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ENGINEERING TARANAKI CONSORTIUM

venture TARANAKI
Te Puna Umanga

WAIKATO
Offshore Wind

SOUTH TARANAKI
Offshore Wind

Aotearoa Offshore Wind Industry Engagement

Supply chain workshop : 14 November 2022

BlueFloat ENERGY

energy estate

Elemental Group

Agenda

Topic	Who
Welcome	Justine Gilliland
Our development principles	Simon Currie & Justine
Ecosystems not projects	Simon Currie
South Taranaki OWP	Brett Rogers
Waikato OWP	Brett Rogers
What have we done already	Justine Gilliland
Current & Anticipated Technical workstreams	Will Thorp
Environmental & Planning	Brett Rogers
Collaborative research	Brett Rogers
Stakeholder and community engagement	Justine Gilliland
Australian Projects	Simon Currie
Q&A	

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About our partnership

BlueFloat Energy, Energy Estate and Elemental Group have formed a partnership to develop offshore wind farms in New Zealand. We formed the partnership in early 2021 and since then we have been actively developing our portfolio of projects and supporting the growth of the offshore wind industry in Aotearoa. Our partnership brings together complementary skill sets and experience in the global offshore wind industry and deep understanding of the New Zealand energy sector.

Our projects will accelerate decarbonisation by supporting new reliable and low-cost generation, providing 24/7 power for industry, encouraging new industry and creating skilled and enduring jobs in Taranaki and other regions. Our development principles are based on partnerships – with iwi, government, training institutions, industry participants and local stakeholders. We are committed to fostering the growth of a NZ offshore wind industry and local supply chain.

BlueFloat ENERGY

A leading offshore wind developer with a global pipeline of fixed and floating projects

energy estate

An experienced developer & accelerator of renewable energy, storage and green hydrogen projects

Elemental Group

A pioneer in the offshore wind sector in New Zealand

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Our Development Principles
It's not what we procure, but how

Our development principles

- Partner with Māori, as kaitiaki, co-governors, owners and joint-venture partners
- Focus on enduring community-centred outcomes aligned with te ao Māori
- Committed to biodiversity and marine environment restoration and regeneration
- Collaborate with wider energy market participants and support common infrastructure solutions to reduce impact
- Explore synergistic activities such as aquaculture and fisheries
- Create and deliver skills, training and education
- Prioritise local procurement and employment
- Deliver meaningful, secure and dignified work
- Develop projects with positive legacies
- Accelerate Aotearoa reaching its Net Zero targets

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Procurement : It's the HOW, not the WHAT

New Zealand Energy Excellence Awards And Offshore Wind Partnership Demonstrate Commitment To Social Outcomes

- Social procurement is intentionally using procurement as a tool to generate a positive impact alongside acquiring the goods, services and works required.
- Every purchase we make has an economic, environmental and social impact, whether intended or not. Social procurement aspires to have the most positive impact possible.
- "We are committed to ensuring that our own projects benefit communities from a social and economic perspective, as well as supporting biodiversity and the marine environment, and want to see others highlight the same" says Carlos Martin, chief executive of international offshore wind energy developer BlueFloat Energy.
- "We strive to help significantly reduce global emissions, and passionately advocate for local supply chains and capacity building. Our development principles embed the UN Sustainable Development Goals in all aspects of our business" says Rosie King, director, engagement and culture for Energy Estate.

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NSW Electricity Roadmap

A new model for social procurement

Table 9: Baseline requirements and stretch goals related to MC8[37]

Supply chain inputs criteria *% for supply chain inputs refers to goods and services procured from, or value added in Australia & New Zealand as a percentage of total Project contract value*	Baseline requirements			
	Wind	Solar	Pumped hydro	Battery storage
Development phase *(everything before COD)*	40%	49%	66%	23%
Operation and maintenance phase	51%	71%	61%	35%
Steel products and components using locally milled steel *(excludes steel components integral to a component or products not available locally at the time of the Bid)*	10%	95%	30%	95%
Supply chain inputs criteria	**Stretch goals**			
	Wind	**Solar**	**Pumped hydro**	**Battery storage**
Development phase *(everything before COD)*	72%	81%	86%	78%
Operation and maintenance phase	76%	81%	82%	79%
Steel products and components using locally milled steel	95%			
Investment and innovation in the supply chain	**Baseline requirement and stretch goal**			
Commitment related to one or combination of: % of Project value in new/local facilities, % of Project value invested in innovation of supply chain, contributions to or participation in pooled investment.	For the first Tender Round, Proponents to make a voluntary but contractually binding commitment to investment and innovation. These commitments should form the basis for baseline requirement and stretch goals in future years.			
Employment, skills and knowledge transfer criteria	**Baseline requirement**	**Stretch goal**		
Learning workers (% of total Project workforce)	20%	40%		
Apprentices (% of all trades positions on a Project)	20%	30%		
First Nations participation criteria	**Baseline requirement**	**Stretch goal**		
First Nations participation	1.5%	10%, or the goal in the region-specific protocol under the First Nations Guidelines.		
Fair and ethical practice criteria	**Baseline requirement**	**Stretch goal**		
Employment of underrepresented groups *(women, young people)*	15%	25%		
Environmentally sustainable procurement criteria				
Numerical minimum requirements do not apply. Proponents are required to respond to evidence requirements to demonstrate environmentally sustainable procurement. This includes: • Alignment with NSW Net Zero Plan. • Alignment with NSW Circular Economy Policy Statement. • Sourcing materials according to EN15804, Green Building Council's or other appropriate sustainability framework.				

NSW Government recently released new rules for procurement of renewable energy and storage projects – which also apply to transmission

Designed by the RE Sector Board comprised of broad range of stakeholders including unions, industry, government and consumer advocacy groups

High local content ambitions -
although bit disappointing for wind as baseline target is only 10% local steel

Commitment to min % of
- Learning workers
- Apprenticeships
- Underrepresented groups

Mirrors social procurement approach of major corporates and should encourage other States and Federal Government to embed similar approach

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The power of the PPA

A 120MW solar farm near Wagga Wagga in NSW developed by Energy Estate through its partnership with Wirsol and Beast Solutions. The project was purchased by Spark Infrastructure in 2019 & was constructed by Beon

Westpac's 10 year PPA purchases approximately 30% percent of the electricity generated by the solar farm & will deliver 45% of the bank's 100 per cent clean energy target.

Flow Power contracted 50 % of the solar farm's output through a second PPA to provide power to (among others) The Sydney Opera House, Snack Brands and winemaker Australian Vintage.

