

## SECTION

# Medium and Long-Term Strategy

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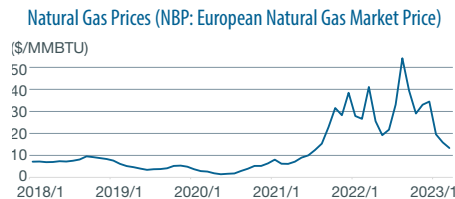
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# Understanding the External Environment

## Ensuring Energy Security and Decarbonization

### Unpredictability in the Energy Resource Landscape

Russia's invasion of Ukraine in February 2022 upset the global balance of resource supply and demand, causing a spike in natural gas and coal prices. Expanded LNG production, chiefly in the United States, has helped to stabilize the balance between supply and demand, yet the situation remains unpredictable, due to geopolitical risks such as the Russian invasion becoming an extended conflict and the worsening situation in the Middle East, as well as LNG production slumps, all of which could result in drastic changes to supply and demand. As such, the reliable procurement of energy resources has become increasingly crucial to ensuring a stable supply of electricity. Because Japan is heavily dependent on overseas energy resources and in light of the current uncertainty in the energy landscape, the country set policies to secure overseas interests in the development and production of fossil fuels, bolster procurement, and build a strategic surplus of LNG within the scope of its Basic Policy for the Realization of GX.



### In Pursuit of Stable Electricity Supply

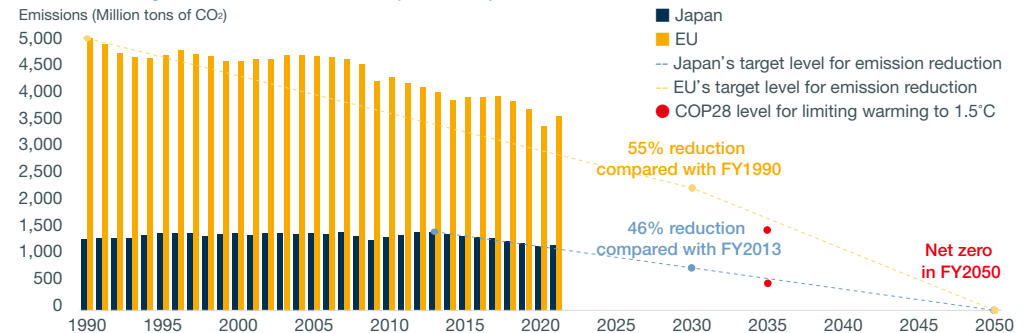
Electricity demand in many countries is taking the form of increased demand for data centers as cloud services and generative AI continue to be adopted. Meanwhile, increased production and installation costs due to global inflation and rising interest rates represent an obstacle to introducing renewable energy sources such as solar and wind power. In Japan as well, the annual growth rate of renewable energy installations remains low. Thermal power generation, which accounts for approximately 70% of electricity generated, is currently sufficient to address the supply-demand gap stemming from structural changes and fluctuations in renewable energy generation due to shifting weather conditions, as thermal power has not encountered any shortages in its ability to adapt. As the introduction of renewable energy is expected to further expand in the future, it will be necessary to systematically secure this capacity for change, thereby ensuring a stable supply.

Japan's basic energy policy is formulated around its S+3E perspective (S+3E means first and foremost ensuring stable supply and realizing low-cost energy supply by enhancing efficiency on the premise of safety while making maximum efforts to pursue environment suitability). Creating power supply facilities that are environmentally compatible while still capable of providing a stable supply of electricity will be a key challenge here.

### Accelerating the Move Toward Decarbonization

In 2023, at the 28th Conference of the Parties of the United Nations Framework Convention on Climate Change (COP28), eight specific targets were set for parties to work toward in order to reduce emissions and achieve the ambitious goal set out by the Paris Agreement (limiting the global temperature rise to 1.5°C). Each country was asked to commit to a course for making contributions, taking into account the Paris Agreement, as well as the country's own situation, path going forward, and approaches.

### Achievement of Target Emission-Reduction Levels in Japan and Europe



Source: Compiled from UNFCCC "Greenhouse Gas Inventory Data" (<https://unfccc.int/>) by Mizuho Research & Technologies

### Decarbonization Initiatives Around the World

In April 2022, the UK announced a new Energy Security Strategy in response to soaring global energy prices caused by Russia's invasion of Ukraine. The strategy aims to strengthen long-term energy security by supporting domestic oil and gas production in the short term while also expanding production capacity for low-carbon hydrogen, accelerating the adoption of hydrogen, promoting nuclear and solar power generation to achieve 95% low-carbon electricity by 2030.

Meanwhile, Germany is moving to develop its new Power Station Strategy, focused on the promotion of power generation fueled by hydrogen gas. In addition to divesting from coal-fired power generation, Germany is said to be preparing for its power infrastructure to lose a degree of adjustability due to the closure of deteriorating gas power plants. This is because as solar, wind, and other avenues of renewable energy are expanded, it is necessary to ensure that power generation capacity can flexibly adapt and thereby ensure that supply can respond swiftly to fluctuations in power generation due to weather conditions. The German government aims to dispel investor concerns by clarifying its policies and has laid out a road map for its transition to hydrogen gas power generation. Specifically, the country has announced its intention to develop 10 GW of capacity by conducting up to four short-term tenders for 2.5 GW of power generation capacity for hydrogen-ready power plants.

In Japan, a cabinet decision was made in July 2023 to pass the Act on Promotion of a Smooth Transition to a Decarbonized Growth-Oriented Economic Structure (GX Promotion Act). One of the initiatives in this act will be fuel conversion from fossil fuels to hydrogen & ammonia to ensure a stable supply and move the country to decarbonized power sources. Furthermore, a long-term decarbonization power source auction was initiated in 2024 with the goal of encouraging new power source construction, such as power plants, while also transitioning to sources including hydrogen, ammonia, and renewable energy to achieve carbon neutrality.

Initiatives such as these are realistic transitional approaches toward decarbonization that will reduce greenhouse gas emissions from thermal power generation while ensuring a stable supply.

# Mid- to Long-Term Strategy Overview



## Strategic Positioning (SP)

After examining the decarbonization roadmaps of multiple countries, including Japan, we have adopted the complementary energy sources of LNG, renewables, and hydrogen & ammonia as three pillars of strategic positioning for future business development.

The first pillar, LNG, is an essential energy source during our transition period, and as one of the world's major LNG suppliers with optimization functions across the Atlantic and Pacific, we will continue to supply LNG in a stable and economical manner.

The second pillar is renewables, and we are one of the few companies in Asia operating large offshore wind farms. We launched JERA Nex building on the expertise and development capabilities of Parkwind, a major European offshore wind company acquired last year. As a Center of Excellence, JERA Nex will establish an ideal collaborative operational structure with regions such as Japan and Taiwan.

The third pillar is hydrogen & ammonia. In countries across Asia, including Japan, fuel-based thermal power generation will remain crucial for the stable operation of power systems, but by using hydrogen & ammonia as fuel sources, we aim to decarbonize these systems. Furthermore, by pursuing the joint use of hydrogen & ammonia with other industries, we will also contribute to the decarbonization of industries beyond the power sector.

## Operational Capabilities (OC)

Our business operations are designed to combine the three operational capabilities of business development, optimization, and operation and maintenance (O&M) to create synergies. In order to navigate fierce market competition and the demanding decarbonization process, it is crucial to allocate talent based on their skill sets, enhance their expertise, and work together as a team of professionals.

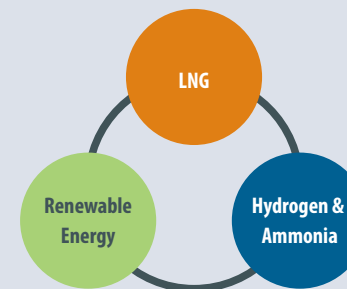
For example, in O&M, we focus on predictive maintenance using digital technologies. Big data from our thermal power plants around the world is gathered by a specialized team, who analyze the data to detect early warning signs. This expertise can also be applied to offshore wind power farms, where frequent inspections are difficult.

By effectively combining the three pillars of strategic positioning with these three operational capabilities, we can flexibly adapt to various future scenarios and provide cutting-edge solutions tailored to the needs of each country and region.

