



EGP Coordination Group
for Japan and Korea
29th August 2023



AGENDA

Time	Topic
08:30 CET 15:30 KST/JST	Welcome
08:35 CET 15:35 KST/JST	Latest news and updates from Korea
08:50 CET 15:50 KST/JST	Latest news and updates from Japan
09:05 CET 16:05 KST/JST	Brief update on the EGP programme in Korea
09:15 CET 16:15 KST/JST	Brief update on the EGP programme in Japan
09:25 CET 16:25 KST/JST	Q&A



Latest news on offshore wind in Korea





MINISTRY OF FOREIGN AFFAIRS OF DENMARK

Status on Offshore Wind in Korea

Green Energy Export Day

August 29th, 2023

Jacob Navarro Rasmussen

Energy and Environment Counsellor

Win-win Business Partnerships

Global Cooperation for Energy Transition
Denmark in Korea

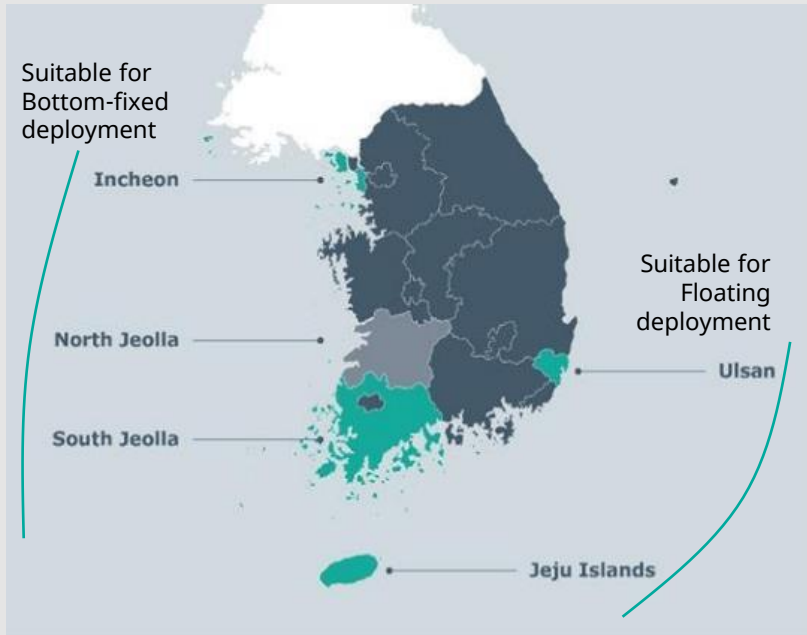


EMBASSY OF DENMARK
Seoul



Danish Energy
Agency

Overall Lay of the Land



Promotion areas for offshore wind development, source: COWI (2021)

Offshore wind potential in Korea

- Offshore wind is targeted to reach 14.3 GW by 2030.
- RE100 initiative suggests strong push for carbon neutrality as key companies join the initiative.
- Strong domestic supply chain exists domestically.
- Floating is expected primarily in the eastern region including Ulsan and Jeju Island.
- Bottom-fixed to take place in the western part of the country including Shinan.

Overall Lay of the Land (cont'd.)

KOREAN SUPPLIERS HAVE STRONG TRACK-RECORD IN SERVING OFFSHORE WIND PROJECTS GLOBALLY



Source: Copenhagen Infrastructure Partners (2022)

Challenges vs. Opportunities

Headwind

- Grid issues, local acceptance, port infrastructure...
- **Complicated licensing process** that needs to go through up to 10 different ministries
- Unclear local government discretion and criteria contributing to delays and confusion
- Lack of government-led master plan/control tower
 - Permits scattered across various authorities per different individual laws.
 - The laws and authorities are so diverse that each developer undergoes permit processes with each administrative organizations.

