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Victoria Mollard, Director,

Australian Energy Market Commission

## Coordination of generation and transmission investment – options paper

23 October 2018

Dear Ms Falvi and Ms Mollard,

Aurizon Network Pty Ltd (**Aurizon**) welcomes the opportunity to make a submission in relation to the Australian Energy Market Commission (**AEMC**) Coordination of Generation and Transmission Investment options paper (**Options Paper**).

### 1. Background

Aurizon has previously provided two submissions to the AEMC's review of coordination of generation and transmission investment. Aurizon owns and operates the regulated open-access Central Queensland Coal Network (**CQCN**). Approximately 2,000 kilometres of the CQCN is electrified allowing trains to use electricity or diesel fuel as their source of traction power. The electric traction network represents a significant proportion of Queensland's regional and total energy demand and provides a critical supply chain link for Queensland coal exports.

Transmission and wholesale electricity costs together with energy security and reliability are critical to the future competitiveness of electric traction. Our customers have a technically feasible and readily accessible 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 Options Paper has sought engagement on a range of questions. This response does not explicitly address each question but instead focuses on elements Aurizon considers are important to evaluating next steps. Aurizon recognises that the Options Paper and responses and will be provided to the Energy Security Board (**ESB**) in December 2018 when it considers how best to implement the Integrated System Plan (**ISP**) released earlier this year.

### 2. Threshold issues

#### Scope of the Options Paper

The role and function of the review of coordination and generation has evolved since it commenced. During the course of the review, the Australian Energy Market Operator (**AEMO**) released the ISP. Consequently, the review seems to have changed to focus on how best to facilitate generation and transmission investment rather than whether facilitation is appropriate.

Aurizon recognises that in considering how best to allocate risk, there is a need to take into account system-wide costs and benefits. In particular, it would be helpful if there were greater clarity in relation to the benefits compared to the costs for consumers and generators from the options outlined. Furthermore, the potential arrangements that may be introduced to ensure the benefits of the facilitation of investment would be realised by those bearing the risk of coordination is also an important consideration for Aurizon.

It is difficult to understand the magnitude of the cost and benefits of the options, particularly the potential benefits for consumers, and therefore why it is necessary for consumers to bear the risk to coordinate generation investment when generators are unwilling to do so themselves.

Major transmission investment has traditionally not been driven by generation, but by demand. Changing the approach so that generation drives transmission investment represents a significant change to the underlying framework that has underpinned the NEM. It may require careful consideration of whether the existing regulatory and policy framework, and the allocation of risk remains fit for purpose. This could have a material impact on energy consumers and the future competitiveness of Australian industry. Outcomes of the Options Paper may require a broader review of the NEL and NER framework, the approach to economic regulation, need for reliability and the imposition of transmission costs and charging.

### **The role of the ISP**

The problem the ISP seeks to resolve is unclear. It appears to focus on projects that have 'strategic national' significance that are not properly captured by other existing AEMO or TNSP<sup>1</sup> processes. Without a clear problem statement, it is difficult to understand the proposed scope and provide feedback including in relation to AEMOs proposed role in the future.

The Options Paper forms an important element of the ESB's considerations regarding how to make the ISP 'actionable'. However, it is unclear what actionable means. The ISP provides three key project milestones, with one requiring almost immediate action while the other two occur in the next 10 years. It is unclear whether the intention is to action all of them or what needs to be actioned. It is also unclear how subsequent ISP's will inform this process. For example, if modelling in 2019 shows materially different scenarios due to change in government, technology or market factors how does 'actioning' the ISP change?

### **The role of demand in the future network**

The ISP and Options Paper focus on the need for new generation to secure supply following retirement of existing generation and to meet climate policy objectives. The investment required to facilitate this is likely to be substantial. However, there is limited discussion about the role of demand in addressing system security and the need for new supply.

Demand management can substitute generation, particularly for peak supply. It also uses the existing network and requires minimal network investment. The key challenge relates to the availability of support to incentivise new generation and the lack of support available for demand management. Aurizon is concerned that the focus on generation limits the role of demand and may pass risk and costs to consumers without sufficient consideration of, and links to, potential benefits for consumers, resulting in suboptimal outcomes.

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<sup>1</sup> Transmission Network Service Providers

## Approach to policy reform

The energy market is undergoing unprecedented reform. There are a range of government agencies undertaking reviews or reform to energy policy and regulatory frameworks including the ACCC, AEMO, AEMC, AER, ESB and state and federal governments<sup>2</sup>. These workflows focus on different market or policy drivers and result in their own discrete recommendations.

