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Please note that if there is any discrepancy, the Japanese version will take priority.

# Summary of FY2022 Earnings Results

2023/5/10

Electric Power Development Co., Ltd.

## Forward Looking Statements

The following contains statements that constitute forward-looking statements, plans for the future, management targets, etc. relating to the Company and/or the J-POWER group. These are based on current assumptions of future events, and there exist possibilities that such assumptions are objectively incorrect and actual results may differ from those in the statements as a result of various factors.

Furthermore, information and data other than those concerning the Company and its subsidiaries/affiliates are quoted from public information, and the Company has not verified and will not warrant its accuracy or appropriateness.

### ※Display of Figures

- ✓ All figures are consolidated unless stated otherwise.
- ✓ Amounts less than 100 million yen and electric power sales volume less than 100 million kWh shown in the consolidated financial data have been rounded down. Consequently, the sum of the individual amounts may not necessarily agree with figures shown in total columns.

# Major efforts to enhance corporate value April 2022 ~ April 2023

## Progress Toward Carbon Neutrality

Expansion of renewable energy      Efforts toward CO<sub>2</sub>-free thermal power and Hydrogen power generation

Start of commercial operation Approx.	Construction phase Approx.	Large-scale CCS in Japan <b>Established joint venture company for survey</b>	Takehara New No.1 Biomass mixed combustion <b>10%</b> start
<b>271</b> MW	<b>301</b> MW		

## Profit growth & financial strength

Stable operation of domestic power plants and start of operation of large overseas projects  
Stable revenue and profit growth

FY2022 result  
Consolidated ordinary profit  
**170.7** billion yen

**Annual dividend: 90 yen**  
Dividend increase of 15 yen



New Shimamaki wind farm



Onikobe Geothermal Power Station



Kumaoi hydro electric power plant



Triton Knoll (UK)



Jackson generation power plant (U.S.)



Batang power plant (Indonesia)

(Photo: PT Bhimasena Power Indonesia)

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## I . Summary of FY2022 Earnings Results

# Summary of FY2022 Earnings Results

## Increased revenue and profit [2021/2022]

- Main reasons for increase in consolidated operating revenue
  - Rising electricity sales prices domestically and overseas
  - Increase in sales of a subsidiary in Australia that owns coal mining interests due to soaring coal prices
- Main reasons for increase in consolidated operating profit
  - Increase in profit of a subsidiary in Australia that owns coal mining interests
  - Increase in profit due to decrease in unplanned outages at thermal power plants
  - Increase in profit due to increase in renewable energy sales
  - Start of operation of the Jackson Generation Power Plant in North America

(Unit: billion yen)

Consolidated	FY2021	FY2022	Year-on-year change		FY2022	Comparison with the forecast	
	(Apr.-Mar.)	(Apr.-Mar.)			Forecast <sup>*2</sup> (Apr.-Mar.)		
Operating Revenue	1,084.6	1,841.9	757.3	69.8 %	1,869.0	(27.0)	(1.4)%
Operating Profit	86.9	183.8	96.8	111.4 %	171.0	12.8	7.5 %
Ordinary Profit	72.8	170.7	97.9	134.5 %	164.0	6.7	4.1 %
Profit attributable to owners of parent	69.6 <sup>*1</sup>	113.6	44.0	63.1 %	115.0	(1.3)	(1.1)%

Non-consolidated	FY2021	FY2022	Year-on-year change		FY2022	Comparison with the forecast	
	(Apr.-Mar.)	(Apr.-Mar.)			Forecast <sup>*2</sup> (Apr.-Mar.)		
Operating Revenue	790.0	1,370.7	580.6	73.5 %	1,402.0	(31.2)	(2.2)%
Operating Profit	17.8	46.5	28.6	160.1 %	38.0	8.5	22.5 %
Ordinary Profit	58.2	75.3	17.0	29.2 %	72.0	3.3	4.6 %
Profit	73.6 <sup>*1</sup>	60.0	(13.5)	(18.5)%	64.0	(3.9)	(6.1)%

- ✓ Annual dividend FY2022 : 90 yen
- ✓ Dividend increase of 15 yen from FY2021

	Cash dividends per share		
	Interim	Year end	Annual
FY2021	35 yen	40 yen	75 yen
FY2022	40 yen	50 yen	90 yen

\*1 Increased due to recording of deferred tax assets, etc.

\*2 Earnings forecast released on January 31, 2023

# Key Data (Electric Power Sales)

	FY2021 (Apr.-Mar.)	FY2022 (Apr.-Mar.)	Year-on-year change	
<b>Electric Power Sales (TWh)</b>				
Electric Power Business	74.7	68.4	(6.3)	(8.5)%
Hydroelectric Power	9.2	8.8	(0.4)	(4.3)%
Thermal Power	47.9	45.6	(2.3)	(4.8)%
Wind Power	1.1	1.0	(0.1)	(12.0)%
Other <sup>*1</sup>	16.3	12.8	(3.4)	(21.2)%
Overseas Business <sup>*2</sup>	11.0	14.2	3.2	29.0 %
<b>Water supply rate</b>				
	99%	94%	(5) points	
<b>Load factor<sup>*3</sup></b>				
	67%	65%	(2) points	

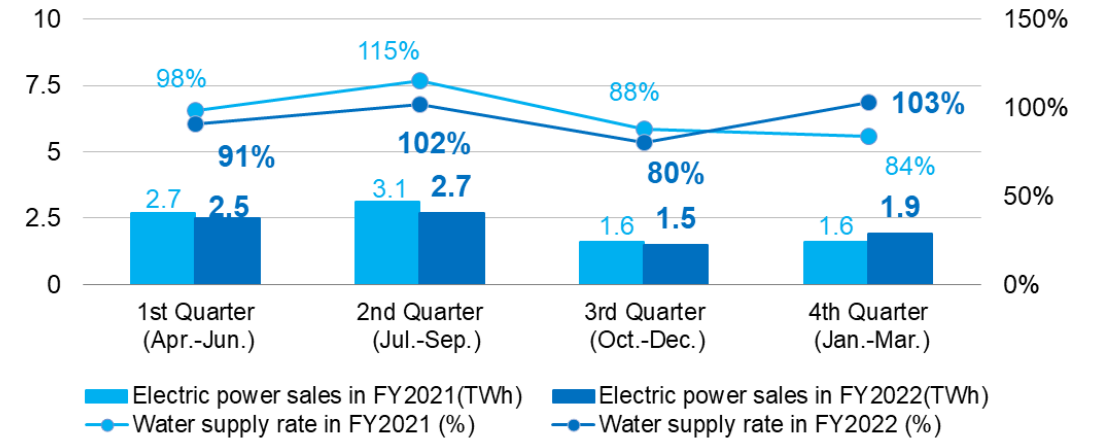
\*1 Electric power sales volume of electricity procured from wholesale electricity market, etc.

\*2 Electric power sales volume of overseas consolidated subsidiaries (Electric power sales volume of equity method affiliated companies is not included)

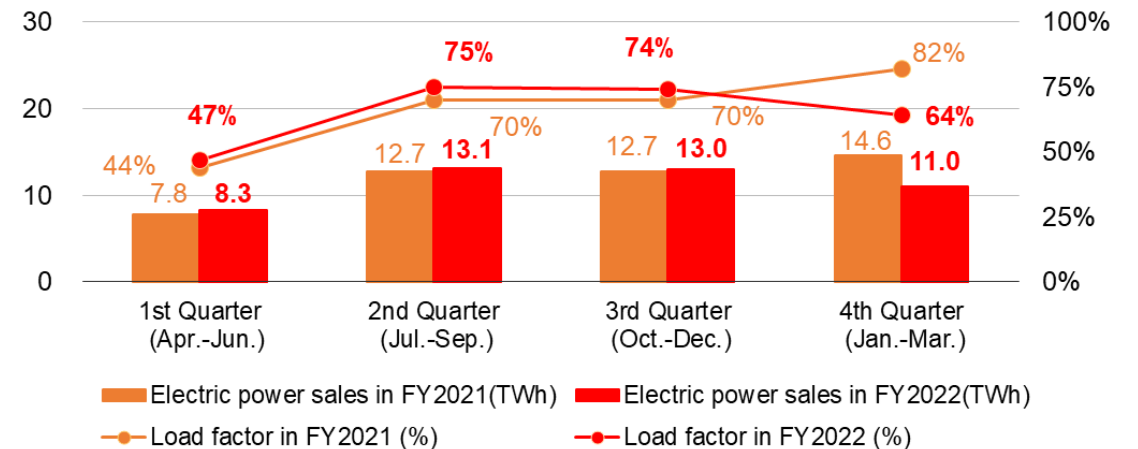
\*3 Load factor of thermal power shows the results for non-consolidated only

### Electric Power Sales for each Quarter

[Domestic Hydroelectric Power]



[Domestic Thermal Power]



# Key Data (Operating Revenue)

## ■ Electric Power Business

- Total electricity sales volume of the electric power business decreased
- The revenue increased due to the increase in sales prices with the rise in resource prices.

## ■ Overseas Business

- The revenue increased due to the start of operation of the Jackson Generation Power Plant in North America and the rise in sales prices in the Thailand projects.

## ■ Other Business

- The sales increased due to soaring coal prices at a subsidiary in Australia that owns coal mining interests

	FY2021 (Apr.-Mar.)	FY2022 (Apr.-Mar.)	Year-on-year change	
Operating Revenue (Billion yen)	1,084.6	1,841.9	757.3	69.8 %
Electric Power Business	876.4	1,417.9	541.4	61.8 %
Electric Power Sales	822.9	1,362.4	539.5	65.6 %
Renewables <sup>*1</sup>	134.5	146.0	11.5	8.6 %
Transmission / Transformation	48.7	49.5	0.8	1.7 %
Overseas Business <sup>*2</sup>	145.1	277.5	132.4	91.3 %
Other Business <sup>*3</sup>	63.0	146.4	83.3	132.2 %

	FY2021 (Apr.-Mar.)	FY2022 (Apr.-Mar.)
Foreign exchange rate		
(Yen/USD) at the end of December	115.02	132.70
(Yen/THB) at the end of December	3.43	3.80
(Yen/AUD) at the end of December	83.42	89.57
(THB/USD) at the end of December	33.42	34.56

\*1 Hydroelectric and wind power

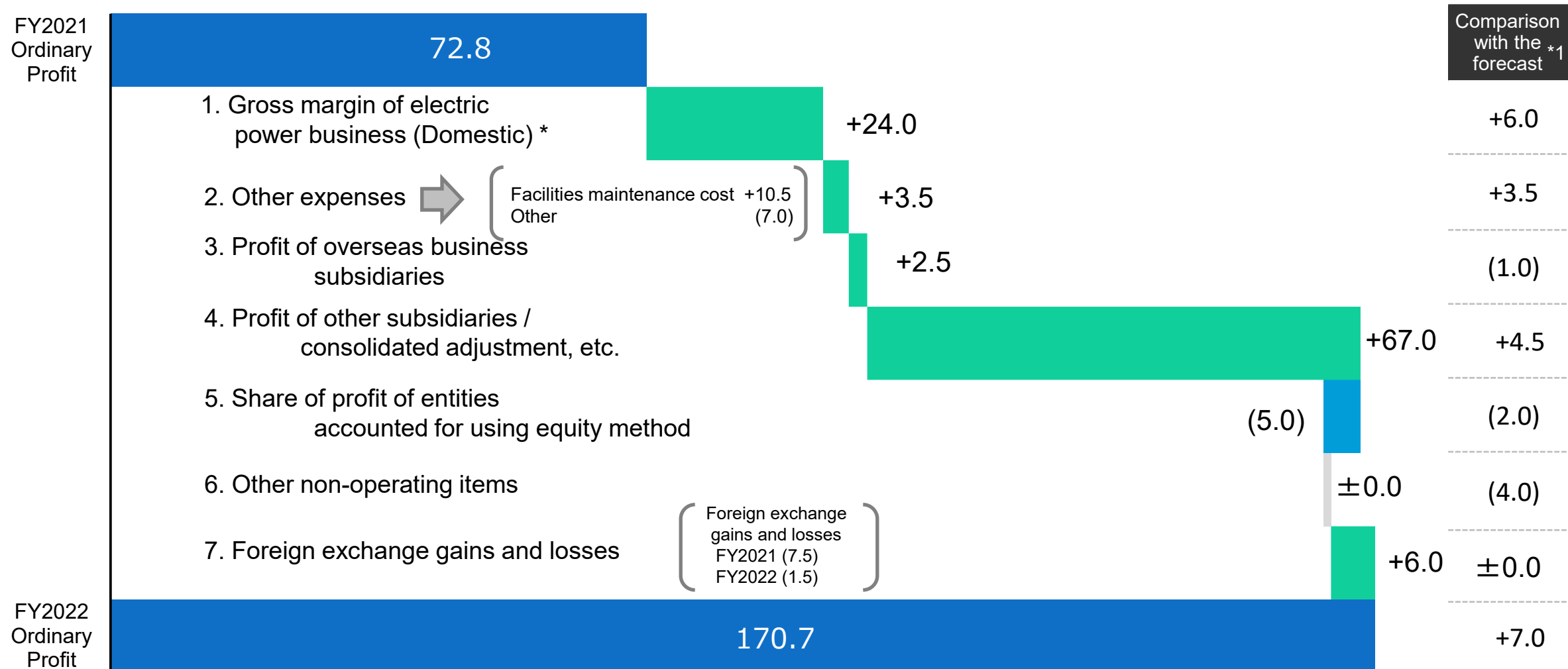
\*2 Sales for the overseas business segment (Sales from overseas consolidated subsidiaries and overseas consulting business, etc.)

\*3 "Other Business" is composed of "Electric Power-Related Business" segment and "Other Business" segment. See Appendix P.22 for details.



# FY2022 Earnings Results (Main Factors for Change)

(Unit: billion yen)



\* Gross margin of electric power business (Domestic) : Domestic electric power business revenue (hydro, thermal, wind and other) – fuel costs, etc.

\*1 Earnings forecast released on January 31, 2023

# Breakdown of Increase / Decrease Factors of Consolidated Ordinary Profit

(Unit: billion yen)

(Year on Year)

<p><b>1. Gross margin of electric power business</b> <b>(Domestic) +24.0</b></p> <ul style="list-style-type: none"> <li>Decrease in unplanned outages</li> <li>Increased sales of renewable energy</li> <li>Improved gross profits from market, and fuel balance ,etc.</li> </ul>	<p><b>5. Share of profit of entities accounted for using equity method (5.0)</b></p> <ul style="list-style-type: none"> <li>Overseas... (5.0) U.S. : Elwood: Penalty in capacity market due to cold weather China : Impairment loss</li> <li>Domestic ... ±0.0</li> </ul>									
<p><b>2. Other expenses +3.5</b></p> <ul style="list-style-type: none"> <li>Decrease in facilities maintenance cost...+10.5</li> <li>Increase in cost in various items... (7.0)</li> </ul>	<p><b>6. Other non-operating items ±0.0</b></p> <ul style="list-style-type: none"> <li>Gain on sales of fixed assets</li> <li>Increase in financing costs</li> <li>Losses recorded due to disposal of construction materials of Ohma nuclear power project</li> </ul>									
<p><b>3. Profit of overseas business subsidiaries +2.5</b></p> <ul style="list-style-type: none"> <li>Jackson Generation Power Plant in North America Started commercial operation</li> <li>Power generation projects in Thailand Scheduled decrease in fixed income Decrease in energy margin Foreign exchange effect (JPY depreciation),etc.</li> </ul>	<p><b>7. Foreign exchange gains and losses +6.0</b> <b>FY2021 (7.5) → FY2022 (1.5)</b></p> <ul style="list-style-type: none"> <li>US dollar-denominated debt in power generation projects in Thailand...+6.0</li> </ul> <p>Foreign exchange rate(THB/USD)</p> <table border="1" data-bbox="1286 1053 2397 1258"> <thead> <tr> <th></th> <th>At the end of December of the previous year</th> <th>At the end of Dec.*</th> </tr> </thead> <tbody> <tr> <td>FY2021</td> <td>30.04</td> <td>33.42</td> </tr> <tr> <td>FY2022</td> <td>33.42</td> <td>34.56</td> </tr> </tbody> </table> <p>* The fiscal year of overseas subsidiaries is from January to December</p> <ul style="list-style-type: none"> <li>US dollar-denominated loan in overseas businesses and others... ±0.0</li> </ul>		At the end of December of the previous year	At the end of Dec.*	FY2021	30.04	33.42	FY2022	33.42	34.56
	At the end of December of the previous year	At the end of Dec.*								
FY2021	30.04	33.42								
FY2022	33.42	34.56								
<p><b>4. Profit of other subsidiaries / consolidated adjustment, etc. +67.0</b></p> <ul style="list-style-type: none"> <li>Increase in profit from a subsidiary in Australia that owns coal mining interests due to soaring coal prices</li> </ul>										

## Consolidated: Revenue / Expenditure Comparison

(Unit: billion yen)

