Energy for a New Era

FY2024
Consolidated Financial Results

(Note) The company's fiscal year (FY) is from April 1 to March 31 of the following year in this material.

JERA Co., Inc.

April 28, 2025

Outline of Financial Results

Consolidated Statement of Profit or Loss

(Unit: Billion Yen)

	FY2024(A)	FY2023(B)	Change(A-B)	Rate of Change(%)
Revenue (Net sales)	3,355.9	3,710.7	-354.8	-9.6
Operating profit	240.7	563.4	-322.6	-57.3
Profit	183.9	399.6	-215.7	-54.0
<Reference> Profit excluding time lag	143.7	148.7	-4.9	-3.3

Consolidated Statement of Financial Position

(Unit: Billion Yen)

	As of Mar. 31,2025 (A)	As of Mar. 31,2024(B)	Change(A-B)	Rate of Change(%)
Assets	8,589.7	8,508.1	81.6	1.0
Liabilities	5,596.4	5,849.5	-253.0	-4.3
Equity	2,993.2	2,658.6	334.6	12.6

Key Points of Financial Results

【Revenue】

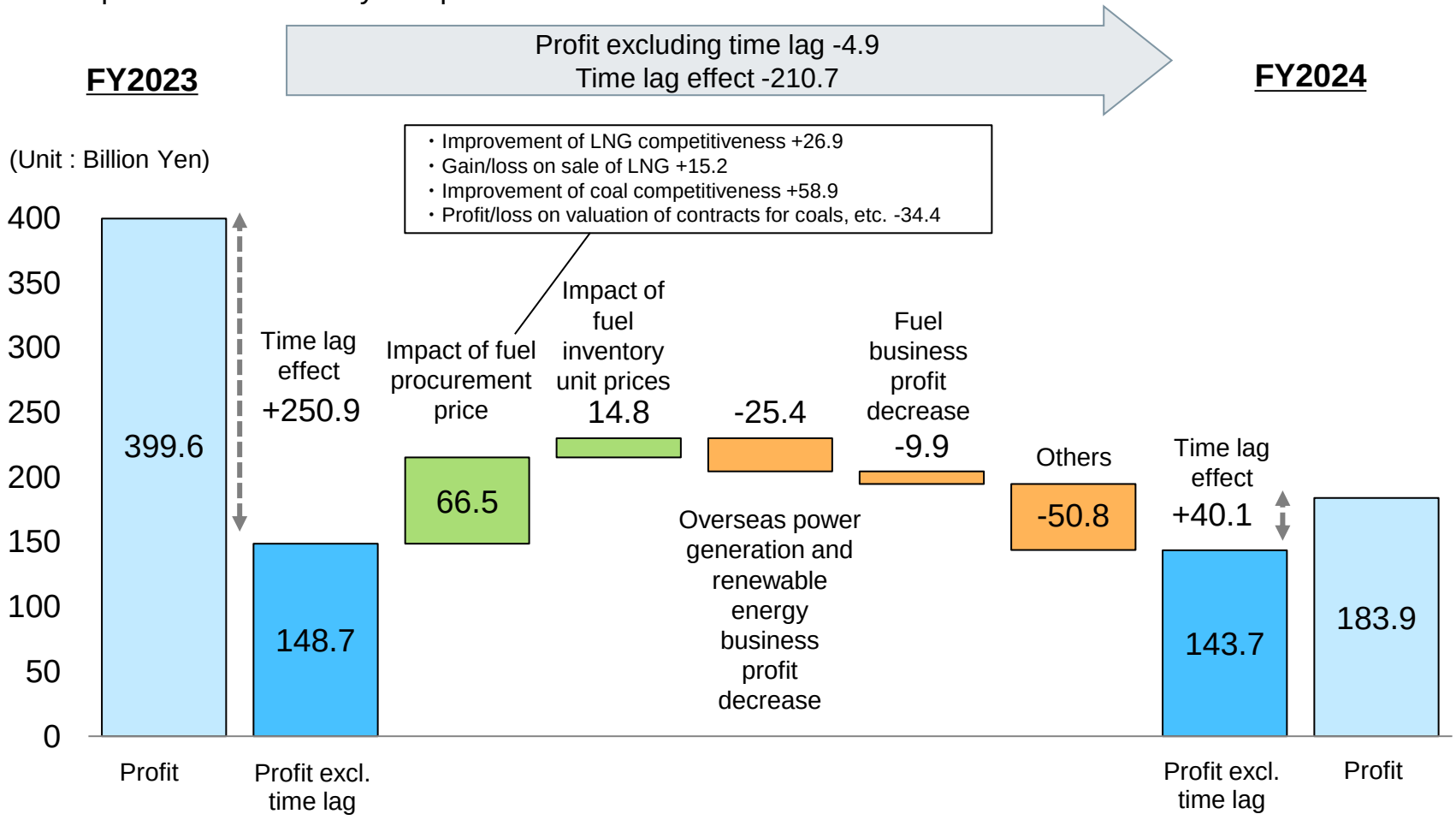
- **Revenue decreased by 354.8 billion yen (down 9.6%) from the last year to 3,355.9 billion yen** mainly due to a decrease of income unit price in electrical energy sales.

【Profit】

- **Profit decreased by 215.7 billion yen from the last year 399.6 billion yen to 183.9 billion yen.**
  - ・The effect of time lag decreased.
    (-210.7 billion yen [250.9 billion yen to 40.1 billion yen])
  - ・Profit excluding time lag decreased.
    (-4.9 billion yen [148.7 billion yen to 143.7 billion yen])
- Profit excluding the time lag decreased mainly due to a decrease in profits from overseas power generation and renewable energy business and fuel business, despite an improvement in the impact of fuel procurement price and the impact of fuel inventory unit prices.

Change Factors of Consolidated Profit

- Profit excluding the time lag decreased mainly due to a decrease in profits from overseas power generation and renewable energy business and fuel business, despite an improvement in the impact of fuel procurement price and the impact of fuel inventory unit prices.



*Figures are after-tax.

Consolidated Statement of Profit or Loss

(Unit: Billion Yen)

	FY2024(A)	FY2023(B)	Change(A-B)	Main Factors of Changes
Revenue (Net sales)	3,355.9	3,710.7	-354.8	• Decrease of income unit price in electrical energy sales
Operating expenses	3,166.2	3,222.2	-56.0	• Decrease of fuel costs
Other operating income/ loss	51.0	74.9	-23.9	• Equity method profit / loss -35.9 • FX gain and loss +10.6
Operating profit	240.7	563.4	-322.6	
Financial income	94.1	78.6	15.4	
Financial costs	56.7	64.6	-7.8	
Profit before tax	278.1	577.4	-299.2	• Decrease of time lag effect -292.7(348.4→ 55.7) • Decrease of profit excl. time lag -6.5(228.9→222.3)
Income tax expense	66.0	116.1	-50.1	
Profit attributable to non-controlling Interests	28.2	61.6	-33.4	
Profit	183.9	399.6	-215.7	

Consolidated Statement of Financial Position

(Unit: Billion Yen)

	As of Mar 31,2025 (A)	As of Mar 31,2024(B)	Change (A-B)	Main Factors of Changes
Cash and cash equivalents	1,261.6	1,405.3	-143.7	• Decrease in JERA, etc.
Property, plant and equipment	2,905.1	2,805.4	99.7	
Investments accounted for using equity method	1,299.2	1,235.2	63.9	
Others	3,123.6	3,062.0	61.6	• Decrease of derivative assets (JERAGM, etc.) -381.8
Assets	8,589.7	8,508.1	81.6	
Interest-bearing liabilities	3,099.7	3,103.6	-3.9	
Others	2,496.7	2,745.8	-249.1	• Decrease of derivative liabilities (JERAGM, etc.) -366.1
Liabilities	5,596.4	5,849.5	-253.0	
Equity attributable to owners of parent	2,896.1	2,632.6	263.5	• Profit +183.9 • Foreign currency translation adjustments +109.0
Non-controlling interests	97.1	25.9	71.1	
Equity	2,993.2	2,658.6	334.6	

Consolidated Statement of Cash Flows

(Unit: Billion Yen)

		FY2024(A)	FY2023(B)	Change(A-B)
Operating cash flow		405.1	1,324.8	-919.7
Investment cash flow	Purchase of property, plant, and equipment	-287.7	-242.3	-45.4
	Purchase of investment securities	-20.6	-59.6	39.0
	Others	-126.9	-226.5	99.5
		-435.3	-528.4	93.1
Free cash flows		-30.1	796.4	-826.6
Financial cash flow	Increase (decrease) in interest-bearing debt	-8.9	-731.5	722.6
	Dividends paid *	-	-	-
	Others	-109.6	-141.6	31.9
		-118.6	-873.2	754.5
Increase (decrease) in cash and cash equivalents (minus indicates decrease)		-143.7	44.4	-188.2

* Excluding Dividends paid to non-controlling interests

Segment Information

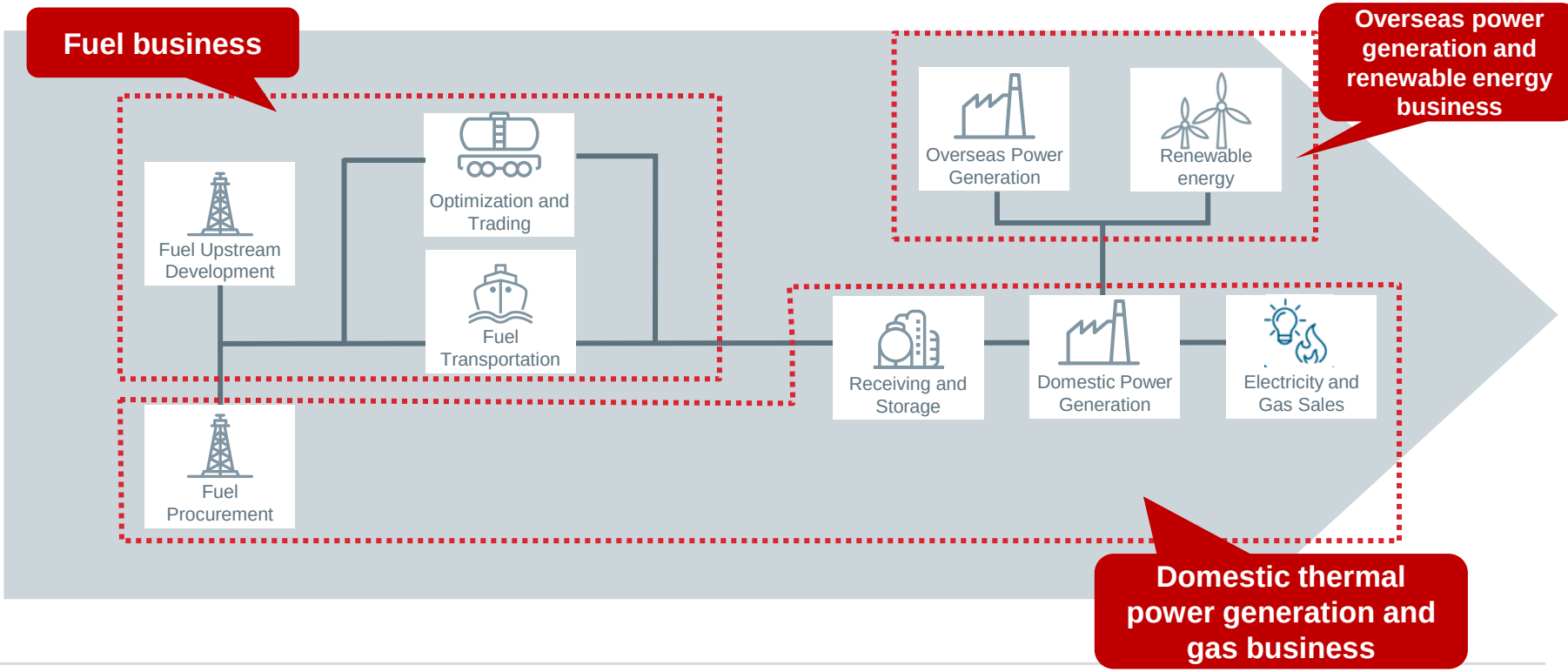
(Unit: Billion Yen)

