IWEA

Irish Wind Energy Association

New Horizons: Ireland's Offshore Wind

Dr. David Connolly, CEO, IWEA

12th September 2019

IWEA Represents ~90% of Wind Energy in Ireland

Members across existing assets, development & supply chain for onshore & offshore:

- Wind farm developers
- Asset owners
- Supply Chain:
  - Turbine manufacturers
  - Construction companies
  - Supply companies
  - Accountants
  - Insurance
  - Consultancy
  - Legal firms
  - Banks

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2030:
A Game Changer

REQUIRES AT LEAST 3.5 GW OF OFFSHORE WIND ENERGY BY 2030

News > Ireland | World Business Sport Nuacht Programmes RTÉ Investigates

Government pledges to generate 70% of electricity from renewable sources by 2030

Updated / Monday, 25 Mar 2019 **14:17**

Technology	NDP 2030	Uptake to meet 2030 targets (Based on MACC analysis) 2025	2030
Electricity — **Total RES in Generation mix[4], %**	**55**	**52**	**70**
▪ Onshore wind, GW	~7	~6.5	~8.2
▪ Offshore wind, GW	1.8	~1.0	~3.5
▪ Solar PV, GW	1.5	~0.2	~0.4

How Can We Work Together to Deliver the Benefits of Offshore Wind in Ireland?

Huge Potential

Rapidly Falling Prices

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reNEWS

IN THE OFFSHORE PIPELINE

Project, location	MW	Developer	Status
Arklow Bank 2, Wicklow	520	SSE Renewables	Legacy
Braymore Point, Dublin	800	SSE Renewables	Early-stage development
Celtic Sea Array, Waterford	800	SSE Renewables	Early-stage development
Clogherhead, Louth	500	ESB, Parkwind	Early-stage development
Codling Bank 1, Wicklow	1100	Fred Olsen, Hazel Shore	Legacy
Codling Bank 2, Wicklow	1000	Fred Olsen, Hazel Shore	Advanced development
Cooley Point, Louth	500	ESB	Early-stage development
Dublin Array, Dublin	600	Innogy, Saorgus	Advanced development
Helvick Head, Waterford	1000	Energia	Early-stage development
Inis Ealga, Cork	400	DP Energy	Early-stage development
Kilmichael Point, Wexford	500	ESB	Early-stage development
NISA, Louth/Meath	750	Statkraft	Early-stage development
Oriel, Louth	330	Oriel, Parkwind, ESB	Legacy
Skerd Rocks, Galway	400	Fuinneamh Sceirde Teoranta	Advanced development
Unnamed project, tbc	1000	Energia	Early-stage development
Total:			**10.2GW**

>10,000 MW of Offshore in Pipeline in Ireland

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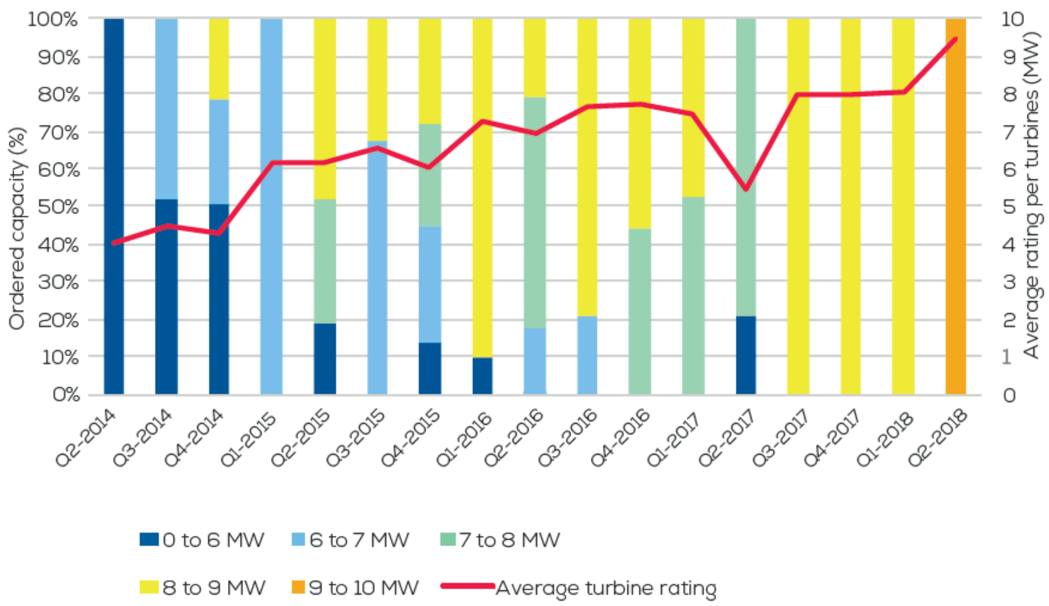
Offshore Turbine Technology Rapidly Improving

