



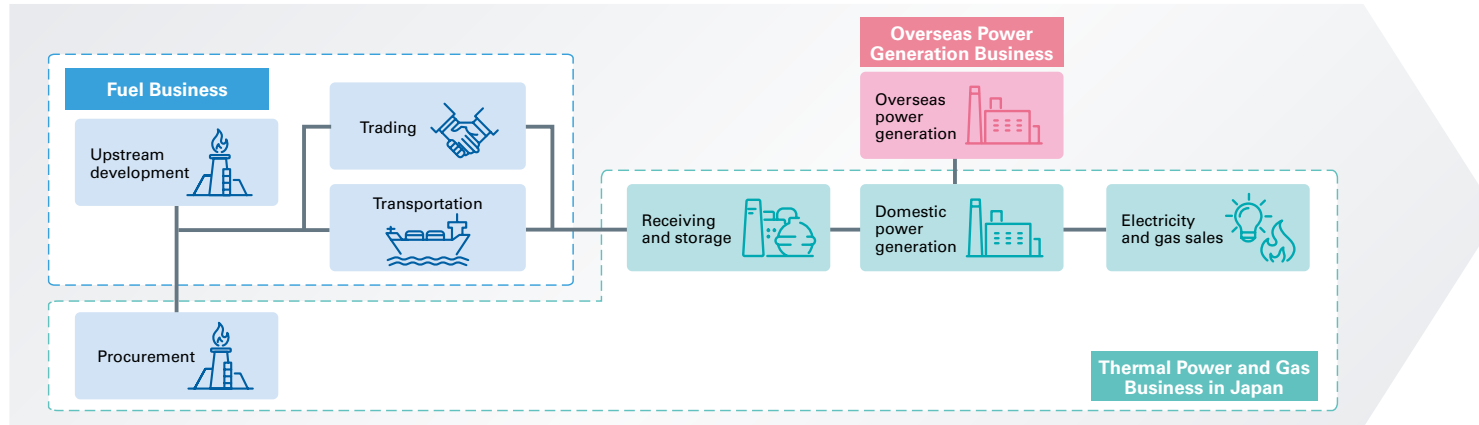
## Strategies

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# The Management Capital Behind Our Value Chain and Growth

There are three areas of the company that manage JERA's value chain framework: Business Development, which devises and operates several projects on a global scale; Optimization, which is responsible for establishing the best possible energy operations throughout the value chain; and the pairing of O&M (operation and maintenance) and Engineering (development and construction), which is located in Japan's Kanto and Chubu regions to provide a stable power supply to the country.

The relationships between these three business areas and our three business segments—fuel, overseas power generation, and domestic thermal power and gas—are as follows:



The Management Capital Behind Growth			Fuel Business	Overseas Power Generation Business	Thermal Power and Gas Business in Japan
<b>Human Capital</b>	<b>Intellectual Capital</b>	<b>Natural Capital</b>	LNG transaction volume*1 ≈ <b>37</b> MTPA	Overseas power generation capacity*4 ≈ <b>10.6</b> GW	Number of LNG terminals*3 <b>11</b>
<b>Financial Capital</b>	<b>Manufacturing Capital</b>	<b>Social Capital</b>	Countries involved in LNG procurement*1,*2 <b>16</b>	Overseas business locations <b>10+</b> Countries	Power generation capacity*4 ≈ <b>66</b> GW
			LNG Cargo Fleet <b>19</b> carriers	Number of overseas projects ≈ <b>30</b>	Power generation output*1,*4 <b>247.3</b> TWh
			Number of employees*5 <b>390</b>	Renewable energy output share ≈ <b>1.7</b> GW	Thermal power plants*4 <b>26</b>
			Net sales*6 <b>2,995.5</b> billion yen	Net sales*6 <b>4.1</b> billion yen	LNG storage tank capacity*3 <b>6.65</b> million kl
<b>Business Development (p.31)</b>	We are building an optimal asset portfolio and increasing earnings by expanding the scale and scope of the value chain through new business development and restructuring existing assets.	Fuel upstream / LNG procurement / transportation		Development of overseas power generation, value chains, and renewable energy	Domestic power generation
<b>Optimization (p.33)</b>	We aim to achieve efficient, optimal operation by consolidating and controlling the entire energy value chain, from fuel procurement and transportation to power generation and electricity and gas sales.	Short-term fuel procurement / trading			Electricity and gas sales
<b>O&amp;M Engineering (p.35)</b>	We ensure the safe, affordable, and flexible operation of our fuel-receiving and storage terminals and thermal power plants.				O&M Engineering Technical and third-party sales

As of March 31, 2022

\*1. As of FY 2021 \*2. Represents the number of countries that exported LNG to our terminals \*3. Includes joint projects with other companies in Chita and Yokkaichi \*4. Includes in-progress construction. Domestic figures exclude joint thermal power holdings.

\*5. Does not include corporate employees \*6. Total net sales when reconciled: -1,683.8 billion yen

# Business Strategies

## Business Development

### Our Business Mission

We are a group of project development and asset management professionals who are globally expanding our renewable energy business, as well as our LNG value chain business, from fuel upstream operations to power generation. We are also up and running with initiatives in the hydrogen and ammonia business focused on achieving a decarbonized society. We are already working on various projects in Japan, Asia, North America, Australia, Europe, and the Middle East. The business environment surrounding energy is rapidly changing in terms of policies, supply and demand structures, and business models in each region, and there have also been remarkable advances in decarbonization-related technologies. In this business environment, it is important to have a customer-driven perspective that captures the circumstances and needs in each country, as well as to find solutions and areas for improvement by having diverse talent from around the world bring their ideas and know-how to the table to engage in frank discussions.

Going forward, we will provide cutting-edge solutions in Japan and other countries by leveraging cross-regional collaboration and the knowledge and expertise we have gained from our projects. At the same time, we will work with like-minded partners in Asia, where growth is particularly rapid, to contribute to the stable supply and decarbonization of energy.



**Yukio Kani**  
Corporate Vice President and Managing  
Executive Officer, Director  
Business Development

Opportunities	Risks	Strengths
<ul style="list-style-type: none"> <li>• Global trend toward decarbonization</li> <li>• Growing energy demand, especially in Asia</li> <li>• Expansion of development opportunities for renewable energy and low/carbon-free thermal power</li> <li>• Technological advances toward zero-emission thermal power</li> </ul>	<ul style="list-style-type: none"> <li>• Increased uncertainty in global energy policies and supply-demand structures</li> <li>• Increased geopolitical risk</li> <li>• Delays in establishing an environment for realizing zero-emission thermal power</li> </ul>	<ul style="list-style-type: none"> <li>• One of the world's largest LNG transaction volumes</li> <li>• Extensive value chain, from fuel upstream activities to power generation and sales</li> <li>• Credibility from having been selected by partners from around the world seeking a company engaged in large-scale business development</li> </ul>

### Measures Related to Our Business Strategy

#### Building a decarbonized fuel supply chain

We are engaged in collaborative work to build and expand supply chains for hydrogen and ammonia, which are decarbonized fuels. We are also engaged in international bidding to procure ammonia and carbon capture and storage (CCS) efforts.

#### Developing renewable energy

We are promoting large-scale renewable energy by setting the goal to develop 5 GW of capacity by FY2025 and participating in offshore wind and solar power generation in Japan and abroad.

#### Establishing roadmaps for decarbonization in Asia

We are conducting research, providing support, and collaborating with partners to establish decarbonization roadmaps tailored to the different environments in each country.

#### Providing a stable supply of electric power in Japan

We are contributing to a stable power supply by replacing older thermal power plants with high-efficiency ones and restarting idle thermal power plants when the supply-demand balance is tight. We are also developing our fuel upstream business and concluding long-term contracts to ensure a stable LNG supply.

### FY2021 Milestones

- Collaboration and investment to build and expand our hydrogen and ammonia supply chain (Japan, Australia, the US, and other countries)
- Environmental impact assessment procedures for offshore wind power in Japan (Akita and Yamagata prefectures)
- Basic agreement on business alliance with West Holdings Corporation for domestic solar energy development
- Research and support toward developing a decarbonization roadmap for Indonesia's power sector
- Restarting idle thermal power plants to ensure supply capacity (Anegasaki Thermal Power Station Unit 5 and Sodegaura Thermal Power Station Unit 1)
- Development of fuel upstream business (acquisition of a stake in Australia's Barossa gas field and investment in Freeport LNG in the US)



## Domestic Power Generation

In an effort to both enhance our domestic competitiveness and reduce environmental impact, we are taking initiatives that include taking the infrastructure of our existing thermal power generation facilities and rebuilding maximum-efficiency models, adopting cutting-edge exhaust gas treatment equipment, and spearheading the introduction of carbon-zero hydrogen and ammonia fuels. We are also working to deliver a portfolio of power solutions consistent with energy and environmental policies and achieve a balance between the stability and sustainability of our energy supply.