	FY2021 (Apr.-Mar.)	FY2022 (Apr.-Mar.)	Year-on-year change	Main factors for change
<b>Operating Revenue</b>	<b>1,084.6</b>	<b>1,841.9</b>	<b>757.3</b>	
Electric power business	876.4	1,417.9	541.4	
Overseas business	145.1	277.5	132.4	
Other business	63.0	146.4	83.3	
<b>Operating Expenses</b>	<b>997.6</b>	<b>1,658.0</b>	<b>660.4</b>	Electric power business+516.1, Overseas business+130.3, Other business+13.9
<b>Operating Profit</b>	<b>86.9</b>	<b>183.8</b>	<b>96.8</b>	
<b>Non-operating Revenue</b>	<b>22.5</b>	<b>24.7</b>	<b>2.2</b>	
Share of profit of entities accounted for using equity method	14.2	9.1	(5.0)	
Other	8.2	15.6	7.3	
<b>Non-operating Expenses</b>	<b>36.6</b>	<b>37.8</b>	<b>1.1</b>	
Interest expenses	22.4	27.3	4.9	
Other	14.1	10.4	(3.7)	
<b>Ordinary Profit</b>	<b>72.8</b>	<b>170.7</b>	<b>97.9</b>	Electric power business+27.9, Overseas business+0.6, Other business+67.5
Total income taxes	(1.9)	51.7	53.7	
<b>Profit attributable to owners of parent</b>	<b>69.6</b>	<b>113.6</b>	<b>44.0</b>	

# Consolidated: Balance Sheet

(Unit: billion yen)

	FY2021 End of FY	FY2022 End of FY	Change from prior year end	Main factors for change
<b>Non-current Assets</b>	<b>2,594.8</b>	<b>2,701.3</b>	<b>106.5</b>	
Electric utility plant and equipment	1,076.9	1,065.5	(11.4)	
Overseas business facilities	271.3	447.2	175.8	
Other non-current assets	92.2	89.2	(3.0)	
Construction in progress	676.5	572.1	(104.4)	
Nuclear fuel	75.8	76.2	0.4	
Investments and other assets	401.8	451.0	49.2	Long-term investments +48.1 (Includes impact of foreign exchange revaluation+26.0)
<b>Current Assets</b>	<b>471.3</b>	<b>661.3</b>	<b>189.9</b>	
<b>Total Assets</b>	<b>3,066.1</b>	<b>3,362.6</b>	<b>296.5</b>	
Interest-bearing debt	1,786.4	1,885.8	99.3	Non-consolidated +81.2, Subsidiaries and others +18.1
Other	315.6	284.1	(31.5)	
<b>Total Liabilities</b>	<b>2,102.0</b>	<b>2,169.9</b>	<b>67.8</b>	
Shareholders' equity	870.8	977.8	106.9	
Accumulated other comprehensive income	45.2	106.8	61.6	Foreign currency translation adjustment +46.7 Deferred gains or losses on hedges+17.3
Non-controlling interests	48.0	108.0	59.9	
<b>Total Net Assets</b>	<b>964.1</b>	<b>1,192.7</b>	<b>228.6</b>	
D/E ratio (x)	2.0	1.7		
Shareholders' equity ratio	29.9%	32.3%		



## Summary of FY2023 Earnings Forecast

## Summary of FY2023 Earnings Forecast and Dividends

- Ordinary profits of 90 billion yen, the target of the mid-term management plan, is expected to be achieved.
- Dividend remains at 90 yen (full year), which was increased at the end of FY2022
- Revenues and profits are expected to decrease compared to the previous year due to loss of temporary profits.  
Expect to see a decline in domestic electricity sales prices and coal sales prices at Australian coal mining subsidiaries due to lower resource prices.

(Unit: billion yen)

Consolidated	FY2022 Result	FY2023 Forecast	Comparison with FY2022 Result	
Operating Revenue	1,841.9	1,513.0	(328.9)	(17.9)%
Operating Profit	183.8	111.0	(72.8)	(39.6)%
Ordinary Profit	170.7	110.0	(60.7)	(35.6)%
Profit attributable to owners of parent	113.6	76.0	(37.6)	(33.2)%

Non-consolidated	FY2022 Result	FY2023 Forecast	Comparison with FY2022 Result	
Operating Revenue	1,370.7	1,048.0	(322.7)	(23.5)%
Operating Profit	46.5	32.0	(14.5)	(31.3)%
Ordinary Profit	75.3	62.0	(13.3)	(17.7)%
Profit	60.0	55.0	(5.0)	(8.5)%

	Cash dividends per share		
	Interim	Year end	Annual
FY2022	40 yen	50 yen	90 yen
FY2023	45 yen (forecast)	45 yen (forecast)	90 yen (forecast)

## Key Data

### ■ Electric Power Business

The revenue is expected to decrease due to lower electricity sales prices following the decline in resource prices, though the increase in sales of electricity from thermal power plants

### ■ Overseas Business

The revenue is expected to increase due to the increase in sales of electricity in the Thailand projects and Jackson Generation Power Plant in North America.

### ■ Other Business

The revenue is expected to decrease due to lower coal prices at a subsidiary in Australia that owns coal mining interests

	FY2022 Result	FY2023 Forecast	Comparison with FY2022 Result	
<b>Electric Power Sales (TWh)</b>				
<b>Electric Power Business</b>	<b>68.4</b>	<b>71.4</b>	<b>2.9</b>	<b>4.3 %</b>
Hydroelectric Power	8.8	9.1	0.2	2.8 %
Thermal Power	45.6	48.5	2.8	6.3 %
Wind Power	1.0	1.2	0.1	16.3 %
Other* <sup>1</sup>	12.8	12.4	(0.3)	(2.9)%
<b>Overseas Business*<sup>2</sup></b>	<b>14.2</b>	<b>19.0</b>	<b>4.7</b>	<b>33.4 %</b>
<b>Operating Revenue (Billion yen)</b>	<b>1,841.9</b>	<b>1,513.0</b>	<b>(328.9)</b>	<b>(17.9)%</b>
<b>Electric Power Business</b>	<b>1,417.9</b>	<b>1,100.0</b>	<b>(317.9)</b>	<b>(22.4)%</b>
Electric Power Purchase	1,362.4	1,022.0	(340.4)	(25.0)%
Renewables	146.0	136.0	(10.0)	(6.9)%
Transmission/Transformation	49.5	48.0	(1.5)	(3.2)%
<b>Overseas Business*<sup>3</sup></b>	<b>277.5</b>	<b>326.0</b>	<b>48.4</b>	<b>17.5 %</b>
<b>Other Business*<sup>4</sup></b>	<b>146.4</b>	<b>87.0</b>	<b>(59.4)</b>	<b>(40.6)%</b>

	FY2022 Result	FY2023 Forecast
Water supply rate	94%	100%
Load factor	65%	68%
Foreign exchange rate at term end		
Yen/USD	132.70	130.00
Yen/THB	3.80	3.80
Yen/AUD	89.57	90.00
THB/USD	34.56	34.56

\*1 Electric power sales volume of electricity procured from wholesale electricity market, etc.

\*2 Electric power sales volume of overseas consolidated subsidiaries (Electric power sales volume of equity method affiliated companies is not included.)

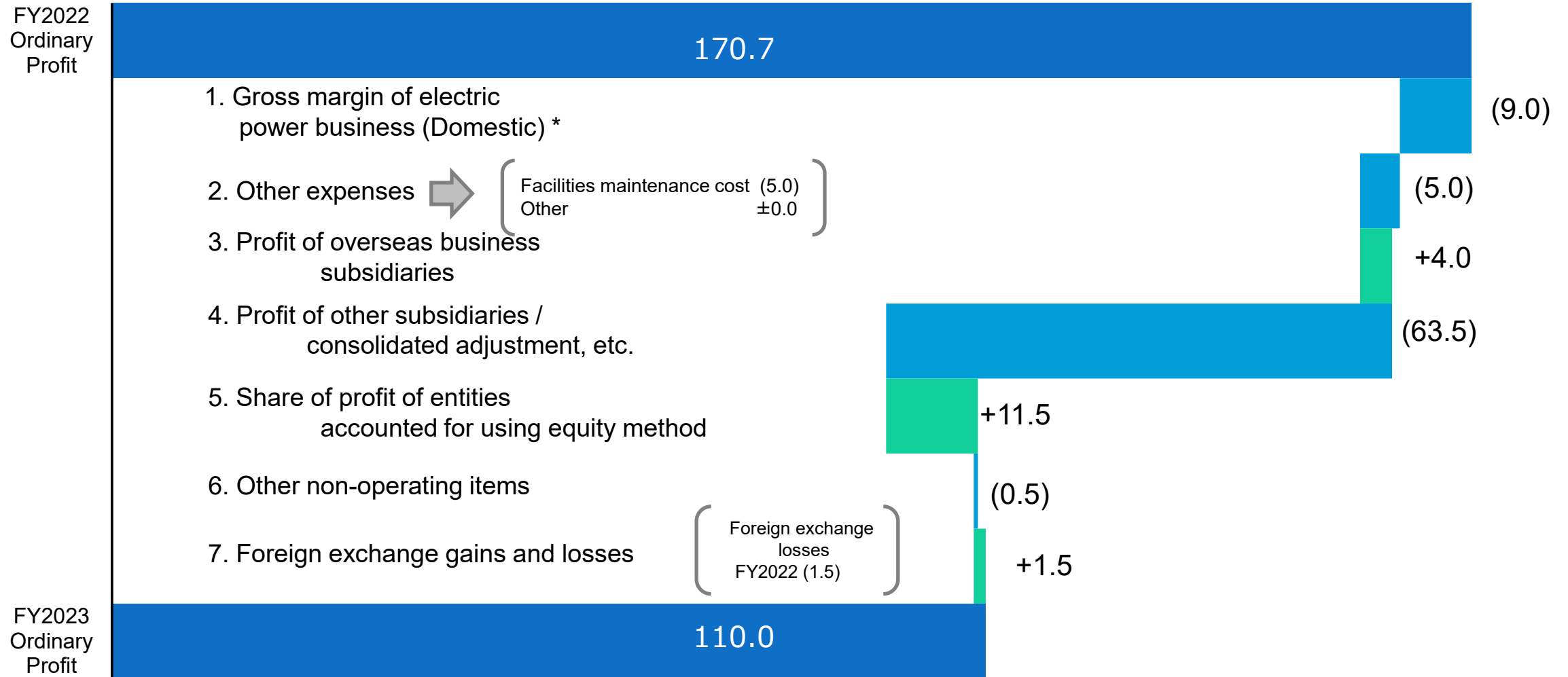
\*3 Sales for the overseas business segment (Sales from overseas consolidated subsidiaries and overseas consulting business, etc.)

\*4 "Other business" is composed of "Electric power-related business" segment and "Other business" segment.

\* Due to rounding, sales of each business do not equal consolidated sales totals.

# FY2023 Earnings Forecast (Main Factors for Change)

(Unit: billion yen)



\* Gross margin of electric power business (Domestic) : Domestic electric power business revenue (hydro, thermal, wind and other) – fuel costs, etc.



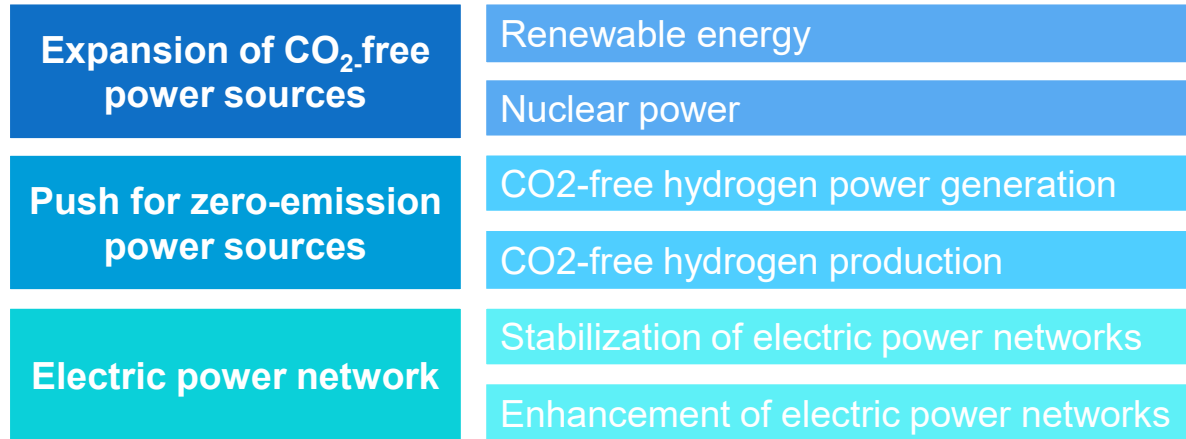
# Breakdown of Increase / Decrease Factors of Consolidated Ordinary Profit Forecast

(Unit: billion yen)

<p><b><u>1.Gross margin of electric power business (Domestic) (9.0)</u></b></p> <ul style="list-style-type: none"> <li>• Decrease in revenue of renewable energy</li> <li>• Rebound in fuel balance ,etc.</li> <li>• Improve profits from market due to falling fuel price, etc.</li> </ul>	<p><b><u>5.Share of profit of entities accounted for using equity method +11.5</u></b></p> <ul style="list-style-type: none"> <li>• Overseas...+10.0 <ul style="list-style-type: none"> <li>•U.S. Rebound in penalty in capacity market</li> <li>Gain on sale of land, etc.</li> </ul> </li> <li>• Domestic...+1.5</li> </ul>
<p><b><u>2.Other expenses (5.0)</u></b></p> <ul style="list-style-type: none"> <li>• Decrease in facilities maintenance cost...(5.0)</li> <li>Increase in labor costs</li> <li>• Other...±0.0</li> </ul>	<p><b><u>6.Other non-operating items (0.5)</u></b></p> <ul style="list-style-type: none"> <li>• Rebound loss in gain on sales of fixed assets</li> <li>• Increase in financing costs, etc.</li> <li>• Rebound decrease in previous loss</li> </ul>
<p><b><u>3.Income of overseas business subsidiaries +4.0</u></b></p> <ul style="list-style-type: none"> <li>• Jackson Generation Power Plant in US...+4.0</li> <li>Contribution to profit for the full year</li> <li>Rebound in penalty in capacity market</li> </ul>	<p><b><u>7.Foreign exchange gains and losses +1.5</u></b></p> <ul style="list-style-type: none"> <li>• Foreign exchange loss in the previous fiscal year</li> </ul>
<p><b><u>4.Income of other subsidiaries / consolidated adjustment, etc. (63.5)</u></b></p> <ul style="list-style-type: none"> <li>• Decrease in profit due to the fall of coal price in Australian coal mines, which one of our subsidiaries owns through proportional consolidation</li> </ul>	

# Investment Cash Flow

Towards a carbon-neutral society, three initiatives in BLUE MISSION 2050



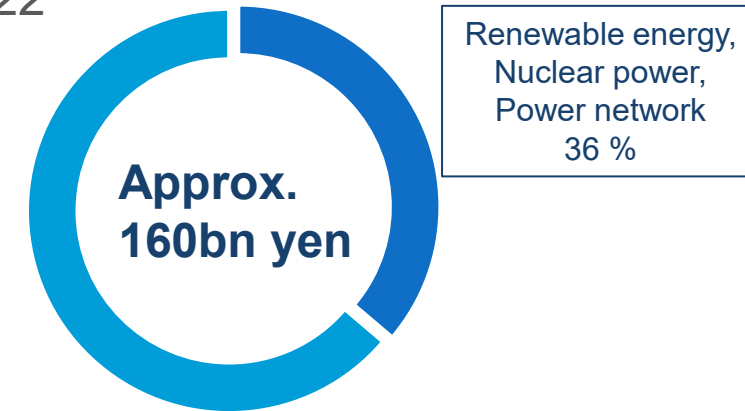
## Current status of investment in the three initiatives of BLUE MISSION 2050

Investment	Major projects
Renewable energy	Mainly domestic wind power. Under construction 8 sites, 339MW Started preparation for construction of Kitakyushu Hibikinada Offshore Wind Power Project in March 2023.
Power network	East-West interconnection enhancement project (New Sakuma Frequency Converter Station construction, transmission line construction)
Nuclear power	Ohma Nuclear Power Project
GENESIS Matsushima	Under environmental impact assessment
CCS	Study of potential storage sites for 2026 FID.

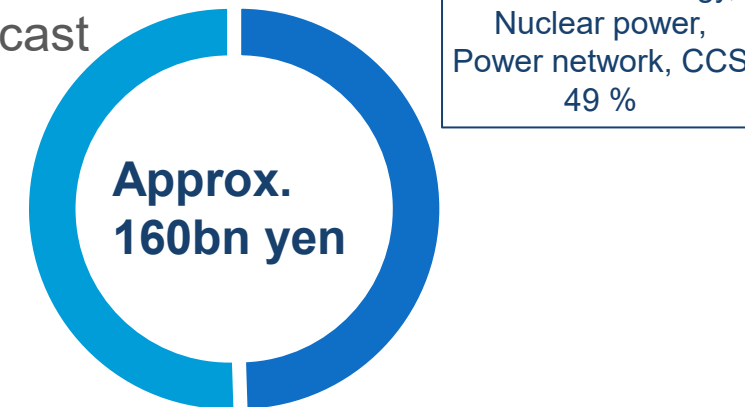
\*The above figures are current estimates and may change depending on future conditions.  
\*The above graphs do not include the recovery of investments and loans in the investment CF.

## Investment result and forecast

FY2022



FY2023 Forecast



A photograph of several offshore wind turbines in the ocean under a clear blue sky. The turbines are white with yellow bases. The image is partially obscured by a white diagonal shape on the right side of the slide.