	FY2024(A)		FY2023(B)		Change(A-B)		Main Factors of Changes in Profit / Loss
	Revenue	Profit / Loss	Revenue	Profit / Loss	Revenue	Profit / Loss	
Fuel	406.2	122.7	407.4	132.6	-1.2	-9.9	•Impact of the forced outages of Freeport •Profit decrease in JERAGM, etc.
Overseas power generation and renewable energy	72.7	8.3	52.5	33.7	20.2	-25.4	•Gain on reversal of impairment loss in Formosa 2 in FY23 -19.6 •Profit decrease in overseas IPPs, etc -5.7
Domestic thermal power generation and gas	4,265.3	124.3 84.1※2	4,424.2	255.3 4.4※2	-158.8	-131.0 79.7※2	•Improvement of LNG competitiveness +26.9 •Gain/loss on sale of LNG +15.2 •Improvement of coal competitiveness +58.9 •Profit/loss on valuation of contracts for coals, etc. -34.4 •Impact of fuel inventory on unit prices +14.8
Adjustments※1	-1,388.4	-71.4	-1,173.5	-22.1	-214.9	-49.2	•Elimination of unfulfilled fuel contracts -27.1
Consolidated	3,355.9	183.9 143.7※2	3,710.7	399.6 148.7※2	-354.8	-215.7 -4.9※2	

※1 : “Adjustments” includes headquarter expenses and consolidation adjustments such as intersegment eliminations
※2 : Excluding the effect of time lag

(Reference) : JERA's Value Chain and Segment

- JERA owns the entire supply chains for fuel and thermal power generation, from fuel upstream business (development of gas fields) to transportation and storage (fuel terminal operation) to power generation and wholesaling.
- We have three business segments; "Fuel business" for investment in fuel upstream, transportation and trading business, "Overseas power generation and renewable energy business" for investment in overseas power generation and domestic and overseas renewable energy business, and "Domestic thermal power generation and gas business" for sales of electricity and gas in Japan.



FY2025 Forecast

- Profit excluding time lag is expected to be around 200 billion yen, while time lag profit is projected to be 30 billion yen, with a total profit of around 230 billion yen.
- Results may fluctuate due to changing trends in fuel markets and other factors.

(Unit: Billion Yen)

	FY2025 Forecast (A)	FY2024 Result (B)	Change (A-B)
Profit	230.0	183.9	Approx. 50.0
Time lag effect	30.0	40.1	Approx. -10.0
Profit excl. time lag	200.0	143.7	Approx. 60.0

[Breakdown for each segment]

(Unit: Billion Yen)

	FY2025 Forecast (A)	FY2024 Result (B)	Change (A-B)
Profit excl. time lag	200.0	143.7	Approx. 60.0
Fuel	100.0	122.7	Approx. -20.0
Overseas power generation and renewable energy	30.0	8.3	Approx. 20.0
Domestic thermal power generation and gas	100.0	84.1	Approx. 20.0
Adjustments	-30.0	-71.4	Approx. 40.0

*Breakdown is based on rough estimates at the disclosure date.

Appendix

Key Elements

[FY2024 Results]

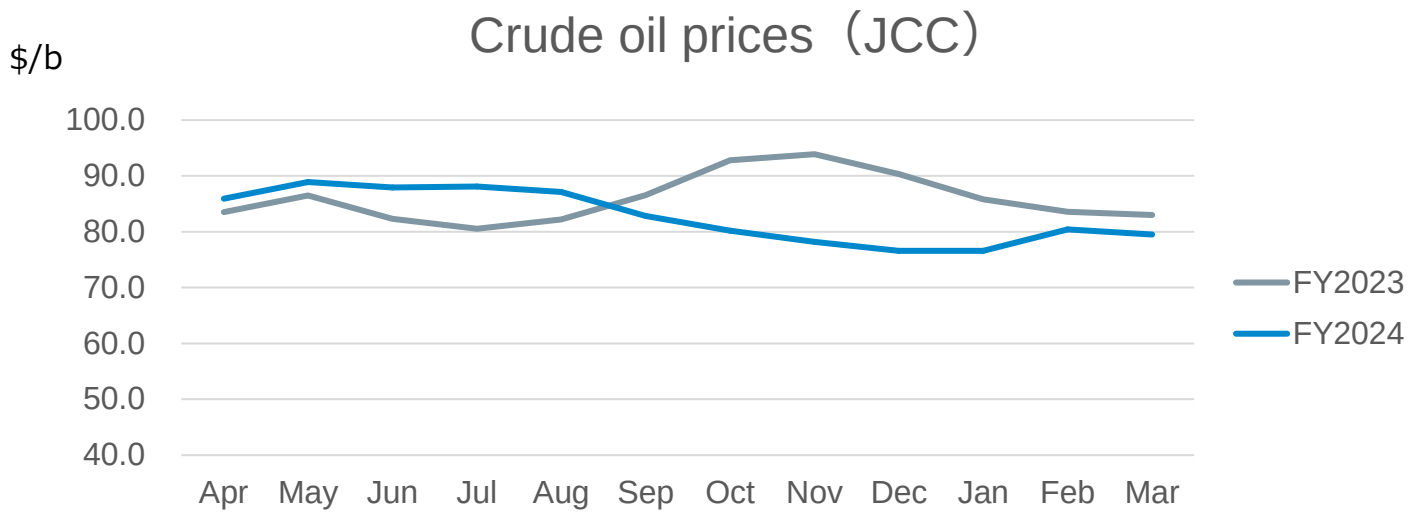
	FY2024(A)	FY2023(B)	Change(A-B)
Electrical Energy Sold (TWh)	234.1	236.2	-2.1
Crude Oil Prices(JCC) (dollar/barrel)	82.7	86.0	-3.3
Foreign Exchange Rate (yen/dollar)	152.6	144.6	8.0

Note: Crude Oil Prices(JCC) for FY2024 is tentative.

[FY2025 Forecast]

	FY2025 Forecast	FY2024 Result
Crude oil prices(JCC) (dollar/barrel)	Approx. 73	82.7
Foreign exchange rate (yen/dollar)	Approx.146	152.6

Trends in Crude Oil Price and Exchange Rates



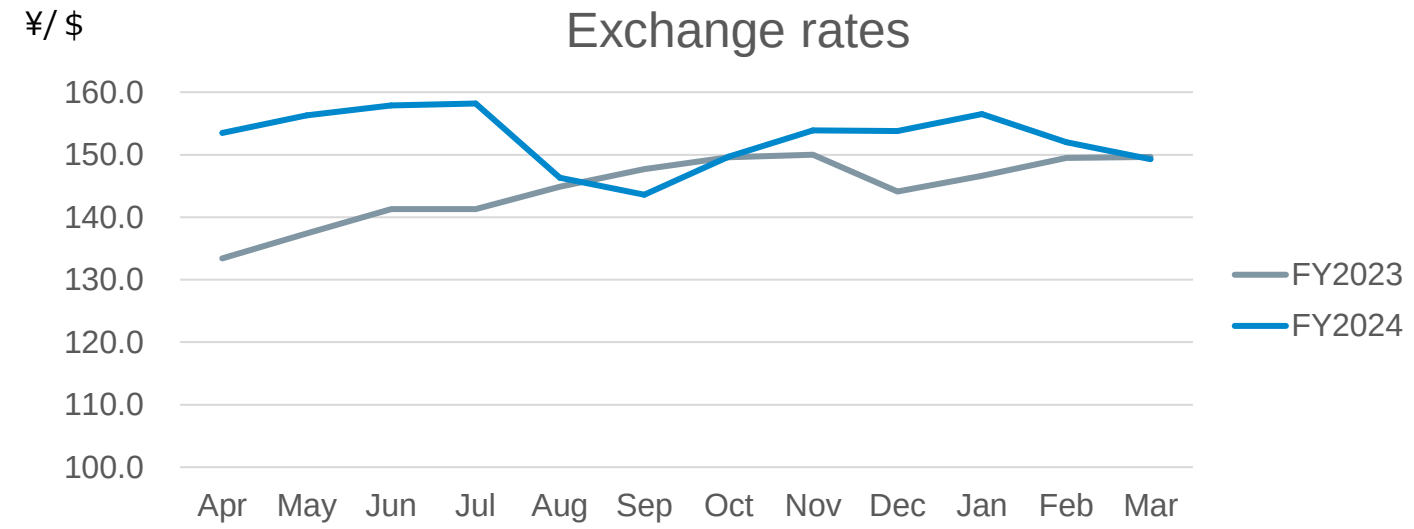
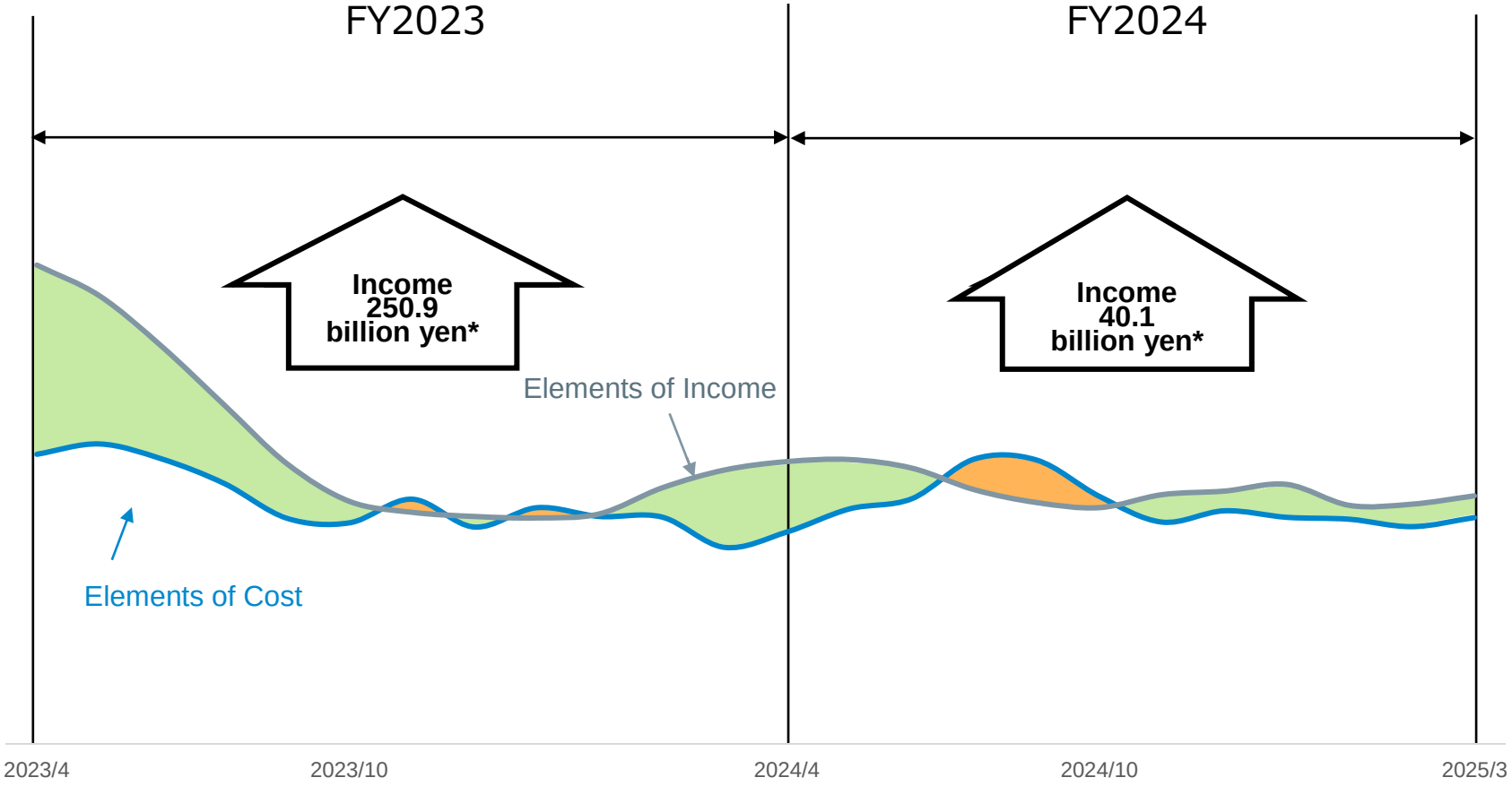


