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Dear Sir/Madam

Tasmanian Energy Security Taskforce Consultation – AEMO Submission

Thank you for the opportunity to submit to this consultation paper. This letter outlines relevant information and data for the Taskforce to consider in its examination of the issues raised in the Consultation Paper.

AEMO is the independent market operator and power system operator of the National Electricity Market (NEM) and the South West interconnected system (SWIS) in Western Australia. AEMO also operates wholesale gas markets across the eastern seaboard of Australia and is also the National Electricity Transmission Planner. Our interests lie firmly in the long-term security of energy for all Australians.

Key elements that AEMO considers should be included in this review are extreme weather conditions, Basslink reliability, and a range of technical challenges associated with increasing penetration of inverter-connected renewable technologies. Such challenges include reductions in system strength, as observed by AEMO in parts of the Tasmanian power system, which can result in greater difficulty in maintaining stable voltages, particularly during disturbances. There is an expected need for some synchronous generation in Tasmania to maintain system strength and inertia levels. Under normal circumstances this requirement could be met by hydro-generation, some of which can operate in synchronous condenser mode (effectively operating the generator as a motor which does not require water but does consume some power).

AEMO has established a strategic program of work called Future Power System Security (FPSS) to address operational challenges that arise from the changing generation mix. Our recent report FPSS Progress Report August 2016¹ outlines the approach AEMO is adopting by identifying technical challenges and potential solutions as new technologies progressively displace more conventional plant designs in the power system. AEMO would be pleased to discuss the challenges and outcomes arising from this work program with the Taskforce.

AEMO also publishes a comprehensive suite of planning and forecasting reports, with outlook periods of up to 20 years, to support efficient decision making and long-term investment in Australia's electricity markets and infrastructure services and Australia's gas markets. These reports could be useful for the Taskforce to consider in light of energy security management and planning.

¹ <http://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Security-and-reliability/FPSSP-Reports-and-Analysis>

In electricity, these include the National Electricity Forecasting Report (NEFR), Electricity Statement of Opportunities (ESOO) and the National Transmission Network Development Plan (NTNDP), state planning reports, solar and wind energy forecasting, and other generation information. This information does not typically consider extreme events where there may need to be separate strategic frameworks in place for ensuring energy security.

Key gas publications include the National Gas Forecasting Report (NGFR) and the Gas Statement of Opportunities (GSOO). AEMO assesses whether gas reserves and gas processing, transportation and storage infrastructure are adequate to meet maximum and annual consumption of gas as forecast in the NGFR. As with electricity, extreme events are not assessed in these publications, however it is important to note that gas can be an important back-up solution for supply security. For example, during extreme dry periods some gas-fired or liquid fuel generation may be needed.

The NTNDP is a strategic publication that provides an efficient development of the transmission network over a 20-year planning horizon. Scenario modelling and stakeholder perspectives are both important inputs to the NTNDP. As part of the 2016 NTNDP, due to be published at the end of 2016, AEMO will conduct a high level cost-benefit analysis of a second Bass Strait interconnector.

A second interconnector for Tasmania would improve the reliability of the connection to the mainland. As another inverter-connected power source into the state, high imports through a second interconnector would have the potential to further displace synchronous plant creating challenges for inertia and system strength in Tasmania. The flow-on market development on both sides of the interconnector and power system implications would need to be carefully studied and all costs and benefits weighed up.

At the meeting of the Council of Australian Governments (COAG) Energy Council on 19 August 2016, the Energy Ministers released a communique noting the important role interconnectors have in the NEM and agreed on a review of the regulatory test for investment of new transmission assets “to ensure it is effective in the current market environment”². This is an important piece of work to assist in improving the assessment of large infrastructure needs and efficient delivery.

Complementing our core planning publications, AEMO recently published its first in a series of ‘Insights’ reports³, which explore topical matters that have the potential to influence or challenge the future management and operation of gas and electricity markets, and adjoining infrastructure. The inaugural report provides a view of how electric vehicles may develop in Australia, and its implications for electricity consumption.

Additionally, Energy Adequacy Assessment Projection (EAAP) reports are published by AEMO to provide information to stakeholders on supply adequacy in the NEM on the impact of potential energy constraints, such as water storages during drought conditions. With a two-year outlook period, the EAAP applies scenario modelling based on low, medium and high rainfall data sets. AEMO could consider extending these data sets to include more extreme data on a needs basis.

² COAG Energy Council Meeting Communique 19 August 2016

³ <http://aemo.com.au/Media-Centre/AEMO-Insights---Electric-Vehicles>

As the Taskforce continues its work in this area, AEMO would be pleased to provide support wherever possible. For any further information, please contact Ms Nicole Nsair on 03 9609 8451.

Yours sincerely

Frank Montiel
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