# Appendix

## (1) Financial Data Contents

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## (1) -1. Consolidated: Revenues and Expenses

(Unit: 100 million yen)

	FY2018	FY2019	FY2020	FY2021	FY2022
<b>Operating revenue</b>	<b>8,973</b>	<b>9,137</b>	<b>9,091</b>	<b>10,846</b>	<b>18,419</b>
Electric utility operating revenue	6,937	6,841	7,313	8,764	14,179
Overseas business operating revenue	1,410	1,790	1,380	1,451	2,775
Other business operating revenue	625	505	397	630	1,464
<b>Operating expenses</b>	<b>8,185</b>	<b>8,301</b>	<b>8,313</b>	<b>9,976</b>	<b>16,580</b>
<b>Operating profit</b>	<b>788</b>	<b>836</b>	<b>777</b>	<b>869</b>	<b>1,838</b>
<b>Non-operating revenue</b>	<b>188</b>	<b>265</b>	<b>112</b>	<b>225</b>	<b>247</b>
Share of profit of entities accounted for using equity method	96	113	27	142	91
Foreign exchange gains	7	74	6	-	-
Other	84	77	77	82	156
<b>Non-operating expenses</b>	<b>292</b>	<b>320</b>	<b>280</b>	<b>366</b>	<b>378</b>
Interest expenses	263	262	237	224	273
Foreign exchange losses	-	-	-	75	11
Other	28	57	43	66	93
<b>Ordinary profit</b>	<b>685</b>	<b>780</b>	<b>609</b>	<b>728</b>	<b>1,707</b>
Extraordinary income	-	-	94	-	-
Extraordinary losses	-	124	57	-	-
<b>Profit attributable to owners of parent</b>	<b>462</b>	<b>422</b>	<b>223</b>	<b>696</b>	<b>1,136</b>

## (1) -2. Consolidated: Cash Flow

(Unit: 100 million yen)

	FY2018	FY2019	FY2020	FY2021	FY2022
<b>Operating activities</b>	<b>1,484</b>	<b>1,592</b>	<b>1,679</b>	<b>1,283</b>	<b>1,558</b>
Profit before income taxes	685	655	646	728	1,707
Depreciation	799	830	964	969	1,076
Share of (profit) loss of entities accounted for using equity method	(96)	(113)	(27)	(142)	(91)
<b>Investing activities</b>	<b>(1,704)</b>	<b>(1,617)</b>	<b>(1,432)</b>	<b>(1,788)</b>	<b>(1,508)</b>
Purchase of non-current assets	(1,060)	(1,495)	(1,592)	(1,352)	(1,448)
Investments and loan advances	(744)	(109)	(25)	(497)	(78)
<b>Free cash flow</b>	<b>(220)</b>	<b>(24)</b>	<b>246</b>	<b>(504)</b>	<b>49</b>

## (1) -3. Consolidated: Segment Information

(Unit: 100 million yen)

		FY2018	FY2019	FY2020	FY2021	FY2022	YoY
Electric power	Sales	6,956	6,860	7,334	8,788	14,202	5,414
	Ordinary income	149	274	190	266	545	279
Electric power-related	Sales	4,553	4,005	3,741	2,439	3,217	778
	Ordinary income	264	185	122	258	928	669
Overseas	Sales	1,410	1,790	1,380	1,451	2,775	1,324
	Ordinary income	292	339	308	220	226	6
Other	Sales	303	221	184	210	293	82
	Ordinary income	13	5	10	12	18	5
Subtotal	Sales	13,223	12,878	12,641	12,889	20,489	7,599
	Ordinary income	721	805	633	757	1,719	961
Elimination*	Sales	(4,250)	(3,740)	(3,550)	(2,043)	(2,069)	(26)
	Ordinary income	(35)	(24)	(24)	(29)	(11)	17
Consolidated	Sales	8,973	9,137	9,091	10,846	18,419	7,573
	Ordinary income	685	780	609	728	1,707	979

### “Electric Power Business”

Mainly J-POWER group’s electric power generation business and transmission/ transformation business. The majority of consolidated revenue is derived from this segment.

### “Electric Power-Related business”

These focus on peripheral business essential for the operation of power plants and transmission facilities, such as designing, executing, inspecting and maintaining power facilities and importing and transporting coal. Intra-group transactions account for a large portion of this segment, such as Company’s power plant maintenance, coal transportation activities.

### “Overseas business”

Overseas power generation business, overseas engineering and consulting business

### “Other business”

Diversified business such as telecommunication, environmental and the sale of coal

\* Elimination includes elimination of intersegment sales

## (1) -4. Consolidated: Key Ratios and Key Data

(Unit: 100 million yen)

	FY2018	FY2019	FY2020	FY2021	FY2022
<b>(PL)</b> Operating revenue	8,973	9,137	9,091	10,846	18,419
Operating profit	788	836	777	869	1,838
Ordinary profit	685	780	609	728	1,707
Profit attributable to owners of parent	462	422	223	696	1,136
<b>(BS)</b> Total assets	27,661	28,053	28,419	30,661	33,626
Construction in progress	5,820	6,471	5,882	6,765	5,721
Shareholders' equity	7,974	8,077	8,091	9,160	10,846
Net assets	8,455	8,573	8,536	9,641	11,927
Interest-bearing debt	16,428	16,484	16,646	17,864	18,858
<b>(CF)</b> Investing activities	(1,704)	(1,617)	(1,432)	(1,788)	(1,508)
Free cash flow	(220)	(24)	246	(504)	49
(Ref) CAPEX <sup>*1</sup>	(1,077)	(1,626)	(1,715)	(1,321)	(1,218)
(Ref) Depreciation	799	830	964	969	1,076
ROA (%)	2.5	2.8	2.2	2.5	5.3
ROA (ROA excl. Construction in progress) (%)	3.2	3.6	2.8	3.1	6.6
ROE (%)	5.8	5.3	2.8	8.1	11.4
EPS (¥)	252.68	230.96	121.85	380.70	621.50
BPS (¥)	4,356.54	4,412.84	4,420.39	5,004.31	5,931.68
Shareholders' equity ratio (%)	28.8	28.8	28.5	29.9	32.3
D/E ratio (x)	2.1	2.0	2.1	2.0	1.7
Number of shares issued <sup>*2</sup> (thousand)	183,048	183,048	183,048	183,048	182,861

\*1 Capital expenditure: Increase in tangible and intangible non-current assets

\*2 Number of shares issued at the end of the fiscal year (excluding treasury stock)



## (1) -5. Non-consolidated: Revenues and Expenses

(Unit: 100 million yen)

	FY2018	FY2019	FY2020	FY2021	FY2022
<b>Operating revenue</b>	<b>6,469</b>	<b>5,712</b>	<b>5,899</b>	<b>7,900</b>	<b>13,707</b>
<b>Electric power business</b>	<b>6,336</b>	<b>5,638</b>	<b>5,838</b>	<b>7,810</b>	<b>13,533</b>
Sold power to retailers	-	-	-	6	11
Sold power to other suppliers	5,806	5,104	5,660	7,672	13,373
Other*	529	533	177	132	149
<b>Incidental business</b>	<b>133</b>	<b>74</b>	<b>61</b>	<b>89</b>	<b>173</b>
<b>Operating expenses</b>	<b>6,282</b>	<b>5,464</b>	<b>5,120</b>	<b>7,721</b>	<b>13,241</b>
<b>Electric power business</b>	<b>6,157</b>	<b>5,397</b>	<b>5,065</b>	<b>7,637</b>	<b>13,075</b>
Personnel expense	324	358	318	201	206
Amortization of the actuarial difference in retirement benefits	(14)	24	28	(70)	(75)
Fuel cost	2,890	2,332	1,937	2,985	7,621
Repair and maintenance cost	697	666	441	515	419
Depreciation	510	527	552	559	589
Other	1,734	1,512	1,814	3,375	4,238
<b>Incidental business</b>	<b>125</b>	<b>66</b>	<b>55</b>	<b>84</b>	<b>166</b>
<b>Operating profit</b>	<b>186</b>	<b>248</b>	<b>778</b>	<b>178</b>	<b>465</b>

\* "Other" shows transmission revenue and other electricity revenue. Due to the split of transmission business in April, 2020, "Other" for FY2020 shows only other electricity revenue

## (1) -5. Non-consolidated: Revenues and Expenses

(Unit: 100 million yen)

<b>【Amortization of the actuarial gain or loss】</b>	<b>FY2018</b>	<b>FY2019</b>	<b>FY2020</b>	<b>FY2021</b>	<b>FY2022</b>
Opening balance (a)	(21)	35	42	(103)	(109)
Amortization* (b)	(14)	24	28	(70)	(75)
Amount accrued for the current year (c)	42	31	(116)	(77)	(23)
Closing balance (d)=(a)-(b)+(c)	35	42	(103)	(109)	(58)

<b>【Repair and maintenance cost】</b>	<b>FY2018</b>	<b>FY2019</b>	<b>FY2020</b>	<b>FY2021</b>	<b>FY2022</b>
Hydroelectric	168	129	134	122	122
Thermal	452	472	290	374	278
Transmission	59	48	-	-	-
Others	16	16	16	18	18
Total	697	666	441	515	419

<b>【Depreciation and amortization cost】</b>	<b>FY2018</b>	<b>FY2019</b>	<b>FY2020</b>	<b>FY2021</b>	<b>FY2022</b>
Hydroelectric	143	147	155	159	170
Thermal	230	239	356	357	376
Transmission	100	102	-	-	-
Others	35	37	40	42	42
Total	510	527	552	559	589

\* Actuarial difference is amortized by the declining-balance method over two years from the year following the year in which they occurred.

# (1) -6. Non-consolidated: Balance Sheet

	(Unit: million yen)	
	FY2021 End of FY	FY2022 End of FY
<b>Assets</b>		
Non-current assets	2,126,004	2,139,352
Electric utility plant and equipment	853,331	844,678
Hydroelectric power production facilities	376,083	391,674
Thermal power production facilities	413,511	392,875
Internal Combustion Engine Power Production Facilities	726	-
Communication facilities	7,410	7,193
General facilities	55,599	52,935
Incidental business facilities	2,391	2,456
Non-operating facilities	786	1,043
Construction in progress	453,249	467,413
Construction in progress	453,249	467,413
Nuclear fuel	75,806	76,226
Nuclear fuel in processing	75,806	76,226
Investments and other assets	740,440	747,534
Long-term investments	54,215	54,701
Long-term investment for subsidiaries and associates	636,379	649,501
Long-term prepaid expenses	6,950	3,308
Deferred tax assets	42,894	40,023
Current assets	294,056	349,091
Cash and deposits	126,006	153,611
Accounts receivable-trade	28,134	49,911
Other accounts receivable	7,763	6,396
Supplies	45,737	91,096
Prepaid expenses	1,455	1,575
Short-term receivables from subsidiaries and associates	20,965	10,995
Other current assets	63,994	35,503
<b>Total assets</b>	<b>2,420,061</b>	<b>2,488,443</b>

	(Unit: million yen)	
	FY2021 End of FY	FY2022 End of FY
<b>Liabilities</b>		
Non-current liabilities	1,322,592	1,420,629
Bonds payable	704,994	772,595
Long-term loans payable	561,753	601,887
Long-term accrued liabilities	5,330	5,849
Lease obligations	149	80
Long-term debt to subsidiaries and associates	2,081	2,101
Provision for retirement benefits	39,369	30,114
Asset retirement obligations	6,695	6,383
Other non-current liabilities	2,217	1,617
Current liabilities	354,601	295,372
Current portion of non-current liabilities	120,793	184,399
Short-term loans payable	7,950	7,950
Commercial papers	90,016	-
Accounts payable-trade	11,930	7,991
Accounts payable-other	32,383	7,445
Accrued expenses	12,035	11,728
Accrued taxes	4,742	9,849
Deposits received	323	408
Short-term debt to subsidiaries and associates	67,534	56,083
Other advances	2,861	578
Other current liabilities	4,031	8,937
<b>Total liabilities</b>	<b>1,677,194</b>	<b>1,716,002</b>
<b>Net assets</b>		
Shareholders' equity	719,227	764,312
Capital stock	180,502	180,502
Capital surplus	109,904	109,904
Legal capital surplus	109,904	109,904
Retained earnings	428,829	474,283
Legal retained earnings	6,029	6,029
Other retained earnings	422,800	468,254
Reserve for special disaster	80	82
Exchange-fluctuation preparation reserve	1,960	1,960
General reserve	342,861	392,861
Retained earnings brought forward	77,898	73,350
Treasury shares	(9)	(378)
Valuation and translation adjustments	23,640	8,129
Valuation difference on available-for-sale securities	12,611	13,573
Deferred gains or losses on hedges	11,028	(5,444)
<b>Total net assets</b>	<b>742,867</b>	<b>772,441</b>
<b>Total liabilities and net assets</b>	<b>2,420,061</b>	<b>2,488,443</b>

Note) For consolidated balance sheet, please refer to the Financial Results disclosed on May 10, 2023

## (1) -7. Non-consolidated: Statement of Income

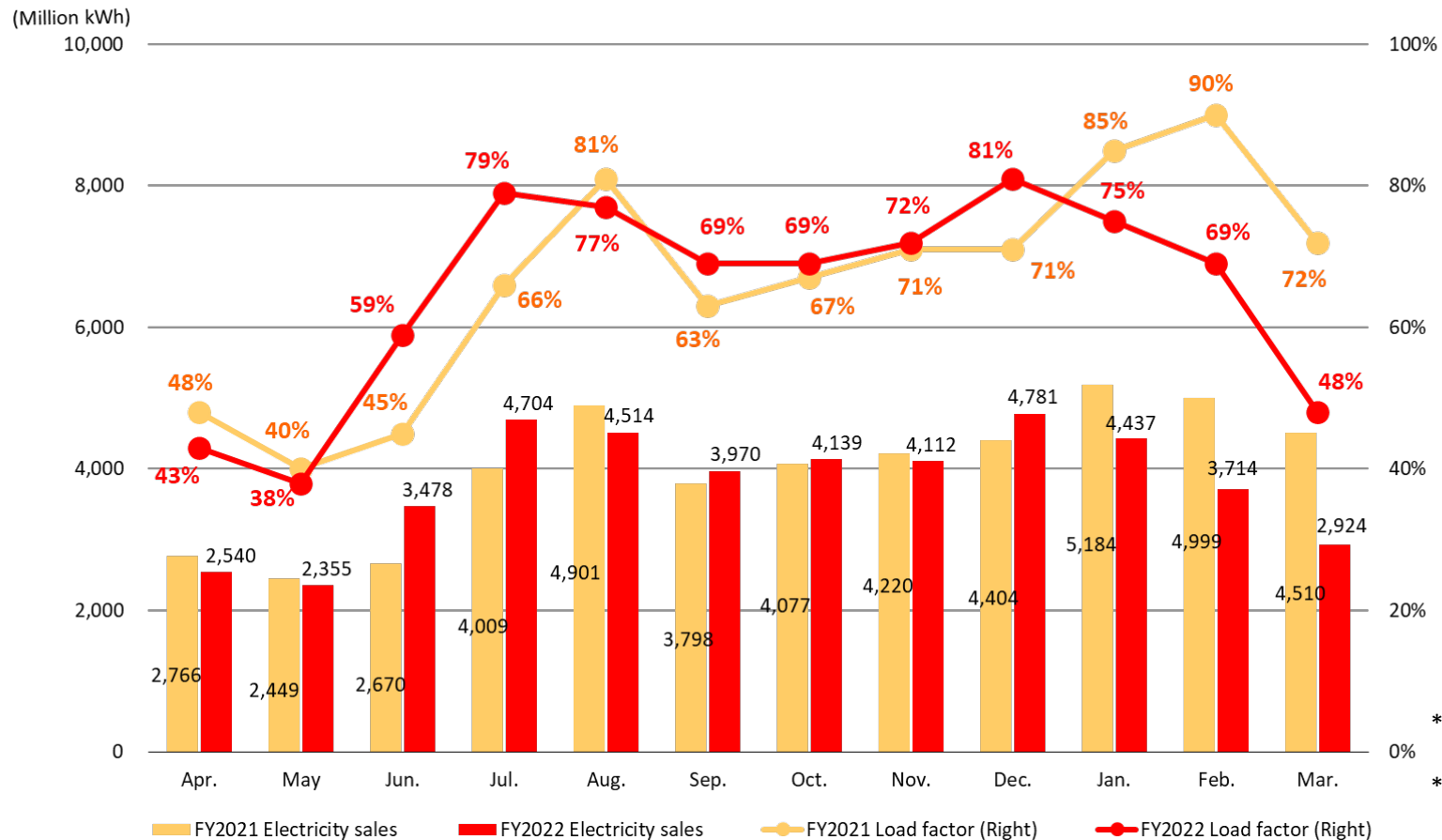
	(Unit: million yen)	
	FY2021 (Apr.-Mar.)	FY2022 (Apr.-Mar.)
Operating revenue	790,055	1,370,724
Electric utility operating revenue	781,056	1,353,379
Sold power to retailers	606	1,168
Sold power to other suppliers	767,205	1,337,307
Other electricity revenue	13,245	14,904
Incidental business operating revenue	8,998	17,344
Operating revenue-consulting business	1,016	1,275
Operating revenue-coal sale business	6,916	14,917
Operating revenue-other businesses	1,064	1,150
Operating expenses	772,155	1,324,162
Electric utility operating expenses	763,745	1,307,562
Hydroelectric power production expenses	62,942	68,234
Thermal power production expenses	427,208	885,143
Internal combustion engine power production expenses	3,410	110
Renewable power production expenses	-	92
Purchased power from other suppliers	203,278	276,941
Selling expenses	2,025	1,769
Communicating expenses	4,783	4,674
General and administrative expenses	49,225	51,619
Expenses for third party's power transmission service	3,801	7,002
Enterprise tax	7,068	11,975
Incidental business operating expenses	8,410	16,600
Operating expenses-consulting business	721	895
Operating expenses-coal sale business	6,871	14,831
Operating expenses-other businesses	817	872
Operating income	17,899	46,561

