

COSMO REPORT 2024

Strategy

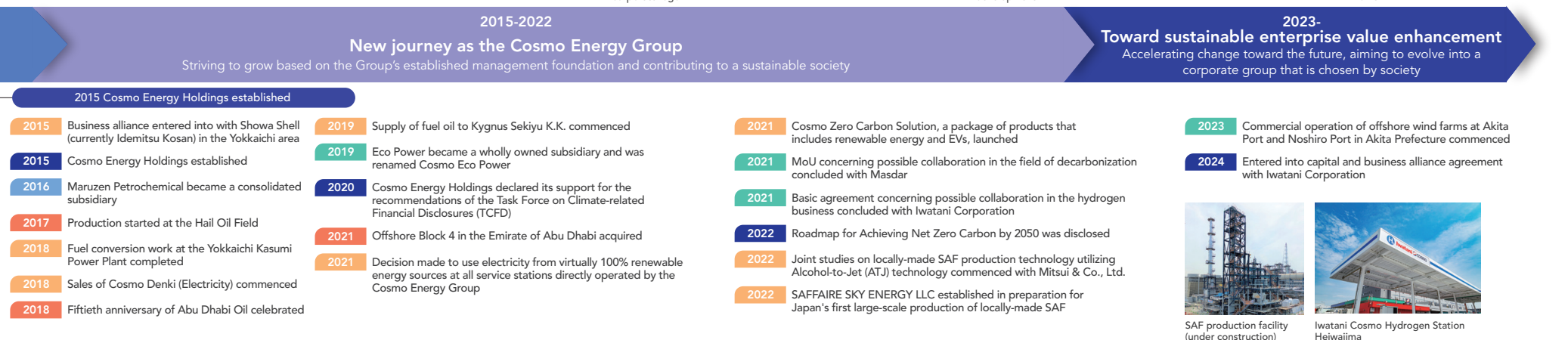
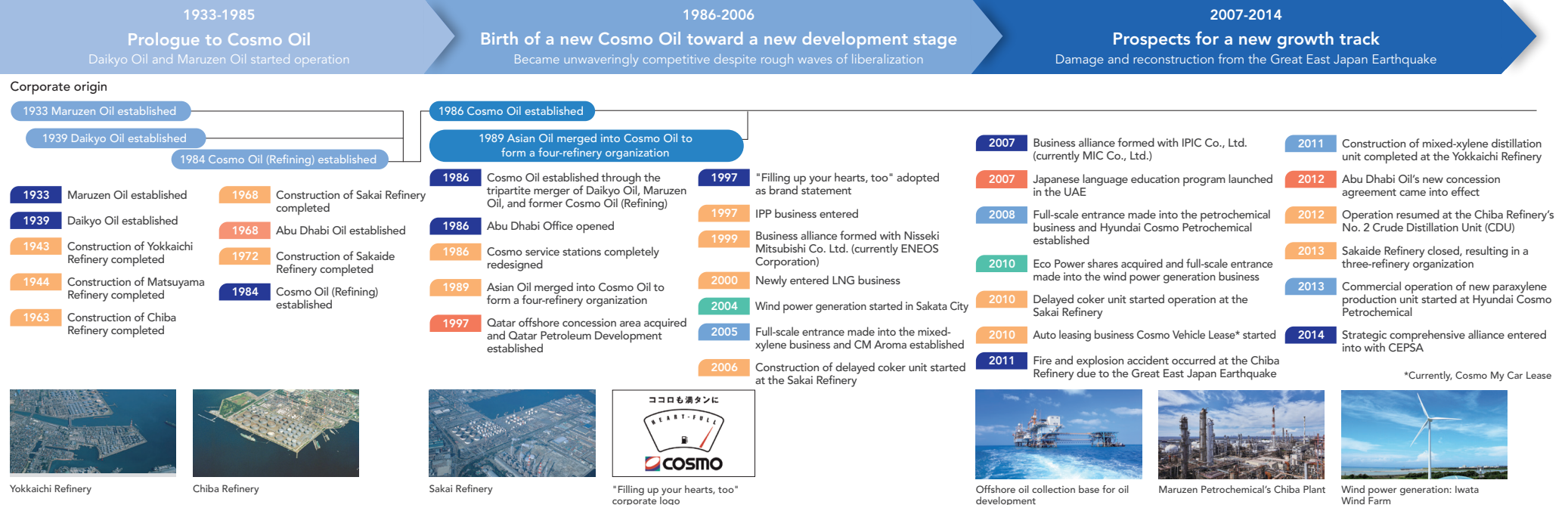
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History of Value Creation

Thirty-eight years have passed since the establishment of Cosmo Oil and the start of the Cosmo Energy Group. Amid a variety of changes in the business environment, the Cosmo Energy Group remains committed to fulfilling its mission of providing a safe and stable energy supply and seeks to become a group that contributes to society.

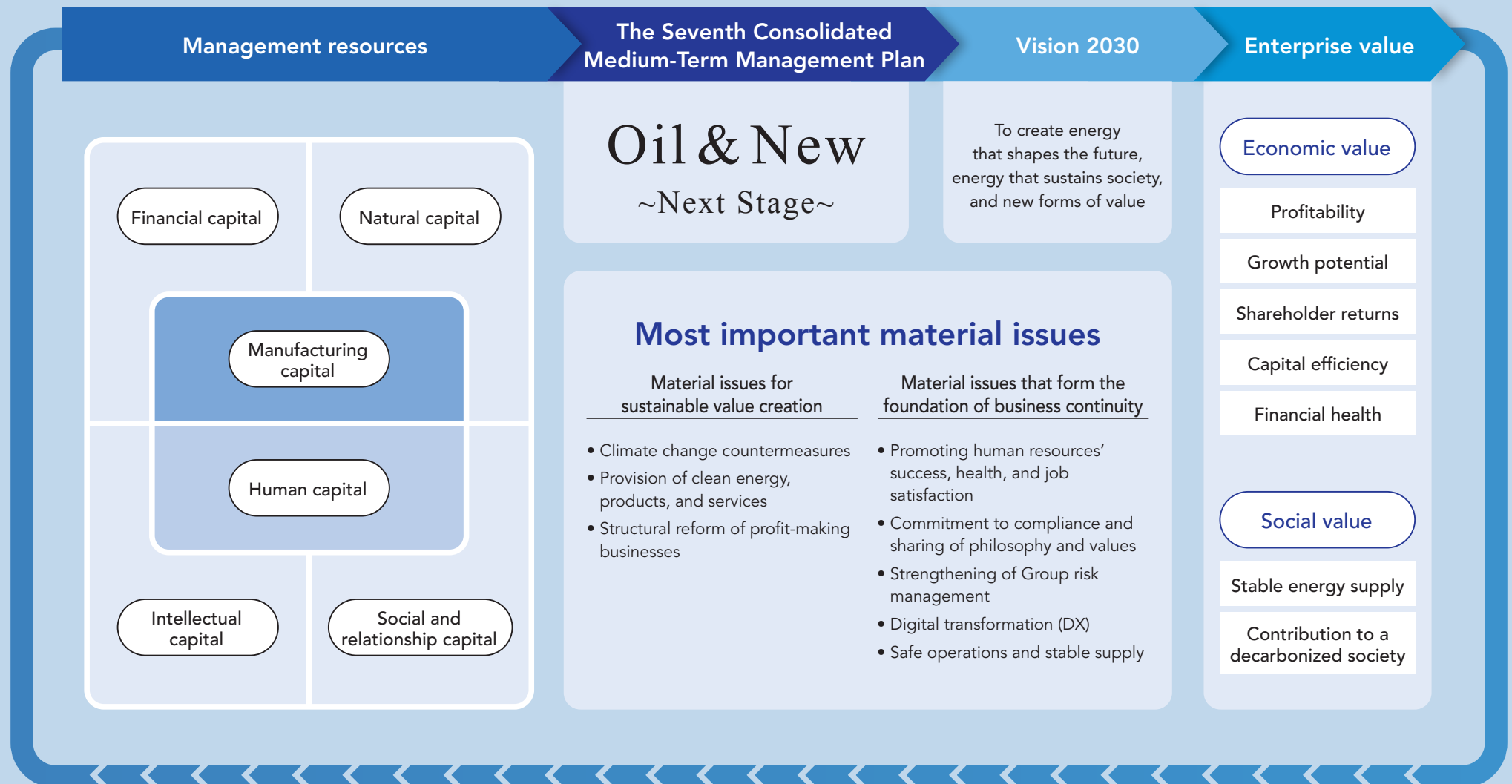
■ Common to all businesses ■ Related to the Petroleum Business ■ Related to the Renewable Energy Business
■ Related to the Oil E&P Business ■ Related to the Petrochemical Business



VALUE CREATION MODEL

Value Creation Model

The Cosmo Energy Group will enhance enterprise value while addressing the most important material issues, leveraging tangible and intangible management resources to realize the Seventh Consolidated Medium-Term Management Plan and Vision 2030, which integrate financial and non-financial initiatives.



VALUE CREATION MODEL

Resources and Enterprise Value to Sustain Value Creation

Management resources

Manufacturing capital

- Crude oil production Approx. **37,000** barrels per day
(comparison with crude oil processing capacity: approx. 9%)
- Crude oil processing capacity **400,000** barrels per day
- Refinery operating rate (CD basis¹) **87.9%**
- Refinery operating rate (SD basis²) **94.8%**
- Operations Management System (OMS) as a foundation for safe operations and stable supply
- Number of service stations **2,602**
- Petrochemical production capacity
 - Olefins Ethylene³ **1.29** million tons per year
 - Aromatics Para-xylene **1.36** million tons per year
 - Benzene **735,000** tons per year
 - Mixed-xylene **618,000** tons per year
- Wind power plant capacity⁴ **310MW**
(No. 3 in Japan/approx. 6% domestic share)

1 CD basis (Calendar Day basis): The operating rate of the Company (total for three refineries).

2 SD basis (Streaming Day basis): The operating rate of the Company (total for three refineries) excluding the impact of regular maintenance, etc.

3 Includes the production capacity of Keiyo Ethylene (a consolidated subsidiary in which Maruzen Petrochemical has a 55% stake)

4 As of December 31, 2023

Human capital

- Number of employees (consolidated) **6,530** people
- Average number of temporary workers **3,686** people

Financial capital

- Total assets **¥2,212.6** billion
- Net assets **¥727.4** billion
- Net worth **¥601.2** billion
- Free cash flow **¥145.1** billion

Natural capital

- Crude oil reserves **155** million barrels
(equivalent to approx. 19 years' worth of supply)
- Wind, sunlight, and other natural energy sources

Intellectual capital

- Intellectual property rights
 - Number of patents held **1,032**
(Japan: 608, Overseas: 424)
 - Number of trademark rights held **478**
(Japan: 353, Overseas: 125)
- Brand
 - Company recognition rate **95%**⁵

5 Based on a nationwide survey of 2,000 men and women aged 16-69 years by an external research agency (as of August 2023)

Social and relationship capital

- Number of Cosmo The Card holders **3.62** million
- Cumulative number of Cosmo My Car Lease contracts **119,737** vehicles
- Number of Carlife Square app downloads **7.26** million
- Friendly relationship with oil-producing countries Over **50** years

*Unless otherwise specified, figures are actual results for FY2023 or as of March 31, 2024.

Enterprise value

Economic value

(FY2025 target under the Seventh MTMP)

Profitability

Ordinary profit
(excl. the impact of inventory valuation)
¥165.0 bil.
Profit attributable to owners of parent
≥**¥60.0** bil.

Growth potential

Investment in New fields
¥140.0 bil.
(three-year cumulative total)

Shareholder returns

Total payout ratio
≥**60%**
Dividend
≥**¥300** per share

Capital efficiency

ROIC
≥**6%**
ROE
≥**10%**

Financial health

Net D/E ratio
1.0 times
(Net worth ≥¥600.0 bil.)

Social value

Stable energy supply

Contribution to a decarbonized society

The Seventh Consolidated Medium-Term Management Plan (FY2023-2025)

The Seventh MTMP was formulated by backcasting from our vision for the future, Vision 2030. Leveraging our significantly strengthened profitability from the Sixth MTMP, we aim to enhance enterprise value under the Seventh MTMP.

2050
Net Zero
Carbon Emissions

Vision
2030

The Seventh
Consolidated Medium-
Term Management Plan

The Seventh Consolidated Medium-Term Management Plan

Oil & New ~Next Stage~

Enterprise
value enhancement

Profitability

Capital policy
Shareholder returns/
Financial health/
Capital efficiency

Expected
growth

Management foundation
transformation
HR/Digital/Green

Vision 2030

To create energy that shapes the future, energy that sustains society, and new forms of value



Bolster green electricity supply chain

Build a high value-added supply chain that encompasses power generation, supply-demand adjustment, and sales



Expand next-generation energy

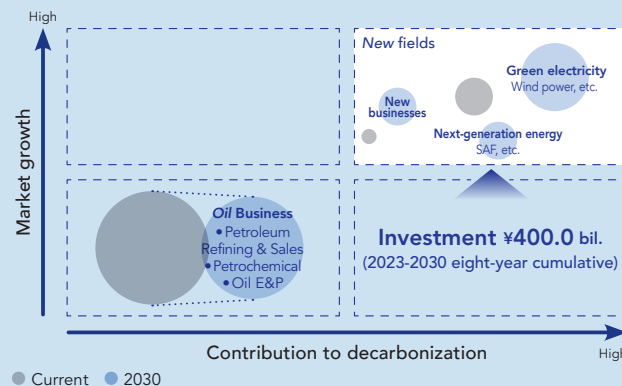
Supply SAF and develop hydrogen and other energy businesses



Strengthen competitiveness of Oil Business and pursue low carbonization

Enhance competitiveness by digitizing refineries, etc., and shift to low-carbon operations through CCS/CCUS

Business portfolio



Profitability

Ordinary profit
¥200.0-250.0 bil.
Profit attributable to owners of parent
¥90.0-120.0 bil.