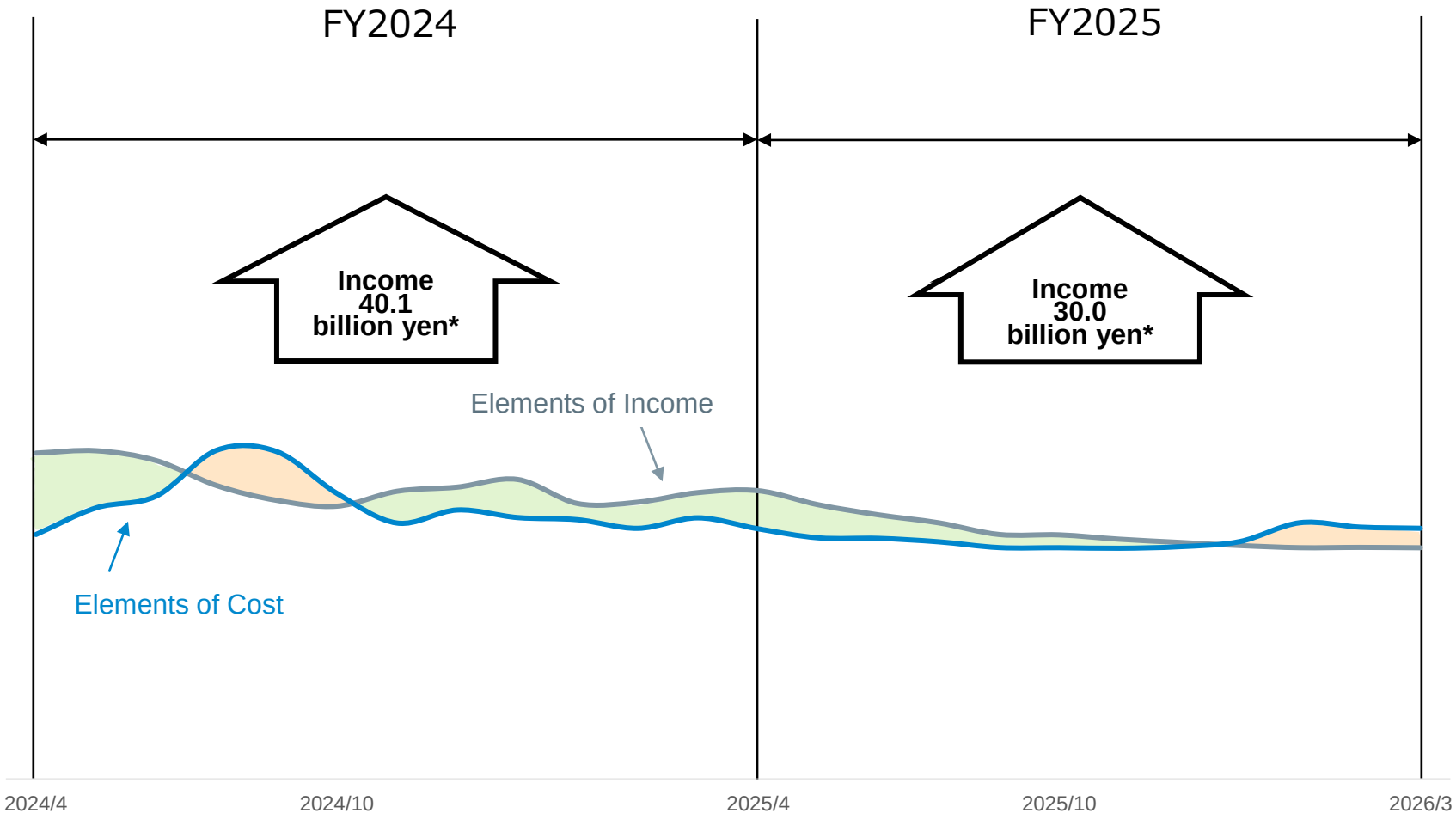
Image of Time Lag （FY2023－FY2024）

- Time lag is profits and losses due to the time difference between changes in fuel prices and their reflection in sales prices.
- The impact on profits and losses will be neutral in the medium to long term.



* Figures are after-tax amounts.

Image of Time Lag （FY2024－FY2025）



* Figures are after-tax amounts.

Electrical Energy Sold and Electrical Power Generated

[Electrical Energy Sold(TWh)]

	Apr to Jun	Jul to Sep	Oct to Dec	Jan to Mar	Total
FY2024	45.9	66.2	57.8	64.2	234.1
FY2023	48.1	67.3	58.2	62.6	236.2

[Electrical Power Generated(TWh)]

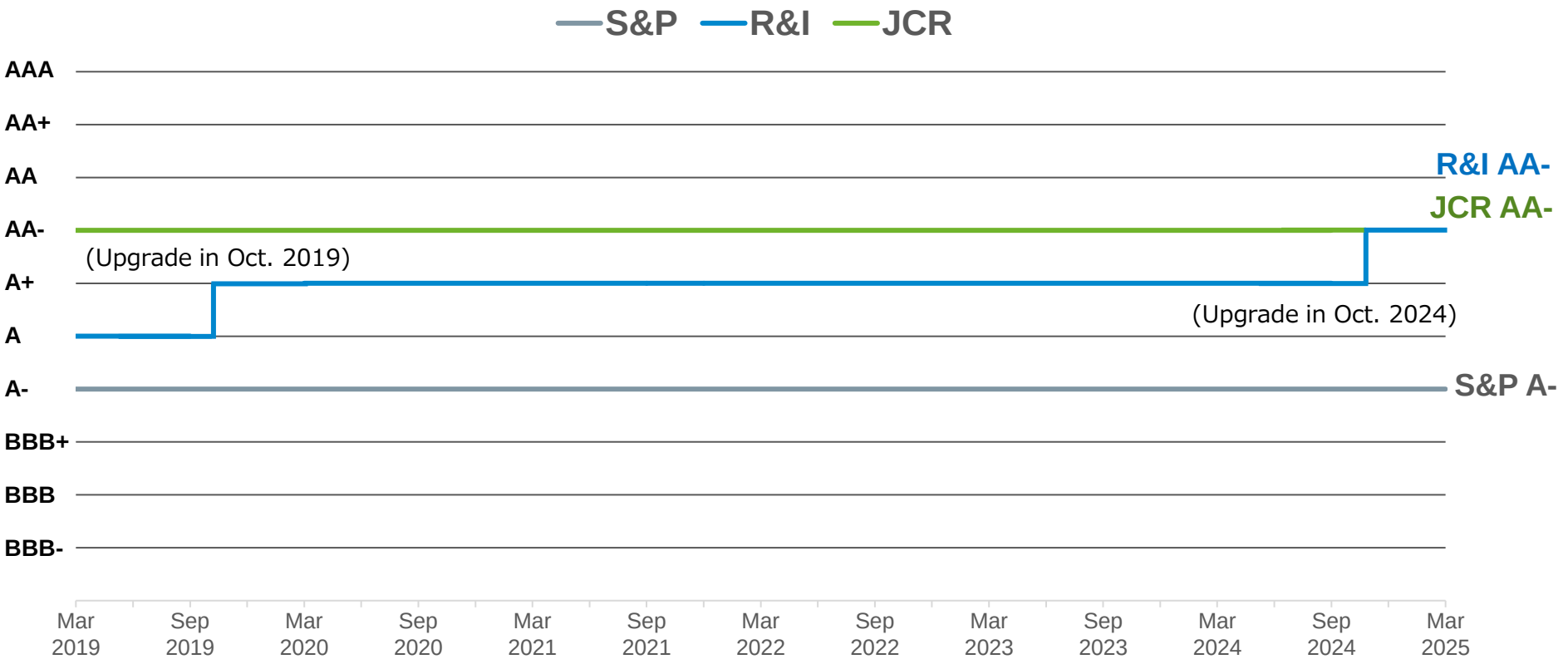
		Apr to Jun	Jul to Sep	Oct to Dec	Jan to Mar	Total
FY2024		45.2	65.1	54.9	62.1	227.2
	LNG	33.0（73%）	48.1（74%）	42.1（77%）	46.5（75%）	169.7（75%）
	Coal	12.1（27%）	16.6（25%）	12.5（23%）	15.2（24%）	56.4（25%）
	Others	0.1（0%）	0.4（1%）	0.2（0%）	0.5（1%）	1.1（0%）
FY2023		47.5	66.2	55.0	62.2	230.9
	LNG	36.2（76%）	48.8（74%）	41.7（76%）	47.5（76%）	174.2（75%）
	Coal	11.2（24%）	17.2（26%）	13.3（24%）	14.3（23%）	56.1（24%）
	Others	0.0（0%）	0.1（0%）	0.1（0%）	0.4（1%）	0.6（0%）

*The total may not match due to rounding.

Note: Electrical Power Generated for Jan to Mar of FY2024 is tentative.

