

# Oceanex Energy Australia and New Zealand Offshore Wind Projects

Presentation to Society for Underwater Technology on Oceanex, its' projects, partnership with Equinor and potential opportunities in Australia and New Zealand



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# The Oceanex Team

Oceanex Energy's ownership is comprised of Andy Evans, Peter Sgardelis and Green Tower B.V., a specialist renewables investor. Together, the ownership team brings local and global knowledge and experience in establishing and growing the offshore wind industry in Australia with strong financial experience and support to grow a thriving new industry for Australia and New Zealand.

Oceanex is partnering with Equinor, the large Norwegian energy company and a floating foundation pioneer, as its' investor and development partner (in its' project-specific special purpose vehicles) on its' NSW projects only from 2 December 2022. The Oceanex team has grown in recent months to include:

Andy Evans – Chief Executive Officer (Melbourne)

Peter Sgardelis – Chief Development Officer (Melbourne)

Emily Scivetti – Chief Operating Officer (Sydney)

Jordan Glanville – Infrastructure Manager (Melbourne)

Tim Donnan – Director of Land, Environment and Approvals (Sydney)

Karly Spronk – Operations Manager (Sydney)

Sarah Guilfoyle – Stakeholder Manager (Newcastle)

# The Broader Context – Oceanex Portfolio in Australia and NZ



Oceanex is proposing to develop a minimum of 4 projects off the coast of NSW (with and WA with generation capacity exceeding 8,000MW (noting Ulladulla is not in the priority category) and up to 3 projects off the coast of New Zealand with a generation capacity exceeding 3,000MW. Each project is strategically located close to a strong offshore wind resource within proximity industry and employment centres, key electricity load bases and key grid infrastructure with upcoming capacity and availability

# The Oceanex Proposal for Australia

	Foundation	Area km <sup>2</sup>	Indicative MW	Distance shore	Ports	Commencement	Completion
Hunter/ Newcastle	Floating	<700	2000	30 km	Newcastle, 68km	2029	2032
Illawarra/ Wollongong	Floating	<700	2000	27 km	Port Kembla, 40km	2029	2032
Eden	Floating	<700	2000	20 km	Port Kembla, 315km	2031	2034
Bunbury	Fixed	<700	2000	32km	Bunbury/Fremantle	2030	2033

(Indicative figures and dates only)

# The Oceanex Proposal for New Zealand

	Foundation	Area km <sup>2</sup>	Indicative MW	Distance shore	Ports	Commencement	Completion
Taranaki A	Floating	499	1000	20km+	Port Taranaki	2028	2031
Taranaki B	Fixed	497	1000	20km+	Port Taranaki	2028	2031
Waikato	Floating	498	1000	20km+	TBD	2030	2033

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**ALL PROJECTS**

# Potential Economic and Regional Benefits for Australian Projects

Oceanex Proposal: Development and construction of 4 projects with a generation capacity of 8,000MW+. Projects proposed off the coast of Newcastle, Illawarra, Eden and Bunbury

## A\$40b+

Estimated capital expenditure for 4 priority projects (10,000MW) PLUS >\$200m development expenditure per project for up to 5-7 year period

## 3,000+

Estimated direct jobs per project during the construction period of 3-4 years (per project)

## 35-65%

Estimated local content used to construct offshore wind during construction period

## 300

Estimated local jobs per project during the operations and maintenance period (30 years)

# Why Offshore Wind for Australia – The Real Narrative?

Offshore wind provides large-scale clean, reliable, affordable electricity that creates huge new investment and jobs to transform Australia and its key regions. Offshore wind provides many benefits that differentiate it from other large infrastructure projects and proposed new sources of electricity generation including:



## ELECTRICITY RELIABILITY AND SECURITY

Large electricity supply and network reliability with generation that meets peak demand periods. Wind blows longer/stronger at sea.



## MEETING KEY GOVERNMENT OBJECTIVES

Assisting Government meet policy goals whether environmental, energy, employment, investment, social or otherwise including Electricity Infrastructure Roadmap (NSW) and Net Zero goals



## DOWNWARD PRESSURE ON PRICES

Places downward pressure on electricity prices due to large injections of electricity supply into the market when the market needs power at peak times



### **MARKET ACCESS USING EXISTING GRID – COAL EXITS**

Utilisation of robust grid transmission infrastructure - grid close to offshore wind resource where projects planned to take advantage of upcoming grid availability (10GW coal exiting NSW by 2040).



### **LARGE INBOUND INVESTMENT**

Global investment in offshore wind to increase 15-fold by 2040 - attractive for long-term, local and international investors.