Benefits of the PPAs

- Beon's 'Women in Solar' program – required by Westpac & designed to increase the number of women working in solar farm construction . The pilot project provided training and employment to 11 women – 3 single mothers, 3 Aboriginal and 5 long-term unemployed.
- **Created a $500,000, 10-year partnership between the Bomen Solar Farm and Mount Austin High School (funded by Spark Infrastructure & Westpac) to keep girls in school longer, with support to transition into the workforce upon graduation.**
- $50,000 scholarship fund for female workers to undertake further study or training courses that will enhance their skills and assist them to continue working in the renewables industry.
- $1 million Community Fund co-funded by Spark Renewables & Westpac to fund local community initiatives
- $250,000 for the Bomen Revegetation Project- 58 hectares of previously cleared land across 4 sites planted with more than 50,000 seedlings to help improve the region's biodiversity & provide the habitat needed to restore our native fauna populations

The future - zero waste wind power

German company - GP Renewables Group – focusses on the dismantling, recycling or repowering processes of wind farms and recycling of wind blades.

Chipboard strengthened by shredded wind blades.

Eco-board uses 40% less wood

- Stronger and thinner
- Less fibre and lower transport costs

At end of life, it can be re-shredded and processed over and over again

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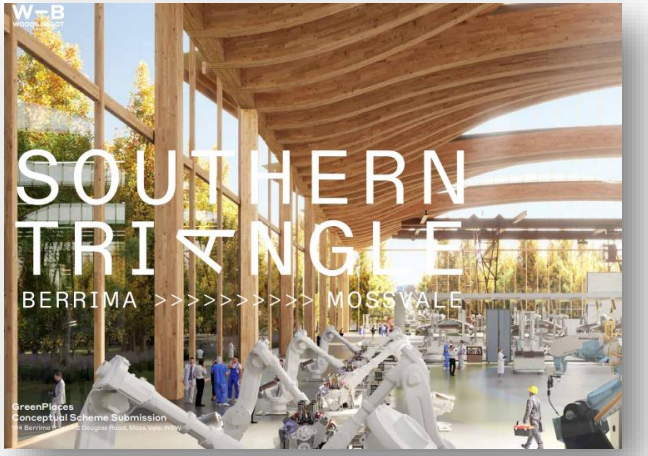
Commitment to be Housing "Net Positive"

PASSIVEPLACE

- PassivePlace is an Australian company which is an integrated housing manufacturer, accommodation delivery and management group.
- Manufacture and deliver architecturally designed transportable housing using Passive House principles.
- Advanced manufacturing methods to deliver housing rapidly, reducing trade and skill reliance, creating a truly scalable regional delivery solution.
- Housing can be repurposed (and relocated) from infrastructure worker accommodation to permanent community, social and accessible housing.
- Providing "net positive" housing legacy for regional communities after major project delivery.



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Fostering regional economic development

Case study: From black to green in Almeria - Mar de Agata Offshore Wind Farm

BlueFloat Energy and SENER are developing a 300MW floating offshore wind farm off the coast of Almeria (Andalucia, Spain) named Mar de Ágata.

Mar de Agata Offshore Wind Farm produces renewable energy

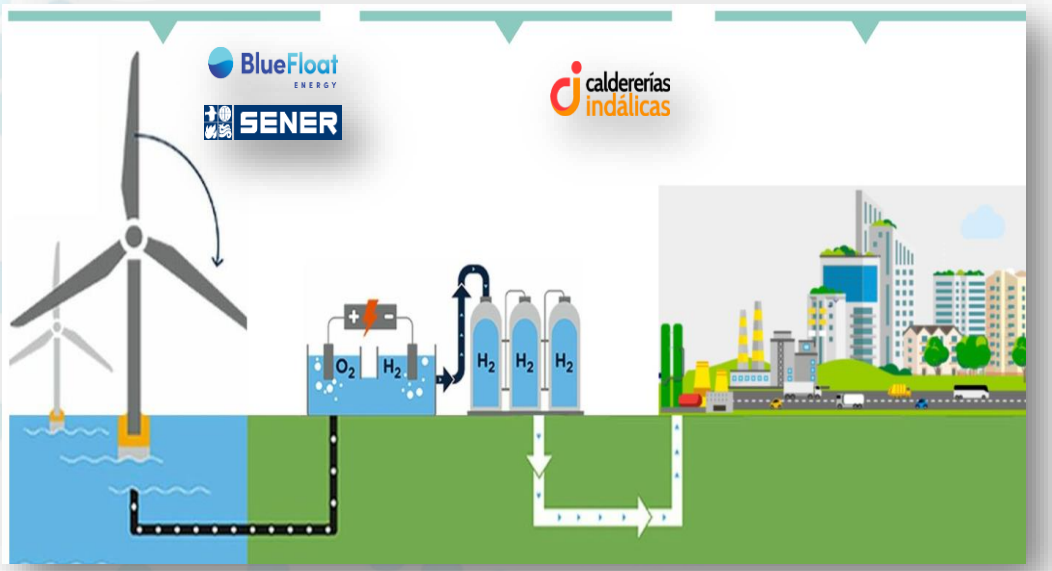
The energy produced by the wind farm is used to separate water into oxygen & hydrogen.

Hydrogen is used for various purposes by local industries.

Project proposed in response to the closure of 1159 MW thermal power plant

MoU with Caldererías Indálicas - local steel manufacturer- to capture synergies with other local initiatives:

- Green hydrogen plant to fuel the large truck fleet exporting vegetables from Almeria to Europe
- A large-scale industrial development to manufacture locally the floating structures