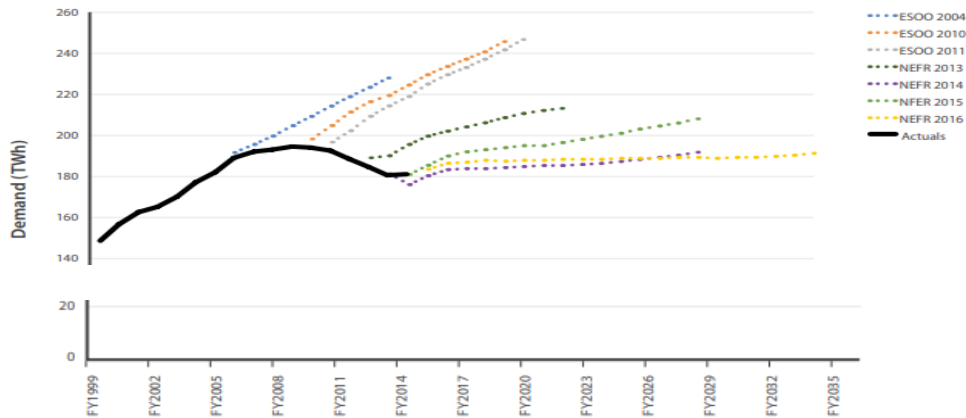
There is a risk that responses to the current reform could result in a disjointed policy framework that requires further reform to reconcile is in continual flux as additional policy reform is required to reconcile the different frameworks into a cohesive policy.

## Allocation of risk, consultation and transparency

The Options Paper sets out a range factors that are largely focused on what transmission investment would be required to facilitate new generation in the NEM. These factors could impact the allocation of financial, system reliability and jurisdictional risks. This can result in fundamental questions about the allocation of risk and requires careful consideration of how best to internalise costs to understand the true cost of energy. This includes transmission investment, reliability and security impacts, and generation cost. Aurizon encourages greater consultation regarding the distribution of costs and benefits prior to implementing changes.

Aurizon is also concerned that incorrect electricity demand and supply forecasts could trigger investment in infrastructure that increase consumer costs. Network demand forecasting is challenging. The proposal to coordinate network and generation investment complicates this process further. AEMO and TNSPs would be required to both accurately forecast demand and supply to justify new transmission investment.

Figure 5.1: Forecast and actual electricity demand



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The need for alternative investment models appears to be based on the AEMC's acceptance that generators cannot collaborate to co-develop projects. It would be helpful to have an assessment of both the distribution of risks, and the costs and benefits to consumers if consumers were to bear the risks, given it appears generators are unwilling to carry them. There is limited explanation of the value captured in return for the risk transfer. Transmission bonds have been proposed as a mechanism that could work and enable capital underwriting of new

<sup>2</sup> ACCC - Australian Competition and Consumer Commission | AEMO – Australian Energy Market Operator | AEMC - Australian Energy Market Commission | AER – Australian Energy Regulator | ESB – Energy Security Board

<sup>3</sup> [https://www.energy.gov.au/sites/g/files/net3411ff/independent-review-future-nem-blueprint-for-the-future-2017.pdf\\_p\\_134-5](https://www.energy.gov.au/sites/g/files/net3411ff/independent-review-future-nem-blueprint-for-the-future-2017.pdf_p_134-5)

transmission infrastructure. However, the proposal – as outlined, provides limited insight into the distribution of costs that would be passed on to consumers.

The drivers for new generation are diverse, including market pricing, connection costs and network capacity, capital availability, policy, government mandates as well as demand and supply forecasts. The costs of investment made – or dictated by AEMO are likely to be passed on to consumers through tariffs or energy prices. The Options Paper does not consider how risks are managed if generators do not connect. Further, network reliability risks are increasingly imposed on consumers and the costs to mitigate may impact across jurisdictions and should be included in cost benefit analysis and not externalised to consumers.

Aurizon agrees that *“To the extent that the change promotes the NEO, then consumers should benefit from having more efficient transmission infrastructure built.”*<sup>4</sup> However, it is not clear which consumers will benefit. If a decision to invest in transmission infrastructure is made because of an expected benefit to consumers (identified through a RIT-T type process) then Aurizon supports all consumers contributing to those costs. However, if a group of stakeholders disproportionately benefit, or there is uncertainty about the magnitude of benefit, or potential for consequential costs (e.g. reliability), then those costs should not automatically be borne by consumers. Instead, the cost allocation could be reviewed periodically and where benefits such as lower total cost of energy are actually realised, then costs can be reallocated to consumers more generally. This would help ensure that consumers benefit from expansions in network infrastructure.

