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Committee Secretary
Joint Standing Committee on Trade and Investment Growth
PO Box 6021
Parliament House
Canberra ACT 2600

Dear Secretary

Response to Inquiry into Australia's transition to a green energy superpower

Transgrid welcomes the opportunity to provide a submission to the Joint Standing Committee on Trade and Investment Growth's Inquiry into Australia's transition to a green energy superpower. Transgrid fully supports the acceleration of the critical electricity transmission infrastructure required to support Australia's energy transition to a low emissions electricity supply.

Transgrid is the planner, operator and manager of the high voltage transmission network connecting electricity generators, distributors and major end users in New South Wales and the Australian Capital Territory. Our network is also interconnected to Queensland and Victoria and is instrumental in ensuring that the electricity system facilitates a reliable, low emissions and affordable electricity supply for consumers.

Australia is dramatically shifting its energy mix, and Transgrid is on the frontline of making the rapid and profound changes required to make this happen. We must maintain a robust transmission network that will be resilient to support the connection of a rapidly changing mix and location of energy resources, while continuing to provide strong security, reliability and safety performance.

This submission sets out what Transgrid is doing to support the energy transition, as well as some of the key challenges that we face in delivering on this objective. Of particular concern to Transgrid are the issues of transmission project financeability, global supply and resource scarcities, access to skilled labour, and system security. We also comment on broader sector issues including achieving net zero emissions, the development of hydrogen and green steel industries in Australia.

Transgrid is building superhighways to connect new renewable energy

As part of the Australian Energy Market Operator's (AEMO) Integrated System Plan (ISP), Transgrid has recently completed vital upgrades and expansions to NSW's interconnectors with Queensland, Victoria and South Australia.¹

¹ The Australian Energy Market Operator's (AEMO) Integrated System Plan provides a roadmap for the development of the national electricity system

Going forward, Transgrid plans to invest \$11 billion in transmission over the next 5-10 years to help deliver AEMO's most recent ISP actionable projects. This work will enable low-cost renewables to enter the market and fill the gap left as coal generators are retired, delivering both environmental benefits and savings to our customers. This infrastructure will also create 7,000 jobs and over 14,000 indirect jobs in regional NSW and \$25 billion in economic activity.

The transmission projects we are to deliver include:

- *EnergyConnect* – a new interconnector between the power grids of South Australia and NSW, capable of supplying 8.5 per cent of NSW's total average maximum daily demand at full capacity.
- *HumeLink* – a 500kV transmission line and substation development which will connect Wagga Wagga, Bannaby and Maragle. It will enable a successful and rapid integration of new clean energy from renewable energy zones and unlock the full capacity of Snowy 2.0.
- *VNI West* – a new interconnector between NSW and Victoria which will increase the states' sharing capacity and unlock clean energy from existing and future renewable energy zones (REZs).

With acceleration front-of-mind, we are working to integrate these projects into a single simultaneous program (the Powering Tomorrow, Together Program) to bring forward delivery, leverage supply chain savings and accelerate the realisation of long-term consumer bill relief.

Transmission project financeability

To support the transition, ISP projects must have revenue profiles that enable them to maintain the benchmark BBB+ credit rating and be financeable. Networks cannot fund new major projects by raising additional equity beyond the 60:40 debt to equity ratio, if they only receive the allowed debt return on the additional equity that is sought. Transgrid strongly advocates that the energy market bodies should help to resolve this financeability issue.

Access to skilled labour

A key challenge for the energy transition is the development and retainment of skilled labour, especially as other industries compete for this labour during the same period. Transgrid is already experiencing skills shortages in construction managers, electrical and power engineers, civil engineers and transmission line workers, and these shortages will only increase over the coming decade.

Transgrid is working with regional authorities, training providers, universities, and our own Registered Training Organisation to upskill the regional workforce by providing new training opportunities in regional NSW. For example, in August 2022, Transgrid committed to a \$2 million Engineering Scholarship Fund with Charles Sturt University. Further support is needed, and we welcome Government initiatives to assist upskill and train local workers.

Supply chain and resource scarcities

Recent increases in energy prices across the world have heightened the global competition for the engineering skills, equipment and materials needed to build a net zero economy. This means Australia will

have to compete for its share of these scarce resources. A potential solution to this challenge, is long-term planning and co-operation across stakeholders in Australia.

System security challenges

The accelerating pace of Australia's electricity system transition is presenting challenges to the stability and operability of the transmission system. Transgrid is proactively assessing our system security capabilities to ensure that the necessary mechanisms and equipment are in place prior to further coal withdrawals, to ensure there is as little disruption to consumers' electricity services as we approach 100 per cent instantaneous renewables.

We recently conducted an operations capability assessment and gap analysis on what is required to enable the secure operation of the NSW grid at 100% renewables (known as the '*System Security Roadmap*'). Our analysis concluded that there is a strong economic case to uplift our technology and specialist resource capability. Implementation of the Roadmap is expected to commence in Transgrid's 2023-2028 regulatory period.

Achieving net zero

Transgrid is building on its leadership in the energy transition by rolling out credible and ambitious long-term greenhouse gas emission reduction targets. These targets are Science Based Targets aligned to the level of decarbonisation required to keep global temperature increases to 1.5 °C or well below 2°C compared to pre-industrial levels set by the Science Based Target Initiative.

We will achieve our targets by:

- Reducing our direct emissions by eliminating emissions from our passenger and commercial vehicle fleets by 2030, and supporting industry efforts to develop alternatives to sulphur hexafluoride (SF6) use.
- Delivering and accelerating the 'Powering Tomorrow, Together Program' to enable Australia's renewable energy transition which will reduce line losses. We are also developing metrics to better understand how our system security projects influence line losses. Further, our offices and depots will be powered by 100 per cent renewable electricity by 2025.
- Driving efforts across our value chain we have committed that 50 per cent of our spend will be with suppliers that have Science-Based Targets by 2025.

We also intend to support the development of green materials, including locally produced green steel and waterless concrete, and will utilise no-carbon products where possible.

Hydrogen

Transgrid supports Government initiatives to support developing energy industries such as hydrogen. We have recently been working with the NSW Government to implement its commitment to provide a 90% reduction in network charges to hydrogen producers that benefit from an exemption as part of its Hydrogen Strategy.

Green steel

Steel will be a critical input material for transmission projects, and to realise the full benefits of the transition, it will be important to decarbonise and localise supply chains to the extent possible, including for steel. Transgrid supports an industry-wide movement to accelerate development of low carbon steel supply in Australia.

Transgrid thanks the Committee for the opportunity to provide our industry experience and insight into how Australia can successfully transition to become a green energy superpower. For further information, please contact Neil Howes, Senior Manager Policy Reform, at neil.howes@transgrid.com.au.

Yours faithfully

David Feeney
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