

# Current Status and role of Offshore Wind in Japan



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**President**

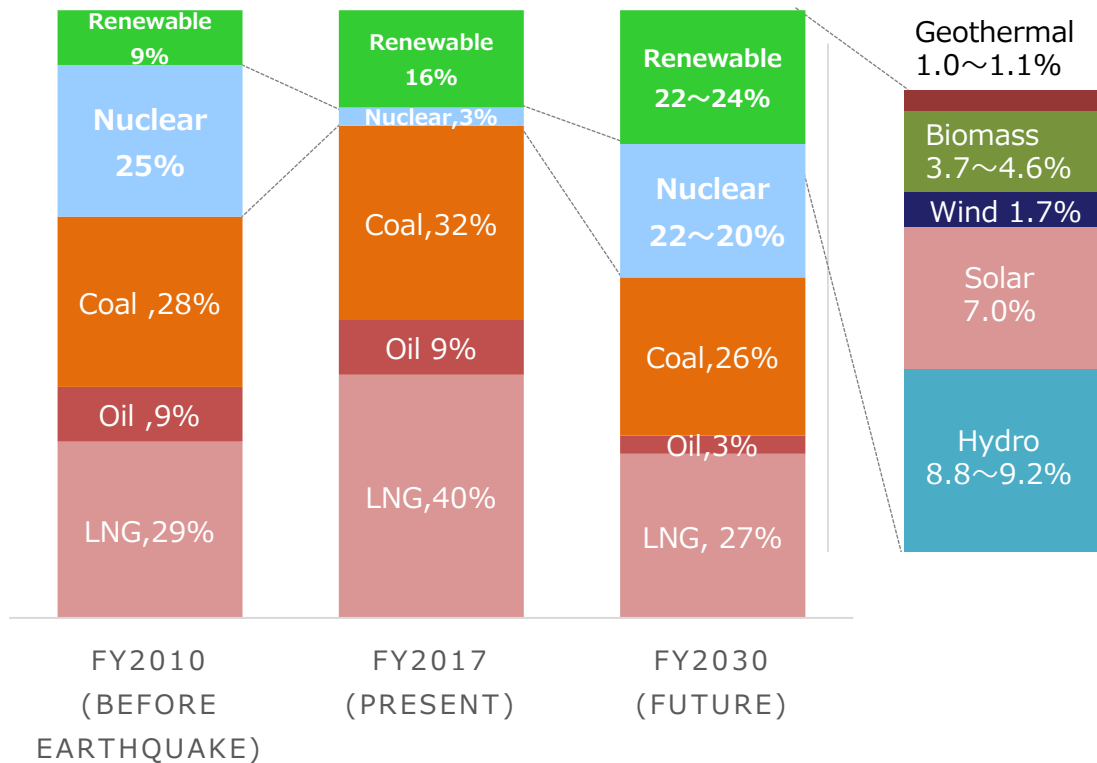
**Japan Wind Power Association**

<http://jwpa.jp>

# 5<sup>th</sup> Strategic Energy Plan

Based on the 4th Strategic Energy Plan, Long-term Energy Supply and Demand Outlook energy Mix for 2030 was formulated in 2015. The energy mix has been followed in "5<sup>th</sup> Strategic Energy Plan" that was approved by the Cabinet in July 2018.

