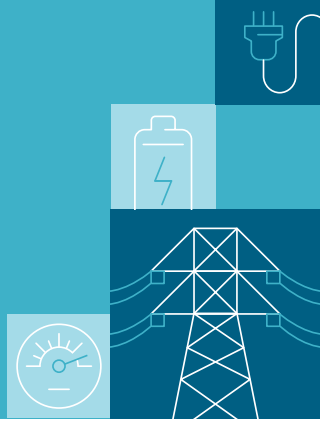
AEMO SERVICES

Consumer Trustee

Market Briefing Note

Further information on outcomes of Tender Round 2 - Firming Infrastructure



AEMO Services acts as the Consumer Trustee under the NSW Electricity Infrastructure Roadmap, we design and implement competitive tenders to meet the long-term financial interests of NSW electricity customers. AEMO Services recently announced the award of six LTESAs representing 1,075 MW with almost 3,000 MWh of energy storage[1]. These were recommended to the Scheme Financial Vehicle (SFV) following the completion of a competitive tender process.

The purpose of this market briefing note is to provide more transparency on the successful Bids in Tender Round 2 – Firming Infrastructure and to outline how AEMO Services is making tender decisions in the long-term financial interests of NSW electricity customers.

Context and Objectives of Tender Round 2

The New South Wales (NSW) Minister for Energy directed AEMO Services to hold a tender for firming infrastructure. Firming infrastructure refers to flexible capacity that is scheduled in the central dispatch process by AEMO and can ramp-up quickly when there is a sudden increase in demand. Firming can be provided by a range of technologies, including both short- and long-duration storage such as battery energy storage systems (BESS), demand response, gas generators, as well as pumped hydro energy storage.

Tender Round 2 was to procure at least 380 MW of additional firming infrastructure in Sydney-Newcastle-Wollongong sub-region to assist NSW electricity system security and reliability from December 2025. It commenced on 3 April 2023, using a two-stage process – the first assessed a project's social licence commitments, deliverability and organisational ability to deliver the project and the second assessed a project's financial value to NSW electricity customers.

In June 2023, the Commonwealth Government announced support up to an additional 550 MW to be procured in Tender Round 2 as part of its Capacity Investment Scheme (CIS). The Commonwealth's support enabled AEMO Services to increase the indicative tender size to 930 MW.

Please refer to Definitions for further information on terms throughout this note.

The financial contract used to incentivise investment in Firming Infrastructure within NSW is the Long-Term Energy Service Agreement (LTESA). Its design is intended to address project cash flow volatility and a lack of forecast project revenue (commonly referred to as 'missing money') by providing annuity payments to projects as a revenue top up. This facilitates lower financing costs and brings forward investment in firming capacity.

There are two types of Firming LTESAs:

1. Demand Response LTESA for projects that can reduce electricity demand. Participants must participate in AEMO's Wholesale Demand Response Mechanism and be physically located in the Sydney-Newcastle-Wollongong sub-region.
2. Firming Supply LTESAs for all other eligible firming technologies, including battery energy storage systems, (BESS) and gas-fired power plants.

A high number of competitive bids were submitted across a diverse range of technologies, including 4-hour and 2-hour BESS, Demand Response and Open-Cycle Gas Turbines. Those projects that were successful provided bids that scored well against both the:

- non-financial merit criteria – this included a clear pathway to commercial operations, strong organisational ability to deliver the project and high-quality social licence initiatives; and
- financial merit criteria – this included low cost, high market benefits, and minimal departures to the pro-forma risk allocation.

1. Please note this includes Demand Response Projects who have a contracted minimum response duration of 2 hours so are taken to have an energy storage equivalent of twice their capacity.

Successful Projects in Tender Round 2

AEMO Services recently announced the award of six LTESAs representing 1,075 MW with almost 3,000 MWh of energy storage[2]. The successful projects in Tender Round 2 include two, 2-hour duration Battery Energy Storage Systems (BESS) projects, one 4-hour duration BESS project, and three demand response projects.

Across the six successful projects, the capacity weighted average Forecast LTESA cost was $32,000 PV[3]/MW/annuity period and the Annuity Cap was $40,000 PV/MW/annuity period. All projects made the commitment to be operational by December 2025 and make meaningful contributions to the local workforce and communities.

