



# Daigas Group Medium-Term Management Plan 2023

Creating Value for a Sustainable Future

March 10, 2021

Osaka Gas Co., Ltd.



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## Review: Medium-Term Management Plan 2020 – I

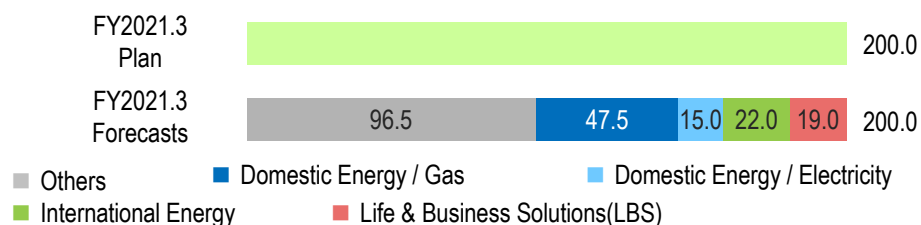
We expect most of our key management indicators to meet the targets set out in the Medium-Term Management Plan 2020 by the end of FY2021.3.

### Progress of Medium-Term Management Plan 2020

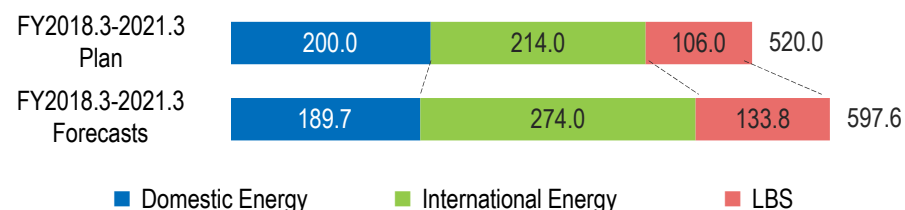
		FY2021.3 Forecasts	FY2021.3 Medium-Term Management Plan
Profitability indicators	ROE	7.0%	7.0%
	ROA	3.2%	3.5%
	EBITDA	200.0 billion yen	200.0 billion yen
Financial soundness indicators	Shareholders' equity ratio*	50.1%	Around 50%
	D/E ratio*	0.65	Approximately 0.70
Shareholder returns	Payout ratio	30.5%	30% or higher

\* Calculated with 50% of issued hybrid bonds as equity

#### - Breakdown of EBITDA (billion yen)



#### - Investment for business growth (billion yen)



## Review: Medium-Term Management Plan 2020 – II

During the last four years when we faced business environment changes such as full deregulation of gas and electricity retail markets in Japan, we managed to build the foundation for business portfolio management through investment for growth in the International Energy business and steady growth in the Life and Business Solutions business.

### Domestic Energy Business

- Achievement of 9.3 million customer accounts\* through expanding electricity retail and wider area businesses in Japan.
- Expanded renewable energy business.
- Improvement of business operations by establishing core energy business companies.
- Enhancement of disaster prevention for early recovery.

\*FY2021.3 forecast

### International Energy Business

- Expansion of the business foundation in North America.
  - ✓ Acquisition of shale gas development business in North America. (Sabine Oil & Gas Corporation)
  - ✓ Participation in several IPP projects in North America.
  - ✓ Launch of Freeport LNG commercial operation.
- Entered energy business in Southeast Asia such as gas supply in Vietnam.
- Launch of LNG trading business in Singapore.

### LBS Business



OSAKA GAS  
URBAN DEVELOPMENT Group

- Expanded assets through acquisition of rental properties and completion of sales properties.



OGIS-RI Group

- Contributed to Daigas Group's information technology.
- Expansion of business through utilization of proprietary technology such as AI.



OSAKA GAS  
CHEMICALS Group

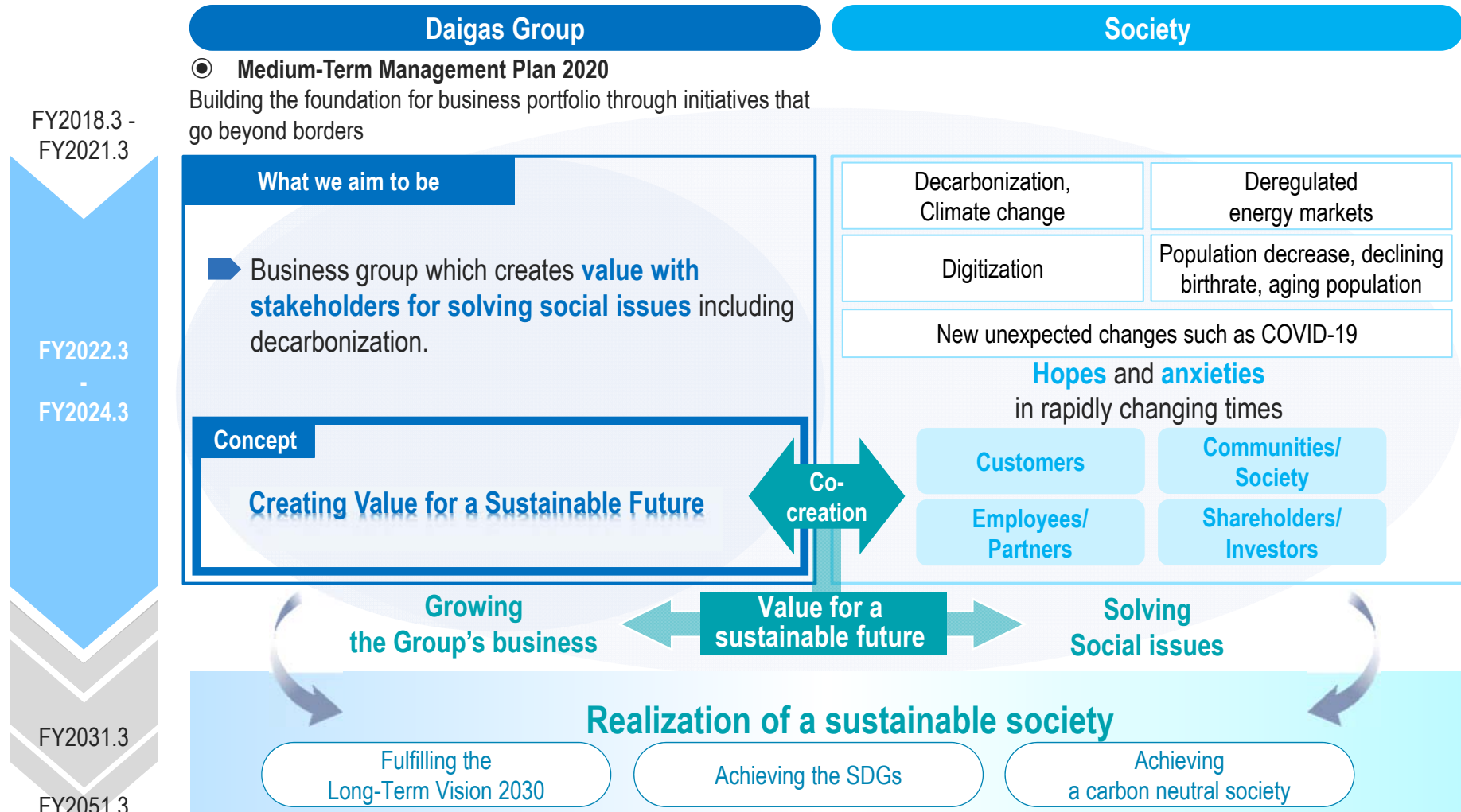
- Development and sales expansion of high value-added materials that create value for business, consumers, and environment.

## Declaration: **C**reating **V**alue for a **S**ustainable Future

- With the effects of climate change growing, the trend toward decarbonization accelerating, and COVID-19 spreading globally, people's way of life, work, lifestyles, and values are dramatically changing, which is increasing the importance of sustainability.
- In this Medium-Term Management Plan 2023, **we aim to solve various issues in building a sustainable society by taking on new challenges as well as existing ones while thereby achieving further growth of the Daigas Group.**
- We focus our efforts on **creating value for a sustainable future with our stakeholders by utilizing our strengths in developing solutions and innovations, and share the achievements with our stakeholders.**
- In the meantime, we intend to **enhance our business portfolio management** by taking various measures such as introducing ROIC to our KMIs.
- **We aim to be an innovative energy and service company that continues to be the first choice of customers while striving to make contributions to achieving a sustainable society.**

