

# Oceanex Energy Developing an Offshore Wind Regulatory Framework

An overview of the Australian experience of introducing an offshore wind regulatory framework and learnings for New Zealand



# Overview Page

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# The Oceanex Team

Oceanex Energy's ownership is comprised of Andy Evans, Peter Sgardelis and international investment with significant experience in infrastructure development and construction and leading advisory experience in renewable energy (especially offshore wind). 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.



CEO

**Andy Evans**

Andy Evans is the CEO and a founder of Oceanex Energy and also the former CEO and a co-founder of the Star of the South (proposed 2GW offshore wind farm off the coast of Victoria).



CDO

**Peter Sgardelis**

Peter Sgardelis is the Chief Development Officer and a founder of Oceanex Energy and also the former COO and a co-founder of the Star of the South.

# The Oceanex Portfolio - Australia and NZ



Oceanex is developing up to 5 projects off the coast of NSW and WA with generation capacity exceeding 10,000MW 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 Australian Portfolio

	Foundation	Area km <sup>2</sup>	Indicative MW	Distance shore	Ports	Commencement	Completion
Hunter/ Newcastle	Floating	495	2000	30 km	Newcastle, 68km	2028	2031
Illawarra/ Wollongong	Floating	493	2000	27 km	Port Kembla, 40km	2028	2031
Eden	Floating	493	2000	20 km	Port Kembla, 315km	2031	2034
Ulladulla	Floating	496	2000	21 km	Port Kembla, 99km	2032	2035
Bunbury	Fixed	494	2000	32 km	Fremantle, 52km	2033	2036

(Indicative figures and dates only)

# The Oceanex New Zealand Portfolio

A 3D map of New Zealand in a teal color, showing the North and South Islands. Several white wind turbine icons are placed on the map, primarily along the coastlines of both islands.

	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

# ANZ Offshore Wind History

**First Australian offshore wind developer established**

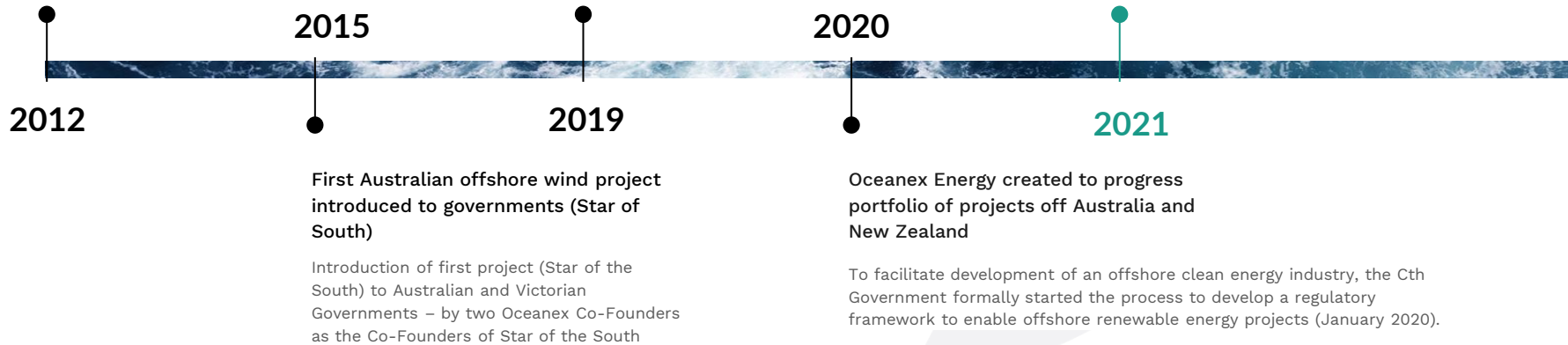
(Offshore Energy/Star of the South – includes the Oceanex Energy Co-Founders)

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.