### **INNOVATION/NEW INDUSTRIES - HYDROGEN**

Enable acceleration of large hydrogen and electric transport industries and be a leader in progressing global floating foundation technology for offshore wind



### **ENERGY IN RIGHT PLACES - AVOID COMPETING USE**

Flexibility of site location to avoid environmental issues, and competing land use, visual and noise-based issues more familiar with land-based projects



### **R&D / EDUCATION LEADERSHIP**

Chance for R&D and education leadership by developing regional education, training and centres of excellence for Asia Pacific region



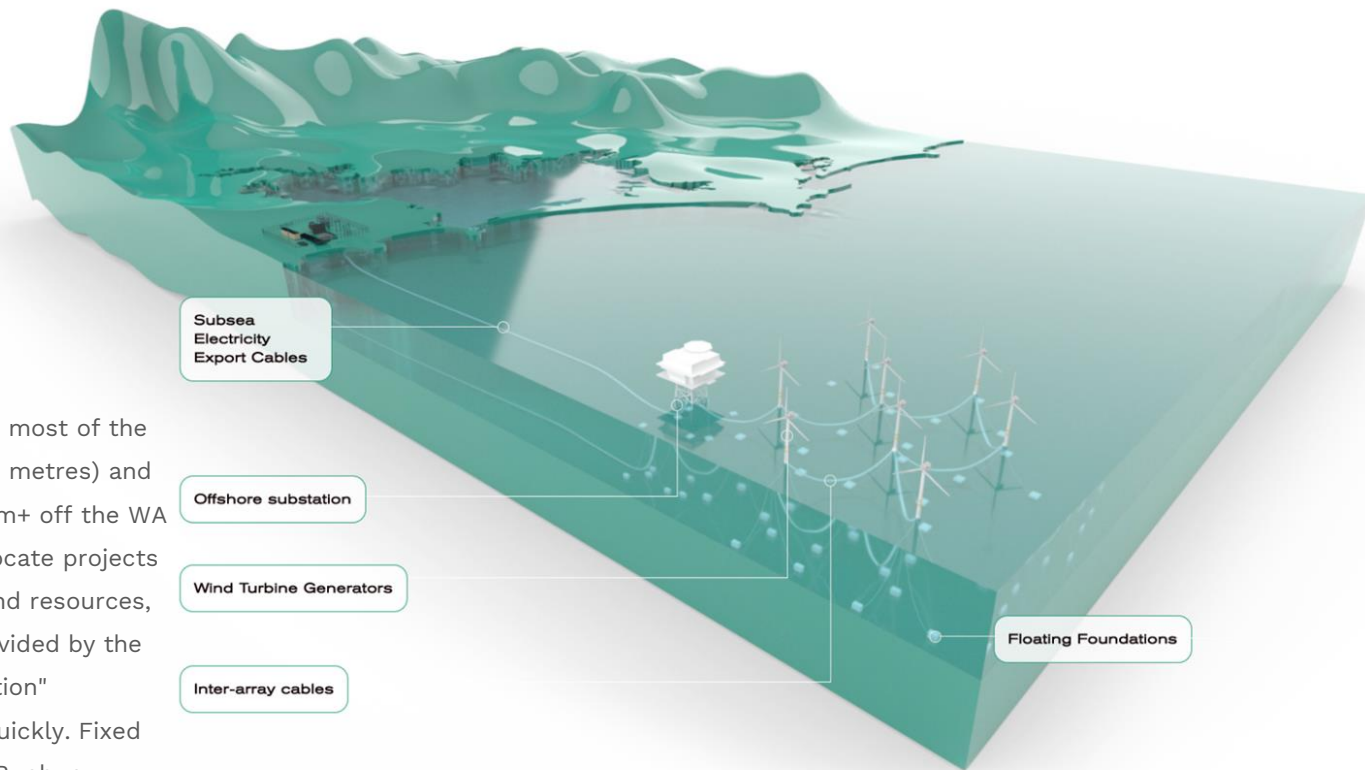
### **EMPLOYMENT STIMULUS FOR DECADES**

Utilising a strong history in energy generation, ports and marine industries to transition to new related industries with shared skillsets



# What an Offshore Wind Farm Looks Like

The prevalence of deep water off most of the New South Wales coastlines (<70 metres) and shallow waters (<70 metres) 30km+ off the WA coastline, provides flexibility to locate projects that best utilise the excellent wind resources, grid access and the potential provided by the advancement of "floating foundation" technology which is developing quickly. Fixed foundations will be used for the Bunbury Offshore Wind Farm. Oceanex projects planned a minimum 20km+ from coastline to minimise visual amenity issues and access stronger wind

