19 October 2018

AEMC
Coordination of Generation and Transmission Options Paper
Attention: Elizabeth Bowron, Project Leader

Via: AEMC Submission Portal: www.aemc.com.au

Adani Renewables Australia Response to the Coordination of Generation and Transmission Options Paper

Adani Renewables Australia is pleased to provide feedback to the Australian Energy Market Commission (AEMC) on the Coordination of Generation and Transmission Options Paper ("the Paper"), in the hope that this can assist the AEMC in its objective of exploring options for the conversion the Integrated System Plan (ISP) developed by Australian Energy Market Operator (AEMO) into an actionable strategic plan. This submission is not confidential.

Adani Renewables Australia

Our vision is to generate renewable energy as part of an energy mix that is affordable, secure and reliable for all customers with a particular focus on industry, as Australia transitions to a lower emissions economy. To do this, we aim to establish a leading renewable energy business operating in Australia, which provides affordable, reliable and sustainable energy solutions to industry and to the wider community. We believe all electricity users have the right to affordable and reliable energy. Delivering this will require a mix of energy types, including thermal and renewable, and technologies including storage options.

The first two operations in Adani Renewables' portfolio are the Rugby Run Solar Farm in Queensland which will supply up to 170 MW in two phases, with construction now underway, and the Whyalla Solar Farm in South Australia which could supply 140 MW from 2019 and which is in advanced stages of development.

In India, Adani has 2000 MW of solar and 750 MW of wind power in operation. A solar park of 2000 MW capacity is under development in Rajasthan. The vision is to have 10 GW by 2022, using a vertically integrated model, including module production with a capacity of 1200 MW annually. India has target of 175 GW renewables by 2022 of which 100 GW is solar and 75 GW as other renewables. Adani plans to achieve 10 GW of this national target directly and to support a further 23 GW through construction of solar parks.

We believe that our best chance of building a sustainable renewables business is to acknowledge that Australia's energy mix must be affordable, secure, and reliable. If consumers need to choose between affordability and reduced emissions, in almost every instance they will choose affordability. Understanding the needs of our diverse customers including industry, and seeking to provide solutions that meet those needs, must be a key part of our strategy. As

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we move towards a greater percentage of renewables we need to keep these considerations paramount.

Current Challenge

We believe that the energy transition should be designed so that Australia aims to achieve global competitive advantage through a globally competitive energy price and availability, given the quality and diversity of our energy resources, many of which we export to competitor economies. Adani Renewables Australia believes this is what the Australian community expects.

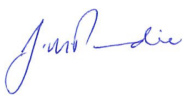
Coordination of Generation and Transmission Investment

Adani Renewables supports the intent of the Recommendation 5.1 of the Independent Review of the National Electricity Market (Finkel Review) which was to deliver a smooth transition, for the changing power system and for energy consumers, across the NEM through better system planning. This ISP is a cost-based engineering optimisation plan that forecasts transmission system requirements for the National Electricity Market (NEM) over the next 20 years.

Our detailed response to a subset of the questions asked in the Paper are set out in the section below. The key themes of our submission are that:

- the ISP will need to evolve to reflect community concerns and feedback from economic assessment processes
- the lowest cost options for managing the power system transition should be transparent
- a key principle is that risk be allocated to the party best able to manage those risks
- strategic national projects must be subject to rigorous evaluation and their implementation subject to competitive projects wherever possible, and
- storage projects should be classified separately to generators and load recognizing their emerging range of service provision.

We would be pleased to have the opportunity to discuss this feedback in greater detail. I can be contacted via jennifer.purdie@adani.com.au or 0477 343 845.



Jennifer Purdie

CEO – Renewables

Responses to Options Paper Questions

Question 1; Questions Arising from the ISP

The ISP is a cost based engineering optimization engineering plan that identifies potential transmission investments that AEMO deems necessary to support the long term interests of consumers.

The ISP has not addressed issues such as community acceptance of REZs. It is possible that, in areas of high value alternative land use, for example irrigated land, that the local community will not necessarily accept imposition of a REZ. Community opposition to wind farm development has been experienced. Historically, there has been opposition to plantation timber developments where these are perceived to crowd out other economic activities in a region. Solar and wind farm development will cluster around new transmission line developments, and could similarly be perceived to crowd out other economic activity. Conversely, in some regions, REZ development may be warmly received as a stimulator of economic activity. As such, development of a REZ in an area of high alternative land use may end up being more expensive than a REZ in another area, even though the former may have a better solar and wind resource.

Similarly, the ISP is not a business case for transmission project development, and therefore of itself does not justify transmission investments. (This is discussed further below.)

Over time the ISP will necessarily evolve to reflect community considerations, and the feedback from robust financial assessment of its individual elements.

