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Friday, 28 April 2023

Mr Chris Bowen
Minister for Climate Change and Energy
Department of Climate Change, Energy, Environment and Water
Industry House, 10 Binara Street,
Canberra
Submitted online: <https://consult.industry.gov.au>

Dear Minister

Notice of Proposal to Declare an Area – Pacific Ocean off Hunter, NSW

Transgrid welcomes the opportunity to respond to the Department of Climate Change, Energy, Environment and Water's (**DCCEEW**) notice of proposal to declare Pacific Ocean off Hunter, NSW as a zone for offshore renewable energy projects.


Transgrid supports the development of renewable generation as synchronous thermal generators retire. The Hunter offshore wind projects can help decarbonise the economy with year-round clean energy generation. Offshore wind is a key emerging renewable generation technology that can contribute to meeting the Australian Government target of net zero emissions by 2050 and reducing emissions by 43% and reach 82% of Australia's electricity generated from renewable sources, by 2030 if it promotes positive outcomes for consumers and the public.

Offshore wind is a proven technology internationally and has gained support in recent years in Australia, driven by the development of commercial operations, favourable regulatory and compliance developments, and the co-location of generation, storage and demand. Driving a coordinated approach to the planning and delivery of the necessary infrastructure is important to ensuring offshore wind can be delivered at least cost to consumers.

To better support the establishment of offshore REZs, there are several issues that we consider need further consideration. An overview of these issues is attached to this submission.

Transgrid looks forward to assisting DCCEEW to ensure all appropriate issues are taken into account as offshore renewable zones are considered and developed. If you or your staff require any further information or clarification on this submission, please contact Zainab Dirani at Zainab.dirani@transgrid.com.au.

Yours sincerely



Maryanne Graham
Executive General Manager
Corporate and Stakeholder Affairs

Notice of Proposal to Declare an Area – Pacific Ocean off Hunter, NSW

Transgrid submission to the DCCEEW's consultation

Summary

This submission highlights key issues which we believe warrant further consideration by the Department of Climate Change, Energy, Environment and Water (**DCCEEW**) as part of its consultation on the notice of proposal to declare Pacific Ocean off Hunter, NSW as a zone for offshore renewable energy projects.

Transgrid supports the Government's renewable targets and the subsequent initiatives that would achieve these targets at the lowest cost to consumers whilst maintaining reliability and system security.

The summary provides our views on four key topics. These include:

- Regulatory and policy considerations
- Social licence
- System reliability and security
- Other considerations.

Regulatory and policy considerations

DCCEEW currently regulates offshore renewable energy infrastructure in Australian Commonwealth waters under the Offshore Electricity Infrastructure Act 2021 (**OEI Act**) and the Offshore Electricity Infrastructure Regulations 2022. It is not yet clear how the OEI Act (including Offshore wind infrastructure and regulation), regulatory bodies, state-based regulation and the offshore projects interface together. To further clarify the roles of each body and how regulation applies to offshore wind, the following key points should be considered in further detail.

- Whilst offshore wind projects will be located in Commonwealth waters, there are currently no regulatory arrangements governing its integration into the NEM or associated NSW transmission networks. Existing Commonwealth regulatory powers under the National Offshore Petroleum Safety and Environmental Management Authority (**NOPSEMA**) are limited to administrative, environmental and safety-based regulation, including provision of R&D, feasibility, infrastructure and environmental / safety approvals. There needs to be much greater clarity of roles and responsibilities between the Commonwealth and the NSW Government.
- The delivery of onshore network augmentation to facilitate offshore renewables - further clarity on whether network augmentation will be under the National Framework or Jurisdictional arrangements will help with certainty.
- There are currently no regulatory or policy mechanisms governing the provision of offshore wind generation into NSW-based regulatory frameworks. This includes:
 - Policy mechanisms defining the integration of offshore wind generation into the transmission frameworks regulated by the National Electricity Law and Rules or the relevant NSW frameworks including the NSW Electricity Infrastructure Roadmap.
 - Policy mechanisms governing the roles and responsibilities of offshore wind participants, including the role of the TNSPs in the construction, ownership, operation and maintenance of transmission

infrastructure located within Commonwealth waters, territorial waters that are the responsibility of the State or the seabeds under those waters.

- Policy arrangements related to project development and delivery models, including contestability.
- Cost recovery of offshore transmission and related infrastructure, including who pays and how this impacts consumers.
- Defining and implementing asset management and technical engineering standards.
- Incorporation or exclusion of offshore wind into AEMO's Integrated System Plan Optimal Development Pathway (and hence planned future onshore network infrastructure).

Social licence

DCCEEW highlights that the selection of the proposed area off the Hunter was selected to minimise overall disruptions with consideration to environmental, social and commercial elements whilst still allowing for economically viable offshore wind infrastructure development. Transgrid supports the DCCEEW consideration of social licence as it is critical to build and maintain social licence in the communities that will host and be affected by the new electricity infrastructure that is required to achieve the transition of our electricity system and broader economy.

