

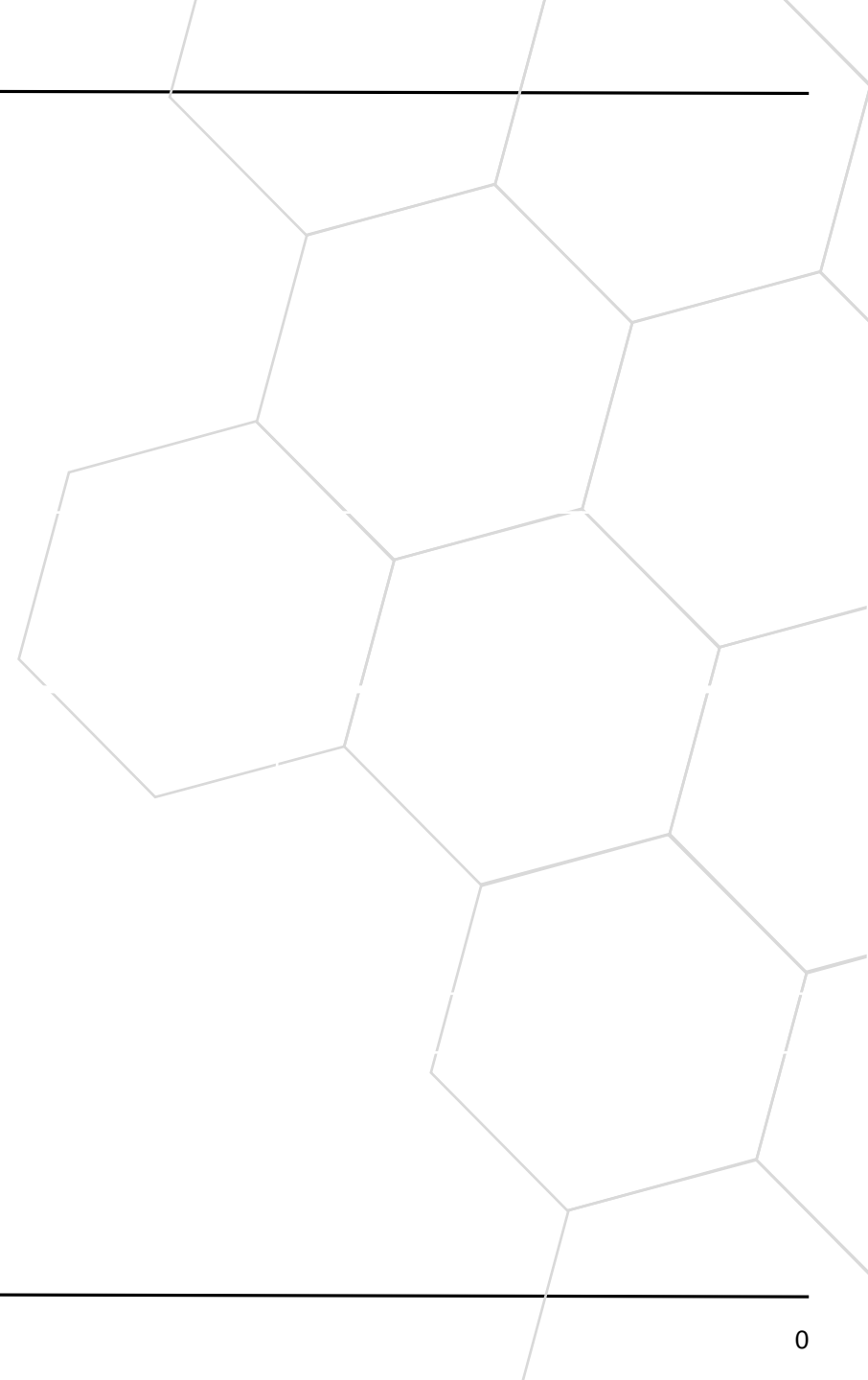


Renewables
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Taiwan Offshore Wind *Policy and Regulation*

Prepared by:
Emilie Reeve

2nd May 2018, Glasgow



Taiwan offshore wind development target timeline

Government set timeframe for offshore wind growth

Offshore wind targets		
Current Capacity	Mid-Term (2020)	Long-Term (2025)
8 MW	520 MW	5,500 MW

Demonstration Incentive Program (DIP)

- Up to 2020: Aim to demonstrate offshore wind capabilities in Taiwan.
- Subsidy for 50% of the turbine installation costs. NT\$250 million (c.US\$ 8 million) towards CAPEX costs for demonstration wind farms.
- Swancor's Formosa I: 128-129.6 MW
- Taipower Chang Hua South: 108-110 MW
- Both DIPs have grid access reserved therefore no need to participate in the selection process.