Tailwind

- OSW is being understood by the government as an export item (in addition to nuclear energy)
- Government has started to recognize that Korea has important supply chains for offshore (evidenced by Ørsted, CIP, Vestas announcements)
- Realization that Korea cannot source green energy within the country (risk of production moving out of the country which can hurt export and labor market)
- **Increased pressure from the industry** and push for carbon neutrality worldwide

Key Business News

- Denmark-Korea Green Business Forum held in June at the **World Climate Industry Expo** in Busan. At the forum, Orsted and Korea's LS Cable & System signed a submarine cable supply contract.
- Vestas is set to **move its Asia-Pacific regional headquarters** to South Korea
- The **first industrial-scale offshore wind power project** in Korea - the 532MW Anma - has successfully completed its key environmental impact assessment, Construction start expected '24 next year, COD in 2027.
- **POSCO** announced in June that it has signed an MOA with CIP for cooperation in Pohang offshore wind power and green business.
- **SK Ecomplant** announced last December that it signed an MOU with COWI to develop offshore wind power in Korea and cooperate in new and renewable energy technology.
- When **President Yoon** attended the general assembly of the Bureau International des Expositions (BIE) in June, **CIP announced investments** of USD 350 million in Korean offshore wind projects.
- **CS Wind** acquired **Bladt Holding** to further enter the substructure manufacturing market. This July, it acquired a 100% stake.
- Danish companies such as Jumbo, K2, COWI, PEAK Wind, Rambøll, Lautec, CIP and Ørsted are active in Korea and **opened local offices** to better pursue projects.



New Trade, Industry, Energy Minister



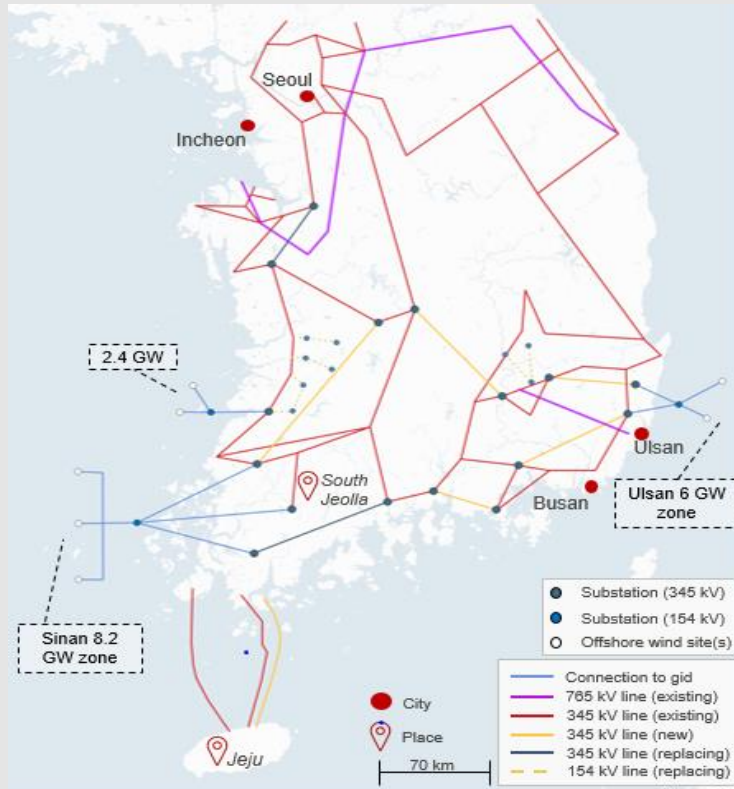
- **Bang Moon-kyu** (Minister of government policy coordination) was appointed to replace Lee Chang-yang (Minister of trade, industry and energy) on Aug. 22nd.
- Clear expectation from the President to grow Korea's **nuclear energy** capacities.
 - "The President asked to take drastic personnel measures to those still stuck in anti-nuclear or ideological policymaking, do not conform to the new national policy and take an ambiguous stance." (Presidential Spokesperson's Office, May)
- **Mixed reactions** – possible leaning more towards the Ministry of Strategy and Finance vs. MOTIE to be empowered since Bang is the President's entrusted person.
- Appointee from the Ministry of Strategy and Finance in 6 years. **Strong economic and finance background.** Extensive experience in areas related to ministries of finance, agriculture and health.
- MA in Public Administration from Harvard University and PhD in Public Administration from Sungkyunkwan University.

Policy Updates on OSW cont'd.