Given this, it is important that detailed consideration is given to ensure there is appropriate coordination, design and deployment of shared-use infrastructure in the Hunter offshore region to minimise disruption to the community. We would encourage further consideration of the following items:

- To minimise social licence concerns, including visual impact to the coastline, it is critical to optimise transmission infrastructure through a multilinked and coordinated approach. To increase community acceptance, it is important to consider the following:
 - A coordinated approach to the planning and build phases of the project and combining subsea cables with a multi-GW shared connection point at sea, thereby minimising the amount of onshore transmission needed, will result in substantial uptake benefits including community acceptance.
 - A thorough cost/benefit analysis should be conducted to ensure that consumers will not pay more than necessary for the infrastructure. Integration into the ISP process would enable a comparative analysis of the net market benefit of offshore wind to be compared with the net market benefits of other projects, ensuring offshore wind is deployed where and when it is efficient to do so.
 - Development of multiple offshore wind projects via a masterplan, rather than considering each project individually. The adoption of this approach has been shown to reduce the quantity of onshore land crossings and project development disruptions to communities as well as providing local communities and stakeholders with greater certainty as to longer-term impacts. Under this approach, several offshore wind development projects can be coordinated and consolidated, reducing the number and timing of several shoreline crossings to onshore transmission landing points, compared to "point-to-point" offshore wind projects.
 - The installation of subsea transmission cabling usually requires the use of Cable Laying Vessels (CLV). CLVs install the subsea cabling via dredging the sea floor to create a cavity, into which the cabling is laid. Coordination of several offshore wind projects could minimise community concern through minimisation of environmental disruption including sea floor and sea water disturbance and sea-borne industry disruption (e.g., fisheries).
- As construction and deployment of infrastructure will result in extensive disruption to the environment and commercial operations during the construction phase, extensive community engagement needs to

be undertaken throughout the project. TNSPs would play a critical role supporting Commonwealth and State governments.

System reliability and security

DCCEEW has not provided specific commentary in the consultation on reliability and security of the network. Transgrid considers that it is important to consider this critical area. As the NSW jurisdictional planner, Transgrid plays a critical role in ensuring system reliability and security is maintained. Key considerations include:

- Reliability of the system impacts: Offshore wind generation and related infrastructure can be susceptible to long periods of downtime (several weeks to months), particularly if there are significant faults or damage to subsea cables.
- Appropriate redundancy and reliable onshore / offshore network topologies should be considered that promote greater interconnection to the shared network onshore. This includes the use of shared-use infrastructure and radial versus meshed / H-connection topologies.
- Onshore transmission capacity – detailed modelling should be undertaken to outline the required transmission capacity to cater for an offshore renewable zone off the Hunter region. Transgrid can play an important role in defining network needs to connect offshore renewables to land.
- Single points of contingency within NSW generation sources - the proposed offshore wind projects are of sizeable GW scale. Single contingency failure of offshore wind or large industry loads of more than 750MW could have a detrimental impact on system operationality and security due to Frequency Control Ancillary Service (**FCAS**) requirements. These failures will require Special Protection Schemes or discharging battery storage if the single contingency of offshore wind is more than 750MW. Consideration needs to be given to the integration of battery storage and the implication for large industry loads with offshore wind generation of more than one or two gigawatts.
- Certainty in generation replacement within energy transition - The energy transition will require the orderly replacement of existing thermal generation with alternative generation technologies. This will require a contemporaneous understanding of the sequence and magnitude of generation technologies coming online via a Government publication and certainty in project delivery (including ensuring project bankability and timeliness of project delivery).

Other considerations

We encourage the DCCEEW to consider the following issues as work progresses to declare Pacific Ocean off Hunter, NSW as a zone for offshore renewable energy projects.

- De-risking extensive early development costs through clear approval pathways and sharing of costs could result in an accelerated and more streamlined process whilst minimising costs to consumers. Consideration should be given to learnings from programs such as the Pumped Hydro Recoverable Grants Program (**the Program**) in NSW. The Program provides recoverable grants to project developers to assist with the cost of early stage, detailed feasibility studies for investigation of seabed geotechnical condition.
- Whilst fixed-bottom foundation offshore wind technology is well proven internationally, floating offshore technology is a relatively new technology and currently has increased installation and operational risks attached. Unlike the Victorian offshore wind zones, which are predominately in shallow waters where fixed installation is achievable and efficient, NSW's offshore wind resource is almost entirely in deeper

waters and may require the use of floating wind technologies. In addition to installation and operational risks, careful consideration also needs to be given to the cost of these technologies which currently cost more than onshore and offshore fixed wind turbines. Strategically investing in de-risking emerging offshore wind technology will be critical.

- Removal of industry barriers: There are a range of local barriers that will likely need to be addressed for floating foundation technology in NSW such as port infrastructure, vessel market availability, local supply chain, skills development, and risk profiles of project financiers.
- Development or proactive “overbuild” of offshore transmission capacity - International markets such as the UK, have noted market benefits from ‘right’ sizing transmission capacity such as subsea export cabling, to accommodate sensible expectations of multiple or future offshore wind projects. The, entirely appropriate concern to avoid stranded assets or underutilised network capacity needs to be carefully balanced with the financial and design efficiency and reduced community and environmental impacts achieved by minimising the number of times transmission infrastructure needs to be constructed for an offshore wind zone. Better outcomes for stakeholders will be achievable if the responsible Government has clear offshore wind targets which inform the required transmission infrastructure capacity, a coordination framework, and a centralised, masterplan-led approach to network design and generation integration.
- Lessons from international jurisdictions such as the UK’s National Grid ESO Holistic Network Design (**HND**) and Ofgem’s Offshore Network Transmission Review (**ONTR**) have demonstrated that development of optimal offshore wind development models is an extremely complex and multi-disciplinary endeavour. Careful consideration of the development of a similar framework should be considered to ensure appropriate industry and consumer outcomes.
- Industry collaboration to collectively identify, develop and implement solutions to assist with the development of the offshore wind industry, related infrastructure and policy frameworks would be welcomed and should be prioritised in the near term. This should include a collaborative working group involving NSPs, network planning bodies, developers, regulators, consumer advocates and government bodies.