## Renewable Energy

We aim to become the number one company in Asia for offshore wind power, which is expected to grow significantly in the future. Currently, we have several projects at different stages in Taiwan, and in the future, we will strengthen our efforts to win contracts for projects in Japan, expand our business to other countries, and work on the new technology of floating offshore wind. In addition to offshore wind power, we will actively pursue our solar power generation business in Japan and expand our solar and onshore wind power generation businesses in North America, India, and other countries. At the same time, we will also work on battery storage solutions in each country, which will contribute to stabilizing the supply-demand balance.



## Overseas Power Generation and Gas-to-Power

We have approximately 30 projects in more than 10 countries around the world, and we are utilizing the experience we have gained from each of them to engage in business development. Our aim is to expand development through strategies tailored to the needs of each market in North America, Asia, and the Middle East. In addition, we believe the key to our future growth will be seeking out gas-to-power projects, which integrate everything from fuel procurement to power generation.



## LNG and Next-Generation Fuel Value Chain

The LNG business has a transaction volume of  $\approx 37$  million tons per year. We participate in the entire value chain from upstream development to transportation, trading, and power generation, and we strive to secure a stable and competitive LNG supply. By leveraging our expertise in LNG and the world's largest off-take capacity, we aim to build a supply chain for hydrogen and ammonia to achieve zero-emission thermal power generation, supply it to other industries, and expand our business globally.



## Main Business Indicators

Domestic replacement and development  
Steady progress toward development of  
 $\approx 7$  GW of capacity at 5 sites

Renewable energy output share  
**1.7** GW

LNG procured by upstream business  
**12** MTPA

## Featured

### Strengthening Our Offshore Wind Power Generation Business

We are investing in overseas projects in various stages of operation, construction, and development to simultaneously acquire the know-how necessary for the development of our offshore wind power business. We are also hiring professional talent that includes managers of offshore wind power development companies from Europe, a leading market for such projects.



# Business Strategies

## Optimization

### Our Business Mission

In order for us to properly conduct our business and continue to meet the expectations of our stakeholders, it is essential that we engage in smooth value chain management from fuel procurement to transportation, receiving, power generation, and sales. We will enhance our execution capabilities in each of the business areas that make up the value chain while, at the same time, creating new services and providing solutions to our customers, and we will take a bird's eye view of the entire value chain to manage risk appropriately within the ever-changing business environment.

Backed by one of the largest fuel transaction volumes in Japan, we have built a strong and extensive network in the global market. The business environment is undergoing significant changes, including fuel market volatility resulting from shifting international conditions and increasingly complex power operations due to the introduction of diverse power sources. However, we will help realize a society that can grow sustainably by solving challenges and continuing to provide a stable energy supply through flexible responses throughout the value chain.



**Sunao Nakamura**  
Senior Managing Executive Officer  
Optimization

Opportunities	Risks	Strengths
<ul style="list-style-type: none"> <li>• Expansion of competition in electricity and gas sales</li> <li>• Market creation and new system introductions</li> <li>• Fluctuations in resource prices</li> <li>• Fluctuations in domestic electricity demand</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of coordination with the expansion of renewable energy</li> <li>• Negative impact of geopolitical risks on fuel procurement</li> <li>• Tight domestic electricity supply and demand</li> </ul>	<ul style="list-style-type: none"> <li>• Competitive and flexible procurement portfolio</li> <li>• Extensive market intelligence centered on JERAGM</li> <li>• Expertise in electricity and gas market transactions</li> <li>• Flexibility in LNG terminal and power plant operations and fuel receiving</li> <li>• One of the world's largest LNG transaction volumes</li> </ul>

### Measures Related to Our Business Strategy

#### Taking action to ensure stable supply

We are working to optimize the entire value chain in order to minimize the impact of growing power demand fluctuations caused by recent uncertainties. Our efforts include maximizing thermal power generation and fuel operations and utilizing trading networks by means of JERAGM. In preparation for times of peak power demand, we will continue to strengthen our response systems and participate in national efforts to prevent supply issues. Our efforts include coordinated capacity adjustments, participation in public auctions to secure extra power capacity, cooperation in national fuel monitoring plans to better verify the risk of power shortage, new entry into adjustment markets, and better utilization of the existing power market.

#### Strengthening supply stability and securing profitability through fuel trading

We are enhancing our optimization through JERAGM. By engaging in trade that connects the Pacific and Atlantic markets, we are able to flexibly address Japan's massive and fluctuating demand for LNG and coal while also efficiently seizing profit-earning opportunities in the market by leveraging our commercial flow. In this way, we are able to achieve both enhanced fuel supply stability and profitability.

### FY2021 Milestones

#### Optimal power generation and fuel operations

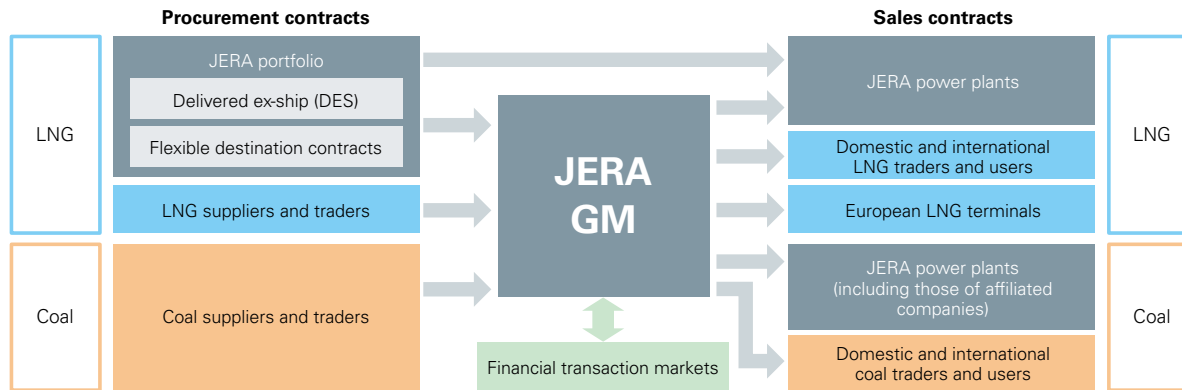
- Actual fuel transaction volume in FY2021: 37 million tons of LNG and 43 million tons of coal
- In FY2021, we procured a record-high additional 4.5 million tons of LNG through JERAGM and took various measures, including securing and maintaining a large LNG inventory.
- During times of peak demand in Japan, we operated multiple power plants at increased output in accordance with instructions from power transmission and distribution companies.

#### Entry into new markets

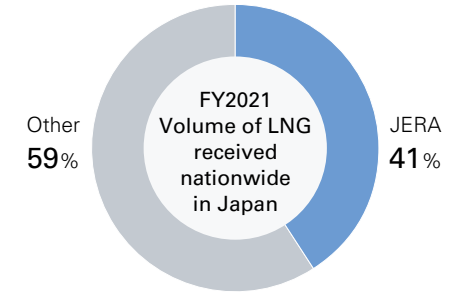
- We placed bids in new adjustment markets and offered power through the markets.
- We used the futures market as a risk-hedging instrument and executed futures contracts.

## JERAGM's Role in Fuel Trading

We pursue arbitrage profit by leveraging contract flexibility and market intelligence while meeting our volume fluctuation needs.



## Main Business Indicators



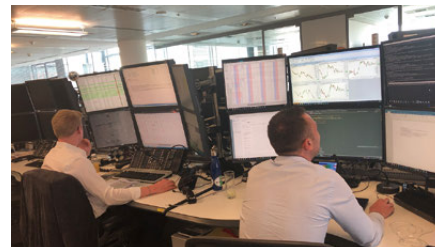
## Short-Term Fuel Procurement

We have built a fuel portfolio with excellent short-term price competitiveness that also responds well to volume and price fluctuation risks by leveraging our world-class procurement capabilities. ("Short-term" in terms of LNG means four years or fewer.) Competitive fuel procurement allows us to contribute to the supply of inexpensive electricity and gas in Japan, and we are working on expanding our fuel trading business based on the flexibility we have gained.



## Fuel Trading

JERAGM is headquartered in Singapore and has locations in London, Amsterdam, Tokyo, and Baltimore. Via this joint venture and its ~300-strong team, we engage in trading operations in the LNG, coal, and freight markets. We also look to optimize the entire value chain through asset-backed trading supported by the breadth of world-class fuel procurement covered by JERA and our French colleagues at EDF.



## Electricity and Gas Sales

We are able to meet the diverse needs of our customers and provide a stable supply of electricity and gas by manifesting supply capabilities backed by our track record and experience in large-scale fuel contracts and operations. We also contribute to a stable domestic power market by supplying as much electricity as possible to the wholesale market. Furthermore, we play a role in the future of the domestic power market through participation in new markets, such as the capacity and adjustment markets.



# Business Strategies

## O&M Engineering

### Our Business Mission

O&M Engineering is a unit of ≈ 3,000 engineers who have been delivering electric power for years through power plant and fuel terminal operation and maintenance (O&M). We coexist with local communities and will continue to support manufacturing and provide a comfortable way of life in our communities.

