



OFFICE OF THE CHIEF EXECUTIVE

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Ms Audrey Zibelman  
Australian Energy Market Operator  
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Dear Ms Zibelman

#### **AEMO Integrated System Plan Consultation – Response to Questions 1.1 & 1.2**

Powerlink appreciates and welcomes the opportunity to provide input to the Australian Energy Market Operator's (AEMO's) consultation paper on the Integrated System Plan (ISP). Powerlink agrees with the intent of the ISP and appreciates the consultative approach in which AEMO has progressed this work.

This submission relates specifically to consultation questions 1.1 and 1.2. Powerlink intends to respond to the remaining consultation questions in a subsequent submission by 28 February 2018. Powerlink also endorses and refers AEMO to the matters raised in the submissions from Energy Networks Australia and Energy Queensland.

As outlined in the ISP consultation paper, the driver behind transmission development has shifted from predominantly load growth to now being determined by the changing generation mix and the location of new generation. As a consequence, there is a high level of analysis and debate into various aspects of the National Electricity Market (NEM) from a diverse range of industry participants. The ISP has the potential to make a valuable and unique contribution to this debate, establishing an objective basis for the development of nationally strategic transmission network and enhanced signalling to generation proponents in the best interests of consumers.

As a transmission network service provider (TNSP) with jurisdictional planning responsibilities, Powerlink appreciates the national perspective that AEMO brings to the ISP analysis. Powerlink will build on this work taking into account regional considerations and joint planning with distribution network service providers. Whilst generators will make investment decisions independently, the enhanced provision of information will support their long-term decision making. This will contribute to achieving a coordinated approach to investment decisions, benefitting electricity consumers.

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Whilst Powerlink has a number of comments regarding the ISP outlined in this submission, there are two key areas to which Powerlink would like to draw AEMO's attention:

1. Identifying factors relevant to the optimal development of generation (including targeted renewable energy zones) and forecasting how these metrics may vary over coming years would assist and inform industry participants to make better long term investments.
2. Having regard for jurisdictional influences in the design of the ISP scenarios will help support stakeholder confidence in the ISP modelling results.

The remainder of the submission addresses questions 1.1 and 1.2 as outlined in AEMO's ISP consultation paper and provides additional commentary on other potential enhancements.

**Question 1.1: The material questions the ISP seeks to address are listed in Section 1.3.1. Are there any other material questions the ISP should address?**

Powerlink proposes that the ISP should seek to address the following additional questions:

- *What factors make certain renewable energy zones optimal and how do these vary as the proportion of renewable generation increases?*

Powerlink expects that the renewable generation considered 'optimal' will vary as the proportion of renewable generation in the system increases. Identifying and articulating these trends may support generation proponents' long-term decision making. The optimised development of generation, should in turn, support the optimised development of transmission.

For example, as the proportion of renewable generation increases, increasing system balancing costs (storage and generation spillage) may mean that the initial focus on maximising generation yield will likely give way to a focus on identifying forms of generation and locations which are highly correlated with demand and diverse from other generation.

MLFs can have a material impact on the economics of a generator and may therefore influence the decision of a generator proponent to proceed with an investment. Presently MLFs are not forecast. It may initially be advantageous for generation to target locations with historically high MLFs. However, as generation patterns change, MLFs may change significantly and incentivise generation development in other locations. Incorporating MLFs in the ISP's co-optimisation process and forecasting how MLFs may vary into the future would help to support the long-term decision making of generator proponents. If impractical to include in the co-optimisation process in this first ISP, then reporting on the resulting MLFs will be informative.

- *What is the optimal role of distributed energy resources (DER) and demand response?*

Powerlink agrees that the effective application of DER and demand response could reduce peak demand and better align demand with variable generation availability, supporting the more effective utilisation of generation and network infrastructure. Presently, DER is proposed to be tested by way of a sensitivity. Powerlink considers that it would be valuable for the ISP to include more comprehensive analysis into the optimal extent and behaviour of DER and demand response. This should include consideration of its cost and merit, and co-optimising its use alongside generation and network development. The results of this

analysis could be a valuable signal to the providers of technology and orchestration services that will facilitate DER and demand response.

Powerlink is aware that computational constraints may limit the extent to which that can be realised in the 2018 ISP. Nevertheless, this is a key question facing infrastructure planners and should be considered to inform subsequent ISPs.

**Question 1.2: The scenarios the modelling will use to inform the ISP are outlined in Section 1.4. Recognising the time limitations to produce the first ISP in mid-2018, are these suitable scenarios to address at a high level? Should these be expanded in more detailed analysis following the first high level ISP?**

Powerlink proposes the following changes to the ISP modelling scenarios:

- *Queensland Renewable Energy Target (QRET)*

Presently the ISP proposes to include the QRET until 2020 across all scenarios. Powerlink strongly considers that the 'Neutral – business as usual' scenario should be amended to include the QRET until 2030. The Queensland Government has publically committed to a 50% renewable energy target by 2030 and is progressing a number of initiatives in support of this target. Powerlink considers that reflecting this and similar jurisdictional positions in the ISP modelling are necessary to ensure stakeholder confidence in the ISP findings.

- *Additional Modelling Detail*

Rather than expanding the number of scenarios, Powerlink considers that it would be more valuable to perform more detailed analysis within each scenario to improve stakeholder confidence in the modelling results, specifically:

- Analysis of MLFs and how they are likely to vary into the future as generation patterns and the network configuration changes.
- Representation of diversity across all of the steps of the modelling process, including the model responsible for optimising network development. Powerlink recognises and welcomes the enhancements that AEMO has already implemented and encourages AEMO to continue to pursue refinements in its modelling.
- An indication of the sensitivity of the modelling outcome to the changes in each key scenario input. Powerlink is unsure whether this can be achieved without a full-scenario analysis for each scenario input. If practicable this would help potential proponents understand the degree of risk posed by the uncertainty in the various inputs and inform future debate about selecting scenarios for detailed analysis.

### **Other matters**

Through discussion with other industry participants, Powerlink considers that the nature of the analysis underpinning the ISP is not clear to all stakeholders.

Powerlink suggests that AEMO clarify the modelling being undertaken and understands the objective of the ISP analysis is to minimise the combined cost of generation and transmission borne by consumers, such that:

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- Specified reliability standards are met (unchanged, at 0.002% unserved energy)
  - Greenhouse gas emissions reduce as detailed for each scenario
  - The power system is operable and secure

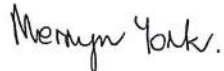
Further, in recognition of the diverse range of stakeholders who have an interest in the ISP, Powerlink recommends that AEMO express the results of the ISP analysis in a manner to which non-technical stakeholders can relate (e.g. impact on a typical electricity bill).

### **Conclusion**

Powerlink appreciates the collaborative manner in which AEMO is developing the ISP and looks forward to continuing to work with AEMO in support of the initiative.

If you have any questions in relation to this submission, please contact Damian Vermey, General Manager Technology and Planning.

Yours sincerely



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**Chief Executive**

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