materials & Performance Chemicals	Chiba (Ichihara, Kujukuri, Hasunuma), Kanagawa (Kawasaki), Mie (Kameyama), Hyogo (Himeji), Yamaguchi (Shunan)	China, Malaysia, Thailand
Bitumen	Yokkaichi	
Plant Protection Products & Functional Feed	Yokohama	
Lithium-ion Battery Materials	Chiba* (*small pilot facilities)	

Trends in Net Sales and Operating + Equity Income

(Billions of yen)	2021	2022	2023
Net sales	421.4	511.0	515.4
Operating + equity income	17.1	17.0	27.6

Power and Renewable Energy Segment

P.37



Capacity of the group power generation facility portfolio*1

Type of power generation	Unit: 10,000 kW
Domestic solar power	18.7
Overseas solar power	52.1
Solar power (subtotal)	70.8
Biomass power	10.3
Wind power	2.0
Geothermal power*2	0.5
Renewable energy (subtotal)	83.6

Power generation capacity


Type of power generation	Unit: 10,000 kW
Domestic thermal power generation	83.4
Overseas thermal power generation	27.1
Thermal power generation (subtotal)	110.5
Domestic power generation capacity (total)	114.9
Overseas power generation capacity (total)	79.2
Power generation capacity (total)	194.1

Trends in Net Sales and Operating + Equity Income

(Billions of yen)	2021	2022	2023
Net sales	138.3	197.1	141.5
Operating + equity income	-9.9	0.5	-7.6

Resources Segment

P.38



Oil and gas production volume

Name	Location	Production volume (thousand BOE**1/day)
Vietnam Gas Field	Off the coast of southern Vietnam	14.1
Norway Oil and Gas Field *2	Norwegian North Sea	13.8
Total		27.9

Coal production volume

Name	Location	Production volume (thousand tons)
Ensham Mine	Australia	1,689
Muswellbrook Mine	Australia	15
Boggabri Mine	Australia	5,519
Total*		7,223

Trends in Net Sales and Operating + Equity Income

(Billions of yen)	2021	2022	2023
Net sales	338.8	672.1	370.5
Operating + equity income	81.0	230.9	116.9

Petroleum Segment

Main Businesses

- ▶ Procurement of crude oil and refining of petroleum products
- ▶ Sale of gasoline, diesel oil, kerosene, and automotive lubricants to service stations
- ▶ Sale of industrial kerosene, diesel oil, and heavy oil
- ▶ Sale of aviation and marine fuel
- ▶ Operation of hydrogen stations

Senior
Executive Officer
General Manager
of Manufacturing
& Technology
Department

Hiroshi
Akiya



Strengths

- ▶ Six refineries with high cost-competitiveness
- ▶ Service station infrastructure with approximately 6,000 service stations nationwide
- ▶ Experience and technological advantages that have been accumulated since our foundation, as well as a track record of overseas expansion

Optimization of a Stable Supply System

In our Petroleum Segment, we are working to increase the competitiveness of our domestic supply chain guided by our social mission of ensuring a stable energy supply. Domestic demand for petroleum is expected to decrease gradually over the medium to long term. However, overseas demand is expected to remain strong mainly including Southeast Asia which is expected to continue economic development. In this environment, we ceased the refining operations of Yamaguchi Refinery (Seibu Oil Co., Ltd.) in March 2024 with the goal of optimizing the Group's supply system. In addition, Fuji Oil Company, Ltd., became our equity method affiliate (with Idemitsu Kosan owning 21.79% of the total number of shares issued) in order to enhance synergies in the petroleum business and promote initiatives for the achievement of decarbonization in the future. We will create synergies in the existing petroleum business through collaboration between the Chiba Complex of Idemitsu Kosan and the Sodegaura Refinery of Fuji Oil. At the same time, we will build a flagship supply base in the Keiyo area, where we will supply petroleum and receive, manufacture and supply CN fuels through both companies.

To ensure a stable supply of petroleum products, we will continue to implement initiatives to further optimize our operations, and on top

we will use AI and other advanced technologies to further streamline our distribution. Further, we are promoting the establishment of CNX centers, which involves the conversion of refineries and complexes to change their functions as we move towards the achievement of CN. There is potential in using existing equipment, including tanks and piers, for the manufacturing and storage of biomass fuels, hydrogen, ammonia and synthetic fuels, for the recycling of used plastics and other purposes. We will continue further in our exploration for considering initiatives tailored to the characteristics of each refinery and complex.

■ Refineries and complexes in Japan (as of August 31, 2024)



President Yamamoto of Fuji Oil (right) and President Kito of Idemitsu Kosan

Status of the Nghi Son Refinery and Petrochemical

Nghi Son Refinery in Vietnam, which is operated by Nghi Son Refinery and Petrochemical LLC (NSRP), an affiliate in which we hold a substantial equity interest, performs an important role as the energy supplier of approximately 35% of the demand for petroleum products in Vietnam.

From August to October 2023, NSRP conducted its first major turnaround program to improve NSRP's equipment reliability and productivity. As a result, the refinery has continued stable production at a high utilization rate in 2024.

Through our investment, we will support the safe and stable operation of the refinery, and will expedite the implementation of contributions to NSRP's bottom line.



Nghi Son Refinery

Basic Chemicals Segment

Main Businesses

- ▶ Manufacturing and sales of basic chemical raw materials including ethylene, propylene and paraxylene
- ▶ Manufacturing / Sales and building a supply chain of biomass products

Basic
Chemicals
Department
General
Manager

Nobuhiro
Miyagishi



Strengths

- ▶ Value chain development from crude oil and naphtha to synthetic resins
- ▶ Integrated operation of petroleum refining and petrochemistry
- ▶ Early implementation of Green Chemical supply chains in cooperation with the Petroleum Segment

Increasing Competitiveness by Consolidating Ethylene Plants

We have a value chain that extends from crude oil and naphtha to synthetic resins, which are the raw materials of plastics. The integration of the petroleum refining and petrochemical businesses is one of our core strengths. While demand for petroleum products continues to decline, we are committed to shifting from fuels to chemicals, thereby maintaining and enhancing the competitiveness of our core businesses.

On the other hand, ethylene plants, which are the core facilities in the petrochemical business, are forced to operate at low

rates due to the expansion of large-scale petrochemical plants in China and decreasing domestic demand. Future improvement in the supply-demand balance is not anticipated, therefore it is necessary to strengthen competitiveness by optimizing production capacity. The consideration of consolidating ethylene production facilities with Mitsui Chemicals, Inc., announced in March 2024, represents a significant initiative in this regard. We are advancing the fundamental restructuring of our production system through collaboration with partner companies.

Building a Green Chemical Supply Chain

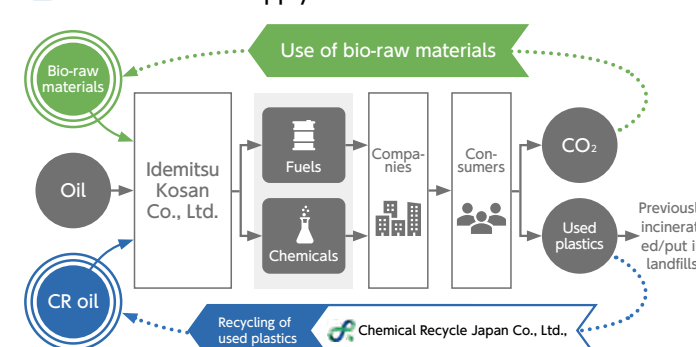
As the drive towards a carbon-neutral society intensifies, there is strong demand for the development of next-generation chemical complexes aimed at reducing CO₂ emissions and promoting resource recycling. In the Basic Chemicals Department, efforts are being accelerated towards the social implementation of chemical recycling and biochemicals.

