TOKIO MARINE GROUP
To Be a Good Company

IUMI – Offshore Wind

Offshore Wind - to support a growth of Japanese Offshore Wind Industry

23rd May 2023

Tokio Marine & Nichido Fire Insurance Co., Ltd.

1. Japanese Government position

◆6th Strategic Energy Plan (2020)

-In October 2020, Prime Minister Suga made a commitment on an achievement of Net Zero by 2050.
-Within various resources, Government considers Offshore Wind is quite promising.
-Installation target for Offshore Wind is quite aggressive

Government plan of promoting offshore wind

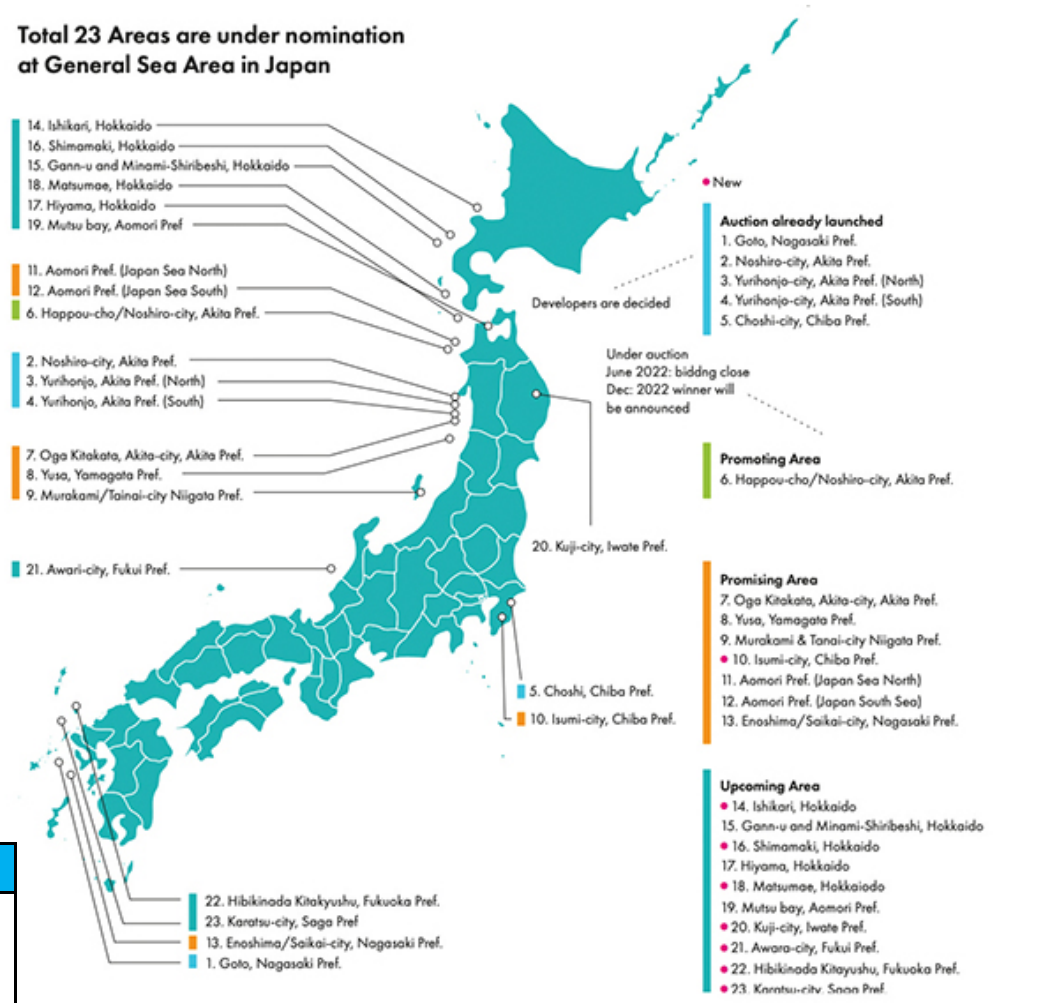
Year	Capacity	Commitment/ Agreement
2030	10GW	Minister of Economy, Trade and Industry
2040	45GW	METI Public-Private Council
2050	90GW	Japan Wind Power Assosiation

