Global investor reaction to Taiwan's offshore auction

18th September 2018

PRIVATE AND CONFIDENTIAL

AUGUSTA & CO

Augusta & Co: pioneering renewable energy transactions

- Europe's leading specialist investment bank for renewable energy
- €10bn raised across 87 successfully completed transactions
- Onshore and offshore wind, solar, biomass, hydro

Pioneering renewable energy transactions since 2002

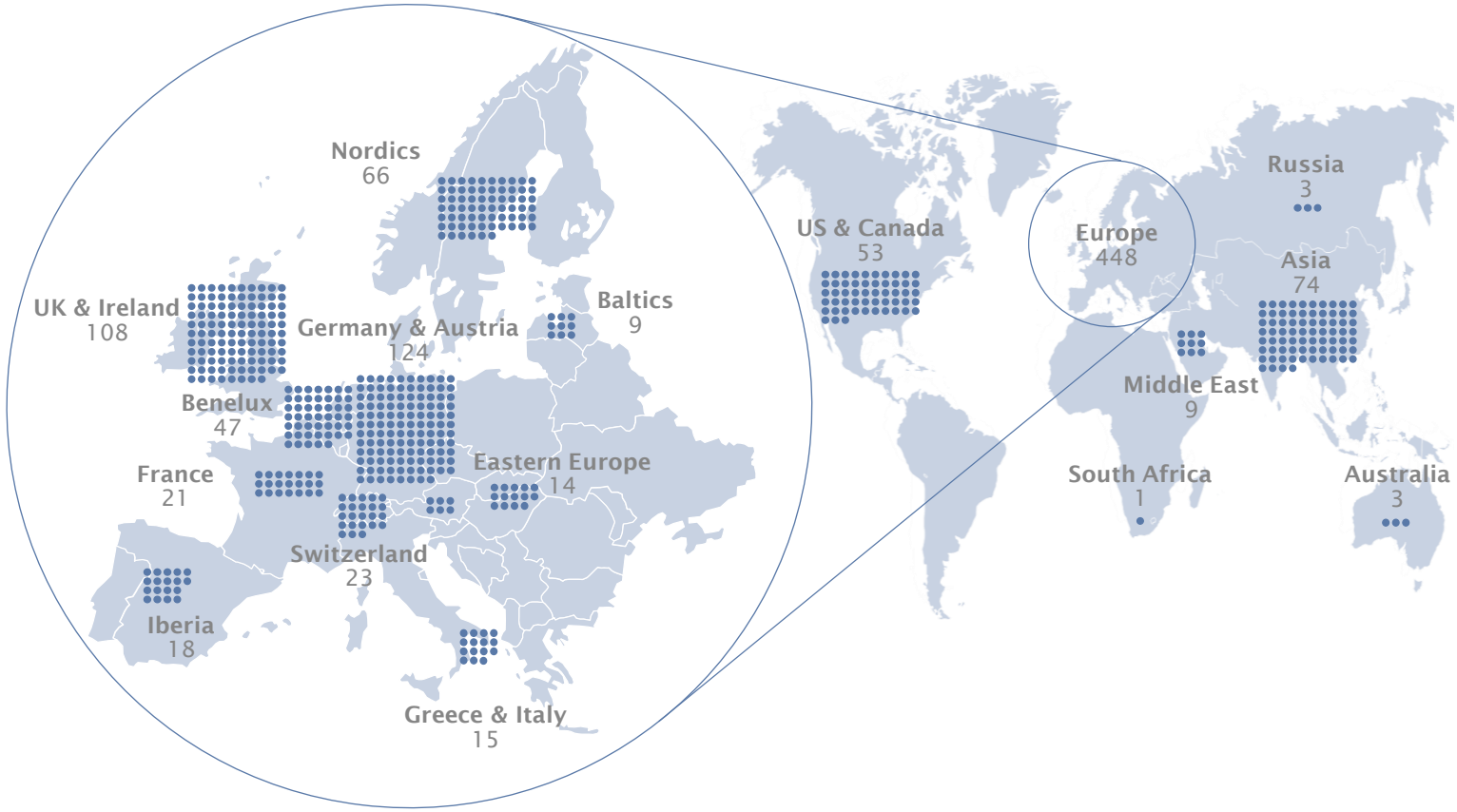
- First offshore wind project financing (North Hoyle as part of RWE Innogy's Zephyr transaction in 2004)
- First sale of pure offshore wind turbine maker (Multibrid to Areva closed in 2007/2010)
- First sale of German offshore wind project to a PE investor (Nördlicher Grund to Blackstone in 2011)
- Sale of largest offshore wind permitted and grid connected portfolio (PNE's Gode Wind to Dong Energy in 2012)
- Largest Google corporate PPA in Europe (160MW Norwegian wind farm Tellenes in 2016)
- Largest Facebook corporate PPA worldwide (294MW Norwegian wind farm, Bjerkreim cluster 2018)
- Advised Yushan Energy on the sale of a 50% stake to Mitsui (2018). Yushan is the JV partner of Northland Power in Hai Long