In the area of chemical recycling, Chemical Recycle Japan Co., Ltd., established last year, has begun the construction of production facilities for recycling used plastics into oil, which will process 20,000 tons of used plastics annually, aiming to start commercial production in the second half of FY2025. The demand for resource recycling has been growing rapidly, and in Europe, a proposed regulation has been announced that mandates the use of recycled materials for more than 25% of the

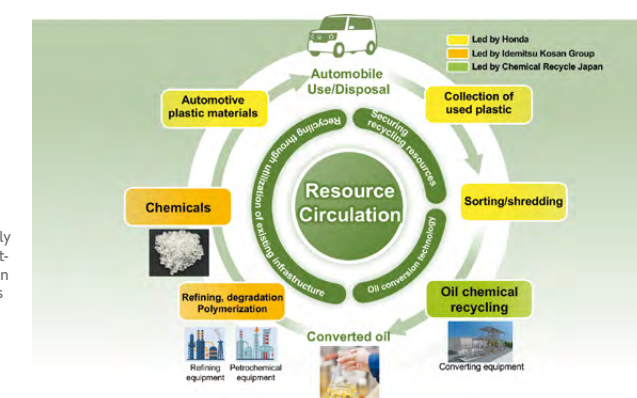
plastics used in new vehicle production. Against this background, we are working collaboratively with various industries (see the figure below) to reuse plastics. We recycle plastics that were previously discarded as waste into substitute materials that can replace crude oil. Besides, we will establish a supply chain system early to produce new "renewable chemicals".

Furthermore, regarding biochemicals, we began selling products made from imported bio-naphtha as the raw material in FY2022. Our biochemicals are now being used in a variety of applications, such as food containers, home appliances, and toys. We aim to build a new production system that does not rely on imported raw materials by utilizing bio-naphtha co-produced during SAF production.

■ Green Chemical supply chain



■ Joint initiative with Honda



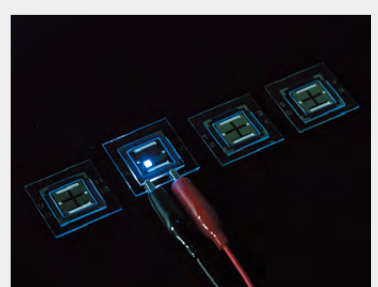
Functional Materials Segment

The Idemitsu Group globally operates its highly promising functional materials business, which includes lubricants, advanced materials & performance chemicals, electronic materials and agricultural biotechnology, in addition to core businesses such as petroleum and basic chemicals. These products are based on common proprietary technologies that we have cultivated through petroleum refining and petrochemistry, including molecular and material design, organic synthesis and evaluation and analysis technologies.



Lubricants

- ▶ A global manufacturing, sales, and R&D network spanning 28 countries
- ▶ Development of lubricants in accordance with the issues that customers face onsite and their needs



Electronic Materials

- ▶ Technical capabilities and patents centered on blue-light emitting materials, a subset of OLED materials with special technical difficulty
- ▶ Global supply network and marketing system for the display manufacturers that are our major customers



Advanced Materials & Performance Chemicals

- ▶ Materials development capabilities to meet the requirements of the market (catalyst, synthesis, and polymerization technologies, material design for chemicals and composites)
- ▶ Extensively developed overseas manufacturing, development, and sales network



Bitumen (High Performance Asphalt)

- ▶ Diverse product lineup of road paving materials, waterproofing materials, industrial materials, etc., and comprehensive asphalt-related technical capabilities
- ▶ Leveraging the our Group's chemical expertise to develop products and technologies to achieve longer-lasting roads



Plant Protection Products and Functional Feed

- ▶ Proposal capabilities to meet the needs of food production sites for the development and distribution of both chemical and biological plant protection products
- ▶ Innovative technologies that enable the development of new plant protection solutions from diverse perspectives



Lithium-ion Battery Materials

- ▶ Our extensive patent portfolio and our integrated manufacturing technology from sulfide raw materials to solid electrolytes, which we have cultivated through petroleum refining and established through many years of R&D

Lubricants

Enhancing the Value of the Idemitsu Brand in Overseas Markets

In the lubricants business, we are striving to strengthen our brand by applying our technologies and knowledge, which have been cultivated in BtoB businesses, in the BtoC market. The IDEMITSU IFG/IRG Series of engine oils, which is one part of our overseas expansion of IBMO series products, feature tailor-made formulations that fit the engine characteristics of cars and are capable of creating maximum power using the minimum amount of energy. With this series of products, we will reduce the environmental impact of society and contribute to sustainability. We have also strengthened our overseas sales network for this series of products, aiming to enhance the value of the Idemitsu brand.

At the same time, in response to the decline in demand for engine oil, which is a result of the progress in the shift to EVs,



we are developing products and cultivating markets in new fields in our efforts to realize a sustainable society. We also aim to build robust global value chains. Our goal is to make Idemitsu technologies and products known around the world to contribute to the continued development of our business.



Electronic Materials

World-Leading Technologies for Developing OLED Materials

In the electronic materials business, we engage in the R&D, production and sales of OLED materials. We possess many technologies and patents including those related to blue light-emitting materials, an area for which it is believed that difficult technologies are necessary, and they have been adopted by many display manufacturers. In addition, with the new light emission system using a laminated emission layer that we developed in 2022, we successfully achieved world-leading luminous efficiency and product life span. This is contributing to the improvement of the performance and power consumption efficiency of OLED displays. We will continue to develop materials with high added value using the material database we possess, as well as artificial and machine intelligence.



Enhancing the Functions of Our Facilities in South Korea and China

OLED displays are used in smartphones, TVs and other equipment, and the material properties required differ depending on the display manufacturer. We established Idemitsu Advanced Materials Korea Co., Ltd., in South Korea in 2023. We will increase our cooperation with customers and academia and develop materials by accurately identifying needs.

Furthermore, in 2024, we agreed an investment by Xi'an Manareco New Materials Co., Ltd. ("Xi'an Manareco"), in Idemitsu Electronic Materials (China) Co., Ltd. By forming an alliance with Xi'an Manareco, which has strengths including technologies for manufacturing OLED materials, we will strive to improve our cost competitiveness and material quality and differentiate ourselves from our competitors in China.



Headquarters of Idemitsu Advanced Materials Korea Co., Ltd.

Advanced Materials & Performance Chemicals

Increasing Competitiveness through Business Structure Reforms

In the advanced materials & performance chemicals business, we deal in a wide range of functional products, from adhesive materials used in disposable diapers to plastic zipper tapes used for food preservation, in addition to polycarbonate resins, syndiotactic polystyrene (SPS) resins, and other engineering plastics that feature high transparency, high durability and high heat resistance.

In accordance with the policies in the Medium-term Management Plan, we have begun to take measures to improve the profitability of each product, including our withdrawal from the Bisphenol A business, in our efforts to rebuild the foundation of our business for the future. On the other hand, we are continuing to concentrate management resources in businesses where there is significant room for growth, aiming to enable their expansion. For example, we have begun the commercial operation of our second SPS plant in Malaysia.

We will provide solutions to respond to the diverse needs of customers. At the same time, we will continue to create new value.



The second SPS plant in Malaysia

Idemitsu-Original SPS Resin with Excellent Properties

SPS resin is an Idemitsu-original resin. It is an engineering plastic that features high heat resistance, chemical resistance and insulation performance. Due to its excellent properties, it is frequently used in the automotive field. It contributes to reducing the weight and increasing the voltage of xEVs.

In recent years, the applications for SPS have expanded further to microwavable dishes that leverage its heat resistance and radio wave permeability. SPS is attracting attention for its features that are completely unlike the features of ceramic and glass dishes. For example, dishes made using SPS do not break. They do not get hot in microwave ovens and can therefore be taken out of the microwave using your bare

hands, thereby being safe for seniors and children to use.