Reference : http://jwpa.jp/page_259_jwpa/detail.html

2. Japan's Offshore Wind situation

◆Upcoming project at "general sea area"

-Since 2019, Japanese Government has been working on expanding the offshore wind by introducing new system for both port and general sea area.
-Currently, 23 projects are nominated, and Auction for Round 1 already concluded.
-Auction for Round 2 already launched for 3 general sea areas



Feed In Tariff

Projects	Price/Kwh	Period
Awarded before 2020	JPY 36.0	20 Years
Round 1 and after	JPY 29.0/ JPY36.0 Floating	
2030-2035	JPY 8.0 - JPY 9.0	

Area 1 : Awarded to Toda Corp consortium on 11th June 2021
Area 2-5 : Awarded to Mitsubishi Corp Consortium on 24th December 2021

Source: Offshore Wind Report 2022 - Global Wind Energy

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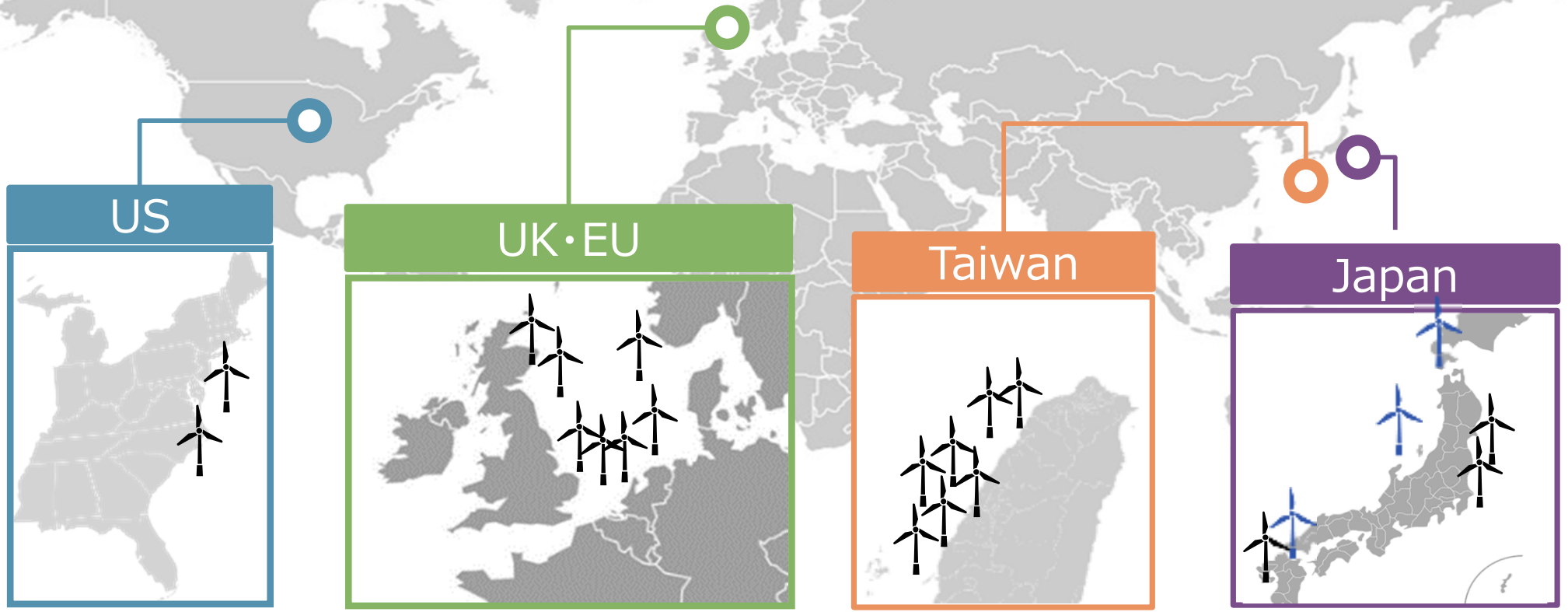
3. TMNF's achievement

◆TMNF Offshore Wind

-Started writing offshore wind in 2013.
-Accumulated expertise by writing offshore wind projects globally.