We have developed the “JERA O&M Way,” which achieves both cost competitiveness and market responsiveness by combining our digital strengths with the kaizen and technological strengths we have cultivated through our experience providing a stable power supply. By continuing to refine this approach, we aim to achieve plant O&M services that are overwhelmingly superior to our competitors in Japan and overseas. Furthermore, we work to transform our operations through digital power plants and to achieve zero-emission thermal power toward a decarbonized society, and we pursue these initiatives and others with safety always as our highest priority.

By deploying these efforts as part of the JERA O&M Way, we aim to become a world-class O&M player able to offer our customers enhanced value.



**Tetsuya Watabe**  
Senior Managing Executive Officer  
O&M Engineering

### Business Strategy Assumptions

Opportunities	Risks	Strengths
<ul style="list-style-type: none"> <li>• Electric power market competition</li> <li>• Expansion of digitization</li> <li>• Expansion of renewable energy</li> <li>• Support for zero-emission thermal power</li> </ul>	<ul style="list-style-type: none"> <li>• Risk of natural disasters such as major earthquakes</li> <li>• Disruption of operations caused by equipment problems or accidents</li> </ul>	<ul style="list-style-type: none"> <li>• A group of engineers with the experience and expertise to meet complex challenges</li> <li>• Opportunities and experience operating an abundant power supply portfolio</li> </ul>

### Measures Related to Our Business Strategy

#### Safety Initiatives

As the world’s first company to take on the challenge of fuel ammonia, we will leverage our experience with Japan’s largest existing thermal power operations to establish world-class safety practices and provide an infrastructure for supplying clean energy to Asia and the world.

#### Zero-Emission Thermal Power Initiatives

We will accelerate our efforts to launch fuel ammonia tests at Hekinan Thermal Power Station Unit 4 at a co-firing rate of 20% during FY2023. This will be a world first for a large commercial unit and help progress toward a decarbonized society by demonstrating our technical capabilities throughout the zero-carbon fuel value chain.



#### Digital Power Plant Promotion

We will promote the implementation of digital power plants, which provide higher lifecycle value by using the power of the cloud to gather information on the plants and their employees, analyze real-time data on variables like facilities status and market trends, and deliver quick and agile operational responses based on AI forecasts.



#### Supply Security Initiatives

In our position as Japan’s largest power producer, we look to ensure a stable power supply through measures that include steady operation of our active power plants, restarting idle thermal power plants during peak demand, and adaptive responses to regular inspections.

We will also contribute to maintaining the stability of the power system by operating an optimal portfolio to cope with supply-demand fluctuations associated with the expansion of renewable energy sources.



## FY2021 Milestones

### Safety Initiatives

Based on our safety strategies for going global, we promoted zero-accident principles, assigned dedicated safety personnel to all construction sites and power plants, utilized digital tools to communicate, and began publishing the frequency of accidents to visualize the level of safety.

### Zero-Emission Thermal Power Initiatives

We launched small-scale fuel ammonia tests at Hekinan Thermal Power Station Unit 5 in preparation for the planning and design of large-scale co-firing demonstration tests at Hekinan Thermal Power Station Unit 4.

### Digital Power Plant Promotion

To make our digital power plants a reality, we developed apps in-house, from verification and validation to the collection of big data. We applied AI-based boiler operations optimization recommendations to actual power plant equipment to reduce fuel consumption and CO<sub>2</sub> emissions.

### Supply Security Initiatives

In addition to conducting priority inspections before times of peak demand, we resumed operation of Anegasaki Thermal Power Station Unit 5, which had been under a long-term planned shutdown, and adjusted regular inspections to ensure additional winter supply capacity ahead of the tightening supply-demand situation.



## Our Facilities in Japan

Number of power plants

**26**

Number of LNG terminals

**8** (excluding jointly operated terminals)

Power generation capacity

**66** GW

## Experience and Talent Are the Keys to JERA's Business

### Engineering

Through the expertise gained from designing a wide variety of large-scale power plants, we seek to optimize our plant design in line with JERA best practices and achieve enduring facility reliability and reduced construction costs.



### Procurement

We are working to reduce costs in all manner of equipment and material procurement through several efforts, including the pursuit of global best practices via market research and cost analysis, innovation in ordering methods, new supplier outreach, and the utilization of third-party products and services. We are also promoting responsible procurement that is ESG-conscious.



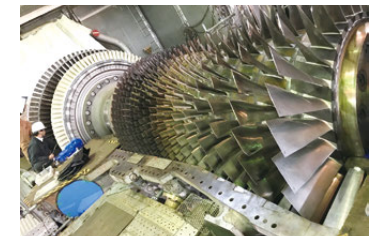
### Operations

We feature flexible and agile operation at our power plants, LNG terminals, and other facilities thanks to our experience providing a stable power supply. For instance, we have improved equipment reliability by reducing and preventing equipment failure and expanding our fuel offerings. In addition, we are exploring the use of the Internet of Things (IoT) for remote supervision and predictive management possibilities.



### Maintenance

We are able to both reduce costs and maintain facility reliability even beyond their design life by applying O&M Engineering capabilities cultivated through many years of experience maintaining power plants and LNG terminals. We will also improve market responsiveness and reduce operating costs by shortening the time needed for regular inspections through on-site kaizen.





# Initiatives at Thermal Power Plants in Japan

## Kawasaki Thermal Power Station



Kawasaki Thermal Power Station is a state-of-the-art power plant that uses environmentally friendly liquefied natural gas (LNG) and achieves the highest standards of performance due to its combined cycle power generation system with gas and steam turbines. Group 2 Units 2-2 and 2-3 (MACC II) achieved a combustion temperature of 1,600°C and further improved performance, reducing both fuel consumption and CO<sub>2</sub> emissions by around 30%.

Power generation equipment	Output (MW)	Fuel	Start of operation	Type of power generated
Group 1	Unit 1-1	LNG	February 2009	Combined cycle
	Unit 1-2		June 2008	
	Unit 1-3		June 2007	
Group 2	Unit 2-1		February 2013	
	Unit 2-2		January 2016	
	Unit 2-3		June 2016	

## Coexisting with Local Communities



Steam supply pipe

### Supplying Heat to Neighboring Factories

A portion of the steam used to generate power is supplied to neighboring companies through pipes laid in the area. The effective use of this steam helps save energy and reduce CO<sub>2</sub> emissions throughout the entire region when compared to each company producing steam independently.



Power plant tour

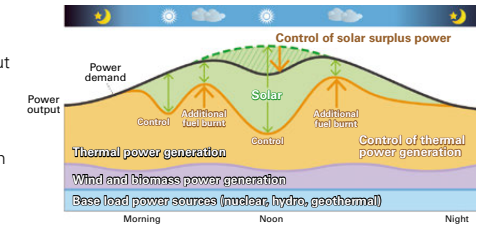
### Power Plant Tours

In addition to in-person tours, Kawasaki Thermal Power Station has offered online tours since 2020 as a measure to prevent the spread of COVID-19. The online tours have allowed people to participate remotely from their homes and have been well-received. In FY2021, 382 people joined the in-person tours, and 1,213 people participated in online tours.

## Contributing to Stable Supply

Combined cycle power generation fueled by LNG is highly adaptive to load changes in electricity demand compared to other forms of thermal power generation. This means that output can be adjusted significantly in a short period of time; for example, output can be raised from 50% to full capacity in as little as 10 minutes.

Currently, Kawasaki Thermal Power Station also plays a role in adjusting output according to fluctuations in power generation from renewable energy sources, which are affected by weather and other factors, thereby contributing to a stable supply of electricity on a daily basis.



Source: "10 questions for understanding the current energy situation in FY 2021 version," available on the Agency for Natural Resources and Energy website



Equipment inspection

Kawasaki Thermal Power Station was the first power plant in eastern Japan to implement the Toyota-style kaizen system for inspection and maintenance operations to improve power generation facility performance. The plant has achieved a significant reduction in maintenance time through three basic pillars for optimizing regular inspections: (1) off-line setup, (2) simultaneous operation, and (3) refinement.

This system enables us to promote the operating rate of the highly efficient Kawasaki Thermal Power Station and reduce operations at inefficient thermal power plants, thereby achieving overall optimization of operations at our thermal power generation facilities and contributing to the reduction of fuel costs and CO<sub>2</sub> emissions. JERA was the first power generation company to adopt this kaizen approach internally, and now, after further study, we have developed our own "JERA-style kaizen" to further improve on this approach.

## On-Site Impressions



**Hiroki Takeuchi**  
O&M Meter Unit  
Kawasaki Thermal Power Station

My primary responsibilities include maintenance of instrumentation controls systems, which is essential for the safe operation of Kawasaki Thermal Power Station, a leading digital power plant (DPP) running on thermal power. I also handle the disconnection and reconnection of equipment required for performing maintenance. I play a key role in exploring ways to work with and integrate digital technology within the power plant. I find it very exciting and rewarding to work together with other key players from different departments on unprecedented tasks, such as improving inspection apps and establishing operational workflows.