## Energy Mix for 2030



## [Total power generation]

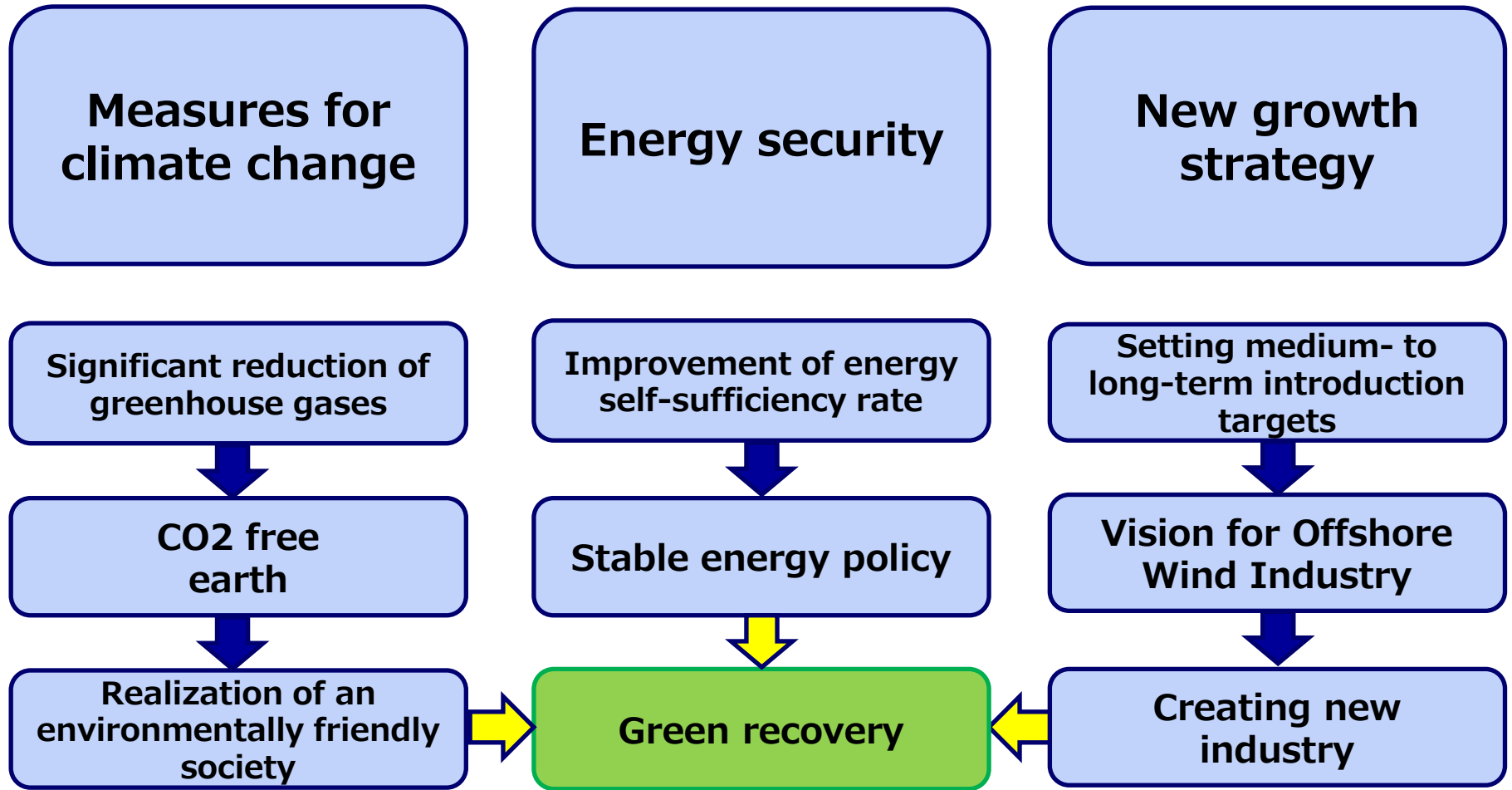
	Power generation	
	TWh	%
Oil	31.5	3%
Coal	281.0	26%
LNG	284.5	27%
Nuclear Power	231.7~216.8	22~20%
Renewable	236.6~251.5	22%~24%
<b>Total</b>	<b>1,065.0</b>	<b>100%</b>

## [Breakdown of Renewable]

	Power generation	
	TWh	%
Solar	74.9	7.0%
Wind (Onshore)	16.1	1.5%
Wind (Offshore)	22.0	0.2%
Geothermal	10.2~11.3	1.0~1.1%
Hydro	93.9~98.1	8.8~9.2%
Biomass	39.4~49.0	3.7~4.6%