### JERA Growth Strategy

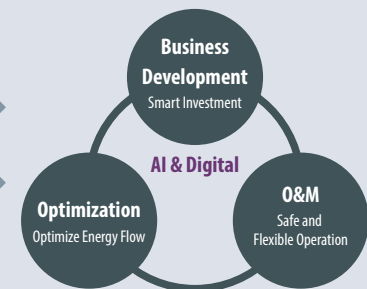
#### Focus Investments Strategic Positioning

Decide where to invest and where not to invest



#### Refine Business Functions Operational Capabilities

Enhance the way you work on a daily basis



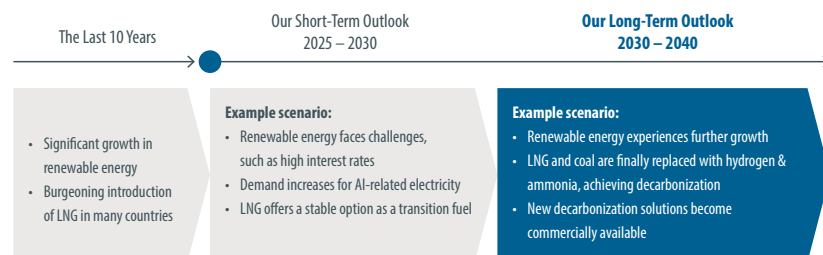
Providing cutting-edge solutions that address the unique geographic and economic needs of each customer, region, and country

# LNG Strategy (One of the largest global players in the LNG value chain)

## Issue Awareness in LNG

LNG is anticipated to play a crucial long-term role as a transition fuel in the shift to a decarbonized society, even as the surrounding landscape undergoes significant changes. In addition to rising demand in emerging markets, particularly in Asia, Russia's invasion of Ukraine has sparked a growing need for alternatives to Russian gas, especially in Europe. Although competition for LNG is intensifying, this presents opportunities to expand commercial prospects through increased demand. Meanwhile, the risks are also becoming more complicated, with factors such as evolving international environmental regulations, reduced production from traditional LNG suppliers, temporary halts in U.S. LNG export approvals, escalating geopolitical tensions, and increasing instability in shipping. As renewable energy continues to expand, LNG is becoming increasingly important in stabilizing the variable output of renewable energy.

### The Changing Business Environment



### VOICE



**Ryosuke Tsugaru**

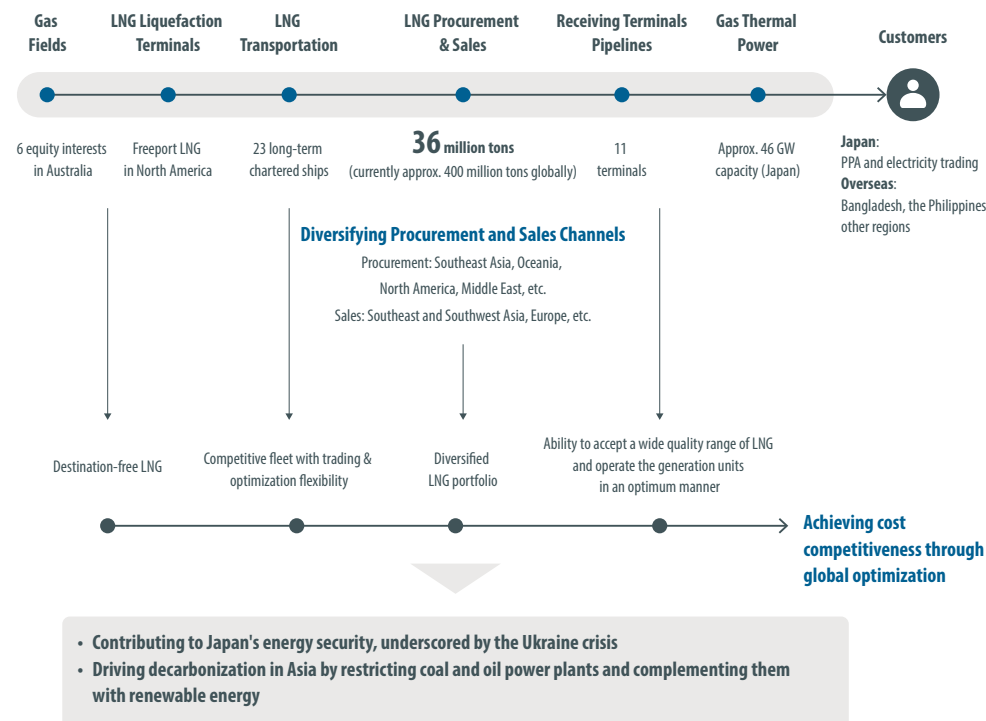
Chief Low Carbon Fuel Officer (CLCFO)  
and Head of the LNG Division

**As an integrated LNG value chain player, we ensure a stable supply and have advanced capabilities to manage demand fluctuations. Providing solutions to the Japanese and Asian markets.**

We handle approximately 36 million tons of LNG annually, making us one of the largest players in the world. Leveraging this volume, we have strengthened our integrated value chain from gas field development to gas-fired power generation. By strengthening downstream assets such as LNG receiving terminals and gas-fired power plants, we enable flexible power generation operations. Additionally, by acquiring upstream and midstream assets like LNG liquefaction terminals and LNG fleets, we are building a flexible and stable LNG supply system. These initiatives will contribute not only to Japan's energy security but also to decarbonization initiatives in the country and across Asia. Going forward, we will continue to deliver solutions to our customers, particularly in Japan and Asia, by building a diversified LNG portfolio, optimizing LNG flows on a global scale, and promoting procurement and sales.

## Our LNG Strategy

### Strengthening the LNG Value Chain



### LNG Platform for Global Collaboration

We are building a high-value LNG portfolio through the organic collaboration of three key entities: two companies based in Singapore—JERA Global Markets (JERA GM), which swiftly executes short-term spot trades with high market liquidity, and JERA LNG Portfolio Strategy, which focuses on gathering market intelligence and leveraging contract specialists—and our headquarters, which engages in long-term contract origination closely aligned with upstream operations and domestic trade flows. In our upstream business, we have established local subsidiaries in Australia and the US to actively manage operations and generate investment returns. In our transportation business, we are expanding stable supply and optimization opportunities through flexible fuel transportation practices via our specialized LNG Marine Transport subsidiary.

## LNG Strategy (One of the largest global players in the LNG value chain)

### Strengthening the LNG Value Chain through Our Fuel Upstream Business

To date, we have enhanced the stable supply and competitiveness of Japan's energy by strengthening the LNG value chain through our participation in a full range of activities, from upstream production and transportation to storage, power generation, and sales. While the shift toward decarbonization is accelerating, LNG, with its superior economic efficiency and stability, is becoming increasingly important as a transition fuel. We will enhance our competitiveness and secure a stable supply of LNG by participating in upstream businesses.

As part of our specific business strategy, we have actively invested in gas field development and liquefaction projects in Australia and North America. Through investment in these businesses, we can secure highly competitive LNG on a long-term and stable basis.

Furthermore, to promote decarbonization, we are exploring carbon capture and storage (CCS) projects that can directly reduce CO<sub>2</sub> emissions from LNG projects, while also striving to further decrease CO<sub>2</sub> emissions across the entire LNG value chain. We will continue to focus on these strategies in our fuel upstream business, as we believe that they will contribute to enhancing supply stability and the competitiveness of our value chain.

### Building a Diverse LNG Portfolio

In response to the global LNG market and the diverse energy landscape in Japan and Asia, we are focused on enhancing our resilience to changes in the business environment and mitigating risks by carefully building a diverse LNG portfolio that strategically balances supply regions, contract timing, and contract term. With the expansion of U.S. LNG exports, the price indices used in LNG trading have diversified. As uncertainty in Japan's LNG demand grows due to the liberalization of the electricity market and the expansion of renewable energy, we are enhancing our ability to ensure stable supply and adapt to demand fluctuations by expanding flexible contracts like FOB and strengthening our LNG fleet.

We will continue to expand and diversify our sales channels by leveraging the flexibility of our LNG portfolio and the agility of JERA GM's optimization trading, while promoting LNG sales, primarily in Asia, where demand continues to grow. Through these strategies, we will strengthen our LNG portfolio and support the stable supply and decarbonization efforts in Japan and across Asia.