Oceanex announces New Zealand projects (May 2021)



# The Offshore Electricity Infrastructure Act 2021 (Cth) – Key Features

- **Act commenced on 2 June 2022** – introduced into Australian Parliament in September 2021, passed in November 2021 and came into operation on 2 June 2022. Regulations still being finalised.
- **Applies to waters in Commonwealth Jurisdiction** – beyond 3 nautical miles from the coastline. All waters within 3 nautical miles are still State waters and subject to State law. No offtake provisions.
- **Feasibility Licences for Exploration Phase** – 7-year Feasibility Licence to undertake all activities to get to FID. Preceded by identification of ‘offshore zones’ (realistically by developers), public consultation process led by Minister for Energy (Cth) and 6-7 month competitive application-to-award period.
- **Commercial Licence for Construction and Operations Phase** – 40-year licence post-FID to undertake all construction activities and operate subject to many conditions. May be extended beyond 40 years.
- **Regulation of Act by National Offshore Petroleum Safety and Management Authority (NOPSEMA)**
- **Ties in with existing Cth and State legislation which must still be complied with** – effect of existing environmental and planning laws, health and safety regimes, etc unchanged.



# Establishing a Regulatory Framework – Lessons Learnt

- **Frame the Narrative Early** – Offshore wind is nationally-significant, large infrastructure that relies on, and unlocks, numerous other industries (hydrogen, offshore oil & gas, manufacturing) and opportunities due to the large energy generation, jobs and investment it creates. It is not merely another individual renewable energy projects. Inclusion in the NZ Infrastructure Strategy at an early stage is great recognition of where offshore wind fits in to long-term plans and its' importance to national prosperity.
- **Engage early with stakeholders of all levels** – important that key decision-makers (e.g. Ministers, government departments) are aware of what you are doing, but they also need comfort to know that they are not taking undue risk in progressing legislation in the knowledge that industry has engaged with local stakeholders such as local industry, communities, traditional owners, special interest groups and those potentially impacted.
- **Seek to use existing policy or legislation that is sound and been recognised previously** – offshore wind lends more to offshore oil & gas so refer to existing legislation as a start and examples or global examples of offshore wind regulatory frameworks that may be used or adapted.

# Establishing a Regulatory Framework – Lessons Learnt

- **Highlight the positives and be aware of the negatives** – offshore wind has been well-received in Australia as the narrative was framed to tie in to Australia’s strengths (large projects, ability to attract international investment, strong industrial regions) whilst also recognising the negatives (misunderstanding of what offshore wind is, why is it needed in a ‘land of sun and coal’, higher cost)
- **Be patient, but highlight the urgency and opportunity** – real traction in Australia once the first major international investor entered Star of the South (Copenhagen Infrastructure Partners in 2017) which increased sharply in the last 2 years once more projects were announced. Governments won’t ignore optimism backed by real time and capital being invested, especially in a competitive global market.
- **Understand that Governments, politicians and key influencers can only make decisions based on the quality and weight of information provided** – offshore wind is a great global story with plenty of evidence, great graphics and a very collegiate global community. Tap into it and create documents, storyboards and messages that are easy to digest for all and make decision-making a lot simpler. See later slides on Supply Chain Report and ‘jelly’ images.

# Establishing a Regulatory Framework – Lessons Learnt

- **Understand why a regulatory framework is important and what the real goals are** – it is not just seeking approval to develop and construct in a legal way, it is important to show a nation's commitment to offshore wind and attract investment (local and international), give governments an opportunity to meet their broad objectives (net-zero/environmental, future-proofing economies, creating new markets, e.g., green hydrogen) and highlight opportunities to develop a nation's workforce and commitments to new technology and intellectual property.
- **Utilise the global market and experience** – offshore wind is not new, despite the fact that every country thinks that ('it's different here in Australia and New Zealand'). Reference to other jurisdictions and those with experience mean there are great learnings to be had from countries with far greater issues, that have already progressed. Governments and industry need to travel to attract opportunities, investors and supply chains, most of whom are very willing to help.
- **Don't give up/be resilient** – it's a long journey but well worth it.