Credit Ratings

[Issuer Credit Ratings History]



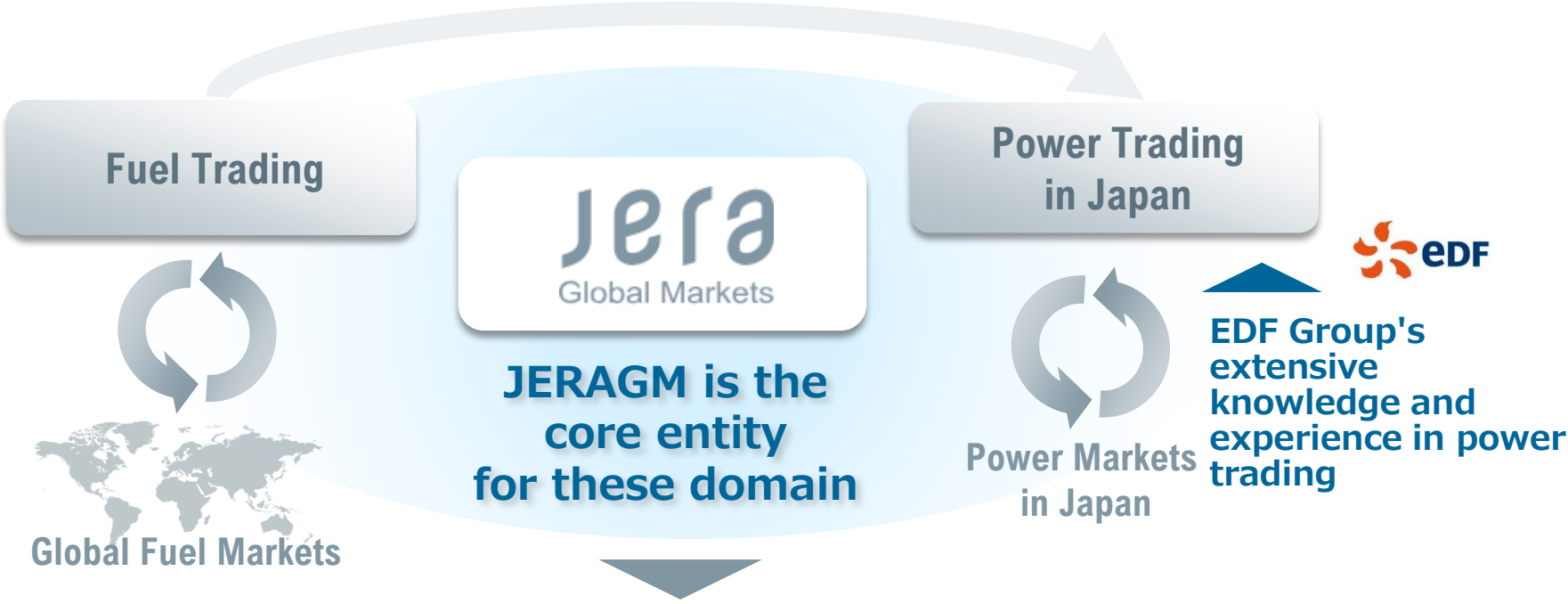
Topics

Topics:

JERA and EDF Trading Expand Joint Venture covering Japan's Power Trading business

- JERA and EDF Trading Limited have agreed to integrate their power trading business in Japan and set JERA Global Markets Pte. Ltd. as the core entity for JERA's power trading in Japan from April 2025.

JERAGM's global energy trading business capability for power trading business in Japan



By the finest optimization in the global fuel markets and power markets in Japan,
we contribute to a stable global energy supply and the further revitalization of the power market in Japan.

Topics:

JERA Makes Final Investment Decision on “Blue Point” Low-Carbon Ammonia Production Project in the United States

- JERA has made a final investment decision on the low-carbon ammonia production project “Blue Point” in Louisiana, USA, in partnership with CF Industries Holdings, Inc. and Mitsui & Co., Ltd..
- The Project will develop a low-carbon ammonia production facility in Louisiana, USA, which would be the largest ammonia production facility in the world with an annual nameplate capacity of approx. 1.4 million tons.
- The facility will produce ammonia using natural gas as feedstock, with CCS technology implemented to capture, transport, and store the CO2 generated during production.
- As an investor, JERA will offtake the produced ammonia to supply markets in Europe, Asia, and other regions.

Project Overview	
Project Name	Blue Point
Type of Ammonia	Blue ammonia
Production Capacity	Approx. 1.4 million tons annually
Start of Production	2029 (est.)
Total Cost	Approx. 4 billion USD (600 billion JPY)
Investors	CF Industries (40%) JERA (35%) Mitsui (25%)
Location	Ascencion Parish,Louisiana,USA

Left side: Yukio Kani, Global CEO and Chair of JERA
Center: Tony Will, President & CEO of CF Industries
Right side: Furutani Takashi, Senior Executive Managing Officer of Mitsui

Topics:
Restarting Taketoyo Thermal Power Station to Contribute to a Stable Supply This Winter

- Concerning the fire that occurred at Taketoyo Thermal Power Station in Jan. 2024, based on the measures to address causes and prevent reoccurrence that were compiled by the accident investigation committee, we aim to **restart biomass co-firing at the facility around the end of FY 2026**.
- **As a provisional measure** until biomass co-firing can be restarted, we decided to conduct **coal-only operation during high-demand summer and winter periods beginning this winter (from Jan 7, 2025)**.

  ⇒By restarting and operating the facility with a priority on safely, we will contribute to securing a stable supply of electricity.

	Tentative Restart	Restart with Biomass
Date of Restart (Target)	Jan 7, 2025	Around End of FY 2026
Operating Conditions	Coal Only	Biomass Co-Firing (17% → 8%)

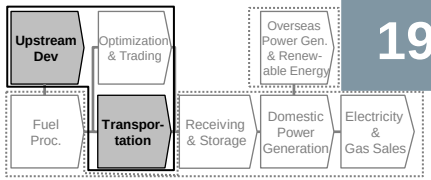
Unit	Taketoyo Thermal Power Station Unit 5
Output	1.07 GW

***Supplementary information on operating conditions**

- Raising the co-firing rate will be considered provided safety can be ensured. Given the change in co-firing rate and the provisional measure of coal-only operation, we will implement measures to reduce CO2 emissions provided that a stable supply of electricity can be ensured.
- Additional measures related to CO2 emissions:Implement the planned reduction of operations at Taketoyo Thermal Power Station during low-demand periods and strive not to exceed the initial planned annual CO2 emissions for 17% co-firing.
- Additional measures related to CO2 emissions intensity: Implement the planned reduction of operations at other JERA coal-fired thermal power plants, and a shift to gas-fired thermal power plants, during low-demand periods and strive not to substantially exceed the initial planned annual CO2 emissions intensity for 17% co-firing.

Overview of each segment

Fuel Business:
Fuel Upstream / Transportation Business



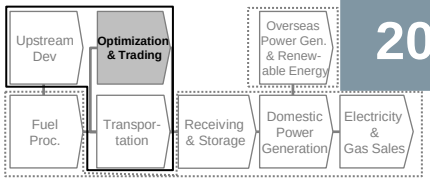
- LNG Demand has increased in Europe and Asia. JERA participates in LNG upstream projects and JERA's transaction volume is the world's largest class (FY2023: Approximately 36 million tons in JERA Group). JERA diversifies procurement risk secures by building portfolio which makes JERA acquire the procurement market information and the trend.
- Additionally, JERA owns fuel carriers for highly consistent, flexible, and competitive fuel supply.

Upstream Project

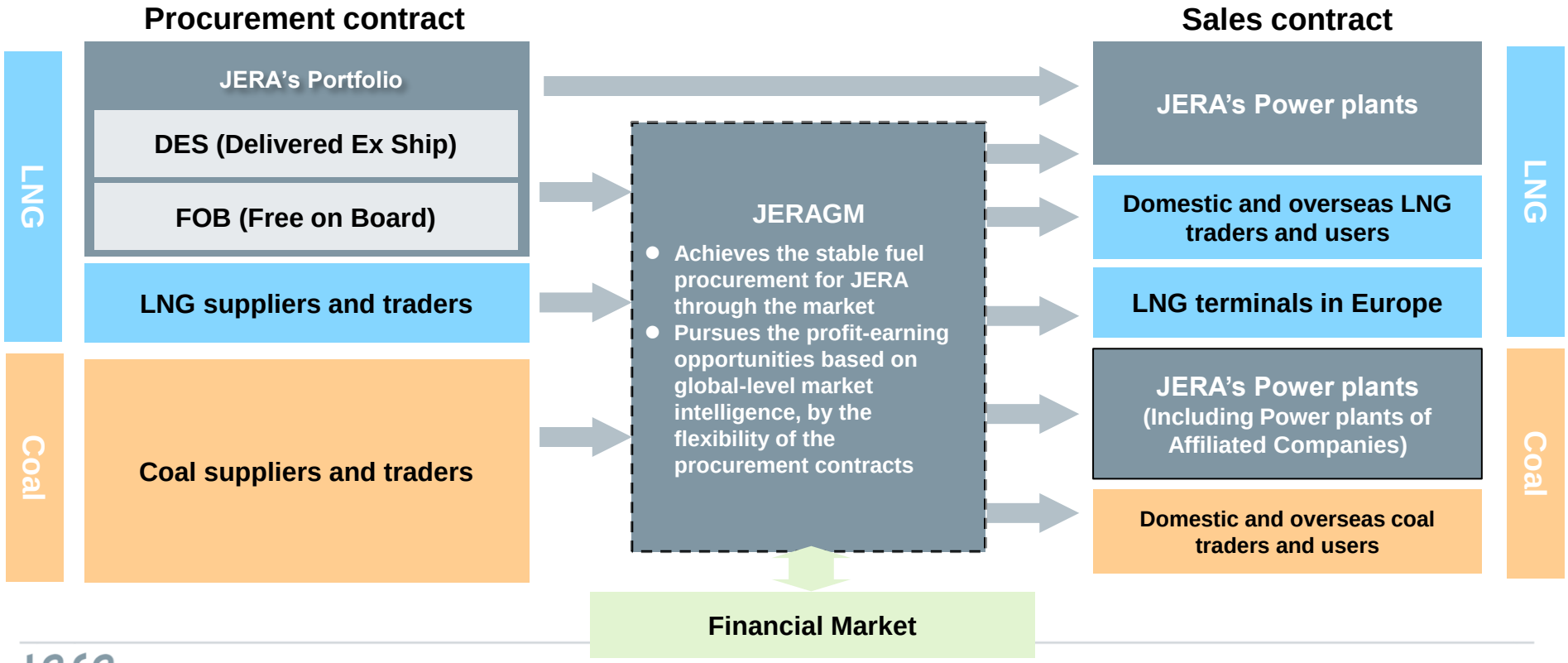
Project Name	Country	LNG Production / Liquefaction Capability	Investment Ratio
Darwin LNG Project	Australia	Approx. 3.7 million tons/year	Gas field: 5.15% LNG plant: 6.132%
Gorgon LNG Project		Approx. 15.6 million tons/year	0.417%
Ichthys LNG Project		Approx. 8.9 million tons/year	0.735%
Wheatstone LNG Project		Approx. 8.9 million tons/year	Gas field: 10%***1** LNG plant: 8%***1**
Barossa gas field Project		Approx. 3.7 million tons/year	12.5%
Scarborough Gas Field Project		Approx. 8.0 million tons/year at maximum (Supply starts in 2026)	15.1%
Freeport LNG Project (Train1)	United States	Approx. 5.15 million tons/year	25%
Freeport LNG Development, L.P.*2		Approx. 15.45 million tons/year*4 for all three lines*3	21.9%*4

*1 Ratio of capital contribution through PE Wheatstone, in which JERA invests *2 Freeport LNG Project Management Company
*3 Including 5.15 million tons/year from Train 1 *4 Ratio of capital contribution through Gulf Coast LNG Holdings LLC, in which JERA invests