Investment

New fields ¥400.0 bil.
(2023-2030 eight-year cumulative)
¥600.0 bil. strategic investment
incl. in New fields

Capital efficiency

ROE $\geq 12\%$
ROIC $\geq 8\%$

Climate change countermeasures

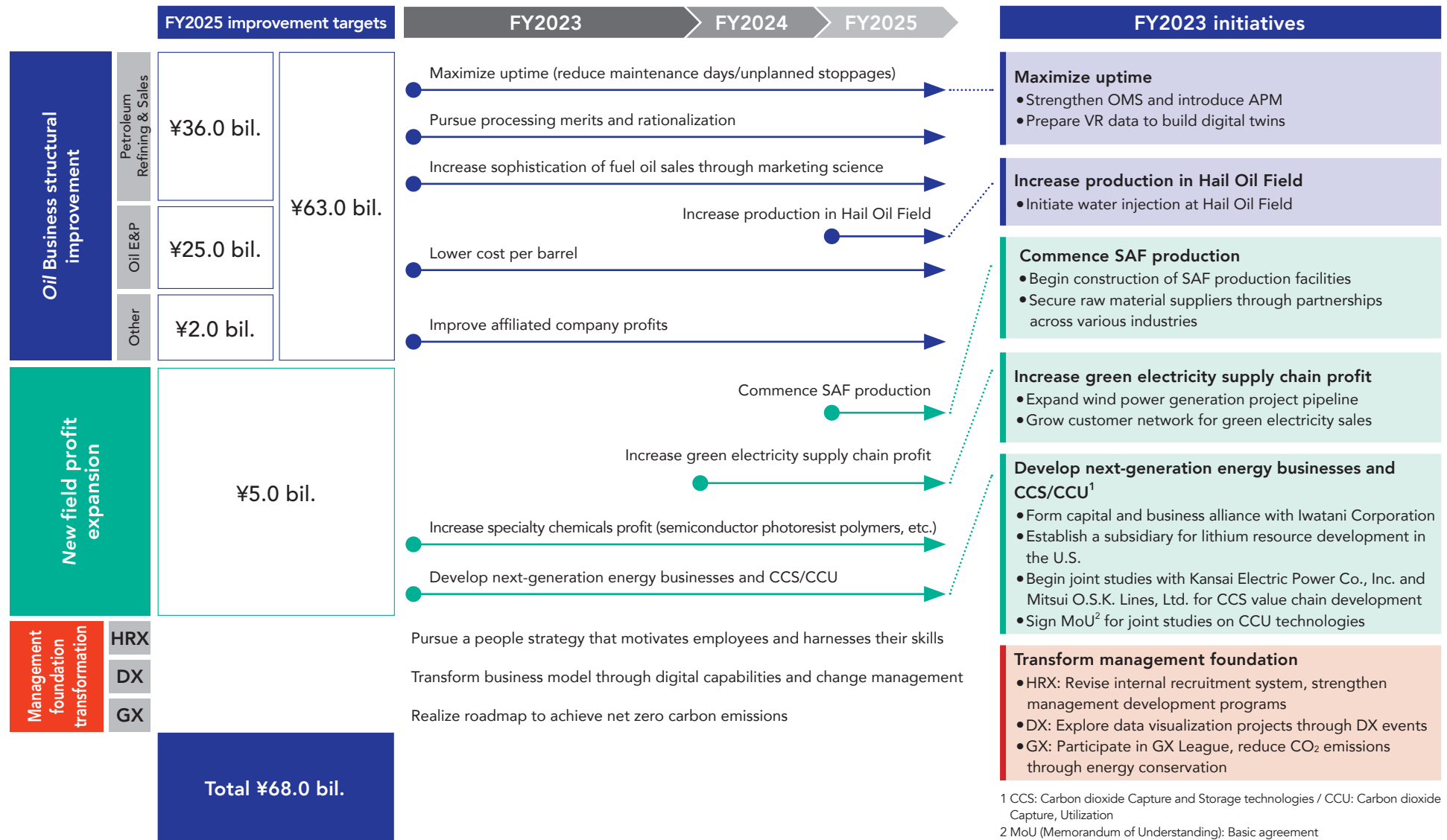
CO₂ emissions reduction
-30%

-2.0 mil. tons vs. 2013

The Seventh Consolidated Medium-Term Management Plan (FY2023-2025)

In FY2023, we were able to take a steady step forward toward enhancing our enterprise value.

From FY2024 onwards, we will continue to advance step-by-step toward achieving the Seventh MTMP and realizing Vision 2030 beyond that by dedicating our full efforts to enhancing enterprise value.



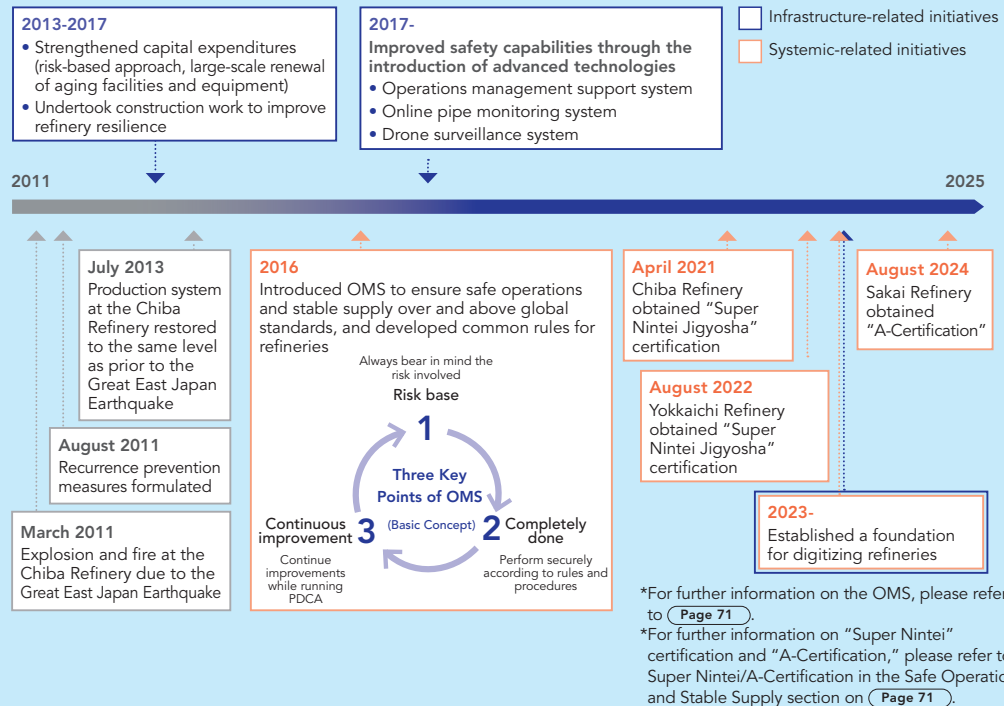
Oil Business Structural Improvement

Petroleum Refining Business: Maximizing uptime

Ongoing efforts for safe operations and stable supply

Following the LPG tank explosion at the Chiba Refinery caused by the Great East Japan Earthquake in March 2011, the Cosmo Energy Group reevaluated our approach to *safe operations and stable supply* and continues to promote ongoing improvements even now. After formulating measures to prevent recurrence in August 2011, we carried out a large-scale renewal of aging facilities and equipment from 2013 to 2017. We also introduced the Operations Management System (OMS) in 2016, advancing initiatives on both the infrastructure and systemic fronts. Since 2017, we have been improving our safety capabilities by introducing advanced technologies, such as drone surveillance. Currently, we are undertaking various initiatives under two main pillars: strengthening DX and an advanced voluntary safety system.

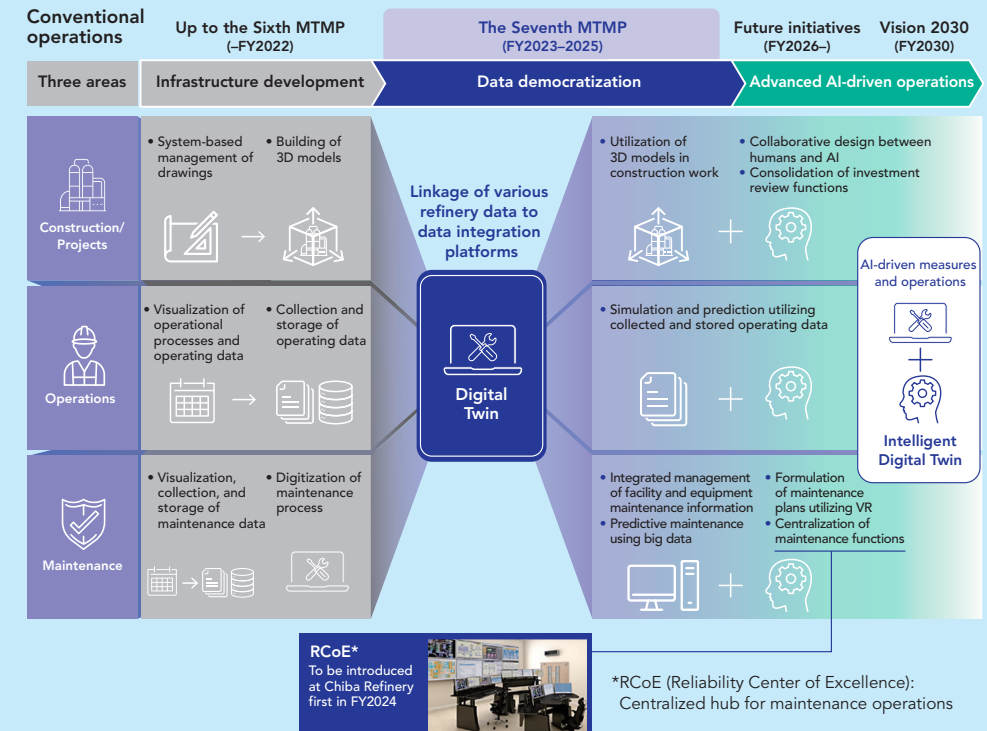
Major initiatives since 2011



Long-term roadmap for digitizing refineries

We are working to digitize our refineries to achieve even higher uptime and operational efficiency. One such initiative is the Plant Digital Twin, which replicates refineries in a virtual space. Up until the Sixth MTMP period, we developed data utilization platforms in three areas: Construction, Operations, and Maintenance. Under the Seventh MTMP, we will integrate these data utilization platforms and make decisions using centralized data. In the future, we aim to achieve advanced operations utilizing AI.

Long-term roadmap for digitizing refineries

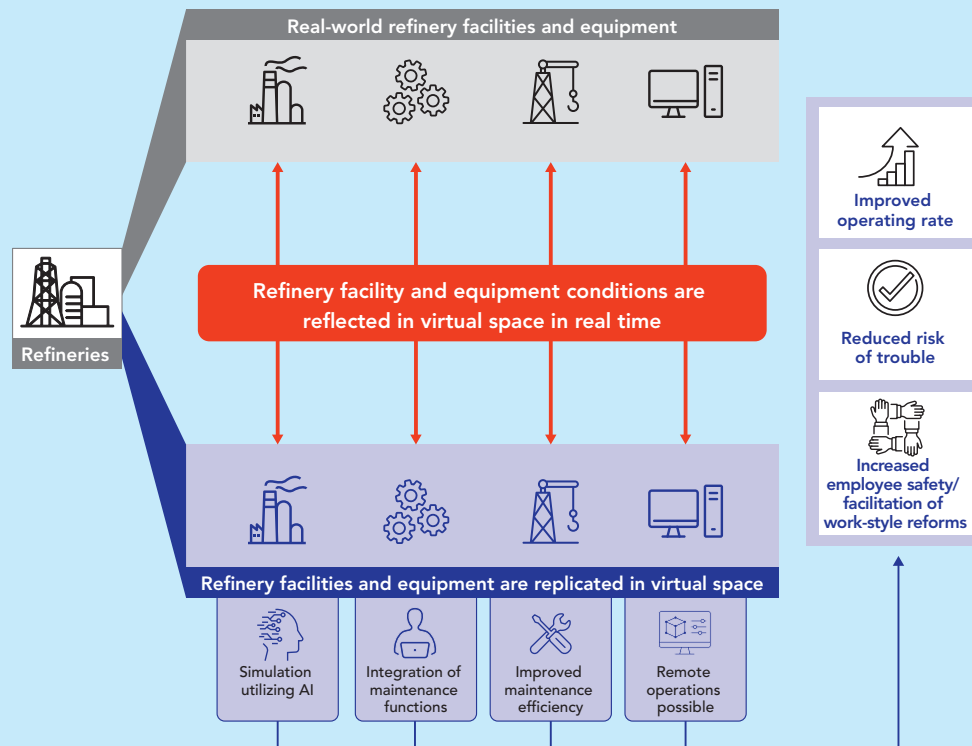


Oil Business Structural Improvement

Petroleum Refining Business: Maximizing uptime

Benefits of digitizing refineries

Based on AI simulations, humans can focus on high-level, non-routine decision-making. In addition, we can consolidate various functions by integrating refineries in the digital space and linking various types of data. These initiatives will improve operating rates, reduce the risk of trouble, increase employee safety, and facilitate work-style reforms.



Initiative schedule during the Seventh MTMP period

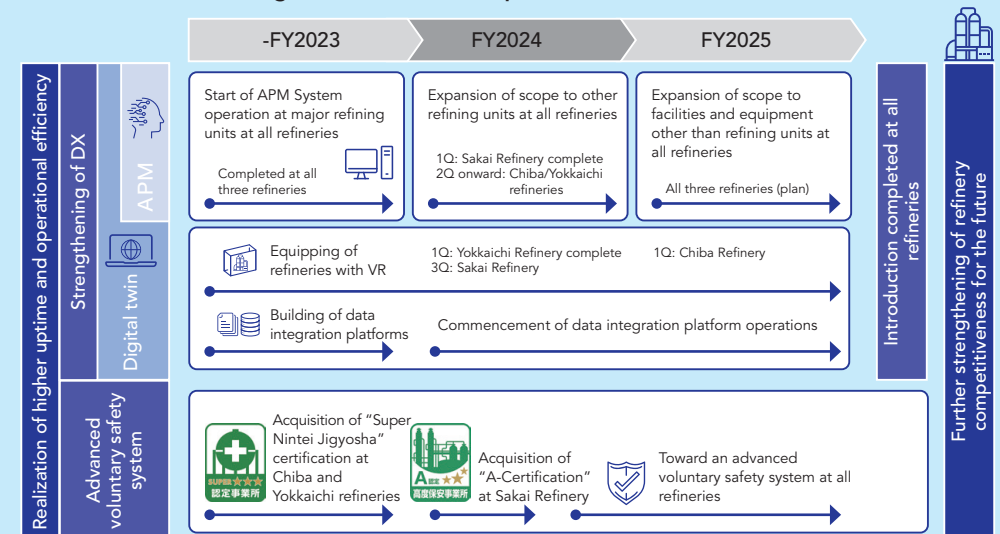
During the Seventh MTMP period, in addition to ongoing initiatives such as strengthening our OMS, etc., we aim to further improve safe operations and stable supply levels by advancing DX initiatives and obtaining certifications for our refineries. We began operating the APM¹ System to facilitate the integrated management and advancement of our maintenance strategies in major refining units at all of our refineries in FY2023 and are expanding its application to other units in FY2024. Regarding the Digital Twin initiative, we started equipping our refineries with virtual reality (VR) from FY2023 and plan to complete its introduction at the Yokkaichi and Sakai refineries in FY2024, and the Chiba Refinery in FY2025. In terms of building data integration platforms, we proceeded with introducing them in FY2023 and began operations in May 2024. Furthermore, in addition to the Super Nintei Jigyosha² certification already obtained by the Chiba and Yokkaichi refineries, the Sakai Refinery finally gained A-Certification³ in August 2024 as part of efforts to build an advanced voluntary safety system.

1 For further information on the Asset Performance Management (APM) System, please refer to [Page 36](#).

2 Tokutei Nintei Jigyosha

3 Special Accredited Advanced Safety Inspector certification

Initiative schedule during the Seventh MTMP period



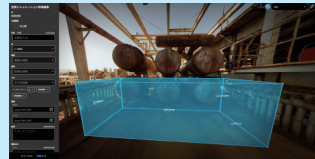
Oil Business Structural Improvement

Petroleum Refining Business: Maximizing uptime

Initiatives under the Seventh MTMP

Visualization

Equipment and other information are registered in a 3D viewer based on 360° panoramic photographs. This creates an environment where information from the field can be obtained from anywhere, enabling plans to be drafted from remote locations.