# Why Offshore Wind – The Real Narrative

Offshore wind provides large-scale clean, reliable, affordable electricity that creates huge new investment and jobs to transform ANZ 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



## **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.



### **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/TRANSPORT**

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

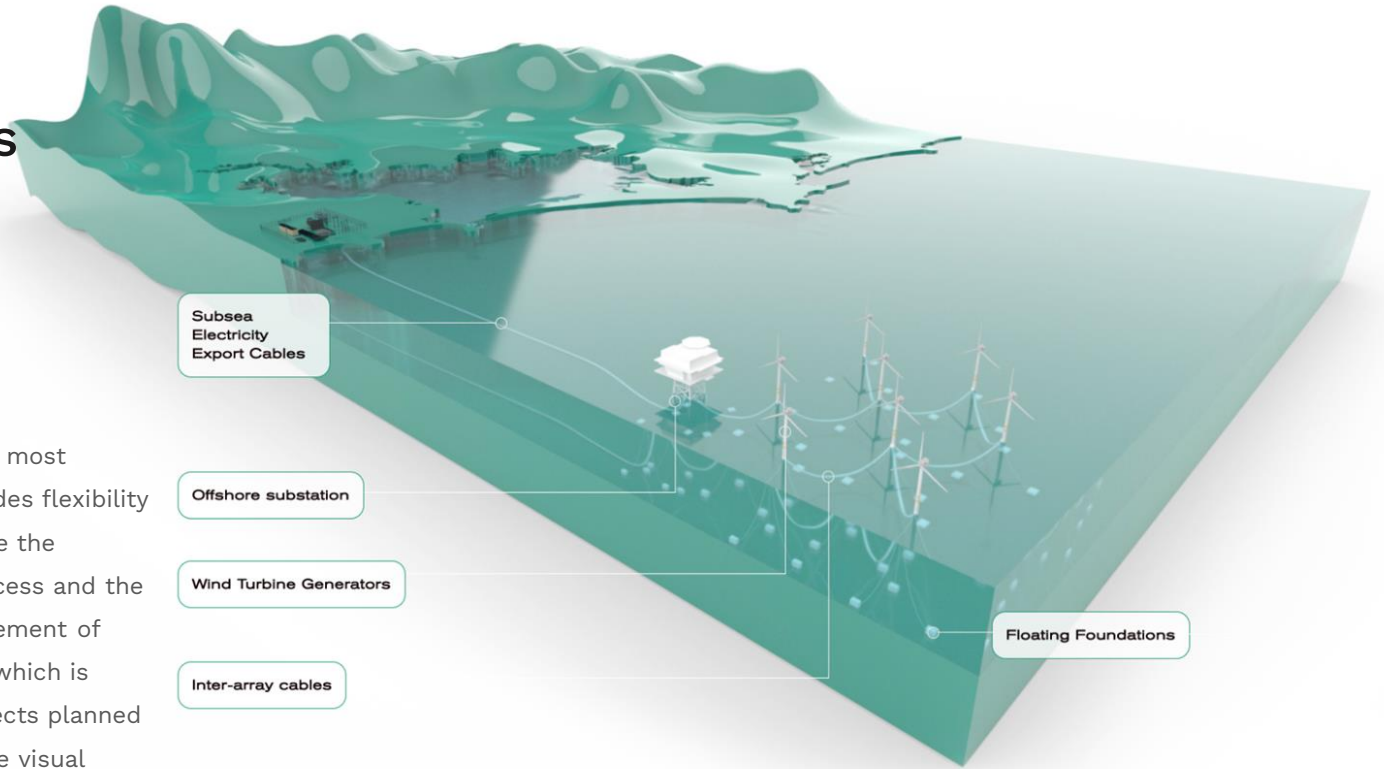


### **EMPLOYMENT STIMULUS FOR DECADES**

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

## Use of Graphics - What an Offshore Wind Farm Looks Like

The prevalence of deep water off most coastlines (over 70 metres) 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. Oceanex projects planned 20km+ from coastline to minimise visual amenity issues and access stronger wind

