



Japan-Korea Symposium 2025

Expanding Wind Power as a Major Energy Source in Japan

Sep.12, 2025

Jun Suzuki

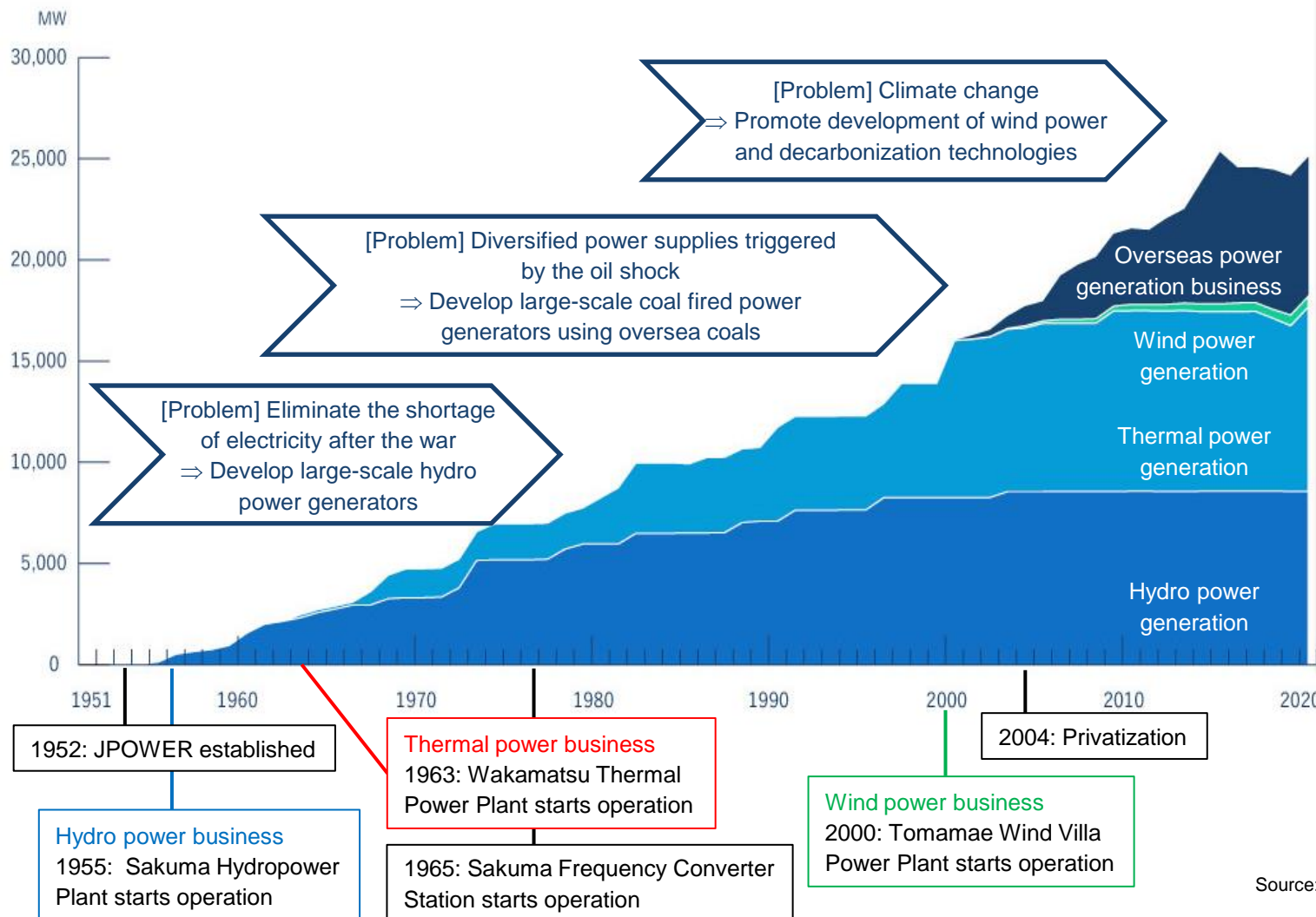
Electric Power Development Co.,Ltd./J-POWER

History of J-POWER

1. J-POWER

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- J-POWER has contributed to the solutions of various energy-related problems since 1952.
- J-POWER is keeping challenging for the realization of carbon neutrality by 2050



To the Future

[In 2050]
Realize carbon-neutral energy supply

BLUE MISSION 2050

Source: J-POWER "BLUE MISSION 2050"
Feb. 2021 JPOWER

J-POWER Domestic Power Plants

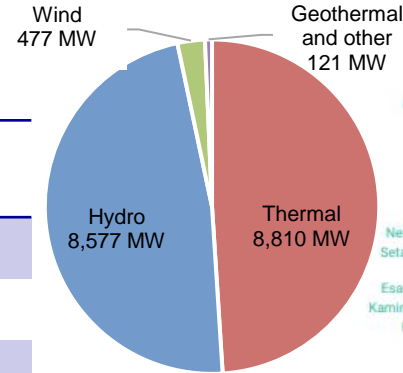
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- J-POWER has large-scale generating/transmission system/communication facilities in Japan.
- J-POWER has the second market share of hydro and wind generation.

Facilities of J-POWER Group
(as of March 2024, Based on the output of equity interests, In operation)

Generating facility	No. of generating facilities	Output
Hydro power plant	61 locations	8,577 MW
Wind power plant	24 locations	560 MW
Geothermal plant	3 locations	40 MW
Thermal power plant	9 locations	8,810 MW
Verification test facility	1 locations	83.MW
	98 locations	18,070 MW



Main Facilities

- Hydroelectric power plant
- Hydroelectric power plant (preparing for construction)
- Thermal power plant
- Nuclear power plant (under construction)
- Geothermal power plant
- ▲ Wind power farm/plant
- ▲ Wind power farm/plant (under construction/preparing for construction)
- Solar power plant (under construction)
- Research facilities, etc.

(As of March 31, 2024)

Source: J-POWER GROUP INTEGRATED REPORT 2024

Offshore Wind Power under Construction: Hibikinada Offshore

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- Hibikinada Offshore project in Fukuoka, Kyushu will start operation by the end of 2025.

Project Outline

Name	Kitakyushu Hibikinada Offshore Wind Farm
Operator	Hibiki Wind Energy Co., Ltd. (J-POWER: 40%, KyudenMiraiEnergy Corporation: 30%, Saibugas Co., Ltd.: 10%, KYUDENKO Corporation: 10%, Hokutaku co., Ltd.: 10%)
Location of the business district	Kitakyushu city, Fukuoka
Facility size	Max. 220,000 kW V174-9.5 MW (from Vestas)×25 units



Schedule for start of operation

Item \ Year	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Wind condition/marine area survey	Wind condition/marine area/topography/geological survey, boring investigation								Start operation of all units by the end of 2025		
Environmental assessment											
Facility design, etc.					Basic design, detailed design						
Construction work					Preparation for start of construction (application for approvals and licenses, etc.)						
	Construction starts, operation starts in sequence										

Offshore Wind Power: Triton Knoll

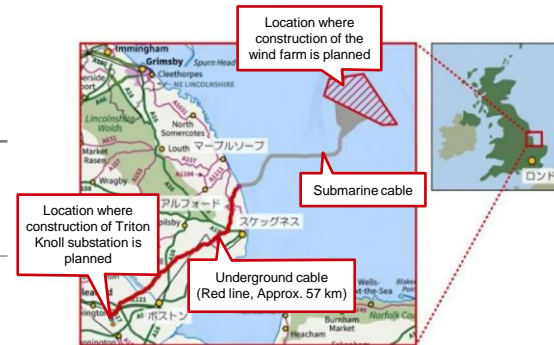
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- J-POWER acquired 25% of stocks of Triton Knoll Hold Co Ltd. in U.K. in August 2018 and joined the project from the construction phase.
- J-POWER dispatched technical staff to the site to obtain knowledge on construction and O&M management and feed it back to the offshore wind power generation projects in Japan.
- Commercial operation of all the turbines started in 2022.

Project outline

Name	Triton Knoll offshore wind power generation project
Operator	Triton Knoll Offshore Wind Farm Ltd. J-POWER: 25%, RWE: 59%, The Kaisai Electric Power Co., Inc.: 16%
Location of the business district	The North Sea/East area in the U.K.
Facility size	857,000 kW * Output adjustment 9,525 kW×90 units (from Vestas)
Sales method	This project has guaranteed a fixed price using the margin settlement method for 15 years since the start of its operation.



Floating Offshore Wind Demonstration Project in Spain

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- J-POWER has joined the WHEEL project, a floating offshore wind power demonstration project led by ESTEYCO SA (Madrid, Spain) in 2025.
- In this demonstration project, a floating offshore wind turbine (6,170 kW × 1 unit) will be constructed and tested using WHEEL, developed by ESTEYCO.
- WHEEL combines the advantages of barge-type foundations and spar-type foundations.
- While various floating foundation designs are currently under development, the WHEEL foundation, being primarily made of concrete, offers potential benefits over steel-based designs.



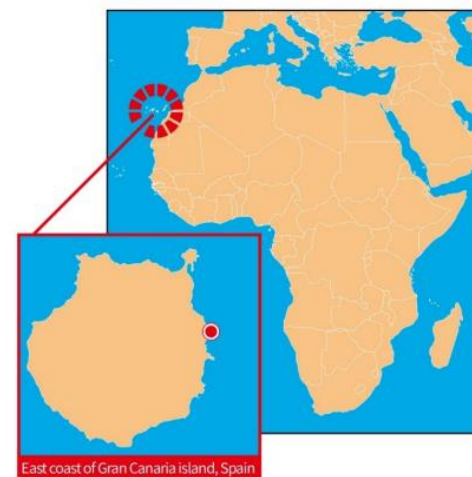
[Demonstration Unit (Planned)]
(Left: during transportation to the site, Right: during installation at the site)

(1) Project Overview

Name	WHEEL (Wind Hybrid Esteyco Evolution for Low-carbon solutions)
Location	3 km off the eastern coast of Gran Canaria, Spain
Output	6,170kW (One unit manufactured by 2BEnergy)
Schedule	Foundation manufacturing to begin in June 2025 Installation to begin during Q1 2026 Operations to commence during Q2 2026

(2) About ESTEYCO

Name	ESTEYCO SA
Headquarters	Madrid, Spain
Business	Engineering, technology and Architectural consultancy firm