## Medium-Term Management Plan 2023 as a Momentum Builder

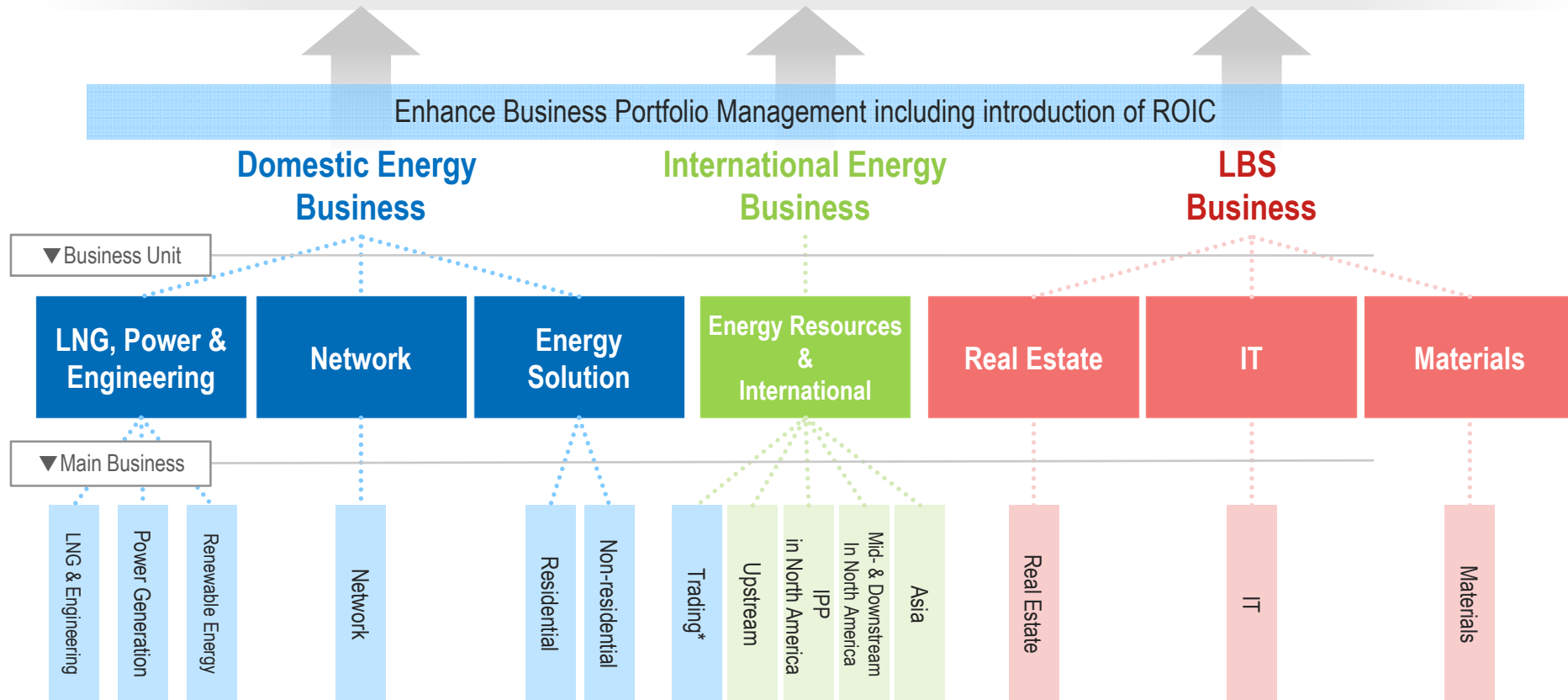
Under the Medium-Term Management Plan 2023, we strive to build up momentum for a further growth of our business as a corporate group that provides solutions to achieving a sustainable society, focusing on creating value for a sustainable future with our stakeholders.



## Enhancement of Business Portfolio Management

We plan to evolve into a group of enterprises with a robust business portfolio by promoting each business unit's autonomous growth and optimally allocating resources throughout the Group.

- Improve each business unit's capabilities of autonomous management and expansion
- Build a robust business portfolio



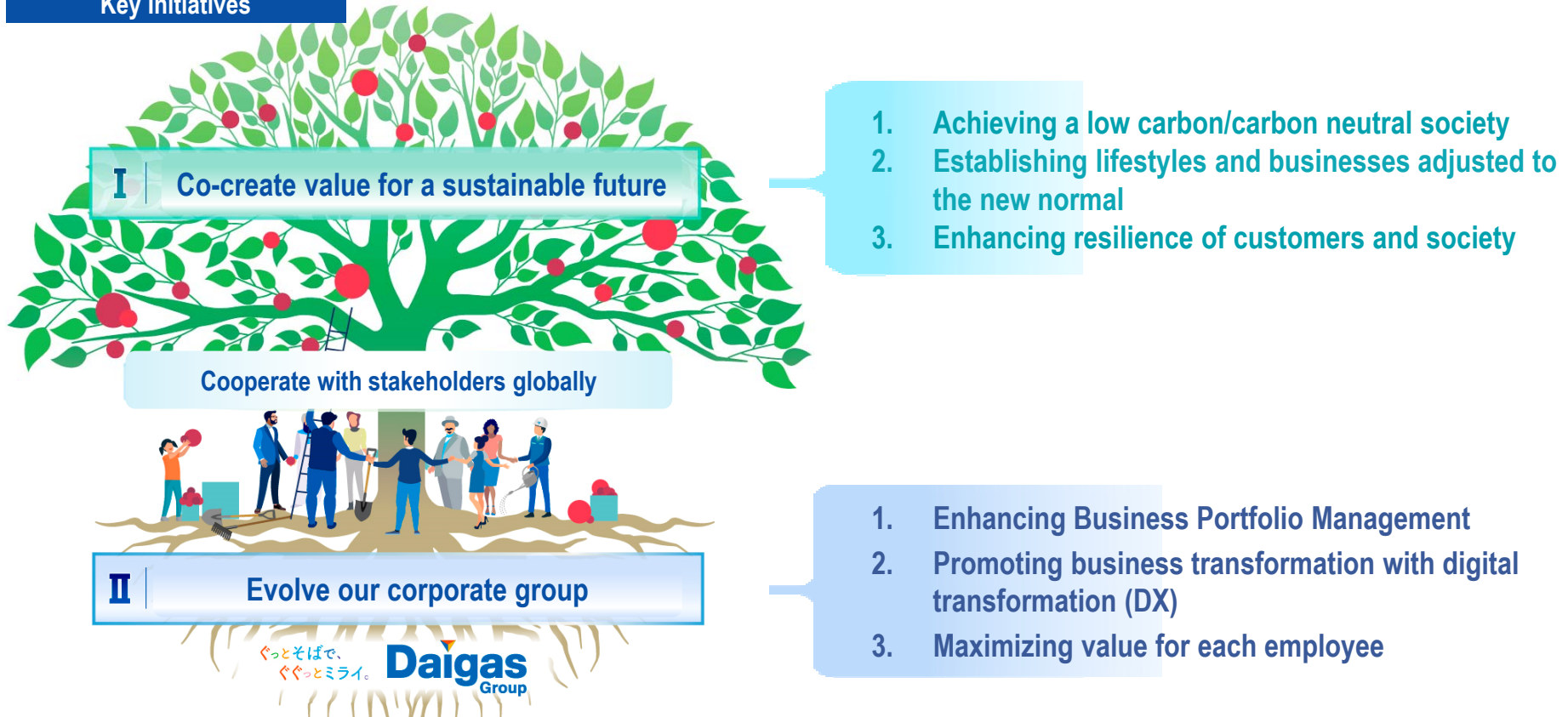
\*Trading is included in the Domestic Energy Business segment.

# Medium-Term Management Plan 2023 - Creating Value for a Sustainable Future

## Key Strategy

- I. **Co-create value for a sustainable future:** Pursuing the creation of value for solving social issues alongside stakeholders.
- II. **Evolve our corporate group:** Building a robust business portfolio and strengthening the management foundation to support the enhancement of our business portfolio management.

## Key Initiatives



### Key points

Achieving approx. 5% In ROIC

Increasing cash flows from operating activities by 50%\*

Distributing shareholder returns when we achieve profit growth

\*Total amount from FY2022.3-FY2024.3 divided by Total forecasts from 2019.3-2021.3



## Key Initiatives

### I . Co-create value for a sustainable future

SDGs we contribute to

#### 1. Achieving a low carbon/carbon neutral society



#### 2. Establishing lifestyles and businesses adjusted to the new normal



#### 3. Enhancing resilience of customers and society



### II . Evolve our corporate group

SDGs we contribute to

#### 1. Enhancing Business Portfolio Management

#### 2. Promoting business transformation with DX

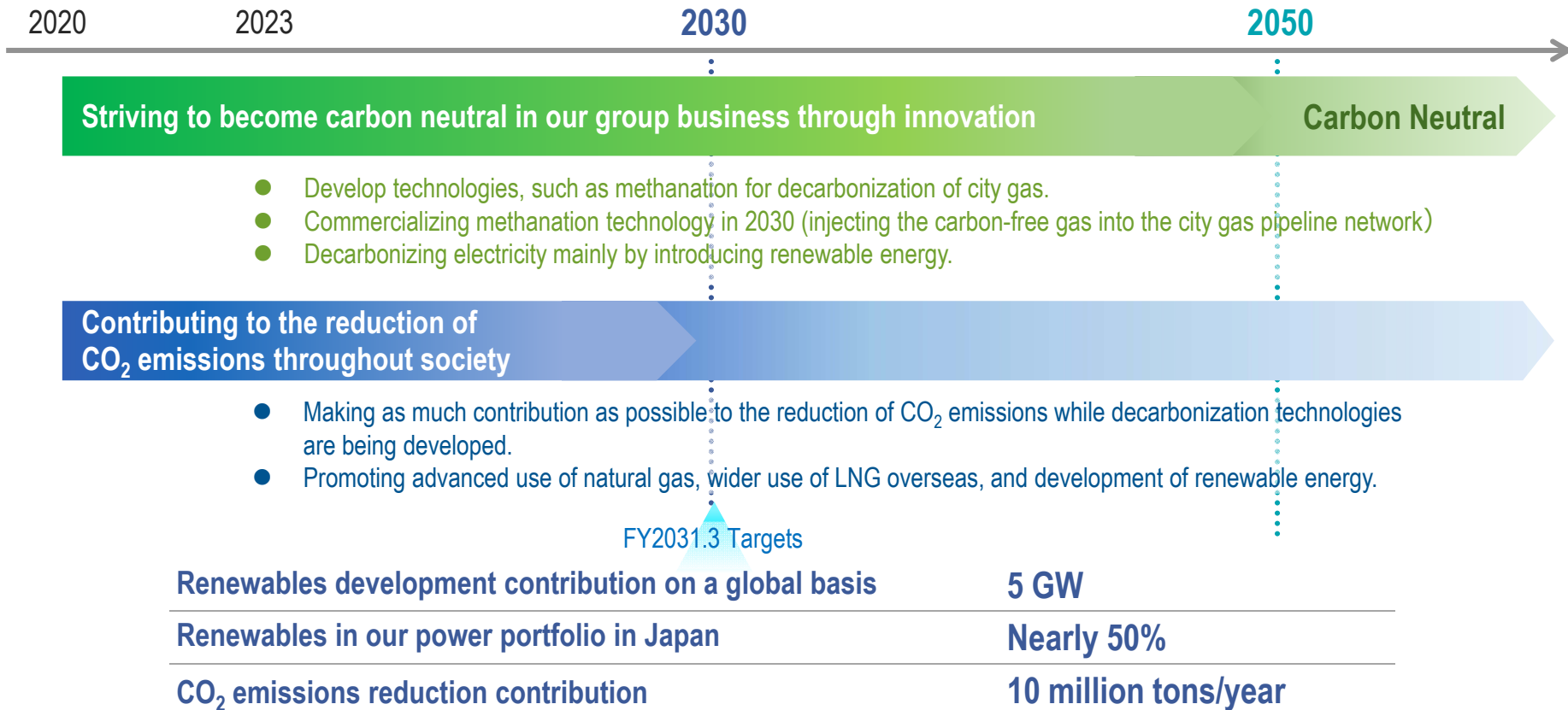
#### 3. Maximizing value for each employee





# 1. Achieving a low carbon/carbon neutral society

As our contribution to achieving a low carbon/carbon neutral society, we strive to become carbon neutral by 2050 through decarbonization of our gas and electricity and through contribution to the reduction of CO<sub>2</sub> emissions.



