

22 October 2019

Sent via email: angelina.cox@synergy.net.au

Angelina Cox
A/Manager, Energy Trading
Synergy
Forrest Centre
219 St Georges Terrace
PERTH WA 6000

Level 45
152 St Georges Terrace
Central Park
Perth WA 6000

Postal Address:
PO Box 7096
Cloisters Square
Perth WA 6850

T +61 8 9469 9800
E wa@aemo.com.au

Dear Angelina,

2019 ANCILLARY SERVICES PARAMETERS – DRAFT METHODOLOGY AND ASSUMPTIONS REPORT

Thank you for providing Synergy's submission¹ in relation to Ernst & Young's (EY) Draft Methodology and Assumption Report² (**Report**). This letter responds to the matters raised in Synergy's submission.

1. Section 3.4 of the Report: Calculation of the Load Rejection Reserve Requirement

Synergy's submission raises the following matters in relation to section 3.4 of the Report:

- The provision of Load Rejection Reserve (LRR) often requires units to be committed and run out of merit.
- Synergy considers that the calculation of compensation based on AEMO's proposal to model a dynamic LRR requirement in close to real time risks understating the actual costs Synergy incurs in providing LRR. This is because Synergy's offer pricing and unit commitment decisions must allow for a maximum likely LRR which may be more than what is utilised in real-time.
- Any downward revision in the LRR requirement occurring between Synergy's gate closure and the relevant trading interval arising from a dynamic LRR requirement would result in Synergy's costs being remunerated based on the near-real time requirement, rather than the quantities reserved (often below cost) in Synergy's offers. Under current market arrangements, Synergy does not have an opportunity to revise its offer near real time to reduce the volume offered at the floor (and, clearly, below cost).
- Synergy recommends that, even if the application of a dynamic LRR requirement is adopted by AEMO, the calculation of compensation should be included that allows for the full recovery of the relevant costs based on quantities required to be reserved at the point of Synergy's gate closure and not on any downward revision of the LRR occurring after.

In response to these matters:

- AEMO agrees that, under the current WEM regulatory framework, the provision of LRR may require units within Synergy's portfolio to be committed and run when the

¹ <https://www.aemo.com.au/Electricity/Wholesale-Electricity-Market-WEM/Security-and-reliability/Ancillary-services/Ancillary-Services-Parameters>

² https://wa.aemo.com.au/-/media/Files/Electricity/WEM/Security_and_Reliability/Ancillary-Services/2019/2019-Draft-Methodology-and-Assumptions-Report.pdf

balancing price is below the short-run marginal cost (**SRMC**) for those units. This is discussed in section 2.6 of the Report.

- AEMO's proposed methodology for the calculation of the LRR requirement is outlined in section 3.4 of the Report. AEMO has proposed to calculate the L component of the Cost_LR parameter based on information available at the time of LRR procurement.
 - Specifically, commitment of Synergy plant will be based on the dynamic LRR requirement, which factors in:
 - Estimated Loads (in MW) of Boddington Gold Mine and the Eastern Goldfields region (BGM and EGF components) as the largest credible contingencies on the network.
 - Estimated load relief (in MW), based on estimates of the SWIS total system load (SystemTotal component).
 - Estimated aggregate partial outputs (in MW) from selected wind farms with required protection settings to reduce the LRR requirement (WF component).
 - For the purposes of this modelling, the WF component at the time of LRR procurement will be assumed to be zero. This is due to the uncertainty of wind farm generation output within the procurement timeframe.
 - In actuality, in circumstances where the procured LRR exceeds the real-time dynamic LRR requirement, AEMO does not expect to actively reduce the procured LRR to align with the real-time dynamic LRR requirement, in order to maintain a margin for wind, solar and system load real-time volatility.
 - This proposed methodology is based on AEMO's expectation for managing LRR service, but operationalising this practice is subject to the current trial for a dynamic LRR requirement, and is dependent on the outcomes of this trial and possibly another phase of the trial.
- AEMO acknowledges Synergy is required to bid the forecast LRR quantity at the minimum STEM price under clause 7A.2.9. Due to the time difference between Synergy's gate closure and commitment, AEMO acknowledges that in certain circumstances³, a cost may be incurred if the forecast LRR quantity bid differs from the quantity committed within the procurement timeframe. For the purposes of the 2020-21 financial year, AEMO anticipates the forecast LRR requirement at the time of gate closure will be the same as the LRR requirement at the time of procurement, as per section 3.4 of the Report. For the purposes of modelling, Synergy's bidding behaviour is assumed to reflect this.
- AEMO therefore considers that the methodology outlined in the Report will account for commitment costs incurred as at Synergy's gate closure, and there is no additional cost which is required to be modelled in this year's review.