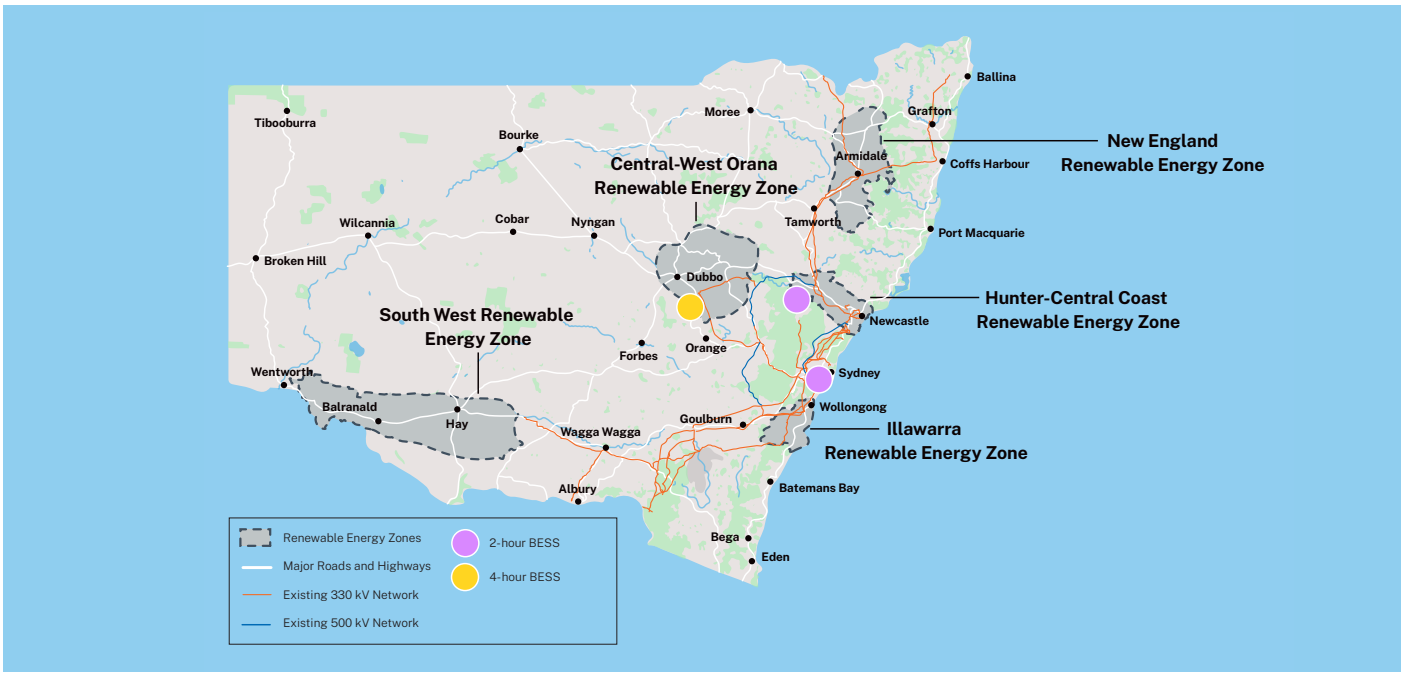
An overview of the successful projects is set out in Table 1 with their locations shown in Figure 1 below.

Table 1: Successful Projects in Tender Round 2

Project Name	Proponent	Technology	Capacity	Storage capacity
Liddell BESS	AGL Energy	Lithium-ion battery	500 MW	1,000 MWh
Orana BESS	Akaysha Energy	Lithium-ion battery	415 MW	1,660 MWh
Smithfield BESS	Iberdrola Australia	Lithium-ion battery	65 MW	130 MWh
Virtual Power Plant (VPP)	Enel X Australia	Demand Response	95 MW, **comprising three separate VPPs** (50 MW, 20 MW, and 25 MW)	Minimum dispatch duration of 2 hours, which will be maintained throughout the LTESA term.

All projects will be supported by the Scheme Financial Vehicle (SFV) as the counterparty to the LTESA. It is expected that Liddell BESS and the VPPs are funded by NSW customers through the SFV while the Orana BESS and Smithfield are expected to be funded by the Commonwealth Capacity Investment Scheme through the SFV.

