



LO3 ENERGY

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22/04/2018

Therese Grace
Australian Energy Market Commission
PO Box A2499
Sydney South NSW 1235

Dear Therese,

Re: Discussion paper – Coordination of transmission and generation investment

LO3 Energy welcomes the opportunity to make a submission in response to the Australian Energy Market Commission's ("AEMC's") Discussion Paper – Coordination of transmission and generation investment

We are a fast-growing company, headquartered in New York, with deep roots in energy, finance and technology. We are building a blockchain based platform to enable decentralised markets, business models and innovative technologies to deliver new ways of buying and selling energy services.

Customers are increasingly generating, storing and transacting their energy locally in electricity markets around the world. The transition to decentralised markets will require regulatory policies that promote efficient price signals and competitive neutrality across the energy supply chain.

LO3 Energy considers the existing frameworks for coordinating transmission and generation investment are fit for purpose. Further amendments in these areas of the type contemplated in the Discussion Paper risks burdening the market with excessive complexity or creating market distortions. We agree with the AEMC however that the transmission rules relating to battery storage need amendment. The rules should treat storage connected to the transmission system as generation rather than load, as stored energy is used for dispatch into the wholesale market rather than for consumption.

We discuss these views in more detail below.

1. Network Congestion

The AEMC notes that with the steep growth in renewable generation capacity anticipated over coming years that congestion, which has to date been relatively benign, could worsen significantly. LO3 Energy would caution against implementing the Optional Firm Access (OFA) at the present time however. This type of regime, much like frameworks with financial transmission rights and nodal pricing in some overseas markets, are highly complex and create costs and risks that will need to be managed by stakeholders. Wide industry and stakeholder support, which is necessary for implementing such far-reaching market reform, is unlikely to be forthcoming unless there is clear evidence that congestion is causing significant market issues. To date, this evidence has been lacking.



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There appear to be two important features of the existing arrangements that mitigate against congestion becoming a bigger problem in the NEM. First, generators face the risk of being

'constrained off' the network by the market operator if they locate in parts of the network where capacity is scarce, due to too many generators chasing too little transmission capacity. Constrained off generators are dispatched below their desired levels in unpredictable ways and without compensation. Second, generators also face the financial impacts of being exposed to higher marginal losses by choosing to connect in locations remote from existing demand centres, or in areas where there is already too much generation capacity.

While other locational factors such as the quality of the resource and availability of suitable land are important considerations for generators, the ability to access the market matters. In practice this means generators will have strong incentives to connect in areas where there is plenty of spare capacity, with unconstrained access to the market price.

Importantly, generators can also choose to fund, either by themselves or in collaboration with others, the construction of new network infrastructure to remove congestion risk and expand their access to market. The recently implemented transmission connection and planning arrangements provide a sensible framework for supporting such collaboration and the joint sharing of costs.¹

This NEM's approach to congestion differs to some other electricity markets around the world, such as Germany and the UK, where generators are financially compensated for revenues lost by being constrained off.² These markets have experienced significant increases in congestion costs over recent years due to the steep increase in renewable capacity in recent years, with these costs subsequently socialised across customers. Providing compensation to generators for being constrained off would appear to remove one of the most powerful locational signals for managing congestion on the network and has the effect of shifting the costs of congestion to consumers, who are much less able to influence those costs.

In sum, LO3 Energy considers that the existing arrangements represent a sound framework for managing congestion in the NEM, achieving a sensible compromise between efficiency and complexity.

2. Treatment of storage

The question of whether to treat storage connected directly to the network as either load or generation, or both, under the rules is perhaps best considered in terms of the primary role batteries are likely to play in the wholesale market. Unlike batteries installed behind the meter, which store electricity primarily to consume it at a later point in time, transmission connected batteries store energy for dispatch into the wholesale market (both ancillary services and wholesale energy markets). Transmission connected batteries should therefore be treated as generation, which means that consistent with the treatment of generators generally, they should not pay for use of the transmission network.

¹ AEMC (2017) Rule Determination, National Electricity Amendment (Transmission Connection and Planning Arrangements, 23 May 2017

² Joos Michael and Ian Stafell (2018) "Short-term integration costs of variable renewable energy: Wind curtailment and balancing in Britain and Germany", Renewable and Sustainable Energy Review, 86 p 45 - 65



3. Renewable Energy Zones

The conclusions reached by the AEMC when it examined the concept of Scale Efficient Network Extensions (SENE) in 2011³ are even more relevant today. Forecasting patterns of future demand and generation has become even more uncertain and unpredictable since then, as customers and businesses are increasingly sourcing and managing their electricity needs locally. It is impossible to predict what proportion of future demand for electricity will be met through centralised or local generation.

In this market environment, LO3 Energy considers it would be imprudent for the AEMC to implement new market rules that ask customers to pay for or bear any kind of stranding risk for investment in large network assets dedicated to connecting remotely located generators. As all customers pay the same regulated transmission charges, this would mean customers who prefer to source their energy locally would in effect be subsidising the access to market of remote generators.

We prefer the existing approach to network investment, where generators are required to fund the network assets that connect them to the shared transmission network, regardless of their size or how far away the fuel source. This approach better promotes allocative efficiency as it allocates the network infrastructure costs associated with accessing more remote energy resources to those who cause them – the generators who wish to exploit those resources. Those who cause costs to be incurred are generally in the best position to minimise such costs. Generators have better information and stronger commercial incentives than any other stakeholder in the market to seek out the right areas to connect and size their assets efficiently.

Further, unlike transmission costs, generators must recover connection costs in their wholesale or contract prices, which means customers who choose to source their electricity from local generation are not required to subsidise those customers who do not. This is feature of the existing framework is important in promoting competitively neutral outcomes between local and remote generators as the electricity market becomes more decentralised.

Generators also have the option under the existing rules to jointly fund and own large network assets in order to take advantage of economies of scale to reduce their connection costs. This should allow generators to provide more competitive wholesale market pricing without the need for this to be subsidised through the transmission arrangements.

LO3 Energy considers the transmission investment arrangements should recognise the difference between those circumstances where investment in transmission is primarily for the benefit of achieving access to market for a generator, or group of generators, and where such investment will deliver a net economic benefit to the market taking into account all relevant substitutes. In our view, the regulatory investment test for transmission and supporting consultation process represents world's best practice in achieving this objective.

If you have any questions please do not hesitate to give me a call on 0439399943.

Thank you,



Con Van Kemenade,
Director, Public Policy

³ AEMC (2011) Rule Determination, "National Electricity Amendment (Scale Efficient Network Extensions)", 30 June 2011