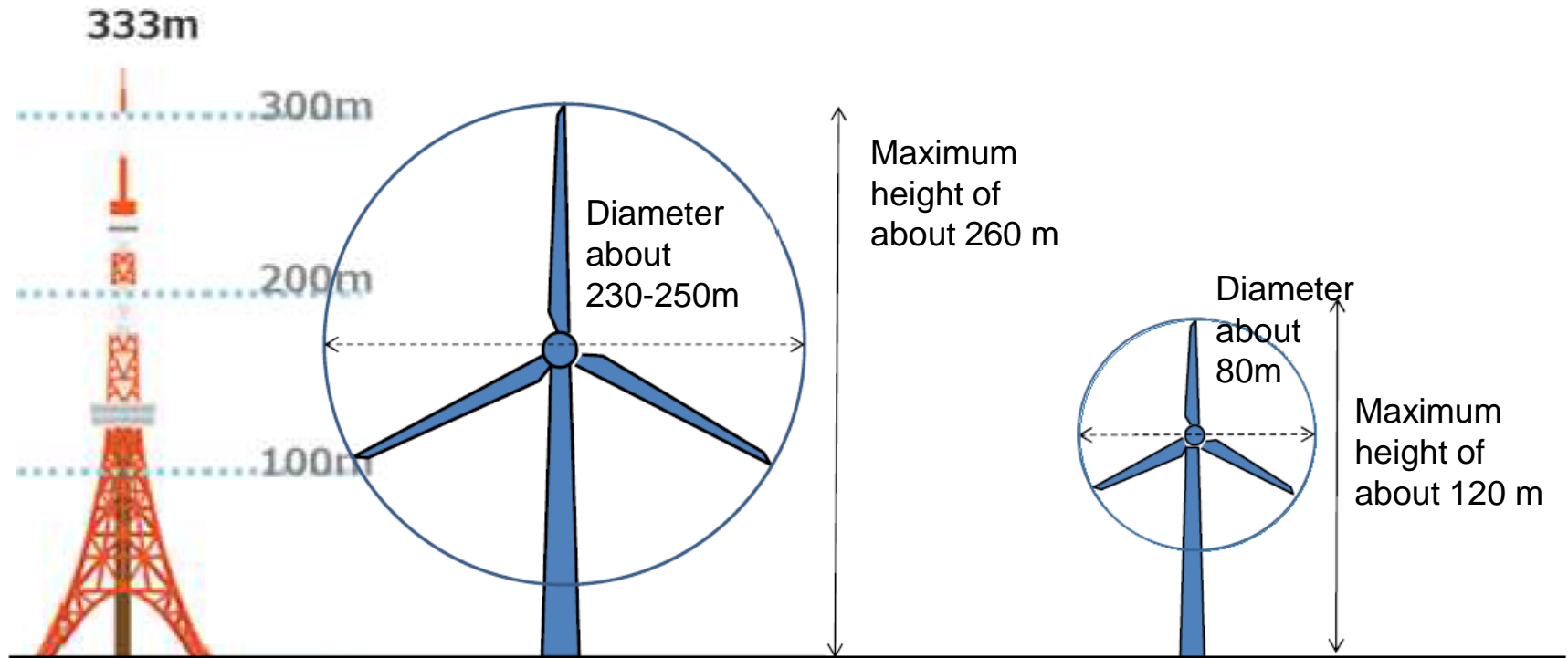


[Project Location]

Source: Participation in Floating Offshore Wind Demonstration Project in Spain Gaining Knowledge on Floating Offshore Wind through a Hybrid Barge-Type × Spar-Type WHEEL
June 25, 2025 J-POWER Press Release

Differences between onshore and offshore wind power

- **Onshore Wind Power:** Currently, the 2-3 MW class is the mainstream, while large-scale wind power is being developed.
- **Offshore Wind Power:** Currently, mainstream wind power is 10-15 MW class. Larger sizes such as 18-20 MW class is being developed.



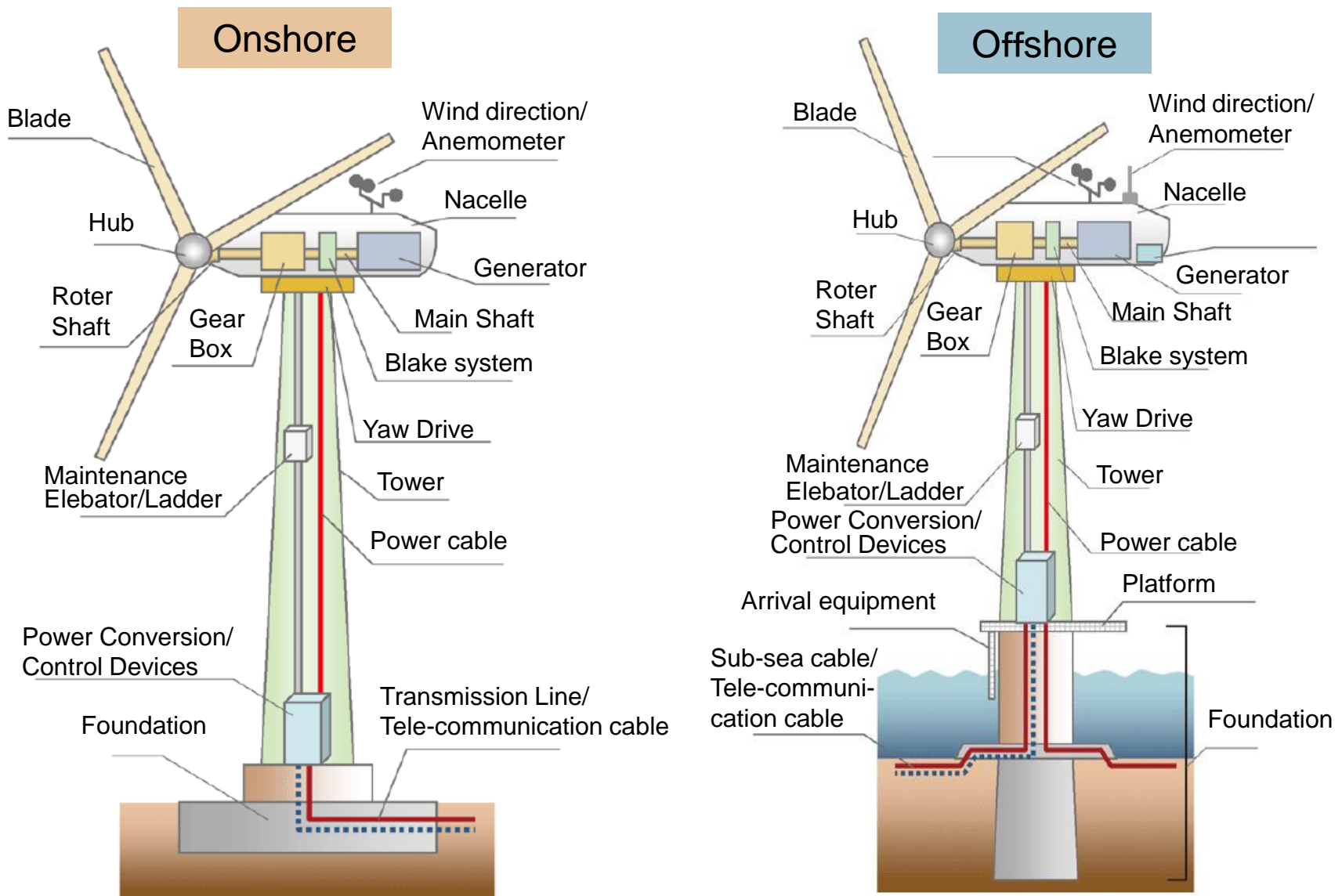
Offshore wind power (15 MW class)

Onshore wind power
generation (2MW class)

※ For diameters, general values are shown.

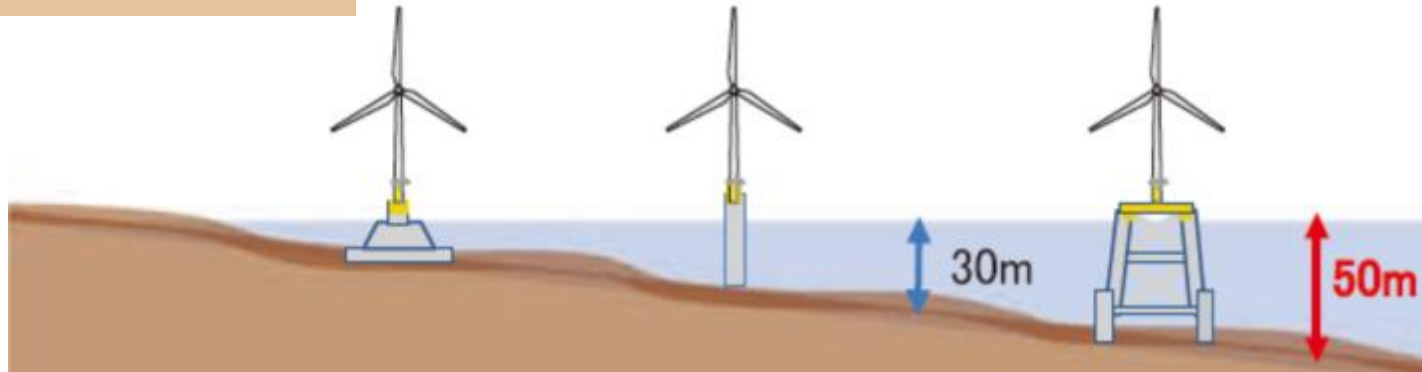
Wind Turbine of Onshore/Offshore

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Offshore wind turbine foundations

