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Australian Energy Market Commission

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Directions Paper: Reserve Services in the National Electricity Market

Stanwell Corporation Limited (Stanwell) welcomes the opportunity to respond to the Australian Energy Market Commission's (the Commission) Reserve Services in the National Electricity Market Directions Paper (Directions Paper).

This submission contains the views of Stanwell and should not be construed as being indicative or representative of Queensland Government policy.

1. Introduction

Stanwell is a major provider of electricity to Queensland, the National Electricity Market (NEM) and large energy users, throughout Australia. While providing reliable and affordable energy for today, we are also exploring new generation and storage technologies that will help reduce emissions while also ensuring Queensland's electricity supply remains secure and reliable.

An in-market, 30-minute operating reserve service could address some of the operational implications¹ and challenges that the NEM is facing as variable renewable energy (VRE) progressively displaces aging synchronous generation units². However, it remains unclear whether a stand-alone operating reserve service is needed in context of broader market reforms that are currently under development.

Prior to the AEMC releasing a draft determination, and prior to Stanwell supporting the implementation of a reserve service, we would welcome an opportunity to review and discuss any quantitative analysis the AEMC has conducted regarding how a reserve service would impact energy and frequency markets, and how the reserve service would interact with longer term objectives such as the Retailer Reliability Obligation (RRO). Stanwell considers that publication of a cost-benefit analysis, worked examples and any other modelling undertaken to test the viability of a reserve service would clarify some of our concerns.

¹ Delta Electricity, NEM Rule Change Request New 30-minute FCAS Raise and Lower Service, p 3.

² Ifigen, Operating Reserves and Fast Frequency Response Rule Change, 18 March 2020 p 2.

Stanwell's response to the Directions Paper addresses three facets that the Commission was particularly interested in receiving stakeholder feedback on: the nature of the need for reserves, whether a new reserve service or incremental improvements could address the need and high-level design elements that we consider would be suitable for a reserve service.

2. The Need for Reserves

The management of variability and uncertainty is becoming increasingly important as the power system transitions to a higher proportion of VRE. If variability and uncertainty are not managed, maintaining system stability and reliability in an efficient way will become increasingly challenging and expensive³.

As noted in our submission to the ESB's Market Design Consultation Paper⁴, existing market mechanisms have been adequate to date, but may not be in the future. In addition to the operational implications noted by Delta and Infigen in their rule change requests, the decision to dispatch plant and/or invest in new plant with low spot and contract wholesale prices is challenging. Meanwhile, the ongoing need to provide assurance to governments that the system remains secure, adds to the pressure to prove market mechanisms are adequate.

Stanwell considers that a reserve service market could improve AEMO's ability to operate the market securely and reliably and provide assurance that the lights would remain on during expected events⁵. However, this could also be achieved by tightening scheduling and dispatch obligations of semi-scheduled generators⁶ and requiring large loads⁷ to notify their intention to operate to AEMO.

3. New Reserve Service or Incremental Improvements

Stanwell considers that incremental changes to improve the accuracy of forecasts (particularly demand, solar and wind forecasts) and refined metrics needed for frequency and ramping, be regarded as business-as-usual. Such information should be used to support existing and potential future market designs. Furthermore, the information should be made available to market participants (and the public) as close to real time as possible. Increasing visibility into variable energy forecasts, demand, frequency and ramping metrics increases market participant's ability to accurately identify, assess and respond to issues

³ Stanwell Response to P2025 Market Design Consultation Paper, p 4.

⁴ Stanwell Response to P2025 Market Design Consultation Paper, p 4.

⁵ Ibid.

⁶ Energy Security Board, Interim Security Measures, <http://www.coagenergycouncil.gov.au/interim-security-measures>. AEMC, Semi-scheduled Generator Dispatch Obligations <https://www.aemc.gov.au/rule-changes/semi-scheduled-generator-dispatch-obligations>

⁷ Energy Security Board, Interim Security Measures, <http://www.coagenergycouncil.gov.au/interim-security-measures>.

with the most efficient, in-market solution. In effect, it should minimise the likelihood of unexpected events⁸ and improve response to expected events.

4. High-level Design

In principle, Stanwell supports an in-market 30-minute operating reserve market. From the information made available to date, we understand that an operating reserve market is effectively an insurance product to meet system needs of reliability and security. Under a 30-minute market, the National Energy Market Dispatch Engine (NEMDE) would trigger a need for reserves 30-minutes ahead of the dispatch interval in need of reserves. At that point in time participants would make megawatts (MW) available in an operating reserve market.

The following section identifies high-level design elements that Stanwell supports in principle, does not support and those requiring further clarification from the Commission.