### **Role of the ISP and level of AEMO control**

The Options paper sets out 5 options to make the ISP that effectively provide AEMO with greater central control. Greater AEMO control is likely to change the distribution of risks and require more consultation. Further, it is understood cost benefit analysis would be retained. However, the scope of this analysis is unclear. There may also be challenges associated with AEMO's ability to direct TNSPs whose Board's and executive are accountable to their customers, shareholders and legal obligations. In addition, the role of the AER in overseeing the investment is unclear. For example, what powers would the AER have to regulate AEMO or TNSPs that act on AEMO's direction?

Aurizon is also concerned about centrally planning the “best” option. It may be more effective to adopt an approach more consistent with the RIT-T process where a problem (rather than solution) is identified. The market could then develop options. If done transparently and consultatively, this would ensure the market can innovate and test AEMO's best option. Another factor to consider is that TNSPs would be expected to consider the requirements and circumstances of customers and other commercial aspects of the section of the market in which they participate. One of the challenges of coordination is to recognise and understand the requirements of diverse customers in the market. TNSPs may be best placed to recognise these requirements and determine options that are flexible enough to anticipate and effectively respond to the diverse requirements of customers.

Aurizon supports greater consultation and transparency about the costs and benefits, including the distribution of costs and benefits between jurisdictions, and where material, between consumers, TNSPs and generators.

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<sup>4</sup> <https://www.aemc.gov.au/sites/default/files/2018-09/Options%20paper.pdf> – p.37

## Key issues relating to five elements of Option Paper

### **The ISP and investment decisions and RIT-Ts**

Aurizon's key concerns relate to the reallocation of risk, and the need to link the ISP, RIT-T and other factors with consideration of whether the overall regulatory framework will remain appropriate. If AEMO or TNSPs are going to take on more responsibility associated with network and market design, then the system costs that are currently externalised from those decisions need to be captured and not necessarily passed on to consumers. Inter-jurisdictional impacts may also be more common due to system reliability and the potential for value transfer between generators, TNSPs and consumers and between jurisdictions.

### **Renewable Energy Zones, congestion and access**

The re-allocation of risk and the uncertainty of value that results is Aurizon's key concern. There is a risk of consequential network costs being borne by energy consumers and therefore the likely costs compared to the benefits of this potential scenario needs careful consideration. The large amount of new generation in north Queensland is likely to require transfer through congested sections of Powerlink's network which could constrain dispatch. This is exacerbated by similarities in generation profile which could result in time of day generation constraints. It may also require investment in system stability and reinforcement or further network investment to reduce congestion. The risk of network congestion and potential for constraints was, or ought to have been known when investing. In these circumstances, the distribution of costs and benefits for any consequential investment should be carefully considered.

### **Treatment of large scale storage facilities**

Aurizon queries why energy storage should not pay network costs to the extent they draw from the network. Large scale storage can provide a range of reliability and market services, it can also potentially compete with other generators in dispatch. These services may not drive network investment, but they will obtain significant commercial benefit from the network investment that has been made and needs to be sustained. The payment of TUOS is necessary to reflect the benefit derived from extracting and storing electricity from the NEM.

With respect to prescribed exit services, Aurizon would also be concerned if the cost pool increases due to large scale storage and that storage makes no contribution to those costs. If large scale storage providers consider that those costs are too high, then installation and supply by local generation can avoid them. Unless the AEMC and AEMO intend to distinguish between different types of demand and price in network value contributed by that demand then storage should be treated the same as demand from a pricing perspective. Such a pricing approach would require change to existing frameworks but may be worth considering further.

In relation to the potential for establishing specific definitions and registration requirements for large scale storage facilities, care should be taken to avoid capturing demand customers with bi-directional energy flows from energy recovery systems, such as ports, railways and mines.

## Conclusion

Developing and adapting frameworks to address the evolving energy market is complex. Aurizon welcomes the opportunity to further engage on this issue and welcomes the AEMC's willingness to consult with stakeholders. Aurizon cautions that the scope and consequences of any reform should be carefully considered. There is a risk that outcomes of the Options Paper could materially impact the competitiveness of large energy users and further erode a pathway to reliable, cheap electricity consistent with climate objectives. Electricity supply has traditionally been a key competitive advantage for Australian businesses and it is Aurizon's desire for that competitive advantage to be restored.

If you wish to discuss further, please do not hesitate to contact myself, or Liam Byrnes ([liam.byrnes@aurizon.com.au](mailto:liam.byrnes@aurizon.com.au) / 07 3019 1231).

Yours sincerely

A handwritten signature in black ink, consisting of a series of loops and a long horizontal stroke extending to the right.

Steve Straughan  
Head of Network Customers