

Thursday, 1 February 2018

Ms Audrey Zibelman  
Chief Executive Officer  
Australian Energy Market Operator  
Level 22, 530 Collins Street  
Melbourne VIC 3000

Submitted via email: [ISP@aemo.com.au](mailto:ISP@aemo.com.au)

Dear Ms Zibelman,

### **RE Integrated System Plan – Modelling Submission**

TasNetworks welcomes the opportunity to make a submission to the Australian Energy Market Operator (AEMO) on the December 2017 Integrated System Plan (ISP) Consultation Paper.

As the Transmission Network Service Provider (TNSP), Distribution Network Service Provider (DNSP) and jurisdictional planner in Tasmania, TasNetworks is focused on delivering safe and reliable electricity network services while achieving the lowest sustainable prices for Tasmanian customers. This requires the prudent, safe and efficient management and development of the Tasmanian power system. In this regard, TasNetworks is appreciative of AEMO's efforts in developing a strategic integrated system plan for the National Electricity Market (NEM) as recommended in the Finkel report.

As requested, this submission focuses exclusively on modelling questions 1.1 and 1.2. TasNetworks supports Energy Networks Australia's (ENA) submission on these questions but would like to make several further comments with a particular focus on the Tasmanian context. TasNetworks will lodge another submission concerning the remaining elements of the consultation paper by February 28.

### **Q1.1 - Material uncertainties and questions to address (Section 1.3.1)**

TasNetworks supports the concept of least–regret generation and transmission developments insofar as it incorporates the full strategic value of those developments. That is, assessment should include, but not be limited to, consideration of:

- the value to increasing energy security both regionally and NEM wide including the risk mitigation of unexpected, or earlier than expected, withdrawal of generation capacity;
- efficient management of peak energy demand via optimisation of regional energy advantages;
- the value to increased energy diversity and the firming service that may be provided to renewable energy developments from additional interconnection between states;
- jurisdictional legislative arrangements and regional economic impacts;
- the value of customer reliability;
- increasing customer choice in electricity service provision;
- competition and market power impacts given regional and national supply/demand imbalances;
- opportunity costs of foregone developments and minimisation of development timeframes of other future network initiatives; and
- the flexibility and optionality to ramp up or curtail investment with the minimum impact necessary to meet evolving technological, environmental and consumer demands.

TasNetworks recognises that strategic system planning decisions may require trade-offs amongst these criteria. For example, a high quality renewable energy zone (REZ) may incur greater costs to develop than an alternative, but less strategically beneficial, proposal. In seeking the “optimal balance” between these trade-offs, clarity around how the selection criteria used for the prioritisation and/or categorisation of REZ resources will manage quality, financial, environmental and diversification benefits is, therefore, critical. TasNetworks considers that the congruence, or otherwise, of this selection criteria with existing economic assessment methodologies is also worthy of further discussion.

The role of additional Tasmanian interconnection within the NEM is a pertinent example in this respect. Previous assessments of additional Tasmanian interconnection have not shown market benefits exceeding costs in typical scenarios. However, these studies have suffered from several constraints that have downplayed and/or excluded the strategic benefits to

additional interconnection e.g. the optionality afforded to future NEM developments and energy security benefits.

Beyond increasing energy security both state and NEM-wide, further Tasmanian interconnection could be matched to generator retirement schedules to defer and/or delay the need for additional mainland capacity. Moreover, by facilitating the development of additional uncorrelated wind and pumped-hydro resources, additional Tasmanian interconnection would allow for flexible and efficient peaking management across the entire NEM. Ultimately, these outcomes would mean a lower cost, more diversified and more secure power system which would benefit customers, both locally in Tasmania and nationally.

### **Q1.2 - Scenarios and sensitivities (Sections 1.4 and 1.4.1)**

Conceptually, TasNetworks supports the use of a base-case and two bookend scenarios as a starting point for analysis within the ISP. TasNetworks also supports the extension and addition of scenarios and sensitivities as the ISP is updated and market conditions, economic factors and the regulatory environment changes. In this regard, TasNetworks considers the following suggestions may be useful improvements.

1. It is imperative to understand the real cost of state based renewable energy targets on generation and network infrastructure development. Insofar as this investigation may be a larger piece of work outside of the ISP, TasNetworks considers that a scenario or sensitivity that excludes the QRET and VRET schemes altogether would be appropriate in the ISP. Particularly, given uncertainties about the future of these schemes arising, for instance, from potential changes in state governments or national policy.
2. Consideration of the availability, reliability and capacity of gas pipeline infrastructure, in addition to gas demand variables, would be useful in better understanding how the costs and mix of generation types may impact system planning outcomes.
3. Given the potential impact that the uptake of Distributed Energy Resources (DER) may have, TasNetworks considers that rooftop photovoltaic (PV) and battery storage costs and capacities should change across scenario, rather than remaining the same across scenarios and treated as a sensitivity.
4. Consideration of generator retirement seems to be on an age basis and TasNetworks suggests that the impacts of reduced revenue on generator retirement should also be incorporated. Similarly, TasNetworks considers that the impacts of ongoing maintenance and refurbishment options on asset life and planning outcomes would be a useful addition. For example, hydro power generation can be sized for either capacity (peak support) or energy (base load and/or supply of isolated systems). Understanding how refurbishment options may support these objectives would lead to a more robust analysis.

5. Current modelling is based on a two-step process using optimal resource planning and market simulation. The former aims at satisfying energy requirements while the latter seeks to address capacity questions. TasNetworks notes that there is an interplay between the two and anticipates this is reflected via some form of feedback mechanism in the modelling process.
6. Having noted that emissions modelling is accounted within the ISP on a reduction trajectory basis, and given the potential future impact of the National Energy Guarantee (NEG), TasNetworks queries whether a cost based approach to modelling emissions impacts might also be beneficial. For example, whether as a scenario or a sensitivity to be applied to each scenario.
7. Having noted AEMO's 2016 National Transmission Network Development Plan (NTNDP) highlighted potential economic benefits to interconnection between adjacent NEM regions over the next 20 years, it may be beneficial for AEMO to provide further clarity on asset live assumptions and the time horizon for analysis given the Consultation Paper recognises some transmission solutions extend to more than 50 years.

Beyond these suggestions, TasNetworks considers further clarity on exactly how the scenarios will contribute to the evaluation of each development option would also be useful. For example, an understanding of the respective weightings that each scenario may contribute to development outcomes would be helpful. TasNetworks also considers the sensitivities should be applied, where applicable, to each scenario rather than just the neutral scenario as indicated in the ISP.

Finally, with respect to additional Bass-Strait interconnection, TasNetworks urges further collaboration with relevant Tasmanian energy stakeholders so the specialised characteristics of the Tasmanian power system and unique benefits to additional interconnection are best captured in modelled outcomes. TasNetworks stands ready to offer expertise in whatever capacity may be required.

If you wish to discuss any aspect of this submission, I can be contacted via email ([tim.astley@tasnetworks.com.au](mailto:tim.astley@tasnetworks.com.au)) or by phone on (03) 6271 6151.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Tim Astley', with a horizontal line extending from the end of the signature.

Tim Astley

Team Leader, NEM Strategy and Compliance