### Strengthening Japan's Energy Security through the Strategic Buffer LNG (SBL) Framework

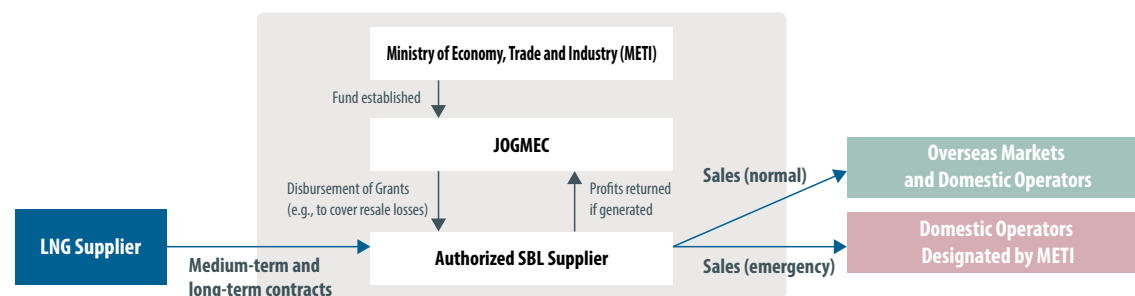
The global energy market has become increasingly complex and uncertain due to the situations in Russia, Ukraine, and the Middle East, underscoring the growing importance of securing stable fuel supplies. In addition, global demand for LNG as a transition fuel for decarbonization is rising.

Amid these circumstances, the Japanese government introduced the Strategic Buffer LNG (SBL) framework, enabling private companies to secure surplus LNG as a precaution against the risks of fuel supply disruptions. As Japan's largest LNG player, we committed to this project to ensure stable fuel procurement and were officially approved by the government as an authorized SBL supplier in November 2023. We will secure SBL from our LNG portfolio and provide it to designated domestic operators whenever the government deems it necessary, such as during sudden energy supply constraints in Japan.

In FY2023, we secured three SBL cargoes during the winter season, when demand typically peaks, to prepare for potential supply shortages.

We will continue our efforts to ensure the stable procurement of LNG and contribute to bolstering domestic energy security.

#### Strategic Buffer LNG (SBL) Framework



Source: Based on materials from the Agency for Natural Resources and Energy

## FOCUS Synergistic Effects of LNG and Renewable Energy

Renewable energy can experience periods of near-zero power generation lasting several weeks. This phenomenon, called the "dark doldrums," occurs in places like the UK, Germany, and Japan and presents a significant challenge to maintaining a stable supply. To balance the fluctuations in solar output and ensure a stable supply, solutions such as thermal power generation and battery storage are essential.

However, given the significant seasonal demand fluctuations (tens of millions of kW over several months), battery storage alone struggles to manage these variations, making it crucial to use thermal power generation, where output can be easily adjusted. Combined cycle power generation fueled by LNG is highly adaptive to load changes in electricity demand compared to other forms of thermal power generation. At our LNG-fired power plants, output is fine-tuned by cycling equipment on and off more than 10,000 times a year. We believe LNG also plays a key role in modulating output to accommodate fluctuations in power generation from weather-dependent renewable energy sources, helping to ensure a stable supply on a daily basis.

# Hydrogen & Ammonia Strategy (Pioneering player in the hydrogen & ammonia value chain)

## Challenges in Hydrogen & Ammonia

As part of its “Basic Hydrogen Strategy,” the Japanese government aims to work with resource-rich countries to build an international supply chain for hydrogen & ammonia. The goal is to achieve a hydrogen society as soon as possible and to strike a balance between strengthening energy security and industrial policy.

To realize a hydrogen society, there are economic and technological issues that must first be resolved. By partnering with companies both in Japan and abroad, we are involved in economically viable hydrogen production projects and are actively working on technological advancements to contribute to the establishment of related technologies and cost reductions.

Drawing on our experience from across the value chain—from fuel development to power generation—we will take the lead in establishing a hydrogen & ammonia supply chain. We plan to leverage the significant demand for hydrogen as a power generation fuel to serve as a catalyst for building infrastructure, promoting the adoption of hydrogen in non-power generation industries, and expanding decarbonization solutions to regions such as Asia, with the goal of fortifying the supply chain.

### VOICE



**Koichi Morisaki**

Chief Thermal Transition Officer (CTTO)  
and Head of the Domestic Zero-  
Emission Thermal Power Promotion  
Division

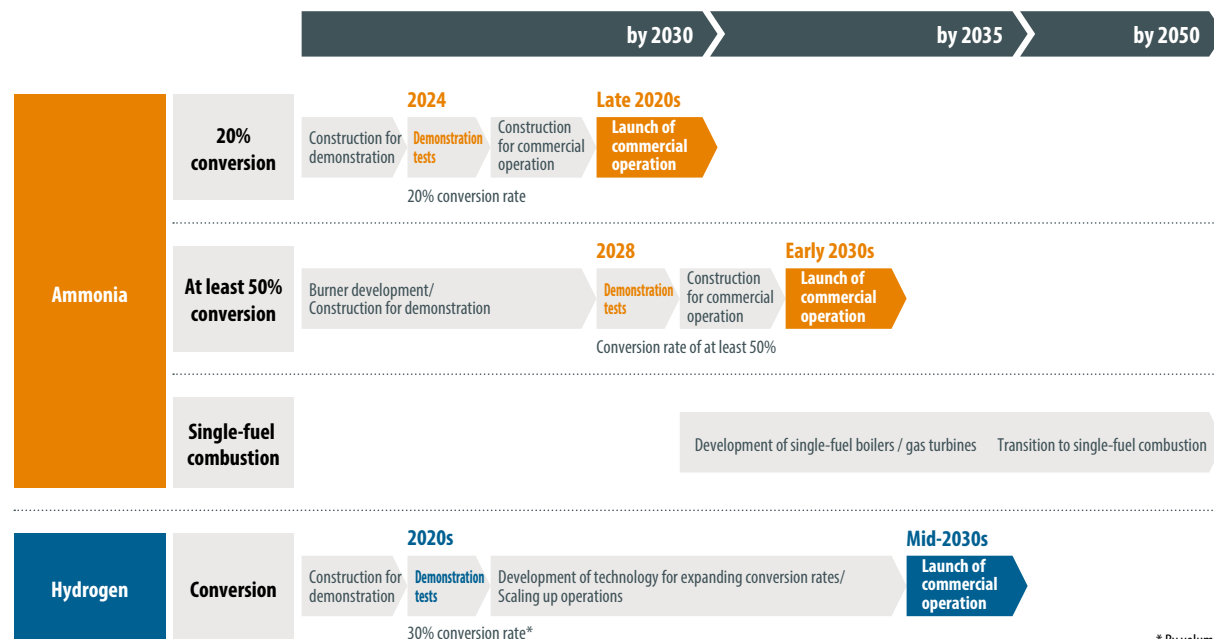
### Zero-emission thermal power generation will drive the acceleration of a hydrogen society and lead Japan's path to decarbonization.

In pursuit of zero-emission thermal power, we will begin converting 20% of coal to ammonia in the 2020s. From 2030 onward, we intend to expand this conversion to include hydrogen in addition to ammonia, ultimately aiming for single-fuel combustion.

We believe that the large-scale demand for electricity will drive the establishment of a hydrogen supply chain, which in turn will promote its use in other industries working toward decarbonization, thereby accelerating the realization of a hydrogen society.

Because decarbonization is a global challenge, we consider zero-emission thermal power to be one of the key strategies for driving decarbonization in rapidly growing economies like those in Asia.

## Our Plans to Introduce Ammonia & Hydrogen into Power Generation



## Message from an Outside Expert



**Nobuo Tanaka**

Chair, Innovation for Cool Earth  
Forum (ICEF) Steering Committee  
Former Executive Director,  
International Energy Agency (IEA)  
CEO, Tanaka Global Inc.  
JERA Global Advisory Experts

### Ammonia Transition to Drive Decarbonization and the Creation of a Hydrogen Society

To be honest, I was surprised when JERA announced in 2020 that the company would aim for zero CO<sub>2</sub> emissions by 2050, even before the governments announcement. I wondered how one of the world's largest thermal power companies was supposed to make this happen. They explained that they planned to gradually convert coal to clean ammonia and eventually move to 100% single-fuel combustion and that they would do the same with clean hydrogen for gas turbine power generation. It was truly eye-opening. The Mirai fuel cell vehicle was meant to pave the way for Japan's hydrogen future, but it didn't gain much traction. The reality is that without serious commitment from the thermal power, steel, and chemical industries, building a hydrogen society won't be feasible. Japan was the first in the world to introduce liquefied natural gas (LNG), which sparked the golden age of gas. This success was made possible by first securing long-term demand, a crucial step in building a global supply chain. Now, the success of Japan's green transformation (GX) hinges on whether we can replicate with hydrogen the global innovation that LNG achieved. And JERA holds the key.



## Hydrogen & Ammonia Strategy (Pioneering player in the hydrogen & ammonia value chain)

### The Role of Hydrogen & Ammonia Power Generation in Achieving Regional Decarbonization

In Japan, the movement toward regional decarbonization is becoming more active, and particularly in areas with concentrated industries, discussions are progressing toward social implementation through the integrated creation of supply and demand for clean fuels such as hydrogen & ammonia.

