

Immense *Portential*: The opportunity for Australia’s ports.

Introduction

Intent of this section is to outline why ports are important for offshore wind and introduce some of the basic port types and uses.

Ports are crucial for offshore wind project delivery. This is important in an isolated country like Australia, where a lack of local advanced manufacturing capability will see projects importing most components.

A large amount of space is required for offshore wind projects. 20-30 hectares is commonly seen in developed ports. Large numbers of turbine components and foundations need to be laid out in a port close to the offshore site, so there’s enough components ready for installation. Get this logistical challenge wrong and the specialist (and costly!) installation vessels will be waiting instead of working.

Figure 1 shows the flow of components from overseas fabrication facilities to local staging ports, then onto installation vessels and the wind farm site.

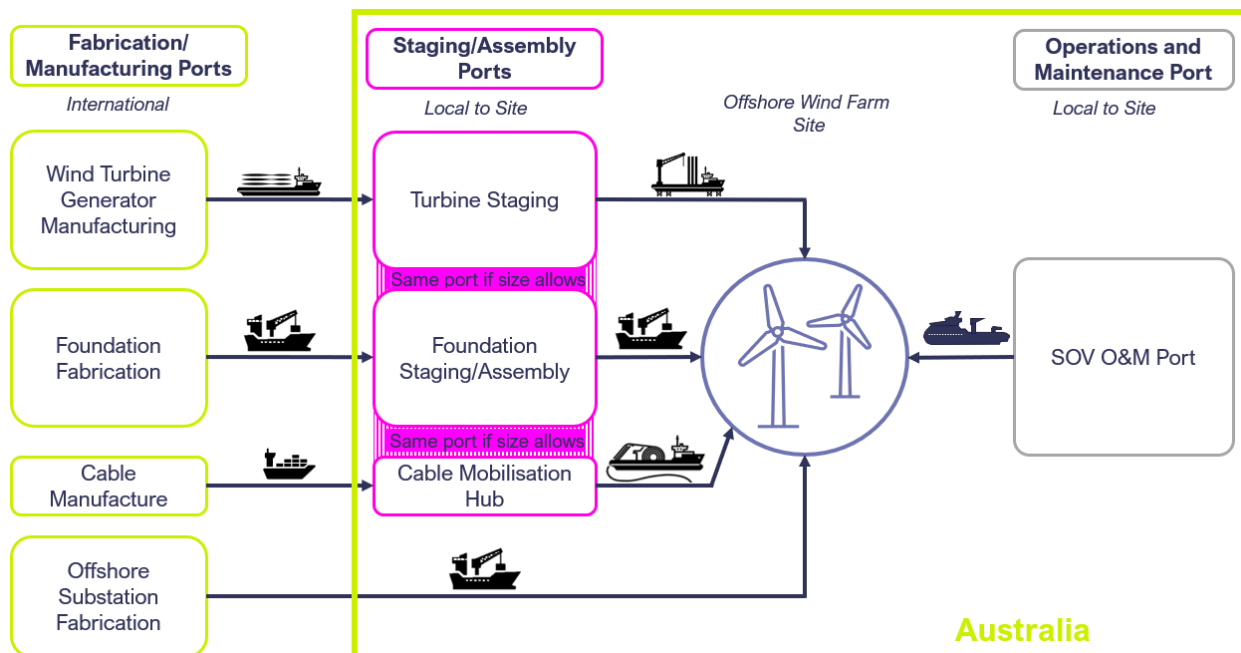
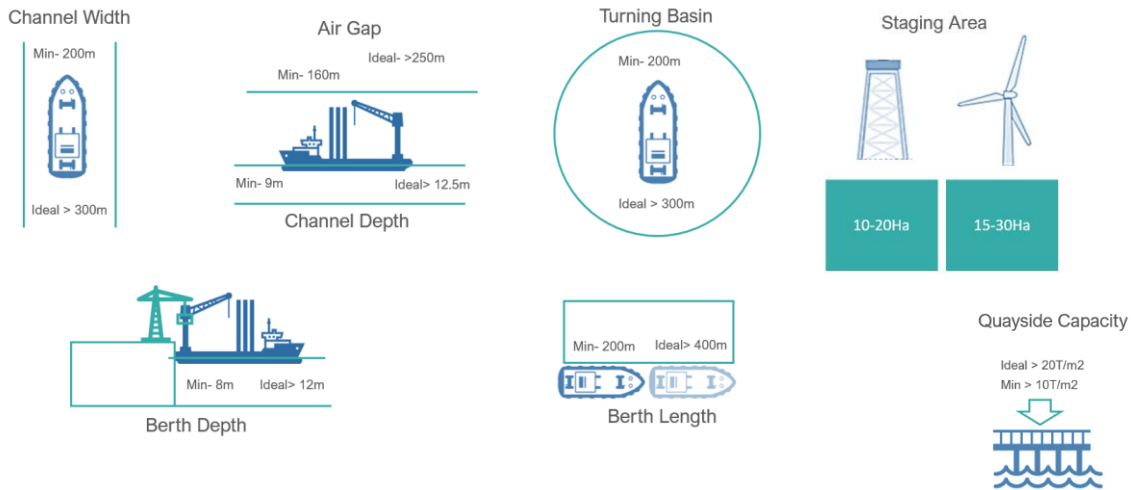


Figure 1: Port Roles in Offshore Wind

Requirements for Offshore Wind Ports

This section summarises port requirements specific to offshore wind.