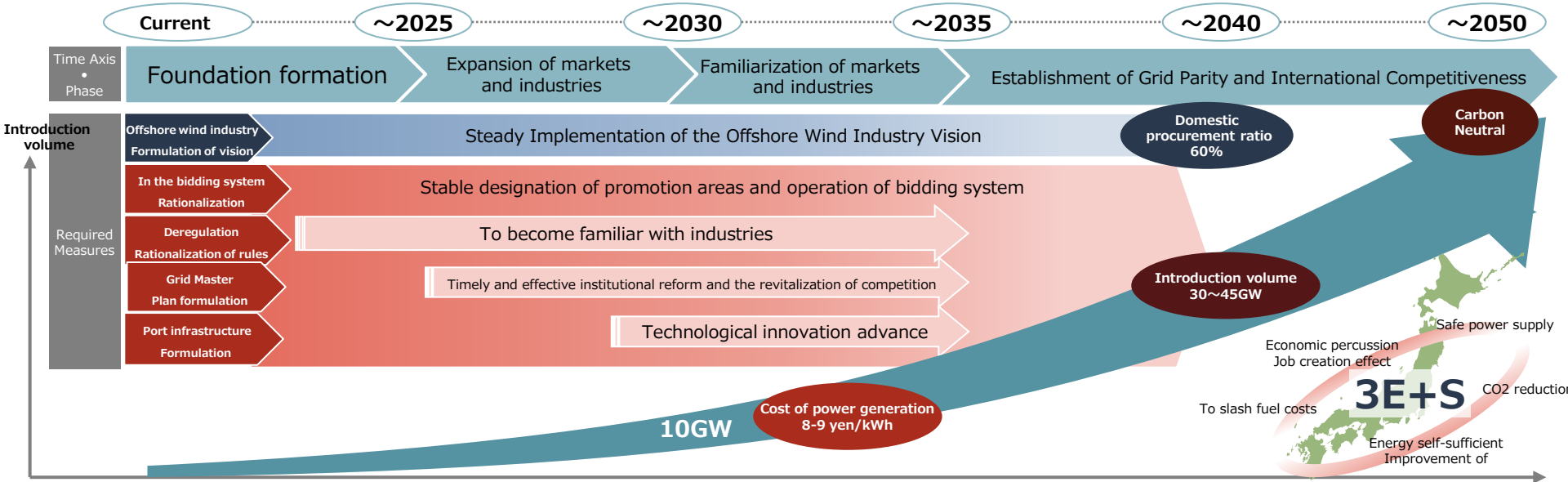
Source : Comprehensive Resource and Energy Study Group Basic Policy Subcommittee (28th Meeting Materials)  
From "Trends after Formulation of Basic Energy Plan and Future Directions (December 27, 2018)"

# Significance of expanding the introduction of offshore wind power

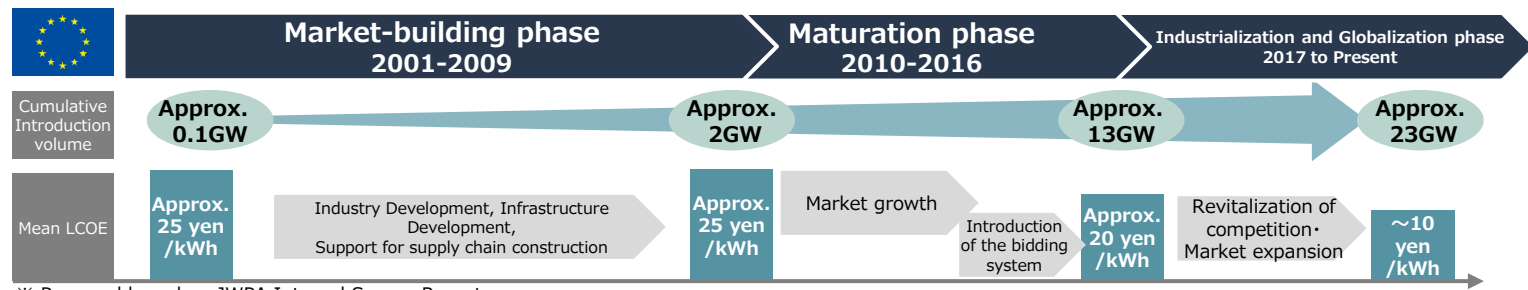


# Path toward the transition to offshore wind power as a mainstay power source

- It is extremely important to implement necessary measures in an appropriate order and in a timely manner in order to achieve both cost reduction and domestic industry development, and to achieve the introduction targets.
- It aims to form the foundation of the industry in the next 10 years, foster domestic industries with international competitiveness early after 2030, and realize three targets (introduction amount, LCOE, and domestic procurement ratio).**



## Comparison \* with the European History



Europe spent 20 years to build a supply chain and timely implement measures such as bidding system and industrial vision to achieve grid parity.

\* Prepared based on JWPA Internal Survey Report

# Discussion of the current situation towards 2050 Carbon Neutral

- Examination for realization of CN presented METI (December 21, 2020)