Question 2: Interaction between the ISP and government policies

The Levelised Cost of Energy (LCOE) alone is a poor measure of the cost of getting energy to the customer when and where they want it, during the period of transition to a more distributed and intermittent generation system, requiring transmission, storage and system strength investment as well as investment in generation. Total generation cost is a more appropriate measure. Existing transmission assets are sunk costs and no doubt require some sustaining investment over time, but the costs of constructing new infrastructure must be considered when the optimal transition pathway is taken into account. To the extent these costs can be deferred by using existing generation infrastructure to the end of its economic life, and even by extending that life to adapt the generation to the 'new mix' by making it more flexible through retrofit, those options are likely to be more cost effective than construction of new infrastructure. By setting aspirational and stretch renewables targets, jurisdictions may be inadvertently increasing the cost to consumers.

The ISP identified an optimized set of transmission investments as an outcome of modelling based upon a given set of assumptions and constraints. Current state and federal government policies are treated as assumptions for the purposes of this modelling. Of note, the ISP has not been modelled on the basis of achieving the lowest cost outcome.

It is recommended that modelling to identify the lowest cost power system transition be undertaken. It would allow the cost of incremental investment arising specifically from government policy to be identified. Importantly, all transmission investments that are identified in both the lowest cost scenario, and in the scenario that reflects current government policies could be undertaken on a no regrets basis.

Question 4: Risk allocation

The ISP is a central planning document. Given the rapid deployment, for example, of non-networks solutions such as distributed energy resources there exists a scenario such that transmission investment undertaken in the short to medium term ends up being under utilised over the longer term. There is clearly potential for AEMO as the central planner to make decisions which are not optimal over the longer term.

Under current arrangements, inclusion in the TNSP's RAB once the RIT-T process is successfully completed, ensures that transmission investment is as close to risk free as possible for its owners. Accordingly, emphasis will fall upon clearing the hurdles identified in the RIT-T process to ensure inclusion in the RAB, rather than upon identifying the most economic project. These are not the same.

The RIT-T assessment occurs once, but the benefits may or may not be realised for many subsequent years. As such, AEMO could identify transmission projects which subsequently prove to be non-optimal, but the associated investment would earn a regulated rate of return regardless. It is the end-use customers who would end up paying for investment in underutilized but regulated transmission infrastructure, as they ultimately bear volume risk.

Furthermore, investment for new or upgraded interconnection between regions competes with new generation investment within region.

Generation investment is highly uncertain, noting both uncertainty about future electricity and LGC prices, and uncertainty in the wider policy environment.

It is therefore possible to predict an outcome where significant transmission investment occurs because it is essentially risk free, but insufficient generation and storage investment occurs as the coal fleet retires because it there is a likelihood that appropriate returns will not be earnt.

For this reason the issue of risk allocation is critical to ensure optimal future investment. In particular, risk should reside with the party best able to manage it.

Of note, a competitive process was undertaken to select Jemena as the constructor and owner of the North East Gas Interconnector (NEGI), an $800M investment of "strategic national significance." Jemena stated that "As further reserves in the NT are proved up, we can expand our scalable pipeline to meet strong demand from east coast customers." In effect the owner used future scalability as a mechanism for managing volume risk.

An option would be for AEMO to utilize the ISP to identify strategic transmission projects. The RIT-T process or similarly rigorous assessment of benefit to customers could be used to establish the capacity that can reasonably be rolled into the RAB and therefore paid for by end-use customers. AEMO could then run a competitive process to establish the lowest cost owner of that project, for example through a competitive auction to secure the lowest charges. The owner could then assume a degree of volume risk through scalable design, and as such would be motivated to market that undeveloped capacity to other users. It is not automatic that the incumbent TNSPs need to be the owners of new transmission infrastructure.

It is axiomatic that 'strategic national' projects must be subject to rigorous economic evaluation and their implementation be subject to competitive processes to the maximum extent possible.

Question 11: Other options and considerations

The ISP is supported as a planning document to guide market participants and investors.

Question 21 – 24: Storage and TUOS

It can be expected that the role of energy storage in the NEM will only increase with time. AEMO's efforts to establish interim arrangements for utility scale battery projects are acknowledged. A long term resolution of the registration requirements for storage projects is required. This requires re-consideration of the current requirements that storage assets register both as a generator and a market customer.

Storage projects should not pay twice for transmission investments they trigger.

Whilst a generator will pay for direct connection, it should not pay TUOS for re-charging storage if the transmission system is utilized such that supply to no end use customer is constrained as a result of that recharging.

As such, storage projects should have their own classification, thereby acknowledging the emerging capability to provide services beyond traditional generation and load services.