One such initiative is the public-private collaboration within the Central Japan Hydrogen & ammonia Association in the Chubu region, where we are working to develop a supply chain model that integrates large-scale ammonia use at our thermal power plants with its application in industry.

By leveraging the support provided by the Hydrogen Society Promotion Act, enacted in May 2024—including subsidies for developing hydrogen supply infrastructure and bridging the price gap between hydrogen & ammonia, and conventional fuels—we are working to introduce hydrogen & ammonia power generation and promote their use in the industrial and transportation sectors, contributing to decarbonization both regionally and nationwide.

### Technological Trends in the Production and Utilization of Hydrogen & Ammonia

Hydrogen & ammonia are expected to be widely used in power generation, transportation, and industry, but to make this a reality, it is essential to develop hydrogen carrier technology that can support large-scale maritime transport and storage.

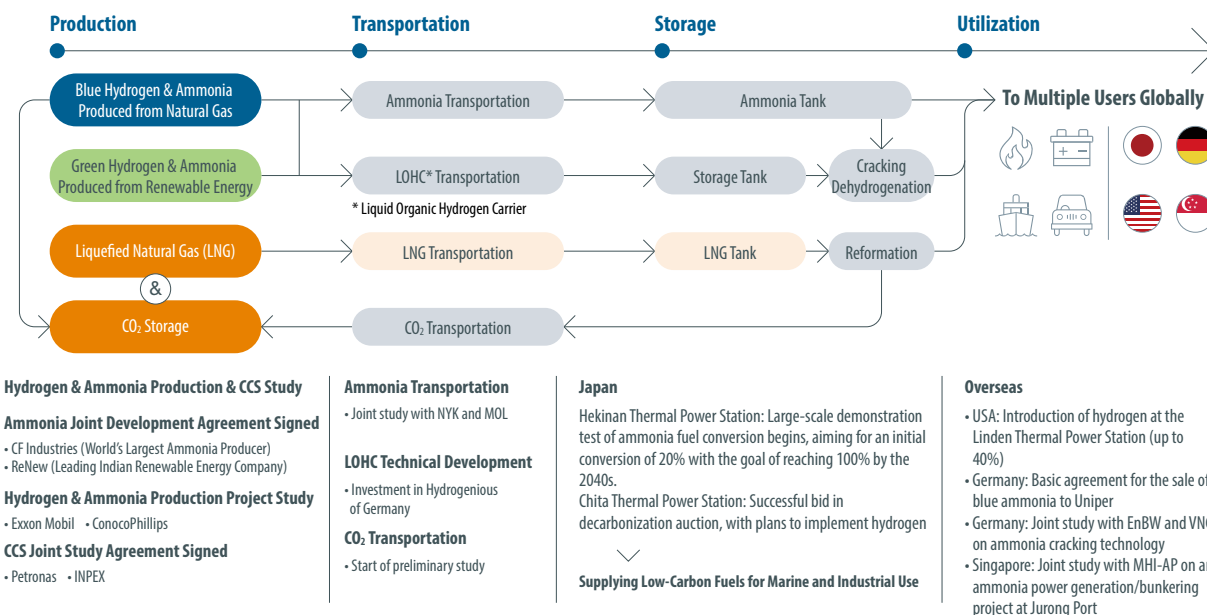
We aim to use ammonia, which can be transported and stored at low cost, as both a hydrogen carrier and a power generation fuel. Our involvement in initiatives such as the Green Innovation Fund Projects allows us to push forward with technology development, spanning from the production of hydrogen & ammonia to their use in power generation, with one of our key initiatives being the development of efficient, low-cost methods to convert ammonia into hydrogen.

We are also working with the Clean Fuel Ammonia Association (CFAA) and other organizations to explore international standardization as part of efforts to promote the widespread adoption of hydrogen & ammonia.

By actively pursuing the development of decarbonization technologies, we aim to establish the technologies required to build supply chains and contribute to the decarbonization of energy.

**JERA aims to become the first mover in building a hydrogen & ammonia value chain, developing a platform to meet electricity demand, and providing decarbonization solutions to other industries (multipurpose initiatives).**

As we work to establish the hydrogen & ammonia value chain, we are moving forward with collaborations and discussions with key domestic and international players, drawing on the trusted partnerships we've built through our existing LNG and other businesses. Focusing on North America, the Middle East, and Asia, we are considering investments in blue & green hydrogen & ammonia production projects alongside our partners, and we are making progress in building the value chain by conducting studies on the transport of fuel ammonia with NYK and Mitsui O.S.K. Lines (MOL).



## FOCUS Innovation Case Study

In July 2024, we began supplying fuel ammonia to a tugboat equipped with an ammonia combustion engine. This marks a world first in using the truck-to-ship method\* to supply fuel ammonia to a commercial ship. Leveraging four decades of experience with ammonia for denitrification in power plants and insights from our LNG bunkering operations, we have been able to implement the truck-to-ship supply method in collaboration with our partners.

\*One method of supplying fuel to ships. Supplied through a flexible hose from a tanker truck.



Tugboat equipped with ammonia combustion engine

# Renewable Energy Strategy (Global player contributing to hydrogen & ammonia production)

## Recognition of Renewable Energy Issues

The renewable energy industry has faced challenges in recent years, including high costs due to rising inflation rates and supply chain disruptions. Given the global nature of the industry, geopolitical issues have also caused a level of uncertainty and there is increasing scrutiny on energy security.

At the same time, progress has been made with the development of new technologies, improved turbine efficiencies, and strong partnerships. There is also global recognition of the industry's importance, including its role in developing other low-carbon solutions such as hydrogen & ammonia. Going forward, reaching global renewable energy targets will require significant support from governments for the entire value chain to promote clean solutions.

### VOICE



**Satoshi Yajima**

Chief Renewable Energy Officer (CREO)  
and Chief Solution Service Officer  
(CSSO)

**The Center of Excellence (COE) and local teams will work closely together to develop wind and mega solar projects on a global scale.**

To further expand our renewable energy business, where competition is fierce and growing, it is essential to build a professional organization that integrates project development, construction, and operation, while efficiently utilizing the knowledge and human resources of the group.

In 2024, we established JERA Nex in the UK as a base for our renewable energy business and last year we acquired Parkwind, Belgium's largest offshore wind power company. This acquisition aims to create a center of excellence by consolidating global knowledge and human resources. In the future, we will integrate our existing renewable energy

businesses in Japan and overseas, along with our 330 domestic and overseas professionals.

Our focus is on reaching a cumulative renewable energy development capacity of 20 GW by 2035, using global expertise and local business development talent to build a global (global/local) system.

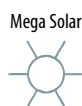
As the renewable energy business is closely linked to the production of green hydrogen & ammonia—JERA Nex has a vital role to play in our Growth Strategy.

**Rising from Zero  
to the Top in Asia**  
2019 – 2023

**Step 1**  
Building Center of Excellence (COE)  
2023 – 2024

**Step 2**  
Establishing of a Glocal System  
2024 – 2025

**Step 3**  
Pursuing Collaboration  
from 2025



#### Step 1 | Building Center of Excellence (COE)

JERA Nex (UK)  
30 ppl (as of June 30, 2024)

- Drive Parkwind's PMI under a diverse management team
- Establish a governance structure suitable for the glocal system

Parkwind (Belgium)  
Offshore wind power: 170 ppl (as of June 30, 2024)

- Acquisition completed in July 2023; development and operation of offshore wind power in Belgium and Germany
- Acquisition of rights to Norway's first offshore wind tender in March 2024

#### Step 2 | Integrating COE and Local Teams (Glocal System)

Taiwan  
Offshore wind power: 20 ppl

Japan  
Offshore/onshore wind and  
other power: 100 ppl

- Participated in Taiwan's first large-scale offshore wind project (Formosa 1 and 2) and led the construction of Formosa 2
- Completed Japan's first large-scale offshore wind project (Ishikari Bay New Port) in January 2024

USA  
Solar and onshore wind  
power: 10 ppl

Other platform-based  
companies

- Selected as operator of multiple projects in Japan's second offshore wind tender (off Oga, Katagami, and Akita City)
- Developed large-scale solar, onshore wind, and battery storage projects in the United States, India, and the United Kingdom

**Step 3**  
Collaboration

**Global Player**

### Step 1: Building Center of Excellence (COE)

JERA Nex is building a center of excellence for JERA's renewable capacity, consolidating existing projects and top-tier industry expertise in a dedicated renewable energy business with the focus and agility to scale rapidly. Headquartered in London, JERA Nex brings together teams and projects in Europe and the UK. This location enables us to leverage the deep experience and talent in the region with the world's most advanced renewable energy industry, and it provides us with direct access to established renewable players for future partnerships.