Visualization tool (INTEGNANCE VR)

Building of data integration platforms

We have introduced data integration platforms that link various data to improve simulation accuracy and enable automatic analysis utilizing generative AI. With the introduction of generative AI, we expect it to contribute to data integration and the consolidation of functions.



Example of using multiple data types with data integration platforms (Cognite Data Fusion)

*For further information on our data integration platform initiatives, please refer to [Page 36](#).

Inspection support utilizing drones and robots

Drone utilization

Starting in 2021, we conducted joint demonstration experiments with SENSYN ROBOTICS, Inc., at the Chiba Refinery toward implementation of a drone surveillance system. The experiments included: (1) inspection of outdoor oil tanks (including those with floating roofs) simulating disaster inspections and patrol inspections, (2) visual inspections of the inside of chimneys utilizing small drones, and (3) pier inspections utilizing underwater drones. Currently, we routinely make use of drone surveillance systems for inspection work at our three domestic refineries.



Robot utilization

With future plant inspection and maintenance alternatives in mind, we have been undertaking demonstration experiments using four-legged walking robots at the Yokkaichi Refinery in collaboration with the YOKOGAWA Group since 2023. We have confirmed practical usage conditions by verifying the walking performance of four-legged walking robots in idle plants, identifying challenges for their onsite utilization, and selecting verification items.



Establishing an advanced voluntary safety system

At the Cosmo Energy Group, the Chiba Refinery was certified as a Tokutei Nintei Jigyosha (commonly known as Super Nintei Jigyosha) in April 2021, followed by the Yokkaichi Refinery in August 2022. In August 2024, the Sakai Refinery became Japan's first Special Accredited Advanced Safety Inspector (commonly known as A-Certification). This allows our three refineries to set continuous operation periods and testing methods based on risk, enabling more risk-based, efficient business operations. Moving forward, we will continue to work toward improving our advanced voluntary safety system at all our refineries.

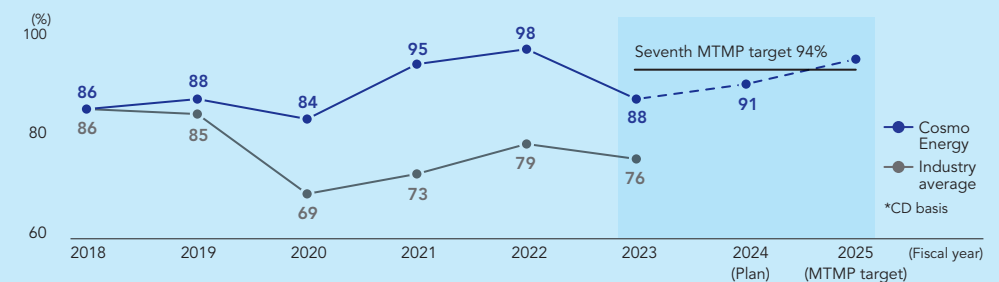
*For further information on "Super Nintei Jigyosha" certification and "A-Certification," please refer to Super Nintei/ A-Certification in the Safe Operations and Stable Supply section on [Page 71](#).

Trend in refinery operating rates

In addition to our cumulative safety initiatives to date, we took up a short position strategy by establishing a system for supplying Kygnus Sekiyu starting in 2019. As a result, the Group's refinery crude distillation unit (CDU) operating rate has consistently exceeded the industry average since FY2019.

Going forward, we will continue to work on strengthening DX and our advanced voluntary safety system to maintain and improve safe operations and stable supply, which form the Group's profit foundation.

Trend in refinery operating rates



Cosmo's Efforts to Digitize Refineries
<https://www.youtube.com/watch?v=WdV8p7GITMA> (available in Japanese only)

GE Vernova APM Implementation - Towards Improving Asset Reliability for Cosmo Oil Refineries.
<https://www.youtube.com/watch?v=tECw9UKMvPY>

New Field Profit Expansion

Commencement of SAF production

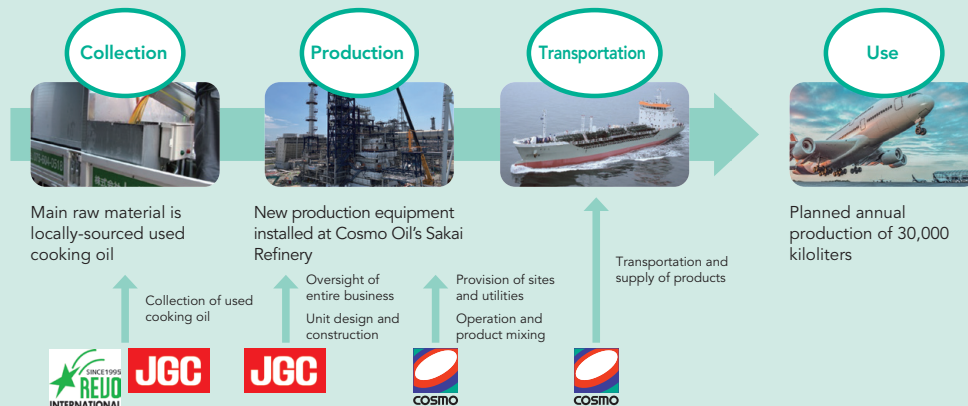
Mass production of Japan's first locally-made SAF

In the aviation industry, where demand is expected to increase over the long term, addressing global warming through CO₂ emissions reduction has become a pressing issue. The adoption of SAF is positioned as a crucial countermeasure in tackling this challenge.

The Cosmo Energy Group fulfills its social mission of continuing to provide a safe and stable supply of energy indispensable to daily life. To contribute to domestic and international CO₂ emissions reduction goals, we have set a target of supplying 300,000 kiloliters of SAF annually by 2030.

Aiming to start supplying locally-made SAF produced from used cooking oil in 2025, we will accelerate our efforts to establish a domestic SAF supply chain for the large-scale production of SAF, the first of its kind in Japan.

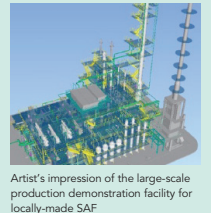
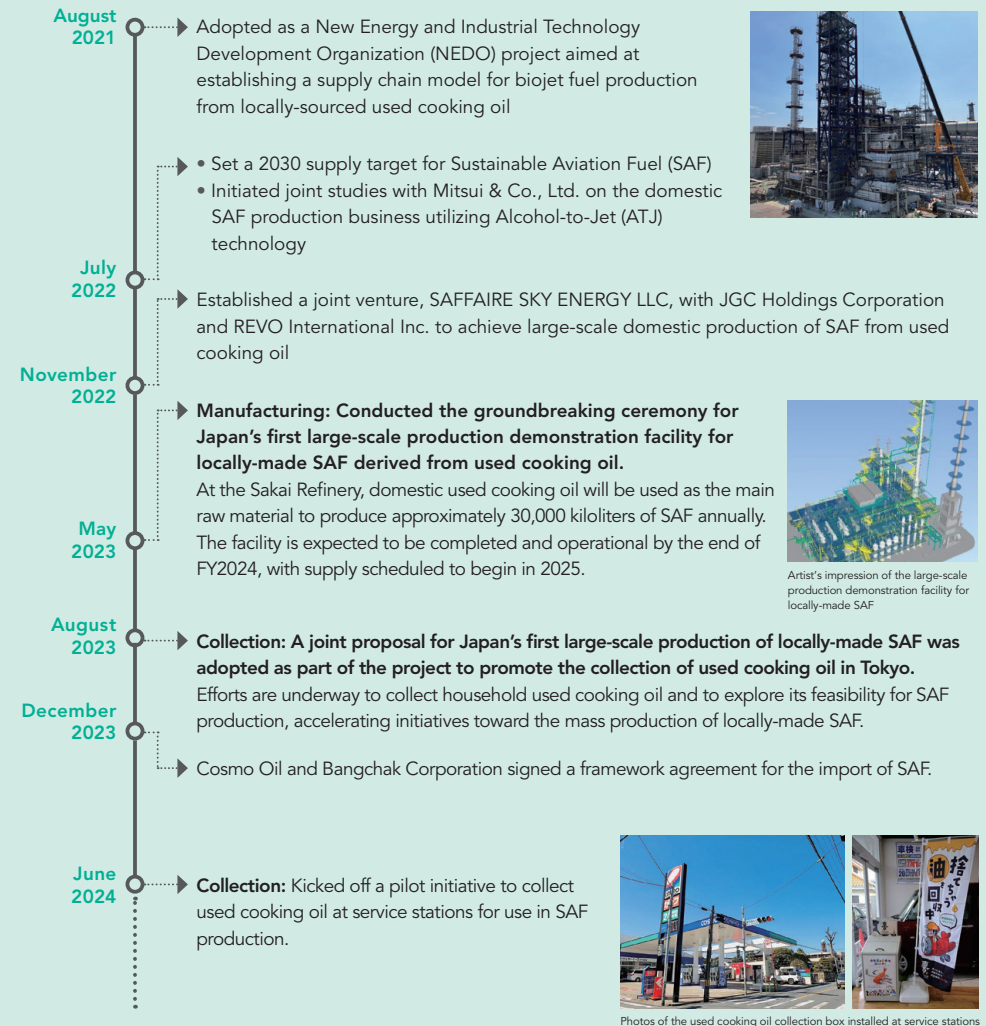
Supply chain for producing SAF from used cooking oil



The Seventh Consolidated Medium-Term Management Plan and Vision 2030 Targets

FY2025	FY2030
30,000KL annually Ordinary profit ¥1.0 bil.	300,000KL annually

Group initiatives



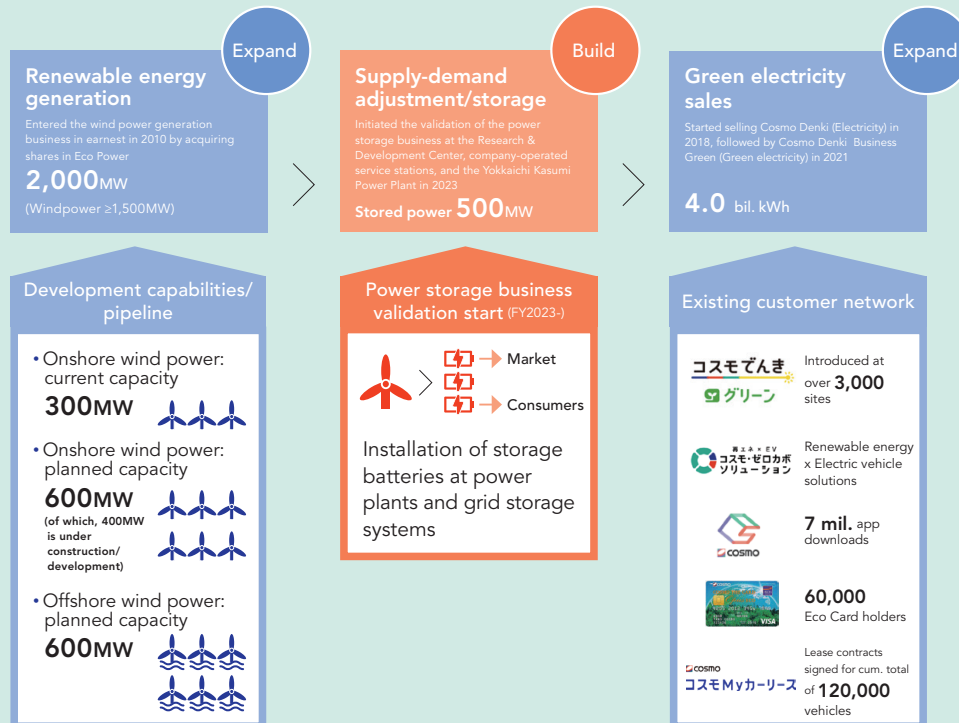
Introduction video of the Sakai Refinery, which is building Japan's first large-scale production demonstration facility for locally-made SAF made from used cooking oil.
<https://api01-platform.stream.co.jp/apiservice/plt3/Mzc3Mg%3d%3d%23MzM0%23280%23168%230%233FE320DBC400%23OzEwOzEw%23>
 (available in Japanese only)

New Field Profit Expansion

Increasing green electricity supply chain profit: Generating renewable energy

Establishing a profit foundation for the green electricity supply chain

In response to the global shift toward decarbonization, demand for renewable energy is growing. The Cosmo Energy Group has long been expanding its Renewable Energy Business, centered on wind power generation. Looking ahead to 2030, we aim not only to continue our efforts in power generation but also to integrate the entire supply chain, including supply-demand adjustment, power storage, and sales, to maximize the value of green electricity.

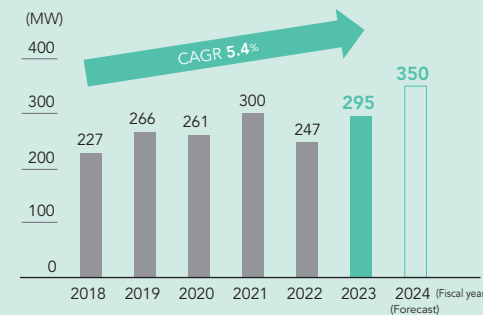


Renewable energy generation

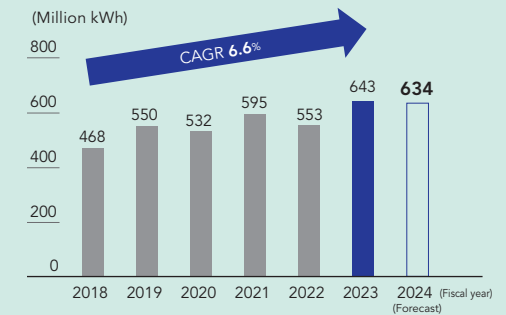
In April 2023, the Kamiyuchi Wind Farm and Oita Wind Farm began operations, and the start dates for the Shin-Mutsu-Ogawara Wind Farm and Shin-Iwaya Wind Park replacement projects have been moved up to FY2024. Both generation capacity and electricity sales volume continue to grow, with a compound annual growth rate (CAGR) exceeding 5%.

Additionally, new projects at Hasaki (replacement) and Kitahiyama (new development) are progressing. By leveraging our strengths in terms of our fully integrated system that encompasses development through operations and maintenance, we are expanding our business to reach our target onshore wind power capacity of 900 megawatts by FY2030.

Wind power generation capacity



Electricity sales volume



The Seventh Consolidated Medium-Term Management Plan and Vision 2030 Targets

	FY2025	FY2030
Renewable energy generation capacity	390MW	2,000MW
Storage battery function	50MW	500MW
Electricity sales volume	1.0 bil. kWh	—
Green electricity sales volume	—	4.0 bil. kWh
Ordinary profit	¥8.0 bil.	¥40.0 bil.