Strengths of the Daigas Group

Know-how of developing and operating renewable power sources

Expertise of fuel conversion to natural gas for in-house power generators and heat consuming facilities

Experience in procuring competitively priced LNG and developing shale gas

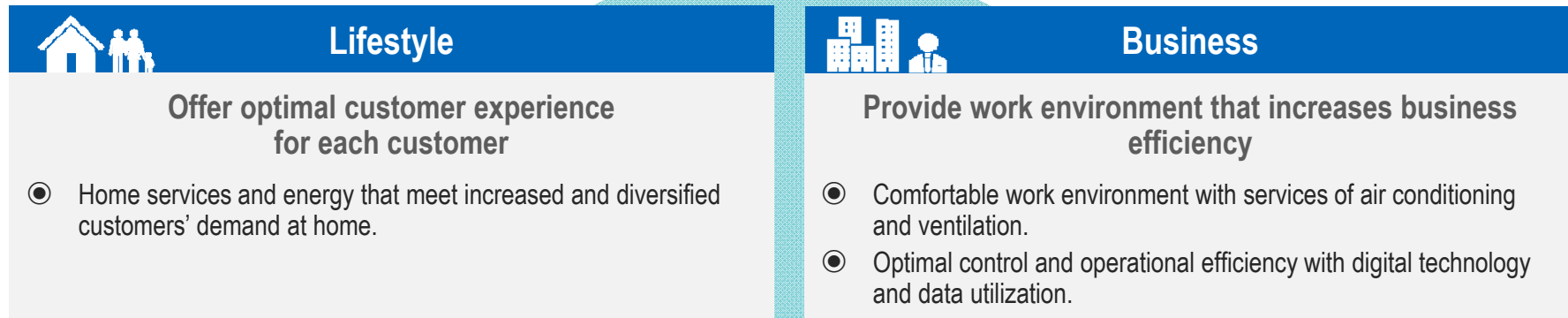
Accumulated knowledge of methanation technology



## 2. Establishing lifestyles and businesses adjusted to the new normal

We globally provide services as optimal solutions to each customer's adjustment of their lifestyles and businesses to the new normal.

Provide solutions globally  
Achieve 10 million customer accounts



High value-added solutions

Urban development

Environmental solutions

Digitization

Innovation

Strengths of the Daigas Group

9.3 million customer accounts and direct customer touch points

Technologies to develop appliances and facilities

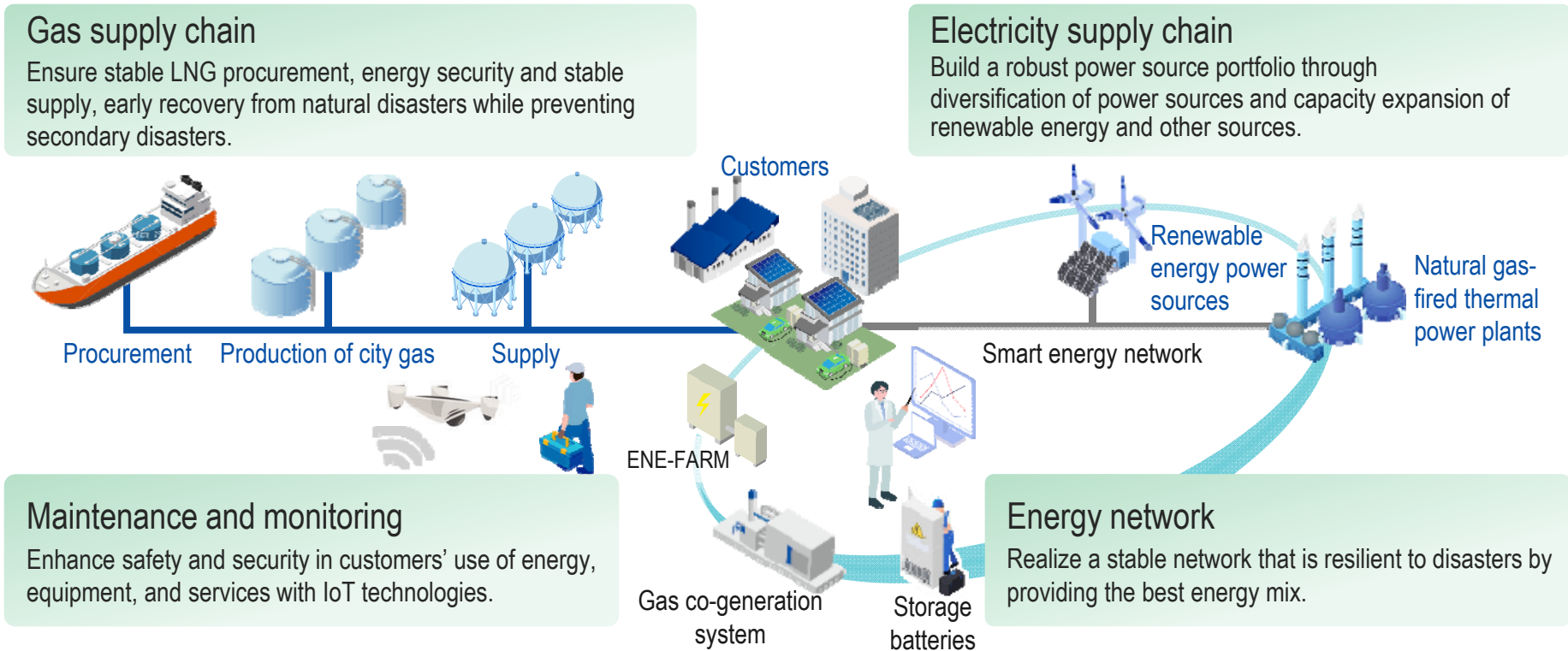
Various gas and electricity rate plans to meet different customer lifestyles

Data assets accumulated through services and maintenance



### 3. Enhancing resilience of customers and society

We aim to enhance energy resilience for customers and society by reinforcing gas supply chain infrastructure for stable supply and expanding energy network combined with distributed power sources.



Taking measures against infectious diseases such as the COVID-19

Strengths of the Daigas Group

Secure and stable energy supply & capability to respond to disasters

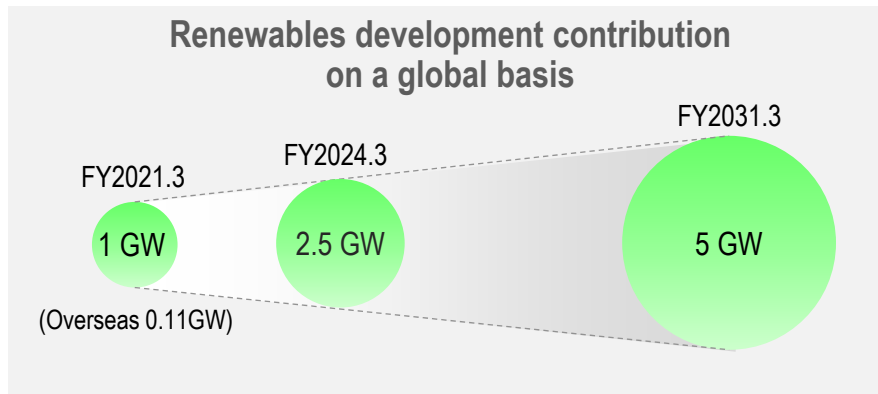
The achievements of operation in remote facility management by utilizing IoT

Use of natural gas-fired thermal power sources, renewable energy sources, and decentralized power sources.

## Our initiatives in detail – I (achieving a carbon neutral society)

### Contribution to CO<sub>2</sub> emissions reduction

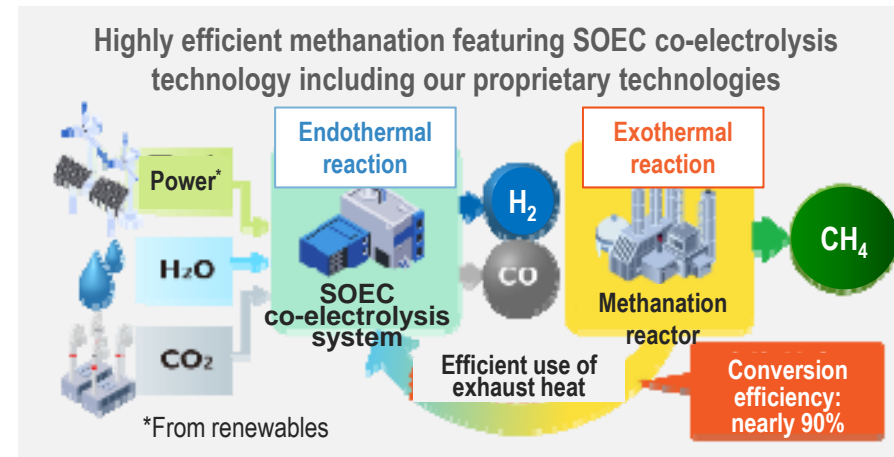
- Greater contribution to renewables development
  - ✓ Develop projects including new power sources such as offshore wind and geothermal power generation. Expand power procurement on an OTC basis.
  - ✓ Meet the needs for renewable energy.