Dishes made using SPS

Bitumen(High-performance asphalt)

For the Stable Supply of Asphalt and a Sustainable Society

We are the only comprehensive asphalt manufacturer in Japan, supplying asphalt for a wide range of applications, including not only road pavement but also waterproofing materials for housing and industrial materials. We are involved in the entire process from design and development to manufacturing and sales, based primarily on stable quality asphalt that is produced at the Group's refineries. This has enabled us to respond appropriately to customer needs and ensure the stability of supply. In particular, for road pavement, we have been engaged in R&D efforts in the area of high-performance asphalt that provides added value in areas such as workability and landscape elements by fully leveraging our proprietary development and blending technologies to blend various additives. Our high-performance asphalt has a wide range of applications, including not only expressways but also park sidewalks.

In addition, in recent years we have been working on the development of products that contribute to carbon reduction with higher durability and longer life of paved roads. Paved

roads are repaired periodically when they have been used for many years and have deteriorated. We have developed recycling additives and asphalt that restores the old asphalt to its original quality. This contributes to the realization of a sustainable society.



Example of high-performance asphalt (Grandphalt ART) on the New Tomei Expressway

Plant Protection Products and Functional Feed

For Safe and Reliable Food Production and Environmental Protection

With food safety and security and addressing the increasing demand for food as key concepts, we are engaged in the development, manufacture, and sale of chemical and biological plant protection products, functional feeds and other products that contribute to the improvement of productivity and the stable supply of agricultural and livestock products based on our research and development activities, both in Japan and overseas. SDS Biotech K.K. is a manufacturer

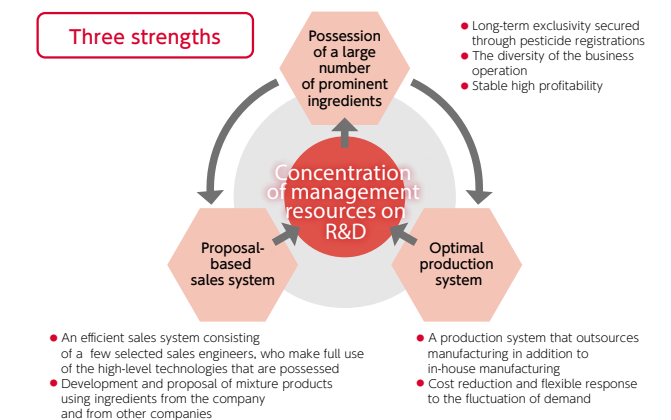
of agrochemical ingredients and functional feeds. This company is working to create new active ingredients and promote and expand the applications of existing ingredients, aiming to achieve various tasks, such as addressing control of pesticide-resistant pest and weed outbreaks, reducing environmental impact, and controlling and reducing greenhouse gases emitted by livestock to contribute to food production sites.

R&D Capabilities for the Creation of New Value

The strengths of SDS Biotech lie in its proposal-based business, in which it maximizes the performance of each ingredient leveraging R&D capabilities cultivated over many years and proposes new usage implementation, treatment methods and mixture products to client manufacturers. For example, the active ingredient of Daconil, which has been used for more than 50 years, is still highly acclaimed by the market at present as a result of various proposal activities based on high-level R&D capabilities. In FY2023, the company began to sell a functional feed containing cashew nutshell liquid in the United States and is currently expanding its sales channels. The company also established an office in the United States and two sales offices in Japan, strengthening cooperation between the R&D and sales teams, which work closely with food producers to cater to customers' needs in detail. Moving forward, SDS Biotech will steadily enhance its R&D capabilities and implement structural reforms with a view toward cooperation with other companies and contribute to realizing sustainable agriculture and livestock farming and addressing

global food demand as an R&D-based manufacturer of agrochemical ingredients and functional feeds.

■ The strengths of SDS Biotech as a manufacturer of agrochemical ingredients



Lithium-Ion Battery Materials

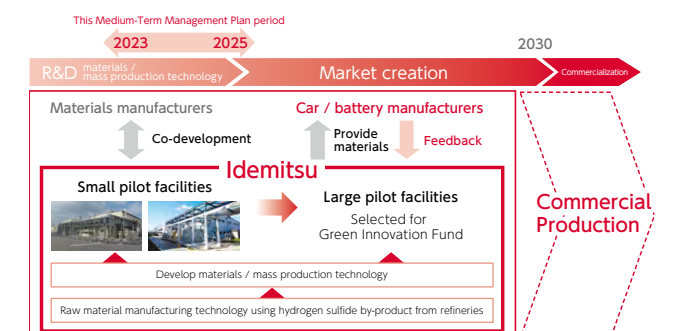
Accelerating Development toward the Commercialization of Solid Electrolytes

The all-solid-state battery is one of the next-generation batteries for which early practical realization has been in demand. Demand is growing for solid electrolytes, a key material for these batteries. The use of solid electrolytes instead of liquid electrolytes is expected to improve safety, increase recharging speed, increase the cruising range of electric vehicles (EVs), and have other benefits.

The sulfide solid electrolytes that we have developed are superior to other solid electrolytes in terms of ion conductivity and workability. In particular, they are said to be suitable for EVs.

We are capable of manufacturing a high-purity intermediate raw material (lithium sulfide) and high-performance solid electrolytes using sulfur compounds obtained from petroleum refining and the manufacturing technologies that we have cultivated through our business. We can simultaneously advance the development of these manufacturing technologies alongside our strengths in material technologies and battery evaluation technologies.

As we move toward commercialization, we will create materials that cater to the needs of automotive and battery manufacturers, and at the same time, move to the development of mass-production technologies with large pilot facilities through pilot tests using two small pilot facilities. We aim to contribute to global carbon neutrality by collaborating with other companies and through the implementation of all-solid-state batteries using our solid electrolytes.



Power and Renewable Energy Segment

Main Businesses

- ▶ Power retailing nationwide
- ▶ Development and operation of thermal power and renewable energy sources in Japan and overseas
- ▶ Provision of solutions in the photovoltaic power generation business (Solar Frontier)

Power & Renewables Business Department General Manager
Hiroshi Yoshida



Strengths

- ▶ Sales channels linked to sales subsidiaries and dealers in the petroleum business
- ▶ Cost-competitive energy sources within the Group
- ▶ Knowledge obtained and a network established through more than 40 years of operations in the photovoltaic power generation business

Integrated Operation of Power Generation and Sales

In the Power and Renewable Energy Segment, we are implementing structural reforms and other measures to improve and stabilize business earnings.

In Japan, wholesale electricity trading prices have been unstable, mainly due to tight supply and demand attributed in part to the exit from thermal power generation and the fluctuation of resource prices reflecting changes in the international situation. Excessive dependence on short-term trading in the wholesale electricity market has been a risk factor impacting business operations throughout the industry. In this business environment, we are attempting to stabilize our revenue base by promoting business operations where power generation and sales are integrated and building a sales network within the scope of our supply capacity.

Regarding power sources, we have achieved competitiveness and capital efficiency by effectively using the Group's assets, such as idle lands and gas as a by-product from our refineries, for both thermal power and renewable energy sources. In terms of sales, we are securing revenue as a foundation through long-term wholesale and then engage in the retail of high- and low-voltage power, offering various

menu options tailored to the needs of customers such as a stable electricity rate and environmental value, with a focus on channels and customers that are closely aligned with the Group's businesses.



Ohgishima Power Station

Outlook for Overseas Business and Solar Frontier's Business

Overseas, we are developing photovoltaic power plants and investing in gas-fired power plants in North America. In South-east Asia, we are developing and operating photovoltaic power plants for self-consumption using the on-site PPA model.* We will rebuild our business strategy with a focus on increasing synergies within the Group, acquiring business opportunities in the future, and achieving stable capital efficiency.

Solar Frontier K.K. is promoting a transformation into a business to provide photovoltaic power generation solutions. Specifically, the company is enhancing its transition from a panel manufacturer to a circular and sustainable

next-generation system integrator capable of designing, constructing, maintaining, and recycling photovoltaic power plants. The company has also launched a brokerage support business for the buying and selling of photovoltaic power plants, leveraging its extensive development experience.