New Field Profit Expansion

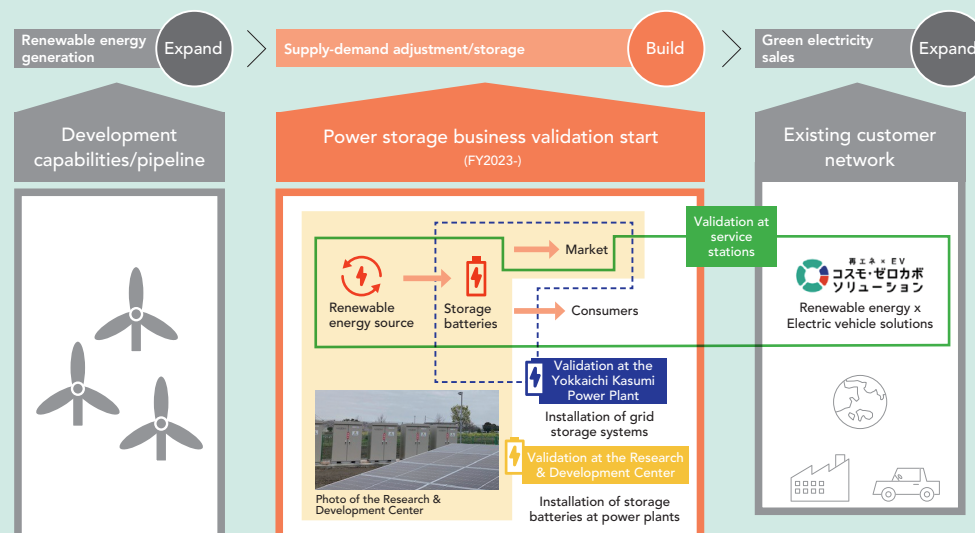
Increasing green electricity supply chain profit: Supply-demand adjustment/storage, and green electricity sales

Supply-demand adjustment/storage

While the supply of renewable energy is increasing across Japan, the mismatch between supply and demand has led to a growing number of situations where the output potential of renewable energy cannot be fully utilized. To address this issue, functions for adjusting power supply and demand, as well as storing generated green electricity, are essential.

These functions are crucial for the responsible use of energy. The Cosmo Energy Group started validation of its power storage business in FY2023 at two locations: the Research & Development Center and company-operated service stations. We also plan to validate the power storage business at the Yokkaichi Kasumi Power Plant in FY2025.

In addition to acquiring know-how in storage battery operation and participating in new electricity market transactions, we will steadily accumulate expertise while leveraging external knowledge with a view to applying it to Cosmo Zero Carbon Solution and other initiatives.

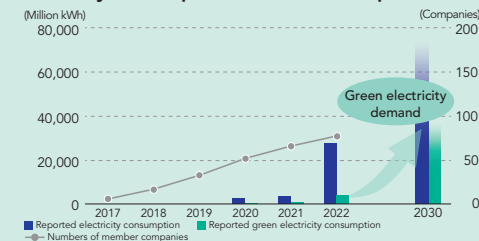


Green electricity sales

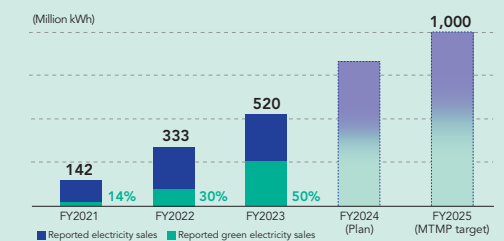
While the number of companies joining RE100, an international initiative for renewable energy, continues to grow each year, the proportion of green electricity used by these companies remains relatively low. As a result, the demand for renewable energy is expected to increase even further moving forward.

In FY2023, green electricity accounted for approximately 50% of the Group's electricity sales, which totaled 520 million kilowatt-hours. We aim to expand green electricity sales as we work toward achieving our target electricity sales volume of 1.0 billion kilowatt-hours in FY2025.

Trend in number of RE100 member companies and electricity consumption of member companies



Electricity sales volume



Initiatives to realize the value of green electricity

As installed renewable energy capacity rapidly increases, Japan is transitioning from the FIT scheme¹ to the FIP scheme² to control the rise in national burden and better integrate renewable energy into the electricity market. In addition, fixed purchase prices under the FIT scheme are steadily declining, making it essential to capture the growing demand for renewable energy to maintain and increase profitability.

The Cosmo Energy Group is utilizing corporate PPAs³ to secure long-term, stable supply contracts while working to realize the full value of green electricity. (For further information on corporate PPA initiatives, please refer to [Page 42](#).)

- ¹ Under the Feed-in Tariff (FIT) scheme, introduced in 2012, the Japanese government guarantees that power companies will be able to purchase electricity generated from renewable sources at a fixed price for a specified period, with the aim of promoting the adoption of renewable energy.
- ² Under the Feed-in Premium (FIP) scheme, introduced in April 2022, in addition to the revenue from selling electricity, a subsidy (premium) is provided to power generation companies. The scheme is designed to further promote renewable energy and its adoption as a main power source. Unlike the FIT scheme, where electricity generated at power plants is sold directly to power companies, the FIP scheme allows power producers to choose their sales channels, such as the wholesale market or direct contracts with consumers (corporate PPAs).
- ³ Corporate PPA: A long-term purchase agreement between a power producer and a consumer for renewable energy-derived electricity and its environmental value, or for environmental value alone.

Trend in FIT price (onshore wind power and new projects)*

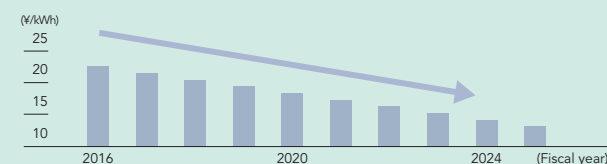
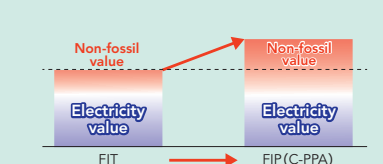


Image of prices under corporate PPAs



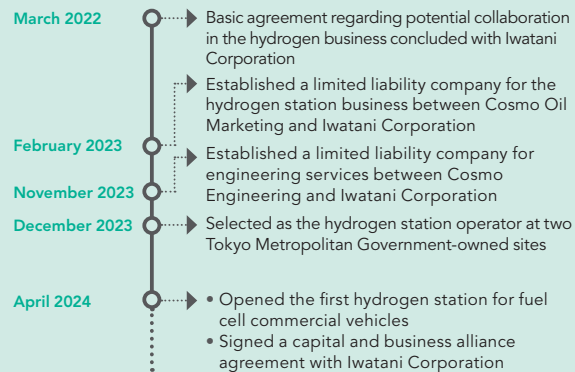
*Created by the Group with reference to public information from the Agency for Natural Resources and Energy.

New Field Profit Expansion

Initiatives for next-generation energy and CCS/CCU*

Efforts in the hydrogen business sector

In March 2022, the Company concluded a basic agreement with Iwatani Corporation to explore collaboration in the hydrogen business. In February 2023, we established a limited liability company aimed at hydrogen station business collaboration, followed by another such company in November of the same year focused on collaborative engineering services for hydrogen-related projects, thereby strengthening our partnership.



Hydrogen station business

In February 2023, Cosmo Oil Marketing and Iwatani Corporation established Iwatani Cosmo Hydrogen Station LLC for collaboration in the hydrogen station business.

We also announced plans to open the first hydrogen station in Heiwajima (Ota City, Tokyo), and the opening ceremony for this station was held in April 2024.

In December 2023, we were selected as the operator of two new sites on land owned by the Tokyo Metropolitan Government (in Shinsuna and the Ariake Motors Sales Office) and aim to create a market for hydrogen stations for commercial vehicles such as large fuel cell trucks and buses.



Opening ceremony of the first hydrogen station



Iwatani Cosmo Hydrogen Station Heiwajima



Artist's impression of Iwatani Cosmo Hydrogen Station Ariake Motors Sales Office (tentative name)



Artist's impression of Iwatani Cosmo Hydrogen Station Shinsuna (tentative name)

Hydrogen engineering business

In November 2023, Cosmo Engineering and Iwatani Corporation established Cosmo Iwatani Hydrogen Engineering LLC for collaboration in engineering services for hydrogen-related projects.

By leveraging the engineering technologies and capabilities of Cosmo Engineering, along with Iwatani Corporation's expertise in the hydrogen sector, we aim to secure contracts for large-scale hydrogen supply chain projects.

Capital and business alliance with Iwatani Corporation

The Cosmo Energy Group and Iwatani Corporation have maintained a strong relationship over many years through transactions involving LPG and petroleum products. In 2022, we signed a basic agreement to explore collaboration in the hydrogen business. With the shared view that further deepening our partnership while combining our respective management resources and expertise will create new synergies and enhance enterprise value for both companies as we move toward carbon neutrality by 2050, we concluded a capital and business alliance agreement in April 2024.

The agreement outlines our commitment to exploring various areas, including efforts to realize a decarbonized society and strengthening our relationship in existing business fields. Particularly in the hydrogen sector, in addition to our existing collaborative relationship, we aim to expand the establishment of hydrogen stations utilizing our Group's service station network and make the most of both our companies' respective management resources, such as knowledge and infrastructure, to build a hydrogen supply network that encompasses production, supply, and retail sales.

Fields of business alliance

Strengthening of relationship in existing business sectors

- Strengthening and optimization of procurement functions in the energy sector
- Strengthening of production functions in the industrial gases sector
- Strengthening of production and sales functions in the chemicals and resources sectors
- Joint marketing leveraging our respective customer bases

Efforts to realize a decarbonized society

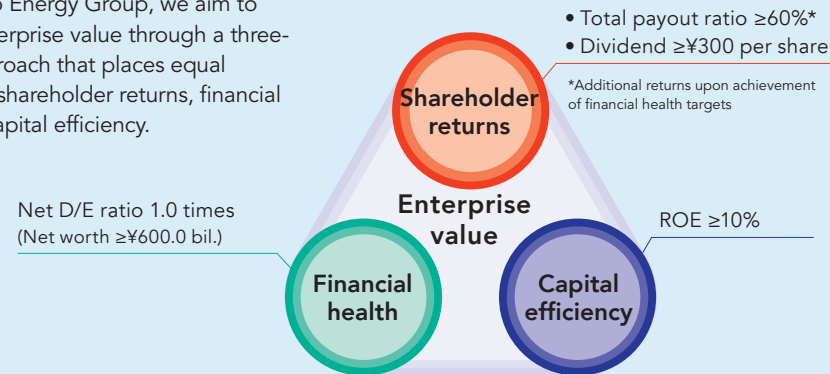
- Development of infrastructure for a hydrogen energy society
- Production of green hydrogen in Japan
- Expansion of decarbonization-related businesses
- Promotion of next-generation fuel development

*For further information on initiatives related to CCS/CCU, please refer to [Page 54](#).

Capital Policy

Realizing our three-pronged capital policy

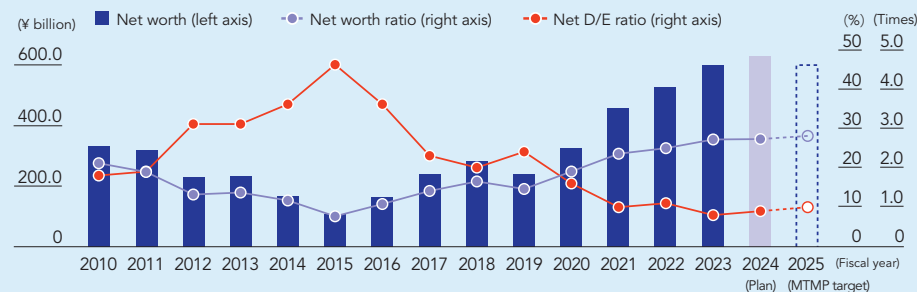
At the Cosmo Energy Group, we aim to maximize enterprise value through a three-pronged approach that places equal emphasis on shareholder returns, financial health, and capital efficiency.



Financial health

For the Seventh MTMP period, we set a net debt-to-equity ratio of 1.0 times and a net worth of ¥600.0 billion or more as our financial health targets. In setting our necessary net worth, we analyzed the performance of about 130 companies in total, 30 to 40 companies per segment, and used objective data as the basis for our calculations. Thanks to the favorable earnings environment, we have achieved both our net debt-to-equity ratio and net worth targets as of the end of FY2023.

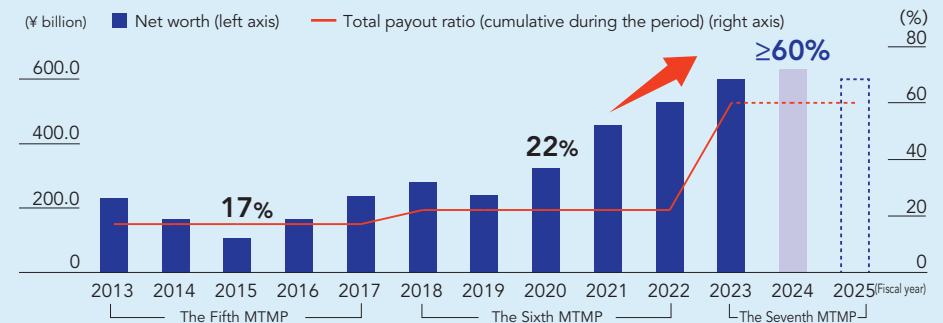
Trend in financial health



Shareholder returns

We regard the appropriate return of profits to shareholders as an important management measure, and we are working to ensure the early realization of a cumulative three-year total payout ratio of 60% or more for the Seventh MTMP. In FY2023, we revised our dividend forecast upwards twice during the term, raising it to ¥300 per share. We also increased the minimum dividend to ¥300 or more per share during the Seventh MTMP period as we look ahead to FY2024. Moving forward, we will continue to flexibly consider the early realization of returns while keeping a close eye on the earnings environment, stock price, and other factors.

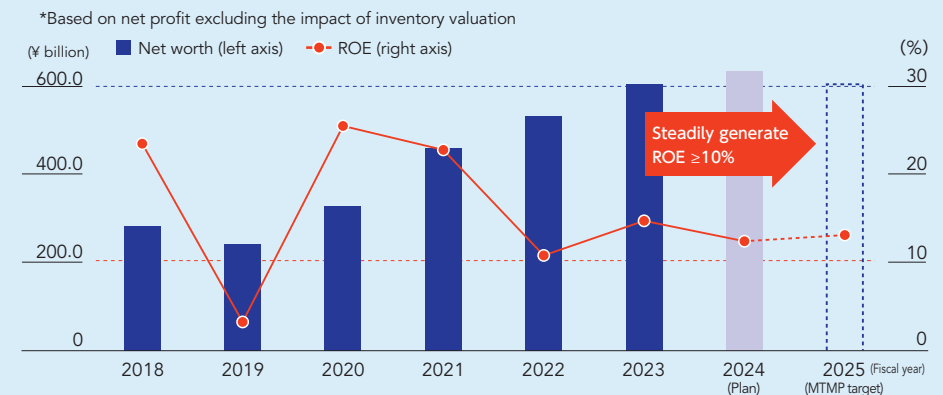
Trend in net worth and total payout ratio



Capital efficiency

For the Seventh MTMP period, although we project that our net worth, which increased significantly under the Sixth MTMP, will improve even further, as well as increased investment to expand New fields, we aim to steadily generate ROE of 10% or more.

Trend in ROE and net worth



Management Foundation Transformation

HRX·DX·GX

To transform our management foundation under the Seventh MTMP, we will undertake three types of transformations.

HRX



In line with our human resource transformation (HRX) action policy to pursue a people strategy that motivates employees and harnesses their skills, we are undertaking initiatives in three areas: human resource cultivation and development, organizational culture, and health. In FY2023, we made a human capital investment of ¥130,000 per person, an increase of ¥30,000 from the previous fiscal year. In addition to focusing on activities to encourage self-directed learning by individuals and expanding support for learning aimed at self-development, we also committed to developing the capabilities of line managers, who are key to human resource development. In FY2023, we achieved an engagement index of 60 points, meeting our target set forth in the Seventh MTMP. The promotion of one-on-one meetings between supervisors and their subordinates is stimulating communication in the workplace and increasing opportunities for employees to feel a sense of fulfillment and pride in their work.