>8 MW MW Available Today

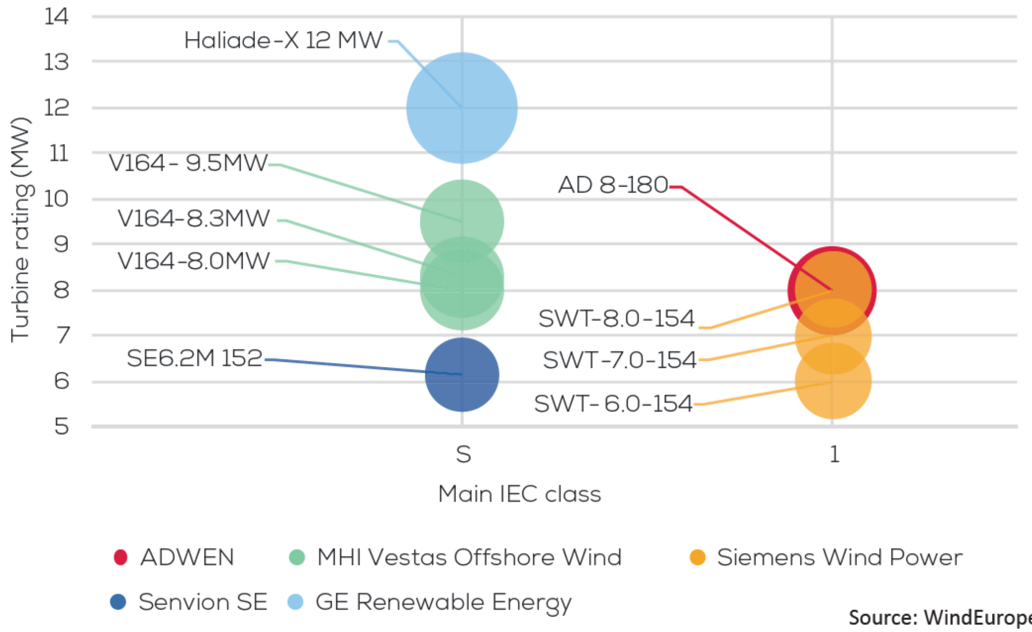
FIGURE 26
Ordered offshore wind turbine power ratings in Europe



Source: WindEurope

12 MW Available Soon

FIGURE 29
6 MW+ offshore turbines currently available in Europe (size of the bubble represents the rotor diameter)