- Currently in the **National Assembly**, (a) the 'Special Act on the Promotion of Wind Power', (b) 'Special Act on Offshore Wind Power Planning Sites and Industry Promotion' and (c) 'Special Act on the Vitalization of Offshore Wind Power' are undergoing combined examination.
- Although the three bills are slightly different, they have in common the establishment of an offshore wind power generation committee and an offshore wind power development promotion team for the purpose of introducing **government-led** planned location systems and **simplifying** the licensing procedures.
- Unlike Congressman Woni Kim's bill (a) which focuses on the promotion of offshore wind power, the bills by Moo-kyung Han (b) and Han-jeong Kim (c) mandates the collection of opinions from fishermen, who are crucial stakeholders while proposing a plan to share profits of offshore wind power business.
- From the industry sector, there is an expectation that the **enactment bill of the Special Act on Offshore Wind Power** can pass the National Assembly review and standing committee before the regular National Assembly regular session in September.

Korea's potential for Hydrogen/p2x



Hydrogen / P2x potential in Korea

- 54.2 GW Renewable energy by 2030 (36.5GW solar power + 17.7GW wind power (12GW offshore wind))
- High-level commitment to grid reinforcement but detailed planning have been delayed by 2025, which will most-likely delay the grid system
- **South Jella(2.4 GW), North Jella(8.2GW) and Jeju Islands, Ulsan (6 GW) and Incheon** are keen on Hydrogen and P2X production domestically due to geographical and curtail issues

Korea Denmark hydrogen/p2x alliance



Upcoming Events

- P2X/Hydrogen Delegation (Aug. 28)
- World Knowledge Forum (Sept. 12-14)
- Chungnam Int'l Conference on Carbon Neutrality (Oct. 5)
- KORMARINE (Oct. 24-27)
- Net Zero 2050 (Nov. 9)
- Nordic Talks (Nov. 20-21)
- Green Business Week (Nov. 22-24)