Figure 1: Location of projects awarded LTESAs in Tender Round 2



Note: all three Demand Response LTESA projects will aggregate loads within the Sydney-Newcastle-Wollongong sub-region and as such cannot be placed in a single location on the map above.

2. Please note this includes Demand Response Projects who have a contracted minimum response duration of 2 hours so are taken to have an energy storage equivalent of twice their capacity.
3. Present Value (PV)

Select parameters of Project Bids are shown in Table 2. The table shows the winning portfolio that was awarded LTESAs in Tender Round 2. The technology mix of this winning portfolio is approximately 50% 2-hour BESS, 40% 4-hour BESS and 10% Demand Response. This weighting was used to calculate the parameter averages shown in the table below. Parameters should not be considered in isolation as they form part of the whole Bid that is assessed.

This information relates to Tender Round 2 only.

Table 2: Selected parameters of the winning portfolio

Parameter	Units[4]	Winning Portfolio
Storage duration	hours	2 - 4
Number of annuity periods	years	3 – 10
Forecast LTESA Cost (weighted average)	$ PV/MW/annuity period	32,000
	$ PV/MWh/annuity period	11,000
Annuity Cap (weighted average)	$ PV/MW/annuity period	40,000
	$ PV/MWh/annuity period	14,000
Maximum Liability (weighted average)	$ PV/MW	336,000
	$ PV/MWh	106,000
Proportion of Capex Underwritten by Annuity Cap (weighted average)	%	20%

Merit Criteria - weightings and Financial Value insights

AEMO Services used eight Merit Criteria Merit to assess Bids quality and make recommendations to the Consumer Trustee. Merit Criteria 1 and 2 were the most heavily weighted out of the Merit Criteria for Tender Round 2 at 55%. These Criteria were considered together due to the relationship between the risk allocation in the pro-forma Project Documents, with any departures assessed in Merit Criteria 2, and the price offered in Merit Criteria 1. Additionally, this weighting is due to the Consumer Trustee's primary consideration being the LTESA financial value, in accordance with s48(2) of the Electricity Infrastructure Investment (EII) Act.[5]

The Project delivery Merit Criteria – namely Merit Criteria 3, 4 and 5 – were collectively weighted 30% of the total merit score. The social licence commitments – namely Merit Criteria 6, 7, and 8 – were collectively weighted 15% of the total merit score.

The weightings are provided for transparency, noting AEMO Services may change the weightings or Merit Criteria for future tenders, as occurred between Tender Round 1 and Tender Round 2. The changes reflect the different nature of Tender Round 2 and the need for projects to be operational on or around December 2025. These changes included:

- a focus on project delivery was critical to ensuring the tender successfully fulfilled its mandate. Tender Round 2 sought to address system reliability risks and hence, the deliverability of projects was weighted relatively higher than in Tender Round 1;
- combining the old Merit Criteria 6 and 7 from Tender Round 1 for greater efficiency; and
- the introduction of a new Merit Criteria 8 as required by NSW regulations.

4. All units are in Present Value. Weighted average calculated using project capacity (MW).
5. The description of financial value in this market briefing is not an exhaustive or comprehensive summary of the evaluation process or indicative of any future evaluation process. AEMO Services retains the absolute discretion to score and assess Bids and make recommendations. It reserves full flexibility in structuring and implementing its tender and assessment processes to ensure that it is satisfied that any recommendations it makes are in the long term financial interests of NSW electricity customers and otherwise consistent with statutory requirements. Proponents responding to future tender rounds should not rely on anything in this document as being indicative of a future evaluation process or outcomes

Performance across all Merit Criteria is considered in the award of an LTESA regardless of their weightings. All Merit Criteria have minimum requirements and if a Proponent does not meet the minimum requirement they may be excluded from further evaluation. Experience indicates that performance in Merit Criteria other than Merit Criteria 1 and 2 can be influential in the final ranking should the range of Merit Criteria 1 and 2 scores be smaller.
Further, AEMO Services continues to evaluate whether criterion weightings should be disclosed pre-tender in the Tender Guidelines. The reason this was not done for Tender Round 1 and Tender Round 2 is it can have unintended consequences and undermine outcomes for NSW electricity customers. Additionally, Proponents may incorrectly infer their efforts should be spent on only a few Merit Criteria instead of across all areas assessed by AEMO Services. Experience indicates the Consumer Trustee's decision considers all Bids wholistically and non-performance on any Merit Criteria may result in an unfavourable outcome for that project.