KPI	FY2022 Actual	FY2023 Actual	FY2025 Target
Human capital investment	¥100,000 per person	¥130,000 per person	¥180,000 per person
Engagement index	57 points	60 points	≥60 points

DX



In keeping with our digital transformation (DX) action policy to transform business model through digital capabilities and change management, we are working to establish data utilization infrastructure and cultivate digital talent.

The number of core digital personnel developed in FY2023 totaled 389, and we are making steady progress toward achieving our MTMP target of 900 people. In FY2023, we focused on cultivating core digital personnel, while implementing our Cosmo DX strategy, which involves participation by all employees, in earnest, through initiatives like offering classroom-based learning and practical support as a set.

KPI	FY2022 Actual	FY2023 Actual	FY2025 Target
Core digital personnel	—	389 people developed	900 people developed

GX



In accordance with our green transformation (GX) action policy to realize roadmap to achieve net zero carbon emissions, we are advancing efforts net zero carbon emissions by 2050, including Scope 3, in order to fulfill our responsibility to provide a stable supply of energy and contribute to realizing carbon neutrality across society as a whole. Greenhouse gas (GHG) emission reductions in FY2023 were reduced by 15% compared to FY2013. In addition to implementing energy-saving measures, we are making steady progress toward achieving our 2030 target due to the impact of regular maintenance and other factors related to refinery operations. As the external environment, including various laws and regulations, undergoes significant changes, we are committed to strengthening our internal systems in order to give a higher level of consideration to investments to reduce emissions.

KPI	FY2022 Actual	FY2023 Actual	FY2030 Target
GHG emissions reduction (vs. FY2013) Including Scope 1, 2, and reduction contribution	-9.5%	-15%	-30%

The Seventh MTMP KPIs at a Glance

Black text FY2023 result

White text FY2025 MTMP target (announced in March 2023)



Shareholder returns

Total payout ratio
(excl. the impact of inventory valuation)

60%

≥60%
Three-year
cumulative

Dividend

¥300
per share

≥¥200
per share¹



Financial health

Net D/E ratio

0.83 times

1.0 times

Net worth

¥601.2 bil.

≥¥600.0 bil.



Capital efficiency

ROE
(excl. the impact of inventory valuation)

14.6%

≥10%

ROIC
(excl. the impact of inventory valuation)

7.6%

≥6%



Profitability

Ordinary profit
(excl. the impact of inventory valuation)

¥162.2 bil.

≥¥165.0 bil.

Profit attributable to owners of parent
(excl. the impact of inventory valuation)

¥82.4 bil.

≥¥60.0 bil.



Future investment

Investment in New fields

¥19.5 bil.²

¥140.0 bil.
Three-year
cumulative



DX

Development of core digital personnel

389 people

900 people



HRX

Engagement index

60 points

≥60 points

Human capital investment

¥130,000
per person

¥180,000
per person



GX

GHG emissions reduction
2030 vs. 2013
(incl. Scope 1, 2, and reduction contribution)

-15%

-30%³

1 Announced in March 2023; ≥¥300 per share as of May 2024 2 Before factoring in sales of assets (¥16.5 bil.) 3 FY2030 target

Capital Policy

At the Cosmo Energy Group, we are committed to further enhancing enterprise value by refining our three-pronged capital policy.

Taisuke Matsuoka

Director, Senior Executive Officer
In charge of Corporate Planning Dept.,
Finance Dept., Power Business Management Dept.,
New Energy Business Management Dept.



Since the LPG tank explosion at the Chiba Refinery caused by the 2011 Great East Japan Earthquake, the Cosmo Energy Group has continued to face challenging times in terms of our business performance and financial position. That said, we were able to improve our financial position to a certain extent by significantly strengthening our profitability under the Sixth Consolidated Medium-Term Management Plan (hereafter, “the Sixth MTMP”), which sought to improve our financial position.

Under the Seventh Consolidated Medium-Term Management Plan (hereafter, “the Seventh MTMP”), which focuses on enterprise value enhancement, the objective of

our capital policy is to “implement a three-pronged approach that places equal emphasis on shareholder returns, financial health, and capital efficiency.” By putting this capital policy into action, we aim to enhance enterprise value.

In FY2023, although our price book-value ratio exceeded 1.0 times, I believe that it’s important to take a balanced, unbiased approach to increasing the aforementioned three elements of our capital policy in order to continue to meet the expectations of capital markets.

On the other hand, from the perspective of enhancing enterprise value, we recognize that a price book-value ratio of 1.0 times is not our goal, but a starting point. We will work to

further enhance enterprise value by refining our capital policy, as well as increasing profitability, expanding New fields, and transforming our management foundation.

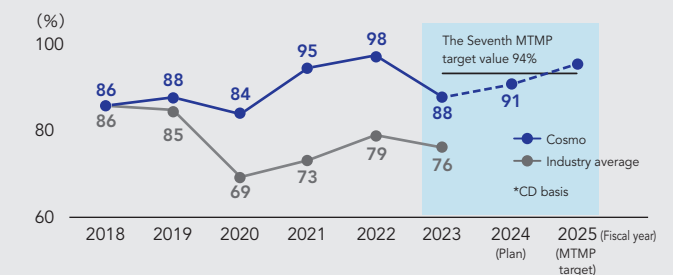
Capital efficiency

In FY2023, despite issues at refineries faced by the Petroleum Business, operating rates remained high thanks to our short position strategy in which sales volume exceeds production volume. Despite the challenges in each business segment, such as the Petrochemical Business recording a loss due to deteriorating market conditions, I think it’s worth noting that the Petroleum Business and Oil Exploration and Production Business drove earnings, helping us achieve our capital efficiency target from the first year of the Seventh MTMP.

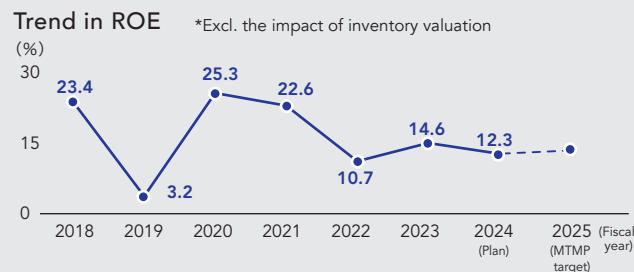
Moving forward, we will continue to further improve capital efficiency, while remaining vigilant about maintaining a balance with financial health.

In addition, under the Seventh MTMP, we have set a companywide ROIC target of 6% or more, while working to manage and improve capital efficiency by segment. We aim to further enhance our strategy for improving capital efficiency by maximizing revenue in each segment and optimizing investment capital.

Trend in refinery operating rate



Capital Policy



In order to further improve capital efficiency, it's also important to strike a balance with growth investment. Of the ¥420.0 billion total investment set forth in the Seventh MTMP, we're planning to invest ¥140.0 billion in New fields. In the energy industry, which is currently undergoing a period of transformation, both the market environment and the direction of policies and regulations may change significantly in a short period of time. In particular, when it comes to investing in New fields, it's necessary to carefully assess medium- to long-term profitability, while steadily implementing measures to secure future growth.

In addition, we will give serious consideration to

initiatives aimed at achieving net zero carbon emissions by 2050 from the perspectives of both climate change countermeasures and economic rationality, while partnering with outside companies and making use of government and other subsidies.

Financial health

Regarding financial health, we set targets in the Seventh MTMP after conducting a multifaceted examination of the risks associated with each segment's assets, required capital efficiency, and flexible financing.

To calculate our required net worth, we analyzed the performance of approximately 130 companies in total, 30 to 40 companies in each segment, and used this objective data as the basis for our calculations. In terms of our net debt-to-equity ratio, we decided to maintain the same level of financial discipline as we did at the end of the Sixth MTMP.

Due to the solid earnings environment, we have achieved both our net debt-to-equity ratio and net worth targets set out in the Seventh MTMP as of the end of FY2023.

Although we originally expected to achieve our net

worth target during FY2024, we achieved our target earlier than planned due to our strong performance in FY2023, underpinned by improved margins in the Petroleum Business and other factors.

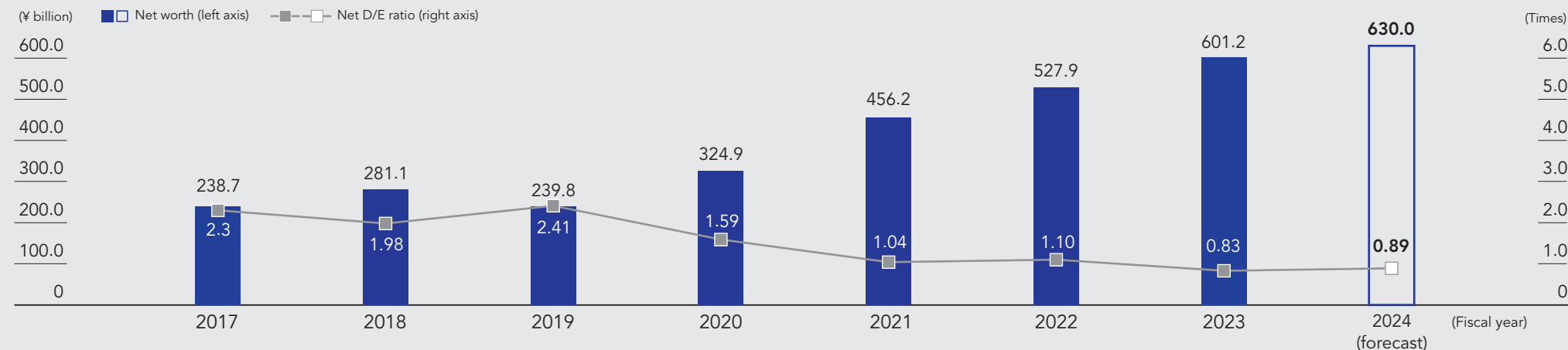
From a financing perspective, our Group obtained A- ratings in FY2022 as a result of strengthening our profitability and improving our financial position, and in FY2023 we issued straight bonds for the first time in 13 years. Going forward, we remain committed to expanding the scale of our direct financing, and will also actively consider leveraging ESG finance*.

We would also like to work towards an even higher rating given the need to diversify our financing methods in response to the global trend towards decarbonization.

* Notice Regarding Formulation of the Green Finance Framework
https://www.cosmo-energy.co.jp/content/dam/corp/jp/en/press/2024/240731-01/240731en_01.pdf

ESG Finance
<https://www.cosmo-energy.co.jp/en/ir/stock/esgfinance.html>

Net worth and net D/E ratio



Capital Policy

Shareholder returns

When the Seventh MTMP was first announced, we set a target cumulative three-year total payout ratio to profit attributable to owners of parent (excluding the impact of inventory valuation) of 60% or more and a target dividend of ¥200 or more per share.

As we were able to confirm the feasibility of achieving a solid earnings level, we revised our dividend forecast upwards twice during FY2023 to ¥300 or more per share, and we increased the minimum dividend for the Seventh MTMP period to ¥300 per share. In addition, we also executed a share buyback totaling ¥23.0 billion, achieving a total payout ratio of over 60% in a single year.

Bolstering shareholder returns

Annual dividend per share

FY2024 forecast	FY2023	YoY
¥300	¥300	—

Furthermore, under the Seventh MTMP, our Group's policy is to return to shareholders any profits over and above a net worth of ¥600.0 billion when our financial health targets are achieved in terms of both net debt-to-equity ratio and net worth. As mentioned earlier, we met our financial health targets earlier than expected due to our solid business performance in FY2023.

In light of these factors, we aim to achieve our target total payout ratio as soon as possible, while continuing to proactively return profits to shareholders from FY2024 onwards.

Message to shareholders

The capital policy set forth in the Seventh MTMP has been highly evaluated by domestic and foreign institutional investors for its exceptional clarity.

As we will soon start to consider the capital policy for our next medium-term management plan, our focus will remain on striking a balance between shareholder returns, financial health, and capital efficiency. We plan to determine our direction after engaging in repeated dialogue with capital markets.

I look forward to your continued support of our capital policy as we work to enhance enterprise value.

Consolidated profit and loss compared to the previous fiscal year

(¥ billion)

	FY2023	FY2022	YoY	FY2024 forecast	YoY
Ordinary profit (excl. the impact of inventory valuation)	162.2	142.9	19.3	160.0	-2.2
Profit attributable to owners of parent	82.1	67.9	14.2	79.0	-3.1
Profit attributable to owners of parent (excl. the impact of inventory valuation)	82.4	52.8	29.6	75.5	-6.9
Net worth	601.2	527.9	73.3	630.0	28.8
Net worth ratio (%)	27.2	24.9	2.3	27.2	0.0
Net D/E ratio (times)	0.83	1.10	-0.27	0.89	0.06

Management Discussion and Analysis

Building on the steady progress made in FY2023, we expect to achieve our targets in FY2024 as well.

Tomoki Iwai

Senior Executive Officer

In charge of Accounting Dept. and Legal & General Affairs Dept.



Summary of consolidated profit and loss

FY2023 results

In FY2023, ordinary profit excluding the impact of inventory valuation stood at ¥162.2 billion, up ¥19.3 billion year-on-year, and profit excluding the impact of inventory valuation was ¥82.4 billion, up ¥29.6 billion year-on-year.

In terms of the breakdown of ordinary profit excluding the impact of inventory valuation for each segment, profit in the Petroleum Business was ¥91.3 billion, up ¥47.2 billion

year-on-year due to factors such as improved domestic petroleum refining margins and the streamlining of expenses despite the impact of regular maintenance and issues at refineries. In the Petrochemical Business, ordinary profit decreased ¥11.6 billion year-on-year to -¥7.8 billion due to the deteriorating of methyl ethyl ketone (MEK) market conditions and other factors. In the Oil E&P Business, ordinary profit decreased ¥16.2 billion year-on-year to ¥68.3 billion due to a fall in crude oil prices, etc. In the Renewable Energy Business, ordinary profit increased ¥0.2 billion year-on-year to ¥2.8 billion thanks to improved wind conditions and other factors.

FY2024 forecast

In FY2024, we forecast ordinary profit excluding the impact of inventory valuation to decrease by ¥2.2 billion year-on-year to ¥160.0 billion, profit excluding the impact of inventory valuation to decrease by ¥6.9 billion year-on-year to ¥75.5 billion. We forecast that the impact of inventory valuation will increase by ¥5.0 billion.

Regarding the breakdown of forecasted ordinary profit excluding the impact of inventory valuation for each segment, in the Petroleum Business, despite the absence of issues at refineries, the deteriorating of market conditions other than for the four main products, the waning positive time lag from the previous fiscal year, and year-on-year differences in the scale of regular maintenance are expected to contribute to ordinary profit of ¥81.0 billion, a decrease of ¥10.3 billion year-on-year.

In the Petrochemical Business, ordinary profit is projected to increase by ¥7.8 billion year-on-year to ¥0.0 billion due to improvements in sales volume and MEK market conditions, and other factors.

In the Oil E&P Business, ordinary profit is expected to decrease by ¥2.3 billion year-on-year to ¥66.0 billion, due to an increase in operating expenses and other factors, while crude oil prices are expected to rise in line with the depreciation of the Japanese yen.

