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Renewables SA  
Department of State Development  
Level 4, 11 Waymouth Street  
ADELAIDE SA 5000

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**Re: Low Carbon Investment Plan for South Australia**

ElectraNet welcomes the opportunity to provide a brief submission on the South Australian Governments' *Low Carbon Investment Plan for South Australia: Strategy Paper*.

ElectraNet is the principal transmission network service provider in South Australia, and owns, operates and maintains South Australia's high voltage transmission network. The primary function of the transmission network is to serve electricity consumers by transporting electricity from generators and interconnectors to large transmission connected customers and to the distribution network.

Over the last decade, ElectraNet has connected the vast majority of the 1,477 MW of large scale wind generation currently installed in South Australia. A further 270 MW is currently under development, with the first 102 MW expected to be operational by November 2016. Wind energy output in South Australia has now risen to account for 33% of total annual grid connected energy in 2014-15 (with a further 6% from rooftop solar) peaking at maximum output of 1,138 MW on 27 June 2014, which exceeded the state wide demand level at that time and allowed for significant export of energy interstate.

This level of renewable penetration has substantially reduced greenhouse gases emitted in the production of electricity in South Australia, and made a contribution to greenhouse gas abatement nationally across the interconnected network. The connection of high levels of wind generation in South Australia has been achieved without the requirement for additional transmission network charges to electricity consumers, with generation developers funding the costs of connecting to the network.

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South Australia is well placed for the current trend of increasing renewable energy development (focused on wind and solar) to continue. As cited in the Strategy Paper, previous studies undertaken by ElectraNet indicate that there are no immediate network capacity limitations to further generation connections in South Australia to unlock more of the State's abundant renewable energy sources.

The Mid-North in particular is regarded as one of the best wind resources in Australia, and the adjacent transmission corridor has the capacity to connect additional generation. Overall there are around 10 locations on the transmission network that could each accommodate additional generation of 200 MW or more. The closure of the coal fired generation at Port Augusta announced by Alinta Energy would increase the capacity to connect new generation to the network by a further 500MW.

Market participants and potential investors have provided information to the Australian Energy Market Operator (AEMO) on 19 publicly-announced electricity generation development proposals in South Australia<sup>1</sup>. Of these, 17 projects are based on renewable energy sources, including 2,963 MW of wind energy.

Further actions being taken by ElectraNet which support the further development of low carbon renewable energy sources in South Australia include:

- Heywood Interconnector upgrade – works are currently underway to increase the nominal capacity of the Heywood Interconnector from 460 MW to 650 MW, a 40% increase. Increased interconnector capacity will improve the ability to import lower cost generation from the Eastern States at times of high demand, and to export lower cost renewable energy to the Eastern States, particularly at times of lower demand in South Australia.
- Renewable generation integration – the growing level of renewable generation in South Australia poses challenges for the management and operation of the electrical power system. AEMO and ElectraNet are working together further to develop options to manage these increasing challenges, building on initial work undertaken in 2014<sup>2</sup>.
- Energy storage project – AGL, ElectraNet and WorleyParsons are jointly undertaking an Energy Storage for Commercial Renewable Integration (ESCRI-SA) project part-funded by the Australian Renewable Energy Agency (ARENA) to explore the role of grid-scale battery storage in South Australia. Given the inherent variability of large scale wind and solar generation output, energy storage can assist in firming up output from these sources and support renewable energy integration in the market.
- Eyre Peninsula Reinforcement – ElectraNet has proactively progressed the Regulated Investment Test for Transmission for the potential upgrade of the transmission network on the Eyre Peninsula to inform stakeholders about this potential development. Expansion of this currently limited transmission capacity to serve prospective loads has the potential to support the development of further available wind resources in this region, but remains dependent at this stage on the commitment of major proposed mining developments on the Eyre Peninsula. ElectraNet is also working to acquire the necessary easements to secure the transmission corridor for this potential upgrade.

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<sup>1</sup> AEMO, South Australian Electricity Report, August 2015

<sup>2</sup> Renewable Energy Integration in South Australia: Joint AEMO and ElectraNet Study , October 2014

More broadly, ElectraNet also remains supportive of market based approaches to promote the development of large scale sustainable renewable generation sources. As large scale generation and associated network infrastructure are long-lived capital intensive assets, a robust and stable market and policy framework is vital to provide long term certainty to investors.

ElectraNet stands ready to work with the Government to unlock the further potential of South Australia's renewable energy resources to serve the long-term interests of electricity consumers in South Australia.

Any queries in relation to this submission should be referred to Mr Rainer Korte, Executive Manager Asset Management in the first instance on (08) 8404 7983.

Yours sincerely



Rainer Korte  
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