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Integrated System Review on Coordination of Generation and Transmission Investment Consultation

Renew Estate and Wirsol are pleased to submit our feedback on Australian Energy Market Commission's (AEMC's) *Coordination of Generation and Transmission Investment Discussion Paper* released in April 2018. Specifically, this feedback relates to the subject of Renewable Energy Zones (REZ) and the system-wide benefits of investing in a more interconnected NEM in Australia.

Renew Estate and Wirsol are project partners in developing large-scale solar farm projects across Australia. Wirsol, as the asset builder and asset owner, has committed an investment of over \$750m in 2017 developing a pipeline of projects across Australia. Wirsol is a substantial global renewable energy player. The partnership between Renew Estate and Wirsol was announced in July 2017 with an ambition to develop 1 GW of renewable energy in Australia over the coming years.

Renewable Energy Zones

The key issue we see in the development of any Renewable Energy Zone is the potential divergence in timescales between transmission development and renewable generation development. Typically, a renewable energy project such as a utility scale solar farm would take anywhere between 18 and 36 months from ideation to completion. For transmission development this timeframe is closer to between 5 and 8 years.

The divergence in timescales magnifies the risk of inefficient infrastructure investment in establishing REZs that are unable to keep pace with development at alternative sites across the NEM. Once the time-delay in establishing the enabling REZ infrastructure is considered, it is possible that greater economic value could be captured utilising existing connection opportunities, even factoring in the impacts of congestion.

To mitigate this risk of REZ development, infrastructure development timelines must be streamlined. This may prove a challenge in implementing development Option 1: *Enhanced information provision* or Option 2: *Generator coordination*, which require wider consultation and engagement processes.

Another key action for mitigating the risk of inefficient REZ network investment is to ensure that any investment is targeted to network regions identified to serve other benefits to the NEM, thus maintaining the paths of least regret. These may include a number of network improvements already under consideration however the greatest system-wide benefit would likely be achieved through investing in a more interconnected NEM in Australia.

We view that the one of the most valuable regions for network infrastructure investment would be in establishing interconnectivity between the South Australia and New South Wales NEM regions. This is an exemplar path of least regret investment, which would improve reliability, reduce energy costs for consumers while facilitating a REZ in an area of strong natural resources. This interconnector opportunity has been the focus of a number of network infrastructure planning studies.

Wirsol and Renew Estate are pleased to see the engagement by AEMC around transmission investment and bringing forward investment in paths of least regret. We view these actions as crucial in facilitating a successful REZ and ensuring that network investment is properly targeted to deliver system-wide benefits.



Concentration of generators and MLF impacts

Renewables benefit greatly from geographical diversity. Large numbers of renewable energy generation in diverse locations around the network cause the intermittency in generation profiles to smooth out. The current network has been designed around “concentrated” sources of energy. The question is how to best adapt the network to allow connection of renewable generation. If the REZ concept is looking to concentrate renewables around sources of energy it may not be successful in delivering system reliability. Renewables need a more fluent and adaptable network.

In the financial modelling of renewable energy project, the loss factors have a relatively large impact on the success of a project. Currently the forecast of loss factors are proving highly variable from year to year and become almost unreliable within months. If the NEM were to be changed to a nodal model rather than the regional model, it would provide an incentive to developers to where generation should be located. This concept could aid the successful development of a REZ.

Costs of network development

From a generation development perspective, Wirsol and Renew Estate would like to see clarity from the ISP on how the costs of development in the networks will be distributed between Network Service Providers (NSPs), generators and government. Network costs vary significantly between NSPs. One of the fundamental design principles of the NEM is based on generators not being charged Transmission Use of System (TUOS) or Distribution Use of System (DUOS) charges. However our experience has been NSP charging “network charges” which are de-facto TUOS or DUOS charges.

In order for investment into development to occur, certainty in policy direction and objectives is required. Affordability in this sense is directly related to the consistency of rules (and interpretation) from AEMO and NSP’s. Although each NSP (transmission and distribution) follow the same basic process the requirements vary slightly and therefore each project process becomes bespoke. To cut down on costs and timeframes there needs to be more consistency between the NSPs during the grid connection process.

We have seen a previous attempt in planning renewable energy areas in Victoria – the Victorian Scale Network Extension (SENE). This allowed generator projects to share connection costs which were initially paid by the first connecting party with costs then recovered by subsequent connecting parties. However, there was a time limit whereby these costs could be recovered before other connecting parties could connect without paying for the initial connection costs. This incentivised sitting on the sidelines and waiting for time limit to expire prior to connecting. No SENE projects have been developed in Victoria.

Similarly, in Western Australia where a number of generators (or loads) were located behind a network constraint, generators (and loads) could be grouped and pay to upgrade the network to provide access. However, this poses the problem of projects proceeding at different speeds and introduces the risk of a project/s dropping out which then elevates the network upgrade costs for the remaining projects as the costs are distributed amongst a smaller group.

Wirsol and Renew Estate’s are please to contribute towards building the future National Energy Market which provides affordable, reliable and more sustainable power for our nation. We would like to thank the AEMC for their continued consultation with industry in developing an informed path to improve our energy system.

Yours faithfully,

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