- Contribution to the reduction of CO<sub>2</sub> by offering energy saving proposals and converting fuel from coal to natural gas

### Technological development for carbon neutrality

- Innovative methanation technology development and collaboration with various partners
  - ✓ Commercialize methanation in 2030.



### Collaboration with various partners

Hydrogen utilization

Biogas

Carbon recycling technology

Carbon neutral fuel

## (Reference) Showcasing our carbon neutral solutions at the Osaka-Kansai Expo 2025

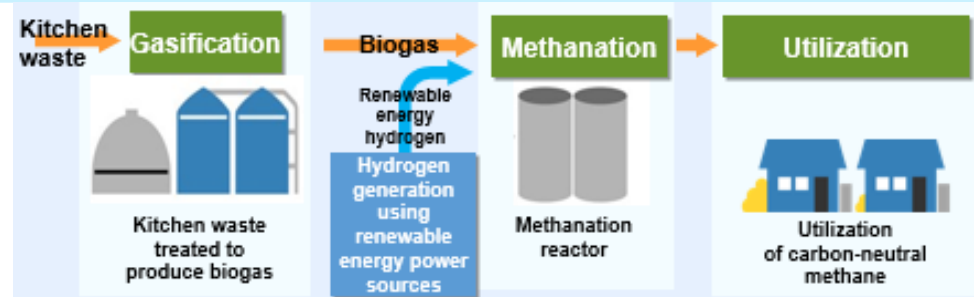
As our contribution to further growth of Osaka and the Kansai region, we will take part in the Expo 2025, an opportunity to showcase our decarbonization solutions. We aim to demonstrate that our technologies can create value and solve issues in building a sustainable future.

As an energy and services company, we plan to exhibit to the world our energy solutions to achieving a carbon neutral society in collaboration with local communities and governments.



Courtesy of Japan Association for the 2025 World Exposition Japan Association for the 2025 World Exposition

### Demonstrate our carbon neutral solutions in the Expo's Future Society Showcases



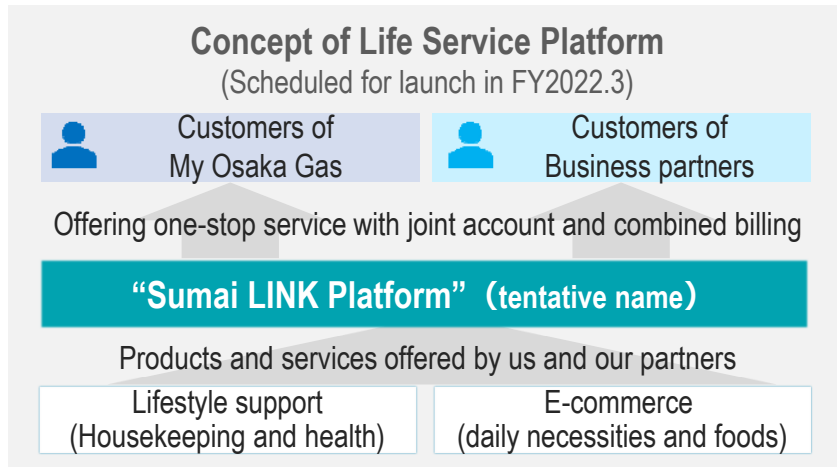
Demonstration of biogas methanation using kitchen waste\*

\* We submitted a proposal to the Japan Association for the 2025 World Exposition upon the solicitation of PLL proposals in January 2020.

## Our initiatives in detail – II (DX for solutions in the era of new normal)

### Home service platforms

- Offer optimal customer experience for each customer
  - ✓ Build a system that can provide optimal solutions both physically and digitally at optimal timing.



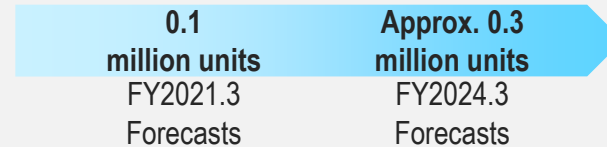
### IoT services

- Expand our line of IoT services designed for customers' facilities

**ツナガルde機能**  
Residential gas appliances

**D-Fire**  
IoT solution for plants

#### Target of IoT-connected gas appliances (Residential)



- Enhance collaboration with startups that own advanced technologies

### Promote DX by leveraging the Daigas group's collective strength

- Introduce new services utilizing Real Estate Tech for rental properties



App for residents  
(Palette Cloud, Inc.)



Smart Lock  
(Bitkey Inc.)

- Promote DX strategy and expand proprietary technology services by utilizing expertise of OGIS\*

**yonobi** Rule-based AI support tools

\*Osaka Gas Information System Research Institute Co., Ltd.

## Our initiatives in detail – III (lifestyle and businesses solutions in the era of the new normal)

### Meeting diversified needs of customers

- Expand customer accounts and enhance value per account
  - ✓ Offer a wider variety of rate plan options and home services to meet increased and diversified customers' demand at home.

#### Number of customer accounts

**9.3 million**

FY2021.3  
Forecasts

**10.0 million**

Further target we aim to  
achieve in the near future

- Provide total solutions to non-residential customers
  - ✓ Maximize value of ESP (energy service provider) including water treatment, environment and biotechnology in ventilation, air conditioning, and industrial heat.

#### ESP target

**To Increase profit by approximately 50%**

(FY2021.3→FY2024.3)

### Highly functional materials

- Provide high-quality material solutions
  - ✓ Develop new fine material products for the optical electronic materials market.
  - ✓ Expand sales of diverse processed products of high-functional activated carbon.

### Steady expansion of the real estate business

- Realize smart urban development by the entire Daigas Group in conjunction with community and real estate development
  - ✓ Build a portfolio with emphasis on housing in the Greater Tokyo Area.
  - ✓ Expand business domains by utilizing owned assets (to logistics, etc.).



## Our initiatives in detail –IV (North American business in International Energy Business)

### Wider use of natural gas

- Promote advancement in the Freeport LNG project and the shale gas development business (Sabine Oil & Gas Corporation)
- Enhance our capabilities of asset management in the IPP business

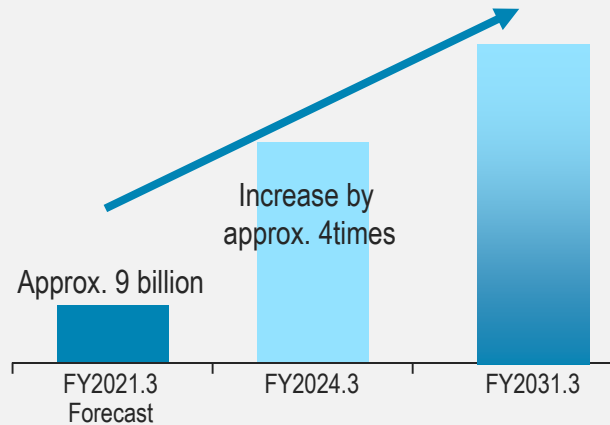


Train 1 of liquefaction facilities in Freeport LNG project (Courtesy of Freeport LNG Development, L.P.)

### Expansion of renewable energy business

- Expand renewable energy business in USA
  - ✓ Invest in renewable energy development businesses including SolAmerica Energy, LLC., and small-and medium-sized solar power businesses, etc.

### Forecast for profit\* in North America



\*Operating profit + Share of profit (loss) of entities accounted for using equity method

### Driving business development in North America

- Increase business control functions of OGUSA\* as an overseas regional headquarters

\*Osaka Gas USA Corporation

## Our initiatives in detail – V (Asia, Trading, decarbonization businesses in International Energy Business)

### Business expansion in Asia, a growing market

- Accelerate our business in Asia through our contribution to economic development and low carbonization with **renewable energy and energy infrastructure development**
  - ✓ Develop joint projects through collaboration with various partners.
  - ✓ Expand businesses of LNG terminal, gas supply, energy services, gas-fired thermal power generation, and renewable energy development.



### Competitive and flexible LNG procurement and optimization

- Expand the LNG procurement portfolio
- Optimize LNG procurement with our trading arm and fleet

### Decarbonization business

- Develop joint projects of CCS<sup>\*1</sup>/CCUS<sup>\*2</sup> and hydrogen in resource-producing countries including Australia and USA
- Establish a business model such as VPP<sup>\*3</sup> in UK
- Meet the needs for carbon neutral LNG supply
- Examine the potential of introducing green ammonia

\*1 Carbon dioxide Capture and Storage

\*2 Carbon dioxide Capture, Utilization and Storage

\*3 Virtual Power Plants

## Our initiatives in detail – VI (energy resilience)

### LNG terminals, power plants, and gas supply network

- Boost productivity by building smart factories out of existing LNG terminals
- Enhance both security and productivity with DX and technological development in network operations
- Improve disaster response capabilities with earthquake resistant gas infrastructures and subdivided gas supply area management

Subdivided areas* for earthquake countermeasures		
171	688	705
FY2021.3 Forecasts	FY2024.3 Forecasts	FY2031.3 Forecasts

\*Area Subdivision Plan is scheduled to be implemented in FY2022.3.

### Distributed power sources to enhance resilience

- Contribute to grid stabilization through optimal combination of renewable energy and distributed power sources
  - ✓ Develop VPP verification joint project featuring ENE-FARM.
  - ✓ Build a monitoring and controlling network for distributed power sources.