	(Unit: million yen)	
	FY2021 (Apr.-Mar.)	FY2022 (Apr.-Mar.)
Non-operating income	52,894	48,315
Financial revenue	49,231	38,528
Dividend income	45,645	34,559
Interest income	3,586	3,969
Non-operating revenue	3,663	9,786
Gain on sales of non-current assets	0	3,870
Miscellaneous revenue	3,663	5,916
Non-operating expenses	12,507	19,543
Financial expenses	11,239	11,726
Interest expenses	10,994	11,318
Bond issuance cost	244	407
Non-operating expenses	1,267	7,817
Loss on sales of non-current assets	71	629
Miscellaneous loss	1,196	7,187
Total ordinary revenue	842,950	1,419,039
Total ordinary expenses	784,663	1,343,706
Ordinary income	58,287	75,333
Extraordinary income	-	3,795
Gain on liquidation of subsidiaries and associates	-	3,795
Extraordinary losses	-	6,009
Loss on valuation of shares of subsidiaries and associates	-	6,009
Profit before income taxes	58,287	73,119
Income taxes-current	314	3,769
Income taxes-deferred	(15,724)	9,251
Total income taxes	(15,409)	13,021
Profit	73,696	60,097

Note) For consolidated statement of income, please refer to the Financial Results disclosed on May 10, 2023

# (1) -8. Monthly Electricity Sales: Domestic Power Generation Business (Thermal Power)

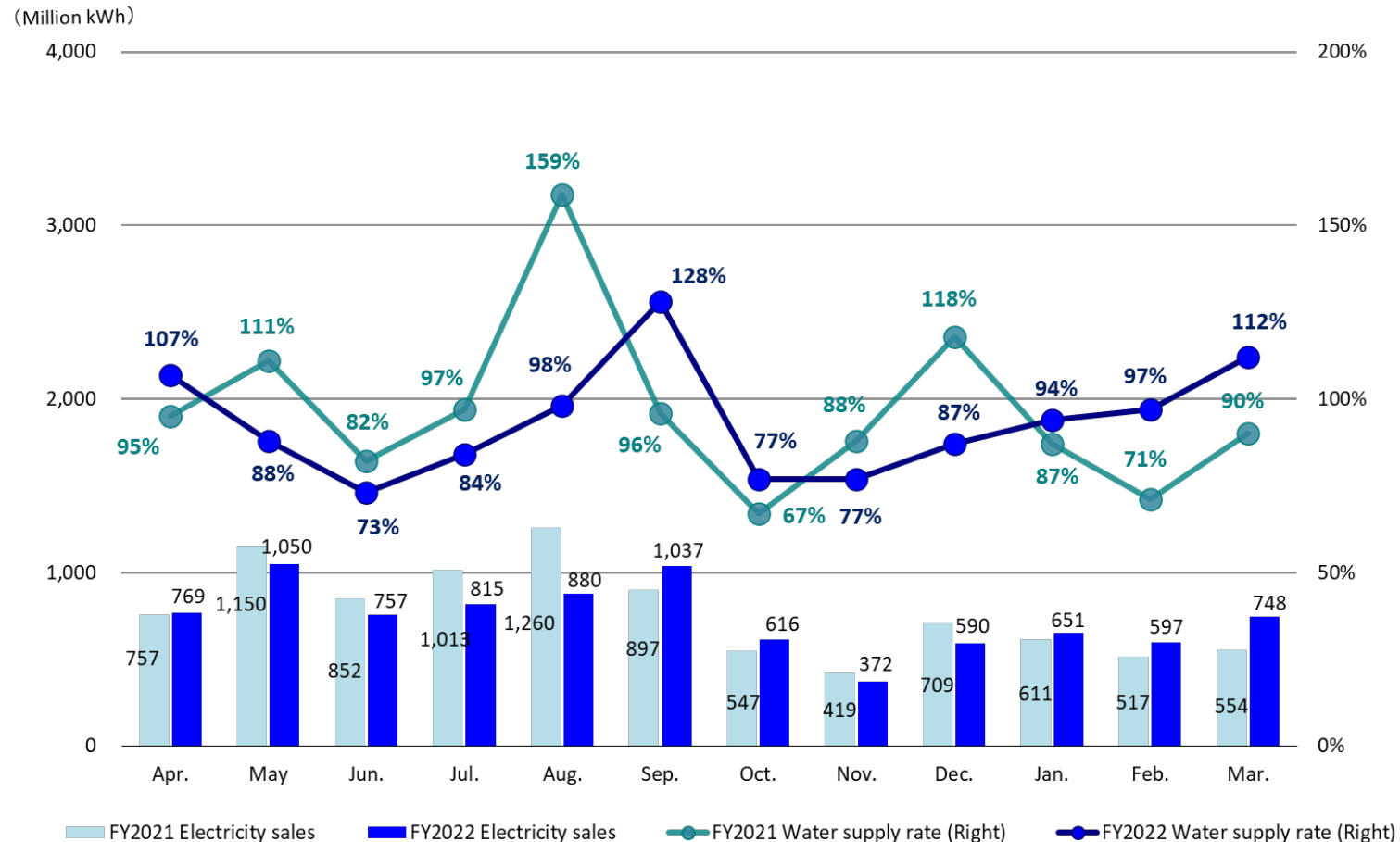
▶ Apr. 2021 - Mar. 2022 Results (Cumulative)	▶ Apr. 2022 - Mar. 2023 Results (Cumulative)
Load factor ⇒ 67%	Load factor ⇒ 65%
Electricity sales ⇒ 47.9 TWh	Electricity sales ⇒ 45.6 TWh



\* Load factors of thermal power show the results for non-consolidated only.  
\* Proportion of equity holding is not considered.

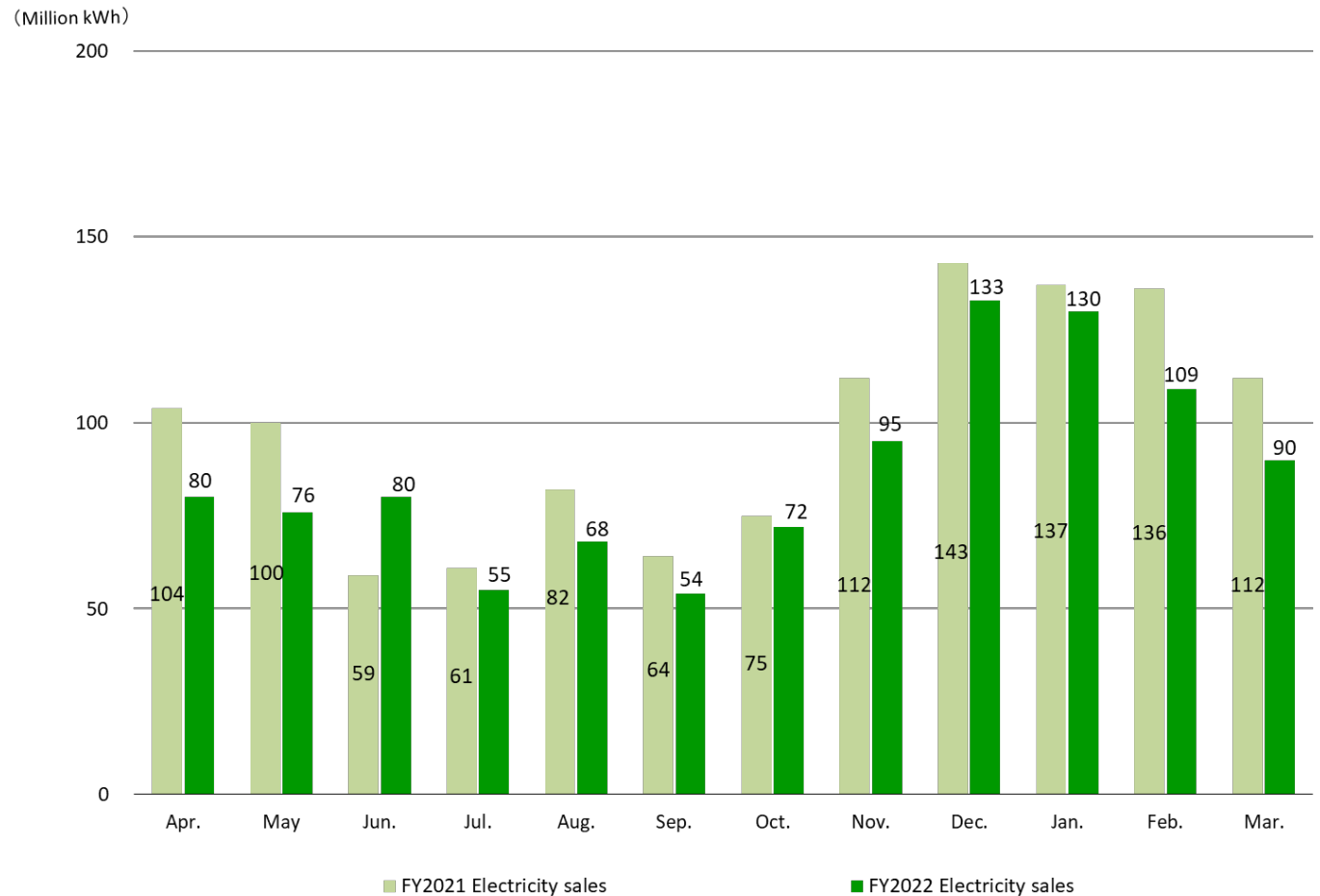
# (1) -8. Monthly Electricity Sales: Domestic Power Generation Business (Hydroelectric Power)

<p>▶ Apr. 2021 - Mar. 2022 Results (Cumulative) Water supply rate ⇒ 99% Electricity sales ⇒ 9.2 TWh</p>	<p>▶ Apr. 2022 - Mar. 2023 Results (Cumulative) Water supply rate ⇒ 94% Electricity sales ⇒ 8.8 TWh</p>
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# (1) -8. Monthly Electricity Sales: Domestic Power Generation Business (Wind Power)

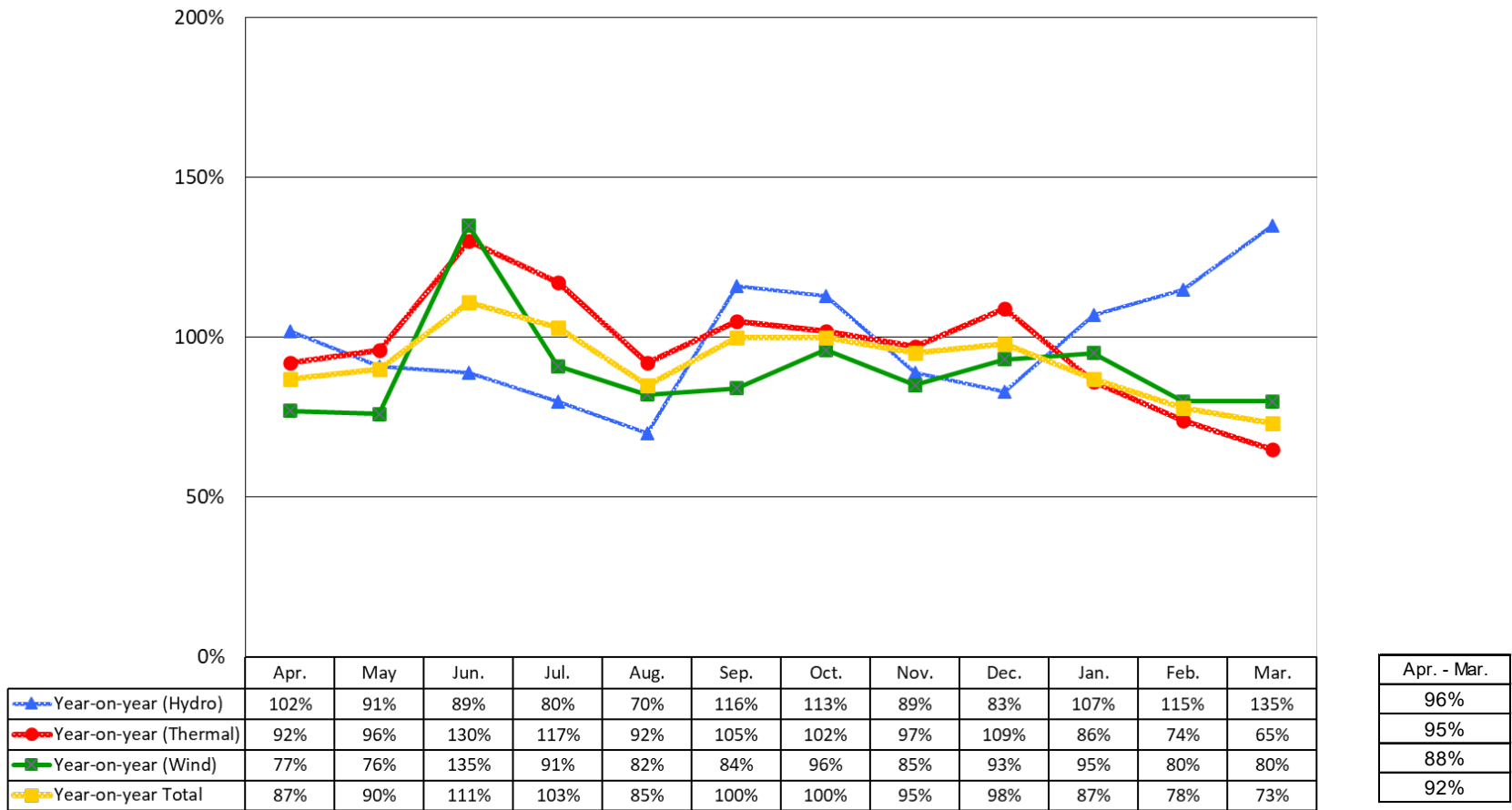
- ▶ Apr. 2021 - Mar. 2022 Results (Cumulative) ⇒ 1.19 TWh
- ▶ Apr. 2022 - Mar. 2023 Results (Cumulative) ⇒ 1.04 TWh



Note) Proportion of equity holding is not considered.

# (1) -8. Change in Monthly Electricity Sales: Domestic Power Generation Business

- ▶ Apr. 2021 - Mar. 2022 Total Results (Cumulative) ⇒ 74.7 TWh
- ▶ Apr. 2022 - Mar. 2023 Total Results (Cumulative) ⇒ 68.4 TWh



Note) Total volume includes electricity sales volume of hydro, thermal, wind and electricity procured from wholesale electricity market, etc.

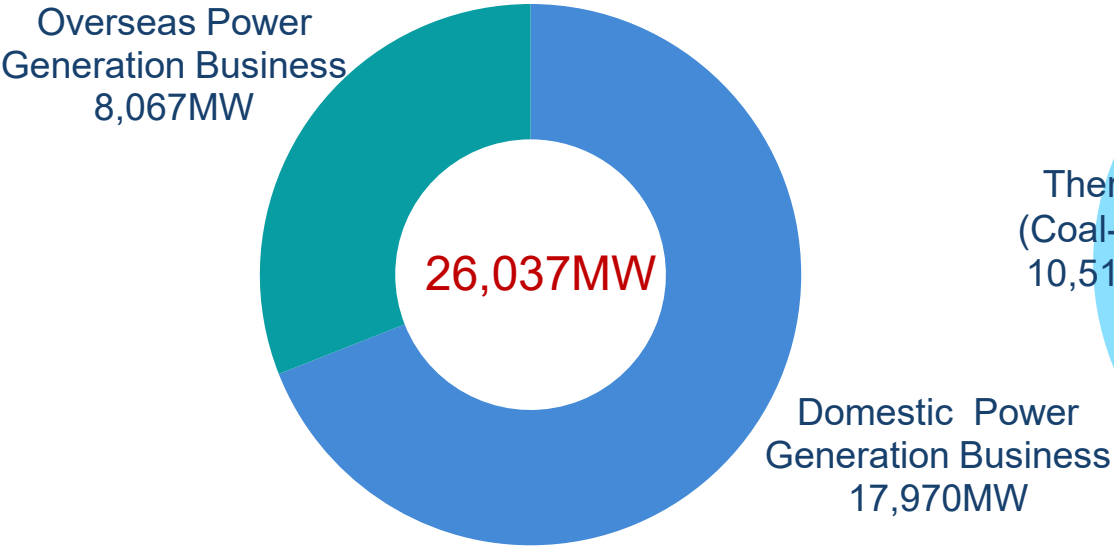


## (2) Business Data Contents

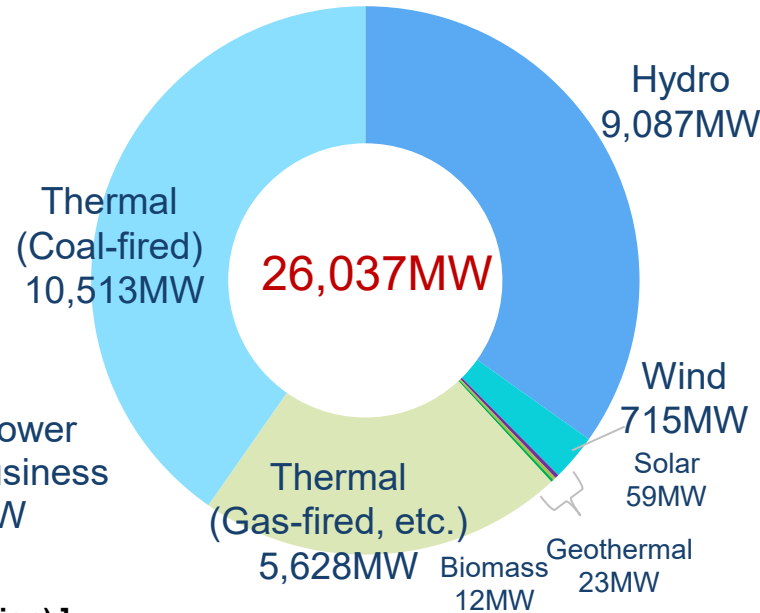
1.	Overview of J-POWER Group Power Generation Facilities	...	33	8.	Osaki CoolGen Project	...	44
	Domestic Electric Power Business Facilities	...	34	9.	Upcycling Existing Thermal Power Plants – GENESIS Matsushima	...	45
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4.	Renewable Energy Development Projects (Wind)	...	40	13.	Global Business Expansion by Leveraging Our Strengths	...	50
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6.	Onikobe Geothermal Power Station started commercial operation	...	42	15.	Actions Taken towards HVDC Transmission System	...	53
7.	Ohma Nuclear Power Project	...	43	16.	J-POWER Group's Green/Transition Finance Framework	...	54