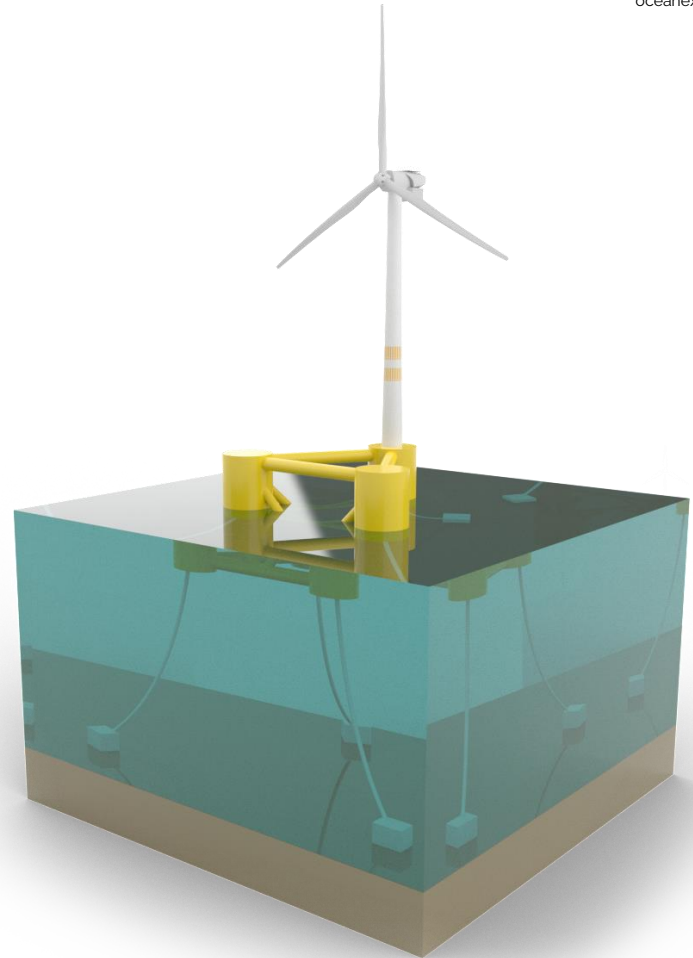


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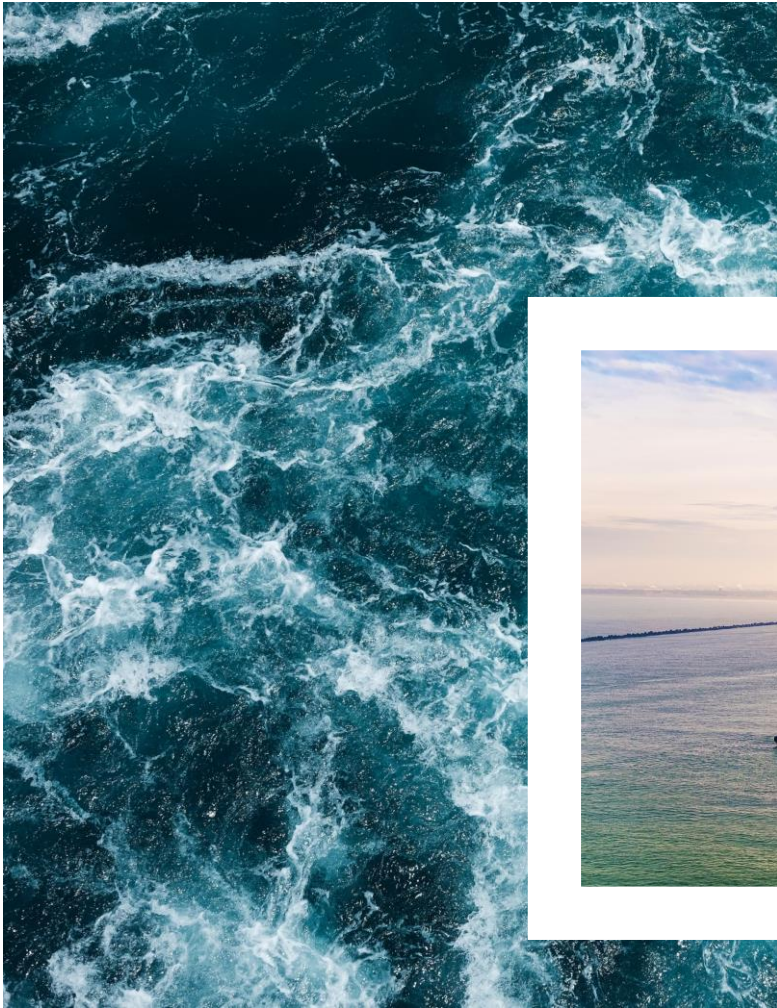
# Use of Graphics- Potential of Floating Foundation Technology