Step 2: Integrating COE and Local Teams (Glocal System)

The next stage will be the consolidation of projects, teams, and expertise across other regions, including Japan, Taiwan, the United States, and the Middle East. JERA Nex will collaborate with local teams in each region, and share knowledge and experience as we work together on project development, construction, operation, and management.

JERA Nex will also continue to work closely with the JERA Group, particularly on the role of renewable energy in the development of low-carbon fuels (LCF) such as green hydrogen & ammonia.

By bringing JERA Nex’s people and projects together, the company will build recognition of its combined expertise in existing and new markets. At the same time, JERA Nex will continue a local approach to project development, focusing on collaboration with communities and local knowledge to deliver high-quality projects. This is because of the importance we place on working with local communities and their knowledge to continue contributing to the region through energy solutions.

JERA Nex is already working as one team across its global project portfolio, including the Formosa 1 and 2 projects in Taiwan, and the Ishikari Bay New Port in Japan. New projects, including the SNII project in Norway and the offshore wind (off Oga, Katagami, and Akita City) project in Japan, are also under way.

Step 3: Pursuing Collaboration

Collaboration across the global renewable energy value chain will be critical in delivering high-quality renewable energy projects.

Much of JERA Nex’s existing portfolio, particularly in offshore wind, has grown in size and volume through strategic partnerships. By pooling resources with partners, JERA Nex has been able to deliver complex projects that require significant investment.

JERA Nex will contribute to energy transitions in each region by leveraging its expertise in renewable energy. JERA Nex will also strengthen its capacity through selective partnerships and acquisition opportunities to build a robust pipeline. By forming an attractive business entity that has a certain scale of renewable energy operations and diversity of business areas, JERA Nex will seek new alliances and integration with global players.

FOCUS Renewable Energy Risk Management

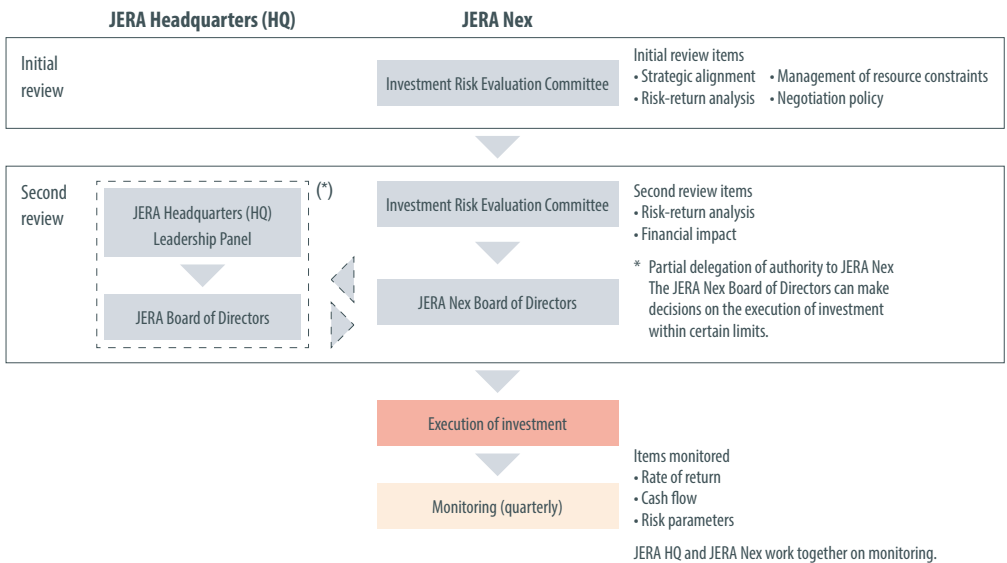
JERA Nex operates independently and autonomously within certain financial and operational limits. Investment decisions are made through the Board of Directors, which consist of directors dispatched from JERA representatives who are familiar with the business and outside directors with expertise and experience, taking into account risk-return/investment suitability and other factors.

By placing members of JERA representatives on the Board of Directors and in management positions, JERA aims to make its corporate mission and vision well known and foster synergies among group companies. At the same time, emphasis is placed on factors crucial for the development of renewable energy projects, such as the agility of decision-making by overseas companies.

For investments above a certain size, JERA makes the final decision. However, JERA and JERA Nex work together to regularly monitor factors crucial for the development of each renewable energy project, ensuring proper risk assessment and management.

JERA Nex will continue to expand its presence in the renewable energy market, adapting to prevailing geopolitical and economic conditions, including supply chain disruptions and other risks. The company will apply strict investment criteria and strong governance as it seeks further growth.

Process from Screening to Monitoring of Investment Projects



# Message from the CFO



Corporate Vice President,  
Managing Executive Officer,  
and Chief Financial Officer (CFO)  
**Kazuo Sakairi**

## Reflecting on the Five Years Since 2019

Five years have passed since the fuel, power generation, overseas operations, and other assets of both shareholder companies were fully integrated into JERA in 2019 to form the current company. As Japan's largest power generation company, supplying approximately 30% of Japan's total electricity, we have a great responsibility to provide a stable supply of electricity to Japan. Against this backdrop, the Russian invasion of Ukraine began in 2022, compounding the stagnation of renewable energy generation in Europe that started around 2021. Consequently, LNG prices (JKM: S&P Global's spot LNG price index for Northeast Asia) surged to a historic high of \$84.8 on March 7, 2022, creating a significant crisis in fuel procurement for Japan, which relies almost 100% on overseas sources for its power generation fuel. In response to this situation, with the collaboration of the Japanese government, we boldly and swiftly implemented initiatives to prevent major power outages in Japan. These included the spot procurement of seven million tons of LNG through our Singapore subsidiary, JERA Global Markets (JERA GM). In addition, together with fuel procurement, we have secured the power generation capacity to meet electricity demand by proceeding with the reconstruction (replacement) of power plants as planned.

Meanwhile, in October 2020, JERA announced "JERA Zero CO<sub>2</sub> Emissions 2050," which aims to decarbonize power plants and the entire value chain to achieve the carbon dioxide (CO<sub>2</sub>) reduction targets Japan has committed to under the Paris Agreement. This includes hydrogen conversion at the Linden Gas Thermal Power Station in the US and ammonia conversion at the Hekinan Thermal Power Station, where demonstration tests aimed at CO<sub>2</sub>-free power generation are being conducted in Japan. We also started collaborating with energy companies across the globe, including through international tenders for the procurement of low-carbon fuels such as hydrogen & ammonia. Furthermore, in the field of renewable energy, in addition to participating in offshore wind power projects in Taiwan and the UK, the company acquired Parkwind, a major Belgian offshore wind power producer, and Japan's Green Power Investment (GPI) in 2023, as well as winning a domestic offshore wind power tender. In April 2024, we established JERA Nex, a company focused on renewable energy development and operations, in London, UK. By concentrating all our skills, talent, and management resources related to renewable energy at this Center of Excellence (COE), we aim to achieve our 2035 target of 20 GW and will drive development efforts globally.

In addition, we are pursuing a platform-based strategy that aims to expand our profit base while contributing to the provision of electricity and decarbonization in Asia, which is experiencing rapid economic growth. We have invested in Summit Power, the largest power generation company in Bangladesh, and Aboitiz Power in the Philippines. These initiatives have been well received in Asian countries that have difficulty relying solely on renewable energy to meet their growing electricity needs, and we have been commissioned by Southeast Asian countries to create a roadmap for their decarbonization.

While the environment around our company has been changing significantly each year, we are steadily carrying out our mission of providing cutting-edge solutions to the world's energy issues. To enhance understanding,

## Message from the CFO

we have presented these initiatives at international conferences such as the Davos Forum and engaged in direct dialogue with more than 350 investors, governments, and other key players.

Next, regarding the status of profit and loss, finance, and synergies, we are making steady progress toward achieving the 2025 profit and loss targets and the financial KPIs set in 2019. Moreover, the synergistic effect of integrating the businesses carved out from the two shareholder companies has resulted in the early achievement of the initial five-year target of 100 billion yen, one year ahead of schedule, through the efficiency improvement of power plants, standardization of operations, and investments in new business fields, creating approximately 120 billion yen in effects to date.