Fixed bottom

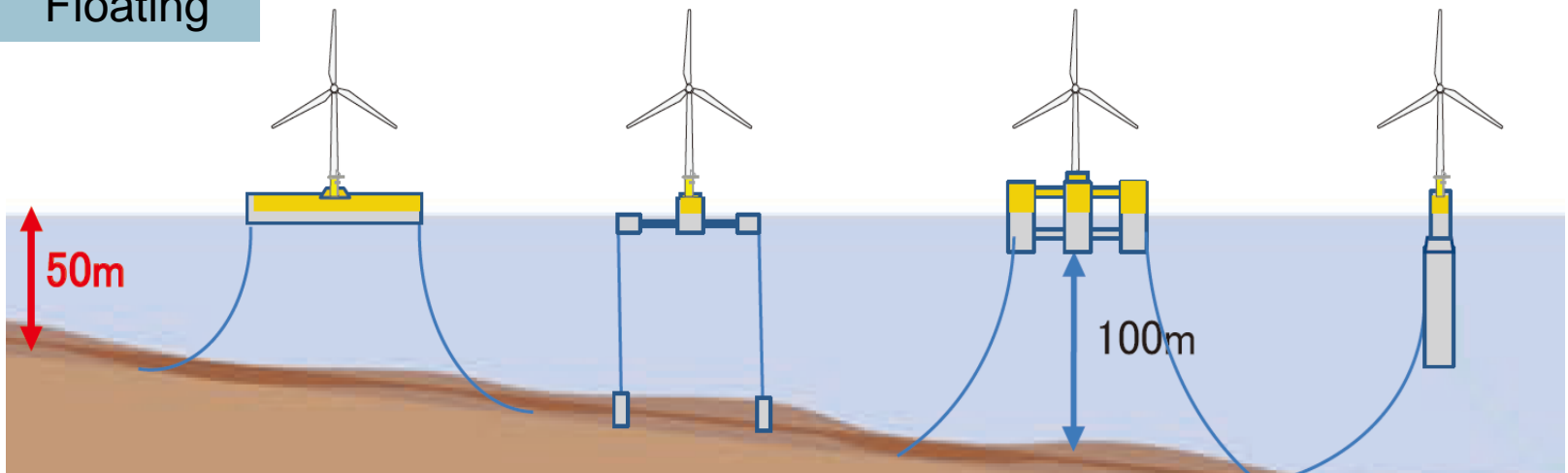


Gravity

Monopile

Jacket

Floating



Barge

TLP

Semi-submersible

Spar

Wind energy is proportional to the cube of the wind speed, swept area and air density.

$$P = \frac{1}{2} m V^2 = \frac{1}{2} (\rho A V) V^2 = \frac{1}{2} \rho A V^3 = \frac{1}{2} \rho \left(\frac{\pi D^2}{4} \right) V^3$$

P: Wind energy (W)

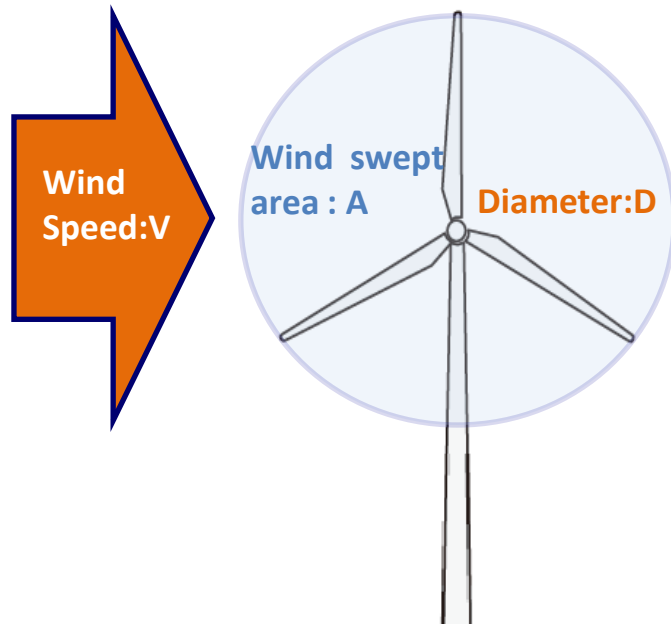
V: Wind speed (m/s)

m: Air mass (kg)

A: Swept area (m²)

ρ: Air density (kg/m³)

D: Rotor diameter (m)



The larger the rotor diameter, the greater the power output.

$$\text{Wind swept Area: } A = \frac{\pi D^2}{4}$$

As wind speed increases, power output increases as the cube of the wind speed

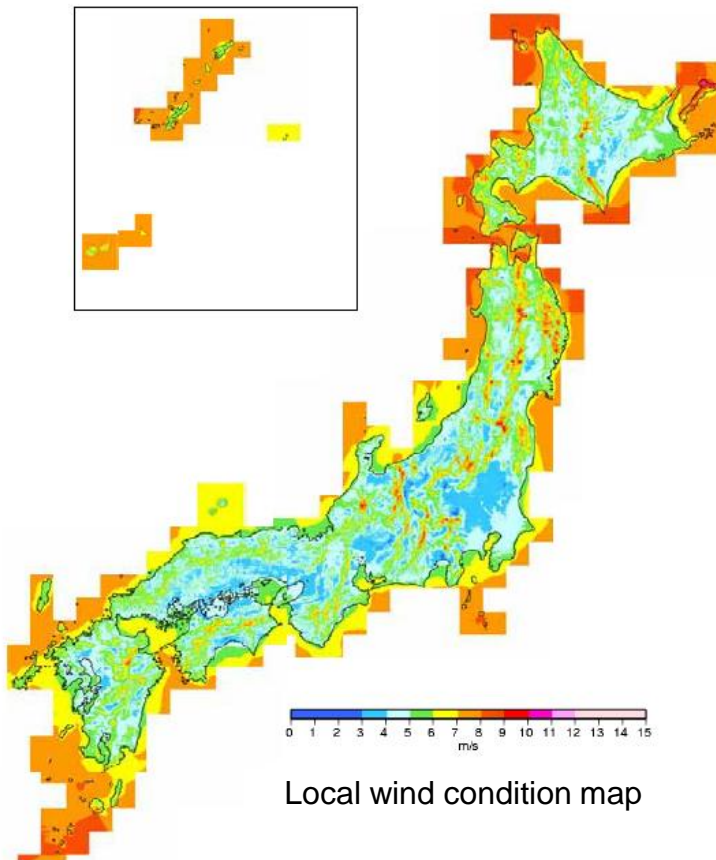
$$\text{Output: } P = \frac{1}{2} \rho A V^3$$

A 10% increase in wind speed, power output increases by 30% !!

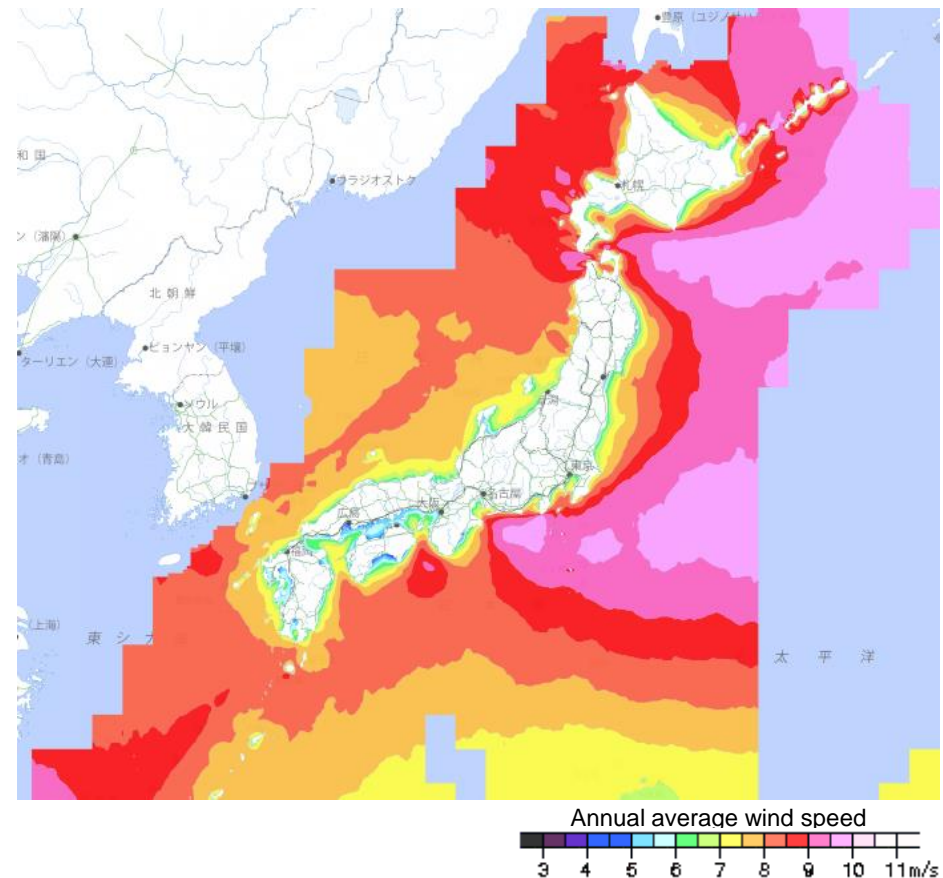
NEDO Wind Condition Map

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The New Energy and Industrial Technology Development Organization (NEDO) has been promoting the integration of renewable energy by preparing and publishing guidebooks for integrations of wind power generation and wind condition maps.



Source: Wind Power Generation Integration Guidebook, NEDO (revised 9th edition published in February 2008)



Source: Neo Winds (Offshore wind condition map) prepared by NEDO

- Purchase of Surplus Power (1992, 1998)
- Renewable Portfolio Standard (RPS) Act (2003)
- Feed-in Tariff (FIT) Scheme (2012)
- Introducing Bidding Scheme (2017)
- Feed-in Premium (FIP) Scheme (2022)

Trends of FIT/FIP prices

➤ The procurement price of FIT/FIP has been decreased year by year and bidding is introduced.