Offshore wind ports require deep berths and access channels, heavy lift quays, and large parcels of high bearing capacity laydowns.



Ports in Australia

Currently no port on the east coast of Australia is capable of supporting offshore wind in any meaningful way. Most ports are ruled out simply by being too far from development zones or having berths or access channels too small for offshore wind vessels. For ports that tick the above boxes, the main limiting factor is then the size of available laydown areas and their bearing capacities.

Four main ports remain as potential options to support offshore wind on the east coast:

- Port of Hastings, Victoria
- Geelong Port, Victoria
- Port Kembla, NSW
- Port of Newcastle, NSW



Figure 2 - Location of Ports

Of these ports, Hastings, Geelong, and Port Kembla have already announced plans to develop facilities to support offshore wind construction, whilst port of Newcastle is developing a multi-purpose precinct that has the potential to support offshore wind.

In a region where we already expect to be facing port capacity shortages, the probability that Port Kembla will be selected to host the future east coast nuclear submarine base is concerning. Some pundits believe that an offshore wind port and a submarine base can co-exist. We disagree. At Port Kembla the outer harbour is the only area suitable for a wind precinct due to space constraints, this is unfortunately the current target area for the submarine base.

Port of Hastings

Port of Hastings is located in Western Port in Victoria, on the eastern side of the Mornington Peninsula. The Victorian State Government recently announced Port of Hastings as the future site of a 35-ha offshore wind precinct ([ref implementation statement 1 and 2](#)) which is currently undergoing a consultation process.



Figure 3 - Port of Hasting Development Proposal. Picture: energy.vic.gov.au

Geelong Port

Geelong Port is located on the western side of Port Phillip Bay in Victoria. Geelong port currently services onshore wind farms and has [announced plans](#) to develop a 25ha dedicated onshore and offshore wind support precinct near Lascelles wharf.



Figure 4 - Geelong Port Development Proposal. Picture: Geelong Port

Port Kembla

Port Kembla is located on the coast below Wollongong, in the Illawarra region of NSW. The port consists of an outer harbour protected by 2 breakwaters, and a dredged inner harbour used mainly for car imports and bulk good exports. NSW Ports (the privately-owned long-term lease holder of Port Kembla and Port Botany) has [announced plans](#) to develop an offshore wind precinct in the outer harbour.



Figure 5 - Port Kembla Port Development Proposal. Picture: NSW Ports

There has been chatter about the Australian Government selecting Port Kembla as the preferred site for a nuclear submarine base. This will face staunch resistance from the local community, but the commonwealth has compulsory land acquisition powers (especially in the interest of national defence). Sources state the outer harbour is the preferred location, which would scuttle NSW Port's existing plans for this location.

Port of Newcastle

Port of Newcastle is a river port located approximately 2km upstream from the mouth of the Hunter Estuary in Newcastle in the Hunter region of NSW. Port of Newcastle hasn't announced a specific offshore wind precinct yet, but it is possible the port will develop part of the large Mayfield precinct for this purpose.

The Port of Newcastle has already stated its intention to develop this precinct as a large, multi-purpose facility. So, there may be an opportunity for offshore wind developers to discuss leasing arrangements in the early stages.

What the Numbers Say

This section compares the offshore wind developments to the ports ability to support them (in GW/yr). Ultimately, it shows that shortages exist, and delays to projects will occur unless more port developments occur, or alternative solutions are found.

- The east coast of Australia is going to have up to 13 feasibility licenses awarded in the next 2-3 years (likely 6 in NSW, 5 in Victoria, and 2 in Tasmania).
- Ports will be limited to servicing wind farms within their region.
- Prohibitive weather delays and transport costs are likely to prevent ports supporting projects in interstate waters.
- **Bass Strait region** offshore wind developments: 7 projects (Gippsland, Portland, Northern Tasmania zones) totalling **10-14GW**.
- Ability of Bass Strait Ports to Support (Port Capacity): **1.5-2GW per year** (Geelong, Hastings)
- Timeline for Bass Strait region development: up to 9 years for projects in region given the port capacity.
- **NSW region** offshore wind development: 6 projects (hunter, Illawarra zones) totalling **9-12GW**.
- Ability of NSW Ports to Support (Port Capacity): **0.75-2GW per year** (Port Kembla, Newcastle). *With worst case including no development at Port Kembla due to nuclear submarine base development and a partially suitable precinct at Port of Newcastle.*
- Timeline for NSW region development: up to 16 years for projects in region given the port capacity.

What the Numbers Mean

Basically, if we don't develop our ports, then we run the following risks:

- Delaying the planned offshore developments
- Losing investment & capital
- Forcing ports and logistics to SE Asia
- Increasing the CAPEX

Potentially waiting 16 years to get to first power due to unsuitable ports will reduce investment appetite and delay FID for offshore wind projects in Australia. It is clear that development of additional port capacity needs to be considered.

Development announcements like that of Hastings, Geelong and Port Kembla go a long way for developers looking to secure their supply chains. Conversely, Kembla's suitability is questionable when a submarine base is considered, potentially disrupting developer plans and investor confidence.

Underutilised ports in other regions, such as Bell Bay in Northern Tasmania, are primed to take advantage of offshore wind developer demand for port capacity. If additional development of port capacity doesn't occur, then left-field solutions like floating storage, flexible ports or SE-Asian staging yards will be considered to ensure developments remain on schedule and safeguard Australia's energy security.



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