The net profit (excluding time lag) was targeted at a cumulative 550 billion yen over the five years up to FY2023. Despite the decrease in profits due to special factors such as the sharp rise in LNG spot prices and the recording of estimated liabilities following the introduction of International Financial Reporting Standards (IFRS), the actual results reached 799.4 billion yen (140% of the target). In addition, cash flow has steadily increased from around 300 billion yen per year at the time of planning to consistently exceeding 500 billion yen.

With regard to ROIC, which indicates the efficiency of invested capital, we are targeting 4.5% by 2025. This level is designed to ensure that we enhance our corporate value by achieving a return on our weighted average cost of capital (WACC) of at least 1%. Our business often requires a considerable amount of time from investment decision to return, making it challenging to achieve results within a single fiscal year. However, we are committed to strengthening our earning power to meet this goal and further enhance corporate value.

Lastly, with respect to the investments that demonstrate our growth potential, we almost achieved the target of 1.45 trillion yen for the three-year period from 2019 to 2021. This was due to the significant funds required to respond to the surge in resource prices triggered by the aforementioned invasion of Ukraine and the inability to carry out discovery projects as expected due to the COVID-19 pandemic. However, we expect to exceed the



CFO Sakairi speaks at a town hall meeting in Perth, Australia, JERA's largest LNG procuring country.

investment target of 1.4 trillion yen planned for the four years from 2022 to 2025.

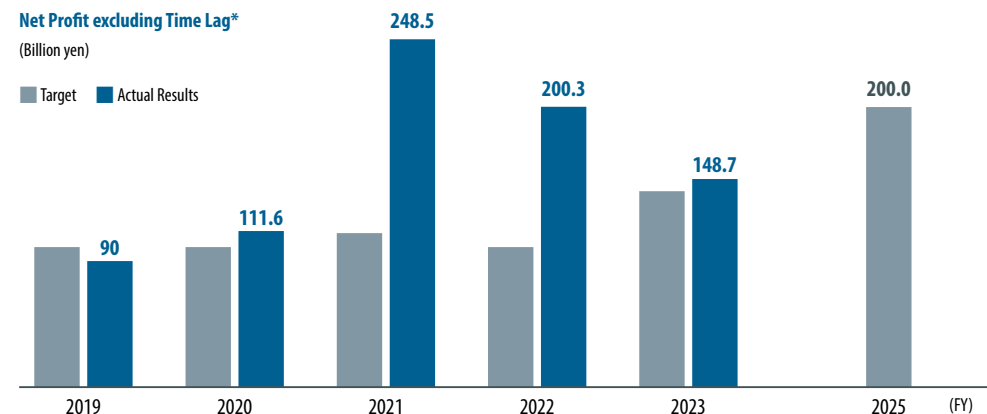
### Net Profit (excluding time lag)

In FY2023, despite an increase in profits from the Overseas Power Generation and Renewable Energy Business and improvements in the write-down on coal and other contracts at the end of the period, there was a decrease of 51.6 billion yen compared with the previous year to 148.7 billion yen (excluding time lag) due to factors such as the impact of fuel procurement prices and the unit cost of fuel inventories at the beginning of the period, and a decrease in fuel business profits. (The profit for the period, which includes time lag, increased by 381.7 billion yen year-on-year to 399.6 billion yen due to time lag turning from a loss to a profit.) Although there was a decrease in profit starting in FY2022, we believe the temporary increase in profits in FY2022 was due to the expansion of transactions centered on Europe by JERA GM amid the unstable fuel market conditions caused by the Russia-Ukraine invasion. We assess that we are on track to achieve the target consolidated net profit of 200 billion yen for FY2025.

### We have reliably met our previously established profit targets and are determined to uphold the profit target for FY2025

#### Net Profit excluding Time Lag\*

(Billion yen)



\* The target for net profit for the period 2019–2021 is based on the business plan announced in April 2019, the target for 2022 is based on the value announced in October 2022, and the target for 2023–2025 is based on the new management target announced in May 2022.

### Balance Sheet Management

#### Total Assets

Total assets decreased by approximately 600 billion yen compared to the previous year due to a significant decrease in derivative assets and liabilities\*. This was triggered by a decline in resource prices despite an increase in assets following the acquisition of Parkwind, a major offshore wind power generation company in Belgium, and investment in GPI, a domestic renewable energy power generation company.

\* The outstanding balance of transactions recorded as offsetting entries in the fuel volume adjustment initiative at JERA GM



## Message from the CFO

### Aiming to achieve a financial structure that is valued by the capital market

	Performance indicators	FY2023	FY2025 target	Target level by FY2035
Profitability	Net profit*	148.7 billion yen	200 billion yen	350 billion yen
	EBITDA*	569.7 billion yen	500 billion yen	700 billion yen
Capital efficiency	ROIC*	4.1%	Approx. 4.5%	ROIC-WACC Spread 150 bps or higher
	WACC	—	Approx. 3.5%	
Growth potential	CFI	528.4 billion yen	Cumulative total for FY2022–FY2025: Approx. 1.4 trillion yen	Cumulative total for FY2024–FY2035: Approx. 5 trillion yen
Financial health	Net DER	0.6x	1.0x or lower	0.5x or lower
	Net Debt/EBITDA*	2.9 years	4.5 years or less	2 years or less
Reference	ROE*	6.3%	Approx. 9.0%	Approx. 9.0%

\* Excluding time lags after fuel cost adjustments

### Interest-Bearing Liabilities and Equity

In FY2023, borrowings and commercial paper decreased due to factors such as a significant change in time lag resulting from an improvement in the fuel market compared to the previous year. As a result, the balance of interest-bearing liabilities was about 3.1 trillion yen, a decrease of about 400 billion yen from the previous year. Capital increased by approximately 600 billion yen from the previous year to about 2.6 trillion yen, mainly due to an increase in net profit and foreign currency translation adjustments. As a result, the net debt-to-equity ratio, a financial health indicator, has also improved to 0.6x, in line with the target of 1.0x or less in FY2025.

In addition, although ROIC, which indicates capital efficiency, has deteriorated compared with the previous year due to factors such as a decrease in net profit (excluding time lag), we are committed to improving profitability and achieving our target of 4.5% set for FY2025.

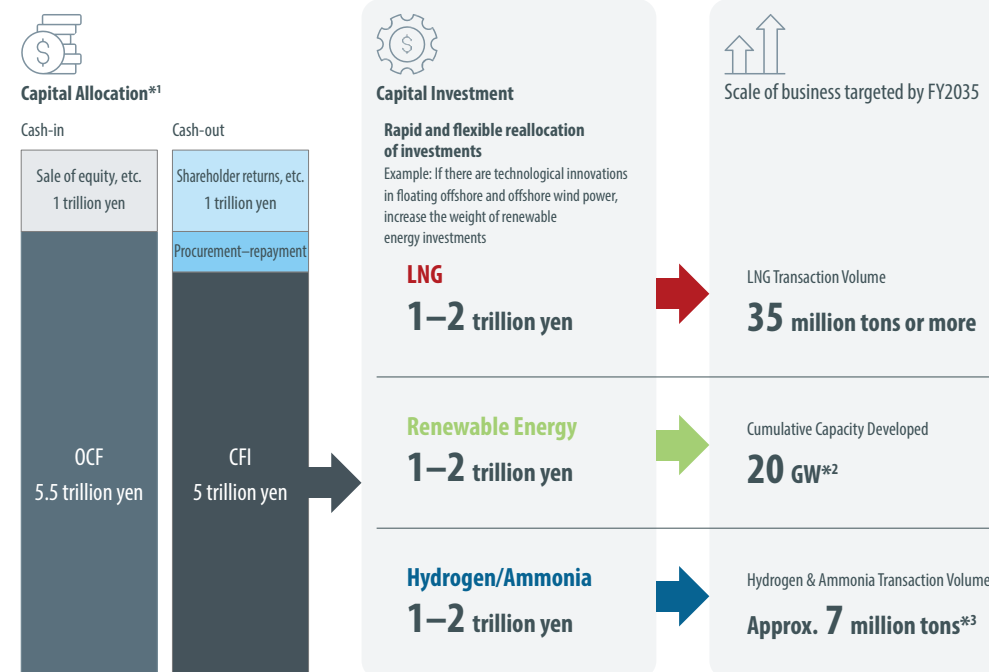
### Capital Allocation

I would like to explain our future capital allocation as presented in “Financial Strategy and Financial Target Levels Targeted for by 2035,” published in May 2024. We expect to generate 5.5 trillion yen in operating cash flow (OCF) in the cumulative period from 2024 to 2035, and we plan to use these funds for investments totaling 5 trillion yen. As a breakdown, we will invest 1 to 2 trillion yen in each of our three strategic positionings (LNG,

renewable energy, and hydrogen & ammonia) listed in our growth strategy. Over the long term, until 2035, we aim to flexibly change the allocation of these three strategic positionings in response to market conditions, technological innovations, and policy trends. This will enable us to become a corporate company that can grow sustainably regardless of changes in the environment or policy. At the same time, we aim to achieve an LNG transaction volume of more than 35 million tons, a cumulative renewable energy development capacity of 20 GW, and a hydrogen & ammonia transaction volume of approximately seven million tons.