I am very proud to work as part of "Team Kawasaki" at Kawasaki Thermal Power Station. We really come together as a team when problems arise and put every effort into resolving them quickly. I'll continue to bring a sense of endeavor and a commitment to stable power supply to my work every day.



# Initiatives at Thermal Power Plants in Japan

## Taketoyo Thermal Power Station



Steam turbine and generator

The Taketoyo Thermal Power Station is located in a temperate natural environment at the center of the Chita Peninsula in Aichi Prefecture, at the mouth of Kinuura Bay, northwest of Mikawa Bay.

Unit 1 started commercial operation in 1966, with Units 2 through 4 following in 1972, and they each played a major role in providing a stable supply of electric power to the Chubu region. The plant has since been converted into a high-efficiency coal-fired power plant. Beginning in August 2022, it incorporated co-firing of woody biomass fuel to offer a stable long-term supply of electric power, reduce the cost of power generation, and improve environmental performance with the introduction of state-of-the-art equipment.

Power generation equipment	Output (MW)	Fuel	Start of operation	Type of power generated
Unit 5	1,070	Coal Woody biomass	August 2022	Steam power

### Environmental Initiatives



Above: Enclosed conveyor belt  
Top right: Indoor coal storage area



Noise barrier

#### Measures for Dust Control

We are striving to control dust through measures such as adopting an indoor coal storage area designed with the smallest possible openings and using an enclosed structure for our discharge conveyors and fuel-receiving operations.

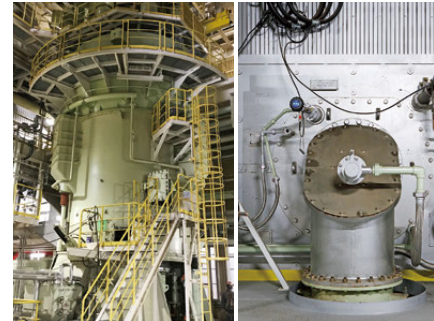
#### Measures for Noise Control

We have implemented measures for noise control to protect the surrounding area, including installing noise barriers around boilers, employing low-noise equipment, and installing sound-deadening devices.

#### Reuse of Coal Ash and Gypsum

We effectively use the coal ash (cinders and particulate matter) generated from burning coal and the gypsum produced by exhaust gas desulfurization equipment as fuel for cement production, material to make building boards, soil improvement additives, and more.

### Introduction of Woody Biomass Facilities: Achieving Both a Stable Supply and Reduced Environmental Impact



Wood pellet mill

Wood pellet burner

Taketoyo Thermal Power Station uses highly efficient ultra-supercritical (USC) pressure power generation equipment, the best technology available for coal-fired power generation, and has a capacity of 1,070 MW, one of the largest single-unit outputs in Japan.

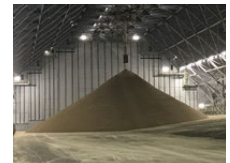
We are also working to improve environmental performance by co-firing woody biomass fuel. From the mill pulverizing the fuel into fine powder to the burner serving as combustion equipment, the facilities exclusively use woody biomass, ensuring a high co-combustion ratio (co-firing rate of 17%) and further reducing CO<sub>2</sub> emissions (≈0.9 million tons per year).

#### What is woody biomass?

Woody biomass is an environmentally friendly, carbon-neutral fuel made from pellets of waste wood generated during sawmilling (wood that cannot be used for construction, furniture, or other such applications). The indoor coal storage area can hold ≈0.07 million tons of woody biomass fuel.



Wood pellets



Indoor coal storage area

### Message from the Plant Manager



**Masato Ishimura**  
General Manager, Head of Taketoyo Thermal Power Station\*

\* as of March 31, 2022

For more than half a century since Unit 1 started operation in 1966, our plant has fulfilled its role of contributing to society through stable, inexpensive power supply while maintaining safety as our top priority. To continue to fulfill that role in the long term, the plant underwent renovations to adopt state-of-the-art technology in August 2022.

Given the plant's location next to a residential area, various environmentally friendly measures were taken to prioritize the safety of local residents and ensure that replacement work could continue with their understanding. Despite major delays in equipment and material delivery and restrictions on the entry of instructors from abroad due to the COVID-19 pandemic, we applied our kaizen approach to complete the project successfully with our construction affiliates in the spirit of "One Team JERA."

Going forward, we are dedicated to maintaining safety in the operation of thermal power generation equipment while maintaining high efficiency and low environmental impact through woody biomass co-firing. In doing so, we hope to contribute to a stable power supply and cherish the goodwill shown by the local community.



# Message from the CFO on Financial Strategy



## Review of Our Business Plans Announced in April 2019

### Consolidated net income

In JERA's business plan unveiled in April 2019, we set a target of 200 billion yen in consolidated net profit by FY2025 (excluding time lag\*). Although we booked losses attributable to temporary factors such as selling excess LNG and the impacts of the pandemic during the three-year period through FY2021, consolidated net profit for the period was essentially at the level set out in the business plan. The figure for FY2021 was 277 billion yen, well above our target of 110 billion yen. This was due to the ability of JERA Global Markets (JERAGM), a subsidiary in Singapore engaged in trading, to increase profits by capturing the volatility of resource prices while enhancing supply stability.

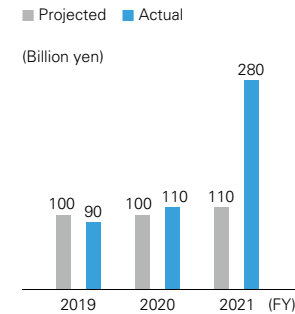
\*Profits or losses attributable to delays between fuel price fluctuations and when they are eventually reflected in sales prices

### Synergies

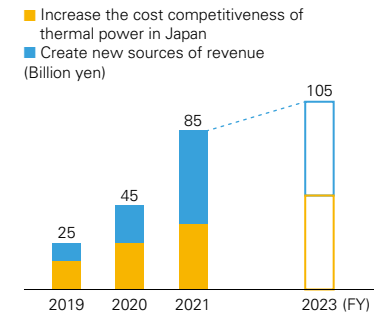
In our previous business plan, we set out the goal to create synergies worth of at least 100 billion yen per year within five years of integrating our existing thermal power generation and other businesses; in FY2021, we created synergies worth of 85 billion yen.

We will continue to pursue this goal by proactively increasing the cost competitiveness of thermal power in Japan and creating new sources of revenue.

### Consolidated net profit



### Synergies



\* Excluding time lag after fuel cost adjustments

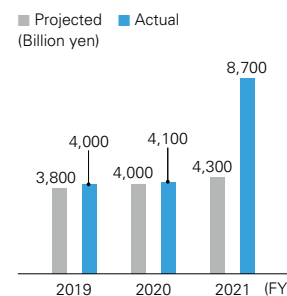
### Balance Sheet

Total assets increased substantially in FY2021 (compared to the previous two fiscal years) due to higher resource prices in the market value of outstanding fuel and financial transactions, which are recorded by JERAGM as "derivative receivables and payables" in accordance with Singapore accounting standards. Continued monitoring is warranted because subsequent changes in resource prices may cause the amount to fluctuate widely.

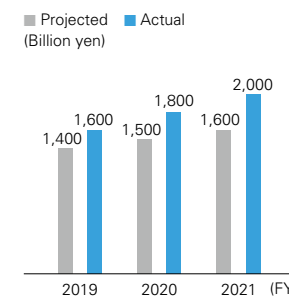
Interest-bearing liabilities also increased compared to the business plan because we secured financing in FY2021 for: (1) short-term working capital in response to increasing losses attributable to the lag after recent hikes in resource prices; (2) procuring additional fuel at spot prices to stabilize our supply; and (3) investing in growth in North America and Asia.

On the whole, our total net assets align with the original plans.

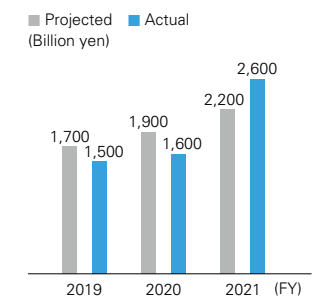
### Total assets



### Total net assets



### Interest-bearing liabilities





## Message from the CFO on Financial Strategy

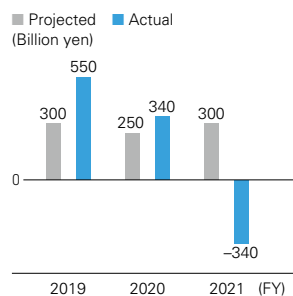
### Cash Flow

Through FY2020, we were cash flow positive—operating cash flow exceeded our projections while cash flow from investing trailed behind. However, in FY2021, our free cash flow was  $\approx -1,000$  billion yen, mainly because operating cash flow was  $\approx -340$  billion yen due to temporary factors such as losses attributable to lags and JERAGM increasing their reserve for deposits. Additionally, cash flow from investing increased to  $\approx 660$  billion yen due to major investments occurring during the period, namely in Freeport LNG (US) and Aboitiz Power (Philippines).