Residential fuel cells ENE-FARM

- Build power supply system for the blackout areas with renewable energy, gas cogeneration power, and micro-grid

## Key Initiatives

### I . Co-create value for a sustainable future

### SDGs we contribute to

1. Achieving a low carbon/carbon neutral society



2. Establishing lifestyles and businesses adjusted to the new normal



3. Enhancing resilience of customers and society



### II . Evolve our corporate group

### SDGs we contribute to

1. Enhancing Business Portfolio Management

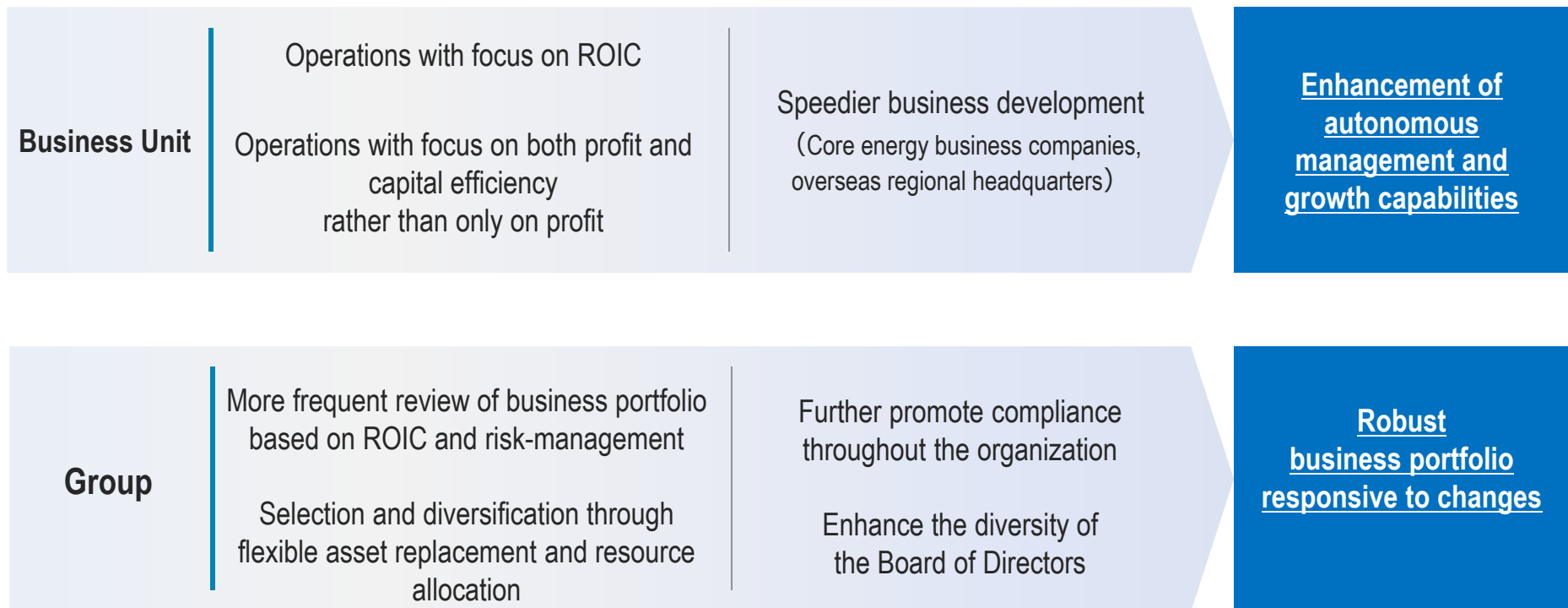
2. Promoting business transformation with DX

3. Maximizing value for each employee



# 1. Enhancing Business Portfolio Management

We strive to improve our business portfolio management and governance while enhancing profit earning capabilities of each business unit by introducing ROIC.



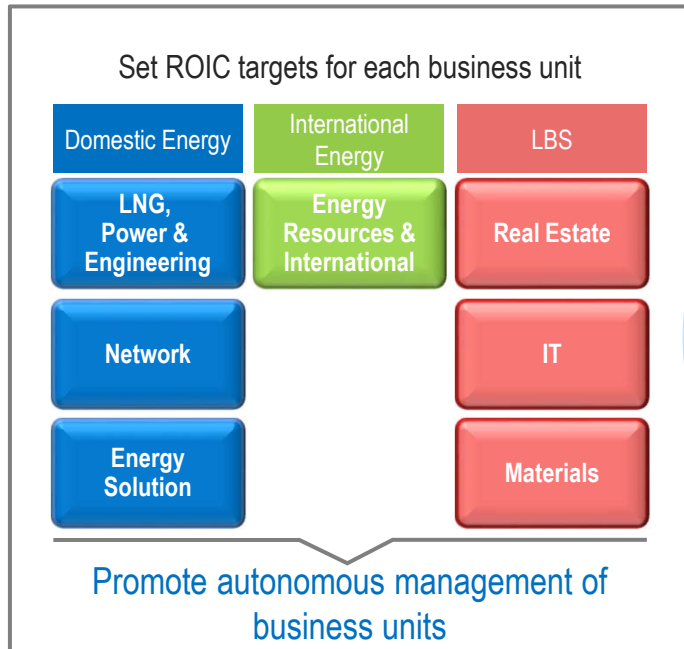
(Reference) Introduction of ROIC

An indicator of how efficiently we earn profits from assets associated with our business

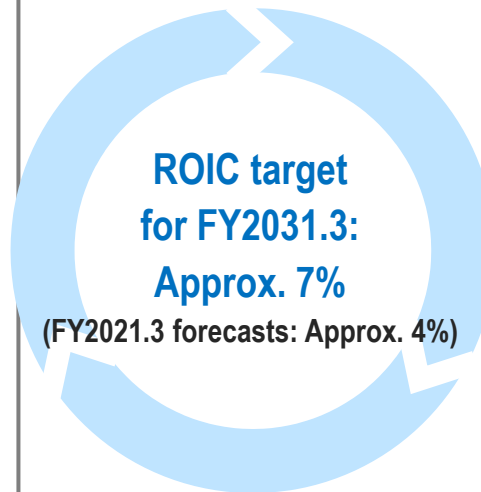
$$ROIC = NOPAT^{*1} / Invested\ capital^{*2}$$

Introduction of common indicators for each business unit and the Daigas group as a whole

Operation of Business Unit

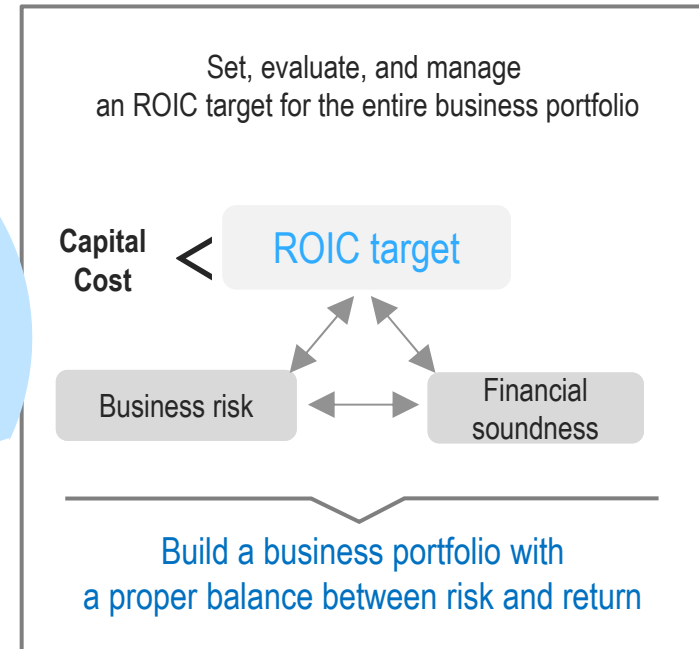


Periodic reviews



Resource allocation  
Assets replacement

Business portfolio management



\*1 NOPAT = Ordinary profit + Interest expenses - Interest income - Income taxes

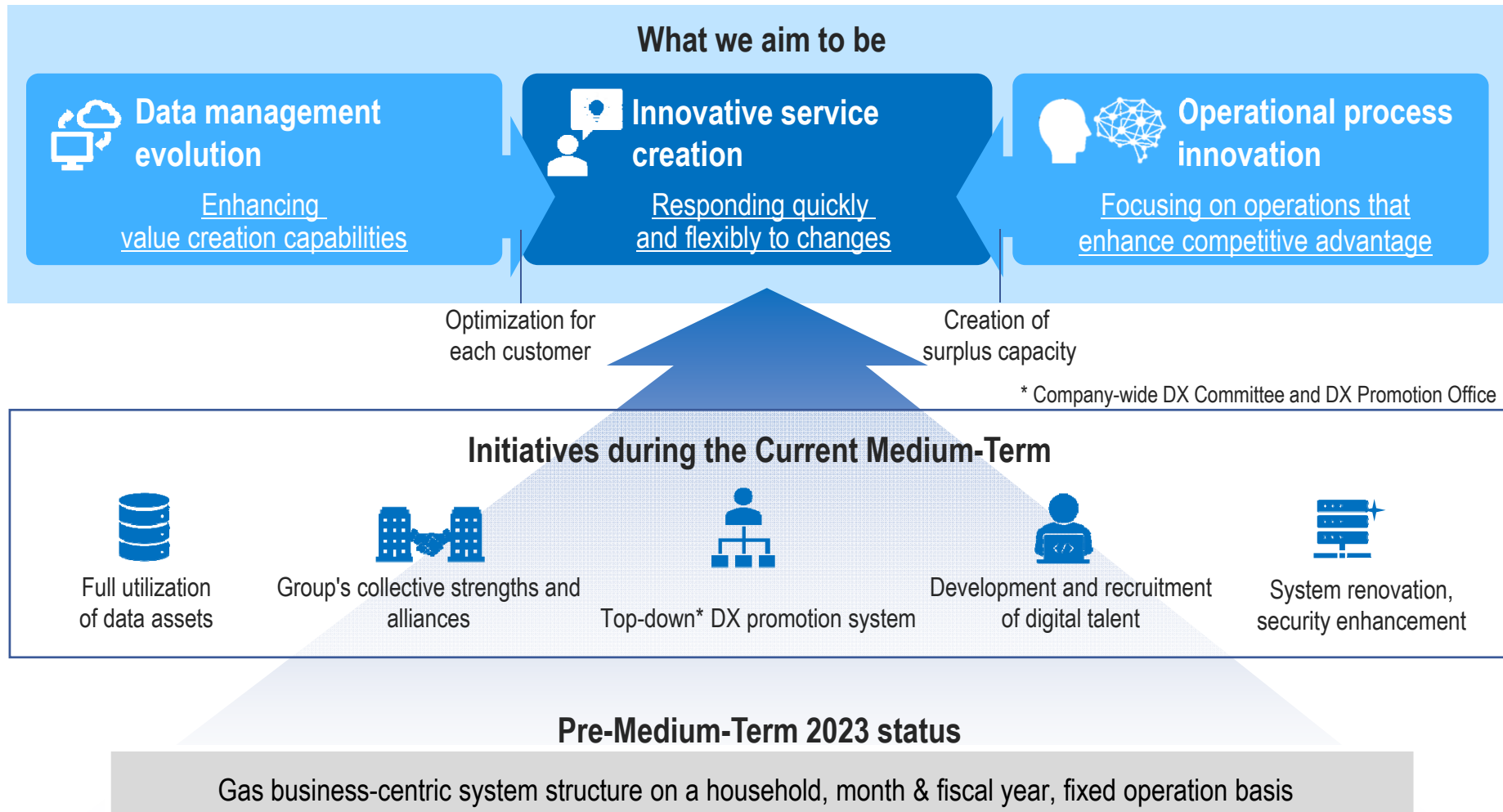
\*2 Invested capital= (Business Unit) Working Capital + Non-current assets