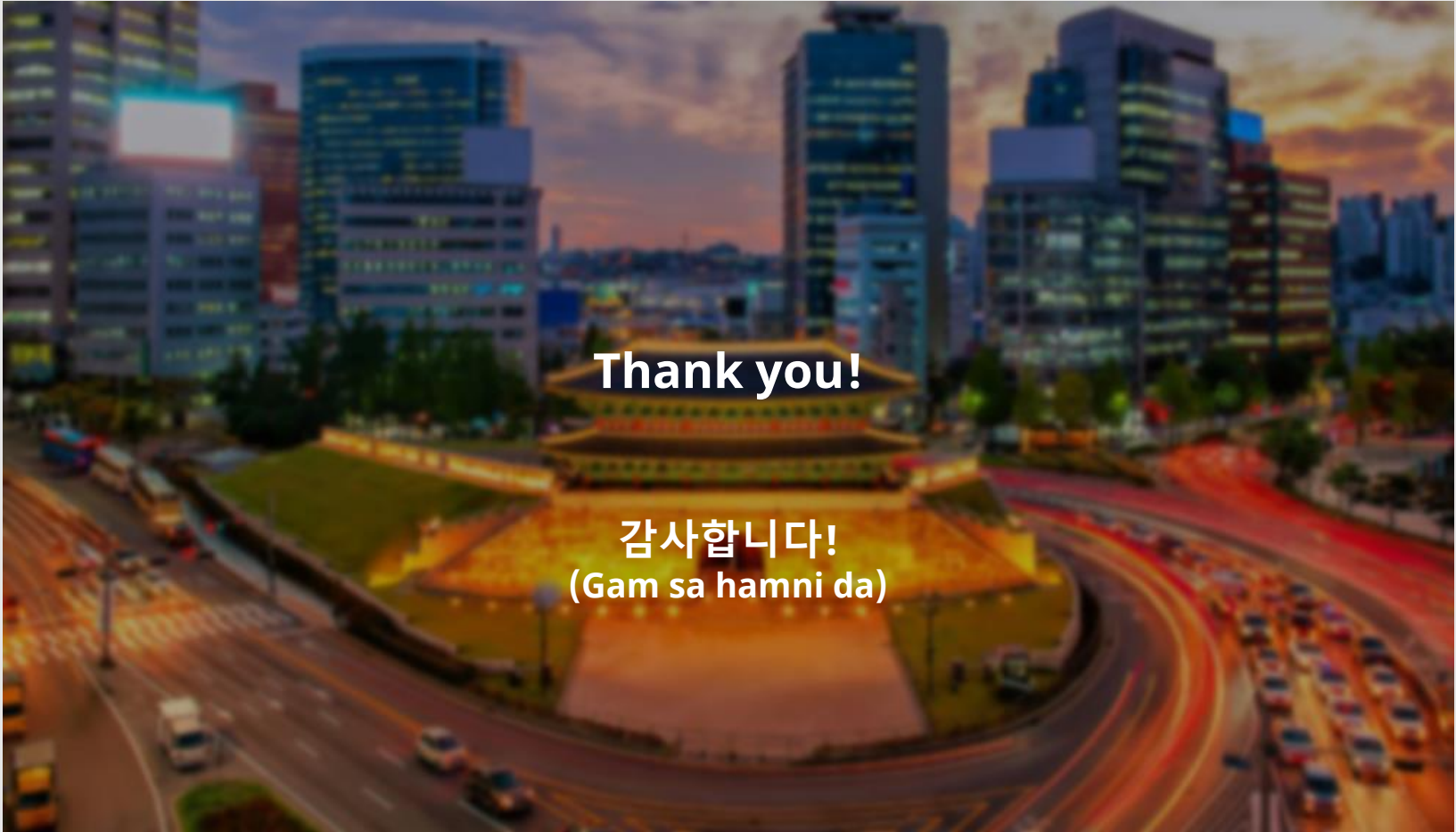
On the Frontlines

Trade Council in South Korea

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Thank you!

감사합니다!
(Gam sa hamni da)



Latest news on offshore wind in Japan





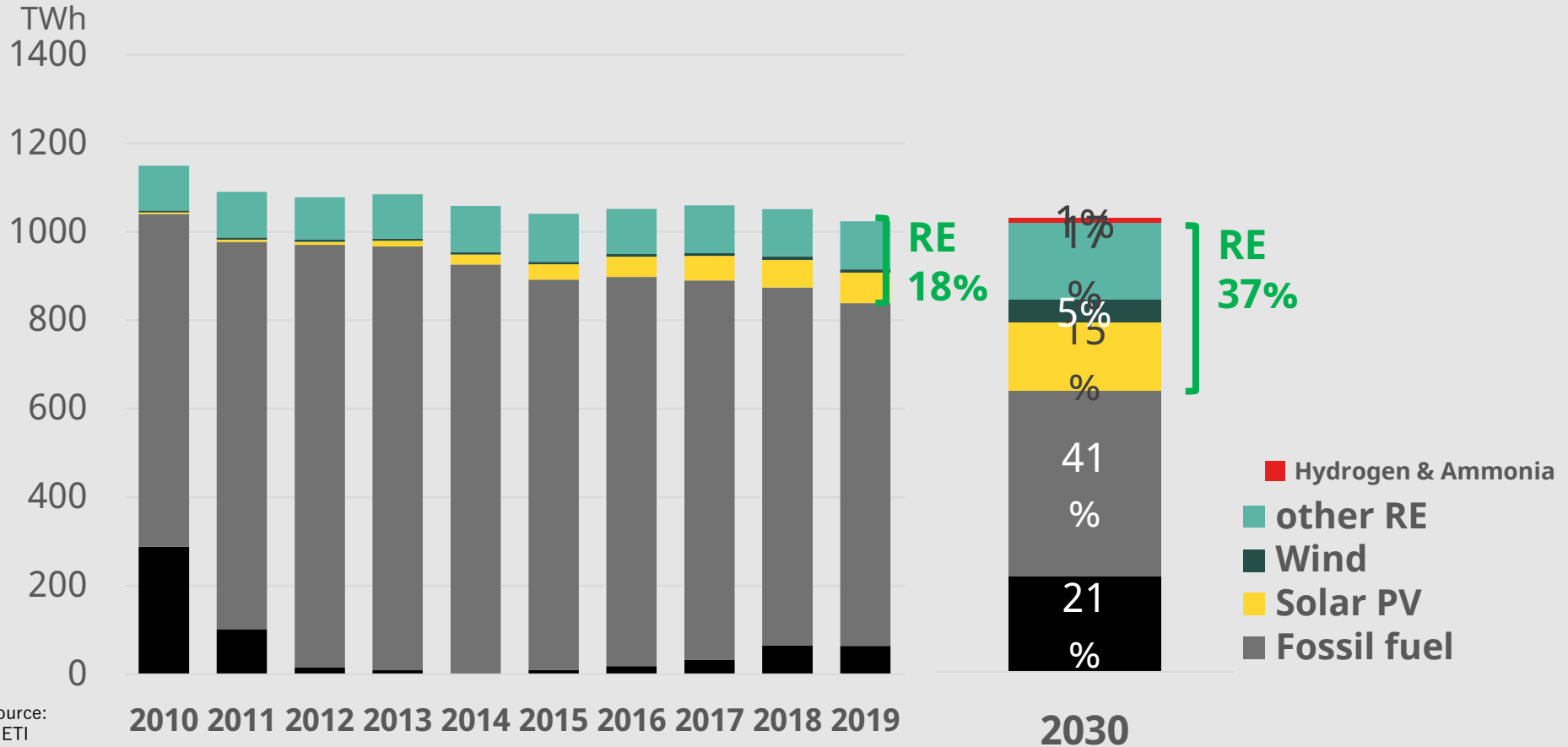
**MINISTRY OF FOREIGN AFFAIRS
OF DENMARK**