4.1. Design elements that we do support

- **30-minute Procurement Timeframe.** Stanwell in principle agrees with Infigen's suggestion that procuring reserves for 30minutes ahead of time (with a 15-minute call-time) would align with current system security requirements. Acknowledging that 15 minutes reasonably reflects the start-time of a wide array of market participants operating below rated capacity⁹. Anything below this would comprise the transition to a higher portion of VRE which would require stricter obligations to be imposed on those participants to reduce variability and uncertainty.
- **Online and offline.** Stanwell considers that as long as a participant can meet the 30-minute procurement timeframe (same obligation as any other bid), their status of being offline or online should not be considered.
- **Co-optimisation.** Stanwell supports an option that allows participants and/or NEMDE to co-optimize reserves with energy and FCAS markets. Options that do not allow for co-optimisation are more likely to create inefficient dispatch decisions across all markets in both the short and long term.
- **NEMDE.** Where possible NEMDE should be utilised to dispatch an operating reserve market.
- **Cost Allocation.** Where causers can be identified, a causer-pays type arrangement is most appropriate to send accurate signals that disincentivise actions that do not support the secure and reliable operation of the NEM. Where causers cannot be identified, costs should be allocated to the region or sub-region where the issues are occurring.

⁸ AEMC, Directions Paper Reserve Services, 5 January 202, p ii.

⁹ Infigen, Operating Reserves and Fast Frequency Response Rule Change, 18 March 2020, p 10.

4.2. Design elements that we do not support

- **5-minute Procurement Timeframe.** A 5-minute procurement timeframe is not suitable for the following reasons:
 - It does not address variability and uncertainty to the same degree as a 30-minute operating reserve market does.
 - It does not provide enough time for participants (and perhaps NEMDE) to co-optimize the allocation of MW to reserve, energy or FCAS markets.
 - It could increase the occurrence of unexpected events, with large and unpredictable swings between the reserve, energy or FCAS markets.
 - Remaining compliant with dispatch, scheduling and rebidding obligations would be more challenging.
 - It is not a solution that would support a smooth transition to a higher proportion of VRE, as it would prevent many synchronous and scheduled generators from participating in the market.

4.3. Design elements requiring further clarification

- **Co-optimised versus callable option.**
 - Stanwell requests the Commission to confirm if the intention of Option 2 (co-optimised available market) is to allow both the participant and NEMDE to co-optimize the MW across the reserve, energy and FCAS markets. If participants and NEMDE have a co-optimisation right, there would need to be a clear point in time at which the right transfers from one to the other, effectively locking-in (or out) the MW from the operating reserve market.
 - During the next round of consultation on this rule change, Stanwell would like the Commission to consider the interaction of the operating reserve market with the late rebidding obligations, as the choice to co-optimize would likely increase the volume of late rebidding.
 - Under section 6.2.3, the Commission states that under Option 3 (callable operating reserve market), NEMDE could co-optimize offers; “the Market Operator would co-optimize offers for the energy and FCAS markets (as they currently do)”¹⁰. However, on the following page the Commission states that the “approach does not co-optimize the procurement of reserve capacity with the procurement of energy and FCAS”¹¹.

¹⁰ AEMC, Directions Paper Reserve Services, 5 January 2021, p 44.

¹¹ AEMC, Directions Paper Reserve Services, 5 January 202, p 45.

- Stanwell requests the Commission to confirm if the callable option would be treated as a form of financial direction from AEMO or not. If it is not treated as a form of financial direction, Stanwell considers that a 30-minute operating reserve callable product that is dispatched and co-optimised by NEMDE (a variation of Option 2 and 3) could be a more preferred design variant.
- **Value of firmness and certainty.** Stanwell considers MW made available in the operating reserve market should be paid for, comparable to premium paid for an insurance product. The greater degree of firmness and certainty a MW offers, the higher the premium should be.
- **Generator Rate of Change (ROC) costs.** Stanwell considers Delta's proposal to use three ROC bid bands (that allow for incremental ROC MW/min and the offer price, \$/hr, to be submitted to AEMO) could be considered as a design element in the operating reserve market. As stated by Delta, "This effectively provides the current nominal ROC at no to low additional cost, a 'high' ROC to reflect the costs of the highest technically available ROC and a band somewhere in the middle to provide much of the technical capability at a more modest cost"¹².
- **Interaction with long-term initiatives.** Stanwell requests the Commission clarify how the objectives of a reserve service interact with compliance and provision of information obligations under the Retailer Reliability Obligation (RRO) and the Energy Adequacy Assessment Projection (EAAP).

5. Conclusion

In conclusion, Stanwell sees merit in progressing an in-market, 30-minute operating reserve service that is dispatched by NEMDE, allows for co-optimisation, is technology neutral and that adopts causer-pays principles. However, to fully understand the implications of the adopting a reserve market we would welcome an opportunity to consider a cost-benefit analysis and modelling undertaken to assess the impact of a reserve market on existing energy and FCAS markets.

Stanwell welcomes the opportunity to further discuss the matters outlined in this submission. Please contact Jennifer Nielsen on (07) 3228 4155.

Yours sincerely,



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¹² Delta Electricity, NEM Rule Change Request New 30-minute FCAS Raise and Lower Service, p 7.