We have global access to capital

In five past processes, Augusta has approached 588 investors of whom 49% were strategic and 51% financial

Our database tracks 1,000+ renewable energy investors and we have executed transactions with c.100 of these

Country of Origin of Augusta's Investors Across Five Past Deals

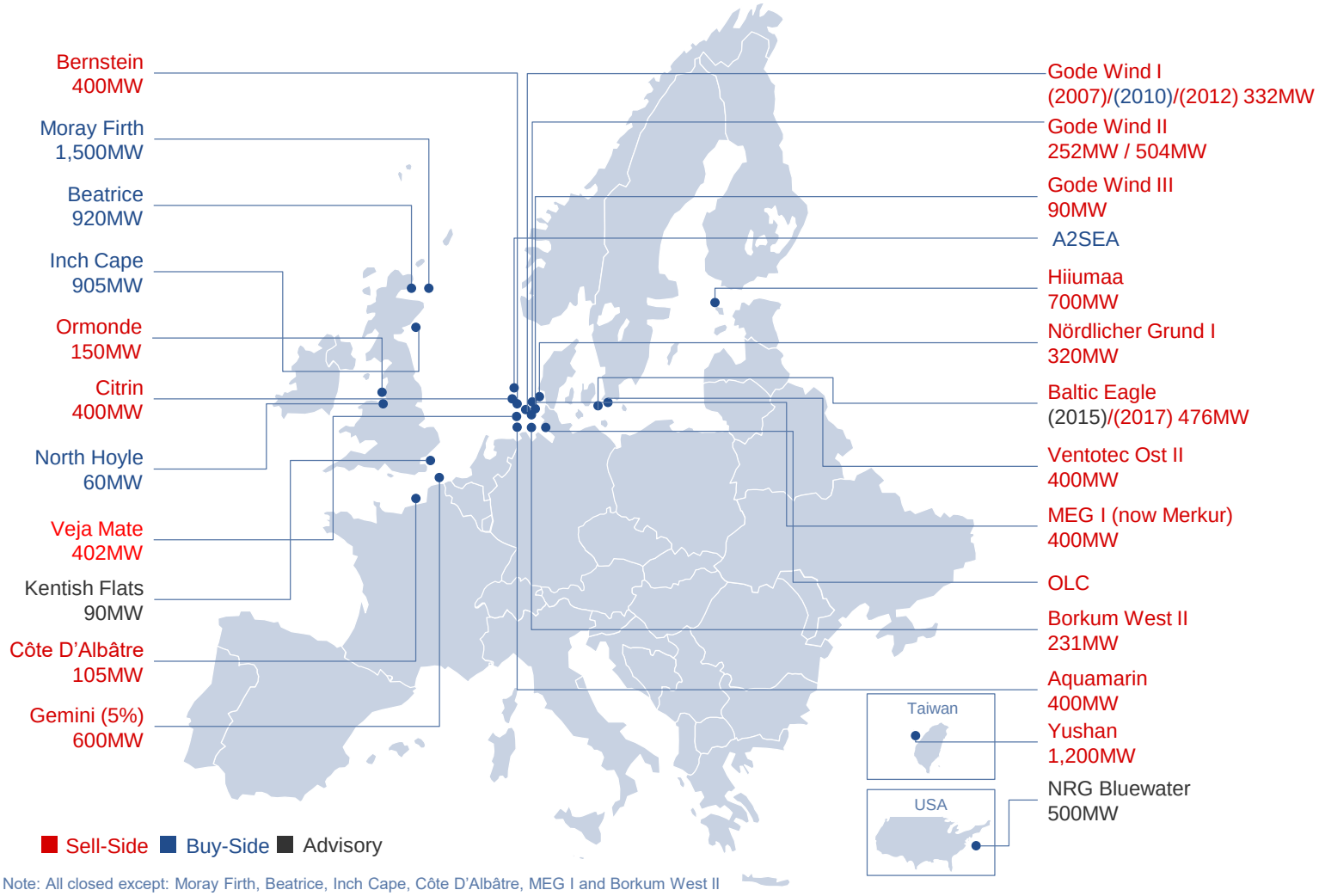


Source: Augusta & Co analysis, ● = Investor

Leading experience in the offshore wind sector

Augusta has advised on more offshore wind transactions than any other adviser:

- *17 project sell-sides closed (including 2 late stage development sell-sides)*
- *5 project buy-sides (2 closed)*
- *2 strategic advisory mandates*
- *1 TIV sell-side (closed)*
- *1 TIV buy-side (closed)*



Note: All closed except: Moray Firth, Beatrice, Inch Cape, Côte D'Albâtre, MEG I and Borkum West II

Selected offshore wind asset and supply chain transactions

Augusta has completed some of the most noteworthy transactions in the European offshore wind industry including asset and supply chain transactions

