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Wednesday, 15 November 2023

The Hon. Chris Bowen MP  
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

**DCCEEW Proposed offshore wind area: Pacific Ocean off Illawarra region, NSW**

Transgrid welcomes the opportunity to respond to the Department of Climate Change, Energy, Environment and Water's (**DCCEEW**) consultation on the proposed offshore renewable energy projects, in the Pacific Ocean off the coast of the Illawarra region in New South Wales. Transgrid is eager to collaborate with DCCEEW, AEMO and EnergyCo to help develop solutions that securely and reliably integrate offshore wind in NSW.

Transgrid shares the Government's desire to accelerate the delivery of critical transmission infrastructure projects in the Integrated System Plan (**ISP**), which will facilitate the transition to net zero emissions by 2050 and ensures we maintain a secure energy supply. AEMO highlights that with the phasing out of coal-fired power plants by 2043, Renewable Energy Zones (**REZ**) are more vital than ever. Without urgent and sustained investment in new sources of electricity, and the transmission needed to connect it to consumers, there will be significant risks to reliability over the coming decade.

We strongly believe that it is essential to have a coordinated structure to facilitate offshore REZ's which includes joint network planning to optimise outcomes and reduce inefficiencies.

In April 2023, Transgrid made a submission to DCCEEW's consultation on the notice of proposal to declare Pacific Ocean off Hunter, NSW. The submission highlighted several key issues we believe need further consideration. We believe these issues would also need to be considered in this context.

To ensure an effective and secure transition to net zero, and the integration of offshore REZ's, Transgrid believes it is important to:

1. Establish an industry-wide taskforce to consult and co-design the development of the offshore wind industry in NSW in the long-term interest of energy consumers.
2. Focus collaboration between DCCEEW, NSW Government, AEMO and Transgrid, as the NSW jurisdictional planner, to proactively plan offshore infrastructure and its integration with the onshore transmission infrastructure.

3. Develop an offshore regulatory framework that clarifies the interface between the Commonwealth framework (OEI Act) with NSW-based arrangements.
4. Consider deployment of small-scale technology proof-of-concepts to trial floating platform technologies and associated network infrastructure in the Australian context, to build industry capability and de-risk key emerging technologies ahead of large-scale deployment.

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

- Social licence
- System and network integration
- International learnings

### **Social licence**

DCCEEW is currently working to improve community support and social licence for renewable energy. We also understand that DCCEEW is working with energy businesses and state and territory governments to improve community engagement for energy infrastructure projects. The stated goal of this partnership aims to address factors that can speed up project delivery. This includes addressing community needs.

Transgrid agrees with DCCEEW and we are focused on building and maintaining social licence in all the communities in which we operate. We are contributing to several regulatory reforms that are currently being considered by the regulatory bodies to ensure that these initiatives will develop solutions that maximise social licence outcomes. We believe building social licence with communities enables:

- Improved outcomes for consumers – by helping lower energy prices, through supporting the timely delivery of transmission infrastructure required to connect cheaper renewable generation and firming to replace ageing thermal generation.
- Decarbonisation of the economy - by supporting the timely delivery of the transmission infrastructure required to increase renewable penetration in the energy system and transition the grid to net zero.
- Good regulatory practice - by improving engagement with communities and landowners.

We look forward to collaborating with the communities in the Illawarra area to ensure we increase the benefits and minimise the negative impacts of new transmission lines on communities in the area.

### **System and network integration**

Transgrid is eager to help DCCEEW and proponents effectively integrate offshore wind and load technologies in the Illawarra. We believe it is essential to coordinate the development onshore and offshore transmission infrastructure components. This includes joint planning activities.

The transition from coal to renewables will be underpinned by a new 500kV backbone extending from Victoria to Queensland via Sydney. This energy superhighway will improve system resilience, ensuring efficient and secure energy transfer from REZs to major load centres and new green industries. When power stations at Vales Point and Eraring on the Central Coast retire, future demand will be met by the generation outside of the load area.

To ensure energy security for Sydney, Newcastle and Wollongong (**SNW**) load centres, and access to cheaper energy for NSW consumers, we believe the following key planning considerations need to be taken into account:

- Offshore REZs off the Illawarra would require us to 'Close the loop' in the next decade by building out the southern parts of the 500kV Sydney Ring, to diversify energy sources (including Illawarra Offshore Wind) to the SNW load centre.
- Installation of new infrastructure and upgrade existing infrastructure. There need to be careful consideration of planning activities, which would take substantial time investment, to accommodate for the new REZ. To connect 4.2GW of Illawarra Offshore Wind generation would require the installation of new substations and lines as the existing assets do not have sufficient capacity to carry the forecast generation.
- Proposed offshore wind projects in NSW (typically 1-2 GW each) far exceed the current largest credible contingency in the NSW power system (~750 MW). A fault in a cable connecting a mega-offshore project to the transmission backbone could result in the sudden loss of a significant share of NSW's power supply, which could trigger frequency and voltage issues, with the potential for cascading failures and widespread power outages.

It will be essential to ensure the power system has sufficient reserve and redundancy provisions to maintain power system reliability and system security, including during maintenance.

### International learnings

As DCCEEW has highlighted, offshore wind is thriving in many regions around the world, particularly offshore wind projects in the United Kingdom and Europe. Given this we believe it is critical to leverage lessons from international offshore wind markets. These include:

- Governments can support new industries with a defined strategy and targets to support the investment opportunity pipeline and reduce anticipatory investment risk.
- Mature markets are trending towards coordinated planning of offshore infrastructure lead by governments, jurisdictional planners and Transmission System Operators (**TSO**), rather than proliferation of point-to-point radial connections led by offshore developers.
- Coordinated, share-used infrastructure ('Integrated Approach') offers many potential benefits, including:
  - Reducing community impacts with fewer shoreline crossings and reduced land use.
  - Improving power system reliability and resilience.
  - Promoting cost efficiency with fewer, scale-efficient connections.
- Ownership models differ considerably between Jurisdictions, but many international markets have adopted a "TSO-owned and operated model" to manage risk and improve reliability.
- Optimal offshore network topologies are highly project and region-specific, given the infrastructure complexity and multi-disciplinary decision criteria involved.

In our opinion, it is important that we carefully consider these factors to optimise outcomes and reduce inefficiencies. We look forward to working with DCCEEW to ensure the appropriate infrastructure is in place to optimise offshore renewable energy. If you or your staff require any further information or clarification on this submission, please contact Zainab Dirani at [zainab.dirani@transgrid.com.au](mailto:zainab.dirani@transgrid.com.au).

Yours faithfully



Maryanne Graham  
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