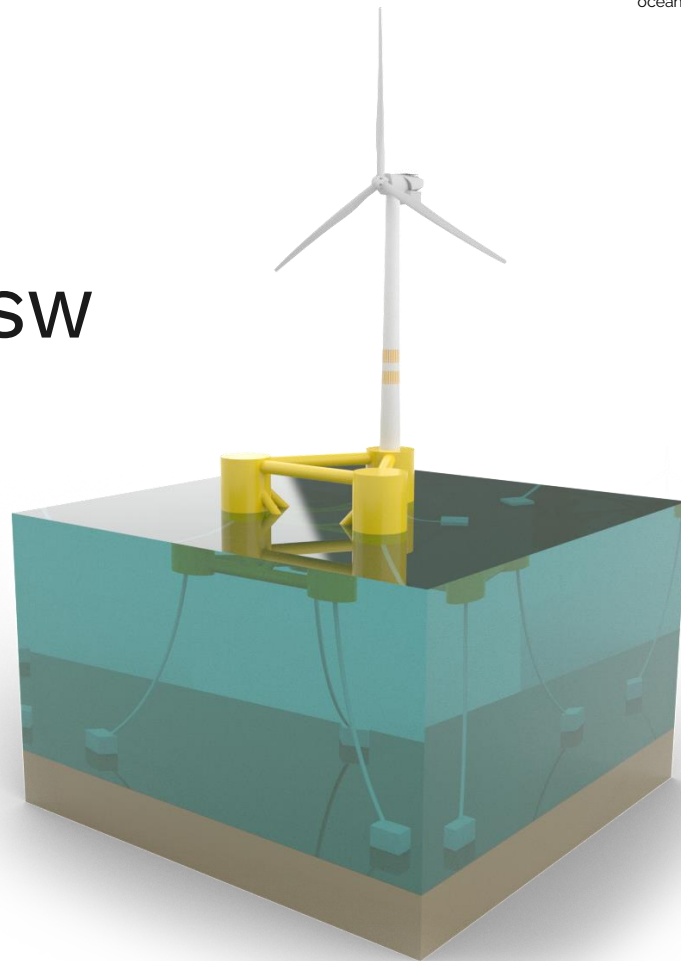


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# Potential of Floating Foundation Technology - NSW

The NSW projects have been designed to deploy floating foundations (>70m water depth) which, when combined with excellent wind resources and developed regional industries, are perfect to host such projects. Benefits include:

- Access to more Ocean Site Locations
- Increased Local Industry Opportunities
- Reduced Seabed Impact
- Leverage Existing Industry Expertise (especially large manufacturing, port logistics, project management)





equinor

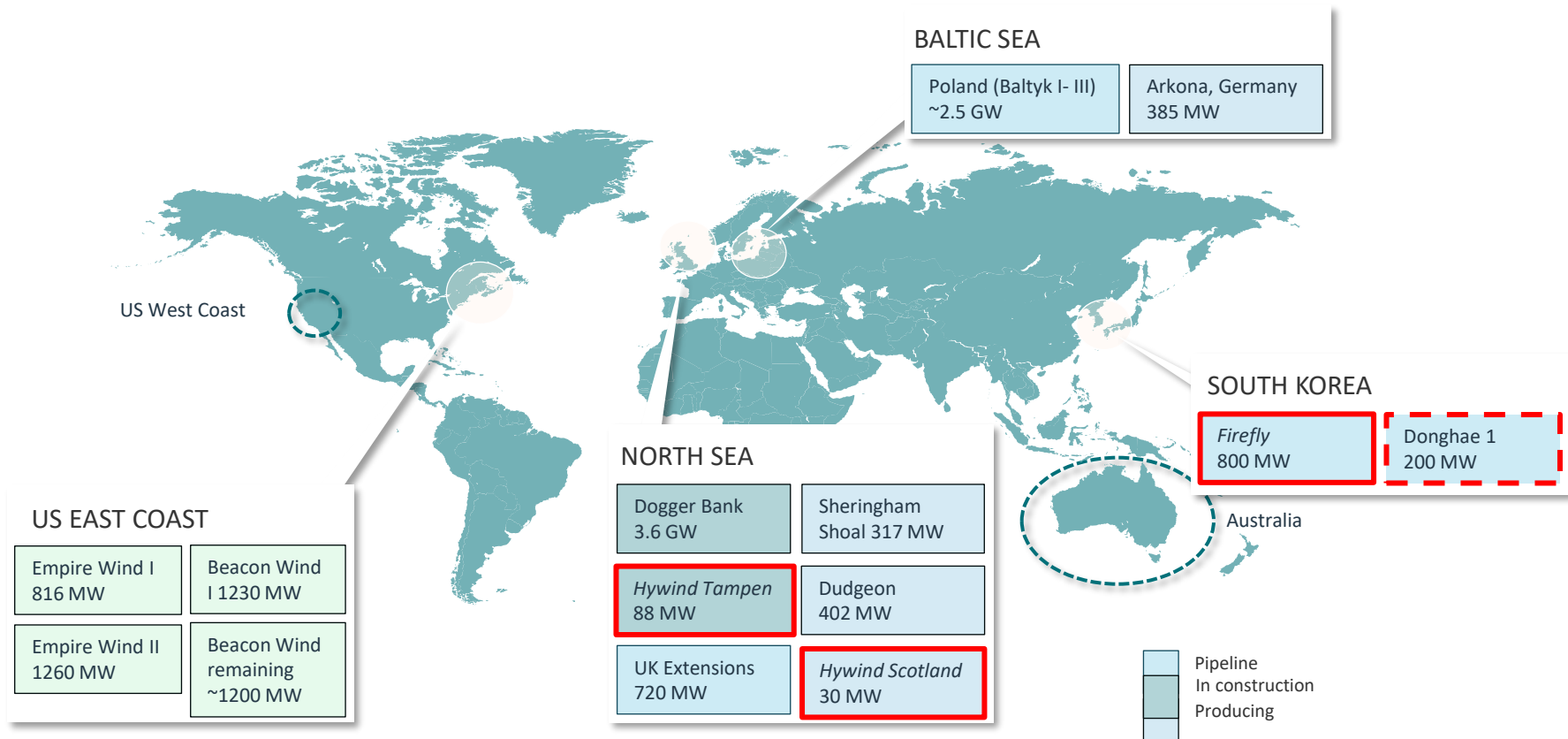
# Floating offshore wind - Equinor's experience