10 countries / regions	60 projects	20GW+ total GW



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4. TMNF's achievement

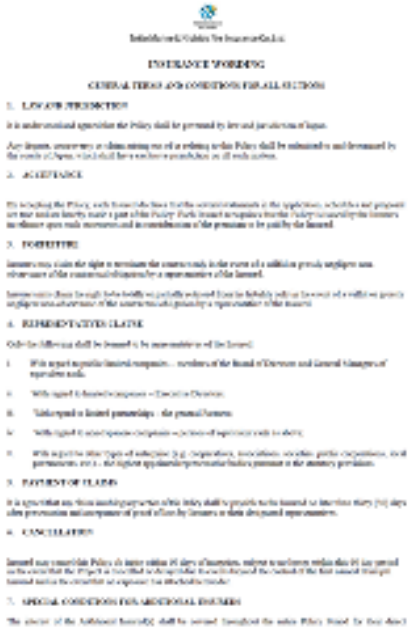
◆TMNF achievement

- Introduction of Marine Warranty Survey
- Introduction of Knock for Knock regime
- Introduction of International Insurance Wording (WINDCAR/WINDOP)


DNV·GL

STANDARD

Marine operations and marine warranty



(b) Knock for Knock	(i) Owners. - Notwithstanding anything else contained in this Charter Party excepting Clauses 6(c)(iii), 9(b), 9(e), 9(f) 10(d), 11, 12(f)(iv), 14 (d), 15 (b), 18(c), 26 and 27, the Charterers shall not be responsible for loss of or damage to the property of any member of the Owners' Group, including the Vessel, or for personal injury or death of any member of the Owners' Group arising out of or in any way connected with the performance of this Charter Party, even if such loss, damage, injury or death is caused wholly or partially by the act, neglect, or default of the Charterers' Group, and even if such loss, damage, injury or death is caused wholly or partially by un-seaworthiness of any vessel; and the Owners shall indemnify, protect, defend and hold harmless the Charterers from any and against all claims, costs, expenses, actions, proceedings, suits, demands and liabilities whatsoever arising out of or in connection with such loss, dam-age, personal injury or death.

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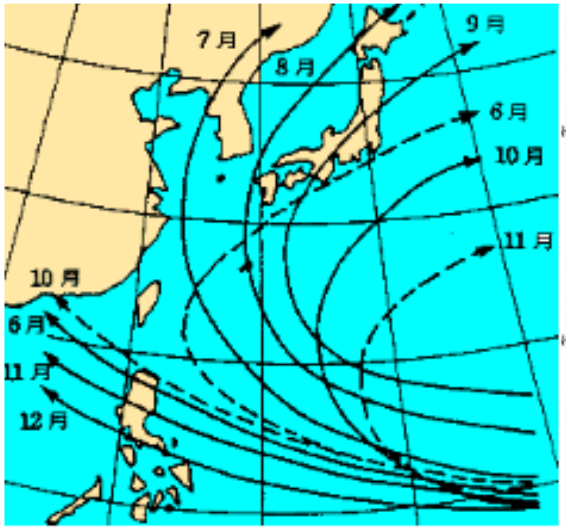
5. TMNF's challenge onward

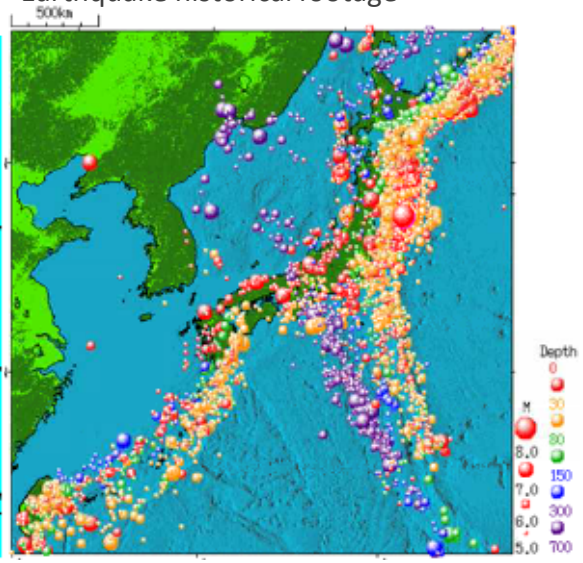
◆Risks specific to Japan

- Natural Catastrophe – Earthquakes, Tsunami, Typhoons,
- Seabed Conditions
- High Wave Hight, Strong Wave Motion
- Lack of Experience in terms of Offshore Wind
- Undeveloped Supply Chain