(Group-wide) Interest-bearing debts + Shareholders' equity (average of the beginning and the end of each fiscal year)

Interest-bearing debts excludes risk-free leased Liabilities to us.

## 2. Promoting business transformation with DX

We aim to achieve corporate evolution through business reform and innovation by increasing both quality and speed in customer interaction, digitization, and reform of all operations.



### 3. Maximizing value for each employee

We intend to build an organization with diverse talent and ways of work where employees can achieve personal growth through challenging tasks and feel a sense of fulfillment through social issue resolution.

#### Diverse talent and ways of work



- Promote **diversity and inclusion** for active participation of diverse talent
- **Reform business processes** with DX
- Improve the quality of work environment **regardless of locations**

#### Organization that provides personal growth and a sense of fulfillment



- **Enhance employees' engagement** through social issue resolution
- Foster the culture of **welcoming ambitions to take on challenges**
- **Maximize value for employees** by accelerating the appointment of the right person in the right place and securing close communications

Ensuring safety and promoting health maintenance



## Management Indicators of Medium-Term Management Plan 2023

We aim to enhance our earning capabilities through growth of our existing business and growth by investment and to ensure shareholder returns depending on our profit growth while maintaining our financial soundness. We also strive to achieve growth in each of our business segments, which are Domestic Energy, International Energy, and Life & Business Solutions.

Medium-Term Management Plan 2023  
Management Indicators

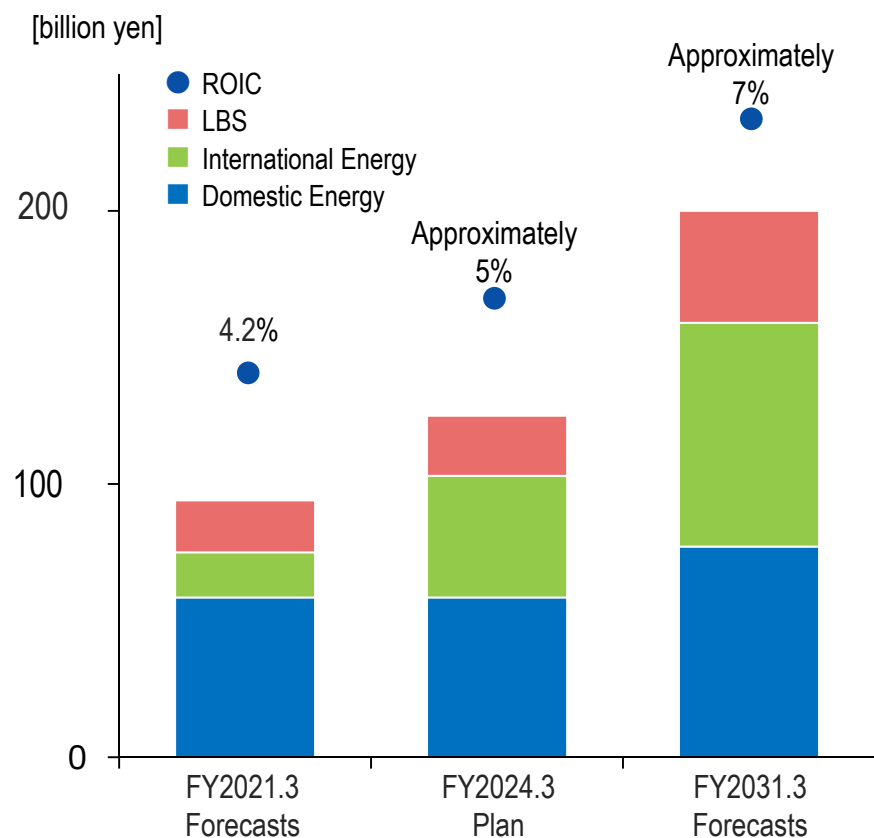
		FY2021.3 Forecasts	FY2024.3 Plan
Profitability indicators	ROIC (Reference) ROE	4.2% (7.0%)	Approximately 5% (Approximately 7.5%)
	Shareholder returns	Payout ratio	30.5%
Financial soundness indicators	D/E ratio*2	0.65	Approximately 0.7
	Shareholders' equity ratio*2	50.1%	Around 50%

\*1 Excluding short-time fluctuation factors that affect profits

\*2 Calculated with 50% of issued hybrid bonds as equity

\*3 Excluding temporary impact on domestic energy business.  
(Time-lag effect of Gas Business and Electricity Business)

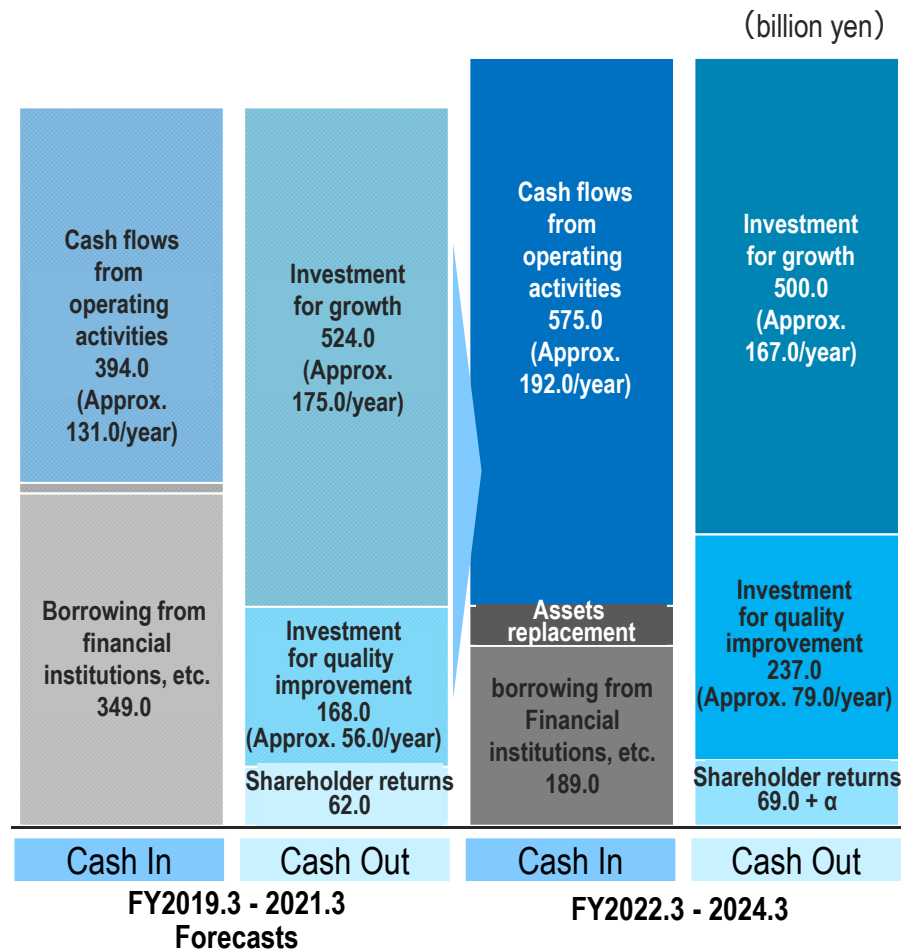
Forecasts for ordinary profit by segment\*3



## Management Indicators of Medium-Term Management Plan 2023

We aim to achieve proper capital allocation to secure sufficient funds for investment and shareholder returns while minimizing external borrowing by enhancing our capabilities to increase cash flows from operational activities as well as replacing our assets.

### Cash flows in this Medium-Term Management Plan



#### Cash In

Maintain financial soundness by reducing borrowing from financial institutions through asset replacement and growth of cash flows from operating activities.

(Increasing cash flows from operating activities by 50% from the previous period)

#### Cash Out

Implement strategic and selective investment for business growth in light of investment efficiency.

- Decarbonization area (Renewable energy in domestic and overseas, etc.)
- Areas where steady earnings contribution is expected (Business in North America, power source development, LBS business, etc.)
- New growth areas where strengths can be utilized, such as Asia

【Breakdown of investment for growth】 (billion yen)

Period	Domestic Energy	International Energy	LBS	Total
FY2019.3 - 2021.3 Forecasts	158.3	250.3	115.6	524.0
FY2022.3 - 2024.3	174.0	168.0	158.0	500.0

As for investment for quality improvement, we intend to increase investment in decarbonization, DX, and resilience enhancement.

We strive to distribute shareholder returns depending on our profit growth and in accordance with the Shareholder Return Policy\*.

\*Maintain stable dividends, a consolidated dividend payout ratio of 30% or higher

## Acceleration of ESG Management

We act in accordance with the Daigas Group Charter of Business Conduct\* in making contribution to achieving a sustainable society.