Source: WindEurope

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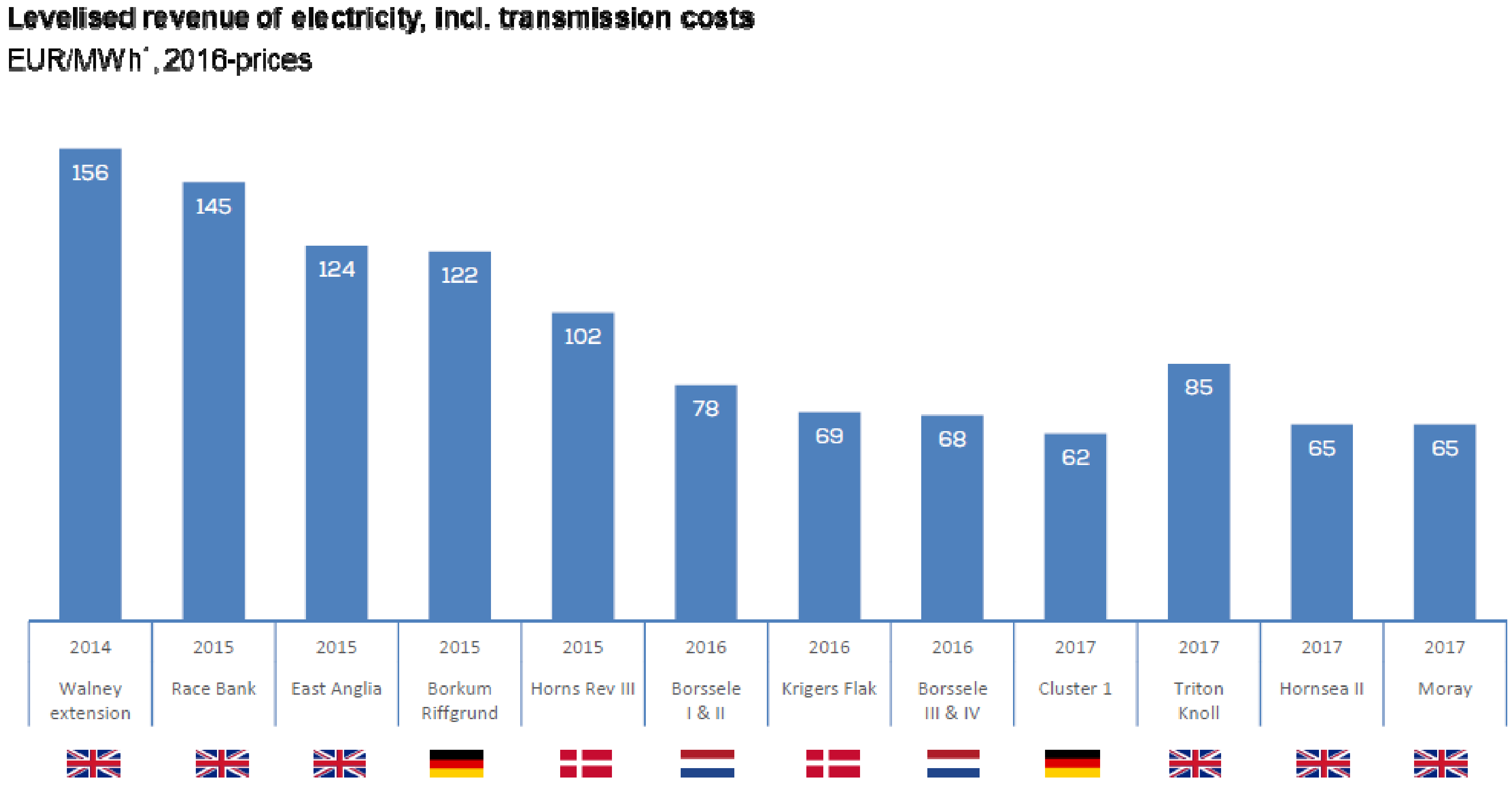
Prices Dropping in Other Auctions



Offshore Wind Prices Falling Rapidly once Industry is Established

Critical to 3500 MW of Offshore by 2030

Time

Policy Alignment

Supply Chain

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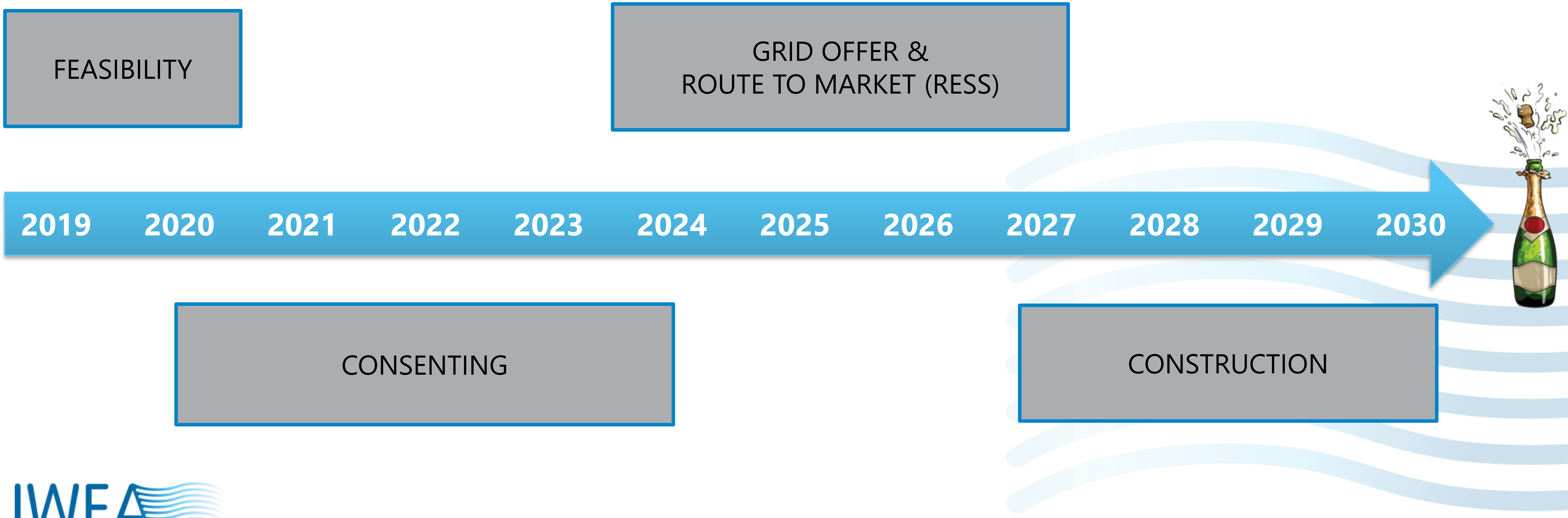
2030 is Very Close for a New Offshore Project: Need to Reduce this Timeline!