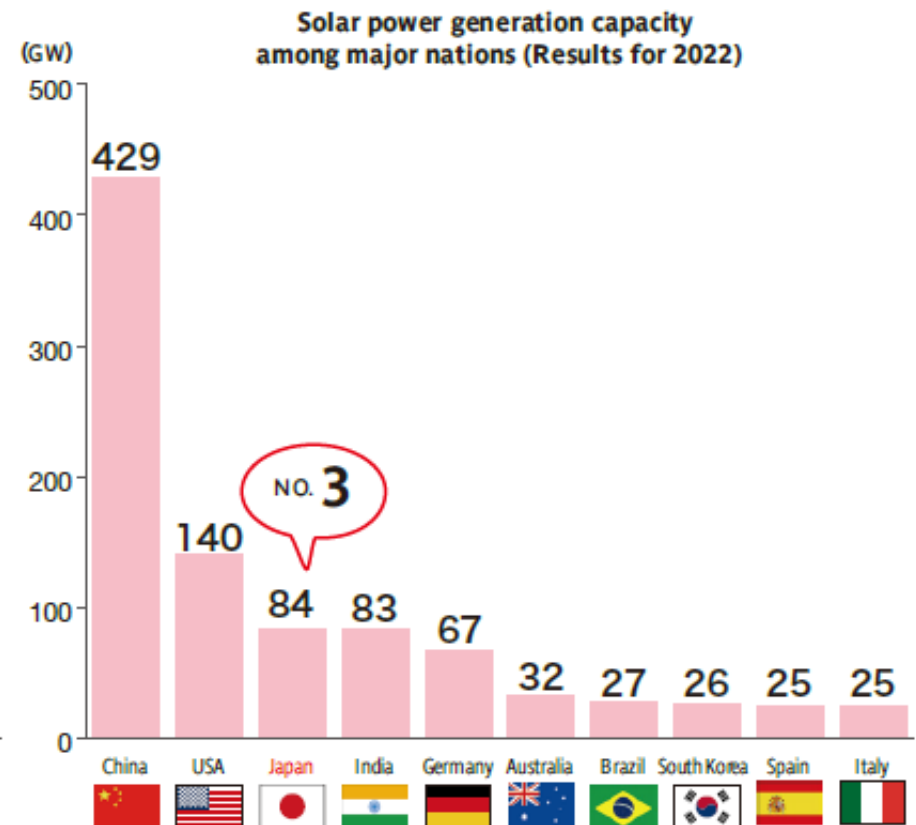
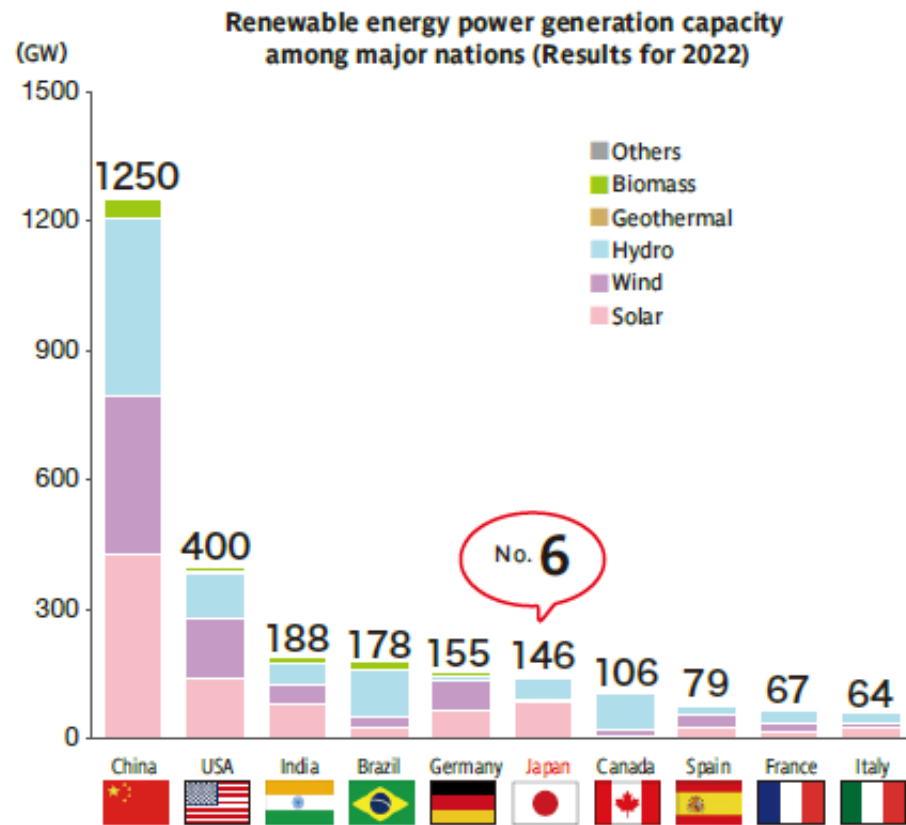
Generation [Procurement/ period]	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Price goal				
Photovoltaic generation for commercial use (10 kW or above) [20 years]	40 yen	36 yen	32 yen	20 yen (- June) 27 yen (July -)	24 yen	Bidding 21 yen (2,000 kW or above)	Bidding 15.5 yen (2,000 kW or above)	Bidding 14/13 yen (500 kW or above)	Bidding 12 /11.5 yen (250 kW or above)	Bidding 11 /10.75/ 10.5 /10.25 yen (250 kW or above)	Bidding 10/9.88/ 9.75/9.63 yen (250 kW or above)	Bidding 9.5/9.43/9.35/9.28 yen	Bidding 9.2/9.13/9.05/ 8.98 yen	Bidding 8.90/8.83/8.75/ 8.68 yen	Bidding						
												On the ground (250kW or higher)									
												12 yen (50 kW to less than 250 kW)	11 yen (50 kW to less than 250 kW)	10 yen (50 kW to less than 250 kW)	9.5 yen (50 kW to less than bidding target)			9.2 yen	8.9 yen	8.6 yen	
												13 yen (10 kW to less than 50 kW)	12 yen (10 kW to less than 50 kW)	11 yen (10 kW to less than 50 kW)	10 yen (Less than 50kW and above 10kW)			10 yen	10 yen	10 yen	9.9 yen
															Roof top				First Investment Support Scheme※		
Residential Solar (less than 10 kW) [10 years]	42 yen	38 yen	37 yen	33 yen 35 Yen※	31 yen 33 Yen※	28 yen 30 Yen※	26 yen 28 Yen※	24 yen 26 Yen※	21 yen	19 yen	17 yen	16 yen	16 yen	15 yen	First Investment Support Scheme※						
				※Installation of a device compatible with output control is obligatory.										(above 10kW)							
Wind power [20 years]	22 yen (20 kW or more)					21 yen (20kW or more)	20 yen Onshore	19 yen Onshore	18 yen Onshore	Bidding 17 yen (above 250kW)	Bidding 16 yen (above 50kW)	Bidding 15 yen (above 50kW)	Bidding 14 yen (above 50kW)	Bidding 13 yen (above 50kW)	Bidding 12 yen (above 50kW)	Bidding 11.8 yen (above 50kW)	Wholesale electricity market value + Environmental Value				
	55 yen (less than 20 kW)																				
			36 yen (offshore wind power): (Fixed bottom and floating)				Prices for offshore wind power plants are set for each public tender.														
							36 yen (Offshore fixed bottom)	Bidding 34 yen	32 yen	29 yen	Bidding 24 yen	Bidding 24 yen	Bidding	Bidding							
Biomass [20 years]						36 yen (offshore floating)															
	24 yen (liquid biomass fuel)					21 yen (above 20,MW)	Bidding 20.6 yen	Bidding 19.6 yen	Bidding 19.6 yen	Bidding 18.5 yen	Bidding 18.0 yen	Bidding 17.8 yen	Bidding 17.8 yen	Bidding							
						24 yen (less than 20 MW)															
	24 yen (general wood biomass, etc.)					21 yen (above 20,MW)	Bidding 20.6 yen (above 10,MW)	General wood biomass and etc.(above 10,000kW), liquid biomass fuel													
						24 yen (less than 20,MW)	24 yen (less than 10,000kW)														
	32 yen (wood biomass made from tree thinnings, etc.)				32 yen (above 2,000kW)																
						40 yen (less than 2,000kW)															
						39 yen (methane fermentation gas)												35 yen			
Geo- Thermal [15 years]	13 yen (construction material waste) ,17 yen (general waste, other biomass)																				
	26 yen (above 15,000kW)														Formuler Method ※						
	40 yen (less than 15,000kW)																				
Hydro [20 years]	24 yen (1,000 kW to less than 3,000 kW)					24yen	20 yen (5,000 kW to less than 30,000 kW)					16 yen									
							27 yen (1,000 kW to less than 5,000 kW)					23 yen									
							29 yen (200 kW to less than 1,000 kW)														
	34 yen (less than 200 kW)																				

Source: Material 1 "Future Renewable Energy Policy" prepared on June 3, 2025 Agency for Natural Resources and Energy, Subcommittee on Large-Scale Introduction of Renewable Energy and Next-Generation Electricity Networks

International Comparison of Renewable Energy Integration Amounts

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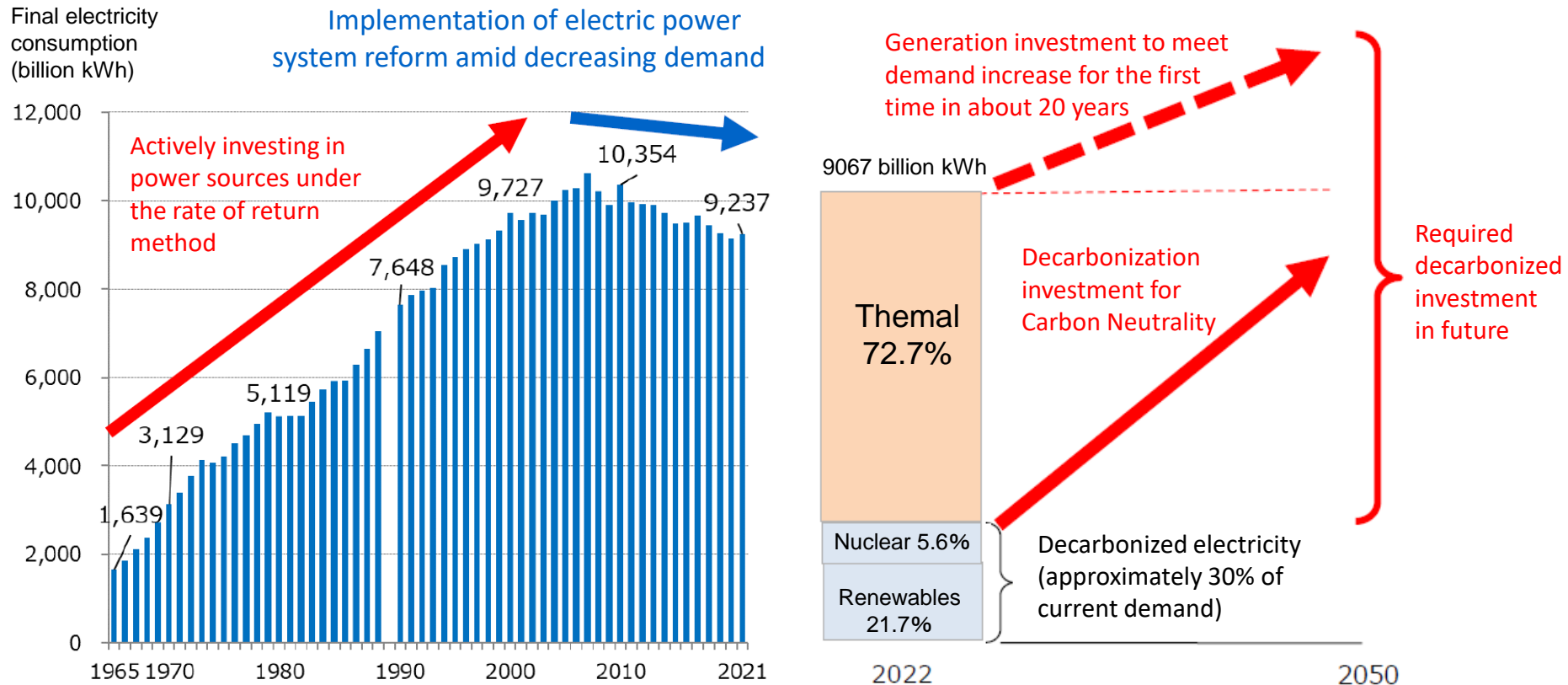
- The amount of renewable energy integrated in Japan in 2022 ranked it at sixth in the world.
- Japan had introduced photovoltaic generation ranked it at third in the world.