\*A revision of the Daigas Group CSR Charter, effective April 2021.

Charter of Business Conduct	Value for a sustainable future	Initiatives to create value for a sustainable future	Indicators	Goals	Fiscal Year to be achieved	
I	Creating value for customers	Establishing lifestyles and businesses adjusted to the new normal	Maintain and expand customer base	Number of customer accounts	10 million or more	FY2031.3
			Enhance customer relationship management	Customer satisfaction rate	90%	FY2024.3
	Enhancing resilience of customers and society	Maintain safety and quality levels	Number of serious accidents	Zero serious accidents	FY2031.3	
		Strengthen resilience of energy supply	Build a resilient energy supply facilities	Implementation of measures for disaster prevention and aging pipes	FY2031.3	
II	Contributing to the sustainability of the environment and society	Achieving a low carbon/carbon neutral society	Implement carbon neutral measures	CO <sub>2</sub> emissions of Daigas group	Net zero emissions	FY2051.3
			Provide clean energy and expand renewable energy value chain	Percentage of renewables in our power generation portfolio in Japan	Nearly 50%	FY2031.3
				Contribution to developing renewables capacity on a global basis	5 GW 2.5GW	FY2031.3 FY2024.3
			Promote advanced utilization of natural gas and environmental products	CO <sub>2</sub> emissions reduction contribution (compared to FY2017.3)	10 million t	FY2031.3
III	Engaging with and contributing to society	Promote communication with local communities	Number of our participations in local governments' activities (i.e. community development planning)	14 cases	FY2024.3	
			Number of joint efforts with local communities	170 times	FY2024.3	
IV	Respecting human rights	Build a responsible supply chain	Appropriate new supplier ratio	100%	FY2024.3	
V	Complying with laws and regulations	Promote the Group's compliance	Number of serious violations of laws and regulations	Zero serious violations	FY2024.3	
VI	Providing work environment that supports employees' personal growth	Create a workplace where employees can feel a sense of fulfillment	Attitude survey (Royalty Score)	Maintained and improved employee engagement	FY2031.3	
			Annual average hours of training per employee	Implementation of human resource development and work environment improvement	FY2031.3	
		Promote diversity and inclusion	Percentage of women in 1. executives, 2. members newly promoted to the middle management positions, and 3. new recruits for career-track positions	1. 20% or more 2. 30% or more 3. 30% or more	FY2031.3	

## Management Indicators for FY2022.3

(billion yen)	FY2021.3 Forecasts	FY2022.3 Plan	Rate of change
Net sales	1,330.0	1,405.0	+5.6%
Operating profit	88.5	80.5	-9.0%
Ordinary profit	100.0	95.0	-5.0%
Profit attributable to owners of parent	71.5	70.5	-1.4%
EBITDA	200.0	200.0	±0%
ROIC	-	4.4%	-
ROE	7.0%	6.6%	-
<b>Dividend forecast</b>	52.5 yen/share	55.0 yen/share	-
The time-lag effect (Gas)	+4.2	-9.8	-
The time-lag effect (Electricity)	+1.7	-2.1	-
Ordinary profit excluding time-lag effect	94.1	106.9	-

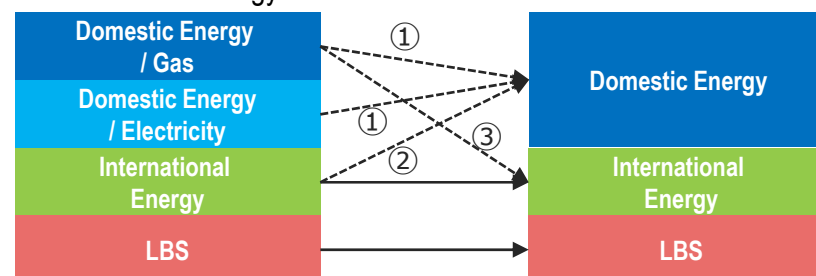
<FY2022.3 financial plan is based on the following assumptions.> (FY2021.3 Forecasts)

Crude oil price (all-Japan CIF price)	60.0 USD/bbl (41.3 USD/bbl)	Exchange rate	105.0 JPY/USD (105.8 JPY/USD)
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(billion yen)	Segment Profit		
	FY2021.3 Forecasts	FY2022.3 Plan	Rate of change
Domestic Energy (Electricity)	68.0 (15.0)	45.5 (15.0)	-33.1%
International Energy	16.5	31.0	+87.9%
LBS	19.0	19.0	±0%

### <Key changes>

- ① “Domestic Energy / Gas” and “Domestic Energy / Electricity” will be integrated into the “Domestic Energy”
- ② OGIT\* and its subsidiaries, which are included in the “International Energy,” will be integrated into “Domestic Energy” because of their all-in-one operation including energy sales, supply and demand management.
- ③ Osaka Gas’ operating expenses for International Energy, which is included in “Domestic Energy / Gas,” will be integrated into “International Energy”.



\*Osaka Gas International Transport Inc.

## Management Indicators for FY2022.3

(billion yen)	FY2021.3 Forecasts	FY2022.3 Plan
Investment for quality improvement	66.0	69.0
Investment for growth	190.0	190.0
Domestic Energy	85.0	70.0
International Energy	50.0	64.0
LBS	55.0	56.0
Total investment	256.0	259.0

Capital expenditures (included in the total)	203.0	196.0
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	FY2021.3 Forecasts	FY2022.3 Plan
Shareholders' equity ratio*	50.1%	49.3%
D/E ratio*	0.65	0.66

\*Calculated with 50% of issued hybrid bonds as equity

(million m <sup>3</sup> )	FY2021.3 Forecasts	FY2022.3 Plan	Rate of change
Gas sales volume (Non-consolidated)	6,917	6,956	+0.6%
Residential	1,817	1,695	-6.7%
Non-residential	5,100	5,261	+3.2%
Gas sales volume (Consolidated)	6,953	6,987	+0.5%

(GWh)	FY2021.3 Forecasts	FY2022.3 Plan	Rate of change
Electricity sales volume	16,567	18,024	+8.8%

Sensitivity to fluctuations in crude oil prices and exchange rates to consolidated ordinary profit

Crude oil price +1 USD/bbl	-0.66 billion yen
Exchange rate +1 JPY/USD (depreciation of the yen)	-0.46 billion yen

**Disclaimer**

Certain statements contained herein are forward-looking statements, strategies, and plans, which reflect our judgment based on the information so far available. Actual results may differ materially from those discussed in such statements. Among the factors that could cause actual results to differ materially are: economic trends in Japan, sharp fluctuations in exchange rates and crude oil prices, and extraordinary weather conditions.

## Domestic Energy Business (residential sector)

We aim to improve the quality of the optimal customer experience that we offer, by utilizing IoT and other digital technologies to meet customers' increasingly diversified needs and preferences.

### Low carbon/carbon neutral society

- Promote a wider use of ENE-FARM, renewables such as solar power, and storage batteries at customer sites.
- Contribute to a wider use of renewable energy through VPP operation including ENE-FARM output adjustment.
- Offer efficient energy-saving tips through IoT utilization.



### Utilization of digital technologies

- Offer products and services that meet the needs of each customer at an optimal timing by utilizing digital technologies as well as conventional face-to-face contact points.
- Launch a new service of home service platforms, as well as advanced and diversified services of My Osaka Gas and “Tsunagarude” series.
- Renovate existing systems for speedier proposals of optimal solutions for customers and for drastic review of operations.
- Improve the maintenance accuracy based on data analysis of failure diagnosis and prediction.

ツナガル de 給湯器



### Enhancement of existing services

- Expand rate plan options in light of increased demand at home and diversified lifestyles and preferences.
- Increase options such as Sumikata plus, in order to meet the customers' home needs.
- Offer a wider variety of services for the rental housing market by utilizing management apps, smart locks, and other real estate tech.
- Expand service options in a wider area such as the greater Tokyo area, and increase customer accounts through M&A.



## Domestic Energy Business (non-residential sectors)

We provide work environment for customers that increases business efficiency by utilizing a variety of energy solutions and IoT services to meet the changing needs of our customers and society.

### Low carbon/carbon neutral society

- Offer fuel conversion to natural gas for large-scale in-house power generation in a wider area.
- Promote renewable energy-based solutions such as solar power and biogas that contribute to achieving a carbon neutral society.
- Achieve VPP operation and enhance resilience with co-generation systems.



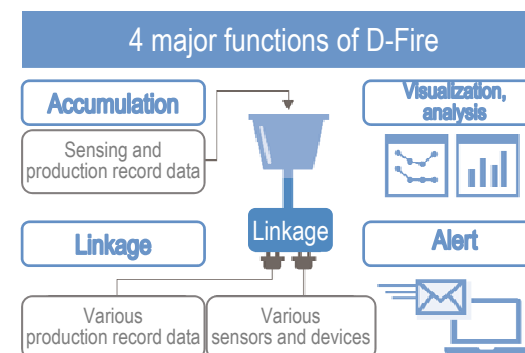
### Utilization of digital technologies

- Offer improved productivity and optimization of customers' entire plants by introducing D-Fire.
- Improve the advantages of energy services such as automated energy-saving control and O&M.



### Enhancement of existing services

- Develop businesses in a wider area through further expansion of partnership and alliances.
- Expand rate plan options to meet customers' needs.
- Offer a wider variety of services in the ESP with low carbon/decarbonized products, water treatment, and chemicals, etc.
- Create new value for customers' businesses in the greater Tokyo area through CD Energy Direct Co., Ltd.





## Domestic Energy Business (gas production and engineering)

We strive to contribute to achieving the business development and comfortable lifestyles of customers through our activities for a sustainable and low carbon/carbon neutral society in our stable gas production.

### Continuation of stable gas production

- Implement various measures for stable operation of LNG terminals.
- Improve anti-seismic measures that contribute to ensuring safety and continuation of gas supply in case of large-scale earthquakes.