# (2) -1. Overview of J-POWER Group Power Generation Facilities (As of March 31, 2023)

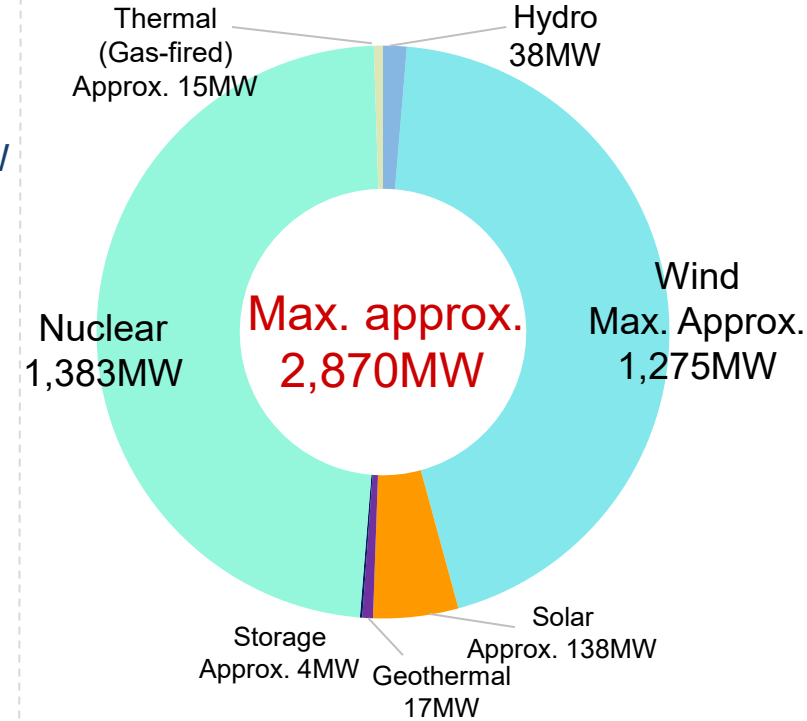
Consolidated Power Generation Capacity\*1



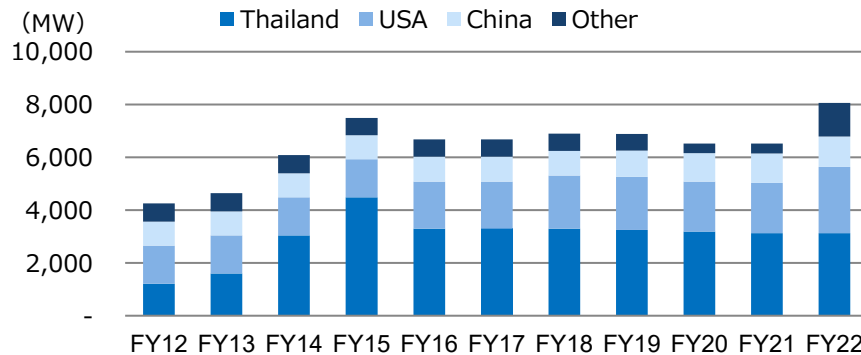
(As of March 31, 2023)



Development Projects\*1\*2\*3



[ Overseas power business equity output (in operation) ]



In addition to projects counted in the above graphs, domestic offshore wind projects outside of port areas are under preparation for development, one geothermal project is under research for development

\*1 Capacity figures show owned capacity which takes into account of equity ratio \*2 For replacement project, only change amount in capacity is counted  
 \*3 In case capacity is to be determined, maximum capacity at environmental impact assessment is used

## (2) -1. Domestic Electric Power Business Facilities (As of March 31, 2023)

Hydroelectric: 61 power plants, 8,577MW\*1

Power plant	Location	Beginning of operation	Capacity (MW)
Shimogo	Fukushima	1988	1,000
Okutadami	Fukushima	1958	560
Otori	Fukushima	1963	182
Tagokura	Fukushima	1959	400
Okukiyotsu	Niigata	1978	1,000
Okukiyotsu No.2	Niigata	1996	600
Numappara	Tochigi	1973	675
Shintoyone	Aichi	1972	1,125
Sakuma	Shizuoka	1956	350
Miboro	Gifu	1961	215
Nagano	Fukui	1968	220
Tedorigawa No.1	Ishikawa	1979	250
Ikehara	Nara	1964	350
Sendaigawa No.1	Kagoshima	1965	120
Other 47 power plants			

Wind Power: 21 wind farms, 477MW\*2

Wind farm	Location	Ownership	Output capacity (MW)
Setana Osato	Hokkaido	100%	50.0
Kaminokuni	Hokkaido	100%	28.0
Green Power Kuzumaki	Iwate	100%	21.0
Kuzumaki No.2	Iwate	100%	44.6
Nikaho No.2	Akita	100%	41.4
Koriyama-Nunobiki Kogen	Fukushima	100%	66.0
Hiyama Kogen	Fukushima	100%	28.0
Irouzaki	Shizuoka	100%	34.0
Tahara Bayside	Aichi	100%	22.0
Awara-Kitagata	Fukui	100%	20.0
Minami Ehime	Ehime	100%	28.5
Other 10 wind farms			

\*1 Including 3,275MW of pure pumped storage type.

\*2 Owned capacity: Output capacity of each facility is multiplied by J-POWER's investment ratio (equity ratio).

## (2) -1. Domestic Electric Power Business Facilities (As of March 31, 2023)

Thermal (J-POWER): 7 power plants, 8,412MW

	Power plant (Location)		Beginning of operation	Capacity (MW)
Coal	Isogo (Kanagawa)	New No.1	2002	600
		New No.2	2009	600
	Takasago (Hyogo)	No.1	1968	250
		No.2	1969	250
	Takehara (Hiroshima)	New No.1	2020	600
		No.3	1983	700
	Tachibanawan (Tokushima)	No.1	2000	1,050
		No.2	2000	1,050
	Matsushima (Nagasaki)	No.1	1981	500
		No.2	1981	500
	Matsuura (Nagasaki)	No.1	1990	1,000
		No.2	1997	1,000
	Ishikawa Coal (Okinawa)	No.1	1986	156
		No.2	1987	156

Thermal (Others): 3 power plants, 481MW\*1

Power plant	Location	Fuel	Ownership	Output capacity (MW)
Tosa	Kochi	Coal	45%	167
Kashima	Ibaraki	Coal	50%	645
Osaki CoolGen	Hiroshima	Coal	50%	166

Geothermal: 1 power plant, 23MW\*1

Power plant	Location	Ownership	Output capacity (MW)
Wasabisawa	Akita	50%	46

\*1 Owned capacity: Output capacity of each facility is multiplied by J-POWER's investment ratio (equity ratio).

## (2) -1. Overseas Power Generation Projects (As of March 31, 2023)

Project	Type		Output capacity (MW)	Ownership	Owned capacity (MW)	Power purchaser	Purchase agreement valid through
<b>Thailand (14 projects)</b>			<b>5,600</b>		<b>3,130</b>		
Roi-Et	Biomass (Chaff)		9	24.7%	2	EGAT*1	2024
EGCO Cogen	CCGT*3		112	20%	22	EGAT*1/ Companies in the industrial park etc.	2024
Yala	Biomass (Rubber wood waste)		20	49%	10	EGAT*1	2031
Kaeng Khoi 2	CCGT*3		1,468	49%	719	EGAT*1	2033
Rooftop Solar	Solar		0.8	60%	0.5	Companies in the industrial park etc.	-
7 SPPs*2	CCGT*3	Consolidated Subsidiaries	790	57.7%	456	EGAT*1/ Companies in the industrial park etc.	2038
Nong Saeng	CCGT*3		1,600	60%	960	EGAT*1	2039
U-Thai	CCGT*3		1,600	60%	960	EGAT*1	2040
<b>United States (11 projects)</b>			<b>6,402</b>		<b>2,511</b>		
Tenaska Frontier	CCGT*3		830	31%	257	ERCOT market and MISO market	-
Elwood Energy	SCGT*4		1,350	50%	675	PJM market	-
Green Country	CCGT*3		795	50%	398	SPP market	-
Pinelawn	CCGT*3		80	50%	40	Long Island Power Authority	2025
Equus	SCGT*4		48	50%	24	NYISO market	-
Fluvanna	CCGT*3		885	15%	133	Shell Energy North America	2024
Edgewood	SCGT*4		88	50%	44	Long Island Power Authority	2023
Shoreham	Jet Fuel (Simple cycle)		90	50%	45	Long Island Power Authority	2023
Orange Grove	SCGT*4		96	50%	48	San Diego Gas & Electric	2035
Westmoreland	CCGT*3		940	25%	235	PJM market	-
Jackson generation	CCGT*3	Consolidated Subsidiaries	1,200	51%	612	PJM market	-

\*1 EGAT(Electricity Generating Authority of Thailand): State-owned electric power utility in Thailand

\*2 7 SPP projects (KP1,KP2,TLC,NNK,NLL,CRN,NK2). J-POWER holds 45% stake in NLL and 60% stake in other 6 plants.

\*3 CCGT: Combined Cycle Gas Turbine \*4 SCGT: Simple Cycle Gas Turbine

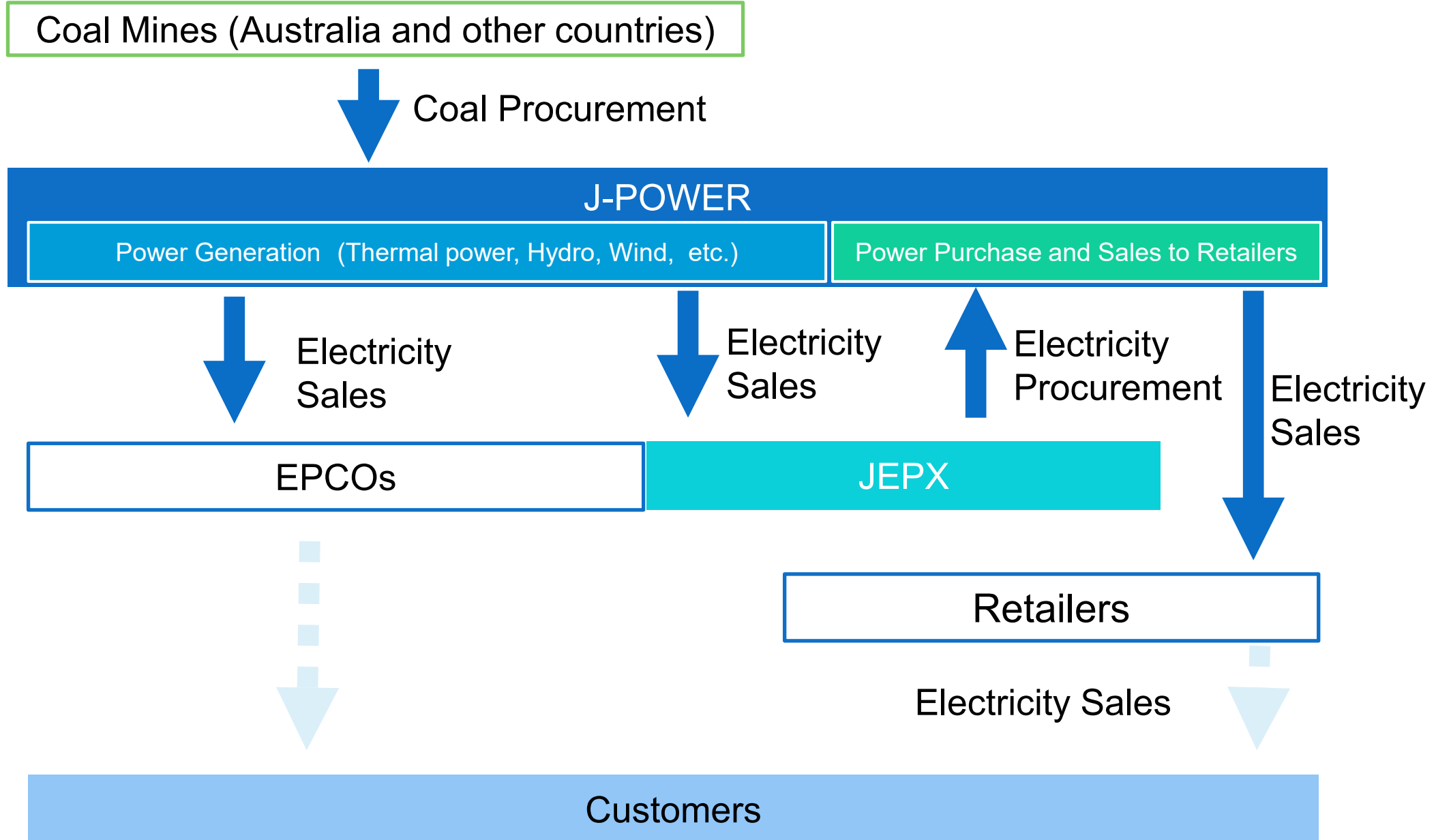
## (2) -1. Overseas Power Generation Business Project (As of March 31, 2023)

Project name	Type	Output capacity ( MW )	Ownership	Owned capacity ( MW )	Power purchaser	PPA Contract period
<b>China (3 projects)</b>		<b>12,157</b>		<b>1,150</b>		
Hanjiang (Xihe, Shuhe)	Hydro	450	27%	122	Shaanxi EPCO	1 year update * 1
Hezhou	Coal	2,090	17%	355	Guangxi EPCO	1 year update * 1
Gemeng* 2	Wind, solar, pumping, coal-fired	9,617	7%	673	Shanxi EPCO	-
<b>Other countries / regions (6 projects)</b>		<b>3,710</b>		<b>1,276</b>		
Triton Knoll (UK)	Offshore Wind	857	25%	214	Orsted	Until 2037
Batang (Indonesia)	Coal	2,000	34%	680	PLN	Until 2047
CBK (3 projects) (Philippines)	Hydro / pumping	728	50%	364	Philippine Electric Power Corporation	Until 2026
Lake Mainit Hydro (Philippines)	Hydro	25	40%	10	ANECO	Until 2048
Kidston Stage 1 (Australia)	Solar	50	7.7%	4	NEM market	-
Gemaron Solar (Australia)	Solar	50	7.7%	4	NEM market	-

\* 1 Although the power sales contract is renewed for one year, in principle, continuous power sales during the operation period will be carried out according to the "Transmission Network Connection Management Agreement" separately concluded with the power transmission and distribution company at the provincial level.

\*2 Gemeng International Energy Co., Ltd. is an electric power company that owns 16 power generation companies .