• Flexibly allocate investments to the three strategic positionings (SPs) set out in the growth strategy while monitoring market conditions, technological innovation, and policy trends, using OCF as the source of funds.

• This will enable us to achieve a corporate structure that can grow sustainably regardless of changes in the environment or policy.



\*1 Cumulative estimate for FY2024 to FY2035

\*2 Investment decisions will be made with discipline, focusing on high-quality projects while monitoring market conditions

\*3 This initiative will be gradually detailed, considering the underlying policies and other assumptions. Should these assumptions change significantly, a revision will be made.

## Message from the CFO



### Strengthening the Finance Group Function to Enhance Corporate Value and Reduce Capital Costs

JERA aims to become a global company rooted in Japan and join the ranks of the world's leading energy companies. As CFO, I have been working to enhance corporate value while assisting the CEO. Specifically, over the past five years, I have been pursuing initiatives in the following four areas to support growth.

First, I have worked on strengthening our operational infrastructure to support prompt and accurate decision-making. As the business environment surrounding our company becomes increasingly complex, I am working on building a financial infrastructure system aimed at data-driven management, enabling us to quickly obtain and analyze a wide range of reliable data for simulations. We have also finalized the implementation of IFRS to enhance transparency and earn the confidence of our stakeholders both domestically and internationally. These efforts have helped standardize and streamline our business processes, allowing our employees to focus on higher-value-added work.

The second area I have focused on is proper capital management and financial governance. JERA requires substantial investment capital for its operations, making effective financial risk management crucial. This involves ensuring that procured funds align with our mission, vision, and growth strategy, contribute to building a

portfolio that enhances corporate value, and that each investment generates returns exceeding the cost of capital.

Third is my role as a trusted business partner for management and business divisions. I provide advice on investments, loans, business acquisitions, and divestitures in each division based on my expertise in accounting, taxation, M&A, and project finance. Through the activities of JERA Ventures, which launched in 2023, I also contribute to discovering technological innovations and investment opportunities.

Finally, the fourth area of my focus has been appropriate and active engagement with external stakeholders, particularly investors. By engaging in dialogue, I aim to ensure that our initiatives are correctly understood by stakeholders both domestically and internationally. I also aim to link them to management decisions that contribute to enhancing corporate value by listening to their expectations and requests and directly communicating them to management.

These four areas are supported by a highly diverse team of professionals, including mid-career hires in the finance and accounting departments and staff at overseas sites. When I joined in 2019, the Finance and Accounting Department in Japan consisted of just over 40 people. However, as of July 2024, it has grown to a team of over 210 members, with approximately 70% being mid-career or new graduate hires and about 30% women, bringing together talent with diverse backgrounds. On a consolidated basis, we also have around 100 finance and accounting professionals, mainly within our key domestic and international subsidiaries, and we aim to achieve integrated global management by working closely with these teams.

The business environment is undergoing rapid transformation, driven by geopolitical risks, climate change issues, and the liberalization of the electricity market. Despite these changes, JERA's Finance and Accounting Division remains focused on adopting innovative approaches, leveraging global talent, and fostering a flat organizational structure and a culture of innovation—all without losing sight of JERA's mission and vision.

### Leading the Growth Strategy Toward 2035 Globally as CFO.

As JERA's CFO, I am committed to supporting our global initiatives by managing our profit and loss, maintaining a sound balance sheet, and building a company that earns the trust of our many stakeholders, including investors and financial institutions. At the same time, I badly want to create a workplace where every employee feels proud of the company and can share a sense of happiness and well-being with their families.

Executing a growth strategy that supports our mission and vision is one of our great challenges. I believe that it is an essential part of my role as CFO to occasionally apply the brakes to ensure that our investments do not involve excessive risk. With this in mind, I will remain focused on the financial KPIs we have set for 2035, helping to maintain financial discipline and enhance corporate value.



# JERA Zero CO<sub>2</sub> Emissions 2050

Committed to Achieving Zero CO<sub>2</sub> Emissions across Domestic and Overseas Operations

## JERA Zero CO<sub>2</sub> Emissions 2050

- ▶ JERA's mission is to provide cutting-edge solutions to the world's energy issues.
- ▶ We are taking on the challenge of achieving net-zero CO<sub>2</sub> emissions in Japan and around the world in hopes of creating a more sustainable society for us all.\*

\* JERA Zero CO<sub>2</sub> Emissions 2050 is premised on steady advances in decarbonization technology, economic viability, and consistency with government policy. We are developing our own decarbonization technologies and taking the initiative to ensure economic viability.

## Three Approaches of JERA Zero CO<sub>2</sub> Emissions 2050

# 1

### Combining Complementarity Renewable Energy with Zero Emission Thermal Power

We will achieve our vision through a combination of renewable energy and zero CO<sub>2</sub> emission thermal power generation. The adoption of renewable energy is supported by thermal power capable of generating electricity regardless of natural conditions. JERA will promote the adoption of greener fuels and pursue thermal power that does not emit CO<sub>2</sub> during power generation.

# 2

### Establishment of Country and Region-Specific Road Maps

We will achieve zero CO<sub>2</sub> emissions by establishing roadmaps that chart optimal solutions for each country and region. As the energy situation varies by country and region, with different solutions available based on the feasibility of renewable energy options and the presence of pipelines and transmission lines, we will work with stakeholders to establish country and region-specific roadmaps. We have already developed a roadmap for our business in Japan, which we will extend to other countries and regions.

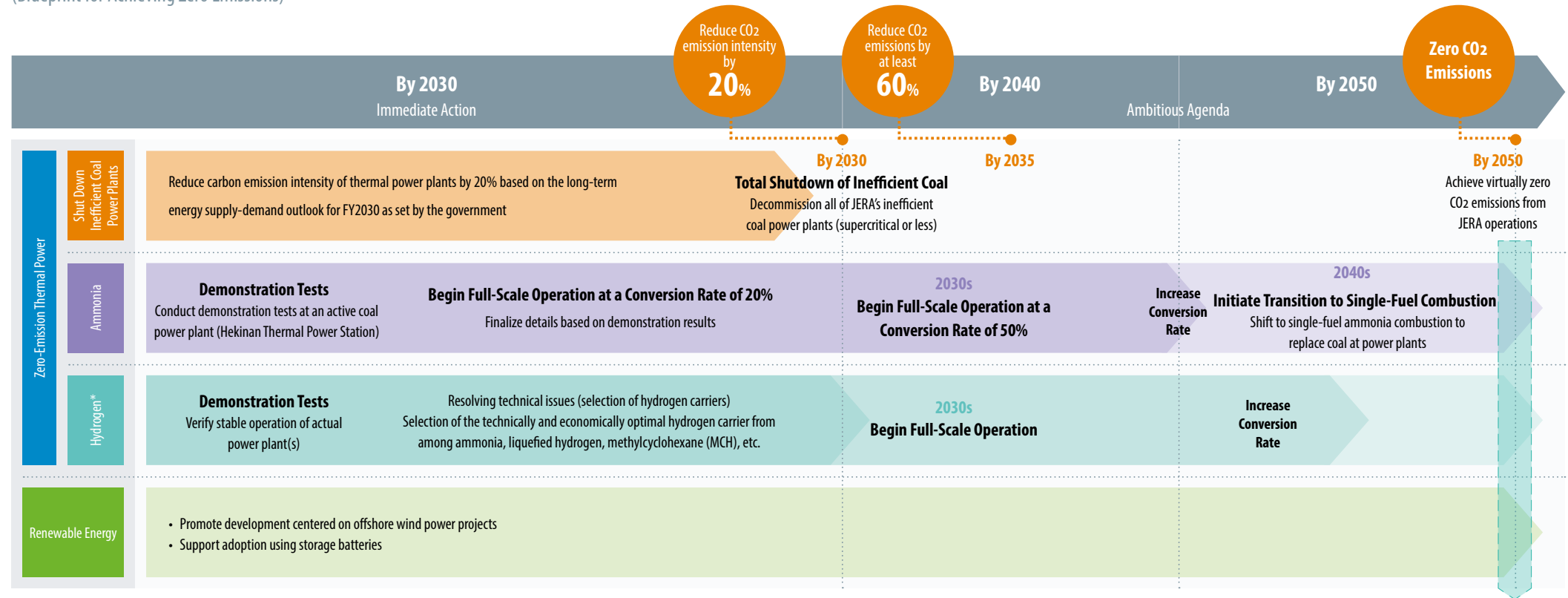
# 3

### Ensuring Smart Transitions

We will achieve zero CO<sub>2</sub> emissions through our smart transition strategy, which combines innovative and viable technologies available when adoption decisions are made. This approach will lower technical risk and facilitate a transition to a green society.