In the Renewable Energy Business, ordinary profit is forecast to decrease by ¥0.8 billion year-on-year to ¥2.0 billion, due to an increase in personnel expenses and other costs.

In closing

In FY2023, the first year of the Seventh MTMP, we were able to steadily build up profits despite issues at our refineries. While the operating environment for the Petrochemical Business remains challenging, domestic refining margins in the Petroleum Business have remained stable, and profits have been strong. In this environment, we will strive to further improve the level of safe and stable operations at our three refineries, while aiming to achieve our profit plan by maximizing refinery uptime through digital transformation (DX) and the use of artificial intelligence (AI).

Management Discussion and Analysis

Consolidated statement of income (year-on-year comparison)

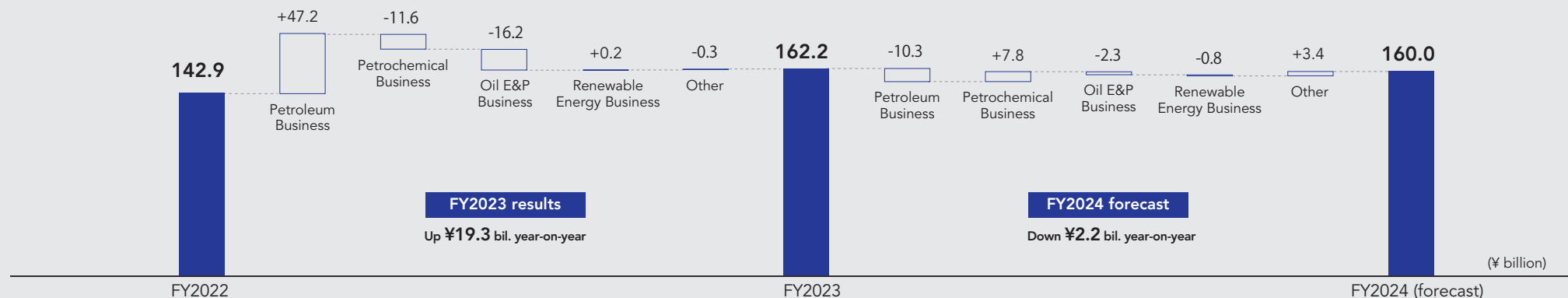
(¥ billion)

	FY2023	YoY	FY2024 forecast	YoY
Net sales	2,729.6	-62.3	3,200.0	470.4
Ordinary profit	161.6	-2.9	165.0	3.4
Impact of inventory valuation	-0.6	-22.2	5.0	5.6
Ordinary profit (excluding the impact of inventory valuation)	162.2	19.3	160.0	-2.2
Petroleum Business	91.3	47.2	81.0	-10.3
Petrochemical Business	-7.8	-11.6	0	7.8
Oil E&P Business ¹	68.3	-16.2	66.0	-2.3
Renewable Energy Business	2.8	0.2	2.0	-0.8
Other ²	7.6	-0.3	11.0	3.4
Profit attributable to owners of parent	82.1	14.2	79.0	-3.1
Dubai crude oil price (US\$/barrel, Apr. to Mar.)	82	-11	85	3
Foreign exchange rate (¥/US\$, Apr. to Mar.)	145	10	145	0

1 Operating companies (Abu Dhabi Oil, Qatar Petroleum Development, United Petroleum Development) have fiscal years ending in December.

2 Consolidated adjustment included.

Consolidated ordinary profit (excluding the impact of inventory valuation)



Overview of consolidated cash flows and consolidated balance sheet

Consolidated cash flows

(¥ billion)

	FY2022	FY2023
Cash flows from operating activities (1)	8.1 ¹	177.9 ²
Cash flows from investing activities (2)	-81.2 ³	-32.8 ⁴
Free cash flow (1+2)	-73.1	145.1
Cash flows from financing activities	81.1	-104.2
Cash and cash equivalents at end of the period	61.8	105.5

1. Temporary impact of subsidies to curb the impact of a surge in gasoline and other fuel prices
2. Booking of profit and the impact of national holidays on tax payments (one-time factor), etc.
3. Construction of onshore wind power sites and secondary recovery investment in the Hail Oil Field, etc.
4. Additional impacts due to changes in the deposit term for time deposits (one-time factor), etc.

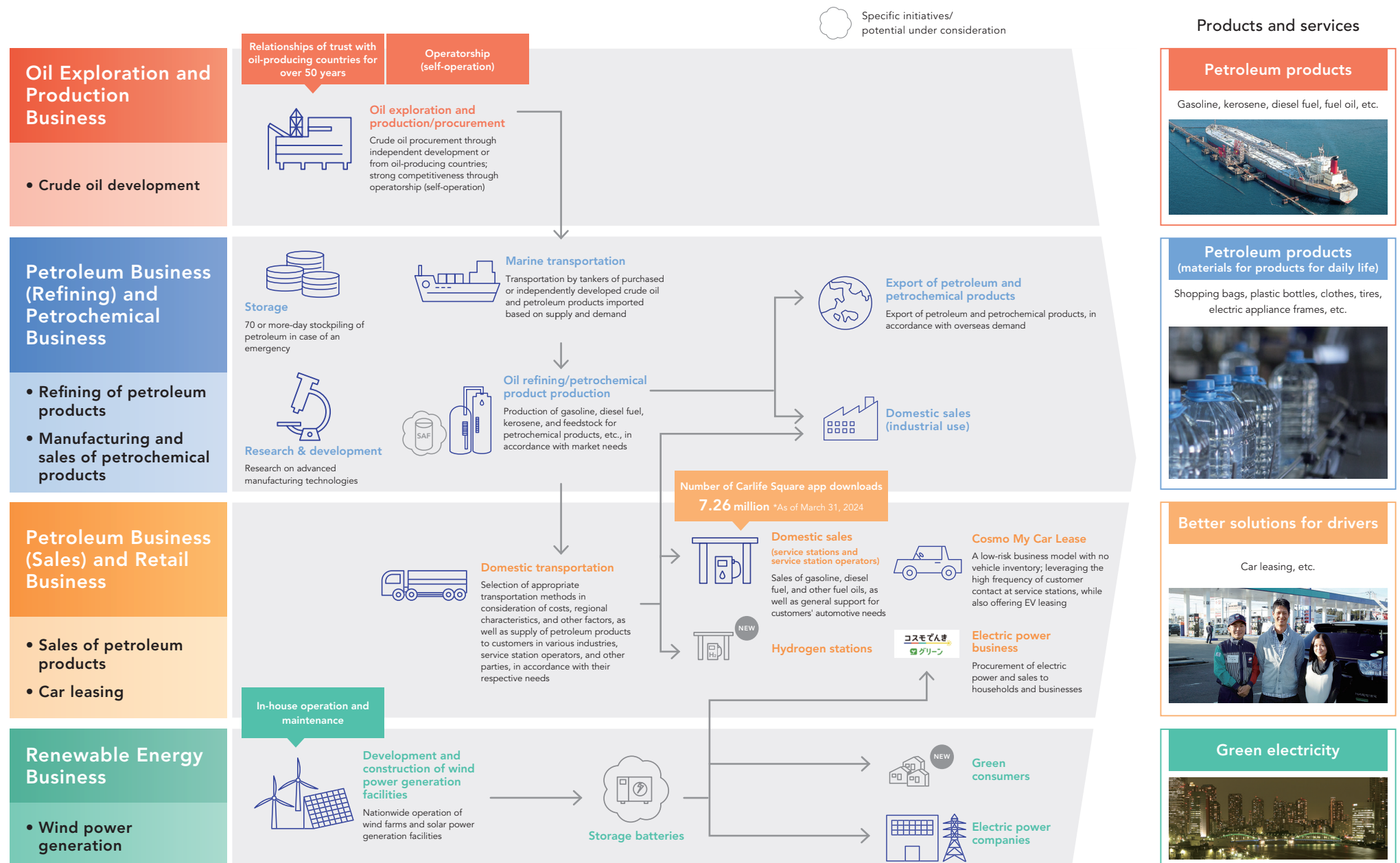
Consolidated balance sheet

(¥ billion)

	Mar. 31, 2023	Mar. 31, 2024	YoY
Total assets	2,120.8	2,212.6	91.8
Net assets	663.4	727.4	64.0
Net worth	527.9	601.2	73.3
Net worth ratio (%)	24.9	27.2	2.3
Net interest-bearing debt*	581.9	501.0	-80.9
Net debt-to-equity ratio (times)	1.10	0.83	-0.27

*Total interest-bearing debt less cash and deposits, etc., as of the end of the period

Cosmo Energy Group Businesses ~Present and Future~



Business Overview

	Petroleum Business (Refining and Sales)	Petrochemical Business	Oil Exploration and Production Business	Renewable Energy Business	Total
Net sales (FY2023 results)	¥2,445.6 billion	¥361.8 billion	¥127.8 billion	¥14.3 billion	¥2,729.6 billion
Ordinary profit (FY2023 results)	¥90.7 billion/¥91.3 billion (excluding the impact of inventory valuation)	¥-7.8 billion	¥68.3 billion	¥2.8 billion	¥161.6 billion/¥162.2 billion (excluding the impact of inventory valuation)
Number of employees (as of March 31, 2024)	4,072 people	1,142 people	298 people	232 people	6,530 people
Major operating companies and affiliated companies (as of March 31, 2024)	Cosmo Oil Cosmo Oil Lubricants Cosmo Oil Marketing Cosmo Oil Sales Cosmo Energy Solutions GYXIS Corporation Kygnus Sekiyu, others	Maruzen Petrochemical Cosmo Matsuyama Oil CM Aromatics HD Hyundai Cosmo Petrochemical, others	Cosmo Energy Exploration & Production Abu Dhabi Oil Qatar Petroleum Development United Petroleum Development Cosmo E&P Albahriya, others	Cosmo Eco Power CSD Solar, others	

Impact of inventory valuation

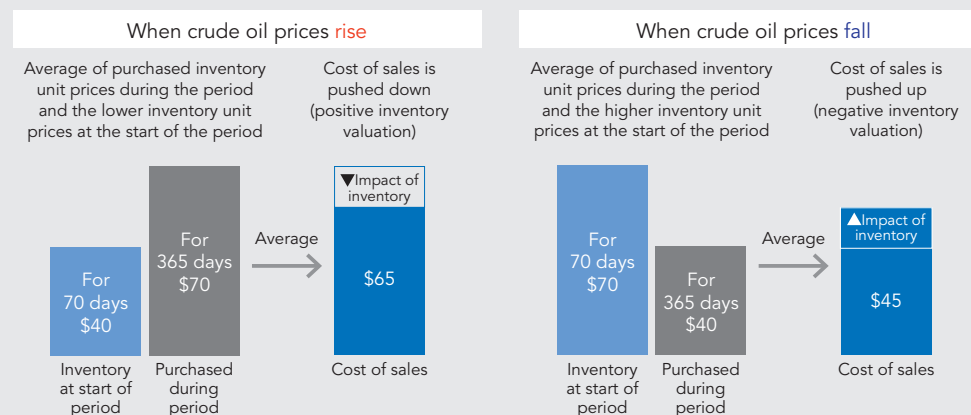
The impact of inventory valuation refers to the impact on the cost of sales in the financial statements, according to the inventory valuation method, when there is a change in the price of crude oil. It can be separated into the following two categories:

① Inventory valuation impact based on reduction in book value

If the market value of inventory at the end of the term falls below the book value, it is necessary to reduce the book value to the market value, and this indicates that a resulting loss is incurred.

② Inventory valuation impact based on the periodic average method

This refers to the impact in terms of income based on the periodic average method, which is an inventory valuation method. During periods when crude oil prices rise, the cost of sales is pushed down because purchased inventory unit prices that have risen during the period are averaged with the lower inventory unit prices at the beginning of the period. Conversely, during periods when crude oil prices fall, the cost of sales is pushed up because purchased inventory unit prices that have fallen during the period are averaged with the higher inventory unit prices at the start of the period.



PETROLEUM BUSINESS



Overview

In the Petroleum Business, Cosmo Oil, a core operating company of the Cosmo Energy Group, is mainly engaged in crude oil procurement, as well as the manufacturing, distribution, and importation and exportation of petroleum products. Meanwhile, Cosmo Oil Marketing, which is also a core operating company, sells Group products, including petroleum products, to corporate and individual customers.

Management resources

- Crude oil processing capacity^{1,2} 400,000 barrels/day (domestic market share 12.4%)
- Domestic sales volume³ Selling volume in Japan 22,280 thousand KL
- Number of Japan-based service stations¹ 2,602
- Number of Cosmo The Card holders¹ 3.62 million
- Number of Carlife Square app downloads¹ 7.26 million
- Cumulative number of Cosmo My Car Lease contracts¹ 119,737 vehicles

¹ As of March 31, 2024

² Including the supply of petroleum products/semi-finished products (37,000 barrels/day equivalent) from Idemitsu Kosan Group based on a business alliance

³ FY2023 results

Competitive advantages

- Maintaining high operating rates at refineries despite declining demand (a supply shortage position associated with fuel supply to Kygnus Sekiyu)
- Reinforcing connections with customers, and solid connections with service station operators and partners in other industries
- Development of brand products (Cosmo My Car Lease, Commitment Compulsory Car Inspection, Cosmo Denki (Electricity), Cosmo Zero Carbon Solution)
- High level of customer satisfaction, diversification of payment methods, and value creation centered on branding activities

Identified risks*

- Risks related to crude oil prices and procurement
- Risks related to petroleum product prices and demand
- Risks related to accidents at and leakage from refineries and other facilities
- Business continuity risks associated with rapid environmental changes

Risk 5 Risk 8

Risk 1 Risk 5

Risk 6 Risk 10

Risk 1

- Risks related to book value depreciation of inventories due to a decline in profitability

Risk 5

* Figures in boxes correspond to priority risks. For further information, please refer to Priority Risks in the Strengthening Group Risk Management section on (Page 68).

Opportunities

- Globally accelerating trend toward carbon neutrality and measures to support the shift to a decarbonized society (shift to EVs, green electricity, and new energy)
- Recovery in demand for jet fuel attributed to the lifting of COVID-19 border controls
- CASE* trends (mobility supply, maintenance, etc.)
- Changes in customer trends, digitization, and the wider acceptance of cashless payments

*CASE: An acronym for Connected, Autonomous, Shared & Services, and Electric

FY2023 results and FY2024 forecast

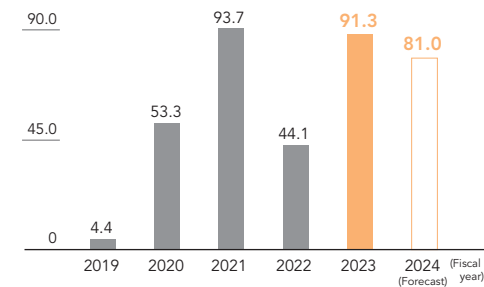
In FY2023, despite regular maintenance and the impact of issues at refineries, sales amounted to ¥2,445.6 billion, down ¥5.9 billion year on year, and ordinary profit (excluding the impact of inventory valuation) totaled ¥91.3 billion, up ¥47.2 billion year on year, thanks to improved margins, reduced expenses, and other factors.