Japan – market status

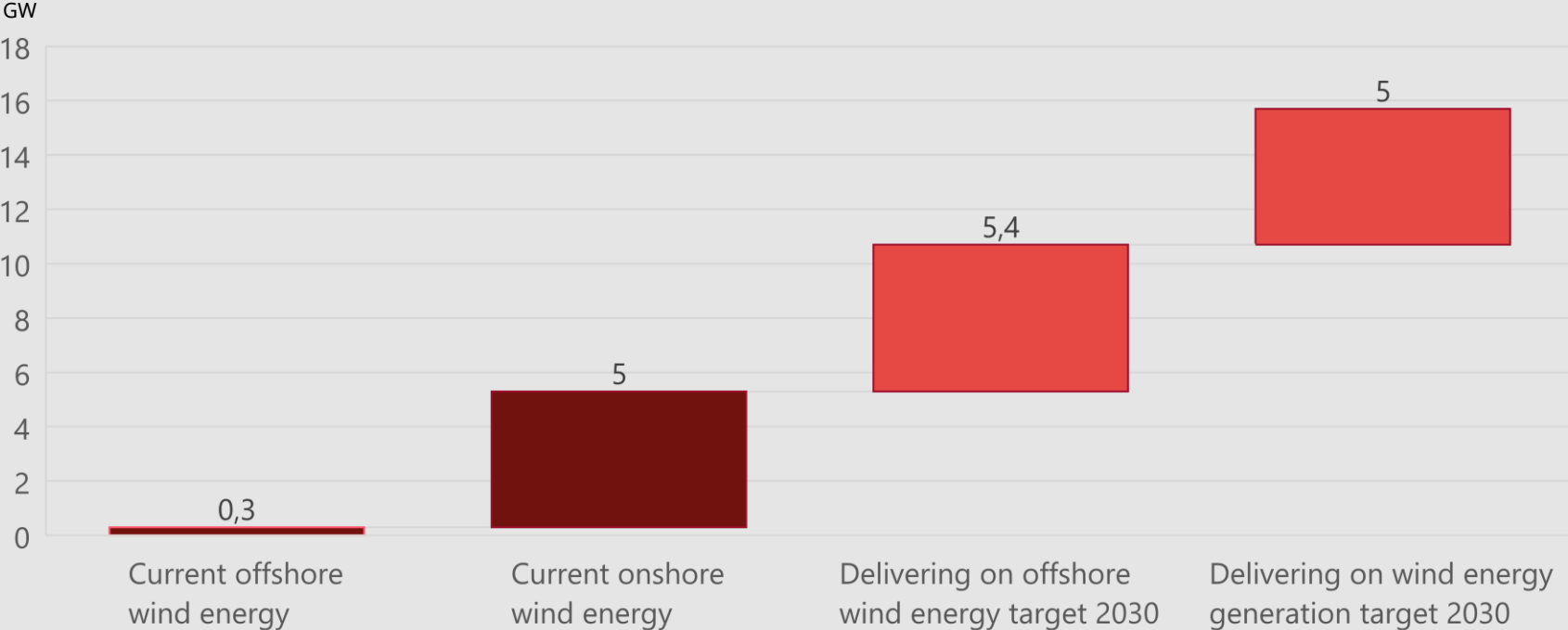
Offshore wind Energy

August 2023

Electricity Production in Japan



Delivering on the wind energy target requires additional 10 GW wind energy in Japan