# JERA Zero CO<sub>2</sub> Emissions 2050 Roadmap for Its Business in Japan

(Blueprint for Achieving Zero Emissions)



This roadmap will evolve incrementally, adapting to changes in government policy and other relevant conditions, and will be revised as needed.

\* We are also considering the use of CO<sub>2</sub>-free LNG.

By 2050, CO<sub>2</sub> emissions from power plants still using fossil fuels will be offset using technologies like CO<sub>2</sub>-free LNG

## JERA Environmental Target 2030

JERA is actively working to reduce CO<sub>2</sub> emissions. For domestic operations, we will achieve the following by FY2030:

- Decommission all inefficient coal power plants (supercritical or less) and conduct demonstration tests of conversion to ammonia at high-efficiency (ultra-supercritical) coal power plants.
- Promote the development of renewable energy centered on offshore wind power projects and work to further improve the efficiency of LNG thermal power generation.
- Reduce carbon emission intensity of thermal power plants by 20% based on the long-term energy supply-demand outlook for FY2030 as set by the government.

## JERA Environmental Target 2035

JERA aims to reduce CO<sub>2</sub> emissions from domestic operations relative to FY2013 by at least 60% by FY2035 through the following initiatives:

- Strive to develop and adopt renewable energy in Japan, given expanded adoption under the national government's 2050 carbon-neutral policy.
- Commit to reducing carbon emission intensity from thermal power generation by promoting hydrogen & ammonia conversion.

"JERA Zero CO<sub>2</sub> Emissions 2050 for Its Business in Japan" and the "JERA Environmental Targets" are premised on steady advances in decarbonization technology, economic rationality, policy consistency, and the business climate under which these goals will be realized.

These targets have been formulated in alignment with Japan's greenhouse gas reduction goals and long-term strategy, both of which were established with an eye toward realizing the global ambition set forth in the Paris Agreement—that of limiting the global average temperature increase to as close to 1.5°C above pre-industrial levels as possible.

# JERA Zero CO<sub>2</sub> Emissions 2050

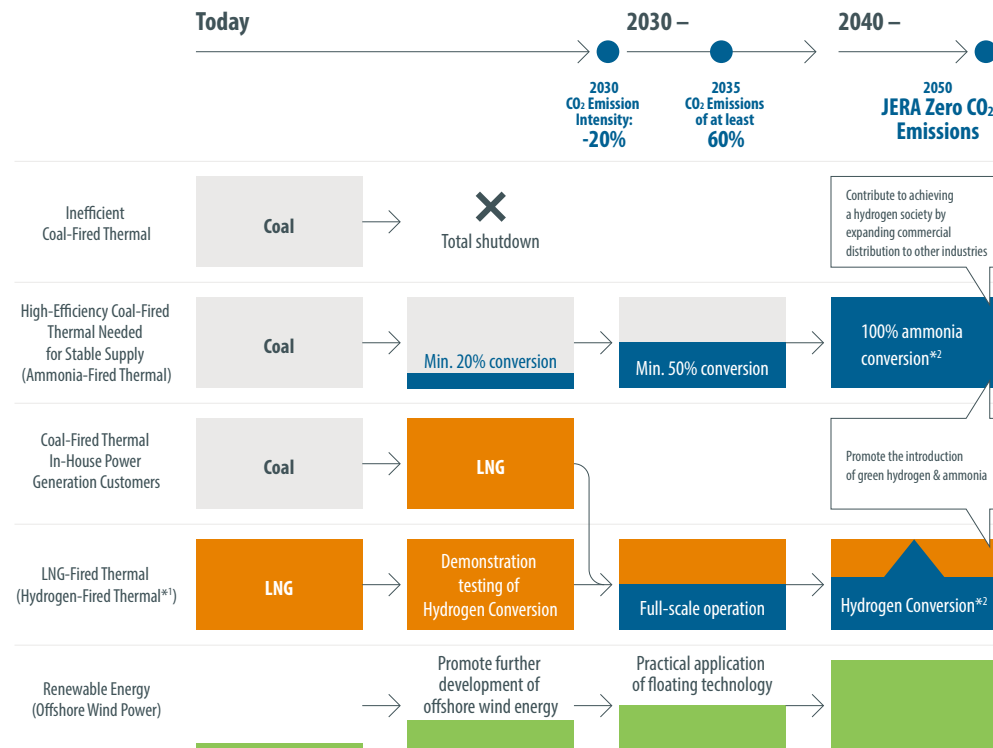
## Zero-Emission Transition Plan (Japan, Asia)

### Leading the Decarbonization of Japan's Power Sector with Renewable Energy and Zero-Emission Thermal Power

In Japan, we promote zero-emission thermal power generation by converting to hydrogen-based fuels.

By 2030, we plan to decommission all of JERA's inefficient coal power plants and convert the coal-fired thermal necessary for stable supply to ammonia-fired thermal, ultimately eliminating coal-fired power generation.

While promoting the development of renewable energy sources, especially offshore wind power, we will also consider the use of CCS and CCUS as options, keeping an eye on technological development trends.



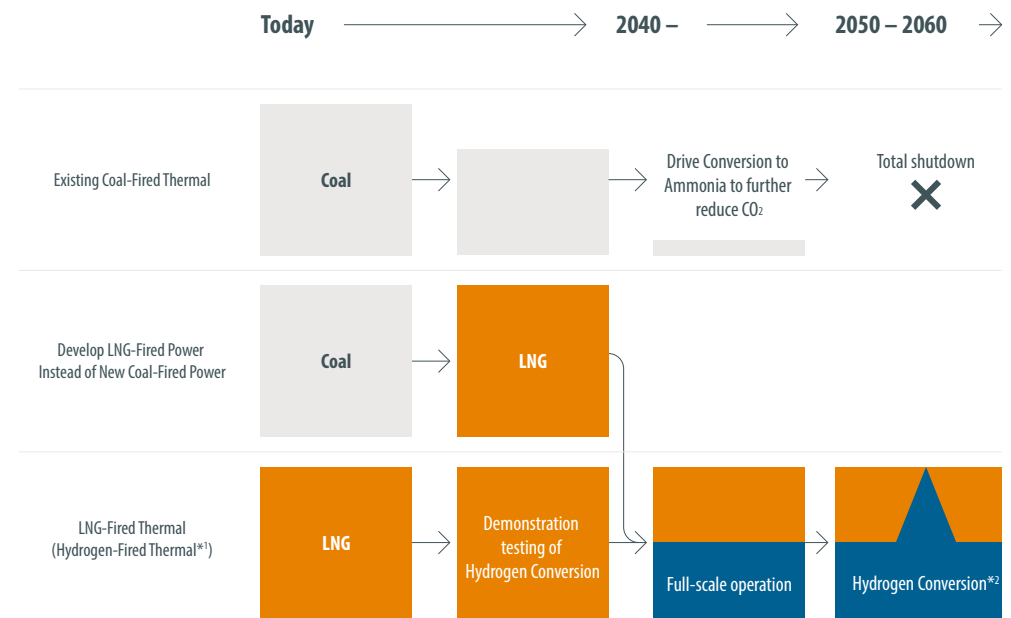
These initiatives will gradually be specified in more detail as government prerequisites become clearer, and reviewed if there are major changes in such conditions.

\*1 Consider use of CO<sub>2</sub>-free LNG \*2 Using green or blue hydrogen & ammonia

### Expanding the Use of LNG in Asia

In contrast, in Asia, we will first develop LNG-fired power instead of new coal-fired power, thereby limiting the increase in CO<sub>2</sub> emissions associated with growth in electricity demand.

At the same time, we will work toward a realistic transition by introducing distributed renewable energy and promoting ammonia conversion of coal for the future.



These initiatives will gradually be specified in more detail as government prerequisites become clearer, and reviewed if there are major changes in such conditions.

\*1 Consider use of CO<sub>2</sub>-free LNG \*2 Using green or blue hydrogen & ammonia