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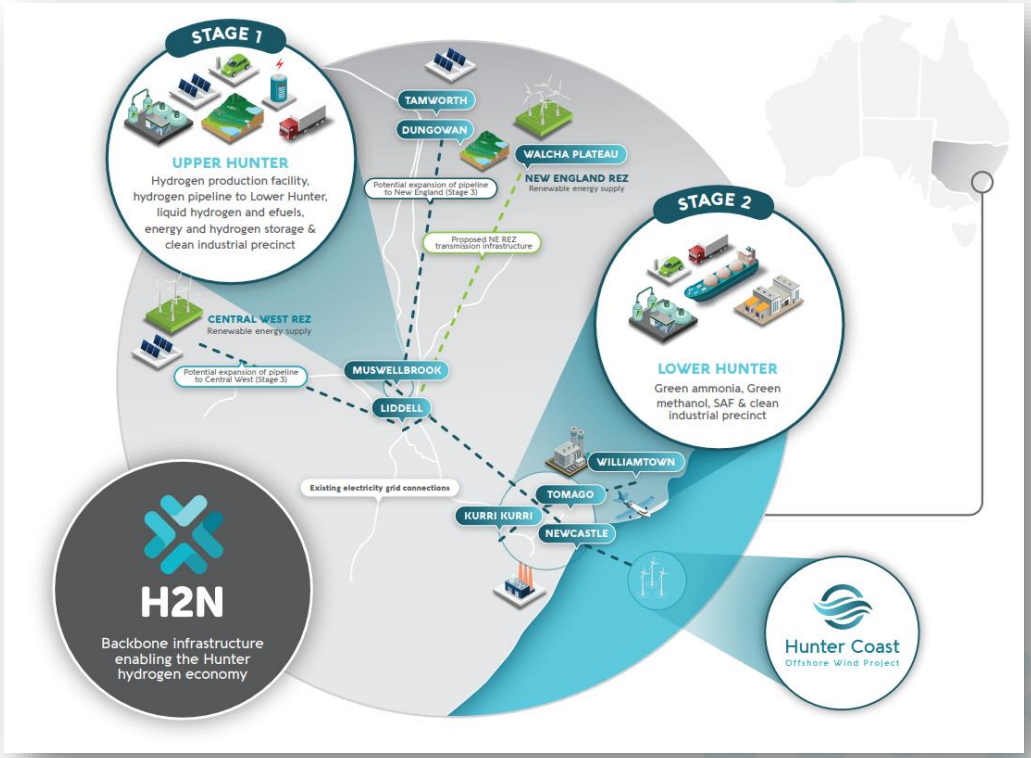
Ecosystems not projects

Ecosystems not projects – Hunter Coast



- Hunter Valley facing rapid transition – world's largest coal export port
- Options for port
  - Container
  - Defence
  - Clean industrial – GH2
- Closest viable onshore resources 150km+ from port
- Large population:1.5m
- Skilled workforce and leading training institutions
- Robust infrastructure
- Manufacturing base – Tomago isn't just about aluminium

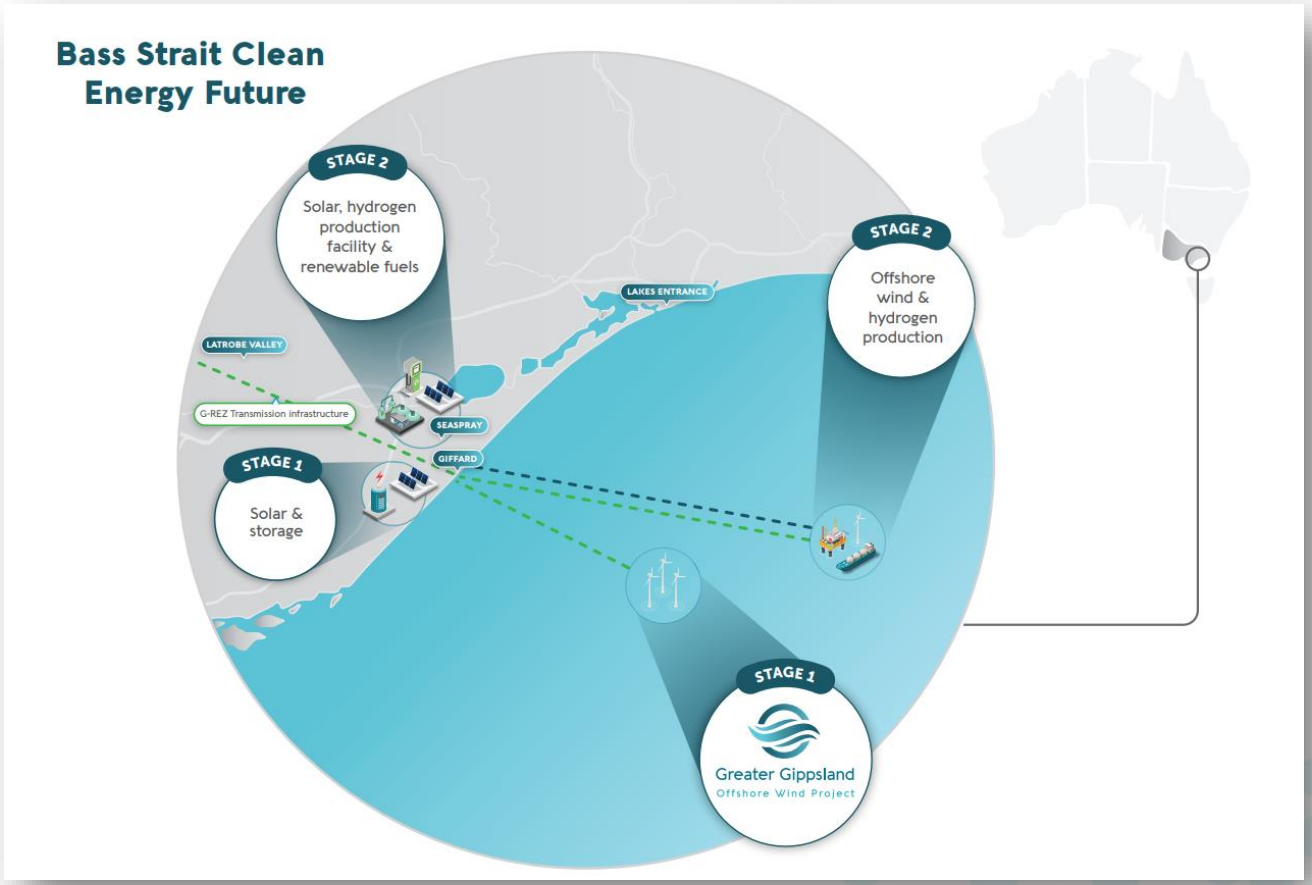
Australian Offshore Electricity Infrastructure regulations published 2 weeks ago - significant and important change which is good news for local manufacturing initiatives. The national interest test – 26(4)(a) – is one of the merit criteria which will be assessed for the upcoming offshore wind licence tenders.