Source: METI, WoodMac and own calculations

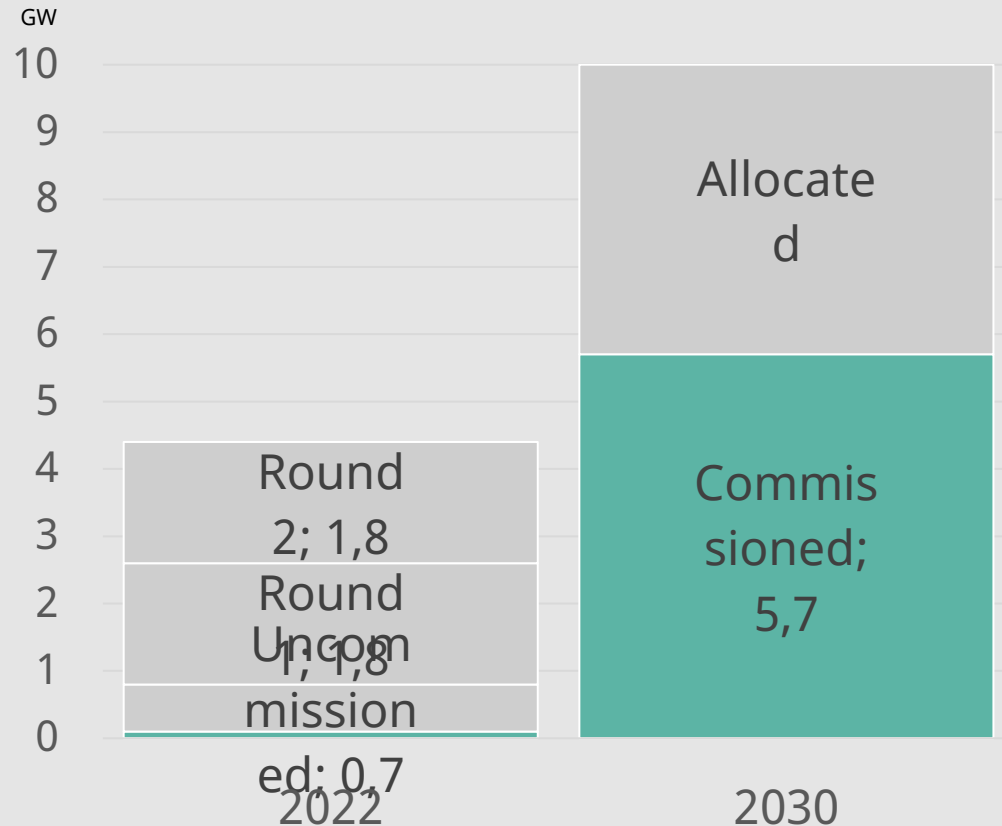
ZoominG in on the Offshore wind energy target

Government targets:

- 10GW allocated by 2030
- 5.7GW commissioned by 2030

Industry targets:

- Cost reductions:
2030-35: LCOE of 8-9 yen/kWh
- Japanese content
2040: 60 pct.



Round 1 Results

All areas won by the same consortium using GE turbines:

1. Choshi, 391 MW, 2028, 16.49 Yen/~95 øre/kWh
2. Noshiro, Mitane & Oga, 479 MW, 2028, 13.26 Yen/~76 øre/kWh
3. Yurihonjo, 891 MW, 2030, 11.99 Yen/~69 øre/kWh



Two track approach is under consideration

1. Continuation of the current centralised model
2. Two-step allocation model for large scale projects – mainly floating projects

Centralised model - 21 zones under development on deferent stages

〈促進区域、有望な区域等の指定・整理状況（2023年5月12日）〉

区域名	運転開始年	万kW
①長崎県五島市沖（浮体）	2024.01	1.7
②秋田県能代市・三種町・男鹿市沖	2028.12	49.4
③秋田県由利本荘市沖	2030.12	84.5
④千葉県銚子市沖	2028.09	40.3
⑤秋田県八峰町・能代市沖		36
⑥長崎県西海市江島沖		42
⑦秋田県男鹿市・潟上市・秋田市沖		34
⑧新潟県村上市・胎内市沖		35,70
⑨青森県沖日本海（北側）		30
⑩青森県沖日本海（南側）		60
⑪山形県遊佐町沖		45
⑫千葉県いすみ市沖		41
⑬千葉県九十九里沖		40
⑭北海道石狩市沖		91~114
⑮北海道岩宇・南後志地区沖		56~71
⑯北海道島牧沖		44~56
⑰北海道檜山沖		91~114
⑱北海道松前沖		25~32
⑲青森県陸奥湾	⑳福井県あわら市沖	
㉑岩手県久慈市沖（浮体）	㉒福岡県響灘沖	
㉓富山県東部沖（着床・浮体）	㉔佐賀県唐津市沖	