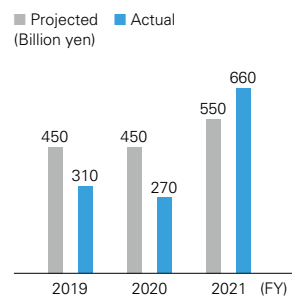
In response, we are striving to stabilize our finances by securing financing through various means. We have borrowed from financial institutions and issued commercial paper (CP) in addition to issuing straight bonds totaling 150 billion yen on six occasions through FY2021.

We are also seeking to further diversify our sources of funding to ensure consistent capital for expenditures that help us stabilize our supply of electricity, invest in growth, and decarbonize. Specifically, we have increased our allotment for CP, concluded foreign currency loans, and issued corporate bonds and transition bonds in US dollars since the fiscal year began. We are also securing transition-linked financing and taking other steps to secure consistent, fit-for-purpose funding.

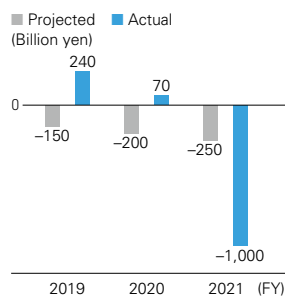
#### Operating cash flow



#### Cash flow from investing activities



#### Free cash flow



CFO Sakairi in discussion with members of the Financial Strategy and Planning Group

### Formulating New Management Targets and Financial Strategy for FY2025

This past May, we formulated and announced new management targets for FY2025 with the aim of growing sustainably and enhancing our corporate value by (1) promoting JERA Zero CO<sub>2</sub> Emissions 2050 and (2) expanding global business while contributing to the consistent supply of electricity, even amid substantial changes to the circumstances surrounding the energy industry of late.

Corporate value must be enhanced sustainably, and we view disciplined growth as essential toward that end. Accordingly, we expounded the discipline we seek in the new management targets, which we announced as the financial strategy to lead us to FY2025.

We believe these management targets and financial strategy will serve as key indicators for demonstrating our vision to our stakeholders.

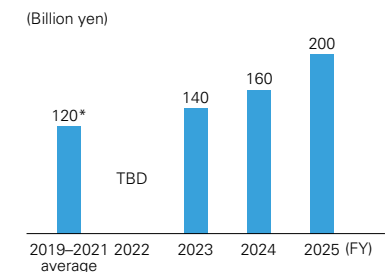
### New Management Targets

#### Profit and Expenditures

The target remains the same as the original business plan: 200 billion yen by FY2025.

However, we now present profit targets for each fiscal year through FY2025, something we had not indicated previously. Notably, we have yet to set exact targets for FY2022 because the situation in Russia / Ukraine and other developments have cast uncertainty

#### Consolidated net profit



\* Excluding time lag after fuel cost adjustments

## Message from the CFO on Financial Strategy

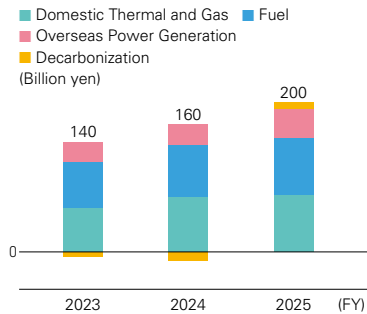
on the future of resource prices and electricity sales, making it impossible to properly calculate our results at this time.

### Profit and Expenditures by Segment

To better visualize how consolidated net profit will increase, we also present our projections of profit and expenditures by segment. In addition to increasing revenues from each segment, we strive to maximize synergies between segments by managing our asset portfolio, optimizing our value chain, and improving our trading performance.

Notably, we expect  $\approx 80\%$  of the FY2025 net profit target of 200 billion yen to come from projects in which we have already invested. Therefore, we believe we have already reached a level at which the target is attainable.

Consolidated net profit by segment



### Indicators for Profitability, Capital Efficiency, Growth Potential, and Financial Health

We formulated the new management targets for FY2025 in terms of profitability, capital efficiency, growth potential, and financial health.

For the profitability indicator, we added a target EBITDA of 500 billion yen to the consolidated net profit target of 200 billion yen. We set this target to assess and manage the cash creation capacity of cash flow businesses, namely JERAGM's capacity for fuel volume adjustment.

For the capital efficiency indicator, we set targets for ROIC, which shows the earning capacity of our asset businesses, and WACC, which represents our cost of capital. The following are two points we want all stakeholders to understand about capital efficiency.

The first is that we intend to expand the spread between our ROIC and WACC. Specifically, we aim to increase the spread to 1% by FY2025, double the average spread of  $\approx 0.5\%$  from FY2019 to FY2021. We hope to achieve this to increase our EVA and enhance our corporate value.

The second point is that we are aware that expansion in our business domains and geographic areas will increase the cost of capital (WACC) that underpins our enterprise.

We expect our fuel and overseas power generation businesses to comprise a greater proportion of our income from now through FY2025, and thus anticipate a higher WACC as the

structure of our business changes. We believe it is necessary to improve our earning capacity to enhance our corporate value even as we project a higher WACC.

For the growth potential indicator, we have set out what we consider to be an eminently achievable target of 1,400 billion yen, the total capital expenditure planned from FY2022 to FY2025.

We set this target to maintain our focus on achieving sustained growth and to avoid falling into a temporary state of balanced contraction, a disadvantage of using ROIC wherein investments in longer-term growth are withheld in anticipation of short-term gains.

For the financial health indicator, we set targets for net debt-to-equity and net debt-to-EBITDA ratios to demonstrate our intent to operate under financial discipline. We will explain this point further in the "Financial Strategy" section below.

Achieving these well-balanced financial indicators—and ensuring that they stay well-balanced—will allow us to enhance our corporate values sustainably.

### New Management Targets

	Performance indicators	FY2019–FY2021 average	FY2025 target
Profitability	Net profit*	120 billion yen	200 billion yen
	EBITDA*	350 billion yen	500 billion yen
Capital efficiency	ROIC*	$\approx 3.5\%$	$\approx 4.5\%$
	WACC	$\approx 3.0\%$	$\approx 3.5\%$
Growth potential	CFI	FY2019–FY2021 total	FY2022–FY2025 total
		$\approx 1,200$ billion yen	$\approx 1,400$ billion yen
Financial health	Net debt-to-equity ratio	$\approx 1.0x$	1.0x or lower
	Net debt-to-EBITDA ratio*	$\approx 4.0$ years	4.5 years or less
Information for reference	Investments in decarbonization	FY2019–FY2021 total $\approx 80$ billion yen	FY2022–FY2025 total $\approx 650$ billion yen
	Co-firing with ammonia	—	20% of demonstration tests completed
	Co-firing with hydrogen	—	30% of demonstration tests completed
	ROE*	$\approx 7.0\%$	$\approx 9.0\%$

\* Excluding time lag after fuel cost adjustments. Excluding a one-time gain of  $\approx 120$  billion yen from trading

### Financial Strategy

Our financial strategy comprises balance sheet management and capital allocation. To stabilize our supply of electricity in Japan, decarbonize, and achieve global growth centered on Asia, we must expand our renewable energy and domestic power generation businesses (including zero CO<sub>2</sub> emissions thermal power generation) in addition to scaling up our business in Asia. We must also

## Message from the CFO on Financial Strategy

become involved in fuel upstream and transport business across a broader area, including North America, Australia, and the Middle East.

Accordingly, we require strict financial discipline to properly manage our long, cross-border value chain, our trading business that fully leverages the optionality of our value chain, and assets in excess of 10,000 billion yen that underpin our trading business.

To practice financial discipline on this level, we use balance sheet management to maintain and manage our financial health.

Additionally, we turn to capital allocation to indicate our growth-oriented cash flow discipline as well as the distribution of funds and course toward the sustainable growth we seek.

### Financial Strategy

		Now		FY2025
Optimal capital structure	Safety	—	▶	Net debt-to-equity ratio 1.0x or lower
	Debt servicing capacity	—	▶	Net debt-to-EBITDA ratio 4.5 years or less
Balance sheet management	Credit ratings	A rating	▶	A rating
	Risk capital	—	▶	Amount in excess of total risk exposure
Capital allocation	Distribution of funds	—	▶	Promoting investments for sustainable growth
	Discipline	Ensuring sufficient operating cash flow		

### Balance Sheet Management

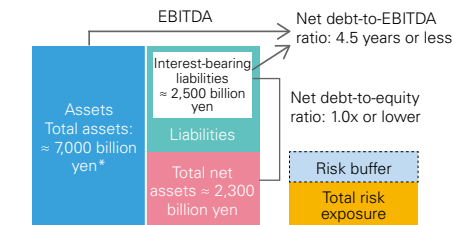
We will implement balance sheet management with the goal of maintaining our current financial strength rating of A through FY2025.

Our specific targets are 1.0x or lower for net debt-to-equity ratio, a measure of safety, and 4.5 years or less for net debt-to-EBITDA ratio, an indicator of debt servicing capacity.

These targets allow us to maximize financial leverage without compromising our focus on the discipline to maintain our A rating. We also drew upon our optimal capital structure to calculate these targets.