Original wording - The impact and contribution of the project to the economy and the community

Revised wording - The project's impact on, and contribution to, the Australian

economy and local communities, including in relation to **regional development, job creation, Australian industries and use of Australian goods and services**

Ecosystems not projects – Bass Strait



Accelerating common infrastructure

- G-REZ and offshore transmission
- Reduced system costs

Repurposing of O&G assets

- onshore and offshore

Local partnerships

- Councils
- State Government
- Traditional owners

Collaboration and co-ordination

- sequencing of projects
- focus on supply chain & infrastructure

Leaving legacy infrastructure

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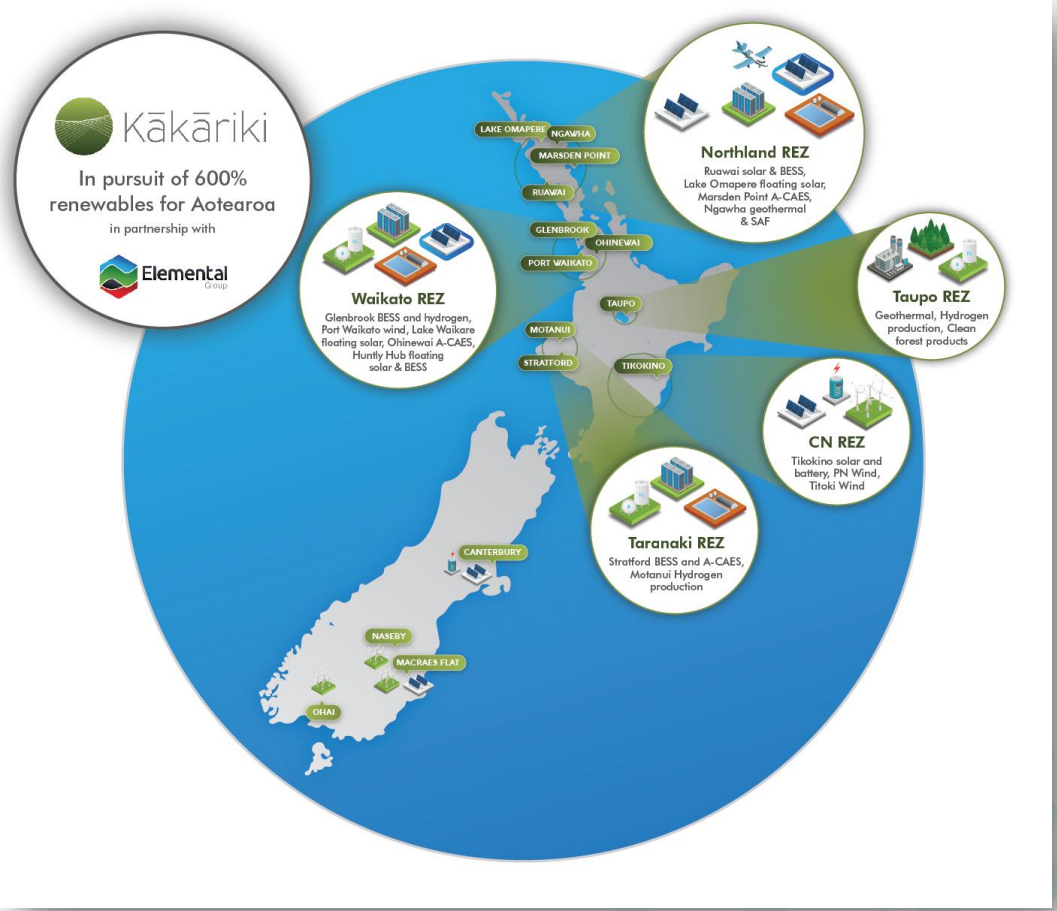
Kākāriki – accelerating the journey to 600% renewables



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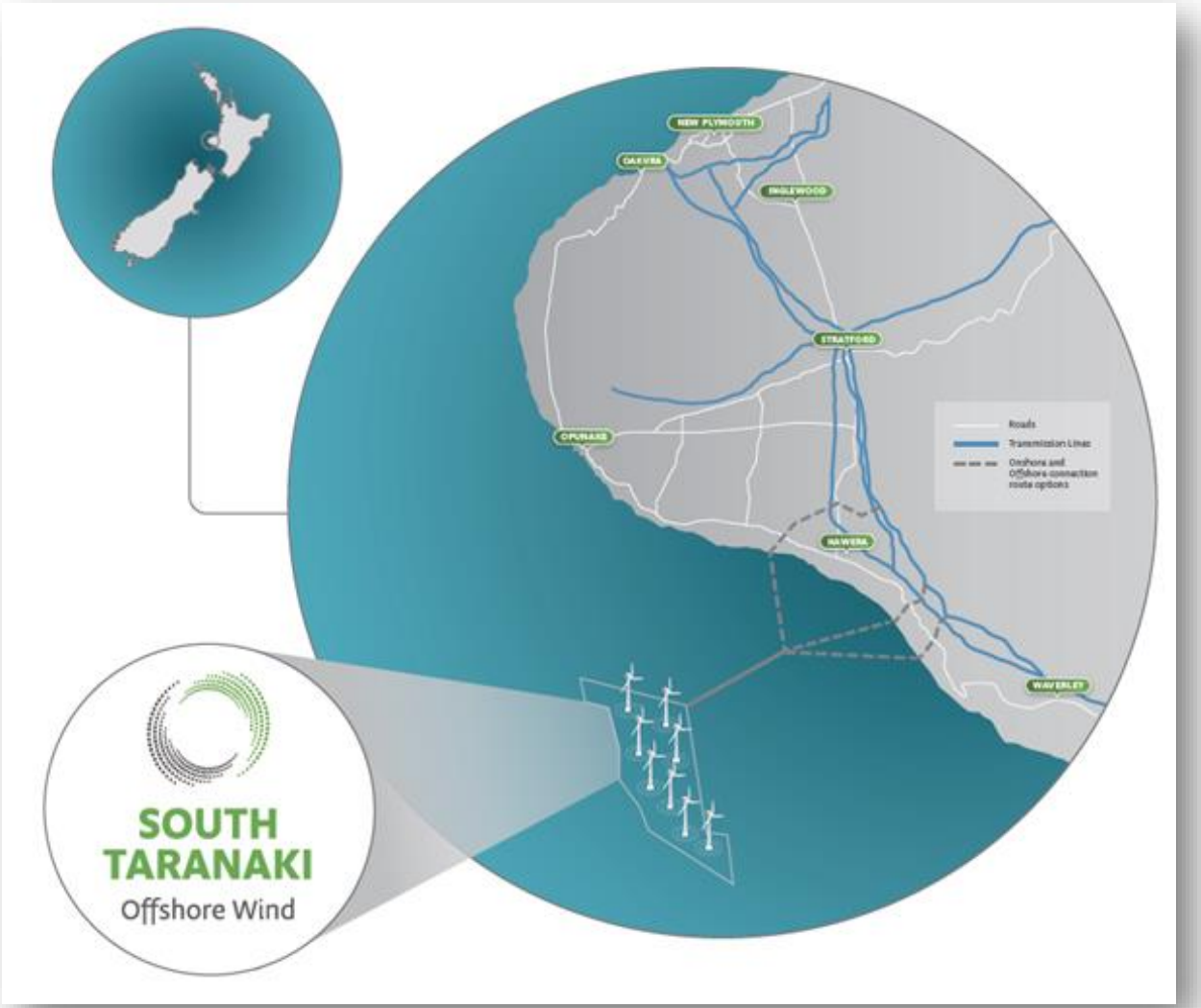
Our Offshore wind projects