2015 - 2020

Zonal Application Planning (ZAP)

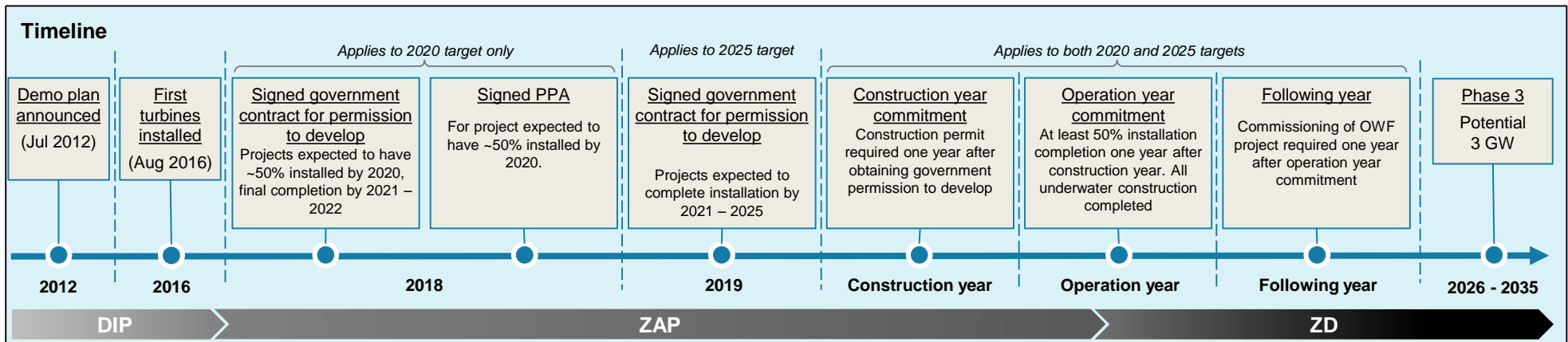
- 2015 – 2025: Aim to build offshore wind industry and development in Taiwan.
- 0.5 GW for projects with an expected installed capacity by 2020.
- 3 GW for projects with an expected installed capacity by 2025.
- Projects are required to undergo a selection process with government awarding capacity.
- Fixed feed in tariff (FiT).

2021 - 2025

Zonal Development (ZD)

- 2025 onwards: Aim to support development and become a self-sustaining industry.
- 2 GW installed capacity available to projects that were not selected in the previous round but will be operational by 2025.
- Projects to undergo an auction process.
- No FiT available (Auction based)

2025 +



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Demonstration Incentive Program (DIP)