Yushan Energy / Mitsui & Co. Partial sale of Taiwanese offshore wind portfolio of up to 1,200MW 2018	DONG energy / Siemens / A2SEA / GeoSea Acquisition of leading offshore wind installation business 2017	Client Confidential Buyer Confidential Sale of large German offshore wind farm of up to 500MW 2017	seawind Valuation / Advisory Baltic Eagle (Germany) 2015	RWE The energy to lead / mpi offshore Sale of single turbine installation vessel Victoria Mathias 2015	BARD LAIDLAW CAPITAL GROUP Sale of 400MW German offshore wind farm Veja Mate 2014
Typhoon Offshore Sale of 5% of 600MW permitted Netherlands Project Gemini 2014	BARD / PNE WIND Sale of 1,400MW+ German offshore wind farms Aquamarin, Bernstein and Citrin 2013	PNE WIND / DONG energy Sale of 584-926MW German offshore wind portfolio 2012	Client Confidential Blackstone Sale of 320MW German offshore wind farm 2011	Deutsche Bank / VENTOTEC / IBERDROLA Sale of 400MW German offshore wind farm 2010	PROKON Nord Energiesysteme GmbH / AREVA €150m two-part sale of Multibrid (offshore wind power turbines) to Areva 2010 / 2007
PNE WIND / RBS The Royal Bank of Scotland Acquisition of 400MW German offshore wind farm 2010	PROKON Nord Energiesysteme GmbH / AREVA Sale of blade manufacturer PN Rotor GmbH to AREVA 2009	ECLIPSE / VATTENFALL Financial adviser on sale of UK plc & 150MW offshore wind farm 2008	PROKON Nord Energiesysteme GmbH Confidential Advisory / Valuation German offshore wind farm 2007	Plambeck Neue Energien / evelop Equity placement in 400MW offshore wind farm 2007	RWE / ARCAPITA / ENGLEFIELD CAPITAL Financial adviser on acquisition of £400m UK offshore wind portfolio 2004

The European market is setting the pace in the evolution of offshore wind….

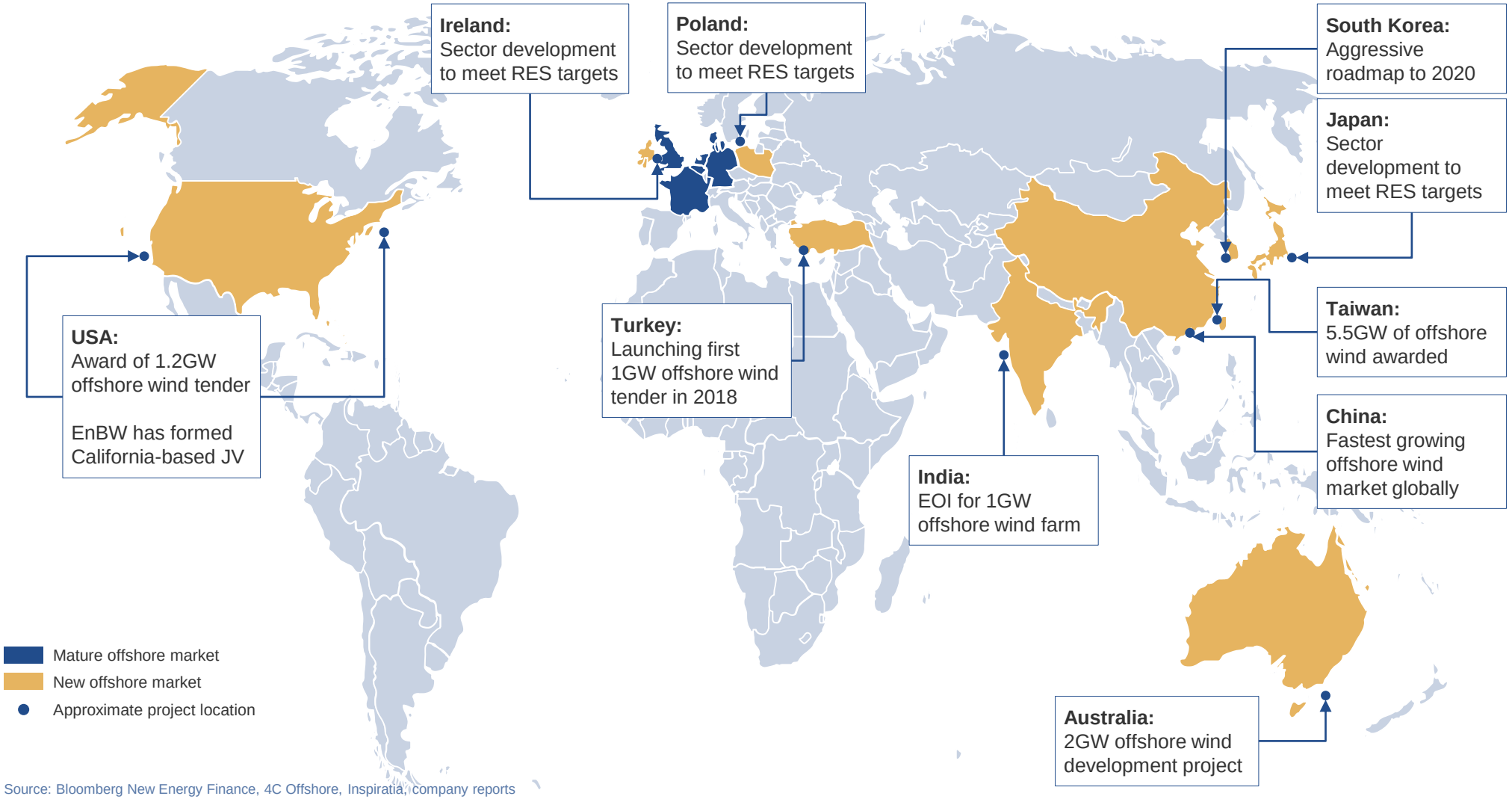
2017 and 2018 have seen a number of firsts in European offshore wind markets