## (2) -2. Main Flow of Domestic Electricity Business

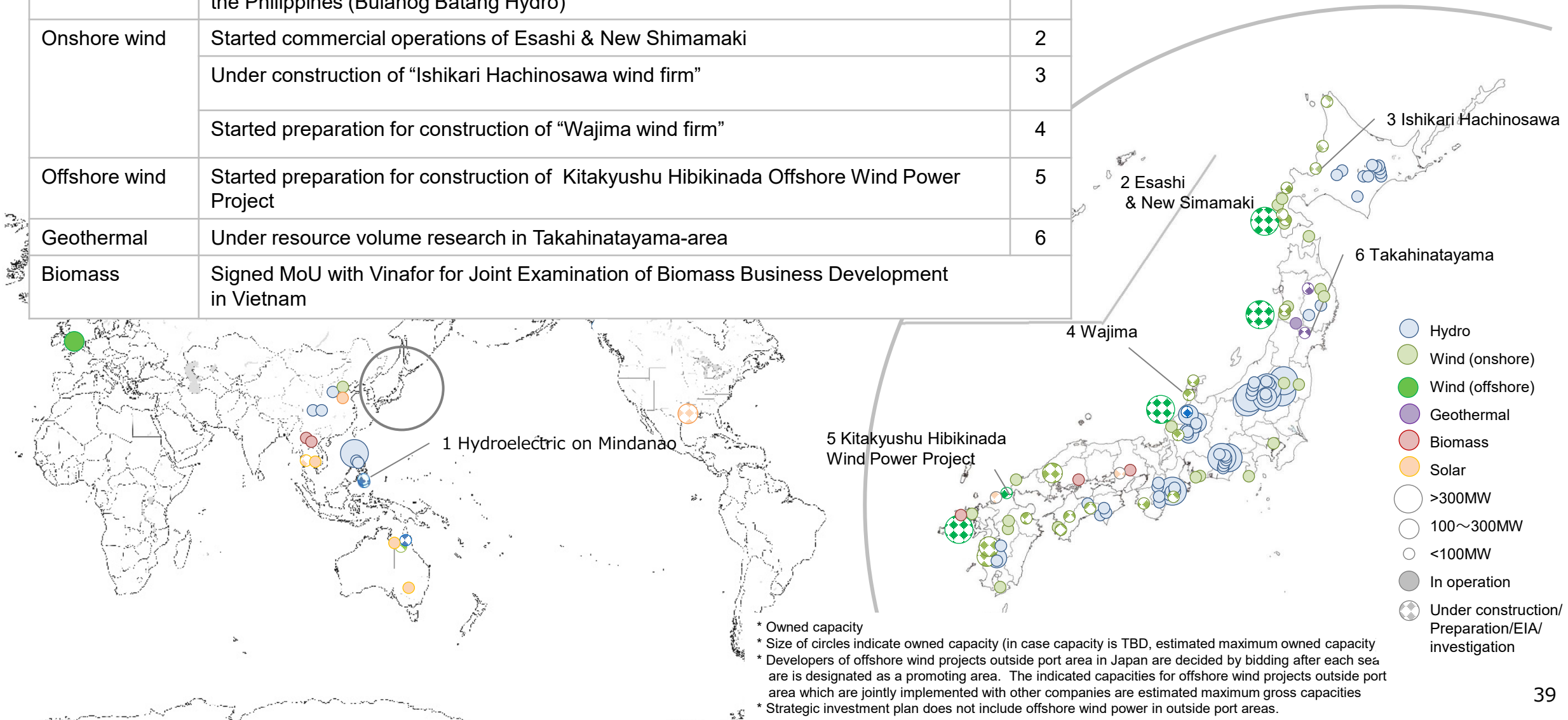


## (2) -3. Expansion of Renewable Energy

**Strategic investment plan: 700 billion yen planned for FY2023-2030, including Renewable Energy**

Hydroelectric	Participation in hydroelectric power generation projects on Mindanao, the Republic of the Philippines (Bulanog Batang Hydro)	1
Onshore wind	Started commercial operations of Esashi & New Shimamaki	2
	Under construction of "Ishikari Hachinosawa wind firm"	3
	Started preparation for construction of "Wajima wind firm"	4
Offshore wind	Started preparation for construction of Kitakyushu Hibikinada Offshore Wind Power Project	5
Geothermal	Under resource volume research in Takahinatayama-area	6
Biomass	Signed MoU with Vinafor for Joint Examination of Biomass Business Development in Vietnam	

(As of March 31, 2023)

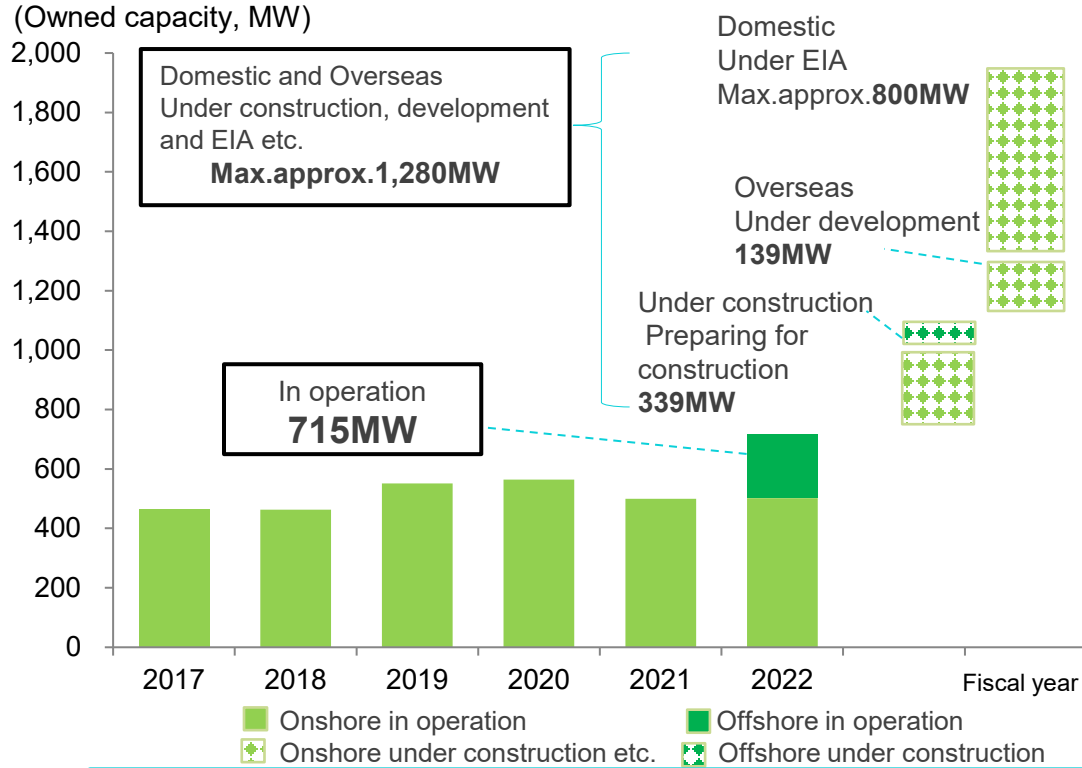




# (2) -4. Renewable Energy Development Projects (Wind)

(As of March 31,2023)

**Projects** \*Excluding domestic outside port and port area offshore wind power

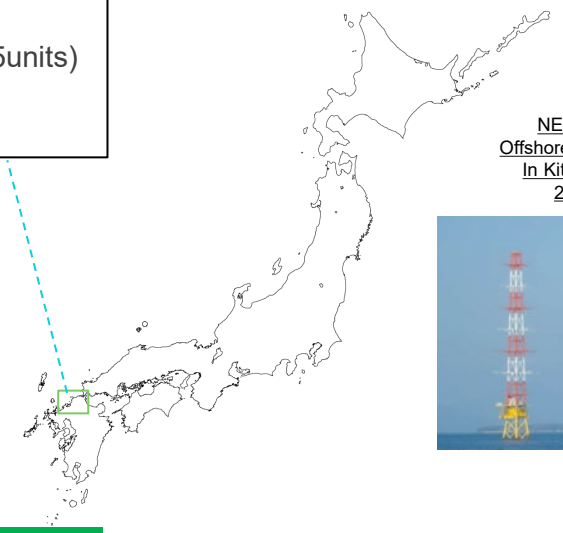
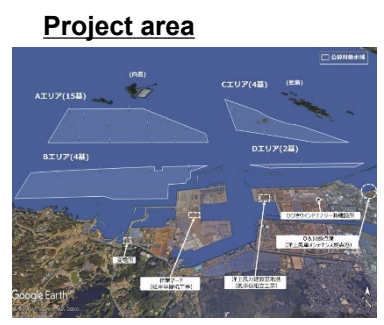


<b>Under construction</b> Kaminokuni No.2*1 Minami Ehime No.2*2 etc.	<b>Preparing for construction</b> Wajima etc.	<b>Under renewal construction</b> New Tomamae New Nikaho Kogen etc.
<b>Under development</b> Kidston Stage 3 Wind(Australia)*3	<b>Under environmental impact assessment</b> Reihoku Kunimiyama Kita-Kagoshima, etc.	

\*1 Presents only phase 1 construction. Total plan amounts up to 120.4MW  
 \*2 Total plan amounts up to 40.8MW  
 \*3 Conducted jointly with Genex Power Limited.  
 The owned capacity includes 7.7% stake in Genex, in addition to the 50% stake held by the Company under the development funding agreement.  
 \*4 Conducted jointly with Kyuden Mirai Energy Company, Incorporated, Hokutaku Co., LTD, Saibu Gas Co. Ltd. and Kyudenko Corp.

## Domestic Offshore

**Kitakyushu-Hibikinada\*4**  
 Start of Construction :March 2023  
 Start of operation :FY2025(planned)  
 Port area  
 Max.approx.220MW  
 (Rated power output 9.6MW\*25units)  
 Owned capacity 40%  
 =Max.approx.88MW



\*We will consider and respond to each location for open tendering toward the realization of offshore wind power in outside port area.

## Overseas Offshore

**Triton Knoll**  
 Start of commercial operation :April 2022  
 UK  
 857MW  
 Ownership 25%  
 Owned Capacity 214MW



## (2) -5. Renewable Energy Development Projects (Hydro, Geothermal, Solar)

(As of March 31,2023)

Hydro	Project	Capacity	Ownership	Owned capacity	Note
	Ogamigo Repowering	20.0MW→21.3MW	100%	20.0MW→21.3MW	Start of operation : FY2024 (planned)
	Suezawa Repowering	1.5MW→2.2MW	100%	1.5MW→2.2MW	Start of operation : FY2024 (planned)
	Nagayama Repowering	37.0MW→39.5MW	100%	37.0MW→39.5MW	Start of operation : After FY2025 (planned)
	Onabara	1.0MW	100%	1.0MW	Start of operation : FY2026 (planned)
	K2 Hydro (Australia, Pumped hydro)	250MW	7.7%	19.3MW	Start of operation : 2024 (planned)
	Bulanog Batang Hydro (Philippines)	33.5MW	40%	13.4MW	Start of operation : 2027 (planned)

Geo-thermal	Project	Capacity	Ownership	Owned capacity	Note
	Appi	14.9MW	15%	2.2MW	Start of operation: April 2024 (planned)
	Takahinatayama-area	-	-	-	Under research for development

Solar	Project	Capacity	Ownership	Owned capacity	Note
	Kitakyushushi Hibikinada	30.0MW	100%	30.0MW	Start of operation: FY2024 (planned)
	Himejishi Oshio	2.0MW	100%	2.0MW	Start of operation: FY2024 (planned)
	Refugio (USA)	400.0MW	25%	100.0MW	Start of operation: After 2023 (planned)
	Rooftop solar (Thailand, 7 projects)	total 9.6MW	60%	5.8MW	Start of operation : After 2023 (planned)

## (2) -6. Onikobe Geothermal Power Station started commercial operation

- All facilities of the Onikobe geothermal power plant, which started operation in 1975, were renewed and replaced, and operation started on April 2, 2023.
- Geothermal power generation is one of the power generation methods with the lowest greenhouse gas emissions, and **it is a purely domestic renewable energy source that can be operated stably regardless of natural conditions.**
- ✓ Output of Approx. 15 MW Annual power generation capacity equivalent to the consumption of about 27,000 households
- ✓ Contributes to annual reduction of approx. 45,000 tons of CO<sub>2</sub>
- ✓ Stable output and high facility utilization unlike wind and solar power, not affected by weather



### Load factor, operating years, and lifecycle CO<sub>2</sub> emissions by power source

	Load factor	Operating years	Lifecycle CO <sub>2</sub> emissions (g-CO <sub>2</sub> /kWh)
<b>Geothermal</b>	<b>83.0%</b>	<b>40 years</b>	<b>13</b>
<b>Wind</b>	<b>25.4%</b>	<b>25 years</b>	<b>25</b>
<b>Solar</b>	<b>17.2%</b>	<b>25 years</b>	<b>38</b>



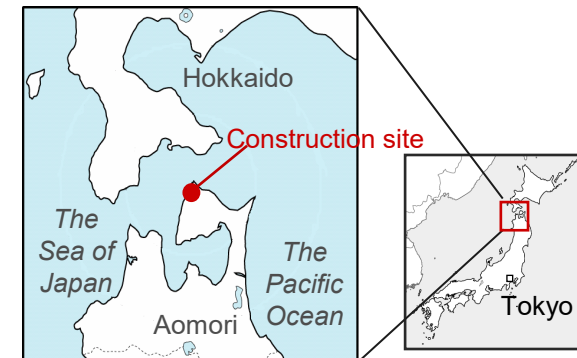
Name	Onikobe Geothermal Power Station
Location	Osaki City, Miyagi Prefecture
Capacity	14.9MW
Schedule	Start of construction: April 2019 Start of commercial operation: April 2023

## (2) -7. Ohma Nuclear Power Project

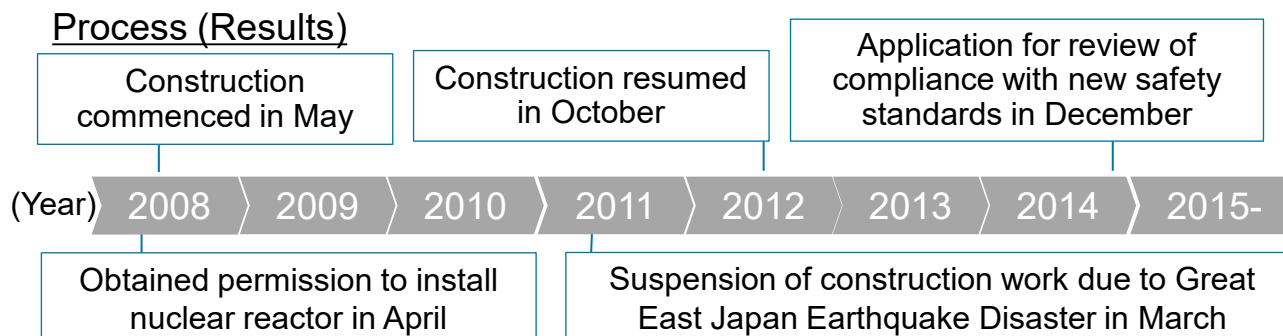
- In December 2014, J-POWER submitted to NRA\* an application for permission for alteration of reactor installment license and an application for construction plan approval in order to undertake review of compliance with the new safety standards
- At present, seismic motion evaluation is under review to determine standard seismic motion and standard tsunami by NRA\*
- Once the review has been passed, we will begin construction on facility safety reinforcement in the latter half of 2024 based on the review findings, with the aim of completion in the latter half of 2029
- Sincerely respond to compliance reviews and steadily implement safety measures based on the latest reviews result as for constantly pursuit of further safety improvements
- Strive for more polite information communication so that we can gain the understanding and trust of the community

\* Nuclear Regulation Authority

Overview of the Project	
Location	Ohma-machi, Shimokita-gun, Aomori Prefecture
Capacity	1,383MW
Type of nuclear reactor	Advanced Boiling Water Reactor (ABWR)
Fuel	Enriched uranium and uranium-plutonium mixed oxide (MOX)
Commencement of operations	To be determined

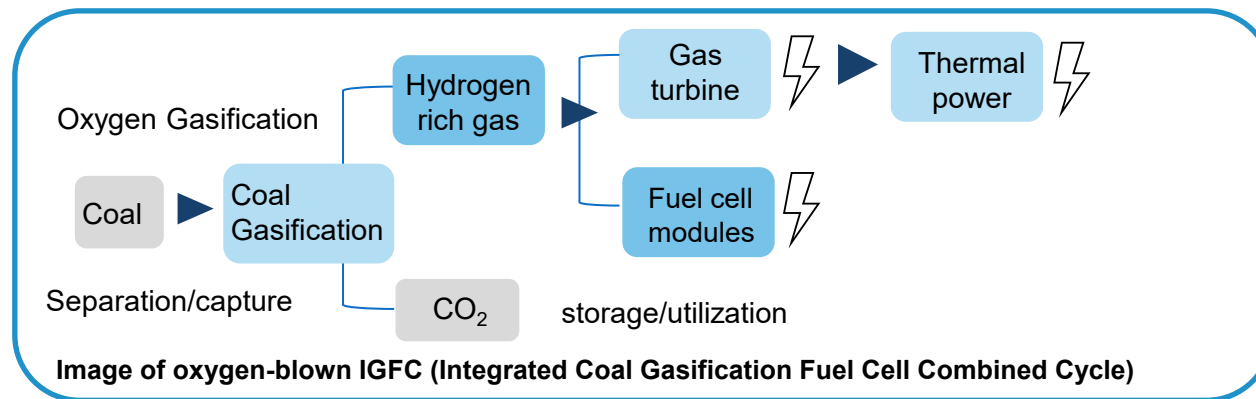


Status of construction (as of March ,31 2023)



## (2) -8. Osaki CoolGen Project

- 3 step demonstration test that manufactures coal gasification gas containing hydrogen and uses it to generate electricity is underway.
- In the 1<sup>st</sup> step, test of gas containing hydrogen (28%) turbine combined cycle was confirmed world's highest level net generating efficiency (LHV) and high adjustment capability.
- In the 2<sup>nd</sup> step, hydrogen rich gas (85% \*) produced by CO<sub>2</sub> separation and capture from coal gasification gas (CO<sub>2</sub> recovery rate of 90% or more, CO<sub>2</sub> recovery purity of 99% or more) was confirmed.
- In the 3<sup>rd</sup> step from April 2022, We tried to further efficiency power generating by combining with 2<sup>nd</sup> step equipment and fuel cell modules(SOFC), completed the test at the end of FY2022.
- Obtained a prospect of achieving a net thermal efficiency (LHV) of approximately 66% while capturing 90% of CO<sub>2</sub> in a 500 MW-class commercial unit.