### Financial Strategy: Balance Sheet Management

FY2025 (projected)



\* Including cash and cash equivalents of 300 billion yen

### Capital Allocation

We expect to create an operating cash flow of 1,580 billion yen over the four-year period from FY2022 to FY2025 and will direct it toward proper balance sheet management without relying excessively on debt.

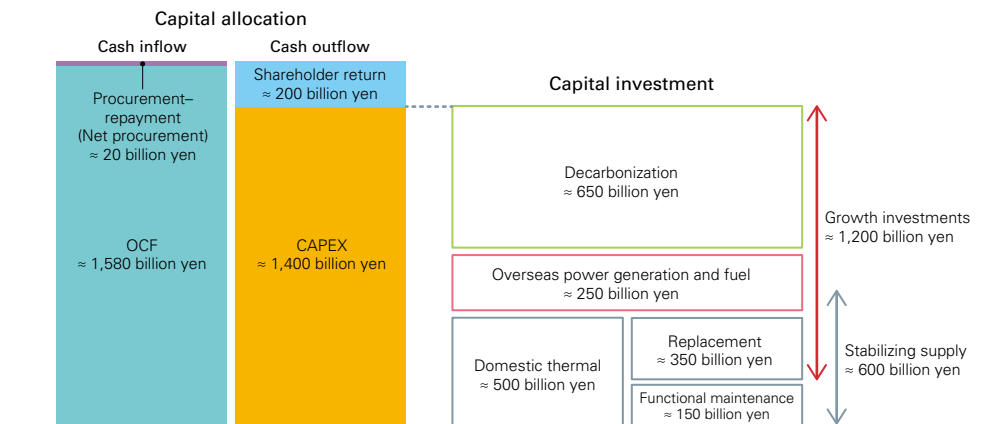
Next, let me explain our allocation of funds, which indicates the course toward the sustainable growth we seek. We plan to make an aggressive allocation to capital expenditures (CAPEX)—1,400 billion yen of our expected cash flow of 1,600 billion yen, mainly from operating cash flow. By allocating the majority of our cash flow to CAPEX, we aim to promote growth and enhance our corporate value, thereby benefiting our stakeholders.

The section on “Capital investment” below provides a breakdown of CAPEX.

First, we plan to allocate 1,200 billion yen to growth sectors through FY2025. We will allocate just over half this amount—650 billion yen—to renewable energy, hydrogen, ammonia, and other decarbonization-related fields to drive efforts toward carbon neutrality while pursuing growth.

We also intend to allocate 600 billion yen to areas that help us stabilize our supply of electricity in Japan. Although some of these areas overlap with growth sectors, these allocations will allow us to maintain our momentum in fulfilling our responsibilities as the largest power generation company in Japan.

### Financial Strategy: Capital Allocation





## Message from the CFO on Financial Strategy

### Mechanisms for Ensuring the Effectiveness of Corporate Value Creation

Mechanisms are required to ensure the effectiveness of efforts to enhance our corporate value while striving to achieve our new management targets and financial strategy. We employ three methods—business management, an investment evaluation process, and integrated risk management—to solidify our efforts to enhance our corporate value.

(For more information about the investment evaluation process and integrated risk management, see the subsection titled “Highly Effective Risk Management” in the Risk Management section of the report on p.73.)

#### • Business Management

To ensure the effectiveness of corporate value creation, we created a KPI tree for each management target to guide our business management. Each tree features KPIs for the entire company as well as the relevant business departments, segments, and regions.

Before the start of each fiscal year, we set targets and formulate action plans for achieving them for the entire company and across each department, segment, and region.

Then, each quarter, we check the KPIs to see how management is progressing toward achieving the targets and elicit specific points for improvement for the immediate future, which we use to

undertake subsequent actions, namely management resource allocation and portfolio management.

### Initiatives for Enhancing Our Corporate Value

In light of the worldwide push toward decarbonization and other aspects of the global situation, the business environment continues to change with unprecedented speed. The future remains difficult to predict amid the recent surge in resource prices and burgeoning geopolitical risks. Our Finance and Accounting Department, which I oversee as CFO, formulates and announces our financial strategy and management targets for sustaining our creation of corporate value while adapting to these changes. We are proceeding with targeted initiatives to ensure the effectiveness of our efforts to enhance our corporate value, namely advancing our business management and financial and accounting systems, which will become a reliable compass for management to plot their course swiftly and in an agile manner.

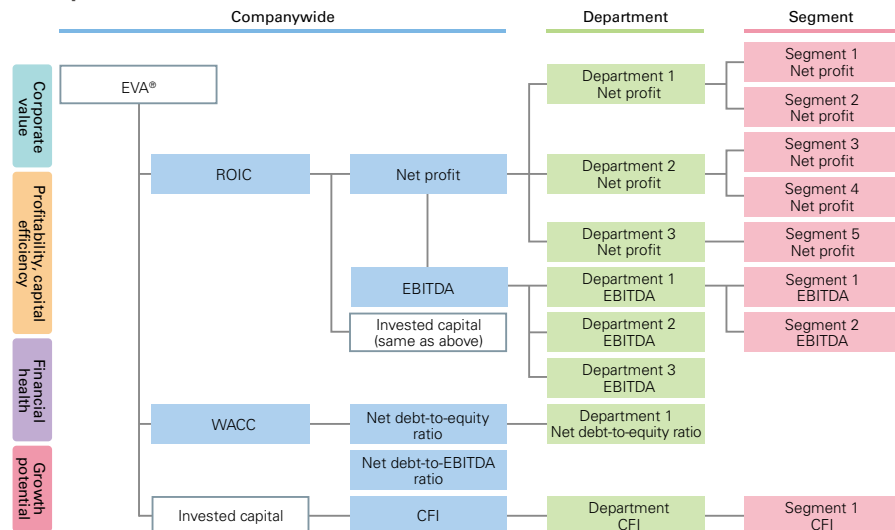
Consistent with our belief in the importance of close coordination between our locations inside and outside Japan, the department also holds regular meetings for the CFOs of our overseas locations as well as global meetings for finance and accounting departments with the aim of maintaining close connections and open information sharing.

Additionally, the Finance and Accounting Department forms various teams that function organically. For example, we have a team that manages and studies tax risks, ensuring the rigor of our tax compliance and the appropriateness of our tax payments. Our global finance team positions us to respond to a sudden demand for funds, and our global IR team exists to strengthen our engagement with investors. Our internal financial advisory team provides support for our investments as well as M&As.

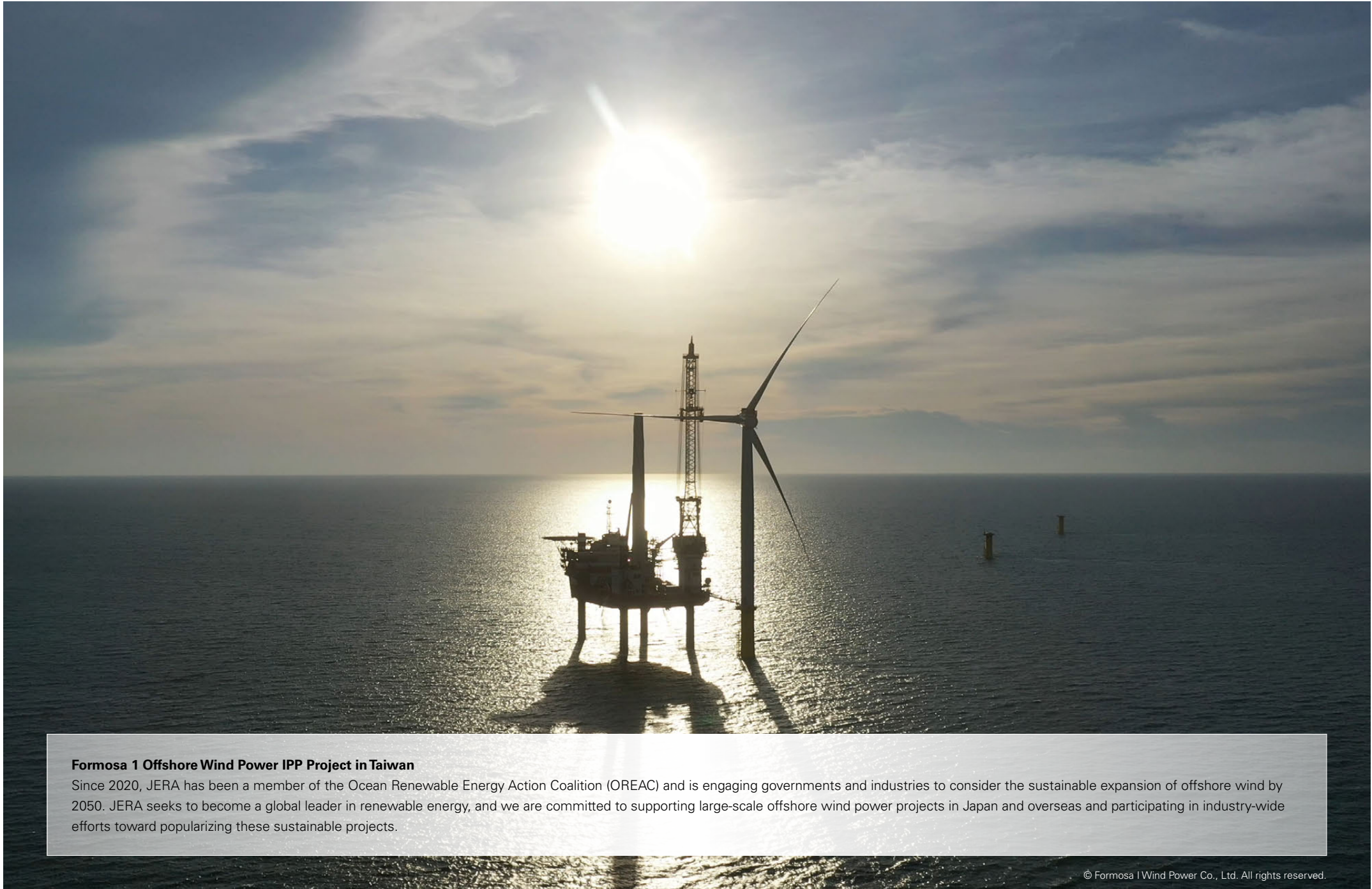
Furthermore, we are trying to acquire a diverse range of talent who can thrive in the current business environment. Toward that end, we are accepting transfers from the TEPCO and Chubu groups in addition to empowering women and hiring experts and professionals. As a result of our efforts, the Finance and Accounting Department is leading the way in our diversity and inclusion initiatives, with more than half of our 135 members already highly skilled at the time of employment.