Sector "firsts" in the last twelve months':

- Over 18 GW installed globally
- £57.5/MWh[1] delivery strike price for Moray East and Hornsea 2 in UK
- €35/MWh bid-equivalent LCOE for Danish near-shore[3]
- Vattenfall secures Hollandse Kust Zuid concessions on a zero-subsidy winning basis (delivery in 2022/23)
- 8.8MW WTGs deployed commercially in 2018 (Aberdeen Bay) with 9.5MW WTGs being produced (Triton Knoll)
- Hywind pilot park as the world's first floating wind farm started operations off the coast of Scotland in Oct-17
- Learning curve and auction pressures are delivering dramatic cost of energy (LCOE) benefits:
- Auctions are delivering dramatic savings, especially where development and permitting costs can be socialised
- Debt markets issuing record volumes of debt at historically low margins
  - Each quarter brings new lenders, junior/mezzanine on the rise, syndications are back - even project bonds
- Equity investors chasing lower returns

Notes: 1. In 2012 prices. 2. BNEF LCOE equivalent estimate of $55/MWh, 3. BNEF LCOE equivalent estimate of $39/MWh, 2016 prices, 2016 average USD/EUR FX rate used, Source: Bloomberg New Energy Finance (BNEF), Augusta & Co

…with new emerging offshore wind markets gearing up for growth



Source: Bloomberg New Energy Finance, 4C Offshore, Inspiratia, company reports

Taiwan's offshore wind market is set to catch-up quickly with Europe…

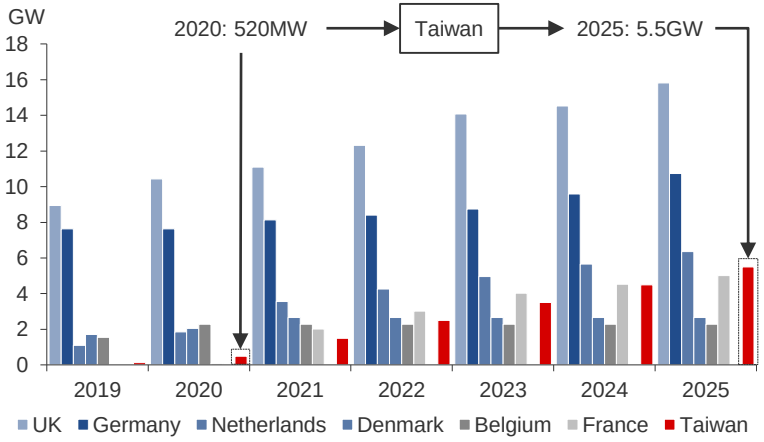
The Taiwanese target of 5.5GW of capacity by 2025 is credible with strong government support linked to a commitment to end nuclear generation

International developers and investors are flocking to Taiwan attracted by the scale and attractive conditions

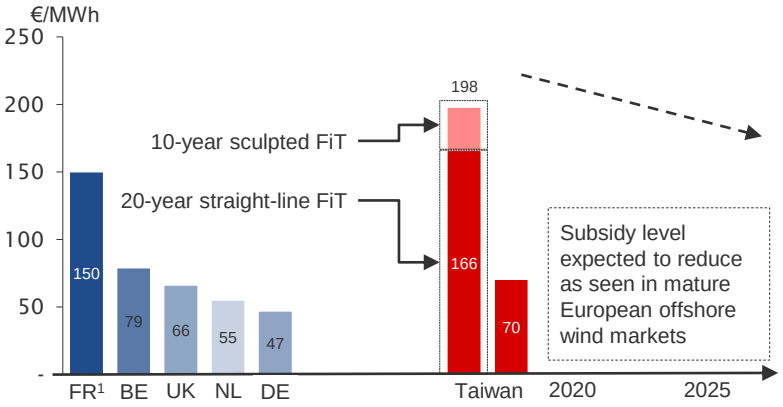
\Global investors are responding strongly to the Taiwanese Offshore Wind opportunity