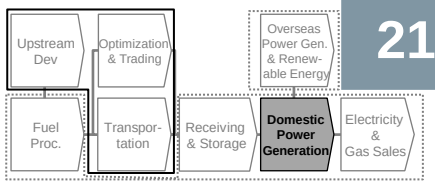
Fuel Business:
Fuel Trading Business



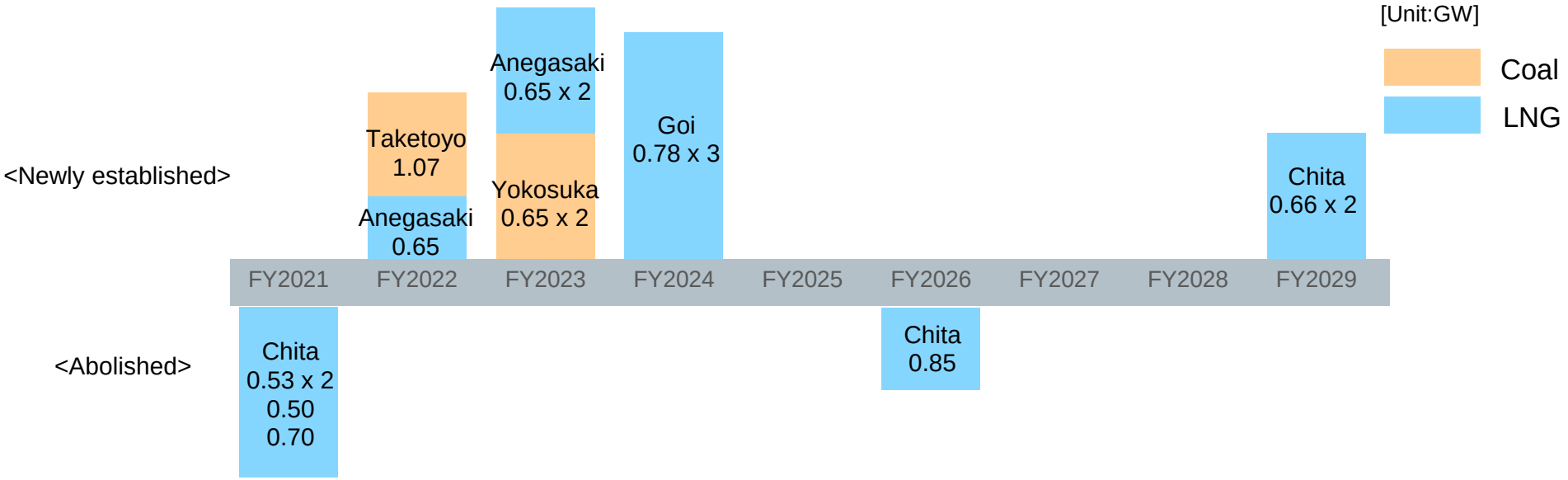
- JERAGM has offices in Singapore (HQ), UK, US, and Japan. Approximately 300 employees engage in asset-backed trading.
- With the global trading network, JERAGM supplies LNG and coal to power plants in Japan. Leveraging this commercial flow, JERAGM has succeeded in achieving both fuel supply stability and the expansion of profits by capturing business opportunities through markets and third parties.
- JERAGM's operation is under the governance of the Board of Directors elected by shareholders.



Domestic Thermal Power and Gas Business: Progress of Replacement of Thermal Power Plants in Japan



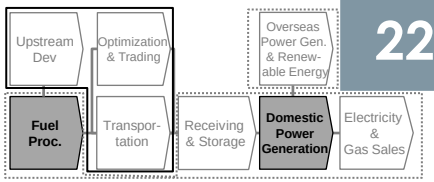
- JERA has replaced with the latest high-efficiency thermal power generation facilities. In addition to Taketoyo, Anegasaki and Yokosuka, Goi began commercial operation in March 2025.
- Unit 1 to 4 of Chita were retired in FY2021 and Unit 5 is planned to be retired in FY2026. We made the decision for replacement with the latest high-efficiency thermal power generation in December 2024. (environmental assessment has been conducted)



*As of March 31, 2025

Development Point	Status of Development
Chita	Construction starts in April 2026.

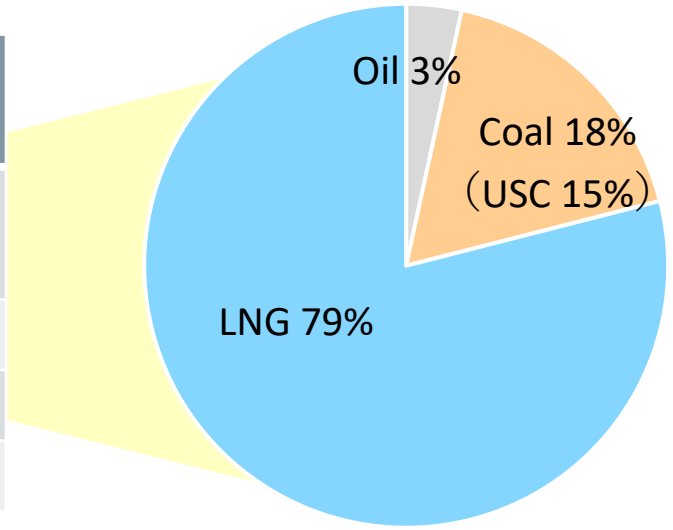
Domestic Thermal Power and Gas Business: Composition of Power Sources



- 79% of our power source is LNG, as low CO_2 emissions.
- Almost of JERA's coal thermal power plants consist of ultra super critical power generation system (USC) with high efficiency. JERA is going to shut down all inefficient coal thermal power plants, Non-USC Plants by 2030*1.

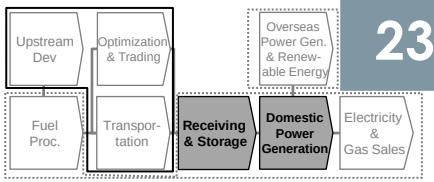
Composition of Power Sources*2

Fuel	Capacity (Generator output)
Coal (USC)	10.32 GW (8.92 GW)
LNG*3	46.29 GW
Oil	2.00 GW
Total	58.61 GW



*1 Press release on October 13, 2020 "Towards Zero CO_2 Emissions in 2050"
https://www.jera.co.jp/english/information/20201013_539
*2 As of March 31, 2025. Includes capacity under construction.
Excludes capacity of affiliates.
*3 Includes LPG and City Gas.

Domestic Thermal Power and Gas Business: Domestic Thermal Power Plants



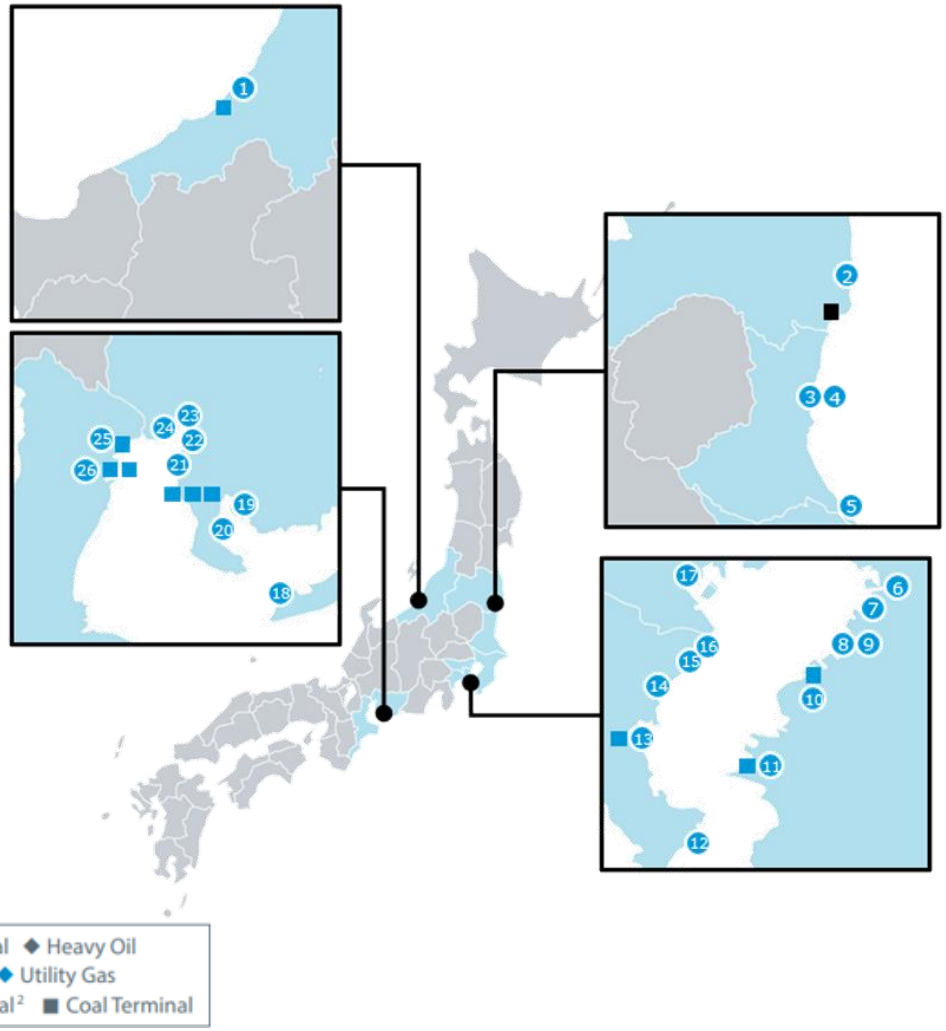
➢ JERA owns nearly 40% of total thermal power generation capacity in Japan.[3]

List of Thermal Power Plants in Japan[1]

(Total output and fuel type listed for each thermal power plant)

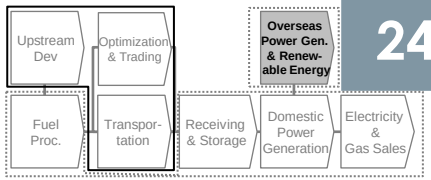
As of March 31, 2025

①	Joetsu	2.38 GW	◆
②	Hirono	1.80 GW	◆◆◆
③	Hitachinaka	2.00 GW	◆
④	Hitachinaka Kyodo <HITACHINAKA GENERATION>	0.65 GW	◆
⑤	Kashima	1.26 GW	◆
⑥	Chiba	4.38 GW	◆
⑦	Goi <GOI UNITED GENERATION> *Goi began commercial operation in March 2025	2.34 GW	◆
⑧	Anegasaki	1.20 GW	◆
⑨	Anegasaki <JERA Power ANEGASAKI> *Started operation in August 2023	1.941 GW	◆
⑩	Sodegaura	3.60 GW	◆
⑪	Futtsu	5.16 GW	◆
⑫	Yokosuka <JERA Power YOKOSUKA> *Started operation in December 2023	1.30 GW	◆
⑬	Minami-Yokohama	1.15 GW	◆
⑭	Yokohama	3.016 GW	◆
⑮	Higashi-Ohgishima	2.00 GW	◆
⑯	Kawasaki	3.42 GW	◆
⑰	Shinagawa	1.14 GW	◆
⑱	Atsumi	1.40 GW	◆◆
⑲	Hekinan	4.10 GW	◆
⑳	Taketoyo<JERA Power TAKETOYO> *Started operation in August 2022	1.07 GW	◆
㉑	Chita	1.708 GW	◆
㉒	Chita Daini	1.708 GW	◆
㉓	Shin-Nagoya	3.058 GW	◆
㉔	Nishi-Nagoya	2.376 GW	◆
㉕	Kawagoe	4.802 GW	◆
㉖	Yokkaichi	0.585 GW	◆