³ The factors that impact these circumstances include changes in LRR forecast requirement, changes in the forecast Balancing Price and the final Balancing Price, and the LFAS Price.

2. Section 4 of the Report: Modelling of unit commitment and reliance on historical offer information

Synergy's submission states that the modelling method should demonstrate unit commitment with a forward view of 2-4 days. The submission also states that it is unreasonable to assume that future bidding profiles will reflect past profiles, and that net load profiles will remain constant, given the uptake of distributed solar PV and planned new large-scaled non-scheduled generation.

In response to these matters:

- The modelling of generators' offers will be based on input assumptions and generator heat rates, as provided by market participants, not historical offer information used to derive likely future offers.
- AEMO and EY have considered unit commitment as a solution option for the ancillary services parameters review. Due to the nature of the non-linear solution methodology developed for this assessment the incorporation of a mixed integer linear programming optimisation would be computationally impractical given the review's regulatory timetable constraints. AEMO will undertake to assess the relative merits of implementation of unit commitment for the next review.
- For the current review, AEMO and EY will perform a backcasting exercise to examine the modelled outcomes, which includes balancing prices, generation duration curves and unit commitment, to ensure alignment with historical market outcomes.

3. Section 4 of the Report: Information required to assess accuracy of the model assumptions and method

Synergy's submission states that the following information is necessary for stakeholders to assess and provide informed feedback on the accuracy of the assumptions and methods used to forecast Synergy's costs of providing spinning reserve (**SRAS**) and LRR:

- Dispatch metrics by facility, such as capacity factors, operating hours and start events.
- Annual plant availability statistics broken down into planned and forced outages.
- Provision of ancillary services by facility.
- A load-duration curve for system load net of non-scheduled generation.
- A forecast balancing price duration curve.

AEMO agrees with Synergy and will endeavour to include summary metrics and statistics such as those suggested above in the Final Report to the Economic Regulation Authority (**ERA**) on 30 November 2019.

4. Appendix A (A.6) of the Report: Greenough River Stage 2 state date

AEMO will update the model assumptions to use the Greenough River Stage 2 start date information provided by Synergy.

5. Appendix B of the Report: LFAS Assumptions

AEMO agrees with the reasoning provided by Synergy in which using LFAS offer behaviour from the period up to 27 August 2019 would better reflect the incentives for non-Synergy participation, and better aligns with the proposed minimum off-peak LFAS requirement of 70 MW for 2020-21. As a result, AEMO's assumption will account for the LFAS offer behaviour from that historical period, and will include the LFAS offer assumptions of the new LFAS entrant that is expected to participate in 2020-21.

6. Not addressed in the Report: Real-time consumption of LFAS increases market requirement for SRAS or LRR

AEMO acknowledges that real-time consumption of LFAS up or LFAS down can impact the availability of SRAS and LRR (from facilities that were simultaneously providing both SRAS/LRR and LFAS).

AEMO proposes to incorporate a consumed LFAS quantity based on the work presented at Meeting 2 of the Transformation Design and Operations Working Group (TDOWG)⁴, showing the estimated usage of LFAS over a two-year period from August 2017 to August 2019. The empirical probability density function for LFAS usage can be fitted to a normal distribution.⁵

In the ancillary services parameters model, the consumed LFAS will be sampled from the fitted distribution at each interval. If the sampled consumed LFAS quantity is positive, then a proportion (based on the quantity of cleared LFAS that is contributing to meeting the SRAS requirement in that interval in the model) of the quantity will be deducted from the SRAS procured and, if the quantity is negative, a proportion (based on the quantity of cleared LFAS that is contributing to meeting the LRR requirement in that interval in the model) of the magnitude will be deducted from the LRR procured. This approach will be discussed in detail in the Final Report.

If you would like to discuss these matters further, please contact Mark Katsikandarakis on (08) 9469 9932.

Yours sincerely

Martin Maticka
Group Manager, WA Markets

⁴ Refer to https://www.wa.gov.au/sites/default/files/2019-09/TDOWG_Meeting_2.pdf

⁵ With parameters $\mu=-11.18$ and $\sigma=31.58z$.