At the Finance and Accounting Department, we aim to implement measures like these in support of JERA's efforts to enhance its corporate value and, in doing so, become a team of professionals that is highly valued by internal and external stakeholders alike.

Example KPI Tree



\* This tree is provided as an example of how we set and track KPIs tailored to the characteristics of each department and segment.



**Formosa 1 Offshore Wind Power IPP Project in Taiwan**

Since 2020, JERA has been a member of the Ocean Renewable Energy Action Coalition (OREAC) and is engaging governments and industries to consider the sustainable expansion of offshore wind by 2050. JERA seeks to become a global leader in renewable energy, and we are committed to supporting large-scale offshore wind power projects in Japan and overseas and participating in industry-wide efforts toward popularizing these sustainable projects.



# Response to TCFD Recommendations

## Fundamental Approach

As a global enterprise committed to solving energy problems in Japan and around the world, we consider measures to combat climate change to be a priority issue and have identified the relevant material issues.

In September 2021, we endorsed the TCFD\*<sup>1</sup> recommendations and joined the TCFD Consortium.\*<sup>2</sup> To properly evaluate climate change-related risks and opportunities and sustainably enhance our corporate value, we have identified four elements—governance, risk management, strategy, and metrics and targets—in line with the TCFD Recommendations that summarize our climate change-related systems, our business in general, and the initiatives typified by the Three Approaches of JERA Zero CO<sub>2</sub> Emissions 2050.

We will continue to disclose information in line with the TCFD recommendations and further enhance communication with investors and other stakeholders.

\*1 The Task Force on Climate-related Financial Disclosures (TCFD) is the task force established by the Financial Stability Board (FSB) at the request of the finance ministers and central bank governors of G20 countries to stabilize the financial system in the face of factors attributable to climate change. The task force has published a framework and recommendations to guide companies' disclosures pertaining to the risks and opportunities posed by climate change.



\*2 The TCFD Consortium is a forum established for companies and financial institutions that endorse the TCFD Recommendations to hold discussions and work together to ensure effective disclosures by companies and facilitate sound investment decisions by the financial institutions to whom the disclosures are made. To further enhance disclosures in line with the TCFD Recommendations and promote constructive dialogue between investors and companies, the consortium actively publishes guidance on various matters and also hosts TCFD Summits to give companies and financial institutions from around the world opportunities to gather in one place.



## Governance and Risk Management

### Governance

Decisions about important policies, new and updated targets, and other matters pertaining to measures to combat climate change are made by the Board of Directors or the Leadership Panel based on our corporate governance system. We have also established a Sustainability Promotion Committee for the purpose of enhancing environmental, social, and corporate governance (ESG) management. This cross-divisional committee is chaired by the president and reports directly to the Board of Directors. Its Environmental Subcommittee reports on the plans and results of measures to combat climate change and other environment-related initiatives for each fiscal year.

Directors hold active discussions with outside experts and specialist organizations to keep pace with the latest information and findings, which they share with the Leadership Panel and other internal groups. We also host ESG seminars for our employees in addition to providing opportunities for them to have discussions with the directors. We are proactively working to further improve our ESG activities by continuing to expand our directors' and employees' understanding of information and trends in climate change and other aspects of ESG management.

Corporate Governance: p.69

Sustainability Management Structure: p.52

### Risk Management

We have established a risk management system headed by the president to understand and mitigate risks associated with corporate activities. The system conducts integrated risk management, categorized into operational, market, and credit risks. We identify climate change-related risks in recognition of their potential to impact the different types of risk. Risks to be managed by directors are identified as "significant risks to be managed by management." The Risk Management Committee (chaired by the president) monitors and reviews the management status and plans for responding to these risks and then reports them to the Board of Directors at scheduled intervals or as needed.

Risk Management: p.72



# Response to TCFD Recommendations



## Strategy

### Defining the Scope of Analysis

We conduct scenario analysis to identify and analyze risks and opportunities throughout our business value chain. Our analysis covers not only the short term (through 2025), but also the medium term (through 2030) and long term (through 2050).

### Scenario Configuration

The following two scenarios have been established with reference to the information published by the International Energy Agency and the Intergovernmental Panel on Climate Change.

#### Under 2°C scenario

Bold policies and technological innovations are implemented to achieve sustainable development, and they successfully limit the increase in average global temperature by the end of this century to 1.5°C–2.0°C from pre-industrial levels.

Reference scenario: IEA: Sustainable Development Scenario (SDS)  
IPCC Sixth Assessment Report, Working Group 1: SSP 1-1.9, SSP 1-2.6

#### Over 4°C scenario

Although intended nationally determined contributions under the Paris Agreement and other new national policies are implemented, the average global temperature by the end of this century is at least 4°C higher than pre-industrial levels.

Reference scenario: IEA: Stated Policies Scenario (STEPS)  
IPCC Sixth Assessment Report, Working Group 1: SSP 3-7.0, SSP 5-8.5

### Changes in the global energy supply\*1

	2050	Now	2050
Power generation output	57,950 TWh (including 48,436 TWh of renewable energy)	26,762 TWh (including 7,593 TWh of renewable energy)	46,703 TWh (including 27,883 TWh of renewable energy)
Electrification rate	40%	20%	26%
Demand for hydrogen and ammonia	21 EJ	0 EJ	2 EJ
Demand for natural gas	2,029 bcm (including 880 bcm in Asia)	3,401 bcm (including 839 bcm in Asia)	4,362 bcm (including 1,442 bcm in Asia)

### Changes in global climate and sea level\*2

	2100	Now	2100
Increase in average temperature	+1.5°C–2.0°C	+1.1°C	At least +4°C
Extreme heat events*3	Frequency: 4.1x Temperature increase: +1.9°C	Frequency: 2.8x Temperature increase: +1.2°C	Frequency: 9.4x Temperature increase: +5.1°C
Extreme precipitation events*3	Frequency: 1.5x Rainfall increase: +10.5%	Frequency: 1.3x Rainfall increase: +6.7%	Frequency: 2.7x Rainfall increase: +30.2%
Sea level rise	+0.4–0.7 m	+0.2 m	+0.8–1.2 m

\*1 Prepared based on SDS and STEPS from IEA World Energy Outlook 2021

\*2 Prepared based on IPCC Sixth Assessment Report, Working Group 1. All figures compared to presumed pre-industrial levels






\*3 "Extreme" refers to weather events with a probability of occurring once in 10 years.

## Response to TCFD Recommendations

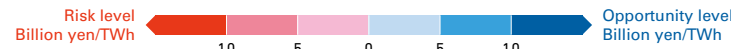
### Assessment of Impact on our Business

We listed and analyzed climate change-related risks and opportunities for our business based on the scenarios on the previous page.

We will work to reduce the risks and seize the opportunities through JERA Zero CO<sub>2</sub> Emissions 2050 as well as other efforts and measures.