- Excellent wind resource:
  - Consistent wind direction mainly from the North and North-East
  - Over 10m/s average wind speed at hub height
- Highly attractive Feed-in Tariff:
  - 3.8GW of projects were awarded a 20-year feed-in Tariff in Apr-18, structured in the following alternative ways:
    - Straight-Line: Year 1-20: TWD 5,849.8/MWh (~ €165.87/MWh)
    - Sculpted: Year 1-10: TWD 7,117.7/MWh (~ €198.43/MWh), Year 11-20: TWD 3,568.5/MWh (~ €99.48/MWh)
- A further 1.7GW were awarded a reduced feed-in Tariff in a competitive auction in mid 2018:
  - MW-weighted feed-in tariff of c.TWD 2,489/MWh (~ €70/MWh), ranging from TWD 2,224.5/MWh (~€63/MWh) to 2,548.1 (~ €72/MWh)

Expected Offshore Capacity Europe vs Taiwan

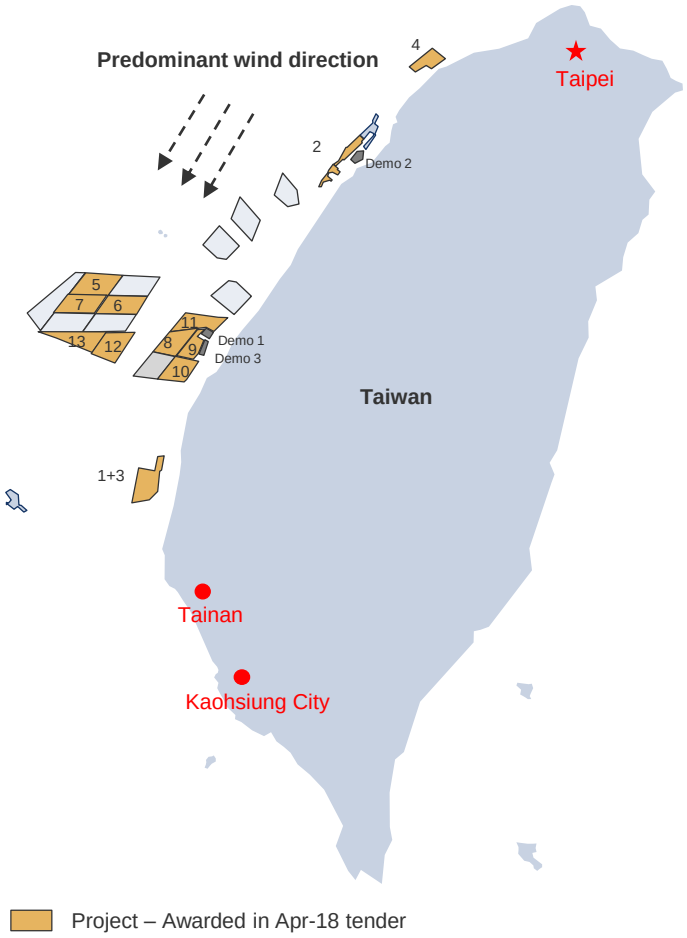


Offshore Subsidies Europe vs Taiwan (2018)



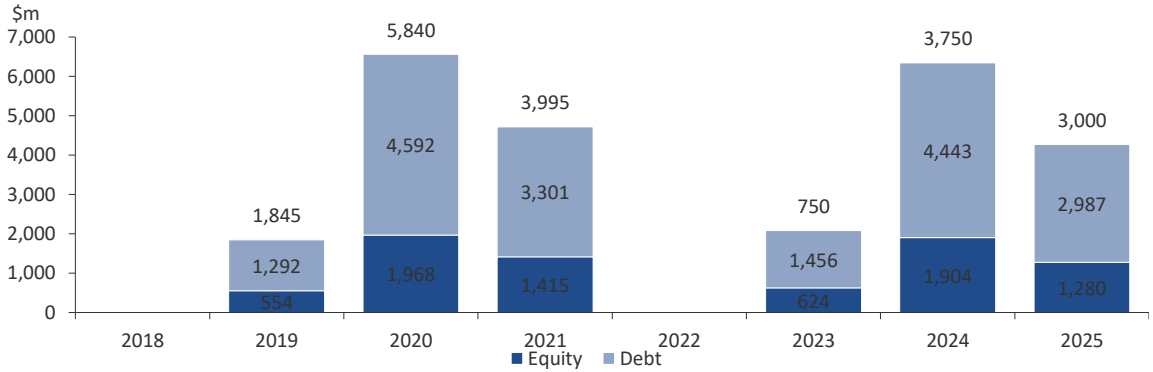
Source: Bloomberg New Energy Finance, A&Co analysis; Note: 1. Subsidies were awarded in 2012 and 2014, renegotiation of tariff levels to current level by the French government was reached in Jun-18