South Taranaki - Project location



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Why South Taranaki

- Opportunity to create enduring outcomes through collaborative approach to shared infrastructure and repurposing
- Local training institutions can support capacity building for offshore wind industry
- Active participation by Taranaki Māori in development of offshore wind industry
- World class offshore wind resource
- Offshore wind in Taranaki region benefits from access to existing transmission infrastructure
- Strong political and public will for energy transition and diversification from fossil fuels
- Nimble and experienced workforce with oil and gas and maritime heritage
- Suitable onshore infrastructure including Port of Taranaki and South Taranaki ports
- Clean energy supply for local large energy users such as Fonterra, Ballance and Methanex

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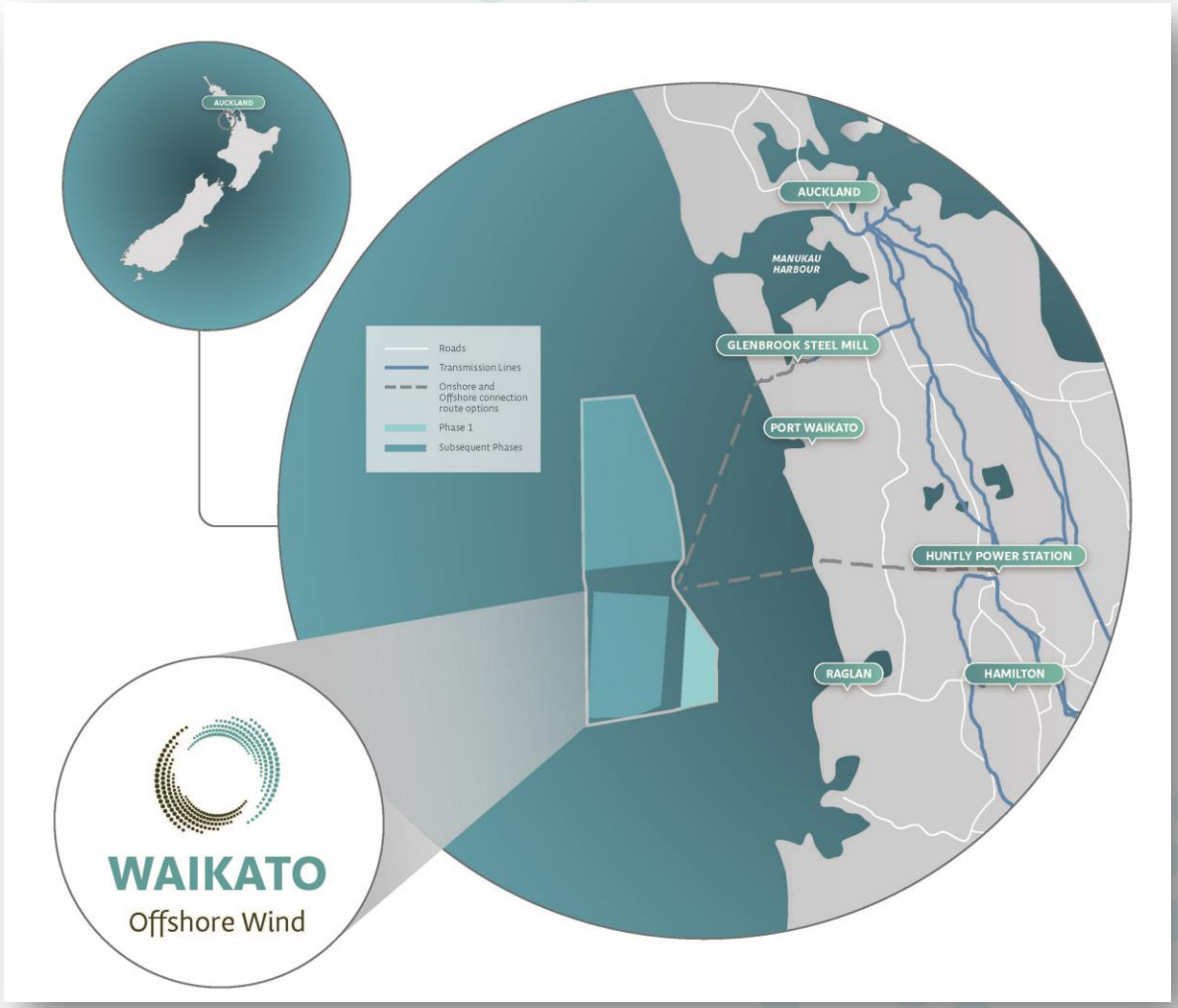
Waikato - Project location



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Why South Auckland – Waikato?

Opportunity to create enduring outcomes through collaborative approach to shared infrastructure and repurposing

Local training institutions can support capacity building for offshore wind industry

Active participation by South Auckland and Waikato tangata whenua in development of offshore wind industry

Excellent offshore wind resource complements other regional resources such as hydro, geothermal, onshore wind and solar

Offshore wind in South Auckland-Waikato region benefits from access to existing transmission infrastructure

Strong political and public will for energy transition and diversification from fossil fuels

Experienced workforce with manufacturing and energy sector heritage

Synergies with local industrial ecosystem and infrastructure

Clean energy supply for local large energy users such as NZ Steel and Fonterra

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What we have done to date

What we have done to date

- Sponsored Energy Excellence Awards and NZWEA offshore
- Sponsored Social Procurement award
- Site scoping - DNV-GL
- Site assessment - Elemental
- Environmental assessment - Elemental
- Grid Assessment - John Diesendorf
- Grid studies - Jacobs
- Lidar - on Beach Energy Kupe platform
- Engagement with communities and supply chain
- Visual simulations with local photographers
- Design - local New Plymouth designer