The majority of the Oceanex portfolio has 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 offshore oil & gas)







OCEANEX ENERGY



# ENERGISING AUSTRALIA WITH OFFSHORE WIND



OFFSHORE WIND INDUSTRY IN NEW SOUTH WALES

MARCH 2022





# Executive Summary

“Australia has an opportunity to be an energy superpower, New South Wales will lead the country...”

Our major trading partners see as part of their energy future, this state has the skills, infrastructure and renewable energy resources to compete globally.”

PREMIER of NSW, HON. DOMINIC PERROTTET MP

## Benefits for NSW and Australia from Oceanex’s NSW Offshore Wind Portfolio (4 Projects, Total 8,000MW)

**\$30b+**

Estimated capital expenditure for 4 priority wind projects (8,000MW) and \$200m+ development expenditure per project for a five year period

**3,000+**

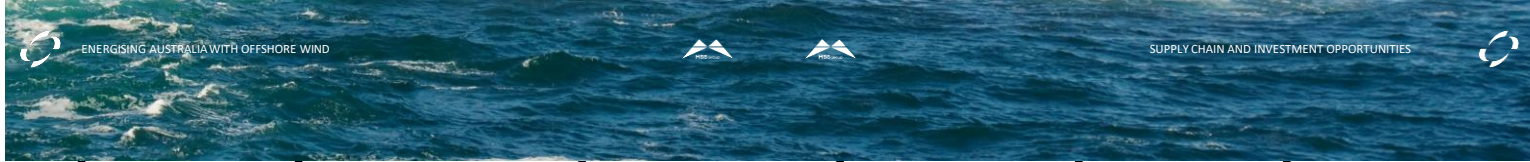
Estimated direct jobs per project during construction period of 3-4 years

**35-65%**

Estimated local content used to construct offshore wind during construction period

**300+**

Estimated direct jobs per project during the operations and maintenance period of 30 years



**2021**  
 Passing of *Offshore Electricity Infrastructure Act 2021* (Cth) (Offshore Act)  
 Regulations to be introduced in 2022 to complete regulatory framework including provision of Feasibility and Commercial Licences

**2022+**  
 Ramp up feasibility studies and NSW supply chain analysis in NSW to support sustainable rapid growth of offshore wind industry  
 Granting of Feasibility Licences with project development expenditure expected to be \$200m+ to get to Final Investment Decision to then construct project

**2027**  
**Final Investment Decision made to construct first project**  
 Licence granted to construct first offshore wind farm in NSW under Commercial Licence from Commonwealth

**2028**  
**Construction Commences**  
 Oceanex's first offshore wind farm(s) commences construction off the NSW coast

**2030**  
**NSW's first power from offshore wind**

**2030+**  
**Expanding supply**  
 Further projects delivered in NSW South Coast and Bunbury WA. Potential for **10,000MW** to be generated in Australia alone

Australia, and NSW, is undergoing an energy and economic transformation with the need for new, large-scale, energy generation to help meet the needs of a growing population, retiring fleets of coal-fired power generators and the adoption of new technologies to power the future.