Category		Projected Changes in Business Circumstances	Impact on JERA
Under 2°C scenario	Policy and legal 	<b>Stricter regulation of fossil fuel use</b> <ul style="list-style-type: none"> <li>• Introduction of carbon pricing</li> <li>• Stricter energy conservation regulations</li> </ul>	<ul style="list-style-type: none"> <li>• Increased operating costs due to carbon pricing</li> <li>• Greater need for better energy transport and consumption efficiency</li> </ul>
	Technology 	<b>Changes in energy supply structure through the development and introduction of non-fossil energy technologies</b> <ul style="list-style-type: none"> <li>• Development and cost reduction of green fuel technology</li> <li>• Reduced cost of renewable energy and battery storage technology</li> <li>• Grid diversification</li> </ul>	<ul style="list-style-type: none"> <li>• Reduced utilization rate of JERA power sources</li> <li>• Expanded opportunities to develop and introduce hydrogen and ammonia fuels</li> <li>• Expanded business opportunities provided by renewable energy and battery storage</li> </ul>
	Market and services 	<b>Electricity market expansion, diversification of the value of electricity</b> <ul style="list-style-type: none"> <li>• Increased demand for electricity driven by economic growth and electrification</li> <li>• Increased consumer need for green products and services</li> </ul>	<ul style="list-style-type: none"> <li>• Expanded opportunities to supply power</li> <li>• Increased need for natural gas as a bridge fuel</li> <li>• Expanded business opportunities provided by green electricity and fuels</li> </ul>
	Market and services / Reputation 	<b>Growing global awareness of climate change</b> <ul style="list-style-type: none"> <li>• Divestment and engagement by investors</li> <li>• Efforts to combat global warming accelerated and more directly connected to the public's impressions of companies</li> </ul>	<ul style="list-style-type: none"> <li>• Financial constraints rooted in limited investment in / divestment from the fossil fuel business</li> <li>• Reputations compromised due to slow or delayed efforts to combat global warming</li> <li>• Expansion of opportunities to leverage transition / green financing</li> <li>• Reputations boosted by setting and achieving ambitious goals to combat global warming</li> </ul>
Over 4°C scenario	Acute/Chronic 	<b>Increased acute risk</b> <ul style="list-style-type: none"> <li>• More frequent/severe natural disasters</li> </ul> <b>Increased chronic risk</b> <ul style="list-style-type: none"> <li>• Sea level rise, increased tsunami height</li> <li>• Changes in climate patterns (e.g., sustained high temperatures)</li> <li>• Changes in drought risk</li> </ul>	<ul style="list-style-type: none"> <li>• Increased cost of disaster response</li> <li>• Increased operating costs associated with facility shutdowns and output constraints</li> </ul>

# Response to TCFD Recommendations



\* Each risk and opportunity factor is shown here with the method of assessment, the financial factors it impacts, and the financial impact per unit of power generated over the short term (through 2025), medium term (through 2030), and long term (through 2050) expressed as financial impact sensitivity. Financial impact sensitivity for each risk and opportunity is color-coded in three levels (0–5 billion yen/TWh, 5–10 billion yen/TWh, and over 10 billion yen/TWh) as shown in the legend. (1 TWh = 10<sup>9</sup> kWh)

Method of Assessment	Financial Impact Sensitivity*			JERA's Response to Changes	
	Impacted Financial Factors	Through 2025	Through 2030		Through 2050
Sensitivity to increases in the cost of coal for thermal power generation, assuming the price of CO <sub>2</sub> in the reference scenario	Costs				<p><b>Actively investing in growth sectors, namely decarbonization business</b> As shown on p.42, in the four-year period from FY2022 to FY2025, we allocated a total of 1,200 billion yen—including 650 billion yen for decarbonization—to investments in growth sectors.</p> <p><b>Steadily promoting JERA Zero CO<sub>2</sub> Emissions 2050</b> We will continue to promote the following measures based on the vision included on pages 1 and 17 to achieve our new vision for 2035 and net zero CO<sub>2</sub> emissions from all JERA businesses (Japan and worldwide) by 2050 (p.20).</p> <ul style="list-style-type: none"> <li>• Ceasing/discontinuing coal thermal power generation, streamlining LNG thermal power generation</li> <li>• Promoting hydrogen-ammonia co-firing, expanding co-firing rates/transitioning to single-fuel firing</li> <li>• Expanding renewable energy, using battery storage to support the adoption of renewable energy</li> </ul> <p><b>Actively disseminating information to stakeholders</b> We will disseminate information about our efforts to achieve zero emissions to electricity users, investors, and other stakeholders in an effort to expand green electricity and diversify our sources of funding.</p> <p><b>Improving disaster resilience</b> Our efforts to prepare for both acute and chronic natural disaster risks include developing rules and manuals for responding to emergencies and disasters, conducting disaster drills on a regular basis, and upgrading the JERA version of the business continuity plan (BCP) and business continuity management (BCM). We will also diversify our suppliers and methods of sourcing power and fuel to enhance our disaster resilience.</p>
Sensitivity to decreases in operating costs for each point of improvement of thermal power generation efficiency	Costs				
Sensitivity to decreases in sales due to reduced volume of electricity sold	Sales				
Sensitivity to the avoided cost of coal for thermal power generation, assuming the price of CO <sub>2</sub> in the reference scenario	Costs				
Sensitivity to increases in sales due to reduced volume of electricity sold	Sales				
Sensitivity to increases in operating costs for each point of increase in capital costs	Costs				
Sensitivity to decreases in operating costs for each point of decrease in capital costs	Costs				
Sensitivity to increases in operating costs from switching power sources due to facility shutdowns and output constraints	Costs				



## Response to TCFD Recommendations

### Assessment of Impact on Our Business: A Deep Dive into the under 2°C Scenario

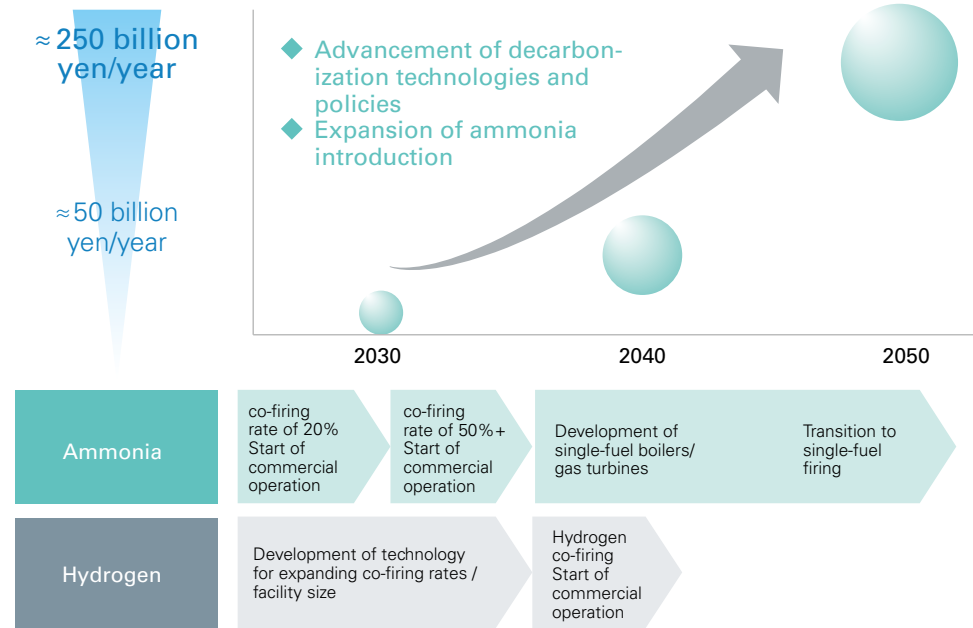
In light of the steady progress we have made in our business toward achieving JERA Zero CO<sub>2</sub> Emissions 2050 since announcing it in October 2020, and due to changes in business circumstances, we formulated a new long-term vision for 2035 and unveiled JERA Environmental Commitment 2035, a set of new environmental targets for achieving the new vision. We updated the JERA Zero CO<sub>2</sub> Emissions 2050 Roadmap for JERA Business in Japan based on the new targets, and our updated plan for introducing hydrogen and ammonia co-firing in Japan is as shown on p.22.

On this deep dive into scenario analysis in line with the TCFD Recommendations, we analyzed the financial impact on JERA of introducing ammonia to our power generation business, which is driven by technological development, assuming the under 2°C scenario and the aforementioned plan for introducing ammonia in Japan.

Our analysis revealed potential cost advantages on the order of 50 billion yen per year by 2040 and 250 billion yen per year by 2050 compared to the scenario in which we continue using coal.

We will continue to proactively develop large-scale fuel ammonia co-firing technology and other decarbonization technologies in addition to devoting energy to ensuring the economic viability of the technologies so that they can help the world move away from carbon as a source of energy.

### Assessment of Cost Advantages of Introducing Ammonia\*



\* All figures calculated based on assumed parameters (e.g., reference scenario). Actual cost effectiveness may differ as business circumstances change. The sizes of the circles on the graph illustrate ammonia amounts. Hydrogen is not included in the scope of this impact assessment. The plan for introducing hydrogen is provided here for reference.

### Metrics and Targets

We view JERA Zero CO<sub>2</sub> Emissions 2050 as a long-term goal and have developed a roadmap for achieving it as well as interim targets for CO<sub>2</sub> emissions in 2030 and 2035. Additionally, we continue to calculate and assess actual results each year to manage our progress.

**Targets:** JERA Zero CO<sub>2</sub> Emissions 2050 Roadmap for its Business in Japan (p.20)

**Actual results:** Non-Financial Data Environmental Data (p.81)