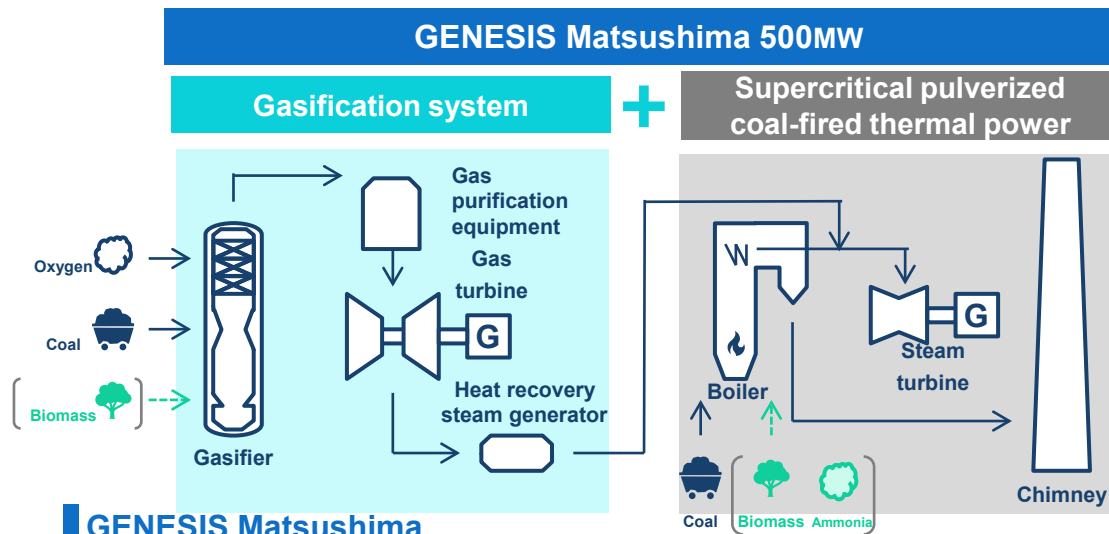
Fuel cell modules  
Solid Oxide Fuel Cell (SOFC)  
Capacity : 1.2MW class  
(0.6MW class SOFC X2)

Company	Osaki CoolGen Corporation (Ownership: J-POWER 50%, Chugoku Electric Power Company 50%)
Generation type	166MW Oxygen-blown IGCC (Gas turbine: 1,300°C class)

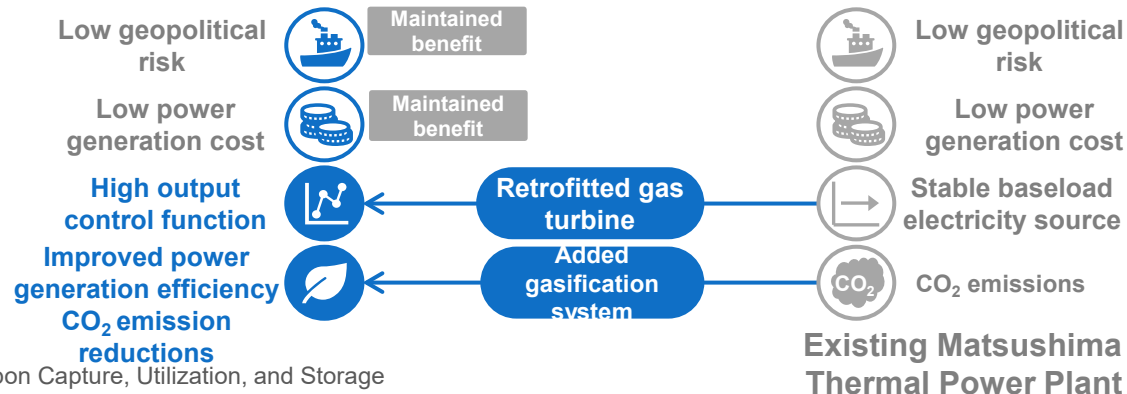
\* This concentration rate is after CO<sub>2</sub> separation and capture. Because of limitation of the turbine unit ability, at the time of power generation, concentration rate would be lower.

## (2) -9. Upcycling Existing Thermal Power Plant – GENESIS Matsushima

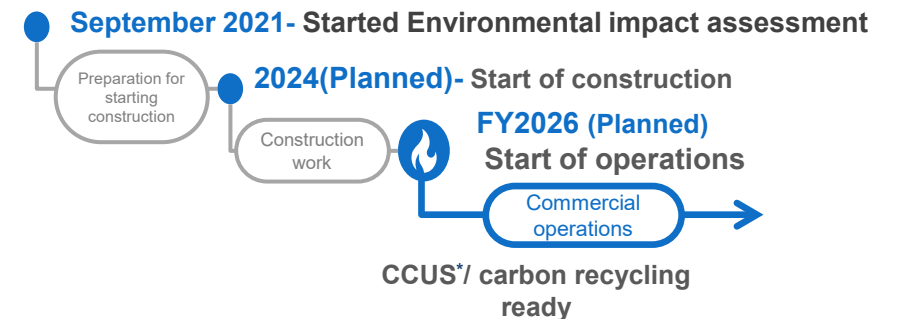
- J-POWER will first step toward CO<sub>2</sub>-free hydrogen power generation by commercializing the technology demonstrated in Osaki CoolGen Project.
- J-POWER will realize reducing environmental loads as early as possible by applying new technologies to the existing assets in an economically viable way while maintaining a stable power supply.
- Received notification of "GENESIS Matsushima Environmental Impact Assessment Methodology" from Minister of METI on February 24, 2023; method statement procedures completed.



### GENESIS Matsushima



\* CCUS : Carbon Capture, Utilization, and Storage



# (Information) GENESIS Matsushima pamphlet is available

## The pamphlet is available

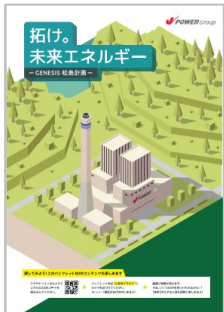
We have produced and released a new pamphlet about GENESIS Matsushima ~the first step toward CO<sub>2</sub>-free hydrogen power generation ~ for wider understanding of local residents and other stakeholders.

[“Genesispedia~GENESIS Matsushima”](#)

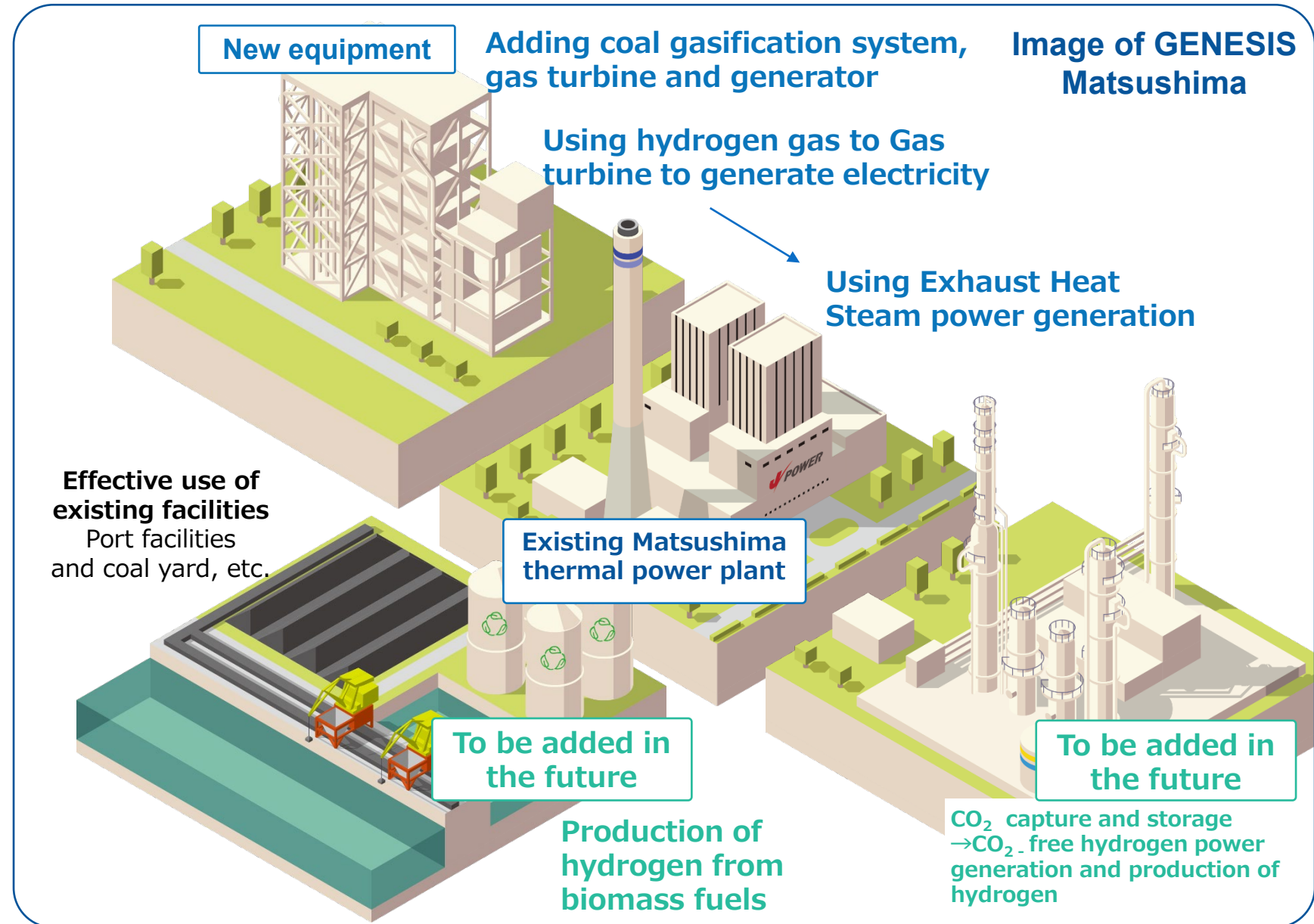
## AR videos are available

The pamphlet explains how the project works and mechanism of hydrogen power generation, using AR.

You can view the AR videos by reading the 2D code with your smartphone camera, activating the camera, and holding it up to the illustration. A total of nine videos are available in the pamphlet.



Use your smartphone’s camera to read the 2D barcode, activate the camera, and hold it up to the illustration to see the image! You can also try it on the illustration on the right.➡



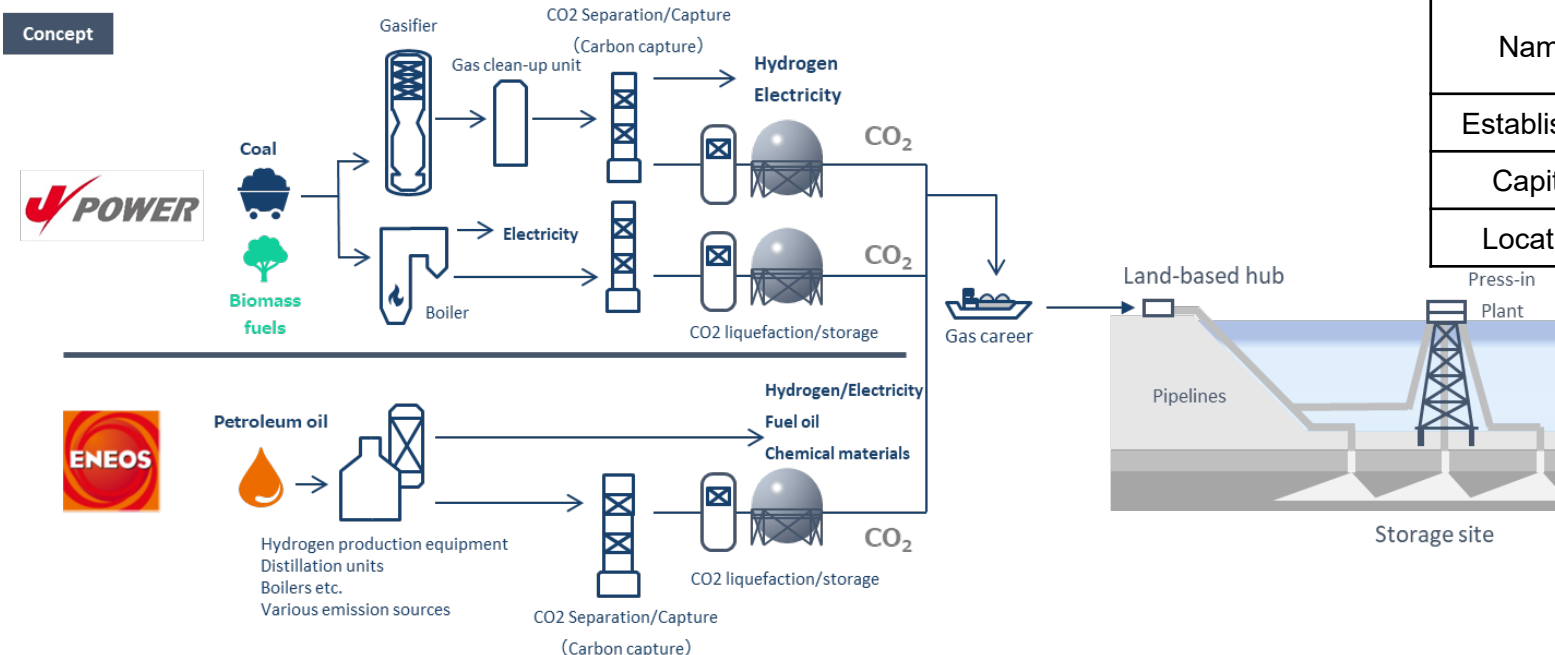
## (2) -10. Establishment of joint venture for CCS in Japan

~Toward the realization of Japan's first full-scale CCS~

- J-POWER, ENEOS Corporation, and JX Nippon Oil & Gas Exploration Corporation jointly established a joint venture company West Japan Carbon dioxide Storage Survey Co., Ltd.
  - The company will accelerate preparations for the first full-scale commercialization of CCS in Japan toward 2030
  - Aiming to be the first full-scale CCS supply chain implementation in Japan, in collaboration with various businesses that are actively involved in CCS
  - With the understanding and cooperation of local residents, local governments, the national government, and related organizations, the company promotes preparations for commercialization, including exploration and evaluation for selecting candidate sites for CO<sub>2</sub> storage in western Japan, where emission sources of J-POWER and ENEOS are located, and CO<sub>2</sub> storage potential is expected
- ✓ J-POWER and ENEOS Holdings are implementing the following initiatives

Overview

Name	West Japan Carbon dioxide Storage Survey Co., Ltd.
Established	Feb.2023
Capital	150 million yen
Location	Chiyoda ward, Tokyo





## (2) -11. Feasibility Study for Large-scale CCS in Japan

- It will take nearly 10 years—from the investigation of candidate sites to the start of press-in (injection) and storage—for surveys, design, and construction.
- By starting as early as possible, we will contribute to CO<sub>2</sub> reduction in Japan from 2030.
- To achieve an early resolution of our goals, we will coordinate and collaborate with all stakeholders to resolve issues, such as business environment improvement, CCS chain formation, and reducing costs.

**Plan**

**Initial business study**

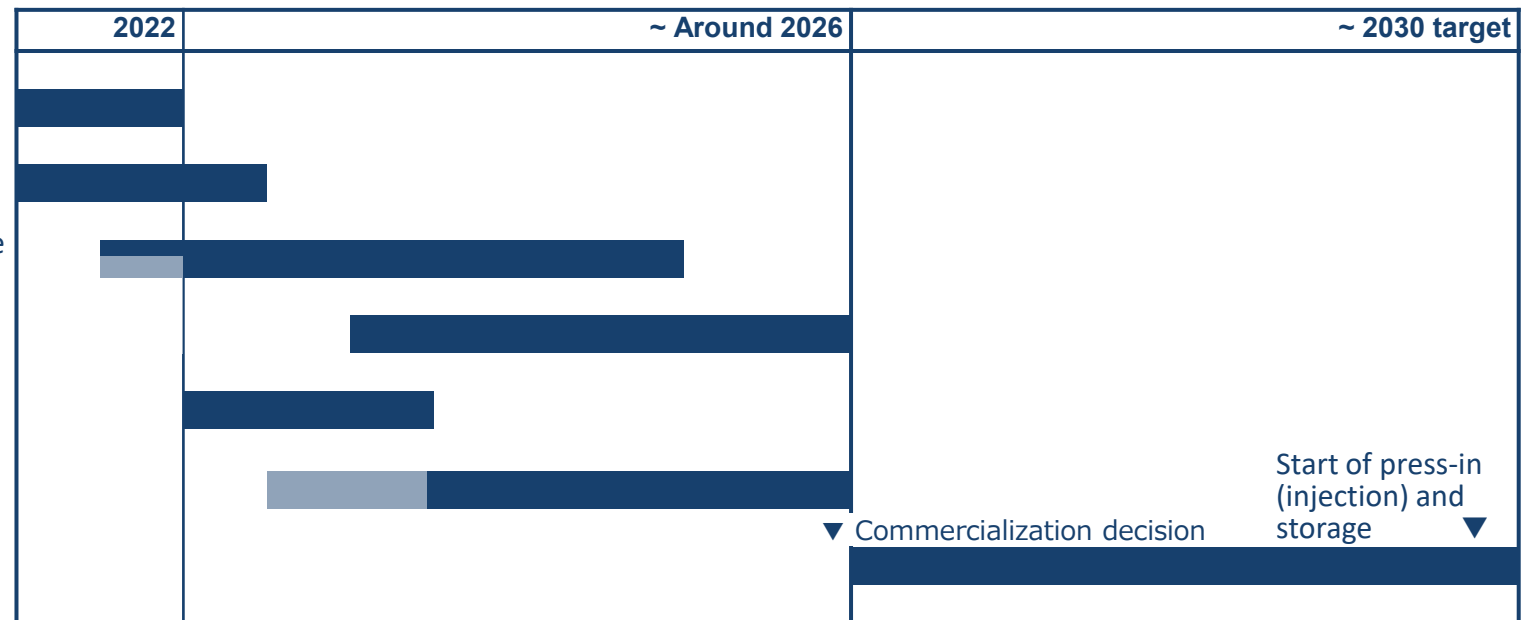
**Candidate site surveys**

- Study of potential storage sites
- Detailed investigation of subsurface structure
- Selection of potential storage sites

**Equipment design**

- Basic design
- Detailed design

**Construction**



## (2) -12. The study for an Integrated Demonstration of CO<sub>2</sub>-Negative Hydrogen Production from Domestic Biomass

- J-POWER, JX Nippon Oil & Gas Exploration Corporation, and Mizuho Research & Technologies, Ltd. jointly applied for NEDO's public solicitation and were adopted.
- Conduct a demonstration test of CO<sub>2</sub> negative hydrogen production in the near around of Nakajo oil refinery owned by JX Nippon Oil & Gas Exploration Corporation in Tainai City, Niigata Prefecture, by combining gasification technology and CCS using woody biomass procured in the vicinity as feedstock.
- Conduct a total system study and verification, including business feasibility and issue recognition, to realize a BECCS integrated process for transportation and utilization in addition to manufacturing.