In FY2024, despite the absence of the refinery issues we faced in FY2023, we forecast an ordinary profit of ¥81.0 billion, a decrease of ¥10.3 billion year on year, due to deteriorating market conditions other than for the four products and the difference in regular maintenance compared to the previous fiscal year.

Segment ordinary profit

(excluding the impact of inventory valuation)

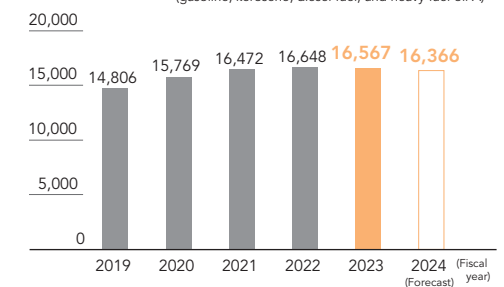
(¥ billion)



Four product sales volume

(Thousand KL)

*The four products are the main petroleum products (gasoline, kerosene, diesel fuel, and heavy fuel oil A)



We will establish smart next-generation refineries that ensure safe operations, stable supply, and carbon neutrality.

Yasuhiro Suzuki
President, Representative Director and CEO
Cosmo Oil Co., Ltd.

We will continue to offer our customers better solutions as an energy and mobility service provider.

Koji Moriyama
President, Representative Director and CEO
Cosmo Oil Marketing Co., Ltd.

PETROLEUM BUSINESS

Business strategy

Key concepts of the Seventh Consolidated Medium-Term Management Plan

- Ensure high uptime and high-efficiency operations at refineries
- Utilize IT and digital technologies



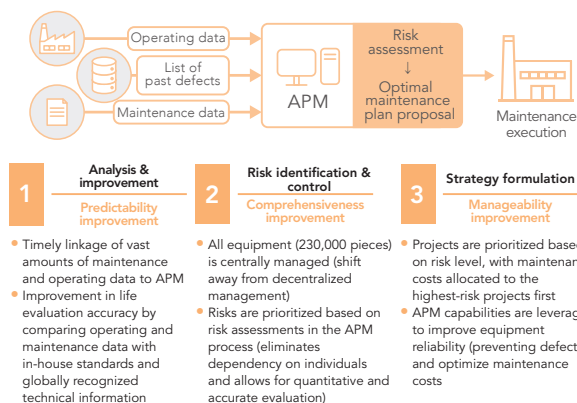
1. Asset Performance Management (APM) System

To fulfill our responsibility to offer a safe and stable supply of energy that supports society while maintaining high uptime at our facilities, reinforcing maintenance operations and improving equipment reliability are critical challenges that we face. To address these two key challenges, we introduced the Asset Performance Management (APM) System in FY2023 as a means for overseeing, managing, and advancing our maintenance strategy processes. This system aims to optimize maintenance costs, improve productivity of maintenance operations, and reduce incidents that lead to unplanned stoppages. By leveraging big data, we will accelerate our efforts in preventive maintenance, with an even higher level of predictability, comprehensiveness, and manageability.

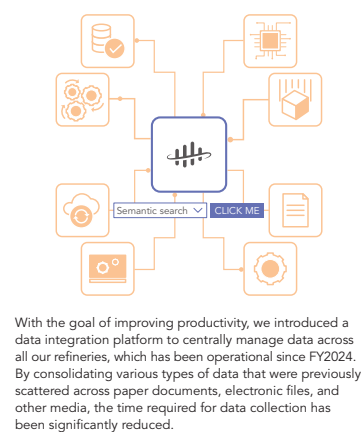
2. Digital twins

We adopted a data integration platform designed exclusively for the manufacturing industry, which has been operational since May 2024. In addition to strengthening competitiveness through the utilization of digital tools in our existing businesses and operations, we aim to improve efficiency and sophisticate operations by leveraging generative AI and data analysis. Through this system, we are creating digital twins by replicating our real-world refineries in a virtual space, allowing us to check plant conditions in a virtual environment. This enables us to keep an eye on what's happening in our facilities and develop maintenance plans remotely. Moving forward, we plan to explore efficient operations, including support for remote troubleshooting between refineries and collaborative maintenance (maintenance coordination and functional integration), regardless of work location.

Reduction of unplanned stoppages: APM



Data integration platforms



Enable efficient digital-driven sales



We are making the most of the power of marketing science in our data-driven digital marketing efforts. By fundamentally rethinking the customer experience and incorporating data-based approaches, we will further evolve our personalized and omnichannel marketing strategies.

1. Increasing sophistication of fuel oil sales

We are developing initiatives to increase fuel oil sales through the analysis of accumulated data. For instance, we have optimized our sales strategies by analyzing customer purchasing patterns alongside market trends, as well as increasing demand and forecasting accuracy.

2. Promoting initiatives through data linkage

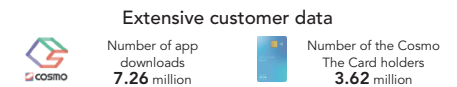
We are implementing initiatives that help us better understand our customers and address their diverse needs by linking our customer data with data from partners in different industries and utilizing it. In our communications with customers, we can now deliver personalized, optimal information based on each customer's interests and past behaviors at the right time. To date, we have been strengthening our connections with customers through an app, with services such as Commitment Compulsory Car Inspection, which allows users to complete everything from getting estimates to making payments on the app, as well as providing coupons for fuel oil and car care products, and notifying users of recommended times to refuel. Moving forward, our goal is not only to enhance communications with individual customers but also to be able to improve the overall customer experience through data utilization. To achieve this end, we will continue to engage in innovative digital communication in pursuit of higher levels of customer satisfaction and increased sales capabilities.

Increasing sophistication of fuel oil sales through marketing science

Customer Data Platform

- Customer behavior (scenarios) is depicted visually using marketing science
- Based on these scenarios, individual messages are delivered automatically to each customer at the right time and via the ideal channel
- This approach enhances the customer experience and increases purchase rates not only for fuel oil but also for a variety of services like Cosmo My Car Lease, Commitment Compulsory Car Inspection, Cosmo Denki (Electricity), etc.

Linkage of external data from partners in different industries in addition to basic data accumulated in-house



PETROCHEMICAL BUSINESS



Overview

In the Petrochemical Business, Maruzen Petrochemical, a Group company, provides a stable supply of petrochemical products as an ethylene center within the petrochemical complex. Additionally, we are also expanding production of specialty chemicals for use in chemical product and semiconductor production processes.

Management resources

- Olefin production capacity¹
 - Ethylene 1.29 million tons/year
- Aromatic production capacity¹
 - Para-xylene 1.36 million tons/year
 - Benzene 735,000 tons/year
 - Mixed-xylene 618,000 tons/year

¹ As of March 31, 2024

Competitive advantages

- Maintaining a world-leading market share in semiconductor photoresist² polymers
- A diverse range of polymers available
- The ability to meet the high quality requirements of customers and increased production volume through state-of-the-art manufacturing and analytical technologies, as well as quality assurance
- Located in the Chiba area close to Tokyo, with one of Japan's largest ethylene production capacities
- Promoting cooperation in oil refining between Cosmo Oil's Chiba Refinery (Petroleum Business) and the petrochemical complex it is part of

² Photoresist: Photosensitive material used in photolithography to create fine patterns on semiconductor devices, etc.

Identified risks

- High volatility in petrochemical product prices
- Decreased domestic demand and export limitations due to China's economic slowdown and increased in-country manufacturing
- Relaxation of supply and demand resulting from new construction/expansion of overseas plants
- Sharp increase in raw material prices due to international conflicts, the depreciation of the Japanese yen, and other factors

Risk 1 Risk 5

Risk 1 Risk 2

Risk 5

Risk 5

* Figures in boxes correspond to priority risks. For further information, please refer to Priority Risks in the Strengthening Group Risk Management section on [Page 68](#).

Opportunities

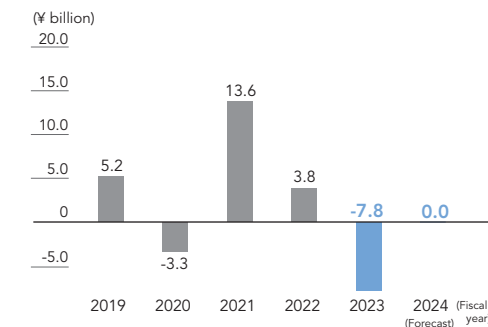
- Increasing long-term semiconductor demand due to the growth of the carbon neutral and digital transformation markets
- Growing global demand for petrochemical products
- Net zero carbon emissions (acceleration of the global move towards decarbonization)

FY2023 results and FY2024 forecast

In FY2023, production volumes declined and prices fell due to a decrease in offtake volume associated with production adjustments by domestic users, regular maintenance, and equipment issues, along with a deteriorating export environment as a result of factors such as a decrease in demand due to the sluggish Chinese economy and oversupply resulting from the operation of newly opened plants in Asia. In particular, MEK market conditions, which were favorable overseas in the previous fiscal year, deteriorated significantly in FY2023, while para-xylene sales volume declined. As a result of these and other factors, segment sales totaled ¥361.8 billion, down ¥78.4 billion year on year, and ordinary profit amounted to -¥7.8 billion, down ¥11.6 billion year on year.

In FY2024, we anticipate that this challenging business environment will persist. However, we will make concerted efforts as we strive to turn a profit through a year-on-year increase in base prices for domestic sales, capitalizing on improved MEK market conditions, driving continued growth in semiconductor photoresist polymers, and leveraging other opportunities.

Segment ordinary profit



We will continue to embrace the challenge of transformation amid significant environmental changes.



Toshiomi Baba
President, Representative
Director and CEO
Maruzen Petrochemical Co., Ltd.

PETROCHEMICAL BUSINESS

Business strategy

Key concepts of the Seventh Consolidated Medium-Term Management Plan

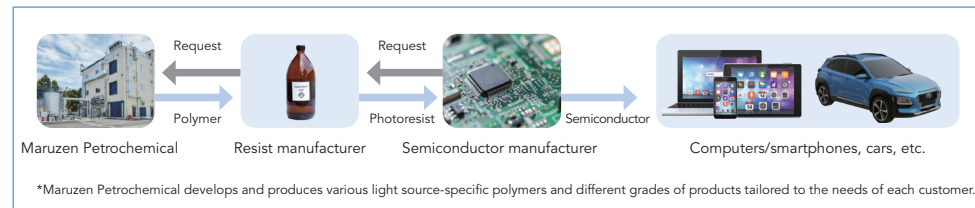
Increase production of semiconductor photoresist polymers



1. Semiconductor photoresist polymer business

Semiconductor photoresist polymers are custom-made products tailored to the specific requirements of our customers. They are characterized by their low degree of substitutability, as their properties are influenced by factors such as structure, molecular weight, composition, manufacturing methods, production equipment operating conditions, and contaminants. At Maruzen Petrochemical, we have expanded our business by responding to customer requests and providing products across a variety of grades through timely collaboration in development, manufacturing, and sales in order to provide optimal quality that aligns with the processes of resist manufacturers.

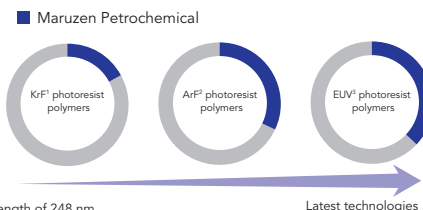
Semiconductor photoresist polymer value chain



2. Business strengths

At Maruzen Petrochemical, we have strengthened our capability to make proposals on timely new developments to support our customers—whom we view as partners, with their business expansion efforts, receiving high praise for our ability to quickly provide sample products and assure quality. Building trust and maintaining good relationships with our customers are the strengths of our business. Additionally, our technical advantages include technologies for removing trace metal contaminants and quality control. These technologies allow us to reduce metal contaminants to the parts per billion (ppb) level. Furthermore, our capability to offer a stable supply of high-quality products is also a significant advantage. As a result, we command a strong global market share, and the number of new grade developments continues to grow steadily.

Global market share by product (as estimated by the Company)



1 KrF (krypton fluoride): An excimer laser, which is a light source for exposure with a wavelength of 248 nm

2 ArF (argon fluoride): An excimer laser, which is a light source for exposure with a wavelength of 193 nm

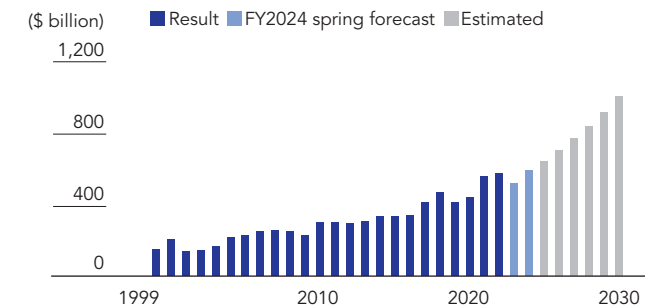
3 EUV (extreme ultraviolet): A next-generation light source used as an exposure technology in semiconductor manufacturing

3. Semiconductor photoresist polymer demand forecast

The demand for semiconductor photoresist polymers is expected to continue growing at an annual rate of approximately 10%, driven by growth of the photoresist market due to increasing semiconductor demand resulting from faster and higher-volume data communication. Consequently, an increase in sales of currently marketed products is anticipated.

Looking ahead, we anticipate significant growth in EUV photoresists and other products that can be used to create finer semiconductor patterns that support advancements in artificial intelligence (AI) technologies and next-generation communication systems (5G). We are actively undertaking development in line with the needs for further miniaturization to steadily secure new orders.

Trend in overall global semiconductor market*



*Created by the Cosmo Energy Group with reference to World Semiconductor Trade Statistics (WSTS)

4. Actions in anticipation of long-term demand growth

In response to the increasing demand for semiconductor photoresist polymers, it is imperative to enhance our capabilities. On the production front, we established a new production facility for EUV photoresist polymers in FY2022, a cutting-edge technology for which demand is expected to grow and have been increasing sales volume since the facility became operational. For ArF photoresist polymers, we are investing in expanding and strengthening our production capacity in FY2024 to meet the growing demand from existing customers. Regarding our efforts to increase production of thick-film photoresist polymers*, a KrF photoresist polymer, the new facility completed in FY2021 is operating smoothly.

On the sales front, we have rolled out proprietary, in-house developed grades and are working to not only retain existing customers but also to acquire new ones.

Moreover, in terms of strengthening research and development and quality control, we established a dedicated framework by spinning off the Functional Resin Technology Development Center, which focused on the specialty chemicals business, from our research center. By developing a system that allows for centralized management and operation from the development to manufacturing of semiconductor photoresist polymers and new materials, and by enhancing collaboration with our sales division, we aim to be able to respond more rapidly.

We remain committed to reinforcing our framework to meet the ongoing technological innovation and quality improvement of semiconductors.

*Thick-film photoresist polymer: A photoresist polymer with properties suitable for higher integration of flash memory, characterized by high concentration (high viscosity) and low metal content.

OIL EXPLORATION AND PRODUCTION BUSINESS



Overview

The Oil Exploration and Production Business is a revenue driver within the Cosmo Energy Group's business portfolio. The Group is promoting safe and stable operations in existing concession areas in the core area of the Middle East, centered on Abu Dhabi in the United Arab Emirates (UAE) and the State of Qatar, with which we have built longstanding relationships of trust.