…with Taiwanese authorities having awarded grid connection to 5.5GW of projects…



Project	Developer	#	Capacity (MW)	Expected COD	Estimated Equity[1] ($m)	Estimated Debt[1] ($m)
Yunlin Phase I[1]	wpd	1	360	2020	540	1,260
Formosa II	Swancor/Macquarie	2	378	2020	567	1,323
Yunlin Phase II	wpd	3	348	2021	522	1,218
Guanyin	wpd	4	350	2021	525	1,225
Greater Changhua NW	Ørsted	5	583	2025	874	2,041
Greater Changhua SE	Ørsted	6	605	2021	908	2,118
Greater Changhua SW	Ørsted	7	632	2021	442	1,032
Changhua ChangFang	CIP	8	552	2025	828	1,932
Xidao	CIP	9	48	2025	72	168
Chungnan	CIP/DGA/CSC	10	300	2025	450	1,050
Changhua Phase II	TaiPower	11	300	2025	450	1,050
Hai Long II	Yushan/NPI	12	532	2024	798	1,862
Hai Long III	Yushan/NPI	13	512	2025	768	1,792
Total			**5,500**		**$8.2bn**	**$19.3bn**

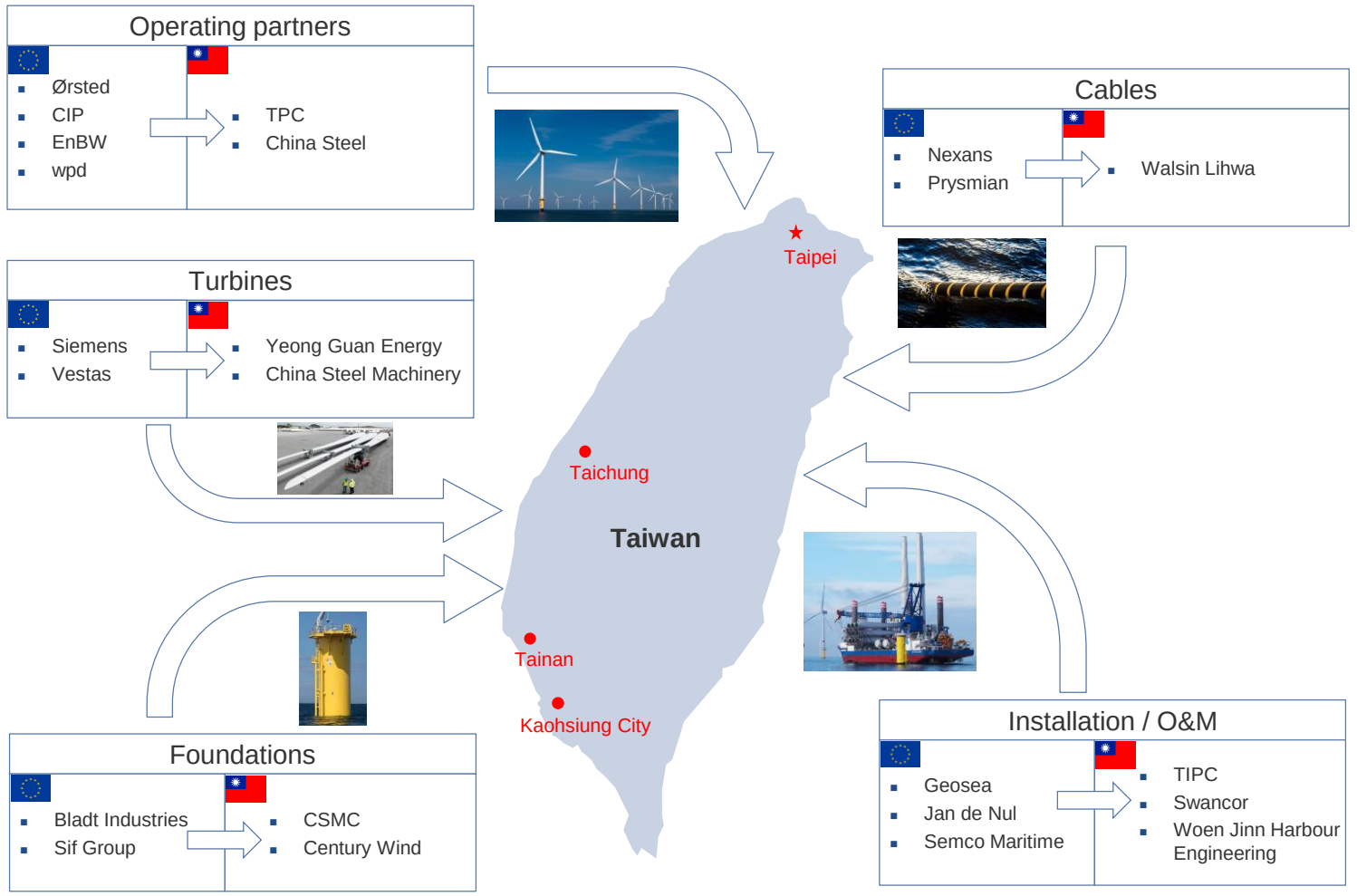
Estimated Annual Capital Requirements[2]



Source: News, developer publications, 4C Offshore, A&Co analysis; Notes: 1. Sell-down process initiated; 2. Based on total capex of $5m/MW and a 70% leverage assumption. Construction assumed to take two years

…accelerated development delivered through European technology transfer

A partnership proposition between local supply, chain and experienced European players