Society for Underwater Technology  
Perth 5 April 2023

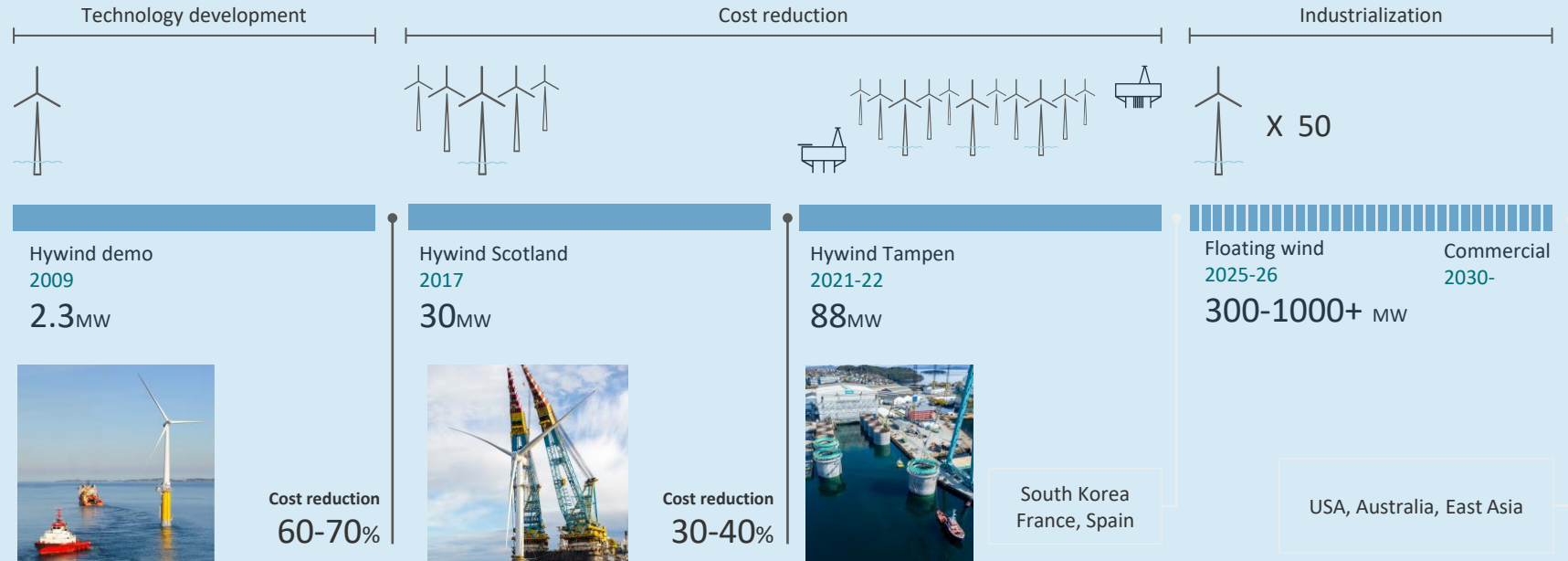
(9 Equinor slides as presented by Andy Evans, Oceanex)