Promotion zone

Promising Zone

Preparation Zone

Round 1
Winner selected

Round 2
Being selected

Newly added



Centralised model - 21 zones under development on deferent stages

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Promising Zone	⑨青森県沖日本海（北側）		30
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	⑪山形県遊佐町沖		45
	⑫千葉県鴨川市沖		41
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Preparation Zone	⑲青森県陸奥湾	⑳福井県あわら市沖	
	㉑岩手県大船渡市沖（浮体）	㉒福岡県響灘沖	
	㉓富山県東部沖（着床・浮体）	㉔佐賀県唐津市沖	

Round 1
Winner select

Round 2
Being select

Newly added

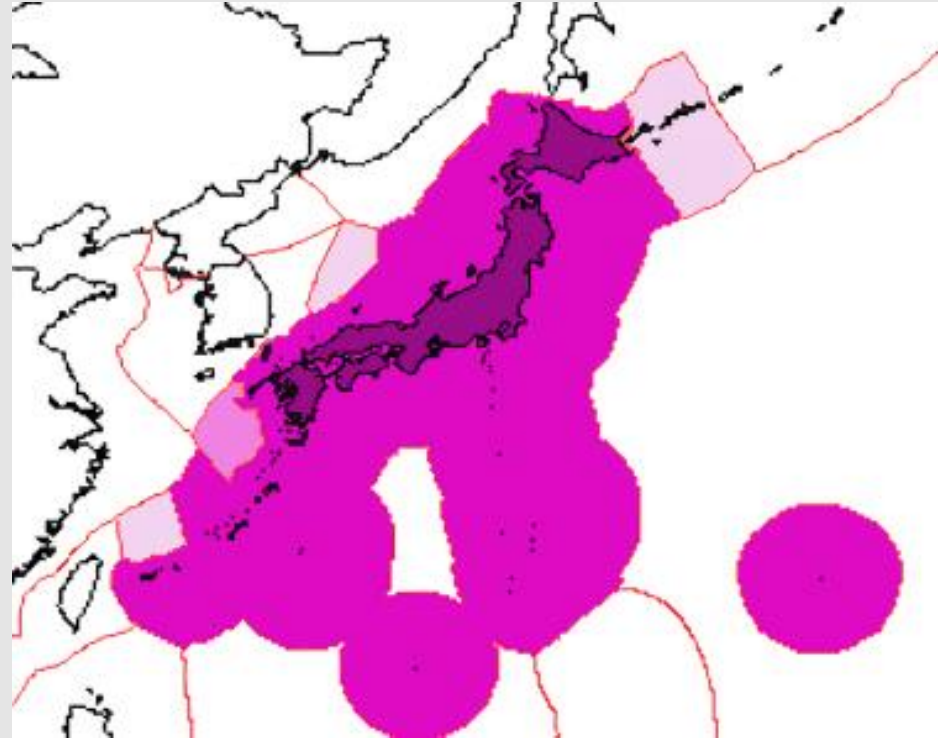
Hokkaido is set to become Japan's Green Power House powered by solarPV, onshore wind energy and especially offshore wind energy.

The main city - Sapporo - is set to become an international financial hub for green finance.

GW-sized transmission cables will connect Hokkaido and Honshu from 2030.

Legislation allowing the offshore wind energy in the Japanese EEZ is being prepared

- Japan's EEZ is the world's 5th largest
- The EEZ will open up for large scale development of floating offshore wind energy
- Two-step auction model for large-scale offshore wind farms further from shore is under consideration
 - 1. step: Allocation of development rights
 - 2. step: Auction on remuneration



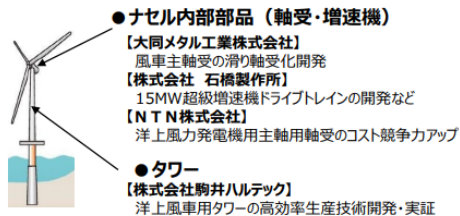
120bil. JPY (6Bil.DKK) from Green innovation fund for floating technology