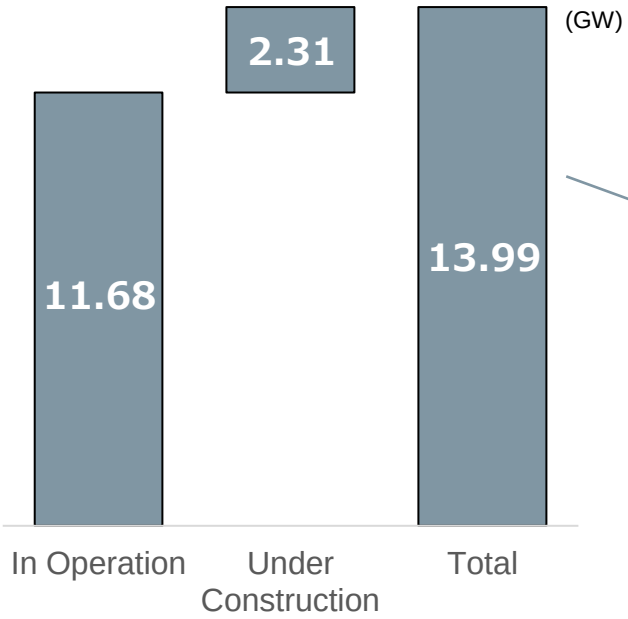
1 Power plant's name <Operator's name> 2 Includes jointly operated terminals in the Chita and Yokkaichi areas
3 reference: METI "Electricity Survey Statistics"

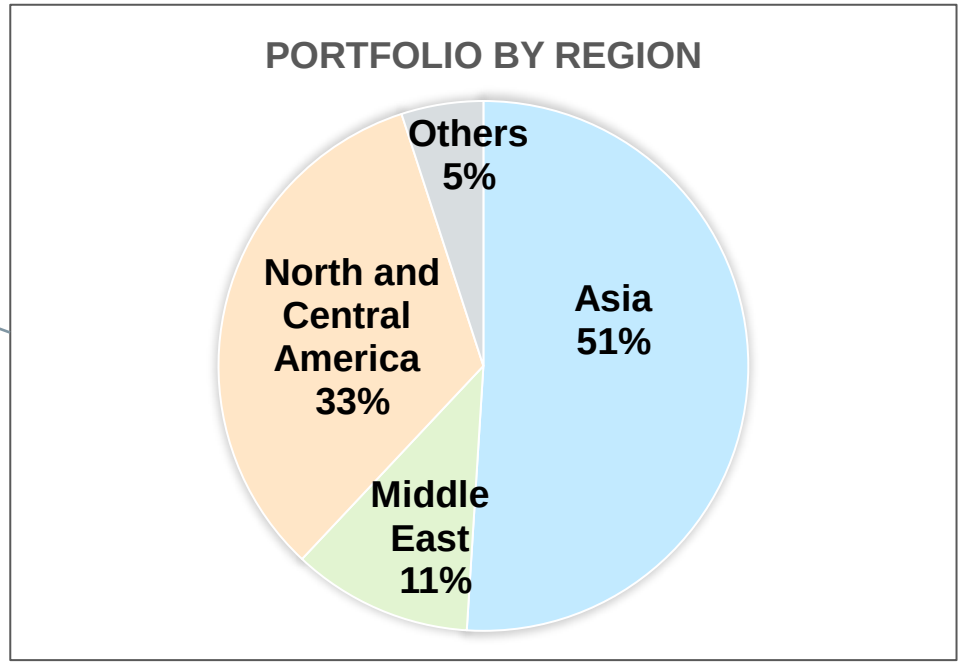
Overseas Power Generation and Renewable Energy Business: Portfolio of Overseas Power Generation and Renewable Energy Business



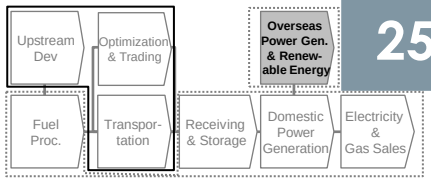
- Total capacity of power generation in overseas projects is 13.99 GW (including under construction) and JERA gains know-hows through the projects around the world.
- By recycling its portfolio, JERA achieves an optimal asset structure in line with changes in the business environment.

< Power Generation Capacity (As of March 31, 2025) >





Overseas Power Generation and Renewable Energy Business: List of Overseas Power Generation / Renewable Energy projects (1)



(As of March 31, 2025)

Investment on Platform Companies*

**Companies participating in multiple power generation projects*

Country	Project Name	Investment ratio	Capacity	Fuel type	Notes
Philippines	TeaM Energy IPP	25.0%~50.0%	1,123 MW	Coal	
	Aboitiz Power Corporation	27.57%	6,298 MW	Coal/Oil/ Renewable	Including under construction
Thailand	EGCO Corporation	12.3%	6,720 MW	Coal/Gas/ Renewable	Including under construction
Vietnam	Gia Lai Electricity Joint Stock Company	35.1%	508MW	Solar/Wind/Hydro	Including under construction
India	ReNew Company	7.38%	17,421 MW	Solar/Wind/Hydro	Including under construction
Bangladesh	Summit Power IPP	22.0%	1,805 MW	Oil/Gas	
Japan	Green Power Investment	3.95%	N/A	Offshore Wind	*1
United Kingdom	Zenobe	6.31%	1,131 MW	Battery Storage	Including under construction
Belgium	Parkwind	100.0%	535 MW	Offshore Wind	

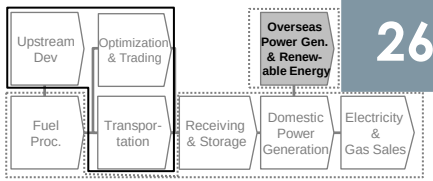
**1 The capacity only includes the offshore wind projects that JERA has agreed with other shareholders to utilize its management assets*

Power Generation / Renewable Energy Projects(1/2)

Japan	Solar Farm	100.0%	75 MW	Solar	Including under construction
	Ishikari Bay New Port Offshore Wind Farm	100.0%*2	112 MW	Offshore Wind	
	Oga city, Katagami city, and Akita City Offshore Wind Farm	42.00%	315 MW	Offshore Wind	Under construction
	The sea of Japan Offshore Aomori Prefecture (Southern Side of the Prefecture) Wind Farm	-	615MW	Offshore Wind	Under construction
Taiwan	Chang Bin/Fong Der/Star Buck Gas Thermal IPP	19.5%~22.7%	3,170 MW	Gas	Including under construction
	Formosa 1 Offshore Wind IPP	32.5%	128 MW	Offshore Wind	
	Formosa 2 Offshore Wind IPP	49.0%	376 MW	Offshore Wind	
Indonesia	Cirebon2 Coal Thermal IPP	10.0%	1,000 MW	Coal	

**2 This is actual investment ratio added direct investment by JERA and indirect investment through GPI.*

Overseas Power Generation and Renewable Energy Business: List of Overseas Power Generation / Renewable Energy projects (2)



(As of March 31, 2025)

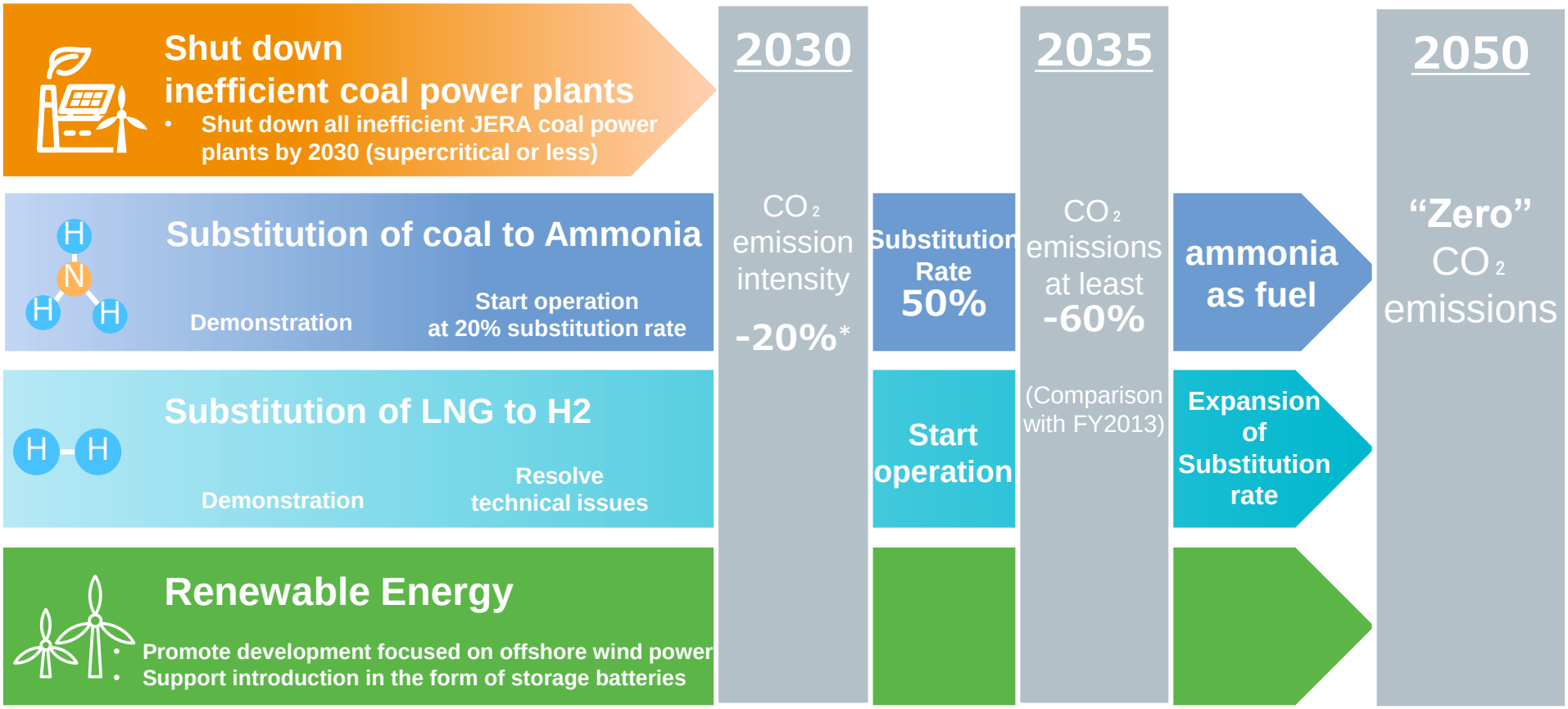
Power Generation / Renewable Energy Projects(2/2)