Announcement events

- South Taranaki launch - Hawera 2 Nov
- Waikato launch - Hamilton 11 Nov with Te Waka and Tataki

Growing team

- Country Manager - Nathan Turner - Shell and Transpower
- Jarek Pole - BFE APAC technical director
- Justine Gilliland – Head of Partnerships
- Toko Kapea - Māori partnerships
- Bianca Ruakere – Head of Comms

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Pioneering visual simulation

- Offshore wind is a new industry for New Zealand, and we acknowledge how significant the issue of visual impact is for coastal communities and all users of the sea. In recognition of that importance, we have prioritised the preparation of visual impact simulations for our projects.
- The process to create the 3D simulation is complex and involves the use of panoramic photographs (taken by a local photopaper from a number of locations), trigonometry, data points and digital technology. There is a video on how it is made on BlueFloat Energy's website https://www.bluefloat.com/projects/
- The output is a realistic and scientifically rigorous visual representation of a floating offshore wind project.
- We have created visual simulations for the South Taranaki and Waikato offshore wind projects

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Current and Anticipated Technical Workstreams

We have the following technical workstreams:

Site characterisation:

- Metocean assessment
- Geological desktop assessment
- Environmental expert assessments

Preliminary engineering:

- Electrical system design and grid connection
- Foundation design/ Anchor and mooring system
- Transport and installation assessment

Local Infrastructure/ Supply chain:

- Port and infrastructure assessment
- Localisation assessments
- Mapping local supply chain capability

Preparations for future activities

- Preparations for geophysical/ geotechnical surveys (onshore, coastal and offshore)

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Partnerships and engagement

We share the same views that partnering with hapu and iwi, host communities, local and central government, unions and the workforce, training institutions and broader stakeholders is critical to the success of the industry. We believe that engagement should be open, early and transparent.

Engagement to date includes

- Local and National Government
- Relevant regulatory bodies – such as MBIE, DOC, EA
- Regional development agencies such as VT, Te Waka and Tataki
- Transpower
- Industry regarding supply chain opportunities and offtake
- Various community groups, advocacy groups, unions, business groups and education providers
- Sponsoring offshore wind forums

Upcoming events

- Offshore Wind 4 Kids
- First community events for South Taranaki and Waikato planned for 2023

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Opportunities for collaborative research

There will be significant opportunities for universities, industries and NGOs/ think tanks to collaborate through research to enable the offshore wind industry to grow in New Zealand.

There are a number of research opportunities across topics such as:

- **Baseline ecological studies:** tracking migratory pathways of marine mammals and birds across declared zones
- **Cultural heritage:** mapping the ocean to better understand underwater heritage off the coasts
- **Social license & community engagement:** providing objective information to communities to broaden awareness and knowledge of the offshore wind industry & gain feedback
- Specialist technical environmental studies: such as noise and light assessments in the marine environment

UOW Energy Futures Network event

- We recently attended the Energy Futures Event in Wollongong hosted by UOW
- A number of researchers from across the university were present to understand how they can facilitate offshore wind development and the broader energy transition in the Illawarra
- Mapped out how we can progress collaborative research activities as an industry (rather than project-by-project or developer-led)

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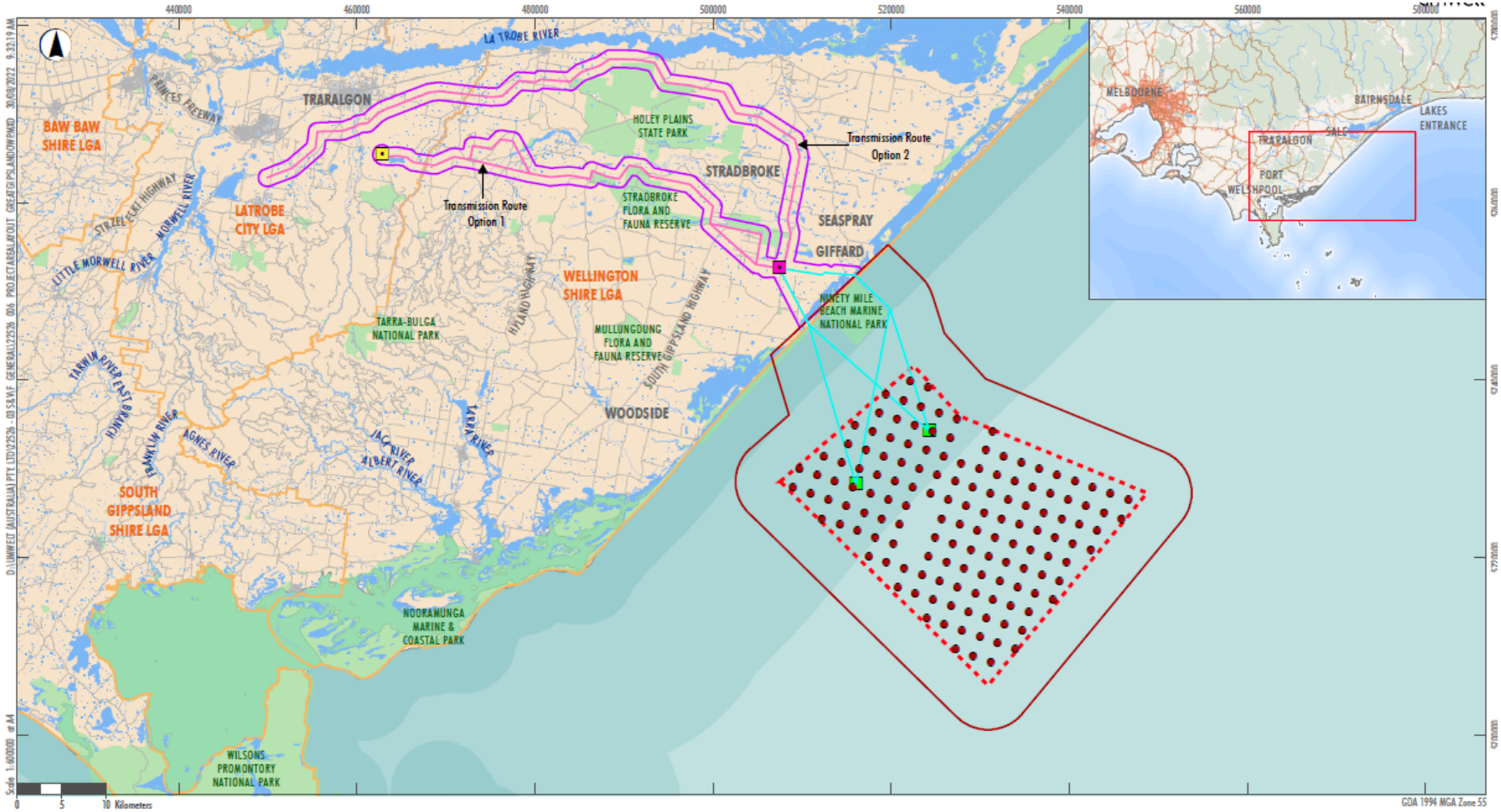
The Trans-Tasman Opportunity
Greater Gippsland
Offshore Wind Project
Wollongong
Offshore Wind Project
Southern Winds
Offshore Wind Project
Hunter Coast
Offshore Wind Project