Source: News, developer publications, A&Co analysis

…with institutional investors willing to invest more aggressively and before COD

	Wind Farm(s)	Date	Vendor	Acquirer	Gross MW	Stake Acquired	Transaction Enterprise Value			Pre-tender/ Auction	Pre-FC	FC	Construction	COD	Levered
							Value	Per MW	Per MWh						
	Hohe See & Albatros	May-18	Enbridge	CPPIB	609	24.5%	€367m	2.46					✓		
	Borssele III & IV	Jan-18	Blauwwind consortium	Partners Group	732	45%					✓				
	Borkum Riffgrund 2	Aug-17	DONG Energy	GIP	450	50%							✓		
	Trianel Borkum II	Feb-17	Trianel and EWE	ewz and Fontavis	198.4	24.5%					✓				
	Nordergründe	Dec-15	wpd	Gothaer	110.7	40%	€423m[1]	€3.82m				✓			✓
	Beatrice	Jan-16	SSE	CIP	588	10%					✓				
	Burbo Bank Extension	Feb-16	DONG Energy	PKA, Kirkbi (Lego)	258	50%	€1.7bn	€6.57m				✓			✓
	Lynn and Inner Dowsing	Feb-16	Centrica / EIG	GIG (61%), BlackRock (39%)	194.5	100%	€521m	€2.69m	€899					Mar-09	
	Ormonde	Dec-15	Vattenfall	AMF	150	49%	€649m	€4.33m						Feb-12	
	Rampion	Aug-15	E.ON	GIG	400.2	6%	€1.7bn	€4.15m	€1,245				✓		
		May-15	E.ON	GIG	400.2	19%	€1.7bn	€4.28m	€1,284			✓			
	EnBW Baltic 2	Nov-15	Macquarie Capital	Arztliche B'schaft	288	3.26%							✓		✓
		Jun-15	Macquarie Capital	PGGM	288	30%							✓		✓
		Jan-15	EnBW	Macquarie Capital	288	49.9%							✓		✓
	Gode Wind 1	Sep-15	DONG Energy	GIP	330	50%	€1.6bn	€4.73m					✓		✓

Notes: 1. Debt estimated based on news reports that EIB and KfW IPEX provided c. two-thirds of the €410m capex. FX rate used at Date of Announcement, Source: Augusta & Co, Inspiratia

Ørsted has pioneered the "farm down" strategy in Europe

Ørsted's strategy is to recycle capital early through asset rotation and create value through partnerships that share the capital cost whilst preserving Ørsted's exclusive role in supporting services

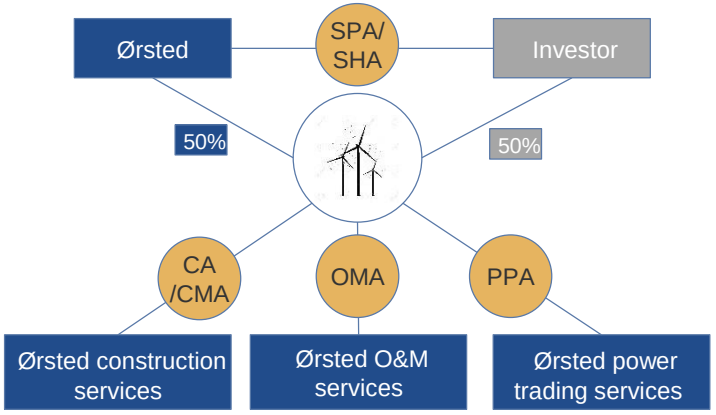
Under the "farm down" approach, Ørsted sells typically 50% of its wind farm asset to a financial or strategic investor at a price around the NPV of the project based on Ørsted's cost of capital. This enables Ørsted to liquidate capital for reinvestment in new projects whilst retaining exclusive control over supporting services such as O&M and PPA management.

Ørsted operates two types of partnership when it farms down a wind asset:

- The EPC wrap model is favoured by Ørsted
  - To insulate an investor from its efficient but complex multi-contract construction strategy
  - To maximise value by providing a guarantee to the investor that a project will reach COD at pre-agreed cost

The Partnership Model Tools

- Ørsted can deliver a gradual increase in risk protection through a series of optional agreements:
  - Construction (CA)
  - Construction Management (CMA)
  - O&M
  - PPA



Offshore wind returns have been compressed to the level of onshore wind

Assuming these returns work for investors, offshore wind ought to be more attractive owing to investors' relative ability to deploy more capital in projects

It is worth noting, industry views are still developing on the following key value drivers that will determine the sector's long-term attractiveness as an asset class:

- *Project life*
- *O&M strategy and costs*
- *Turbine availability*

Consideration	Onshore wind	Offshore wind (2015)	Offshore wind (2017)
Equity IRR	▪ 8-10%	▪ 9-10%	▪ 7-9%
Project life	▪ 25-30 years	▪ 25 years	▪ 25-30 years
Typical stakes	▪ Majority ▪ Levered	▪ Minority ▪ Levered/Unlevered	▪ Minority ▪ Levered/Unlevered
Operating partners	▪ O&M/TCM agreements	▪ Industrial or strategic equity partner	▪ Industrial or strategic equity partner
Scale (Gross)	▪ 10-100MW	▪ 60-700MW	▪ 200MW-1.5GW
Typical gearing at FID	▪ 80%	▪ 0-60%	▪ 0-70%
Yield performance	▪ Sub P50 ▪ 30-40% CF	▪ ~ P50 ▪ 35-45% CF	▪ >P50 ▪ 45-55% CF
EBITDA margins	▪ 80%	▪ 70%	▪ 70-80%
Subsidy	▪ ROC: 0.9/MWh ▪ CfD: £80/MWh	▪ ROC: 1.5/MWh ▪ CfD: ~ £115/MWh	▪ ROC: None ▪ CfD: £57.50-74.75/MWh
Capex	▪ £1.2-1.5m/MW	▪ £4.0-5.0m/MW	▪ £2.3-3.0m/MW
EV/MW (COD)	▪ £2.0-2.7m/MW	▪ £4.5-5.5m/MW	▪ £3.5-4.5m/MW
EV/MWh (P50)	▪ £800-850/MWh	▪ £1,100-1,300/MWh	▪ £700-1,000/MWh

Reflections from Augusta's Taiwanese M&A experience

International equity keen to deploy

- Diverse interest from global players (funds, PF, utilities)
- Appetite from passive capital to risk share pre FID to boost returns
- Levered IRR targets started 200bps higher than Europe but this picture is changing fast
- Quality sponsor still critical as consortium partner

…however, domestic equity still cautious

- Quite a few Asian investors showed interest and submitted indicative bids
- However, local Taiwanese institutions remained in exploratory mode at that stage

Market cautious that domestic debt markets can match capital need but international banks are bullish.

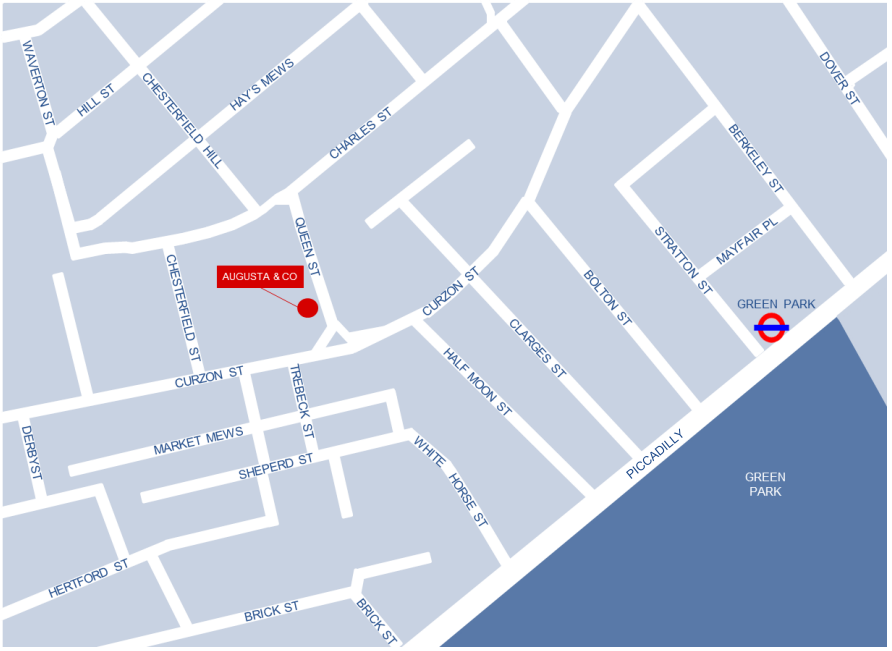
- Political framework (non-OECD):
  - Taiwan is not part of OECD, which excludes many investors active in European offshore
- Regulatory changes:
  - Important aspects such as performance bonds are evolving
- FiT PPA concept:
  - Legal framework was evolving and excluded standard aspects common in Europe such as change of law, curtailment or force majeure but other legal protections compensate
- The positive reaction of global investors to the Taiwanese auction has been confirmed:
  - Largest offshore wind developers competing for projects
  - Supply chain has eagerly embraced the opportunity
  - Equity and debt finance moving fast to get involved

A&Co Contacts

AUGUSTA & CO

Augusta & Co contacts

Meadows House, 2nd Floor
20-22 Queen Street
London, W1J 5PP
Tel: +44 (0)20 7776 0800
www.augustaco.com



Disclaimer
This document (the "Document") with the information contained therein is confidential and proprietary to Augusta & Co Limited ("Augusta"). It has been prepared for information purposes with the express understanding that it is to be read solely by the person to whom it is addressed and his/her professional advisers. Without prior permission of Augusta, no person accepting this document will release or reproduce (in whole or in part) this Document, discuss any information contained herein, make representations or use such information for any purpose other than to evaluate a potential involvement in the transaction proposed. Augusta is authorised and regulated by the Financial Conduct Authority in the United Kingdom.