



Therese Grace
Project Leader
Australian Energy Market Commission
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Coordination of generation transmission and investment

18 May 2018

Dear Ms Grace,

Aurizon Network (Aurizon) is a major Queensland energy consumer that operates a 2,000+ km heavy haulage electric traction (rail) network. This network is a critical component of the Queensland coal export supply chain and transport of agricultural products. We welcome the opportunity to further engage with the AEMC regarding challenge of improving coordination of generation and transmission investment.

Aurizon is a directly connected customer of Powerlink. Transmission and wholesale electricity costs and reliability are critical to the future competitiveness electric traction. Our customers have a readily accessible, technically feasible and available alternative to electric trains in the form of diesel locomotives. We are therefore particularly sensitive to the consequences of inefficient transmission and generation investment.

The AEMC discussion paper has identified several key themes regarding the coordination of generation and transmission investment. We have responded to these below:

1. Congestion in the National Electricity Market

In Queensland, substantial new generation is proposed or under construction in north and central regions. While these regions have significant renewable energy resources (particularly solar irradiation) their location creates a disconnect between where new generation is being built, relative to the location of major load centres. Consequently, energy must travel south resulting in a risk inter-regional congestion on the network. Powerlink's 2017 Transmission Annual Planning Report highlights this issue identifying that additional generating capacity above committed levels in north or central Queensland is expected to lead to a rise in congestion on the Gladstone or Central Queensland – Southern Queensland sections. And that this "will likely result in material constraint durations and levels for generators in north or central west Queensland".

Therefore, Aurizon considers that there is a risk of increased congestion inter-regionally although this would likely have been known to prospective generators in advance of their investment. Further, the majority of new planned investment is solar PV, meaning any

congestion is likely to be during “peak generation periods”. The changing nature of generation may make it more difficult to demonstrate the value of significant new transmission capacity in circumstances where that capacity may be underutilised. Generation and transmission can be direct substitutes at particular points in the network. Therefore, any investment should be focused on achieving supply of energy that is least cost, secure, reliable and consistent with climate policy objectives.

Ultimately, generators should bear some financial burden associated with the consequential price impacts they place on end consumers. Aurizon supports a technology neutral approach to facilitating new investment and achieving policy outcomes. However, cautions that effective coordination should be measured with reference to its ability to achieve the National Electricity Objectives (NEO).

2. New types of generation including batteries

Any new regulatory framework should ensure sufficient flexibility exists to enable new technologies with different characteristics to be incorporated into the network – where doing so is consistent with the NEO. It is also important that the framework recognises and values load and the benefit it provides to the network. Some loads, like rail networks cannot easily ‘flex’ without significant capital investment but also are themselves networks that could support existing transmission and distribution networks if appropriate incentives were in place. Energy consumers are not homogenous and the regulatory framework should maintain sufficient flexibility to ensure organisations that have limited ability to ‘flex’ their load are not penalised. Nevertheless, reducing load (or increasing it) through new technologies including batteries can materially benefit transmission network operation and in some cases replace the need for new generation entirely.

3. Impact of new generation such as wind and solar farms located in areas that are at the edges of the existing network, potentially in new renewable energy zones (REZs)

We reiterate our concerns communicated in our original submission about the risk of distorting investment incentives to the detriment of energy consumers. These concerns relate to both centrally planned approaches (such as renewable energy zones) and a regulatory framework that encourages new generation in locations that require substantial consequential investment to reduce congestion or maintain supply reliability and security. Ultimately, the consequential costs of generation, network investment and maintaining reliability and security are borne by energy consumers. The potential for additional costs may reduce the incentive to utilise Aurizon’s electric rail infrastructure in favour of diesel locomotive powered trains. There should therefore be thorough understanding of the true cost of energy paid by energy consumers that is reconciled with its consistency with the NEO before major investment occurs.

If as proposed by the AEMC, generators are compensated for taking on additional network costs by providing partial or full dispatch certainty, care should be taken to ensure this does not result in monopolisation of dispatch to increase market prices. To the extent possible, market mechanisms should incentivise generators to exploit existing network capacity to minimise further costs. It is also critical to engage with major loads in regions that potentially face congestion or new transmission investment. Aurizon recommends the AEMC take a more holistic approach to coordinating transmission and generation investment. Major transmission load customers should be an integral part of the consultative process as effective coordination will be to the benefit of energy consumers.

4. Integration with other policy reform

Energy markets are undergoing extensive reform undertaken by a number of agencies as noted by the AEMC in its discussion paper. Many of these reforms focus on discrete issues, and are likely to result in discrete recommendations. There is a risk such reform initiatives fail to appropriately account for one another and their consequential impacts, particularly as these initiatives are occurring in parallel.

For example, the outcome of the review of Coordination of Generation and Transmission Investment is likely to impact how the National Energy Guarantee is implemented. Specifically, effective coordination of generation and transmission investment may facilitate the realisation of emissions targets, while reducing the likelihood of a reliability guarantee being triggered. Aurizon welcomes the commitment to energy market reform but cautions that implementation needs to occur in the context of other existing, and pending reforms.

Conclusion

When contemplating regulatory reform to respond to rapidly changing energy markets, care should be taken to ensure that the outcomes do not negatively distort the market and that reliability, security and the true cost of energy are taken into consideration.

Aurizon does not advocate a preferred regulatory approach but recommends any change to the regulatory framework should be guided by the following objectives:

- Consistency with the National Electricity Objective
- Ensuring the true cost of energy for end consumers resulting from new generation investment (including consequential network investment) is least cost
- Recognising the consequential impacts on the reliability and security of the power system and who pays for resulting adaptation costs
- Effective coordination and engagement between generators, network operators and major load customers
- Technological neutrality

Achieving the objective of the National Electricity Law to promote efficient investment, operation and use of electricity services will require carefully developed policy settings. We suggest that should be achieved, to the greatest extent possible, by policy settings that allow businesses investing in both electricity generation and transmission to respond to appropriate market signals.

If you wish to discuss further, please do not hesitate to contact Liam Byrnes (liam.byrnes@aurizon.com.au) or myself.

Yours sincerely



Steve Straughan
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