# An energy major in offshore wind

High-value growth in renewables: 12-16 GW capacity by 2030

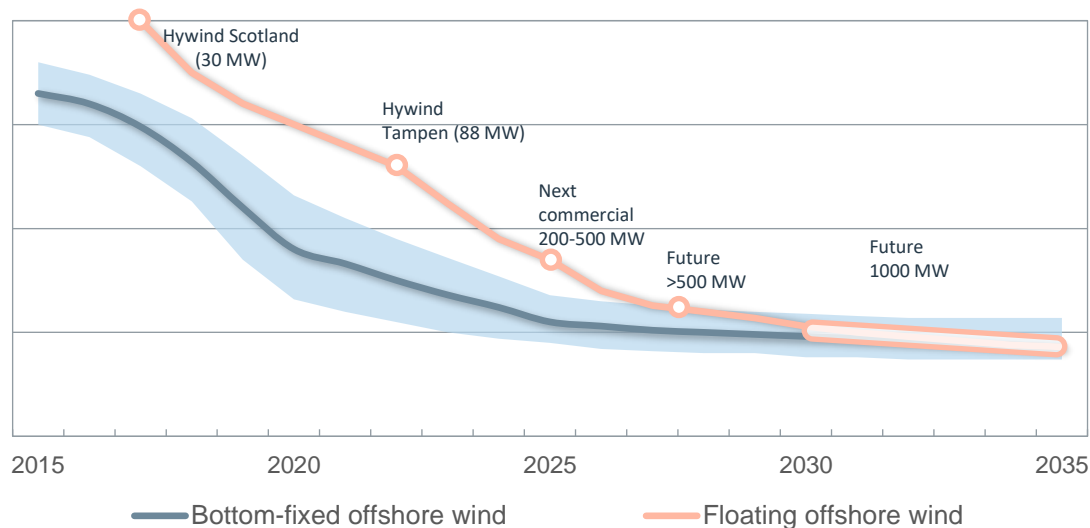


# Floating offshore wind is in the process of industrialisation



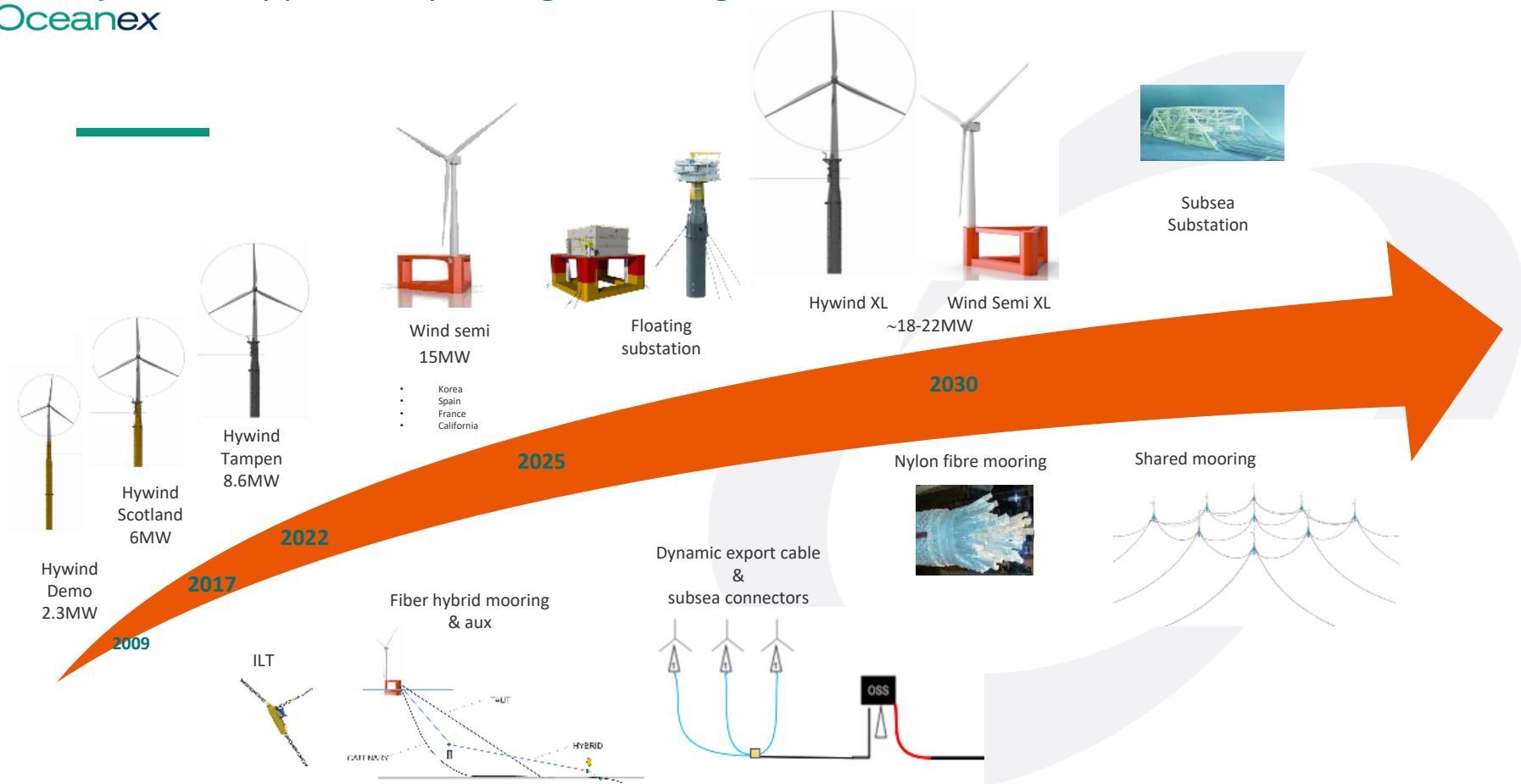
# Global trend of cost reduction projected – depends on local market dynamics

## LCOE



## Cost reduction drivers

- Project experience
- Scale effects (larger turbines, projects, pipeline)
- Competitive supply chain
  - Efficient and standardised
  - Mass fabrication of substructures
- Incremental & disruptive innovation