By utilizing that knowledge, the company has cultivated relationships with communities and Solar Frontier aims to improve its business profitability and achieve a positive financial outcome.

* On-site PPA model : A system in which a power generation company installs power generation equipment on the premises of a customer and provides electricity



Resources Segment

Main Businesses

- ▶ Exploration, development, and production of petroleum and natural gas
- ▶ Production, procurement, and sale of coal
- ▶ Operation of geothermal power plants, supply and sale of electric power and steam

Senior Executive Officer General Manager of Coal and Energy Solution Department
Yuzo Yoshida



Strengths

- ▶ Knowledge and achievements in energy resources businesses accumulated over more than 40 years
- ▶ Technologies for low-carbon solutions
- ▶ Business foundation in Australia

Optimizing the Coal Business and Transforming It into a Carbon-Neutral Business

We have been supplying high-quality coal to our customers in Japan for many years, building strong, trust-based relationships. Our high-quality coal, characterized by low impurity content and high calorific value, results in lower CO₂ emissions. Following our divestment plan, we closed the Muswellbrook Mine and successfully sold the Ensham Mine last fiscal year as planned. We have no further investment plans to explore new mines or increase coal production. Instead, we will focus on the stable distribution of coal from the highly cost-competitive Boggabri Mine, contributing to Japan's energy security while maximizing revenue.

At the same time, we are developing a new biomass fuel, Idemitsu Green Energy Pellets, which can be co-fired with coal in existing customers' boilers and will soon be delivered to our clients. Additionally, based on our extensive knowledge and technologies in coal combustion, we plan to start a low-carbon solution business focused on co-firing biomass, ammonia, and hydrogen. Through this initiative, we aim to provide technological support to customers working on decarbonization, contributing to the transformation towards a carbon-neutral society.

Three New Business Initiatives

1. Critical Mineral Prospecting and Exploration

We are engaged in the exploration and development of critical minerals in Australia, leveraging our business foundation established over 40 years through our coal operations. Our focus is on lithium, vanadium, and graphite, which are crucial for the widespread adoption of electric vehicles (EVs) and next-generation batteries. By creating a new supply chain for these critical minerals in Australia, we aim to reduce geopolitical risks associated with minerals vital to Japan's economic security.

2. New Energy Sources for a Carbon-Neutral Society

We plan to start producing black pellets in Vietnam and continue research and development to commercialize hydrogen and ammonia projects in Australia. Both initiatives aim to contribute to next-generation energy solutions.

3. Renewable Energy and Carbon-Recycling Technologies

We are transforming the former Muswellbrook Mine site into a pumped-storage hydroelectricity facility. Additionally, we are developing technologies to convert factory-emitted CO₂ into carbonates for use in asphalt pavement materials.



Idemitsu Green Energy Pellet plant(Binh Dinh,Vietnam)



Vanadium project site (Julia Creek,Australia)

Officers in charge discuss efforts to create new value and long-term initiatives.

Initiatives towards CN in 2050

We are working on the social implementation of “energy one step ahead,” aiming to be the main player in the market for energy and carbon neutral solutions for a carbon neutral, circular society in 2050. To achieve early implementation by 2030 and monetization in or after the 2030s, we have established the Carbon Neutral Transformation (CNX) Department, whose members are related officers, people from related departments and others. The department is implementing initiatives by selecting blue ammonia, e-methanol and SAF as priority businesses.

At the refineries and complexes of the Idemitsu Group, for many years we have been striving to ensure the stable supply of petroleum products and petrochemicals, which are important sources of energy and materials, with the support of local people. Our accumulated knowledge, experience, technological capabilities and infrastructure will be valuable assets in our efforts to achieve carbon neutrality by 2050. We will promote business innovation at CNX Centers that is suited to the characteristics of each refinery and complex, in



cooperation with governmental agencies, local governments and related companies in Japan and overseas.

We will steadily and swiftly advance the establishment of CNX Centers and continue to support the mobility, energy and livelihood of the people of individual regions, both now and into the future.

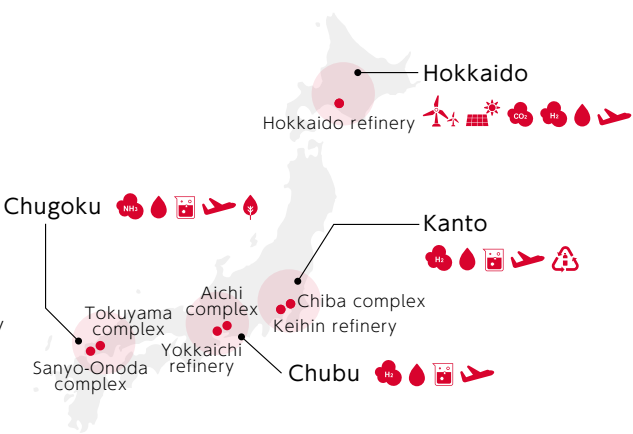
* CNX: Carbon Neutral Transformation

“CNX Center” Concept

We are pursuing a CNX Center concept to transform our refineries and complexes, which have been operating for many years as fossil energy source production bases, into new carbon neutral fuel and product supply bases while taking advantage of their characteristics and strengths. In doing so, we will construct new supply chains tailored to the characteristics and demands of each complex, contributing to the “carbon neutrality” of the entire complex.

- Ammonia
- Hydrogen
- Bio and synthetic fuels
- Bio and synthetic chemistry
- SAF
- Plastic recycling
- Renewable energy
- Biomass

■ CNX Center concept image



■ New priority businesses which will contribute to CN

	Business expansion toward 2030			Potential for further expansion toward 2050
blue ammonia ▶ Fuel conversion from coal	Supplying 1.0 million t to Shunan Complex, etc. (By 2030: US, etc./Tokuyama Complex) ● Manufacturing partner: Mitsubishi Corporation ● Partners at the base: TOSOH, Tokuyama, Zeon			Green ammonia Green hydrogen
e-methanol ▶ To be used directly for ships and vessels ▶ To be used to produce synthetic gasoline	Manufacturing 80,000 t (By 2030, Hokkaido Refinery) ● Manufacturing partners: ENEOS, Hokkaido Electric Power (green hydrogen)	Supplying 200,000 tons (By 2029, Australia, etc.) ● Manufacturing partner: HIF Global ● Supply chain construction partner: Mitsui O.S.K. Lines		Synthetic fuels and chemicals
SAF ▶ Supplying 500,000 kL of CORSIA eligible fuels in Japan	Manufacturing 100,000 kL of ATJ* (By 2028, Chiba Complex)	Manufacturing 250,000 kL of HEFA (By 2028, Tokuyama Complex)	Supplying 150,000 kL from overseas projects (By 2030, Australia, etc.)	Biofuels and chemicals

* ATJ: Alcohol-to-Jet

Priority Business 1 (blue ammonia): Construction of an ammonia supply chain in Shunan District

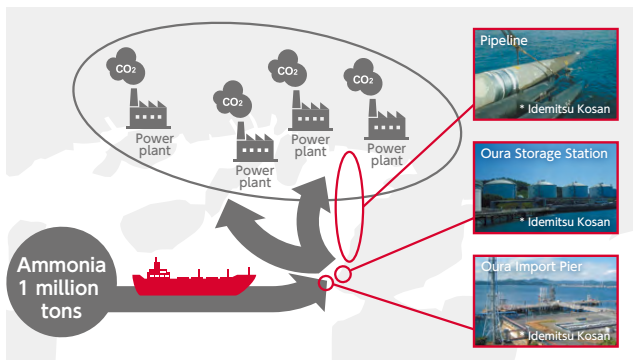
With Tosoh Corporation, Tokuyama Corporation, and Zeon Corporation, we have launched a joint study aimed at establishing a system for supplying more than one million tons of carbon-free fuel ammonia every year at the Shunan Complex by 2030.