Typical Typhoon



Earthquake historical footage



（Source） Japan Meteorological Agency

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5. TMNF's challenge onward

◆NATCAT - Earthquake/Tsunami/Typhoon

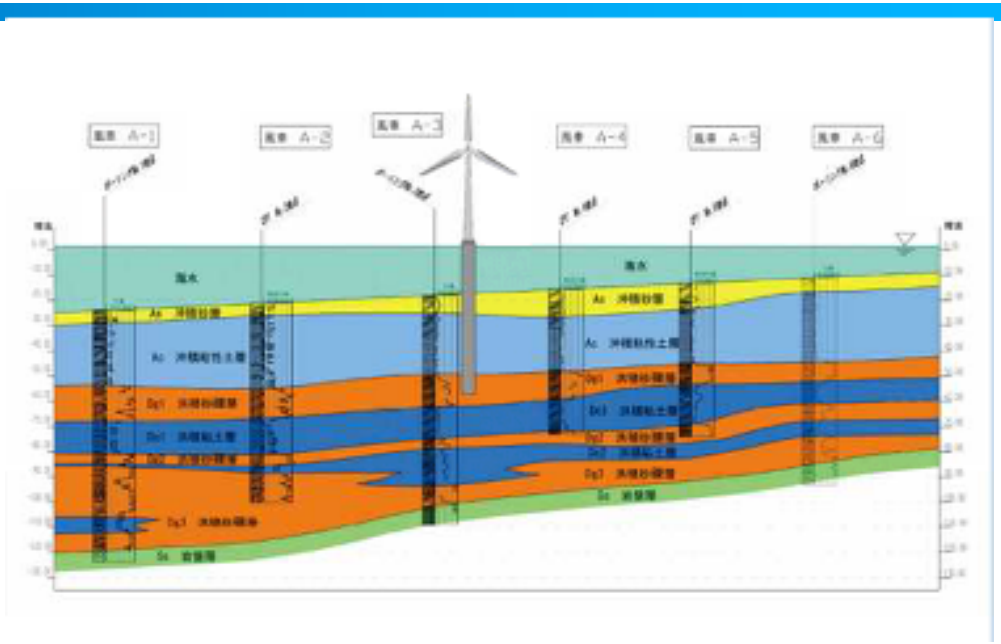
- In European countries EML/Scenario based Assessment is carried out for assessing the project's maximum loss. However, in Japan where it is exposed to Nat Cat risks, PML/Probability Assessment shall be carried out as well. Setting the Combined Single Limit (CSL) with this amount will lead to Premium cost saving.
- Japanese lenders have experience in applying the PML amount to CSL for providing finance to their project finance cases.

Estimated Maximum Loss Scenario Assessment	Probable Maximum Loss Probability Assessment
Evaluation of Estimated Maximum Loss based on estimated scenario	Evaluation of Probable Maximum Loss once in XX years, by few hundred million times simulation
• Losses arising from dropping offshore substation equipment during lifting • Losses arising from disconnection during cable layering • Losses arising from flood during storage of turbine in port • Losses arising from largest Typhoon in the past hitting the site	• Earthquake・Tsunami：Probable Maximum Loss based on maximum seismic motion once in 475years • Typhoon：Probable Maximum Loss based on average wind speed once in 100years

5. TMNF's challenge onward

◆Seabed Conditions

-Japan does not have homogeneous seabedstructure like in the North Sea.
-For safe execution of construction, sufficient seabed investigation per each location is necessary.



◆High Wave Height/ Strong Wave Motion

Operating Window for Offshore Work is relatively short compared to that in the North Sea due to the unique sea conditions.

Japan Sea
High wave heights

Pacific Ocean
Strong wave motion
swell

Source: https://www.kiso.co.jp/services/energy/wind-resource.html

5. TMNF's challenge onward

◆ Lack of Experience in terms of Offshore Wind

-Very limited Offshore E&P activity in Japan, so we do not have experienced offshore contractor of this type (although we have experienced Marine Construction Contractors)
-Collaboration with Marine Warranty Surveyor is essential.

◆ Undeveloped Supply Chain

-Most of the Main Parts coming from Europe
-Possibility of claim being higher (more loading risks and more storage risks)
-Downtime being longer which triggers higher claims for DSU/BI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