- Up to 2020: Aim to demonstrate offshore

New sites awarded 30/04/2018

- 0.5GW for 2020 completion
- 3GW for 2025 completion

2015 - 2020

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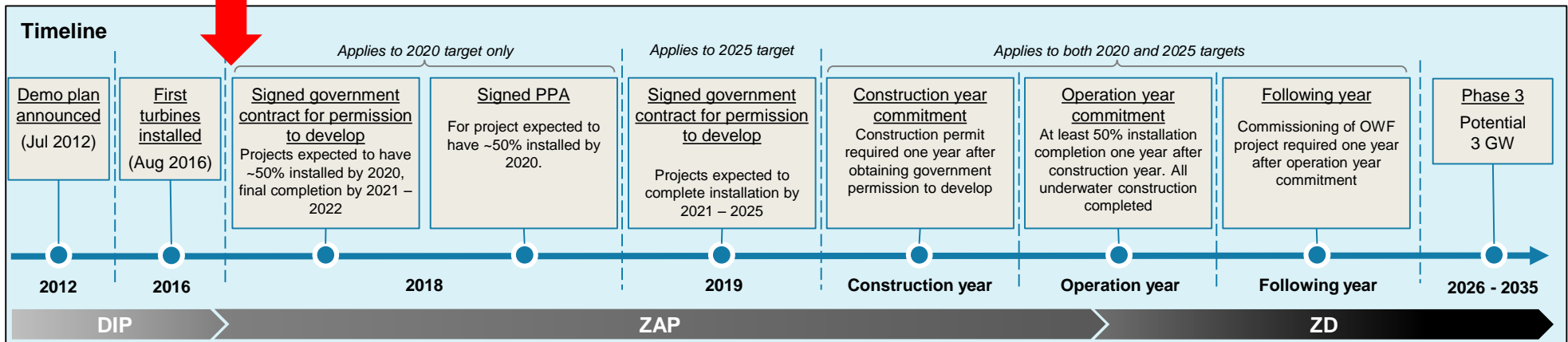
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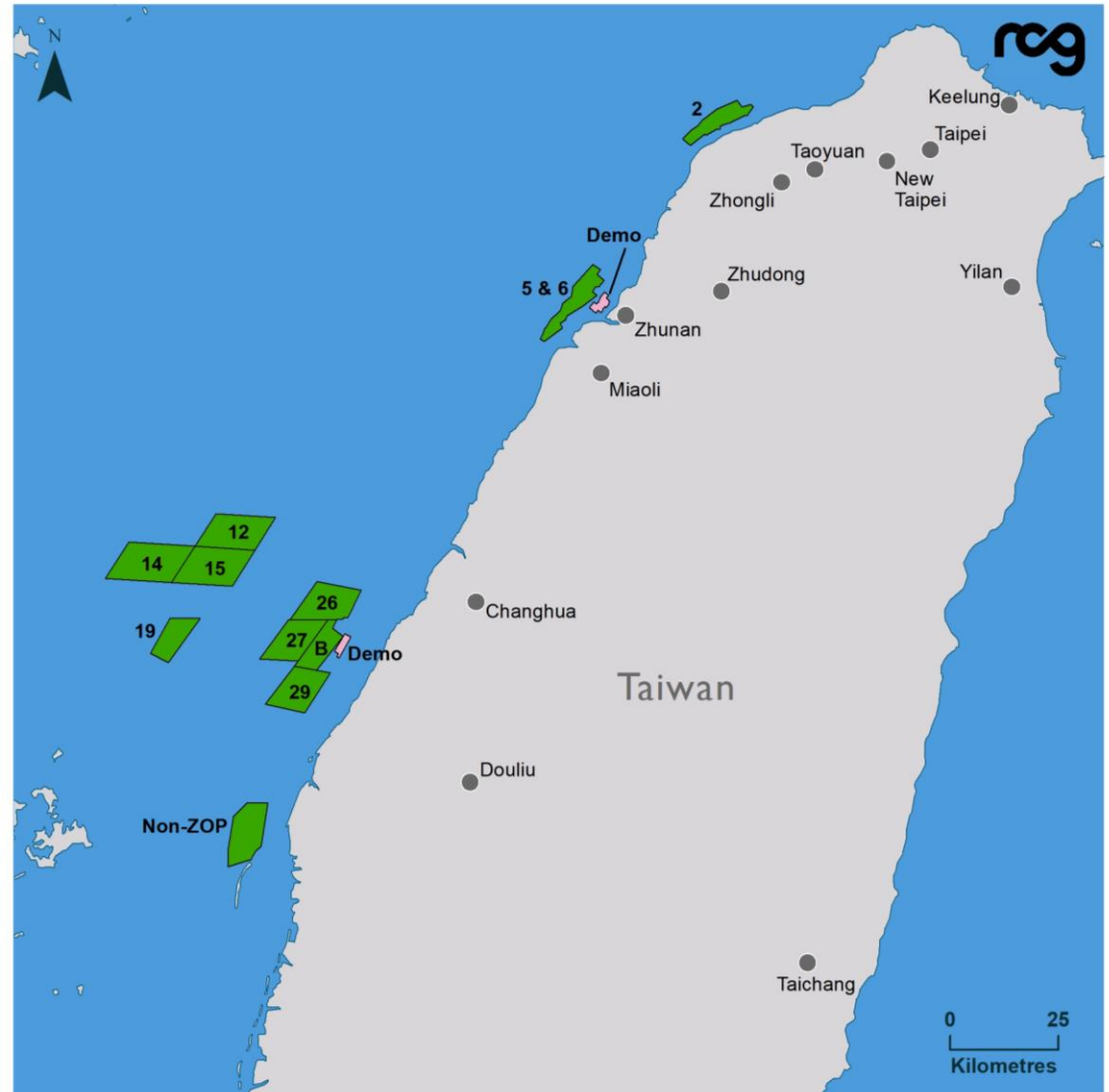
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Sites awarded 30/04/2018