### What is BECCS ?

- ✓ Abbreviated word: BioEnergy with Carbon Capture and Storage

### Major survey contents

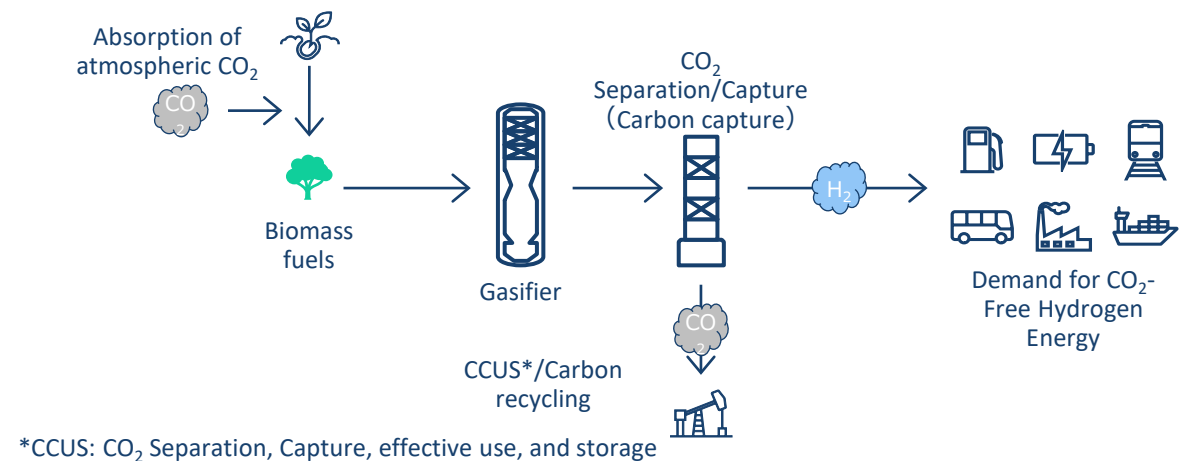
Feasibility study of procuring biomass as hydrogen feedstock

Assessment of hydrogen production potential including trends in biomass gasifier technology

Organize constraints on the use of produced hydrogen (technical issues, legal regulations, etc.)

Building a concrete hydrogen supply chain, including collaboration with local stakeholders

### Concept



## (2) -13. Global Business Expansion by Leveraging Our Strengths

- The J-POWER group is expanding its overseas business based on and combining its unique strengths in (1) project development, (2) project promotion, and (3) portfolio management (profitability improvement and risk management)
- J-POWER group as a developer acquires wide knowledge and earns profits through development of Green-Field projects, steady progress of construction projects, and stable operation. As change of business situation, we revise our portfolio such as rebalancing investments for ensuring profitability and business sustainability.
- Based on valuable knowledge and revenue from our existing projects, J-POWER group continues development of new projects mainly renewable power project. Through these new projects, J-POWER continues global business expansion and contribution to achieve carbon neutrality.

### Project development

- Accumulation of experience of Green-Field projects
- Ensuring first-mover advantage

### Portfolio management

- Risk management and rebalancing
- Improve profitability and make the next investment

### Project Promotion

- Steady execution from construction to operation

### Sustainable business expansion

Leveraging these strengths to expand our business with a focus on renewable power projects.

## New Projects under construction, development, investigation

### USA

- Development of solar power plants (Refugio)

### Asia

- Development and construction of rooftop solar in Thailand
- Gas combined power plant replacement project (EGCO Cogen)
- Examination of biomass business development in Vietnam
- Development of hydroelectric power generation projects in Philippines (Bulanog Batang Hydro)

### Australia

J-POWER participates in renewable power project with Genex\*

- Development of onshore wind (Kidston Stage-3 Wind)
- Construction of pumped storage power plant (K2-Hydro)

\* Genex Power Limited: Renewable power company in Australia

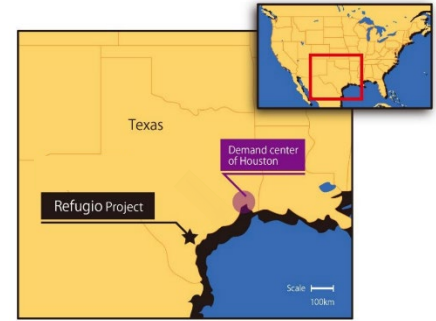
## (2) -14. Overview of Overseas Projects under Development (As of March 31, 2023)

Project	Overview
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### Refugio (USA)

Capacity: 400MW  
 Type: Solar  
 Ownership: 25%  
 Status: Under development  
 Start of operation (planned) : After 2023

- The joint project with AP Solar (local developer for solar power generation in Texas)
- Refugio is located close to Houston, a high power demand area
- Development issues such as procedures for land acquisition, permits have been largely resolved



### Hydroelectric power generation projects on Mindanao (Philippines)

Bulanog Batang Hydro  
 Capacity: 33.5MW  
 Type: Hydro  
 (run-of-river system)  
 Ownership: 40%  
 Status: Under development  
 Start of operation (planned) : 2027

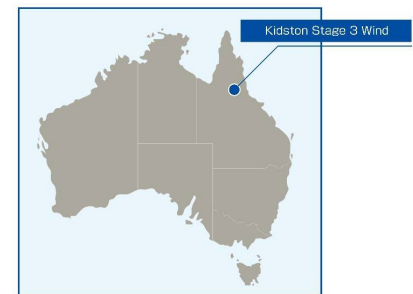
- J-POWER will acquire a portion of the shares of subsidiaries of Markham Resources Corporation (MRC), a power generation company in the Republic of the Philippines, in order to participate in hydroelectric power generation projects on Mindanao Island, the Philippines.
- Mindanao has many undeveloped hydropower sites. The development of these sites is expected to help shift the island's electricity supply from fossil fuel-derived power sources, currently the major contributor, to carbon-free power sources. Both projects will play a role in this shift.
- Lake Mainit Hydro has started commercial operation in March 2023.



### Kidston Stage-3 Wind (Australia)



Capacity: 258MW  
 Type: Onshore wind  
 Ownership: 50%\*  
 Status: Under development  
 Start of operation (planned) : 2025

- First renewable project in Australia for J-POWER
- J-POWER executes Joint Development Agreement with Genex Power Limited for New Wind Project in May 2022
- Leveraging J-POWER's domestic and international wind energy expertise and Genex's renewable energy development capabilities in Australia



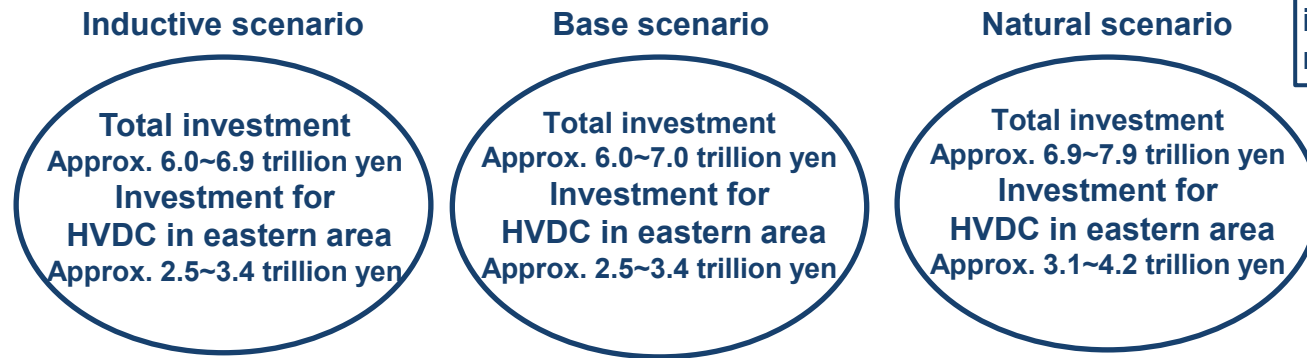
\*The owned capacity which includes 7.7% stake in Genex in addition to the 50% stake held by the Company under the development funding agreement is 53.9%

## (2) -14. Overview of Overseas Projects under Development (As of March 31, 2023)

Project	Overview	
<p><b>EGCO Cogen power plant replacement project (Thailand)</b></p> <p>Type : Gas combined cycle            Output : Electricity 74MW            Ownership: 20%            Schedule : Under construction            Commercial operation (planned); January 2024</p>	<ul style="list-style-type: none"> <li>J-POWER participated in a replacement project for the EGCO Cogeneration Company Limited (“EGCO Cogen”) that is invested jointly with Electricity Generating Public Company Limited (“EGCO”)</li> <li>J-POWER’s first contribution to replacing a power plant in Thailand.</li> <li>Sells electricity and steam to Electricity Generating Authority of Thailand (EGAT) and neighboring industrial users</li> <li>By introducing the latest technology, energy utilization efficiency will improve. As well, greenhouse gas emissions will be reduced, helping to achieve low carbonization goals</li> </ul>	
<p><b>Rooftop solar (7 projects, Thailand)</b></p> <p>Capacity: total 9.6MW            Type: Solar            Ownership: 60%            Status: Under development and construction            Start of operation: Each project will commence commercial operation after 2023</p>	<ul style="list-style-type: none"> <li>Utilizing the business foundation formed by large-scale gas-fired development</li> <li>Work for decentralized power sources to accommodate growing requirements of customers for decarbonization</li> <li>Aiming to supply CO<sub>2</sub>-free energy by installing solar photovoltaic systems on customers’ factory roofs</li> </ul>	
<p><b>Biomass Business Development (Vietnam)</b></p>	<ul style="list-style-type: none"> <li>J-POWER signed a memorandum of understanding (MoU) with Vietnam Forestry Corporation (Vinafor) to jointly examine the development of the biomass business in Vietnam, including power generation and fuel production</li> <li>J-POWER intends to enter and expand the biomass power generation business in Vietnam and will strive to gain knowledge of the sustainable use of biomass fuels through a broad involvement in the supply chain for biomass fuels</li> </ul>	

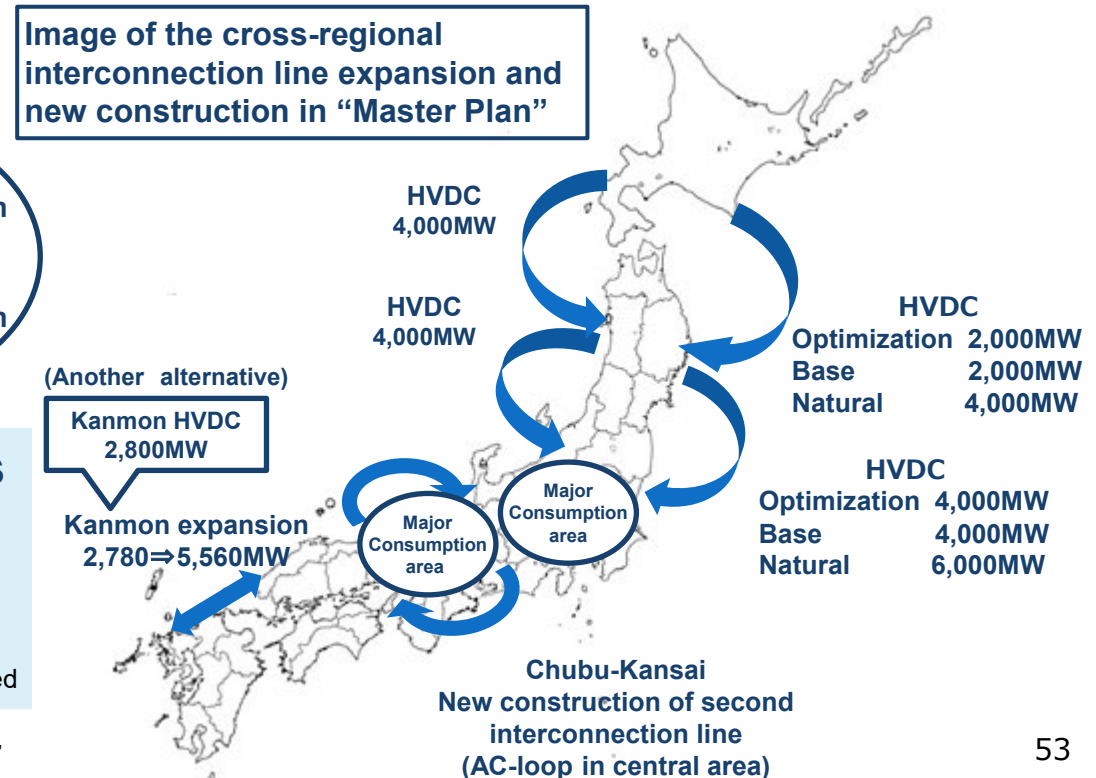
## (2) -15. Actions Taken towards HVDC Transmission System

- Japanese government has announced “Master Plan” (reinforcement of the national grids) considering the future power development on March 29, 2023.
- Three assumed scenarios for demand based on changes in load factors such as EVs, heat pumps, and location of renewable energy demand were published.
- Suitable places for renewable power generation such as off-shore, on-shore, solar power generation are mainly located in Kyushu, Hokkaido, and Tohoku area. Because of this utilization of renewable power requires long-distance transmission of massive power to the point of consumption. Therefore, the introduction of HVDC transmission system, which has benefits from the viewpoint of cost, efficiency flexibility of the operation and stability of the grids, is being studied.



### J-POWER Group’s HVDC transmission system facilities

- ✓ J-POWER Transmission owns and maintains Hokkaido-Honshu
- ✓ HVDC Link and Kii-Channel HVDC Link\* (including submarine cables).  
\*Jointly owned with Kansai Transmission and Distribution, Inc. and Shikoku Electric Power Transmission & Distribution Company, Incorporated



## (2) -16. J-POWER Group's Green/Transition Finance Framework

### Potential Funding Objectives of Green/Transition Finance (Use of Proceeds instruments)

J-POWER"BLUE MISSION 2050"'s Initiatives		Potential Funding Objectives
CO <sub>2</sub> -free Hydrogen energy	Hydrogen power generation	Upcycling (adding gasifier to existing assets)
		Upcycling (CO <sub>2</sub> separation and capture units)
		CO <sub>2</sub> -free hydrogen Power generation facilities*
	Fuel production (CO <sub>2</sub> -free hydrogen)	CO <sub>2</sub> -free hydrogen Power generation facilities*
CO <sub>2</sub> -free power generation	Renewable energy	Hydro, wind, geothermal, solar*
	Nuclear power	The Ohma Nuclear Power Plant
Power network	Stabilization	Distributed energy service*
	Enhancement	Frequency Converter Station, etc.
		Network for renewable energy
Domestic coal-fired power plants		Gradual phasing out of aging plants
		Power generation facilities for mixed / mono combustion with biomass, ammonia, etc.

\*Potential Funding Objectives of Green Finance

※The use of funds is defined on a case-by-case basis, undecided at this time.

## (2) -16. J-POWER Group's Green/Transition Finance Framework

### Possible candidates for Sustainability Targets of Transition Finance (General Corporate Purpose instruments)

KPI: Key Performance Indicator	SPT: Sustainability Performance Target
CO <sub>2</sub> emissions reduction from J-POWER Group's domestic power generation business	1. FY2025: -7 million tons Compared to the 3-year average of actual emissions in FY2017-FY2019  2. FY2030: -40%*/-19 million tons Compared to the 3-year average of actual emissions in FY2017-FY2019 (*-44% compared to the actual emissions in FY2013)

\*SPT (Either or both 1. and 2.) and Various conditions, including changes in interest rate terms based on achievement of goals are determined on individual occasions

\*Assessed for eligibility to various green finance, transition finance, and sustainability-linked finance standards by DNV BUSINESS ASSURANCE JAPAN K.K. as third-party evaluator

Examples of Transition-Linked Loan Financing	
Borrowing Amount	30 billion yen
Borrowing period	5 years
Borrowing date	February 28, 2023
Lender	Domestic financial institutions (syndicated loans)
Third-party evaluator	DNV BUSINESS ASSURANCE JAPAN K.K.





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