In addition, in February 2024, we installed ammonia combustion equipment in ethylene equipment and naphtha cracking furnaces, at Tokuyama Complex and conducted Japan's first pilot test of ammonia co-combustion, with the cooperation of IHI Corporation and IHI Plant Services Corporation. We have thus confirmed that combustibility is sufficient and that stable operation is possible.

We will continue to accumulate data and expertise using this equipment, aiming to achieve the practical use of ammonia fuel. At the same time, we will proceed with joint studies together with various stakeholders, aiming to build a

supply chain from manufacturing and procurement to the supply of clean ammonia.

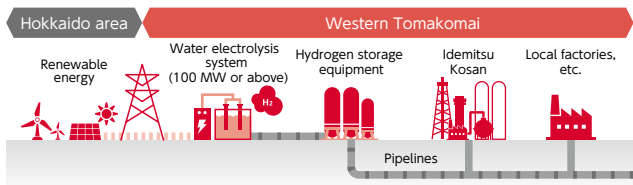
■ Shunan Complex



Priority Business 2 (e-methanol): 1. Study for the construction of a green hydrogen supply chain in Hokkaido, which will be among the largest in Japan

Idemitsu Kosan Co., Ltd., ENEOS Corporation, and Hokkaido Electric Power Co., Inc., agreed to conduct a study for the construction of a supply chain for domestically produced green hydrogen in Tomakomai and signed a memorandum of understanding. We will construct water electrolysis equipment which will be capable of manufacturing more than 10,000 tons/year of green hydrogen by around 2030. This plant will have the largest capacity in Japan. We are aiming to build a supply chain that will supply the green hydrogen

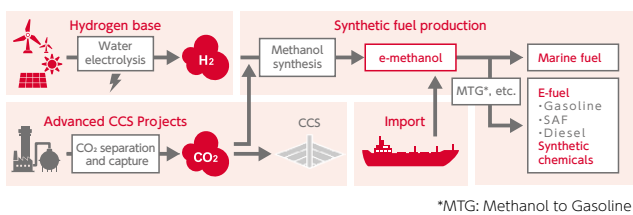
manufactured using renewable energy to ourselves and others in the region.



Priority Business 2 (e-methanol): 2. Investment in HIF Global to build an e-methanol supply chain

We have decided to invest in HIF Global, which develops projects related to e-methanol (synthetic methanol) and other synthetic fuels in South America, North America, Australia and other regions, jointly with the Japan Organization for Metals and Energy Security (JOGMEC). Through this joint investment, we will increase cooperation with government agencies to accelerate the construction of supply chains for synthetic fuels, including e-methanol, a promising carbon-neutral fuel.

■ Vision of the e-methanol business in the Hokkaido region

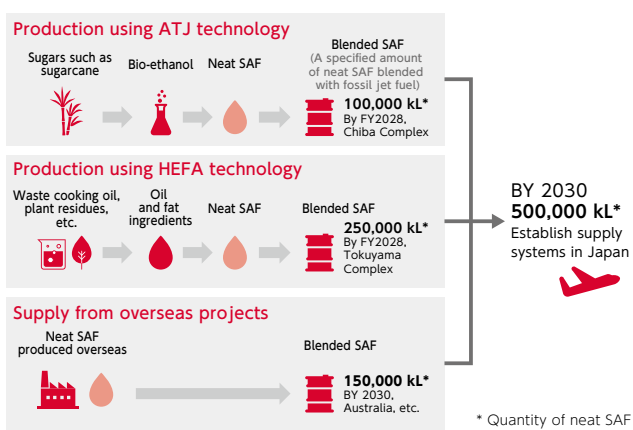


*MTG: Methanol to Gasoline

Priority Business 3 (SAF): Promoting the HEFA-SAF manufacturing project at the Tokuyama Complex

Regarding the SAF manufacturing project using HEFA* technology at the Tokuyama Complex, we have completed the feasibility study (FS) and decided to move to front-end engineering design (FEED), the next phase of the project. We aim to begin producing 250,000 kL of SAF per year at the Tokuyama Complex in 2028, moving towards the construction of a system that will supply 500,000 kL per year in Japan by 2030.

* HEFA: Hydroprocessed Esters and Fatty Acids
Technology and process for manufacturing SAF from hydroprocessed esters and fatty acids obtained by hydrotreating vegetable oil and other materials



* Quantity of neat SAF

Taking on Challenges for the Future in the Area of Advanced Materials

In the increasingly uncertain business environment, we understand that the transformation of our business structure into one that enables us to respond flexibly to change and the creation of a foundation for continued growth and development in the future are important business challenges. To create new value and new businesses, we have been fully engaged in the transformation of our business portfolio in the area of advanced materials.

We are attempting to improve our business structure through the selection and consolidation of businesses, aiming to secure stable income and cash flows. In addition, in the development of lithium solid electrolytes as key materials in all-solid lithium batteries, which are believed to be promising next-generation batteries for EVs, we have started collaborations for the realization of mass production. We have also decided to establish a new integrated laboratory, the "Innovation Center" (tentative name), as the base for integrating technology to restructure our R&D systems. Through these and other initiatives, we have been strengthening and promoting efforts to create new value and new businesses. We are also proceeding with open innovation, corporate venture capital (CVC) activities, and cooperation with start-ups.

We will more clearly cooperate and collaborate with our partners who can envision the future and achieve growth



Senior Managing Executive Officer and President, Advanced Materials Company

Hajime Nakamoto

together with us, to move forward with the construction of value chains in the three focus areas* in the functional material business, which were laid out in the current Medium-term Management Plan, in addition to the radical reform of existing businesses.

We will continue to reform our business portfolio in the area of advanced materials, aiming to become a business which can grow sustainably, enhance its corporate value and contribute to society.

* Electrification Solutions, Bio / Life Solutions, ICT Solutions

Innovation of Existing Businesses: Toward the Reform of Our Portfolio

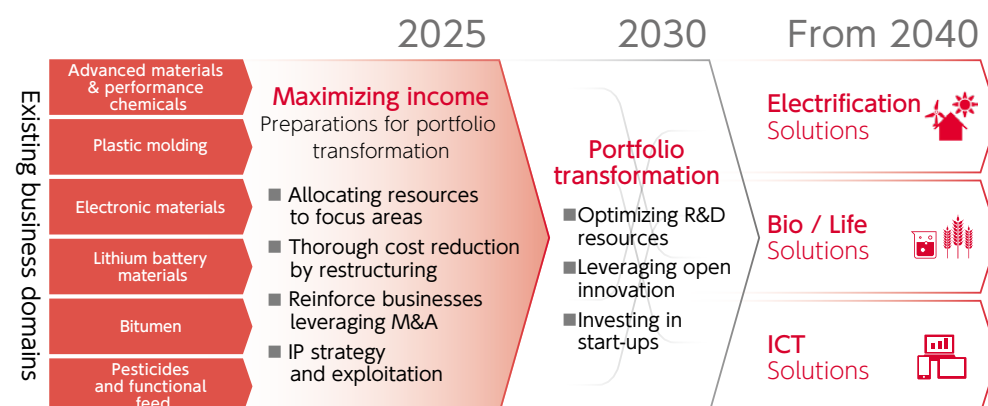
We are working on business innovation in each business field in the area of advanced materials, aiming to achieve the growth of the functional material business.

In the advanced materials & performance chemicals business, we have proceeded with the improvement of the business structure by withdrawing from unprofitable businesses. Meanwhile, our second plant for SPS resin, our proprietary material, began commercial operation in Malaysia.

We will push forward with initiatives for the continued growth of the advanced materials & performance chemicals business, including the extension of value chains, the expansion of business domains, and alliances with other companies.

In the electronic materials business, we have established a new R&D base in South Korea, which is a major market for OLEDs. We will transform our business model into one in which we anticipate change, concentrate our resources on the manufacturing bases of key customers and collaborate with local companies.

To contribute to the food that supports people's lives, SDS Biotech K.K. engages in the chemical pesticide, biological pesticide, and functional feed businesses. We aim to expand our businesses in the agricultural field through cooperation with other companies as an option, in addition to expanding sales channels.