Zone number	Capacity (MW)	Owner(s)
Completion target 2020		
Out of zone	360.0	InfraVest; WPD
5&6	378.0	Macquarie; Swancor
Completion target 2021 - 2025		
2	350.0	InfraVest; WPD
15	605.2	Orsted
Out of Zone	348.0	InfraVest; WPD
14	294.8	Orsted
27	100.0	CIP; TGC
27	452.0	CIP; TGC
29	300.0	CSC; CIP; Diamond Generation
B	48.0	CIP; TGC
12	0.0	Orsted
26	300.0	Taipower
19	300.0	Northland; Yushan
Total capacity by 2020 (exc. Demo)		738 MW
Total capacity 2021 - 2025		3,098 MW
Total capacity awarded		3,836 MW



Future opportunities

Auction and zonal development

Auction process overview

- Projects not awarded capacity in the selection process may enter the auction process for 2 GW installed capacity by 2025.
- Eligible projects are those which scored “60” or above in the selection process, but are not allocated their entire capacity.
- Sealed bid applications are expected to be submitted, with the auction expected to take place in June 2018.
- Bureau of Energy will allocate all remaining capacity (of the total 5.5 GW) after the capacity allocated in the selection process has been deducted.
- There is currently no clarity on the auction mechanism or how capacity will be allocated to winners of the auction process.
- Final agreed FIT will be the lowest price between granted price during the auction process and announced FIT rate in the year of signing the PPA. This poses a price risk to developers.

Zonal Development (ZD)

- Focussed on:
 - Build out of ZAP wind farms.
 - Develop a self-sustaining, growing and commercial offshore wind industry and supply chain in Taiwan.
- Additional capacity is expected to be confirmed in 2019:
 - It is estimated that there may be an additional 3 GW available capacity for projects expected to be operational between 2026 – 2035. However, no confirmation has been provided and this assessment may change.
- To date, no indication has been given as to whether zones of potential will be identified for Phase 3.

Future challenges

From policy to supply chain

Policy

- » Some policies are still yet to be announced/considered
- » Future development plans
- » The China factor (whether to accept Chinese investment, vessels, or components)
- » Lessons learnt and streamlined approach on processes e.g. consenting

Marine constraints

- » Various competing marine uses
- » Fisheries
- » Marine traffic
- » Environmental concerns (white dolphin, birds etc.)

Local infrastructure

- » Insufficient local infrastructure at present
- » Construction harbours and O&M ports
- » Grid capacity
- » Offshore substations

Supply chain

- » Local supply chain doesn't meet requirements
- » Fabrication yards
- » Qualified technicians for construction, O&M
- » Vessels
- » Suitable processes e.g. operations manuals, HSE etc.

More information



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RCG article on Taiwan market following recent announcements can be found at www.thinkrcg.com



Taiwan Offshore Wind – Game on!

1 May 2018, by Gareth Lewis and Michael Chang

A watershed moment in offshore wind for developers in Taiwan has occurred. The anticipated moment following presentations made recently for 3.5 GW of feed in tariff support is here.

With 8 MW of offshore wind already in the water and a further 230 MW being developed as part of the original demonstration phase, recent announcements now see an additional 738 MW of capacity support for delivery by 2020 and a further 3,098 MW for delivery by 2025.

Six years since the Demonstration Plan was first put forward, current announcements really show how Taiwan's offshore wind strategy is in full swing and in great shape. The result was based on those project teams able to demonstrate experience in the ability to deliver offshore wind farm projects as

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