Country	Project Name	Investment ratio	Capacity	Fuel type	Notes
Thailand	Ratchaburi Gas Power Thermal IPP	15.0%	1,400 MW	Gas	
	Wind Power IPP	5.0%	180 MW	Onshore Wind	
Bangladesh	Meghnaghat Gas Thermal IPP	49.0%	718 MW	Gas	Under construction
UAE	Umm Al Nar Gas Thermal IWPP	20.0%	1,550 MW	Gas	
Qatar	Ras Laffan B Gas Thermal IWPP	5.0%	1,025 MW	Gas	
	Ras Laffan C Gas Thermal IWPP	5.0%	2,730 MW	Gas	
	Mesaieed Gas Thermal IPP	10.0%	2,007 MW	Gas	
	Umm Al Houl Gas Thermal IWPP	10.0%	2,520 MW	Gas	
Oman	Sur Gas Thermal IPP	19.5%	2,000 MW	Gas	
Saudi Arabia	Amiral Gas Thermal ISPP	49.0%	475 MW	Gas	Under construction
Mexico	Valladolid Gas Thermal IPP	50.0%	525 MW	Gas	
United States	Tenaska Gas Thermal IPP	11.1%~17.5%	2,950 MW	Gas	
	Carroll County Gas Thermal IPP	20.0%	702 MW	Gas	
	Cricket Valley Gas Thermal IPP	38.0%	1,100 MW	Gas	
	Linden Gas Thermal IPP	50.0%	972 MW	Gas	
	Compass Gas Thermal IPP	50.0%	1,123 MW	Gas	
	Brady Thermal IPP	100.0%	1,633 MW	Oil/Gas	
	El Sauz Onshore Wind IPP	100.0%	302 MW	Onshore Wind	Under construction
	Happy/Oxbow Solar IPP	100.0%	395 MW	Solar	
United Kingdom	Gunfleet Sands Offshore Wind IPP	25.0%	173 MW	Offshore Wind	

Progress of JERA Zero CO_2 Emissions 2050

JERA Zero CO2 Emissions 2050: Roadmap for its Business in Japan

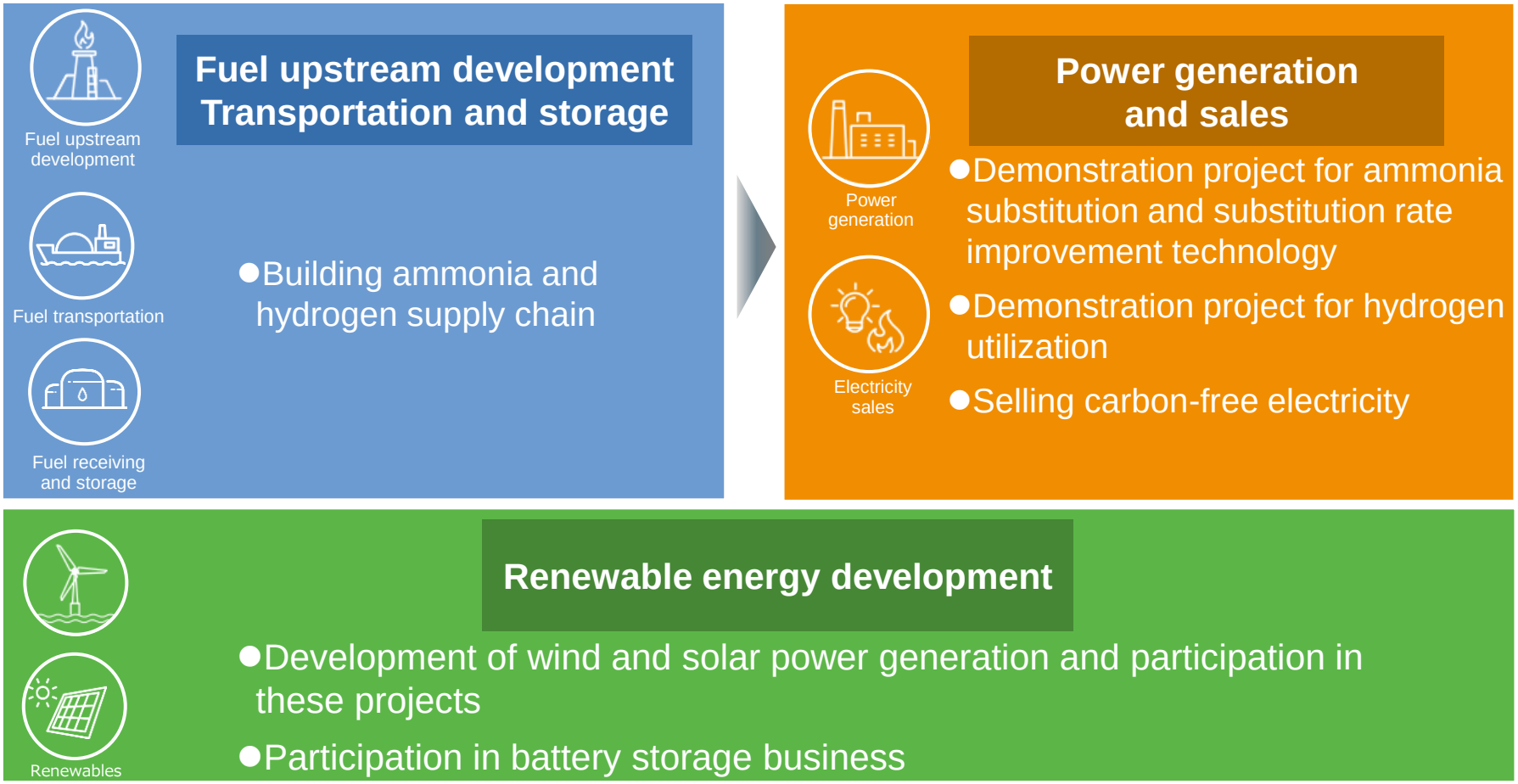
➢ JERA established “JERA Zero CO_2 Emissions 2050 Roadmap for its Business in Japan”, including four initiatives.



*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 Zero CO2 Emissions 2050:
Efforts to Achieve Zero CO2 Emissions in JERA's Value Chain

➢ JERA participates in business throughout the value chains, from fuel upstream development, transportation, and storage and to the power generation and electricity sales. JERA is working with many countries and companies around the world to achieve zero emissions at each stage.



JERA Zero CO2 Emissions 2050:
Efforts towards Zero CO2 Emissions (Ammonia and Hydrogen Supply Chain)(1)

Field	Business Partners	Contents	Release Date
Upstream Development /Production	ADNOC (UAE)	Consideration of cooperation in the fields of clean hydrogen and ammonia	2023/7
	PIF (Saudi Arabia)	Consideration of opportunities for the development including green hydrogen production	2023/7
	TAQA (UAE)	Consideration of project development in the area of decarbonization, including green hydrogen and ammonia production	2023/2
	CF Industries (United States)	Joint Development Agreement for Low Carbon Ammonia Project	2024/4
	Yara (Norway)	Consideration of project development for blue ammonia production and sales & purchase of clean ammonia	2023/1
	Chevron (United States)	Consideration of collaboration on multiple lower carbon opportunities in Asia Pacific region (Australia) and the United States	2022/11
	Exxon Mobil (United States)	The Joint Study to Develop Low Carbon Hydrogen and Ammonia Production Project	2024/3
	ReNew (India)	Agreement to Jointly Develop a Green Ammonia Production Project	2024/4
	Lotte Fine Chemical (Korea)	Joint Collaboration Agreement to Realize Low Carbon Fuel Value Chains	2024/8
	POSCO International (Korea)	Joint Collaboration Agreement to Realize Low Carbon Fuel Value Chains	2024/9
Transportation	Nippon Yusen / Mitsui O.S.K. Lines	Consideration of transporting fuel ammonia for the Hekinan Thermal Power Plant	2022/11
R&D (NEDO's Project)	NIPPON SHOKUBAI Chiyoda Corporation*	Development of large-scale ammonia cracking catalyst and technology	2023/6
	ENEOS*	Construction of hydrogen quality standard system for industrial utilization	2023/6
	Toyo Engineering Corporation (Japan) *	Survey of Hydrogen and Ammonia Demand, and Demonstration Research to Achieve Stable Operation of Ammonia Cracking Equipment, in Thailand	2024/6
	DENSO (Japan)	Jointly Develop High-Efficiency Hydrogen Generation Technology that Combines SOEC with Waste Heat Utilization and Joint Demonstration Testing at a JERA Thermal Power Station	2024/8

* Implemented under a project subsidized by the New Energy and Industrial Development Organization (NEDO)

JERA Zero CO2 Emissions 2050:
Efforts towards Zero CO2 Emissions (Ammonia and Hydrogen Supply Chain)(2)

Field		Business Partners	Contents	Release Date
Power Supply / Utilization	Japan	Kyushu Electric Power	signed a MOU concerning comprehensive discussions on collaboration aimed at achieving decarbonization and a stable supply of energy supply	2023/10
		Kyushu Electric Power Chugoku Electric Power Shikoku Electric Power Tohoku Electric Power Hokuriku Electric Power Hokkaido Electric Power Okinawa Electric Power	Consideration of cooperation in the adoption of hydrogen and ammonia as fuel for power generation	2022/11 ~ 2023/12
		Mitsui	Signed an Ammonia Sales and Purchase Agreement for its use in the demonstration project at the Hekinan Thermal Power Station	2023/6
		Graduate School in University of Tokyo	Basic Agreement Concerning the Mainstreaming of Carbon-Free Power Combining Digital Technology and Energy	2024/3
		Yamanashi prefecture	Conclusion of a Basic Agreement on Building the Hydrogen Energy Society of the Future: Building a Regional Hydrogen Value Chain	2023/11
		NYK Line, Resonac	The World's First Truck-to-Ship Bunkering of Fuel Ammonia	2024/8
		JERA	JERA Cross Launched to Accelerate Corporate Green Transformation (GX)	2024/5
		TOHO	Japan's First Commercial Use of Electricity Generated with Hydrogen-Fired Zero-Emissions Thermal	2024/11
	Europe	Uniper (Germany)	Signed a Heads of Agreement for the sale of low carbon hydrogen/ammonia produced in the US	2023/9
		EnBW / VNG (Germany)	Consideration of the development of ammonia cracking technology for hydrogen production	2023/6
	Asia	EVN (Vietnam)	Signed a MOU that commits the collaboration to establish a decarbonization roadmap for EVN	2023/10
		PPT (Thailand)	Consideration of collaboration on initiatives for expanding the supply chain and usage of hydrogen and ammonia towards decarbonization in Thailand	2023/5
		Aboitiz Power (Philippines)	Consideration of cooperation in studies to decarbonize business and substitution using ammonia at a coal-fired power plant	2023/2
		EGCO (Thailand)	Consideration of cooperation in substitution using ammonia towards decarbonization	2023/1
		IHI Asia Pacific (Malaysia)	Consideration of collaboration on the expansion of ammonia usage in Malaysia	2022/10
		PT Pertamina (Indonesia)	Joint collaboration in building infrastructure LNG and hydrogen/ammonia and so on	2023/12
		PLN (Indonesia)	Master Plan for Energy Transition Management Project in Indonesia	2024/2

JERA Zero CO2 Emissions 2050:
Efforts towards Zero CO2 Emissions (Power Generation)

Initiatives for Ammonia Substitution

Project	Development of Technologies for Carbon Recycling and Next-Generation Thermal Power Generation / Research, Development, and Demonstration of Technologies for Ammonia Co-Firing Thermal Power Generation *Implemented as a granted project by NEDO	Green Innovation Fund Program / Establishment of Fuel Ammonia Supply Chains project / Demonstration project to develop technology to increase the ammonia co-firing rate at coal-fired boilers
Overview	• At Hekinan Thermal Power Station Unit 4 (power output: 1 million kW), JERA succeeded in **20% ammonia substitution demonstration test** and obtained good results.	• Using burner capable of 50% or more ammonia substitution and ammonia-only burners, JERA aims to **succeed in 50% or more ammonia substitution demonstration by 2030**.