(参考) グリーンイノベーション基金「浮体式洋上風力の技術開発」(GI基金予算額：1195億円)

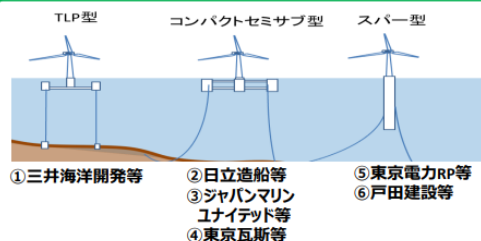
再エネ大量導入・次世代電力NW小委員会(第47回)(2022年12月27日)資料2を一部加工

- 2022年より、気象条件や海象条件等の点からアジア市場に適合し、日本の強みを活かせる要素技術の開発を4分野(①～④)において進めつつ(フェーズ1:345億)、最速2023年度から、システム全体として関連要素技術を統合した実証を行う(フェーズ2:850億)ことで、商用化につなげる。

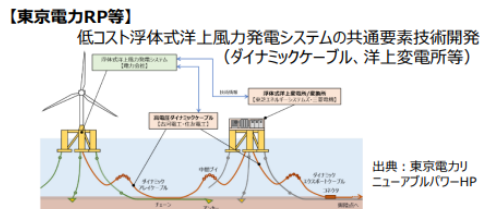
①次世代風車技術開発事業



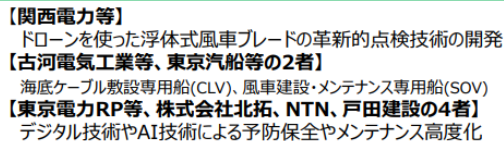
②浮体式基礎製造・設置低コスト化技術開発事業



③洋上風力関連電気システム技術開発事業



④洋上風力運転保守高度化事業



フェーズ2：風車・浮体・ケーブル・係留等の一体設計を行い最速2023年から実証を行う(上限額850億円)

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1. Next-Generation wind turbine technology
2. Manufacturing of floaters and cost reduction solution
3. Offshore wind related electric systems technology
4. New solutions for O&M





Brief update on the EGP programme in Korea



ACTIVITIES IN 2023

Month	Activity
February	Visit to DEA by former MOTIE Minister, Mr. Han-Koo Yeo
	Energy Efficiency – Scoping meeting with KEA
March	Environmental Impact Assessment, meeting with KEA
April	Visit by Korean delegation during the week of Wind Europe
May	DEA and Energinet travel to Korea
June	Visit to DEA by Shinan City
July	Visit to DEA by Boryeong City



ACTIVITIES IN 2023

Month	Activity
September	Energy Efficiency – Energy Audit meeting with KEA
	Visit to DEA by KEEI, KPX and GIST
October	Compensation scheme for fishermen, meeting with KEA
November	Decommissioning and Repowering, meeting with KEA
	Potential – DEA travel to Korea
	Visit to DEA by Dongdaemun District, focus on EE and district heating
December	Steering Committee meeting



Brief update on the EGP programme in Japan



ACTIVITES IN 2023

Month	Activity
January	WS with TSO: Step-by-step analysis with increasing share of RES
February	Meeting with Cabinet Office RE Task Force: Support schemes, curtailment and balancing market
	WS with TSO: Balancing market and EU electricity market
March	DEA and Energinet travel to Japan – Electricity and Gas Market Surveillance Committee, ANRE – Wind Energy Policy Office and others
April	
May	Visit by Director General Mr. Hiroo Inoue, METI ANRE
	WS with TSO's: Interregional transmission planning in DK/EU, grid connections, balancing market
	Meeting with Cabinet Office RE Task Force: Green transition of Danish power production – before and after market reforms of the electricity sector
	Meeting with JOGMEC: Central model for offshore wind
	Meeting with Renewable Energy Institute: Effects of offshore wind farms on fishes and fisheries
	Meeting with MoE: EIA and monitoring



ACTIVITIES IN 2023

Month	Activity
June	WS with TSO: Stability management
July	
August	Visit by Japanese Parliamentary delegation
September	Potential – WS with TSO's
	Visit by METI Hokkaido Bureau
October	DEA travel to Japan, incl. participation in Global Offshore Wind Energy Seminar – Japan
November	Floating offshore wind energy seminar
December	Potential – WS with TSO's



Q&A