- ❏ Offshore wind energy, along with hydrogen production and the electrification of transport, are exciting new large-scale industries that can assist in creating many energy, economic, environmental, technical and social benefits for Australia, its states, local regions and communities and also meet many stated goals of the Commonwealth and State Governments.
- ❏ Oceanex Energy (Oceanex), an Australian developer with international investment, is prioritising the development of two offshore wind farms off the coast of NSW, the Novocastrian and Illawarra Offshore Wind Farms, with a total electricity output of 4,000MW and creating thousands of jobs over a 40+ year life cycle, which it believes will assist meeting a number of energy and economic objectives for governments, industry and local regions, especially the Hunter and Illawarra Regions.

- ❏ The Hunter and Illawarra Regions have been chosen by Oceanex due to existing grid infrastructure with the capacity and availability to transmit large amounts of electricity (due to forecast coal-fired power station closures—over 10,000MW in NSW by the late 2030s), consistent winds allowing steady electricity generation and the creation of many jobs for local workforces in key regions (such as the Hunter and Illawarra) with existing skillsets in related industries that can be utilised for projects with a 40+ year life cycle.
- ❏ Extensive studies conducted by Oceanex over a number of years, including this report, have borne out the suitability of the Hunter and the Illawarra to be the home of a thriving new industry such as offshore wind.

- ❏ Given the deep water levels off the coast of NSW, Oceanex will be utilising floating foundation technology (where turbines are deployed in water depths greater than 70 metres), a technology that is seen as being key to further accelerating the offshore wind industry globally and provides great opportunities for Australia to be an innovation leader at the forefront of the development of a global floating offshore wind industry.
- ❏ For Oceanex to develop, construct, operate and maintain the Novocastrian and Illawarra Offshore Wind Farms (as well as other projects planned for NSW, Western Australia and New Zealand), it will need a developed local supply chain in key regions such as the Hunter and the Illawarra that can be the base for delivering these projects and work with the rest of the Australian and global supply chain.
- ❏ NSW, and the key regions of the Hunter and Illawarra, are well-placed to be the home of a floating offshore wind industry to service NSW offshore wind projects, and other regions whether elsewhere in Australia, New Zealand or the Asia Pacific region, due to the existence of deep-water ports, experienced workforces, large-scale heavy industries such as steel-making, power generation, mining, engineering and marine logistics and a Commonwealth and State policy framework that encourages large infrastructure projects and investment.

## Why NSW? Why now?

- Existing deep-water ports
- Existing grid infrastructure and capacity
- Surrounding heavy industry and highly skilled workforce to support manufacture and installation
- Consistent winds allowing steady generation of electricity
- Commonwealth and State policy framework that encourages investment
- Legislation passed in 2021 to support development of offshore wind farms



# 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	✓
Wind Turbine	Blade Manufacture	✗	N/A	Limited	✓
	Tower Manufacture	✓	✓	✓	✓
	Nacelle Manufacture	✗	N/A	Limited	Limited
Electrical	Gearing Manufacture	✗	✗	✗	✗
	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			
		Basic	Potential	Potential with Investment	Export Potential
	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>
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>7</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>8</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>9</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>
<b>10</b>		





# What needs to happen in 2022-2023?



Supply Chain Opportunities: Offshore Infrastructure

- 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

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ALL PROJECTS

# Potential Economic and Regional Benefits for 1GW NZ Projects

Standard Projections: Development and construction of a 1GW project as forecast for New Zealand based on Australian equivalents as modelled for Star of the South and Oceanex portfolio

**NZ\$4b+**

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

**2,000+**

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

**200**

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

# 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+. NZ potential of 3GW by 2033.



Ongoing

2030

2022

2028

2030+

## Detailed Feasibility of Projects (commenced in 2020)

Ramp-up of feasibility studies and industry and supply chain development in NSW, WA and NZ to support vibrant offshore wind farm industry

Development expenditure of offshore wind projects often >\$200m per project for up to 7-year period

First Power from Offshore Wind Generated in NSW (Novocastrian and/or Illawarra Offshore Wind Farms) – NZ should be targeting similar timeframe



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Thank you.