Creating Businesses with an Eye toward the Entire Value Chain (Lithium battery materials)

All-solid-state batteries are next-generation batteries that are expected to solve many issues faced by conventional liquid lithium-ion batteries.

We aim to create businesses with an eye on the entire value chain, focusing on solid electrolytes which are key materials in all-solid-state batteries.

We can obtain ample sulfur compounds, which are the raw materials of solid electrolytes, through petroleum refining. We use these raw materials to manufacture high-purity lithium sulfide. In addition, regarding lithium resources, which are another raw material of our solid electrolytes, we invested in a lithium development company* in 2023. We aim to contribute to the stable production and supply of lithium in Australia, which is geopolitically stable.

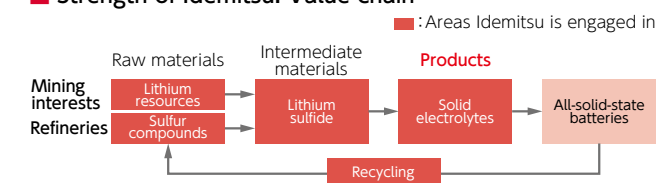
The recycling of resources is also a key part of our aim to create markets for all-solid-state batteries and popularize them. To make this a reality, we will explore competitive technologies for recycling all-solid-state batteries. In addition, we are

working on the development of sulfur-based cathode materials, which are rare-metal-free next-generation battery materials, aiming to increase the added value of all-solid-state batteries.

Thus, we will implement various initiatives to build a value chain, aiming for the social implementation of resource-recycling solutions.

* Idemitsu Australia Pty Ltd., which is our subsidiary, has invested in Delta Lithium Limited, a company engaged in a lithium business in Australia. The investment was made via Idemitsu Minerals Australia Pty Ltd. (a 100%-owned subsidiary of Idemitsu Australia) and resulted in a 15% equity stake in Delta Lithium Limited including approximately 2.3% that had already been invested.

Strength of Idemitsu: Value chain



Establishment of the "Innovation Center" (tentative name), an Integrated R&D Center

We plan to consolidate our research centers specializing in production technologies, development technologies and other areas, which are currently spread across multiple locations, into the "Innovation Center" (tentative name) and work to build an R&D structure across businesses and strengthen external collaborations. Through these efforts, we will establish an integrated framework from R&D to analyses, verification, process engineering, and commercial production, and we will accelerate efforts to develop technologies and create new businesses towards the business structure reforms targeted in the Medium-term Management Plan.

We will create a space and framework that enables diverse human resources to actively interact beyond the boundaries

between departments and companies, including a laboratory that can adapt flexibly to future environmental changes, one-room offices that facilitate researchers' collaborations and co-creation activities, and open laboratory space that enables joint R&D projects with partners worldwide. We will also build a leading MI/DX environment in Japan to accelerate and strengthen R&D through initiatives including collaboration with domestic and overseas partners.

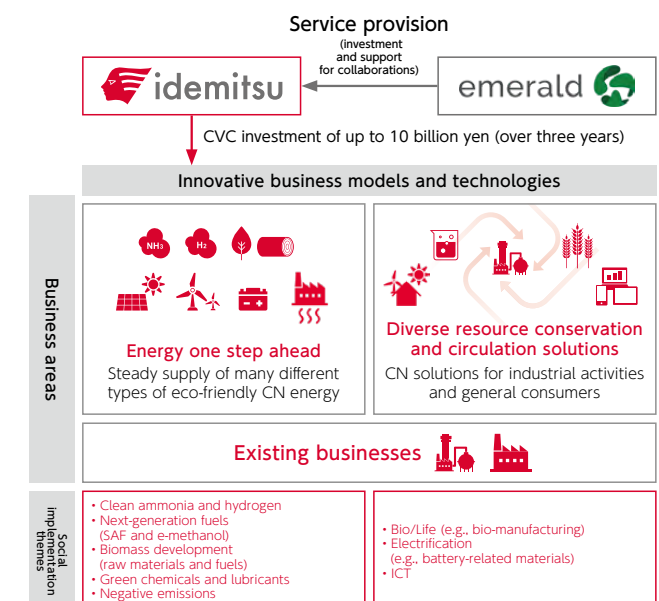


Accelerating Open Innovation

Using funds operated by venture capital firms,* we are promoting cooperation with start-ups worldwide.

To further accelerate initiatives for the strengthening of existing businesses and the creation of next-generation businesses, we have entered a partnership for promoting CVC activities with Emerald Technology Ventures, a venture capital firm focused on materials and cleantech. We have allocated an investment budget of up to 10 billion yen for the three-year period from FY2024 to FY2026. We will press forward with investments in start-ups and cooperation with them.

* Universal Materials Incubator (headquarters: Japan), Emerald Technology Ventures (headquarters: Switzerland), Azimuth Capital Management (headquarters: Canada), Hatch Blue (headquarters: Ireland)