Management resources

- Crude oil production volume¹ Approx. 37,000 barrels per day (comparison with crude oil processing capacity: approx. 9%)
- Crude oil reserves (proved and probable)² 155.0 million barrels (equivalent to approx. 19 years' worth of supply)

¹ FY2023 results

² As of December 31, 2023

Identified risks

- Risk of stranded assets associated with the shift to a fossil fuel-free society
- Risks related to crude oil prices and production
- Risks of accidents in oil fields and at production facilities
- Risks related to exploration and development (Not applicable⁴)

Risk 1

Risk 5

Risk 10

⁴ We also manage risks that are not included in the top risks as part of company-wide risk management.

* Figures in boxes correspond to priority risks. For further information, please refer to Priority Risks in the Strengthening Group Risk Management section on (Page 68).

Competitive advantages

- Strong relationship with the Emirate of Abu Dhabi
- Highly competitive oil fields through self-operation
- Advantages in CCS/CCUS³

Opportunities

- Realization of a stable energy supply during the period of transition to decarbonization
- Expectations for global advancements in and popularization of CCS and CCUS³ technologies
- Potential collaboration with oil-producing countries in the field of decarbonization

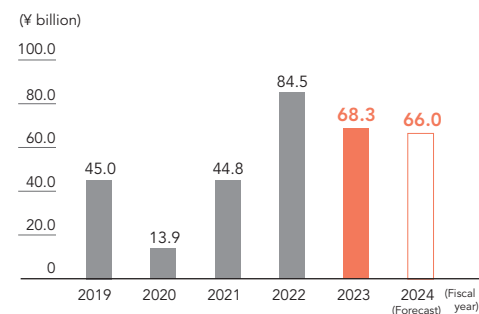
³ CCS: Carbon dioxide Capture and Storage
CCUS: Carbon dioxide Capture, Utilization, and Storage

FY2023 results and FY2024 forecast

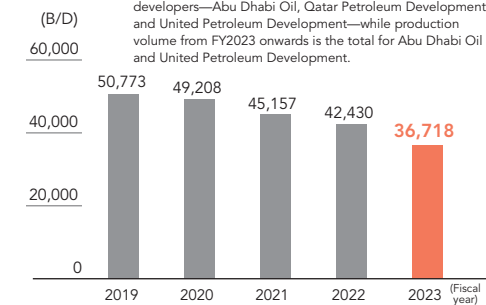
In FY2023, sales amounted to ¥127.8 billion, down ¥10.2 billion year on year, and ordinary profit totaled ¥68.3 billion, down ¥16.2 billion year on year, due to falling crude oil prices (Dubai crude oil price averaging \$82 per barrel from November 2022 to October 2023, down \$13 per barrel year on year) and other factors.

In FY2024, despite a projected rise in crude oil prices associated with the depreciation of the Japanese yen, ordinary profit is expected to reach ¥66.0 billion, a decrease of ¥2.3 billion year on year, due to increased operating costs and other factors.

Segment ordinary profit



Crude oil production volume



We are working to expand our business in the areas of oil development and decarbonization.



Katsushi Nishi
President, Representative Director and CEO
Cosmo Energy Exploration & Production Co., Ltd.

OIL EXPLORATION AND PRODUCTION BUSINESS

Business strategy

Key concepts of the Seventh Consolidated Medium-Term Management Plan

Strengthen profit structure further based on safe and stable operations



Group company, Abu Dhabi Oil, acquired an interest in the Hail Oil Field—an undeveloped discovered structure—in December 2012, and commenced production in November 2017. By January 2018, the field had reached full production capacity, and operations continued smoothly. However, a more rapid decline in reservoir pressure than initially expected was observed, prompting a reduction in production volume from 2019. To address this, we initiated secondary recovery investment by engaging in water flooding—a method of injecting water into the reservoir to restore pressure. We began water flooding in July 2023, and we are currently monitoring reservoir pressure while engaging in discussions with oil-producing countries as we prepare for full-scale production.

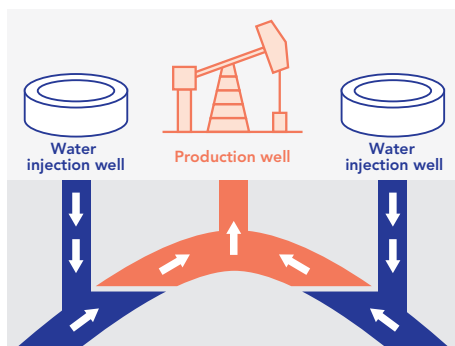
In addition to the Hail Oil Field, the Group is committed to maintaining and increasing the processing capacity of production facilities at existing oil fields and pursuing the development potential of our concession blocks. We will continue striving to maximize both crude oil recovery rates and production volumes.



In-operation drilling rig



Hail Oil Field site terminal (artificial island)



Water flooding (image)



Offshore drilling rig (well drilling equipment)

Consider measures to realize decarbonized businesses and explore ways to achieve low carbonization

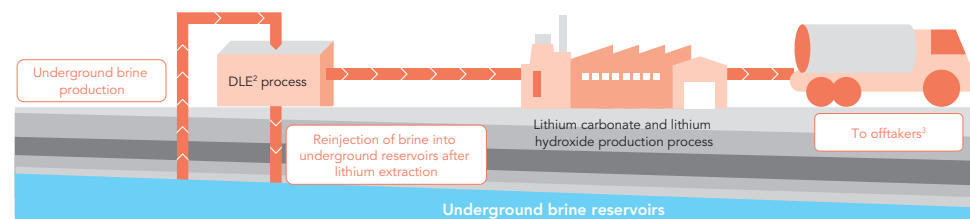


1. Decarbonization efforts leveraging our strong relationship with the Emirate of Abu Dhabi

The Group has been engaged in the safe and stable development and production of crude oil in the Emirate of Abu Dhabi in cooperation with Abu Dhabi National Oil Company (ADNOC) for over half a century. In addition to crude oil development and production, we have also been involved in environmental measures and initiatives that contribute to local communities, earning recognition as a trusted partner from both Abu Dhabi and ADNOC. Building on this relationship, Cosmo Energy Exploration & Production, a Group company, reached an agreement and concluded a Memorandum of Understanding (MoU) with ADNOC on March 2, 2022, concerning the exploration of technologies that contribute to decarbonization and the initiation of joint studies to assess the feasibility of CCS/CCUS in Abu Dhabi. In pursuit of achieving net zero carbon emissions by 2050, we hold regular workshops with ADNOC to develop and apply decarbonization technologies and are exploring opportunities for collaboration in the field of decarbonization.

2. Commencement of initiatives aimed at new entry into lithium resource development

As part of our efforts to bolster the green electricity supply chain and expand next-generation energy, Cosmo Energy Exploration & Production established a US subsidiary, Cosmo E&P USA Inc., in October 2023, aiming to enter the lithium resource development business in the U.S. This move positions the Company to leverage its expertise in sub-surface evaluation and drilling technologies, which have been developed over many years in existing oil fields, giving us a competitive advantage in the business of recovering lithium from underground brine¹.



1 Brine: Underground water containing salts such as lithium. Its composition varies depending on the underground conditions.

2 DLE: Abbreviation of Direct Lithium Extraction

3 Off-takers: Buyers or end-users of lithium carbonate and lithium hydroxide

RENEWABLE ENERGY BUSINESS



Overview

In the Renewable Energy Business, specifically the wind power generation business, our Group company, Cosmo Eco Power has been a pioneering force in Japan since its founding in 1997. Looking ahead, we plan to grow our wind power business and, as a Group, accelerate the development of new renewable energy sources such as solar power, while expanding sales of green electricity. Additionally, we aim to strengthen the green energy supply chain by building supply-demand adjustment and energy storage systems.

Management resources

- Wind power plant capacity¹ 310MW (No. 3 in Japan/6% domestic share)
- Solar power generation capacity² 24MW

¹ As of December 31, 2023
² As of March 31, 2024

Competitive advantages

Onshore

- Industry-leading utilization rate by strong in-house technical capabilities in wind turbine maintenance and the installation of failure prediction systems

Offshore

- Commenced commercial operations of offshore wind power generation in Akita Prefecture

Identified risks

- Changes in government policies and systems related to renewable energy
- Decline in profitability resulting from intensified competition
- The domestic offshore wind power generation industry still in its early stages and has not yet matured

Risk 2

Risk 2

Risk 2

* Figures in boxes correspond to priority risks. For further information, please refer to Priority Risks in the Strengthening Group Risk Management section on (Page 68).

Opportunities

- Renewable energy will be the main power source as we look to achieve carbon neutrality by 2050
- Government-led promotion of wind power generation (including power grid development, changing rules on power feeding, and the easing of regulations)
- Diversification of electricity customers due to the transition from the FIT scheme to the FIP scheme
- Expansion of the onshore wind power market (expected total capacity in 2030: 15.9GW¹)
- Expansion of the offshore wind power market (establishing projects with a total capacity of 10GW by 2030 and 30GW to 45GW, including floating wind turbines, by 2040²)

¹ Source: Ministry of Economy, Trade and Industry, Energy Supply and Demand Outlook for FY2030 (Related Documents), October 2021

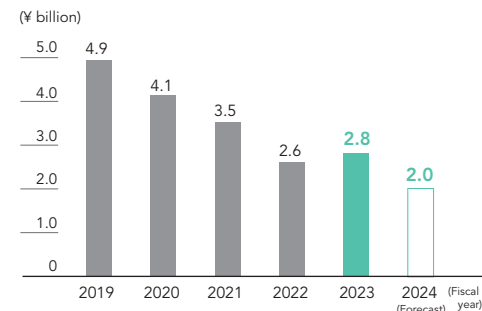
² Source: Public-Private Council on Enhancement of Industrial Competitiveness for Offshore Wind Power Generation, Overview of the Vision for Offshore Wind Power Industry (1st), December 2020

FY2023 results and FY2024 forecast

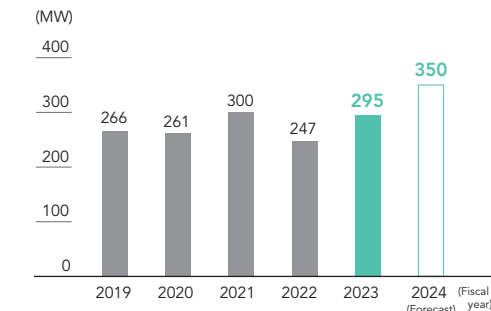
In FY2023, favorable wind conditions resulted in sales of ¥14.3 billion, an increase of ¥2.1 billion year on year, and ordinary profit of ¥2.8 billion, an increase of ¥200 million year on year.

In FY2024, ordinary profit is expected to total ¥2.0 billion, a decrease of ¥800 million year on year, due to factors such as rising personnel expenses.

Segment ordinary profit



Wind power plant capacity



Masayoshi Noji
 President, Representative Director and CEO
 Cosmo Eco Power Co., Ltd.

We seek to become a leading company in creating a carbon-neutral society.

RENEWABLE ENERGY BUSINESS

Business strategy

Key concepts of the Seventh Consolidated Medium-Term Management Plan

**Increase renewable energy generation capacity
(acquire offshore and onshore wind farms)**





Onshore wind power generation business

1. Expanding onshore wind power

In the field of onshore wind power, we aim to secure generation capacity of over 900MW by 2030 through new developments and the replacement of existing wind farms. For the Shin-Mutsu-Ogawara Wind Farm (Aomori Prefecture, installed capacity approx. 33MW) and the Shin-Iwaya Wind Park (Aomori Prefecture, installed capacity approx. 27MW), we have shortened the originally planned three-year construction period to two years after starting the replacement period in March 2023, with operations scheduled to commence before the end of FY2024. Additionally, we are actively advancing projects that have already obtained Feed-in Tariff (FIT) certification, including beginning construction of the Abukuma Minami Wind Farm (Fukushima Prefecture, installed capacity approx. 89MW*) in November 2023, while also proactively undertaking the further development of new projects as we seek to ensure we meet our targets.

Furthermore, the Group signed its first corporate power purchase agreement (PPA) in 2024, seeking to maximize the value of green electricity. This agreement will ensure that we can secure long-term, stable renewable energy customers while also realizing the value of green electricity.

List of corporate PPA projects

Project	Shin-Mutsu-Ogawara	Himekami
		
Operation start date	FY2024	April 2019
Facility capacity	33MW	18MW
Customer	Amazon	Panasonic Group Tokyo Metro
Term	20 years	Approx. 15 years

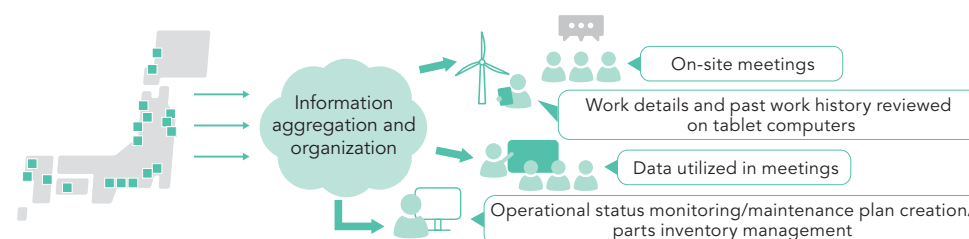
Planned operation start date	Installed capacity (as disclosed in August 2024)
FY2024	Shin-Mutsu-Ogawara (Aomori) Approx. 33MW Shin-Iwaya (Aomori) Approx. 27MW
FY2025	Enshu (Shizuoka) Approx. 6MW Abukuma Minami 1 st (Fukushima) Approx. 35MW*
Second half of FY2026	Abukuma Minami 2 nd (Fukushima) Approx. 54MW* Chuki No. 2 (Wakayama) Approx. 39MW
FY2027	Hasaki (Ibaraki) Approx. 15MW
By FY2030	Shimamaki (Hokkaido) Approx. 95MW Yokohama-machi (Aomori) Approx. 56MW Aizuwakamatsu (Fukushima) Approx. 50MW Kitahiyama (Hokkaido) Approx. 52MW
Total in-operation	Approx. 283MW
Total under construction and development	Approx. 462MW*
Other under-development projects	Approx. 155MW
Total onshore sites	Approx. 900MW

*Total installed capacity of the project

2. Establishing systems infrastructure aimed at sophisticating operations and maintenance

At Cosmo Eco Power, we have been moving forward with the introduction of an EAM (Enterprise Asset Management) system as a means of sophisticating our operations and maintenance (O&M) practices. The introduction of the EAM system enables effective management of inspections, work, malfunction information, and parts inventory, while facilitating analysis linked to operating data. We have achieved certain successes, such as early detection of and recovery from malfunctions, which has helped us maintain one of the industry's top availability rates. The rollout of the system to our key sites is now complete, and we are considering adopting it as a standard feature at newly developed power plants. Cosmo Eco Power is committed to promoting data utilization to further increase our industry-leading availability rates.

Aggregation and organization of data for utilization in various scenarios



Offshore wind power generation business

In the field of offshore wind power, we commenced operations of the Akita Port and Noshiro Port offshore wind farms (Aomori Prefecture, installed capacity 140MW*) in January 2023. For offshore wind power generation projects awarded through public tenders, we are preparing for operator selection from among sea areas designated as promotion areas and promising zones. We will continue to collaborate with reliable partners in these efforts, leveraging Cosmo Eco Power's strengths in wind turbine maintenance and coordinating with local communities, as well as proposals on regional and national promotion measures that make use of the Group's resources.

*Total installed capacity of the project