# FLOATING WIND

Design principles and transferable experience



Design principles  
Spar/SemiSub

Turbine  
controller

Mooring &  
anchoring system

Electrical System  
Infrastructure

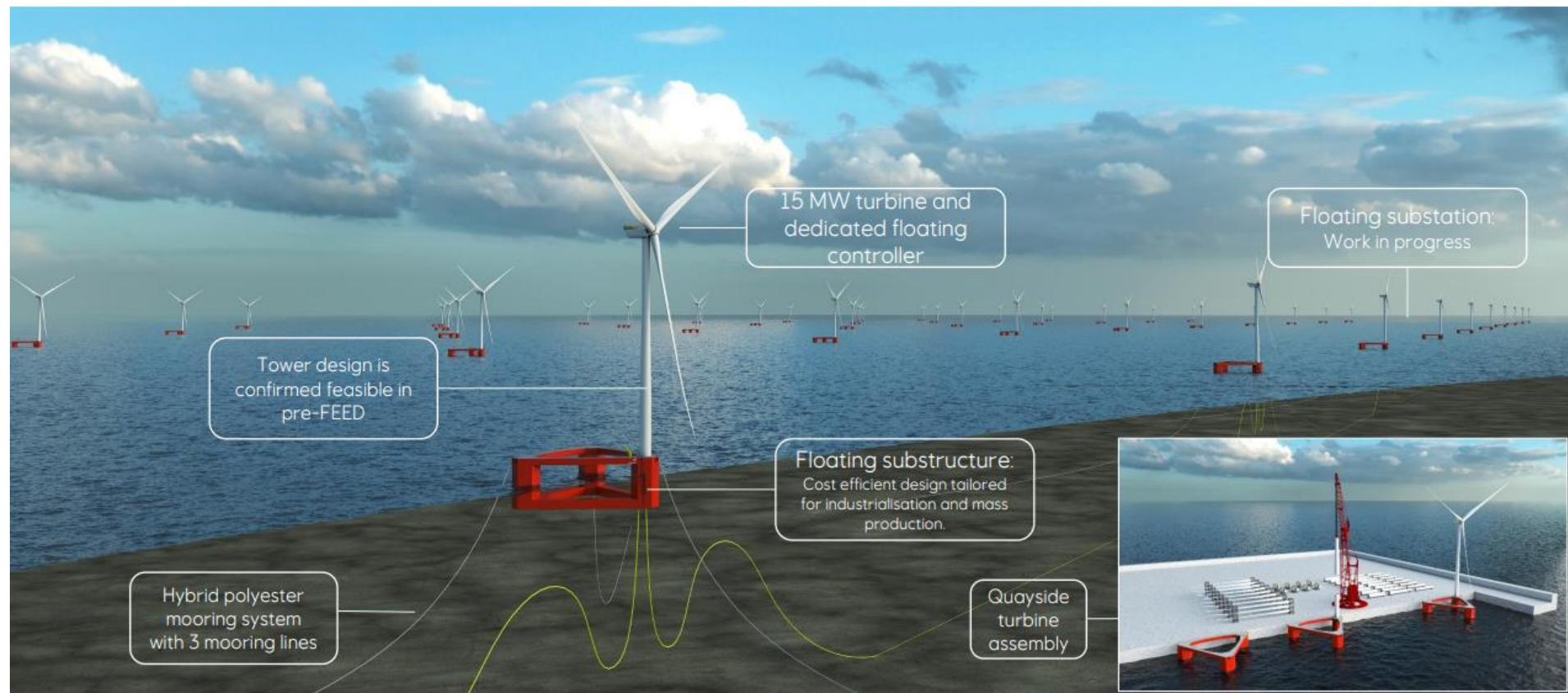
Execution  
models

Supply  
chain





# Concept Based on Project Firefly (S. Korea)



# High Level Design Principles (Semi-Submersible)



- Steel semi
- Three columns
- Ring pontoon
- Turbine on column
- Passive ballast
- Mass production
- Equinor motion controller