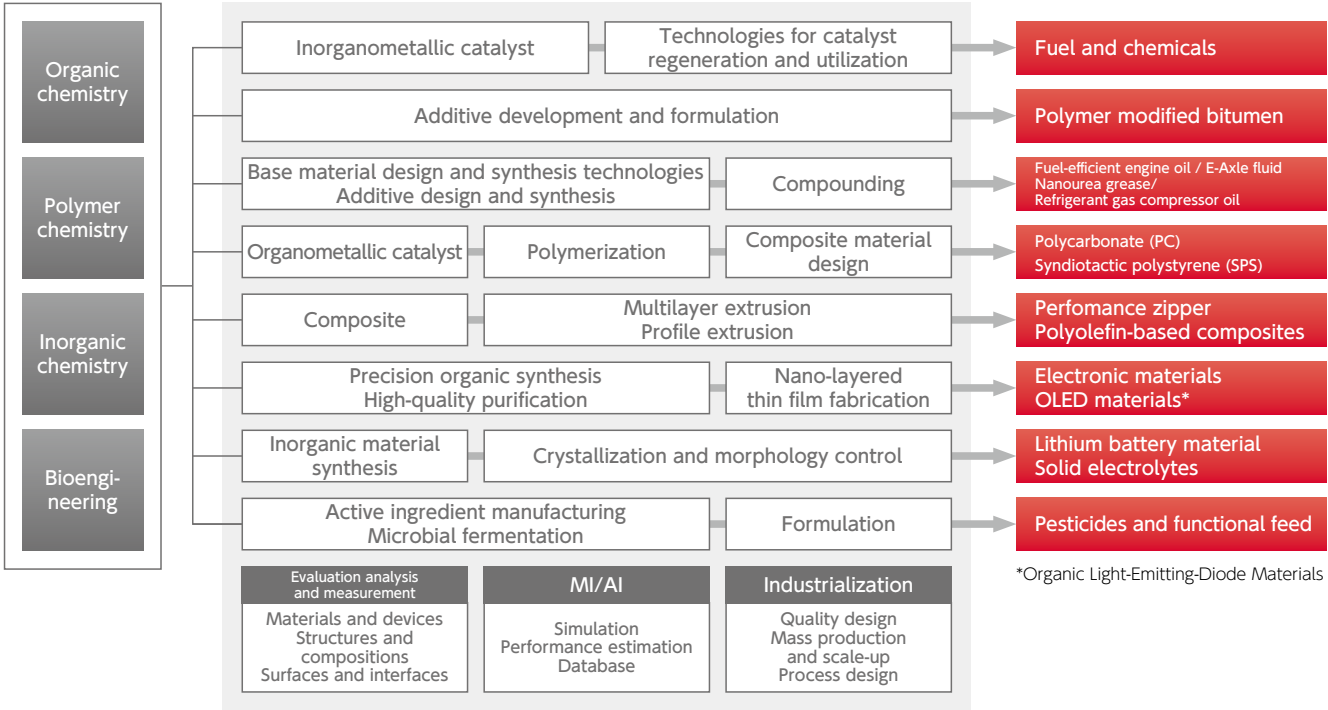


Research and Development for Creating New Value and New Businesses

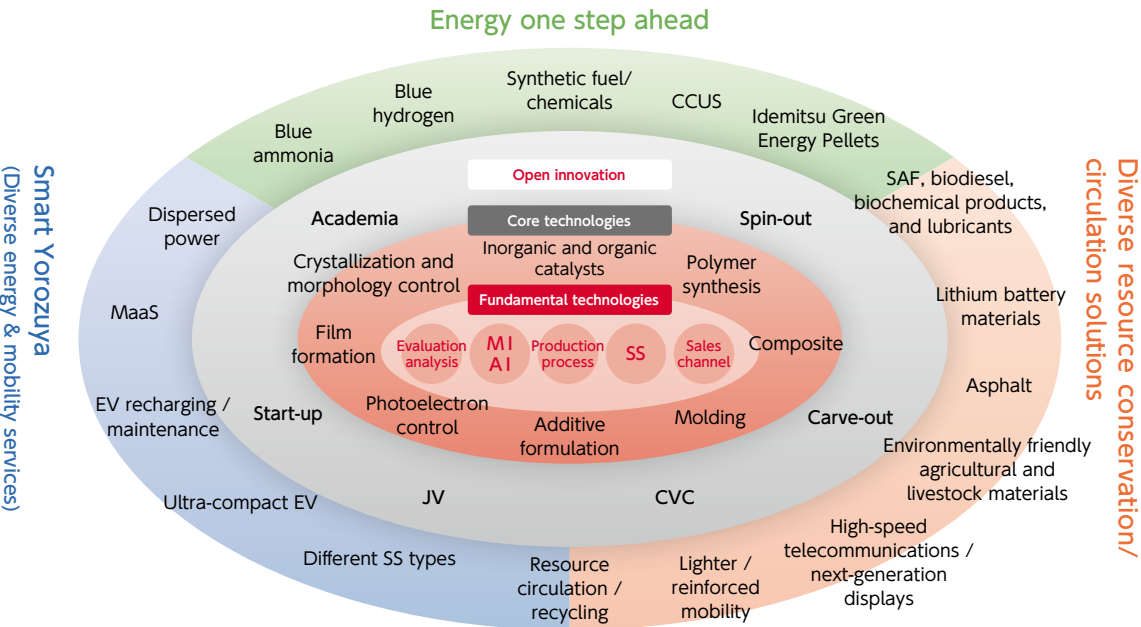
We have been contributing to society by launching a wide variety of products onto the market. This is the result of our efforts to develop many different technologies. (See the diagram below.)

To facilitate the ongoing organic integration of the technologies that we have developed to date, we will put forth new initiatives, especially with our R&D systems. Of the three business domains we will focus on as we move towards 2050, we

will contribute to “energy one step ahead” and diverse resource conservation / circulation solutions through our R&D efforts. To make this a reality, we will accelerate and streamline new business creation through open innovation at the “Innovation Center” (tentative name), our integrated R&D center, and we will acquire new technologies in addition to facilitating internal technology integration, aiming to create new value and new businesses.



■ R&D contribution to social implementation toward the realization of the Vision for 2050



Social implementation of businesses through the integration of fundamental technologies, core technologies, and open innovation

Academia Collaboration (Promoting open innovation)

In the initial stages of R&D, which includes exploration and research that is key to creating new businesses, we proactively collaborate with external parties to work on open innovation.

1. Through the activities of the Idemitsu Kosan Collaborative Research Cluster for Advanced Materials, which we established at the Tokyo Institute of Technology (now known as the Institute of Science Tokyo) in FY2020, we promote the acquisition of technologies in the focus areas of advanced materials and CNX solutions together with the Institute of Science Tokyo. We also established a joint research department with Kobe University and started academic cooperation with the University of California, Santa Barbara, and other institutions.
2. In addition, we signed an agreement regarding comprehensive collaborative research with the University of Tokyo's Research Center for Advanced Science and Technology and the Institute of Industrial Science and started joint research with these institutions, aiming to develop next-generation technologies in the field of carbon neutrality.

Driving MI / DX

We are working to accelerate R&D by spreading Materials Informatics (MI) and strengthening DX.

1. Reskilling: Across all research departments, we continue to implement and promote the sharing of in-house initiative examples, literacy improvement measures through workshops, and practical training on the use of data science and generative AI.
2. Development of DX solutions: We are accelerating the development of solutions to key MI/DX issues related to each R&D theme, such as the digitalization of analysis technologies, by collaborating with domestic and overseas DX consulting firms.
3. Data science environment: We are building a company-wide cloud environment dedicated to data science that allows us to safely and flexibly leverage open databases and open source software, which are essential for MI/DX. We are also building retrieval-augmented generation (RAG) technologies by integrating internal data and generative AI.

Activities to Create New Businesses

Since 2021, we have continued to engage in activities to create new businesses from a medium-to long-term perspective.

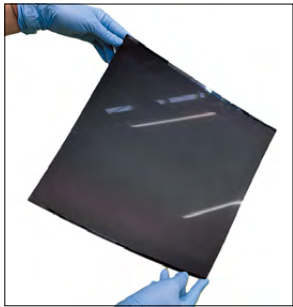
(1) Development of greenhouse gas fixation plant business using purple photosynthetic bacteria

- We have begun to collaborate with Symbiobe Inc., a start-up originating from Kyoto University, regarding CO₂ and N₂ fixation technologies using purple photosynthetic bacteria, which we began to study as a result of our activities to create new businesses. We are moving towards its commercialization.
- We aim to achieve the social implementation of technologies for fixation CO₂ and other greenhouse gases and the manufacturing of green biomaterials* by combining technologies related to photosynthetic microorganisms that are owned by Symbiobe Inc. with the process technologies for upscaling that we own.
- By combining excellent external technologies with ones we own, we will promote outside-the-box R&D and the creation of new businesses, which will increase the probability and speed of social implementation of these technologies, and improve their quality. At the same time, we will develop human resources for co-creative innovation on an ongoing basis.

* Objects related to food or the field of the environment, among ones manufactured by "biomanufacturing" that utilize the metabolism of microorganisms.

(2) Development of solar cells for space use

- The space industry market is expected to become one trillion dollars by 2040, and the market has been expanding rapidly. We are attempting to develop a solar cell for use in space using the solar cell technologies that we have cultivated to date.
- In the high-radiation environment of space, existing solar cells degrade, which is an issue. The CIGS solar cells that we are developing have proven to be high radiation resistant. We will proceed with the development of these solar cells with our partners to implement this innovative technology.



Intellectual Property Activities

Overview of Our Intellectual Property Activities in FY2023

We are reforming our business portfolio based on the Medium-term Management Plan. Intellectual property, which is an intangible asset, as a resource that plays an important role in the implementation of the reforms. Thus, we are further expanding the use of our intellectual property.

Specifically, we analyze the internal and external environment by

using IP landscape approaches and provide intellectual property information to people in business departments and researchers in the early phase of activities, such as the business planning phase. We thus examine the points that should be strengthened in existing businesses and study the direction of new businesses, while promoting the transformation of our business portfolio.

Patent Applications and Registered Patents Held

The status of patent applications by business segment shows that the Functional Materials Segment, which consists of technology-driven business departments, was responsible for more than 70% of patent applications, both in Japan and overseas, as was the case in and before FY2022. We are building a robust patent portfolio to leverage our patents to exert our competitiveness.

FY2023 Topics

In FY2023, both the number of domestic patent applications (published) and the number of overseas patent applications decreased from FY2022. This is attributed to the patent application strategy to apply only in specific overseas countries depending on the market situation of each business and the fact that we have been steadily protecting our expertise in technologies (inventions) that should be made into black boxes, by strengthening the open and closed strategy.

On the other hand, the number of both domestic and overseas patents held has remained at a certain level. Together with technologies that have been made into black boxes, we use them in the global expansion of our businesses.