Importance of decarbonized power generation investment

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- Domestic electricity demand is expected to increase for the first time in approximately 20 years due to the construction of new semiconductor factories and demand for data centers.
- Coupled with the decarbonization drive toward 2050 Carbon Neutrality, we are entering an era requiring large-scale investment in power sources. Changes in circumstances are occurring that were not necessarily anticipated during previous power system reforms.
- Unless the supply capacity of decarbonized power sources is fundamentally strengthened, the outlook for a stable supply of electricity in a decarbonized era will become uncertain.



Source: Summary of discussions to date (related to renewable energy) for the formulation of the next Basic Energy Plan, November 28, 2024, Agency for Natural Resources and Energy, Subcommittee on Large-Scale Introduction of Renewable Energy, Document 1

Impact of global inflation on offshore wind power

- While offshore wind power development is accelerating, mainly in Europe, development costs are rising significantly due to the impact of rising global material prices, supply chain constraints, and rising interest rates from around 2022.
- Project changes have occurred in countries around the world, including the UK and the US, and the outlook for installation in each country has dropped significantly.

<Major project change examples>

【Interruption】 Postponed Taiwan

- Operator: JERA (Japan)
- Output: 2,0 million kW
- Costs have risen by 30%. The sale of business interests announced.

【EXIT】 July, 2023 U.K.



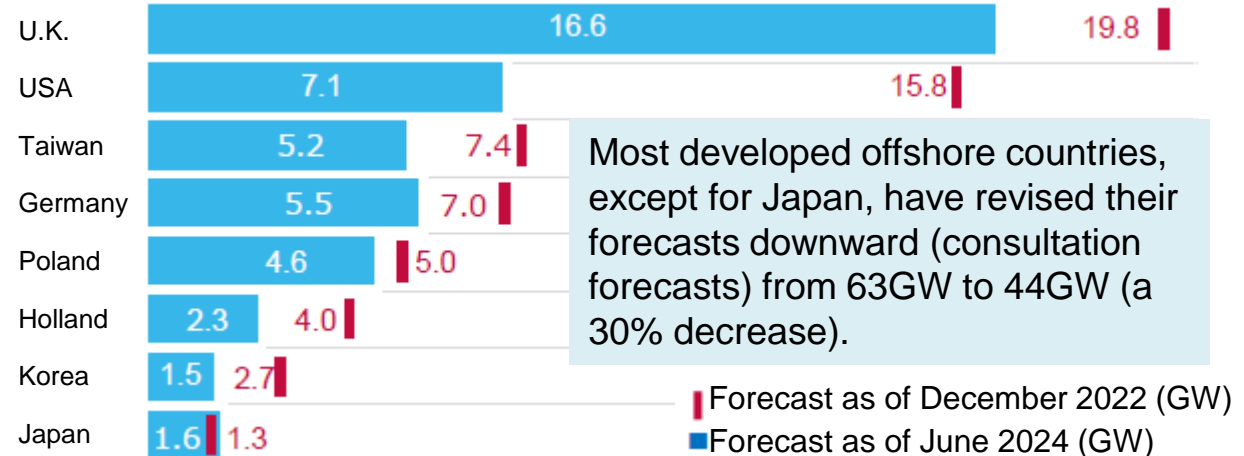
- Operator: Vattenfall (Sweden)
- Output: 1.4 million kW
- Costs increased by 40% (A loss of 76 billion yen)

【EXIT】 July, 2023 USA



- Operator: Ørsted (Denmark)
- Output: 2.2 million kW (2 areas)
- cost rises (A loss of 610 billion yen)

<Global outlook for offshore wind power installations (total for 2024-2028)>



- Offshore wind power project plans are being postponed and bidding systems are being revised worldwide, resulting in a significant decrease of approximately 30% in the outlook for installation compared to the estimates made two years ago.
- Japan's steady installation, despite being on a small scale, has been highly praised, and the outlook for installation is slightly increasing.

[Situation surrounding each country]

UK: Zero bidders in offshore wind power tender held in September 2023.

US: President Trump will suspend new and renewal offshore wind power projects.

Taiwan: Harsh local regulations discourage businesses.

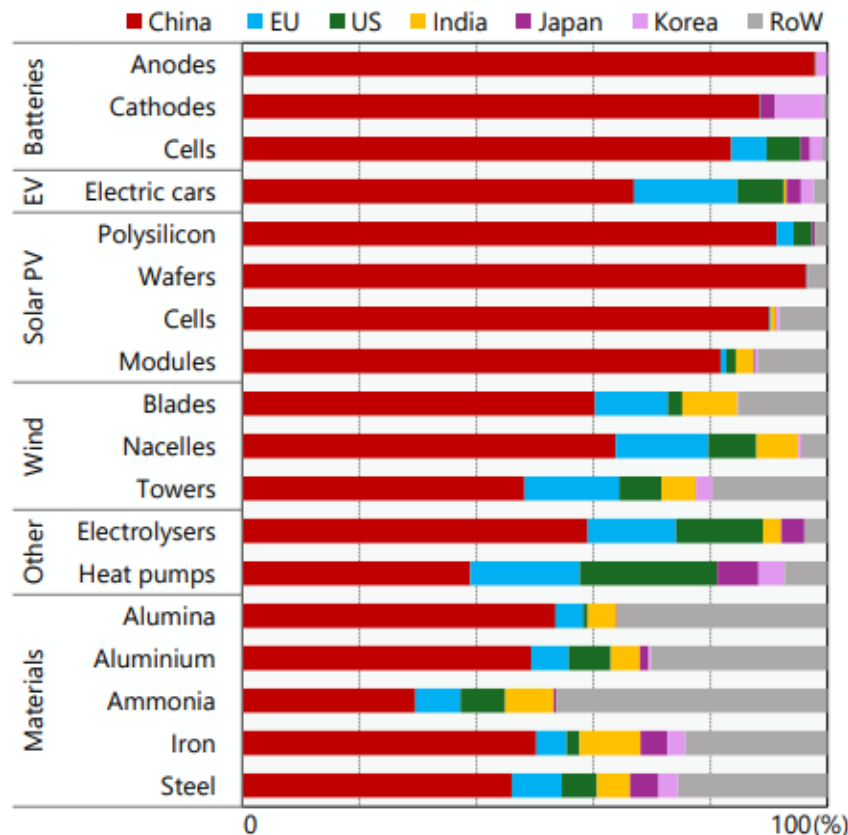
South Korea: Uncertainty about business due to lack of bidding system and legal regulations.

Green Transition and Supply Chain Resilience Regarding Critical Minerals

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- Green transition poses challenges for industrial development related to key products and services, as well as for enhancing supply chain resilience.
- The geographical concentration of supply chains, particularly concerning critical minerals, has become a significant challenge. Various initiatives are being undertaken by interested countries and in international forums.

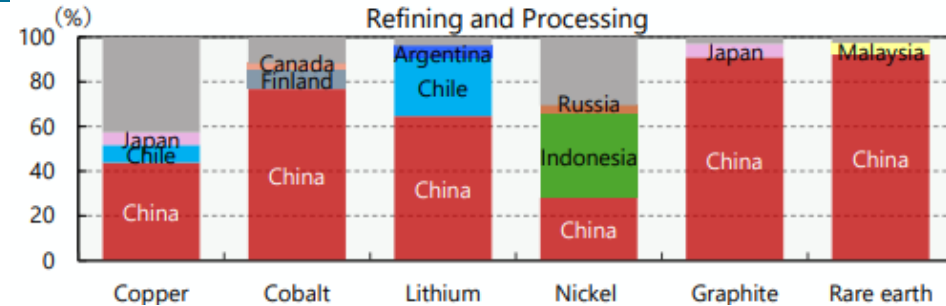
Share of Manufacturing Capacity by Green-Related Products



Note: Values are as of the end of 2023. Anodes for positive electrodes and cathodes for negative electrodes are both components of batteries.

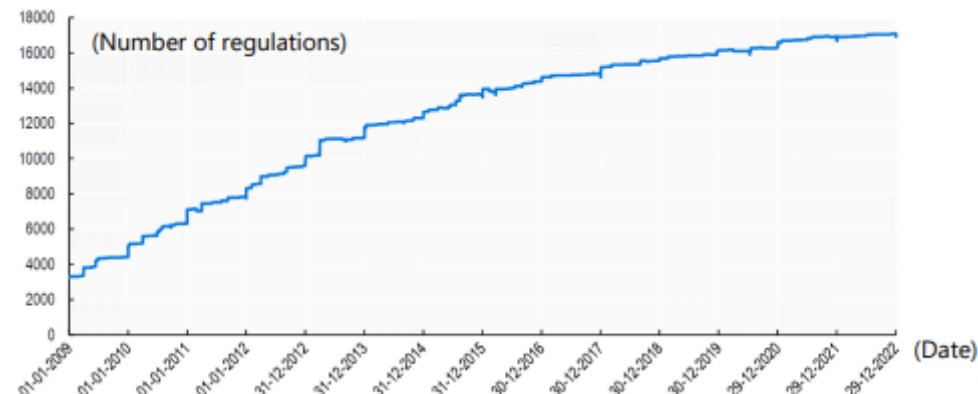
Source: IEA Energy Technology Perspectives 2024

Share of Refining and Processing of Critical Minerals



Note: Values are as of 2023. The gray section represents other countries and regions.
Source: IEA

Export Regulations on Industrial Raw Materials



Note: Bilateral measures are excluded Source: OECD

Japanese Energy Situation

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- Japan's energy structure is fragile, with few readily available resources, extensive forests, and surrounded by deep oceans. While energy self-sufficiency rates and other indicators continued to improve after the oil crisis, they deteriorated significantly after the Great East Japan Earthquake. Even today, they are still at pre-oil crisis levels.
- Following Russia's invasion of Ukraine, risks surrounding fossil fuels, in particular, have increased.