# Floating Offshore Wind in Australia - What will it take?

## Collaboration – Local and Global

Global Network

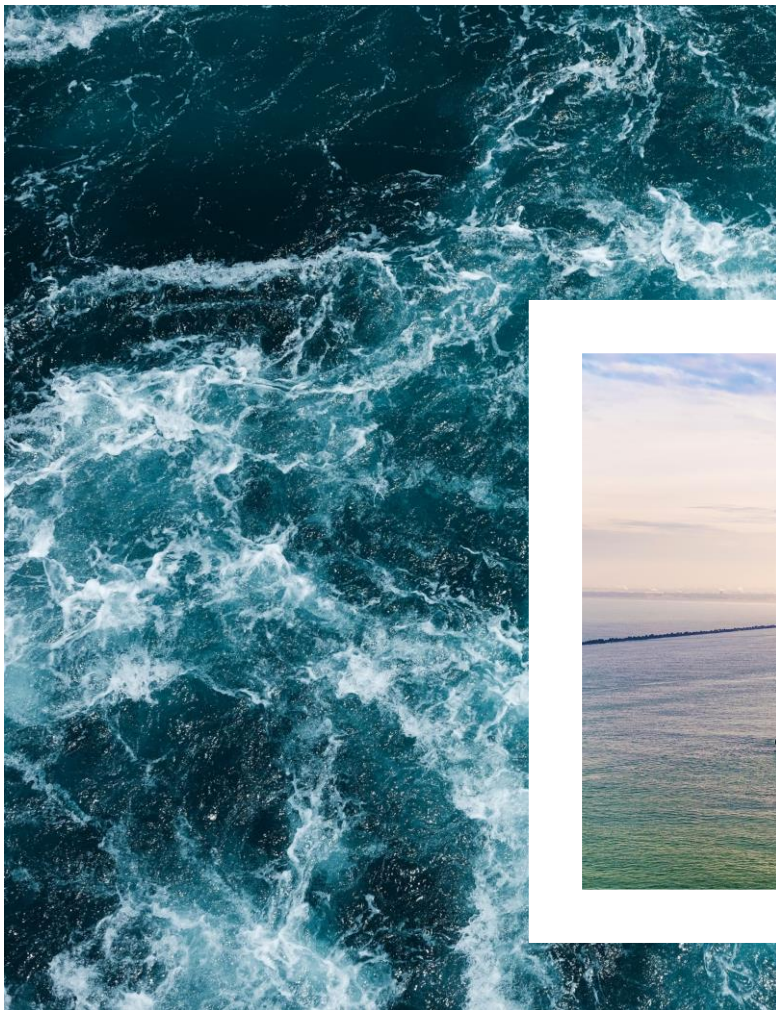
Scale

Competitive Supplier Industry

Experience

Industrialised Concepts and  
Technologies

Digitalisation



OCEANEX ENERGY



# ENERGISING AUSTRALIA WITH OFFSHORE WIND



OFFSHORE WIND INDUSTRY IN NEW SOUTH WALES

MARCH 2022



# Local Supply Chain Opportunities

Oceanex has identified a significant amount of opportunities for the local supply chain in Australia, which we have described in detail throughout this report. In summary, these are:

Table 1. Summary of Local (NSW and Australia) Supply Chain Opportunities

Supply Chain Area		Capability			
		Existing	Potential	Potential with Investment	Export Potential
Development	Survey Companies	✓	✓	N/A	✓
	Engineering Design Services	✓	✓	N/A	✓
	Environmental Services	✓	✓	N/A	✓
Floating Foundation Substructure	Steel Manufacture	✓	✓	✓	✓
	Substructure Fabrication	(Limited at present)	✓	✓	✓
	Suitable Fabrication Facilities	✗	✓	✓	✓
	Secondary Steel	✓	N/A	✓	✓
Anchors	Drag Embedded	✗	N/A	✓	✓
	Suction Anchors	✗	N/A	✓	✓
	Piled/Drilled	✗	N/A	✓	✓
Mooring Lines-Wind Turbine	Chain	✗	N/A	✓	✓
	Synthetic	✗	N/A	Limited	✓
	Blade Manufacture	✗	N/A	Limited	✓
Wind Turbine	Tower Manufacture	✓	✓	✓	✓
	Nacelle Manufacture	✗	N/A	Limited	Limited
	Gearing Manufacture	✗	✗	✗	✗
Electrical	Onshore Electrical Infrastructure (including substation and associated infrastructure)	✓	✓	✓	✓
	Inter-array Cable	✗	N/A	✓	✓
	Export Cable	✗	N/A	Limited	✓
	Offshore Substation	Limited	N/A	✓	✓

Supply Chain Area		Capability			
		Existing	Potential	Potential with Investment	Export Potential
Ports	WTG Assembly	✗	✓	✓	✓
	Turbine Assembly	✗	✓	✓	✓
	Installation Staging	Limited	✓	✓	✓
Vessels	Upgrades	✓	✓	✓	✓
	Heavy Lift Vessel	✗	N/A	Limited	✓
	Anchor Handling Tug Supply	✓	N/A	✓	✓
	Cable Laying Vessels	✗	N/A	Limited	✓
	Semi-submersible Barge	✗	N/A	✓	✓
	Tugboats	✓	✓	✓	✓
	Construction Support Vessel	✓	N/A	✓	✓
	Dive Support Vessel	✓	N/A	✓	✓
	Crane Vessel	✗	N/A	✓	✓
	Service Operation Vessel	✓	✓	✓	✓
	Crew Transfer Vessel	✓	✓	✓	✓
O&M	Vessel Maintenance	✓	✓	✓	✓
	Offshore Activities	✓	N/A	✓	✓
	Onshore Activities	✓	N/A	✓	✓
Facilities	Warehouse Construction	✓	✓	✓	✓
	Manufacturing Facility Construction	✓	✓	✓	✓
	O&M Facility Construction	✓	✓	✓	✓
	Port Facilities	✓	✓	✓	✓







Supply Chain Area		Capability			
		Exist- ing	Poten- tial	Poten- tial with Investment	Exp- ort Poten- tial
	Technology Development	✓	✓	✓	✓
	Infrastructure Development	✓	✓	✓	✓
	Marine/Subsea Foundation Development	✓	✓	✓	✓
Services	Front End Engineering Design	✓	✓	✓	✓
	Marine-Based Services	✓	✓	✓	✓
	Project Management Services	✓	✓	✓	✓
	Project Support Services	✓	✓	✓	✓
	Workplace, Health and Safety	✓	✓	✓	✓
Decommissioning	Mobilisation and Demobilisation (Vessel and Infrastructure)	✓	✓	✓	✓
	Infrastructure and Component Recovery	✓	✓	✓	✓
Offshore Wind Hub/ Centre of Excellence	Academic and learning institutions based in key regions	✓	✓	✓	✓
	Key industries and companies based in key regions	✓	✓	✓	✓
	Key infrastructure based in key regions (ports, grid/transmission, warehouses/ offices)	✓	✓	✓	✓



## Delivering Jobs for NSW Regions

Oceanex Energy's Novocastrian and Illawarra Offshore Wind Farms will generate around 6,000 direct jobs during construction plus a further 600 jobs over a 30-year operational life.