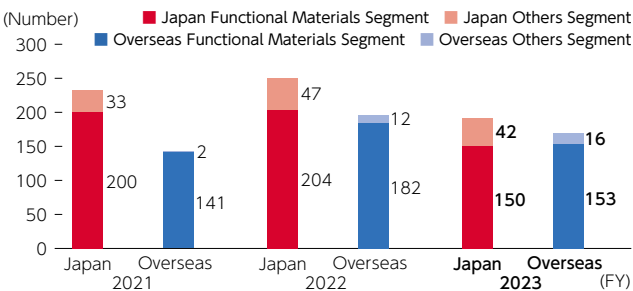
Value of Patents

To visualize our strengths, we calculate the TR* values, which are the values of the patents we hold at the Idemitsu Group, using PatentSight®, a patent analysis tool from LexisNexis®. The TR value of the patents we hold is high, 1.98 (compared to the average of 1). The value for the Functional Materials Segment alone is even higher, 2.25. The breakdown of the patents held is as follows. Overall, basic patents with a high value (TR > 1) are about 50% and relevant and peripheral patents that strengthen basic patents are the remaining 50%. In the Functional Materials Segment, basic patents with a high value are about 60% and the remaining 40% are relevant and peripheral patents. As described above, we have formed patent families consisting of high-value basic patents as well as peripheral and relevant patents. We strongly protect our core technologies and enhance our competitiveness.

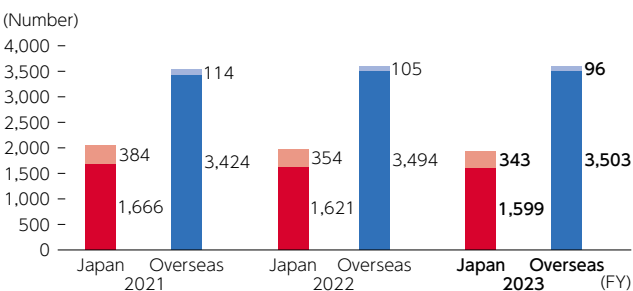
Above all, in the OLED business and the lithium battery materials business, we have acquired various basic patents by developing not only our proprietary materials but also a wide array of technologies including methods for manufacturing them and the applications for these materials, using combinations of our organic chemistry, inorganic chemistry, evaluative analysis and measurement, industrialization and other technologies. As a result, the average TR values in these businesses are high compared to our other businesses.

* Technology Relevance (TR): Value calculated based on the number of citations in the examination by the Patent Office in each country (The average TR value for all patents is 1.)

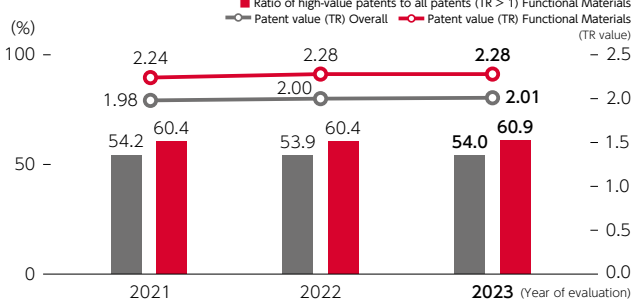
Number of patent applications (published applications)



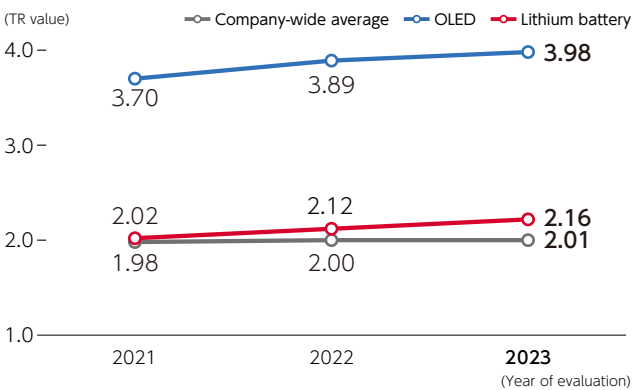
Trends in the number of patents held



Value of patents held and percentage of patents with high value (company-wide)

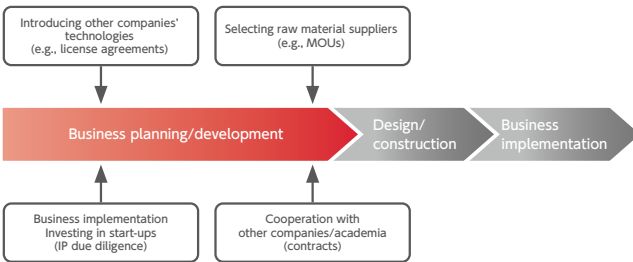


Value of patents held (OLED, Lithium battery materials businesses)

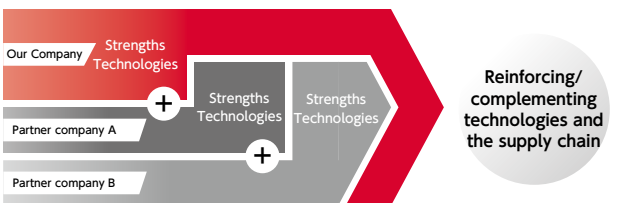


Intellectual Property Support in the Business Planning/Development Phase

In FY2023, we enhanced our intellectual property activities by having the intellectual property department start accompanying other departments in the early phases of business planning and R&D, aiming to use our intellectual property in our management and business operations. We focus mainly on license agreements in the introduction of new technologies and the intellectual property due diligence of start-ups.



Above all, when selecting an R&D or business alliance partner, we analyze the intellectual property environments of ourselves and other companies by verifying our technologies and using the IP landscape to select a partner who is highly complementary to our strengths. We thus strengthen the supply chains of the businesses that we expect to be involved in the future.



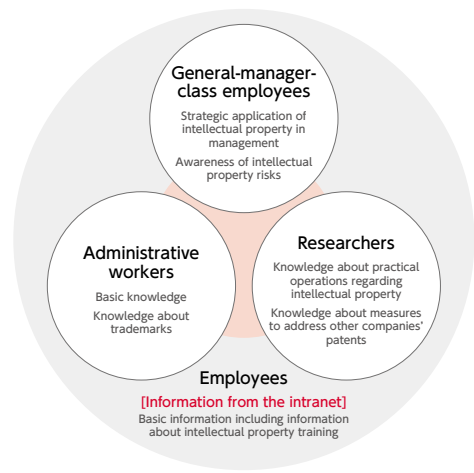
Human Capital Development

We focus our efforts on improving the intellectual property literacy of not only the people in charge of intellectual properties but also all employees. We are also committed to developing human capital who can effectively use the intellectual properties in management.

We provide all employees with information about intellectual properties and training on intellectual property via our intranet. We have thus created a system that enables employees to select the training programs that are suitable for them to enhance their awareness of intellectual property and their related skills.

In addition, we provide administrative workers with basic training for acquiring basic knowledge about intellectual property risks and trademark training for supporting our brand. We provide training to researchers to enable them to acquire knowledge about practical operations regarding intellectual property and learn about intellectual property risks, including measures to address other companies' patents. For these training programs, we provide an environment that facilitates participation and learning with on-demand training using videos with audio in our efforts to develop a wide range of human capital who are intellectual property literate.

Furthermore, in FY2023, we introduced training for general-manager-class employees in order to increase their awareness of intellectual property risks in management decisions and the strategic usage of intellectual properties to achieve high profitability.



TOPICS

Our Researcher Was Awarded the Medal with Purple Ribbon

Masakazu Funahashi, our employee, was awarded the Medal with Purple Ribbon in the 2024 Spring Conferment of Decorations. The decoration was awarded in recognition of our invention of high-efficiency, long-life blue-light-emitting technologies that have enabled the emission of the three primary colors of light and contributed greatly to the practical realization of advanced equipment featuring full-color OLED displays in recent years.