## <Energy Mix>

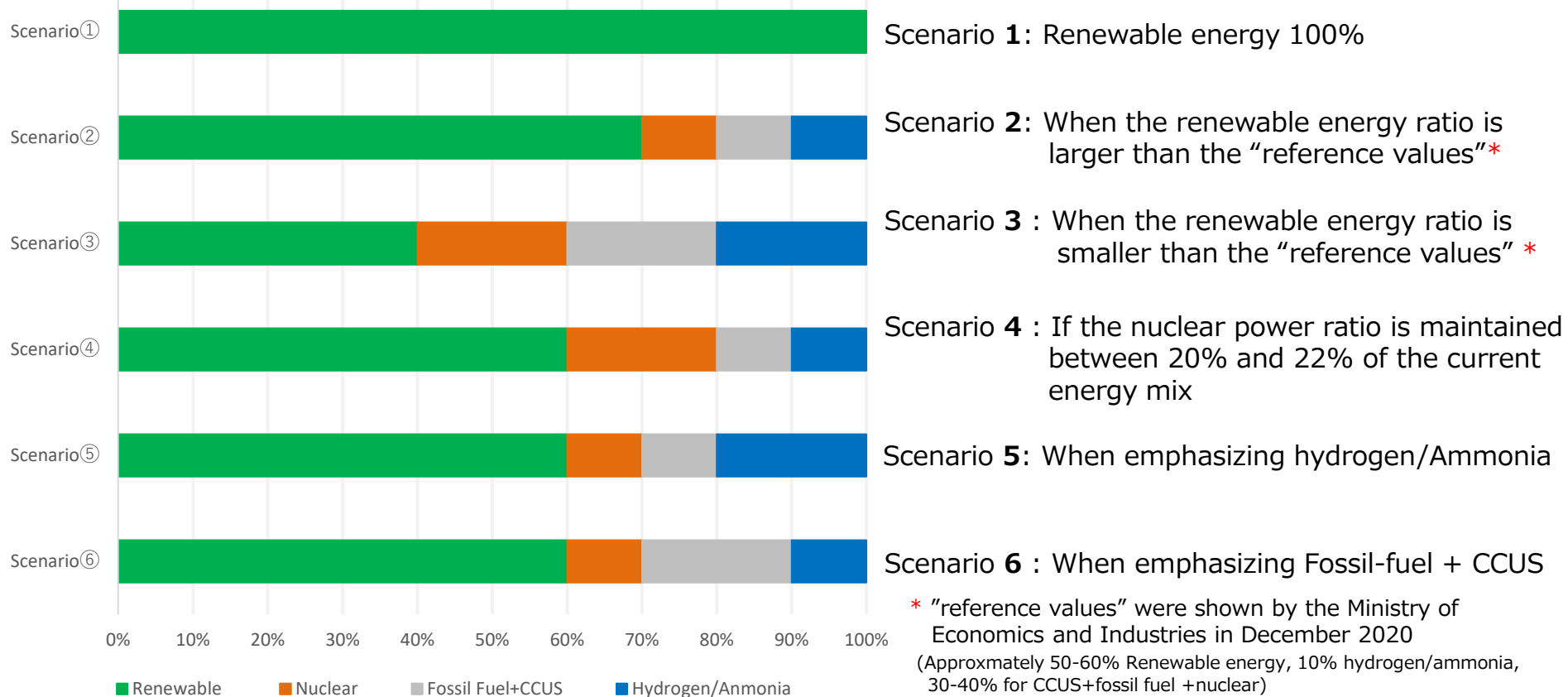
<b>Renewable</b>	<b>: 50-60%</b>
<b>Nuclear + CCS</b>	<b>: 30-40%</b>
<b>Hydrogen + Ammonia</b>	<b>: 10%</b>

- CCS, Hydrogen, Ammonia: technologies that require innovation
- Create scenarios based on established technology and create multiple scenarios including innovation in a well-balanced manner.

# Six scenarios of Energy mix in 2050 presented by METI

This proposal was presented at an expert meeting of METI on January 27, 2021 as a "Study toward the Realization of 2050 Carbon Neutral," and it is said that RITE (Institute of Global Environmental Industrial Technology) will analyze the cost of each proposal and its impact on the economics in several scenarios.

## Six specific proposals for scenario analysis



# 〈Reference〉

## Hydrogen Roadmap

	Current situation	2030	Future vision(~2050)
Hydrogen Amount procured	200t/Year (2017)	300,000t/Year (Commercial supply chain scale) ※Equivalent to about 1GW in power generation capacity	5 to 10 million t/Year (largely dependent on the amount consumed in power generation) ※Equivalent to about 15 to 30GW in power generation capacity
Supply Cost	~100 yen/Nm3 (Station price)	30 yen/Nm3 (1/3 or less)	20 yen/Nm3 (1/5 or less)
Power generation Cost	— (Technology Development Stage)	17 yen/kWh (Commercial Stage)	12 yen/kWh (substitute for gas-fired power generation)

Created based upon data from "How to Study Future Hydrogen Policies" by Agency of Natural Resources and Energy (November 2020)

## Green Ammonia