## The Ten-Point Plan for Progress

These key steps articulate a pathway for NSW and Australia to become a global leader in floating offshore wind and for Oceanex to energise NSW with the development of a floating offshore wind industry.

Required Action	Leader	Area
<b>1</b> <b>Policy formulation</b> that supports large investment as well as timely Cth Energy Minister declaration of 'zones' under the Offshore Act to allow developers to progress feasibility activities under a Feasibility Licence in designated areas	Commonwealth Government	<b>POLICY</b>
<b>2</b> <b>Clear national strategy</b> on offshore wind articulating security of energy supply, economic benefits and attracting foreign investment	Commonwealth Government	<b>STRATEGY</b>
<b>3</b> <b>Enabling frameworks</b> that support national and state government policies including prioritising an approval pathway to get to market expediently	Commonwealth and NSW Government	<b>FRAMEWORK</b>
<b>4</b> Commitment from industry and Government to <b>develop and grow a supply chain</b> and strong relations as part of a global industry	Oceanex and Industry	<b>STRATEGY</b>
<b>5</b> <b>Streamlined approval pathways and processes</b> that prioritise offshore wind projects to ensure they progress expediently in line with being treated as being of National and State Significance	Commonwealth and NSW Government	<b>POLICY</b>

Required Action	Leader	Area
<b>6</b> <b>Commitment</b> to establishment of key regions as 'hubs' and to be an innovation leader in Australia and globally in the floating offshore wind industry	Oceanex and NSW Government	<b>STRATEGY</b>
<b>7</b> Leverage synergies to <b>accelerate and work with other industries</b> particularly in infrastructure and large-scale heavy industry	Oceanex and Industry	<b>DELIVERY</b>
<b>8</b> <b>Plan port infrastructure and adjoining land support</b> required so that local supply chain, jobs and investment opportunities can be optimised	Oceanex and Industry	<b>DELIVERY</b>
<b>9</b> <b>Develop safe work practices</b> consistent with the existing and developing WHS framework to ensure the offshore wind industry in Australia thrives in a manner that values and prioritises safety for all.	Commonwealth Government and Industry	<b>FRAMEWORK</b>
<b>10</b> <b>Undertake detailed gap analysis studies</b> in all aspects of the life cycle of offshore wind farms to optimise opportunities for NSW and Australian industry, regions and local communities.	Oceanex and Industry	<b>FRAMEWORK</b>



# What needs to happen in 2022-2023?



- 1 Announcement of designated 'zones' for feasibility licence applications for the Hunter and the Illawarra under the Offshore Act to provide confidence and certainty to market to develop projects in those regions and attract investment in the supply chain in Australia and globally
- 2 Identify technology areas that are strong opportunities for the Australian supply chain to support Oceanex projects – the Hunter and Illawarra are obvious locations to be Offshore Wind Hubs to progress these developments
- 3 Perform a detailed gap analysis of the areas of strong supply chain opportunities to understand the missing pieces such as knowledge, skills, workforce, equipment and facilities and how they can be developed and sourced locally and globally

Further progress discussions with the key players in the local and global supply chain to build interest in market developing the capabilities to deliver on Oceanex projects

Identify training areas where the local workforce needs to develop and work with industry and training institutions to develop understanding, skills and expertise to meet with projected timelines for Oceanex projects

Work with Government, Australian and international industry to plan and target resources to areas having the most opportunity for development

4

5

6



# ANZ Offshore Wind History

**First Australian offshore wind developer established**

(Offshore Energy/Star of the South – includes the Oceanex Energy Co-Founders)

First offshore wind Exploration Rights provided by Australian Government to Star of the South and first introduction to New Zealand Government for Oceanex Founders

Granting of first offshore wind rights in Australia (Exploration Licence granted in respect of Star of the South)

Australian Government introduces Regulatory Framework (Offshore Electricity Infrastructure Act 2021 (Cth)) to enable offshore wind projects – Act passed on 25 November 2021. Effective from 2 June 2022. One ‘declared area’ (Gippsland) and one further area commenced process (Pacific Coast – Hunter)



# Next Steps

## Commencement of Offshore Electricity Infrastructure Act (Cth) ('Offshore Act')

Start Detailed Feasibility Studies under Feasibility Licence from Cth (subject to approval and hopeful of first NSW 'declared area' by Q4 2022)

## Final Investment Decision

Decision to construct first offshore wind farm in NSW (and potentially NZ). Application for Commercial Licence under Offshore Act which allows construction, operation and maintenance for 30 years

## Commence Construction on First Offshore Wind Project

Commence construction of first offshore wind farm in Oceanex portfolio.

Location to be confirmed from within Oceanex portfolio

## Delivery of further offshore wind projects in NSW, WA and NZ

Deliver portfolio of projects in NSW and WA to have over 9,000MW operational by 2036+



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The background of the slide is an aerial photograph of the ocean, showing deep blue water with white, frothy waves and eddies. A short, horizontal teal line is positioned in the upper left area of the image.

# Thank you.