Energy Self-Sufficiency Rate

FY1970: 15.3% ⇒ FY2010: 20.2% ⇒ FY2023: **15.2%** (Preliminary)

*As of FY2021 (13.3%), Japan will be **the second lowest among the 38 OECD member countries.**

Thermal Power Dependence (% of Electricity Generated)

FY1970: 72% ⇒ FY2010: 65% ⇒ **FY2021: 73%**

***The highest level among the G7 countries.**

Resource Prices (LNG Import Price: **¥1,000/ton**) *Directly Linked to Electricity Rates

FY2010: 49 ⇒ FY2023: 98

***The highest level ever was 165 in September 2022.**

Fossil Fuel Imports (Trade Balance)

2010: Approximately ¥16 trillion ⇒ 2023: Approximately **¥26 trillion**

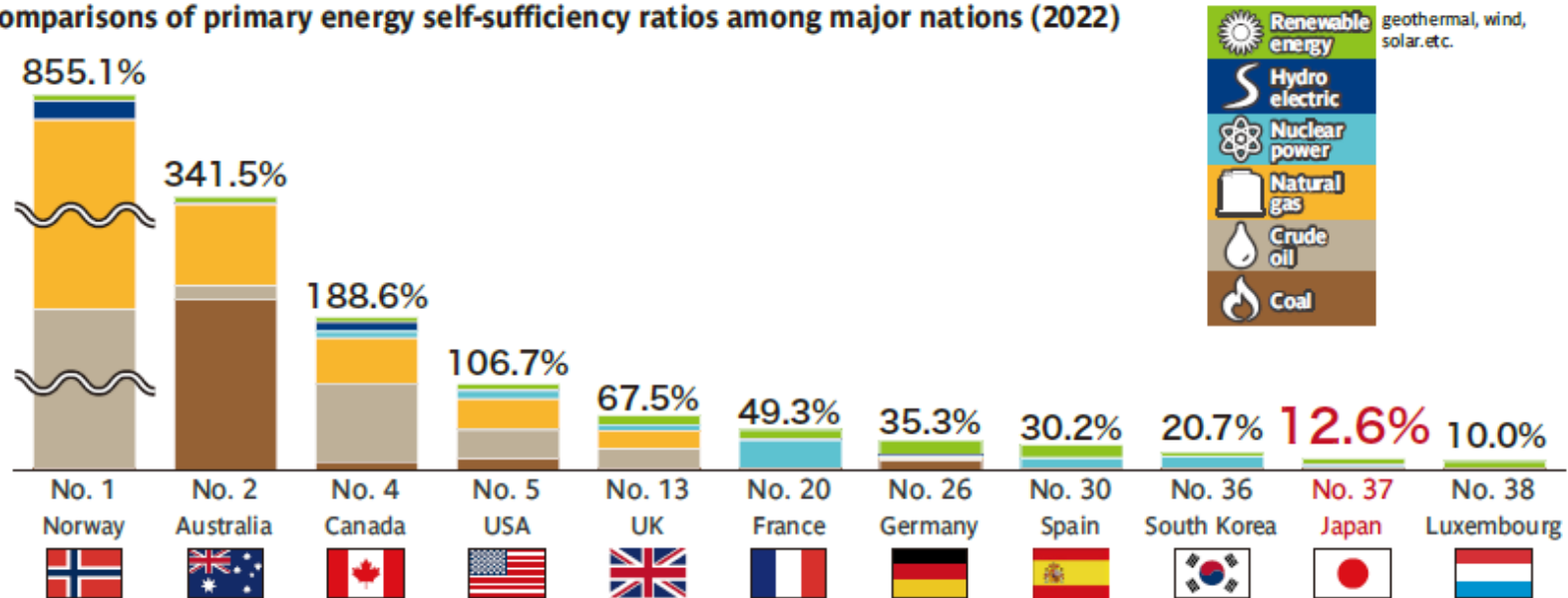
*Most of the foreign currency earned from high-value-added products (approximately ¥28 trillion in 2023) will be consumed by fossil fuel imports (approximately ¥26 trillion).

Changes in Energy Self-Sufficiency Ratio

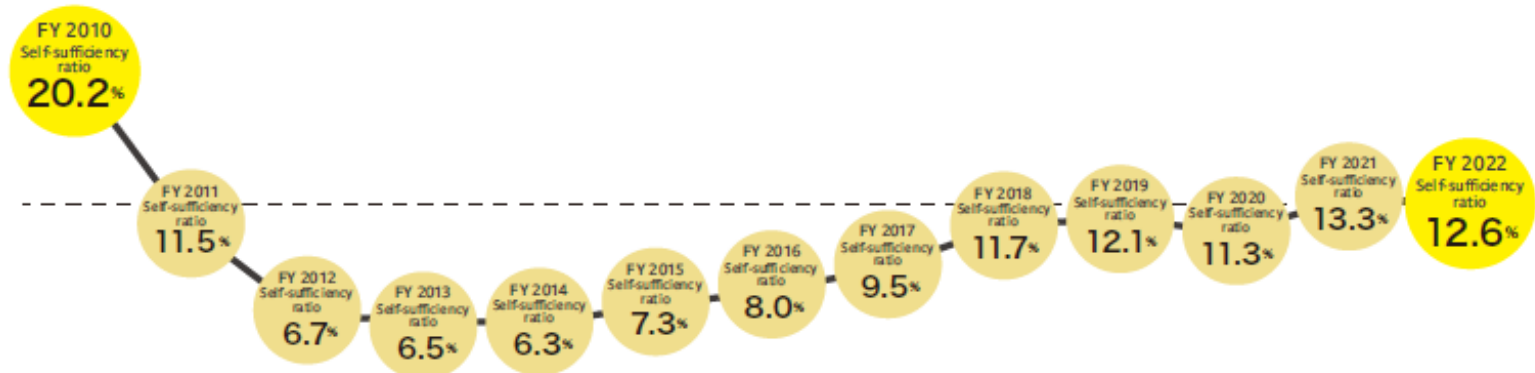
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In FY 2022, Japan's self-sufficiency ratio was 12.6% — lower than those of other OECD countries.

Comparisons of primary energy self-sufficiency ratios among major nations (2022)



Energy self-sufficiency ratio in Japan



Primary energy sources : Primary forms of energy, including oil, natural gas, coal, nuclear power, solar power, and wind power.

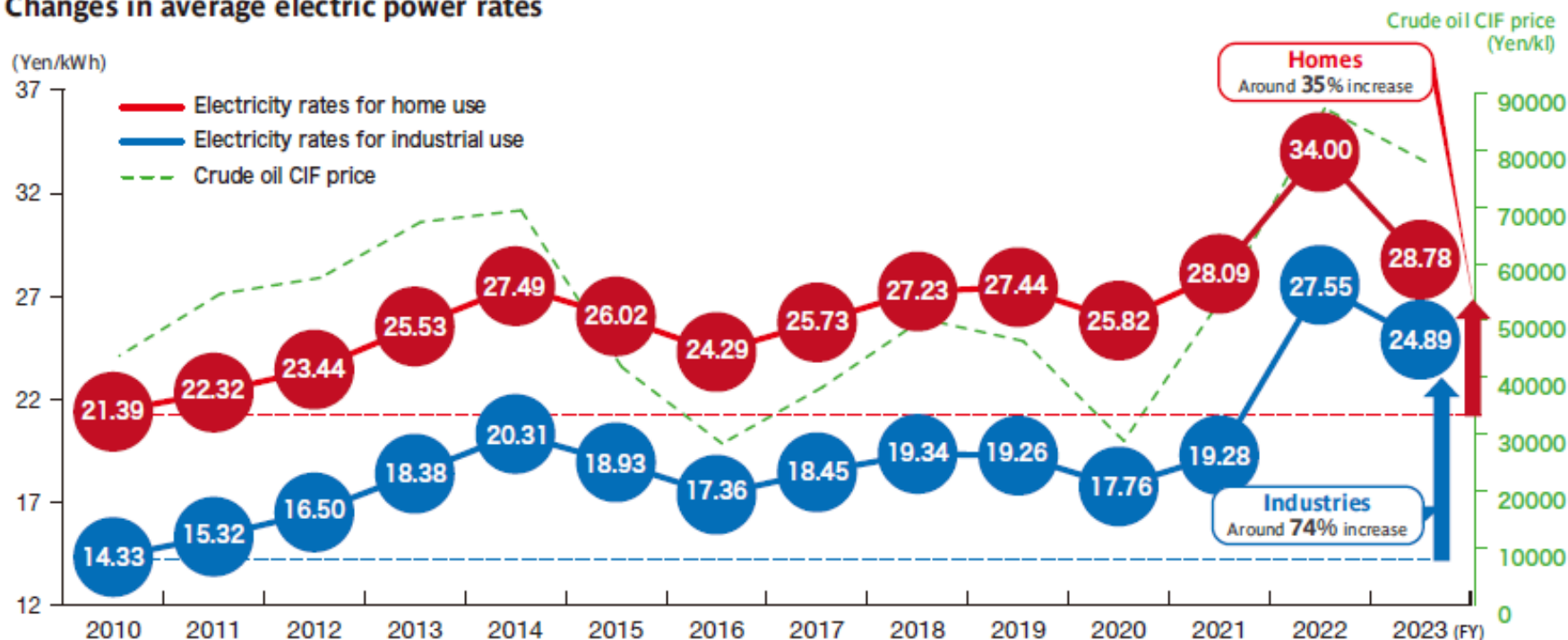
Energy self-sufficiency rate: The percentage of the primary energy resources required for people's daily life and economic activities which can be produced or acquired in their own country.

Changes in Electric Power Rates

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Electric power rates have been rising since the Great East Japan Earthquake. They rose in FY2022 due to price hikes for imported fuels. However, thanks to a decline in imported fuel prices thereafter, electric power rates in FY2023 were lower than those in FY2022.

Changes in average electric power rates



Source: Created based on monthly reports of generated and received electric power, financial materials of electric power companies, and power trading reports
 Crude oil CIF price : Transaction price consisting of the import price plus related costs, such as transport cost and insurance cost.