Estimated Timeline to 2030 for a New Offshore Project



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Policy Alignment for Offshore Wind in the Climate Action Plan?

Legacy Projects – Vital for 2025

Transition Protocol for Consenting by Q4 2019

Grid Offer by Q2 2020, must accept by Q4 2021, Developer Led

RESS by Q2 2021

Enduring Projects – Vital for 2030

Consenting Regime by Q4 2020 (final step is NMPF)

RESS in Q3 2022 & in Q3 2024

Grid Offer +8 Months, EirGrid Led

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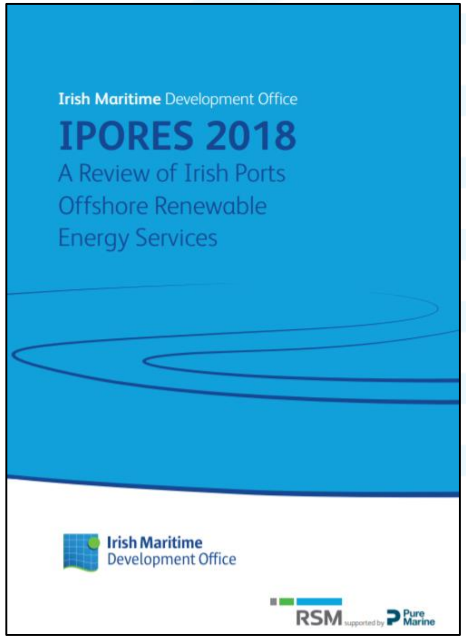
Supply Chain is Critical

- Competing on a global market
- Vital that Ireland gets started as soon as possible to attract the supply chain
- A top priority for IWEA to kickstart the industry
    - Engaging with Irish ports to ensure they are ready
    - Work underway by IWEA on the supply chain to identify:
        - Needs
        - Opportunities
        - Gaps
        - Policies required



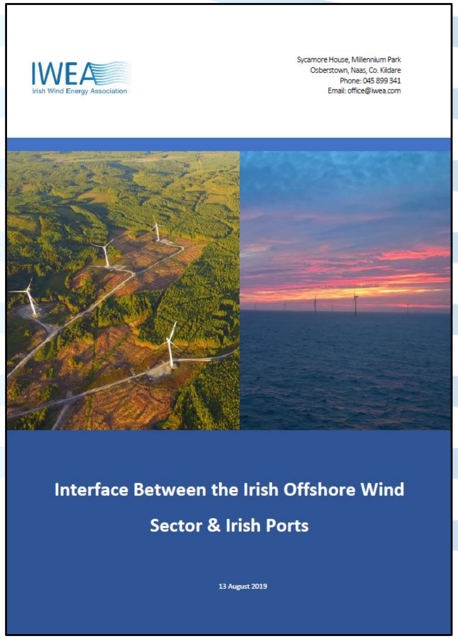
Irish Maritime Development Office

IPORES 2018

A Review of Irish Ports Offshore Renewable Energy Services

Irish Maritime Development Office

RSM supported by Pure Marine



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Interface Between the Irish Offshore Wind Sector & Irish Ports

13 August 2019

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