Senboku LNG Terminal II

### Improvement of productivity at LNG terminals

- Enhance the operational efficiency of gas production by developing smart factories.
- Enhance the operational efficiency of maintenance by using drones and AI.



Central Control Room (Senboku LNG Terminal II)

\*It operates Senboku LNG Terminal I and II in an all-in-one way.

### Expansion of industrial gas business

- Develop the carbonic acid business in a wider area.
- Expand the businesses in Vietnam and other Asian countries.



Nagaoka Carbonic Co., Ltd. liquefied carbon dioxide and dry ice production plants

### Expansion of engineering business

- Build new core businesses by investing in LNG terminals mainly in Asia and shifting to environmental engineering (HYSERVE, biogas, etc.) that contribute to achieving a low carbon/carbon neutral society.
- Move up a gear to increase orders of LNG terminal consulting services and to tap new markets.



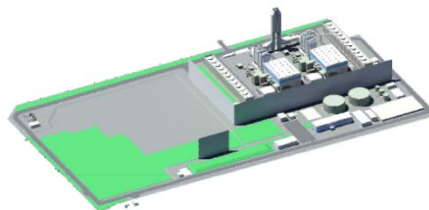
Biogas Upgrading System (Thailand)

## Domestic Energy Business (natural gas-fired power plants and renewables)

We plan to build a business model of an electricity value chain with renewables and VPP in order to contribute to increasing 5GW of renewables by FY2031.3.

### Power source development and electricity procurement

- Expand power source development and ownership as well as power procurement in order to achieve 5GW of renewables development contribution on a global basis in FY2031.3.
- Build a price competitive and environmentally friendly power portfolio by developing thermal power and renewable energy power sources.
- Balance biomass, solar and wind power in our renewables portfolio in light of the characteristics of each power source.
- Ensure on-schedule construction of facilities and system building for O&M and personnel training, for the Himeji natural gas-fired thermal power plant scheduled for COD in January 2026.



Rendering of Himeji natural gas-fired thermal power generation

### Supply-demand management, electricity trading, and service development

- Enhance optimization proposals (securing non-FIT renewable energy sources, forecasting power generation, and supplying renewable energy) in line with customers' needs for renewable energy.
- Develop new business models featuring demand response and VPPs such as storage batteries and EVs, and expand VPP resources.



Hirogawa Myojin-yama wind power plant

## Domestic Energy Business (gas pipeline network)

We strive to enhance the stability and safety of gas supply while offering gas and new services to meet demand in a wider area in order to become the most trusted utility company by society and customers.

### Enhancement of stability/safety and productivity of gas supply operation

- Increase the robustness and economic efficiency of our gas supply facilities through the maintenance of the mains such as Amagasaki–Kumiyama Line, and the systematic measures for aging facilities.
- Strengthen disaster prevention measures for early recovery from natural disasters such as earthquakes while preventing secondary disasters.
- Enhance both safety and productivity through DX and technological development.
  - ✓ Introduce automation, remote control, and frequent operation of construction work, maintenance management, and inspection by utilizing pipeline absolute coordinates and smart meters.



Amagasaki–Kumiyama Line  
(Construction status)



Smart Construction

### Wider use of natural gas

- Contribute to achieving a low carbon/carbon neutral society by promoting a wider use of gas through pipeline development in unconnected areas.
- Contribute to regional development through joint efforts with local governments, such as promoting education on disaster prevention and food, as well as to community revitalization in collaboration with local communities.

### Enhancement of business foundations

- Strengthen business management for legal separation of our network business schedule for FY2023.3.
- Provide new services in Japan and overseas that improve safety and productivity in the infrastructure business by utilizing know-how and technology accumulated in the network business in Japan.

## International Energy Business (including LNG trading)

We are committed to reducing carbon emissions throughout our natural gas value chain, expanding our renewable energy business, and developing decarbonization business in order to provide cleaner energy and enhanced lifestyles to customers around the world.

### Upstream business (resource development)

- Achieve a sustainable development through profitability enhancement and continuous investment in our shale gas development business in USA (Sabine Oil & Gas Corporation).
- Maintain stable operation of our upstream businesses in Australia (Ichthys LNG Project and Gorgon LNG Project).
- Examine opportunities of participating in decarbonization businesses (CCS/CCUS and hydrogen) through alliances in resource producing countries.

### LNG Trading

- Achieve stable procurement of competitive LNG for our domestic gas and power businesses.
- Expand and optimize our trading business through our trading arm in Singapore (OGEST\*1) and shipping company (OGIT\*2).
- Examine carbon neutral LNG procurement possibilities.

\*1 Osaka Gas Energy Supply and Trading Pte. Ltd   \*2 Osaka Gas International Transport Inc.

### Freeport LNG project in USA (natural gas liquefaction terminal)

- Achieve continued stable operation of the natural gas liquefaction terminal
- Maintain our enhanced energy security by stably operating Freeport LNG as one of our diversified LNG sources.



Sabine Oil & Gas Corporation  
(Shale gas well drilling site)



Train 1 of liquefaction equipment  
in Freeport LNG project  
(Courtesy of Freeport LNG Development, L.P.)

## International Energy Business

We are committed to reducing carbon emissions throughout our natural gas value chain, expanding our renewable energy business, and developing decarbonization business in order to provide cleaner energy and enhanced lifestyles to customers around the world.

### Power generation

- Expand our solar power development businesses in USA and Thailand and contribute to development of renewables on a global basis through expansion of our overseas subsidiaries.
- Achieve flexible and steady operation of high-efficiency natural gas-fired thermal power plants that contribute to stabilizing demand-supply balance required in markets with increasing renewables.
- Build new demand-side balancing businesses.
- Examine new business opportunities such as hydrogen.

### Energy infrastructure development and gas sales

- Apply our know-how accumulated in the gas business in Japan to business development in Asian countries, which are rapidly growing natural gas markets, in order to contribute to their economic development, energy saving, and low carbonization.
- Develop energy infrastructure in Asian countries in partnership with the state-owned and local private companies in each country.



Solar power plant in USA  
(SolAmerica Energy, LLC)



Fairview natural gas-fired  
thermal power plant in USA



City gas supply in Phu My 3  
Specialized Industrial Park in Vietnam

## Life & Business Solutions (LBS) Business

We aim to contribute to achieving an environmentally friendly, safe, convenient, and comfortable society by utilizing our technologies and high-quality solutions in each business field.

### Real Estate Business



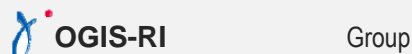
- Acquire/develop high-grade properties and develop large-scale projects such as the Umekita 2nd Project.
- Expand business domains by leveraging owned assets.
- Improve real estate earnings from the Kyoto Research Park area and expand the businesses to a wider area.
- Increase orders for external construction and facilities management by strengthening activities of FMS\* at OGFA.

\*Facility Management Service



SCENES Tsukaguchi

### IT Solutions Business



- Drive the Daigas Group's DX.
- Maintain, enhance and expand the business for manufacturing and finance, and expand the high-value-added businesses by utilizing proprietary technologies such as AI and cloud data analysis.
- Enhance functions of existing solutions such as integrated certification management, system linkage and file transfers, and create new solutions.
- Complete developing systems for legal separation of our network business.



Image recognition solution utilizing AI

### Materials Solutions Business



- Expand profitability and business scale by shifting to high-value-added products in the activated carbon business and increasing capital expenditures in Jacobi Group.
- Develop new products in the fine materials business for the growth of the optical electronic materials market.
- Boost market share by increasing promotions in the preservatives business.
- Expand sales in materials fields such as resin compounds in carbon fiber materials business.
- Increase efforts to expand global sales of Mizusawa Industrial Chemicals's mainstay products such as Silton.



Activated Carbon



Fluoren derivatives

## Technological Development

We intend to accelerate technological development and create businesses in new growth fields in order to enhance our strengths in energy business field and to contribute to achieving a carbon neutral society.

### Responding to intensified competition in energy markets

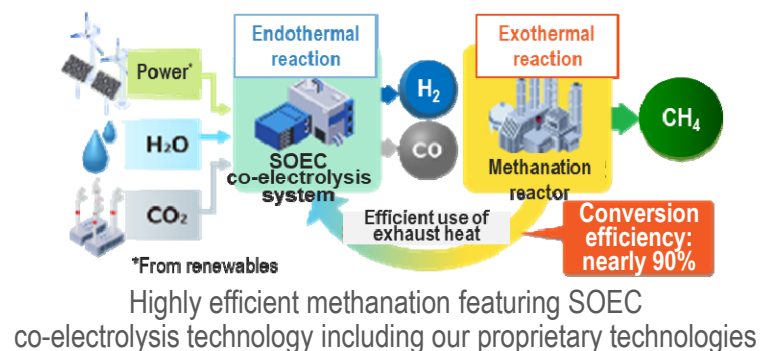
- **Introduce advanced use of energy**
  - Develop higher-efficiency and downsized SOFC (ENE-FARM).
  - Enhance storage battery technologies.
  - Achieve supply-demand management and operation service development for the launch of new electricity markets.
- **Strengthen business foundations**
  - Improve efficiency and reduce costs across the entire value chain with AI and IoT.



Storage batteries

### Contributing to achieving a low carbon/carbon neutral society

- **Short-term initiatives**
  - Increase sales of hydrogen producing equipment (HYSERVE).
  - Expand biogas upgrading business targeting Southeast Asia.
- **Medium- to long-term initiatives**
  - Develop carbon neutral technologies such as high-efficiency methanation and new hydrogen production.
  - Examine green ammonia introduction possibilities.



### Creating new businesses in growth fields

- **Initiatives in the health sector**
  - Develop manufacturing technology and promote sales of ketone bodies (3HB) as raw materials of health foods.
  - Develop multi-purpose gas sensors that contribute to health and safety.
- **Initiatives in the environmental field**
  - Promote manufacturing and sales of cellulose fiber, a new plant-derived materials.
  - Promote manufacturing and sales of radiant coolant that can be cooled at zero energy.



Ketone bodies (3HB)



Radiant coolant (film)