Status of Surcharge (2025)

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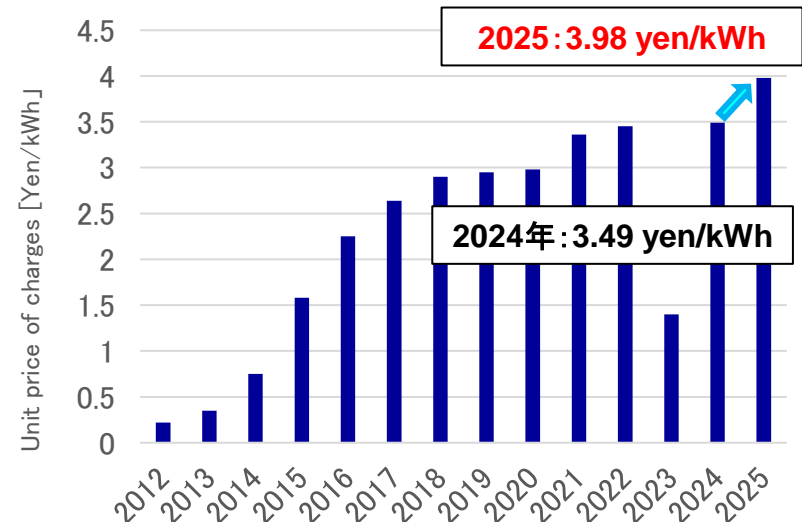
- The surcharge rate for FY2025 is set at 3.98 yen per kWh.
- An example of a consumer who uses 400 kWh/month, the monthly charge is 1,592 yen and the annual charge is 19,104 yen.

$$\begin{aligned}
 & \left[\begin{array}{l} \text{Unit price of charges} \quad 3.98 \text{ yen/kWh} = \\ (1) \text{ Purchase cost, etc. } 4,854 \text{ billion yen} - (2) \text{ Avoidable costs, etc. } 1,790.6 \text{ billion yen} \\ + \text{ Office cost of the Organization for Cross-regional Coordination of Transmission Operators, Japan } 1 \text{ billion yen}^* \end{array} \right] \div (3) \text{ Sold electricity } 770.8 \text{ billion kWh}
 \end{aligned}$$

(Breakdown)

	Assumption in FY2024	Assumption in FY2025
(1) Purchase cost, etc.	4.8172 trillion yen	4.8540 trillion yen
(2) Avoidable cost, etc.	2.1322 trillion yen	1.7906 trillion yen
(3) Sold electricity	770.7 billion kWh	770.8 billion kWh

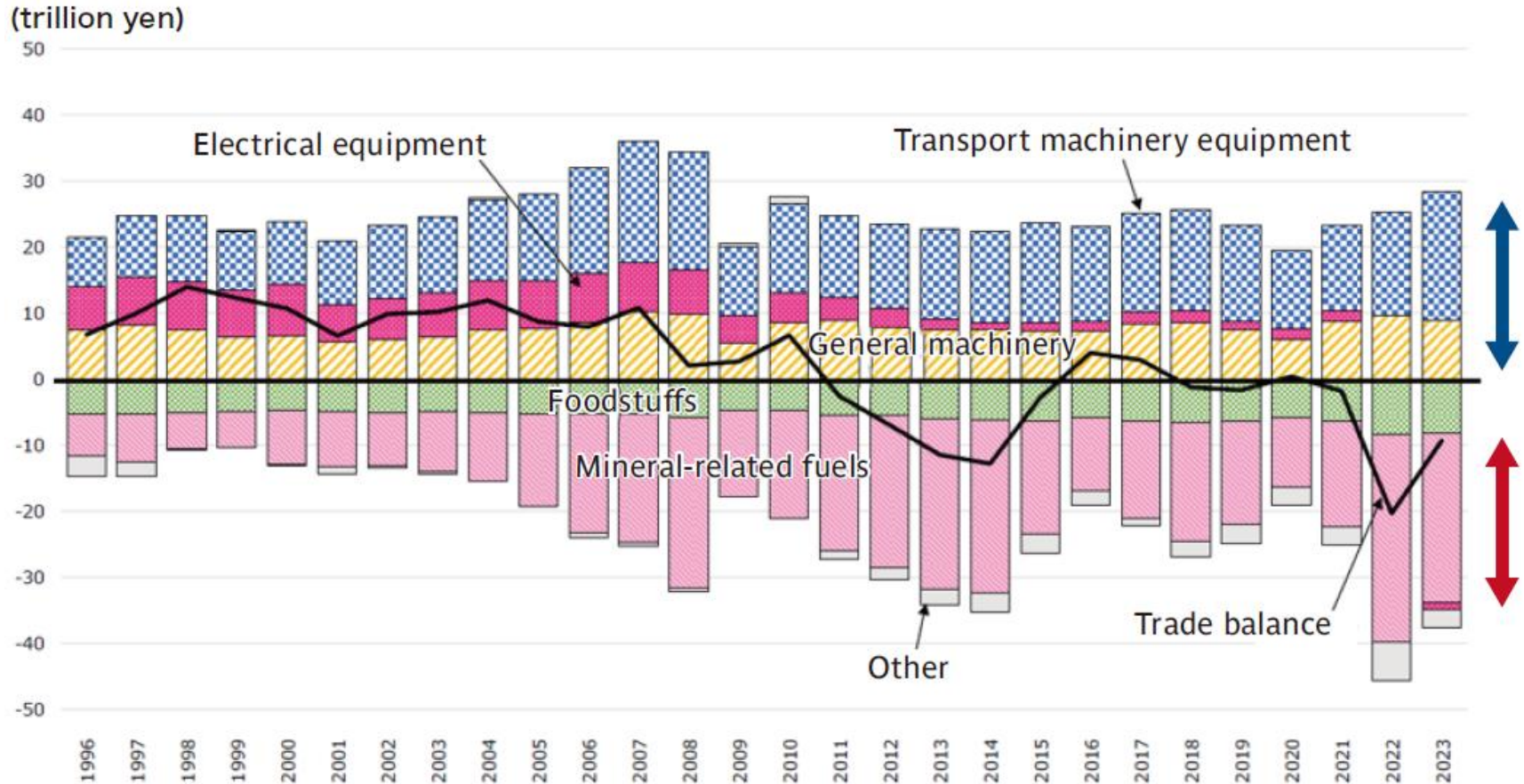
Decrease



Changes in Japan's trade balance

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Japan has a trade surplus in exports of automobiles and semi-conductor manufacturing equipment (approximately 28 trillion yen in 2023). On the other hand, Japan spends most of this surplus on imports of fossil fuels, such as crude oil and LNG (approximately 26 trillion yen in 2023). As Japan is heavily dependent on fossil fuel imports, it is vulnerable to uncertainties regarding energy supply stability as well as sharp price increases caused by a tight supply and demand balance.



Status of the Act on Use of Renewable Energy Marine Areas

5. Offshore Development

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	MW *1	Price*2(Yen/kWh)	COD	Operator	
Promoting Area	① Nagasaki Goto Offshore (Floating)	17	36	2026.1	Toda,ERE,Tokyo Gas, Kansai,Chubu
	② Akita Noshiro/Mitane/ Oga Offshore	494	13.26	2028.12	Mitsubishi Offshore/Trading, C-Tech
	③ Akita Yurihonjo Offshore	845	11.99	2030.12	Mitsubishi Offshore/Trading, C-Tech,Wenty
	④ Chiba Choshi Offshore	403	16.49	2028.9	Mitsubishi Offshore/Trading, C-Tech
	⑤ Akita Happono Noshiro Offshore	375	3.00	2029.6	ERE, Iberdrola,Tohoku
	⑥ Akita Oga/Katagami/Akita Offshore	315	3.00	2028.6	JERA, J-POWER,Itochu Trading, Tohoku
	⑦ Niigata Murakami/Tainai Offshore	684	3.00	2029.6	Mitsui,RWE, Osaka Gas
	⑧ Nagasaki Saikai Eshima Offshore	420	22.18	2029.8	Sumitomo Trading, Tokyo Renewable Power
	⑨ Aomori Offshore Japan Sea (South)	600	3.00	2030.6	JERA,Green Power Investment,Tohoku
	⑩ Yamagata Yuza Offshore	450	3.00	2030.6	Marubeni,Kansai,BP,Tokyo Gas,Marutaka
Potential Area	⑪ Hokkaido Matumae Offshore	250-320			
	⑫ Hokkaido Hiyama Offshore	910-1140			
	⑬ Hokkaido Ishikari Offshore	910-1140			
	⑭ Hokkaido Ganu/Minami Shiribeshi Offshore	560-710			
	⑮ Hokkaido Shimamaki Offshore	440-560			
	⑯ Aomori Offshore Japan Sea(North)	300			
	⑰ Yamagata Sakata Offshore	500			
	⑱ Chiba Kujukuri Offshore	400			
	⑲ Chiba Isumi Offshore	410			
	⑳ Hokkaido Ganu/MimnamiShiribeshi Offshore (Floating)				
Preparation Area	㉑ Hokkaido Shimamaki (Floating)				
	㉒ Aomori Mutsu Bay				
	㉓ Iwate Kuji Offshore (Floating)				
	㉔ Akita Akita-city Toyama East Offshore (Fixed/Floating)				
	㉕ Tokyo Ooshima-island Offshore(Floating)				
	㉖ Tokyo Niijima-island Offshore (Floating)				
	㉗ Tokyo Kouzu-island Offshore(Floating)				
	㉘ Tokyo Miyake-island Offshore(Floating)				
	㉙ Tokyo Hachijo-island Offshore(Floating)				
	㉚ Toyama East Offshore(Floating)				
㉛ Fukui Awara Offshore					
㉜ Wakayama East					
㉝ Wakayama West(Floating)					
㉞ Fukuoka Hibiki-nada Offshore					
㉟ Saga Karatsu-city Offshore					

*1 Regarding the capacity description, for projects after a business operator has been selected, the power generation facility output amount is based on the plan of the selected business operator.

Other than that, it is the guaranteed capacity of the system or the output scale expected in the area calculated in the survey project.

*2 ① to ④ are procurement prices under the FIT system.
⑤ to ⑧ are standard prices under the FIP system.