Greater Gippsland OWP site



Legend

- Offshore Study Area boundary
- Onshore Study Area boundary

Greater Gippsland Offshore Wind Project Area consists of:

- Greater Gippsland Offshore Wind Project Area
- Potential Onshore Overhead Transmission Route
- Potential Subsea / Underground Cable Route
- Potential Turbine Layout
- Offshore Substation
- Existing Onshore Substation
- Indicative Onshore Substation
- Local Government Boundary
- State Forest, National Parks, Reserves
- Road
- Drainage Line
- VIC Coastal and Internal Waters
- Territorial Sea
- Exclusive Economic Zone (Amended by Perth Treaty 1997)

FIGURE 1.B

Project Area and Study Area

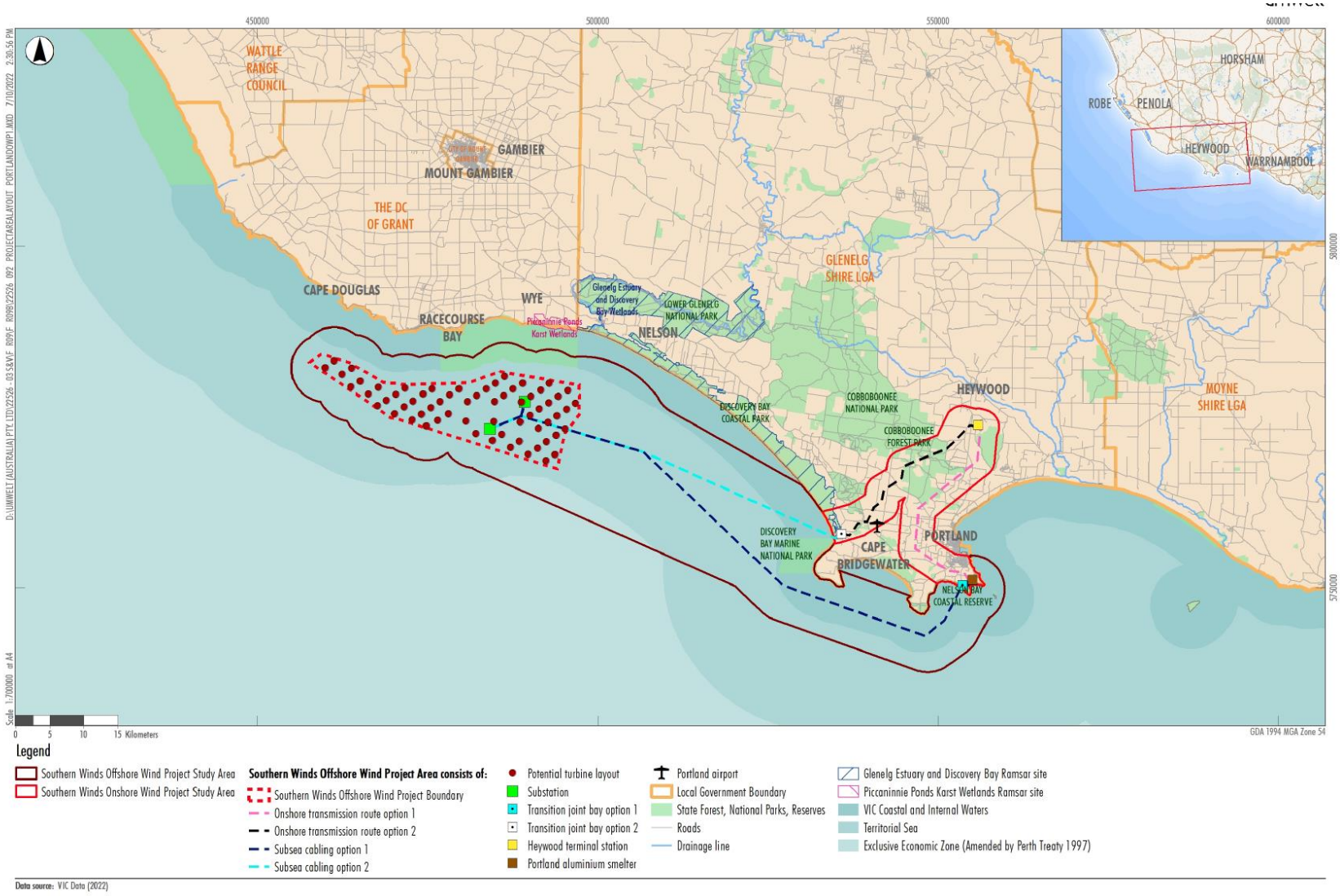
Greater Gippsland Offshore Wind Project

Hunter Coast Offshore Wind Project

Wollongong Offshore Wind Project

Southern Winds Offshore Wind Project

Southern Winds OWP site



Greater Gippsland Offshore Wind Project

Hunter Coast Offshore Wind Project

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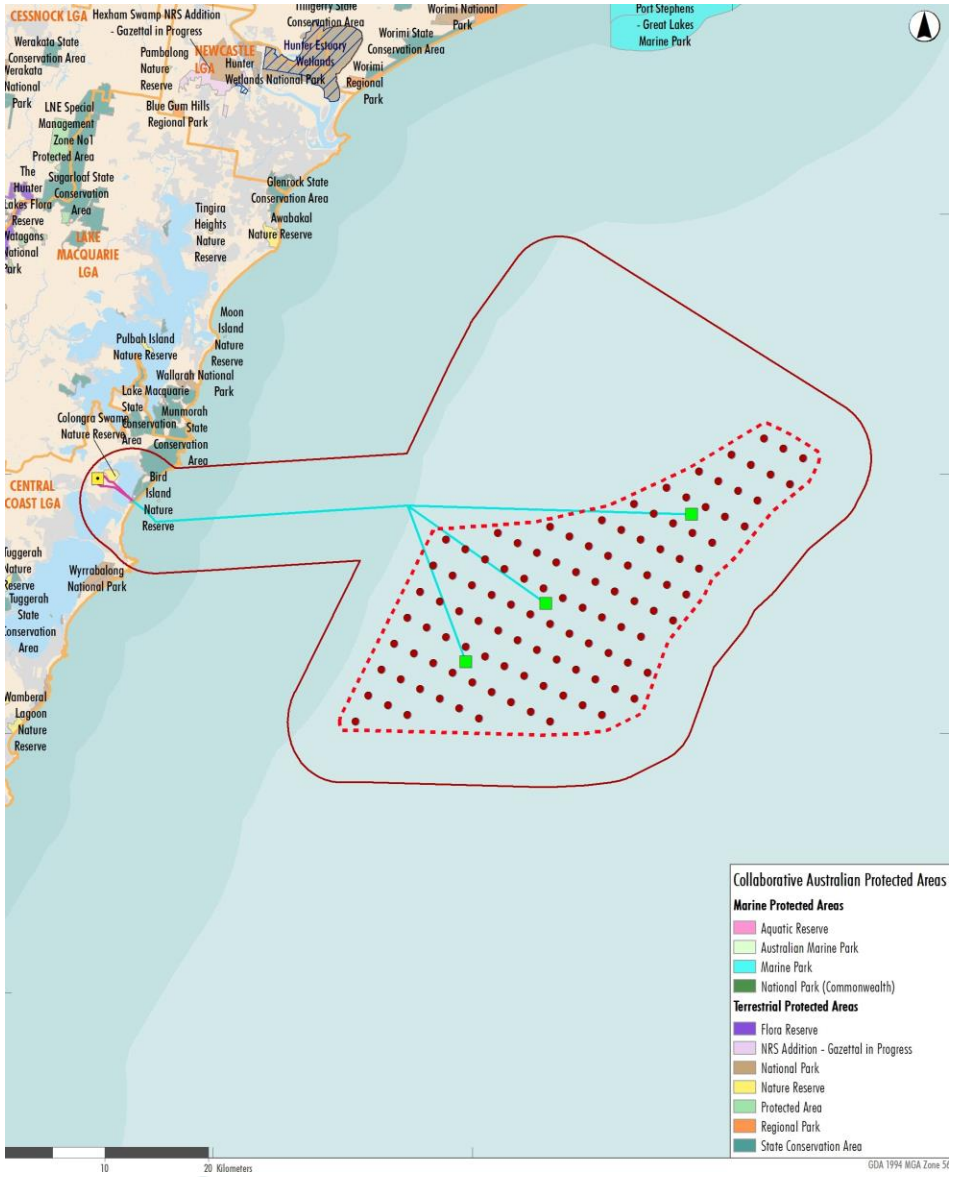
Hunter Coast OWP site



Greater Gippsland Offshore Wind Project

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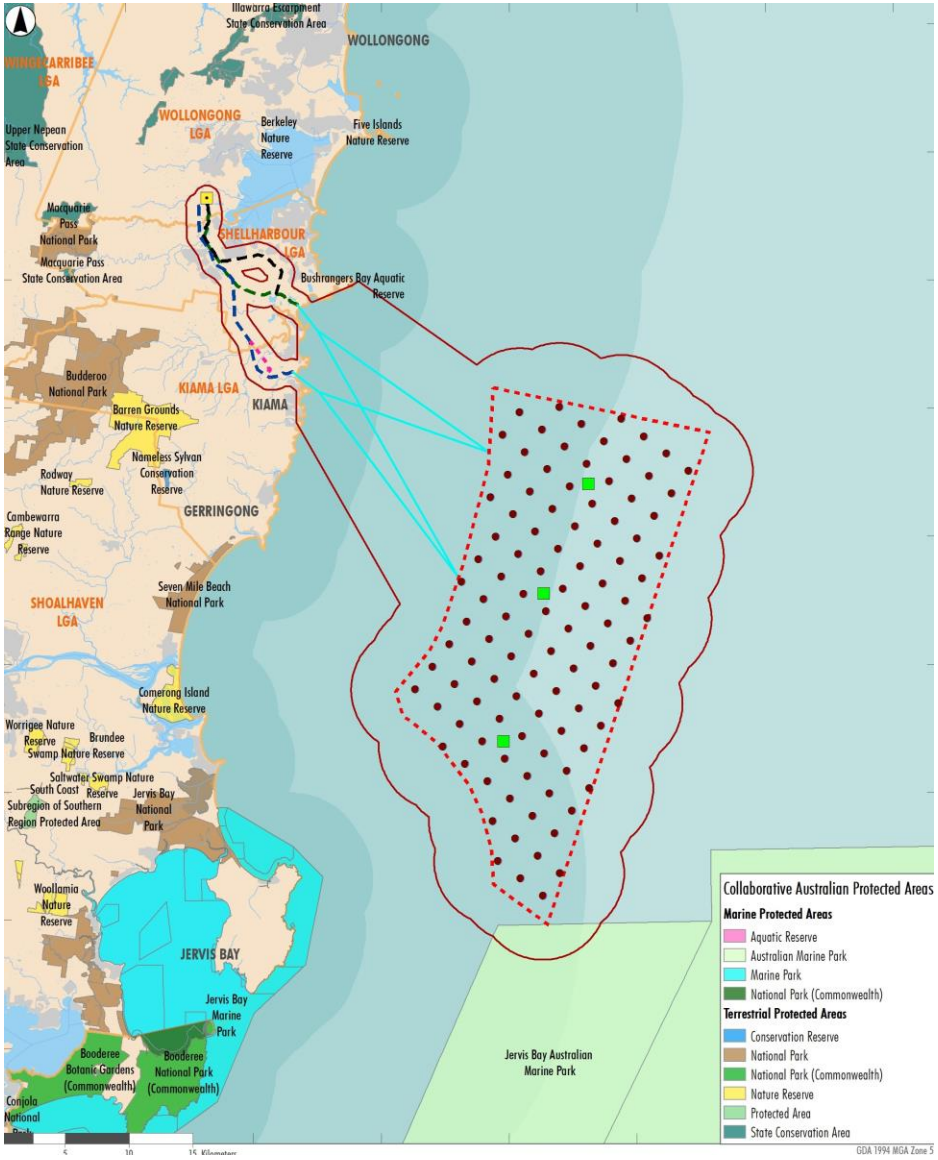
Wollongong OWP site

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