Hekinan Thermal Power Station(Plant for 20% ammonia substitution demonstration test)

Initiatives for Hydrogen Substitution

- Started joint development of high-efficiency hydrogen generation technology utilizing waste heat using SOEC* developed by Denso. Joint demonstration tests are scheduled to start in FY 2025 at a thermal power plant in our company.

* SOEC(Solid Oxide Electrolysis Cell):SOECs operate at high temperatures using a ceramic membrane as an electrolyte to electrolyze water vapor and produce hydrogen.

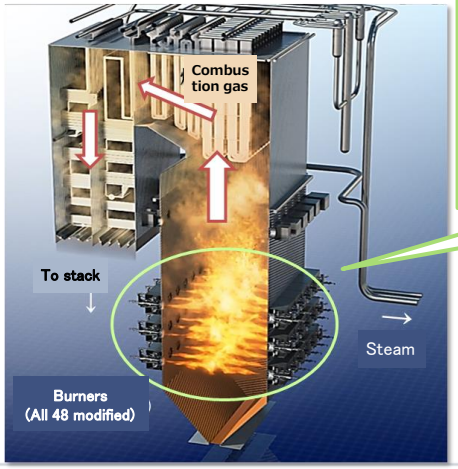
- Received notice of acceptance of “Technology development project aimed at building a competitive hydrogen supply chain”, JERA is developing a catalyst to extract hydrogen from ammonia and evaluating the catalyst and process from the perspective of a power generation company.

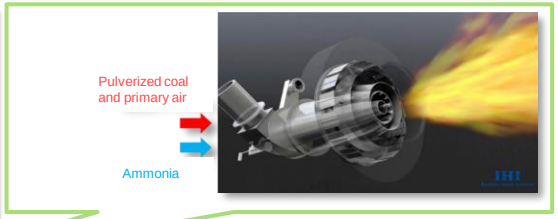
JERA Zero CO2 Emissions 2050:
Successful Demonstration Testing of 20% Fuel Ammonia Substitution

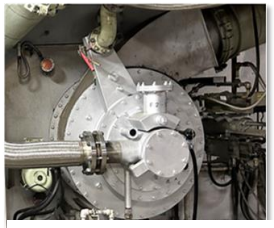
- At Hekinan Thermal Power Station Unit 4, we conducted the world's first test* of 20% ammonia substitution at a large-scale commercial coal-fired power plant.
- **Results were positive, with the level of nitrogen oxides (NOx) no higher** than before ammonia substitution (no higher than when firing coal alone).
- In addition, we **achieved a maximum substitution rate of 28% (0.6GW),** confirming feasibility of operation at a substitution rate higher than 20%.

  ⇒ **Given the success of the demonstration testing, we are accelerating construction and supply chaindevelopment aimed at commercial operation**

April	May	June	July
▼1 Apr. First firing			
	▼10 Apr. Achieved 20% substitution (1GW)		
Confirmation of ignition/extinction and collection of combustion data		Validation testing of operability and combustion characteristics	
		▼17 June **Achieved 28% substitution (0.6GW)**	▼26 June Demonstration testing ends





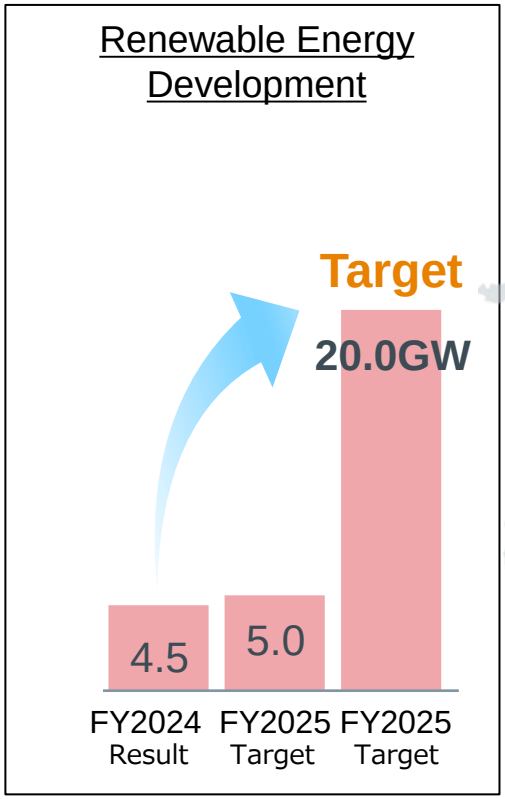

Ammonia burner as installed

Ammonia combustion (Photo: IHI Corporation)

* A NEDO-subsidized "Development of Technologies for Carbon Recycling and Next-Generation Thermal Power Generation / Research, Development, and Demonstration of Technologies for Ammonia Co-Firing Thermal Power Generation" project (Project entities: JERA / IHI)

JERA Zero CO2 Emissions 2050:
Efforts towards Zero CO2 Emissions(Renewable Energy Development)

- JERA has set a target of 20GW renewable energy development by FY2035, and is widely promoting wind power, solar power, battery storage, etc.



Participation in Gunfleet Sands offshore wind power, UK

Participation in battery storage, UK (Zenobē)

Acquisition of a major European offshore wind company (Parkwind *1)

Investment in ReNew Power, India (Wind, Solar)

Investment in Gia Lai Electricity, Vietnam (Wind, Solar)

Participation in Formosa offshore wind power, Taiwan

Acquirement of shares of a leading Japanese renewable energy power generation company (Green Power Investment *2)

Offshore wind developments (Oga City, Katagami City, and Akita City in Akita Prefecture)

Offshore wind developments (The sea of Japan Offshore Aomori Prefecture [Southern Side of the Prefecture])

Development of solar power, Japan (West HD)

Demonstration testing of a large-capacity Sweep Energy Storage System from used EV Batteries (Toyota)

Demonstration testing of Film-type Perovskite Solar Cells, Japan (SEKISUI CHEMICAL)

Participation in El Sauz onshore wind power, US

Collaboration on battery storage, US (Zenobē)

Participation in Happy/Oxbow Solar IPP, US

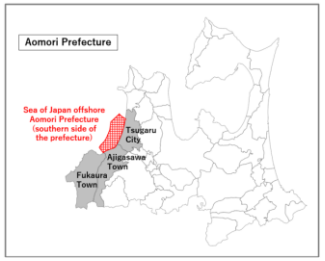
:Wind :Solar :Battery

*1 Parkwind's equity generation capacity is 0.54GW.
*2 JERA's equity generation capacity is approximately 0.11GW.

JERA Zero CO2 Emissions 2050:
Actions for Domestic Offshore Wind Power Generation

- JERA was selected as the business operator for an offshore wind power project off in the Sea of Japan Offshore Aomori Prefecture (Southern Side of the Prefecture)on December 24, 2024.

Tsugaru Offshore Wind	
Interconnection Capacity	615MW
Number of Units	41 units
Turbine Model	Siemens Gamesa 15MW
Planned Start of Commercial Operation	June 2030



<Map of Business Areas>

- JERA was selected as the business operator for an offshore wind power project off Oga city, Katagami city, and Akita city in Akita prefecture on December 13, 2023.

Oga, Katagami, and Akita Offshore Wind	
Interconnection Capacity	315MW
Number of Units	21 units
Turbine Model	Vestas V236-15MW
Planned Start of Commercial Operation	June 2028

<Map of Business Areas>

- JERA acquired shares of Green Power Investment Corporation on August 3, 2023. On January 1, 2024, Ishikari Bay New Port Offshore Wind Farm held by JERA and GPI began in its operation.

Ishikari Bay New Port Offshore Wind	
Interconnection Capacity	112 MW
Number of Units	14 units
Turbine Model	Siemens Gamesa 8MW
Start of Commercial Operation	1st January 2024



<Turbine Generator Installation>

JERA Zero CO2 Emissions 2050:
Agreement to create JERA Nex bp

- bp and JERA Nex * have agreed to combine their offshore wind businesses to form a new standalone, equally-owned joint venture that will become one of the largest global offshore wind developers, owners and operators.
- JERA Nex bp is scheduled to be established at the end of September 2025.

* JERA's renewable energy business subsidiary

Content of Agreement

- Creating strategic platform for growth, combining high-quality operating and development offshore wind assets, with total 13GW potential net generating capacity.
- Building on history of partnership and combining complementary expertise, standalone 50:50 venture initially to progress existing advanced developments from extensive portfolio.
- Agreed funding model to support highly disciplined, capital efficient growth, including accessing competitive financing, portfolio optimisation, and defined capital investment plans from partners.

Left side : Yukio Kani, Global CEO and Chair of JERA
Right side : Murray Auchincloss, bp CEO

JERA Zero CO2 Emissions 2050:

JERA Cross provides decarbonization solutions for corporate green transformation.

- JERA has established JERA Cross with the aim of combining its energy, digital, and business transformation capabilities to accelerate corporate “green transformation” (GX) in June.
- Integrated support for companies from designing their future vision and strategy for the GX, to the development and supply of renewable energy and other energy sources.
- JERA Cross will also provide a stable supply of “24/7 carbon free electric power”*1 contribute to solving client issues.

(As of March 31,2025)

JERA provides decarbonization solutions

Company	Solution	Start Date	Power Generation	remark
Toho Co., Ltd.	Offsite corporate PPA	November,2024*2	Hydrogen and solar	First commercial use of electricity generated by zero-emission thermal power that burns hydrogen exclusively in Japan*3 Aiming to achieve 24/7 carbon-free power in the future
AIN Holdings Inc.	Offsite corporate PPA	December,2024	Solar	Utilizing JERA's solar power generation facilities. The first off-site corporate PPA for AIN Group
Tokyo Metro Co., Ltd.	Solar virtual PPA*4	December,2024	Solar	Non-fossil certificates (environmental value) generated by JERA's solar power generation facilities are provided through JERA Cross.
East Japan Railway Company	Offsite corporate PPA	February,2025	Solar	JERA Cross acts as an aggregator to supply the electricity generated by JERA's solar power generation facilities to Atre Oimachi and Lumine Yokohama via JR East Trading, a retail electricity provider.

*1 A name for electricity that emits no CO2 twenty-four hours a day, seven days a week, 365 days a year. In accordance with the Ministry of Economy, Trade and Industry’s “Guidelines for Retail Sales of Electricity,” this means providing 100% of the electricity supply from CO2 zero-emission sources, including the environmental value derived from the use of non-fossil certificates. This does not mean that CO2 is not emitted during the life cycle of fuel production and transportation, etc.
*2 We have started commercial use of electricity generated by zero-emission thermal power that uses hydrogen as its sole fuel. (In addition to hydrogen power generation, Toho Studios has also introduced electricity supply from JERA's solar power generation facilities.
*3 Research by JERA
*4 Customers can virtually procure the environmental value of renewable energy by non-fossil certificates.