GI Fund Demonstration

①Akita South

②Aichi Tahara & Toyohashi

Source: Aug.6, 2025
Offshore Wind Power
Promotion Working
Group, Subcommittee on
Large-Scale Introduction
of Renewable Energy
and Next Generation
Power Networks,
Reference Material 2

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<Target Capacity> [] is ratio of all generation

Present: Wind Power 4.5GW [0.9%] (Offshore 0.01GW)

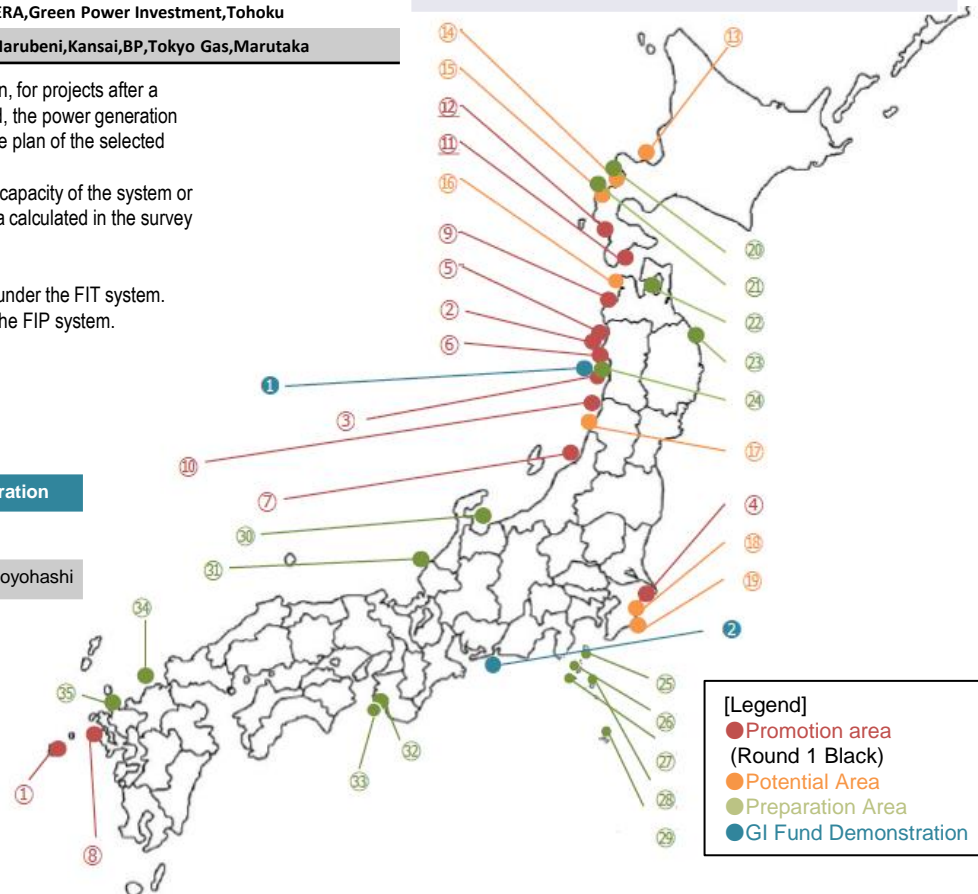
2030: Wind Power 23.6GW[5%] (Offshore 5.7GW [1.8%])

<Planned Offshore Capacity plan target>

2030 10 GW /2040 30-45 GW

<Planned Offshore Procurement Ratio <industry target>>

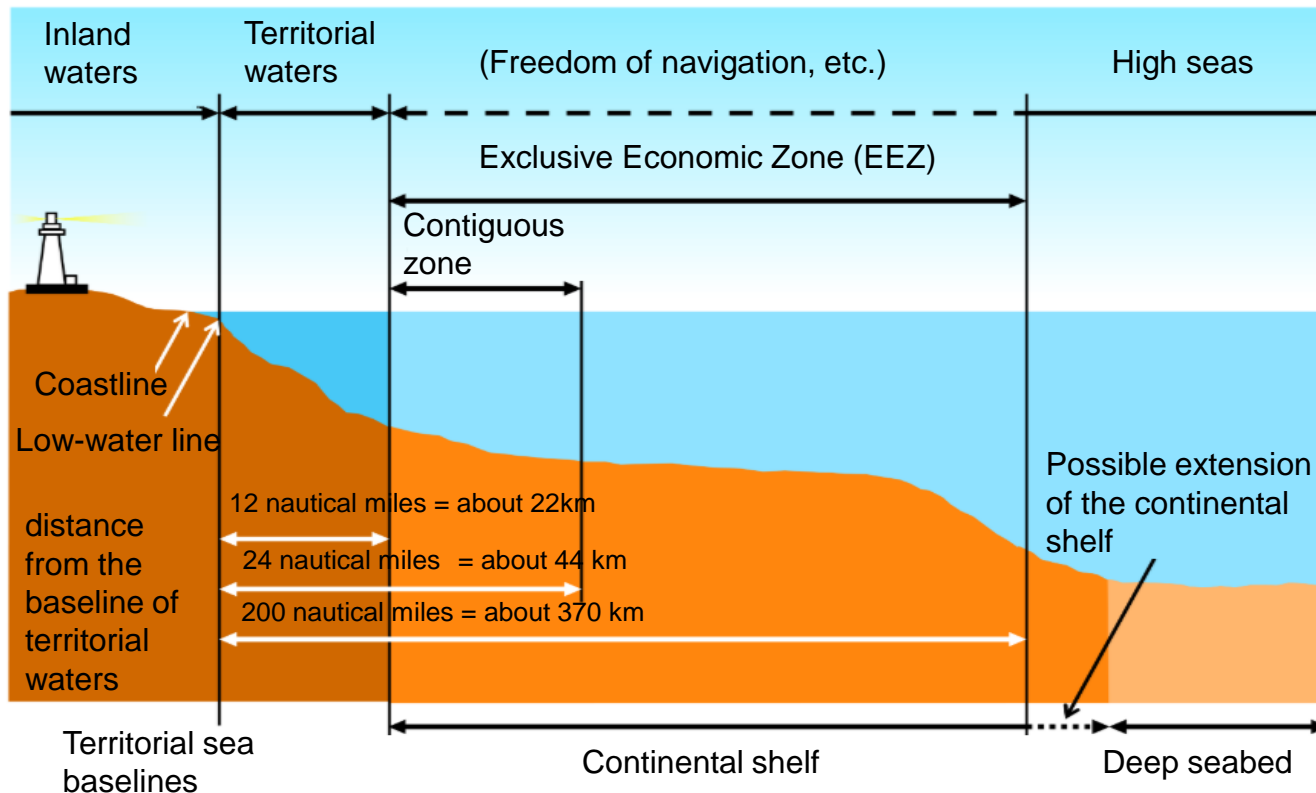
2040 60%



Japan's Exclusive Economic Zone

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- The United Nations Convention on the Law of the Sea (UNCLOS) defines an Exclusive Economic Zone (EEZ) as generally extending 200 nautical miles (1,852 m per mile and about 370 km per 200 mile) from shore.
- Japan's territorial waters and EEZ are the world's sixth largest, with an area of approximately 4.47 million square km.
- A bill to amend the Act on the Utilization of Marine Areas for Renewable Energy was passed in this year's Diet session on June 3rd, 2025. This aim to allow the long-term installation of offshore wind power generation facilities in EEZs.



Area of the Exclusive Economic Zone: approximately 4.05 million square kilometers, approximately 11 times the area of the national land (approximately 380,000 square kilometers)

Vision for Offshore Wind Industry(2nd)

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The second offshore wind industry vision has been formulated, focusing on industrial strategies related to floating offshore wind power.

Directions	Target
I. Response to Inflation and Other Issues II. Creating an Attractive Domestic Market	<ul style="list-style-type: none"> ● Forming floating offshore wind power projects with a capacity of over 15 GW by 2040 [Government] ● Forming large-scale floating offshore wind power projects by FY2029 [Government] ◆ Early review of fixed-bottom wind power generation cost targets [Industry]
III. Strengthening the domestic industrial base IV. Strengthening the technological base	<ul style="list-style-type: none"> ◆ Achieve a domestic procurement ratio of 65% or more by 2040 (Industry) ◆ Develop and secure approximately 40,000 offshore wind power-related personnel by 2040 (Industry) ★ Secure construction and O&M capabilities for large-scale floating offshore wind power toward the 2040 project formation goal (Public/Private)
V. Creating a manufacturing base for the Asia-Pacific region VI. Leading discussions toward standardization	<ul style="list-style-type: none"> ★ By 2040, Japanese power generation companies will be involved in 30 GW of overseas projects (public and private sectors) ◆ By 2030, collaboration with 10 countries and regions, including Europe and the Asia-Pacific region (industry)

Source: Offshore Wind Industry Vision (Second Edition) Aug. 8, 2025

Public-Private Council for Strengthening the Industrial Competitiveness of Offshore Wind

The current state of the wind power industry in Japan

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【Large Wind Turbine】

◇ Toshiba ■ Mitsubishi Heavy Industry 2015
 ■ Hitachi 2019 ■ Japan Steel Works 2019

【Blade】

□ KOMAI HARTECH
 ■ GH Kraft ■ MHI 2015
 ■ Japan Steel Works

【Blade/fiber】

◇ Toray, ◇ Nippon Electric Glass,
 ◇ Nittobo, ◇ Central Glass,
 ◇ Asahi Fiber Glass, ■ Mag Izover

【Blade/resin・hardener】

■ Asahi Kasei
 ■ Hitachi Chemical

【Swing bearing】

□ thyssenkrupp rothe erde Japan
 □ Antex
 ■ Komatsu Ltd.

【Bearing】

□ NSK □ NTN □ J-tekt

【Middium-sized Wind Turbine】

□ KOMAI HARTECH

【Generator】

□ Meidensha □ Yasukawa Electric
 ■ Hitachi Industry Products ■ TMEIC
 ■ Mitsubishi Electric

【Gear Box】

□ Mitsui Miike Machinery
 □ Ishibash Machinery
 ■ Hitachi Nico Transmission

【Nacell Cover】

■ Nitto Electric Group

【PLC】

■ OMRON 2018

【Tower】

□ Kaikawa Iron Works
 ◇ FUJI P.S ◇ AIZAWA Concrete

【Wind Turbine Transformer】

□ Hitachi Industrial Equipment Systems ■ TMEIC

Legend:

□ Already entered,
 ◇ Under consideration,
 ■ Exit, Suspended, Support only etc.

【Yaw・Pitch Drive Unit】

■ Moog Japan 2018/4 ■ Nabtesco
 ■ Hitachi Industrial Machinery System

【Converter】

□ Yasukawa Electric □ TMEIC
 ■ Hitachi Industrial Products ■ Fuji Electric

Figure. Source: https://www.hitachi.co.jp/products/energy/wind/prouct/htw2000_80/

Ssource: Japan Electrical Manufacturers' Association Wind Power Generation System Technology Committee, Domestic Wind Power Equipment Industry and Certification, 105th New Energy Seminar, 2021.6.18 updated

Conclusion

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- The international energy situation is changing dynamically.
- As Japan does not have many stable domestic energy resources, it needs to consider the future balance of electricity supply and demand and ensure a balance between stable supply, growth while promoting economic efficiency, and decarbonization.
- Wind power generation is facing changes in the environment, such as rising costs and raw material prices, and rising interest rates, but for a country surrounded by the sea, offshore wind power is a valuable domestic major energy source.
- When developing wind power, including onshore development, it is necessary to utilize it appropriately and effectively, while taking into account the development of the domestic industry.

Thank you

감사합니다

ありがとうございました