Please note that the above weightings were applied by AEMO Services' Tender Assessment Committee (TAC). The Board of the Consumer Trustee uses the TAC's assessment as a key input to its decision-making process, but that input is not determinative of how the Consumer Trustee will ultimately exercise its discretion in deciding which Bids to progress. The Consumer Trustee will only recommend a Bid where it considers that the recommendation would be in the long-term financial interests of NSW electricity customers (having regard to the assessment as a whole), and the recommendation satisfies or is consistent with all relevant statutory requirements and duties.

Table 3 below outlines some insights from the MC1 assessment of Firming LTESA Bids in Tender Round 2. This illustration does not represent an exhaustive consideration of Financial Value.

Table 3: Characteristics of high performing Bids in Firming LTESA assessment

Key	Outcomes
Bid Prices	While the most competitive bid would have a low Annuity Cap and low Net Revenue Threshold, the Annuity Cap was seen to have more impact on assessment as it is a key driver for minimising both Forecast LTESA Cost and Max Liability.
Other Bid Variables	Some of the successful Bids used variables other than the Bid Prices to be competitive. This included: • having a Contracted Percentages of around 50%, • forfeiting Annuity Periods, or • reducing the Contract Term to as low as 3 years. This was assessed favourably where it led to lower Forecast LTESA Cost and Maximum Liability, and reduced cost and risk to the Scheme Financial Vehicle.
Forecast LTESA Cost	The successful projects had low Forecast LTESA Costs relative to unsuccessful projects. Bids have several levers to lowering their Forecast LTESA Cost through Bid variables. Forecast LTESA Cost can be minimised by lowering a Bid's Annuity Cap, or Net Revenue Threshold. It can also be reduced by excluding Annuity Periods or bidding a shorter contract term.
Maximum Liability	This metric considered the maximum potential payment from the Scheme Financial Vehicle over the full LTESA term. As it considers the highest possible cost, it did not take into account a Project's forecast Net Operational Revenue. Projects were assessed favourably if they had a competitively low Maximum Liability,
Earlier Commercial Operations Date (COD)	An earlier COD was assessed favourably where the Project being available in the market earlier allowed it to capture more of the value arising from the modelled wholesale market volatility observed in 2025-2026.
Dispatch duration	Projects with longer dispatch duration were competitive in MC1 with other, shorter duration projects. Longer dispatch durations are particularly valuable during extended renewable energy droughts or extended outages of transmission or generation where there is generally tighter energy supply which creates a greater opportunity for additional supply to be a price setter and cause wholesale prices to reduce. Longer dispatch durations were also assessed as having a better contribution to system reliability (which includes a consideration of its contribution to avoiding unserved energy).
Network Location	Projects located in stronger network locations with better connection into Sydney-Newcastle-Wollongong were forecast to earn higher revenues than projects in locations further away from the sub-region. Generally, strong locations were those close to or within Sydney-Newcastle-Wollongong subregion.

Future Tenders

Successful projects in tenders run by AEMO Services have exhibited competitiveness across all merit criteria. The Consumer Trustee has established that LTESAs will only be awarded to projects that can demonstrate their award is in the long-term financial interest of NSW customers. The Consumer Trustee has demonstrated a willingness to award LTESAs above and below the indicative tender size where this has been determined to be in the long-term financial interest of NSW electricity customers.

Competitive projects may consider participating in all eligible upcoming tender process where they expect to demonstrate significant value to NSW customers – be it generation, LDS or any future firming infrastructure tenders (should it be directed by the Minister).

Definitions

Term	Definition
Annuity Cap	The Annuity Cap is a bid variable. It sets the maximum annuity that may be paid by the Scheme Financial Vehicle to the LTES Operator in a Financial Year of an Annuity Period. Annuity Cap is an important input in modelling but is not considered in isolation in determining the Financial Value of a Bid.
Annuity Period	A period of one financial year in which a Firming LTESA annuity product is available.
Contracted Percentage	The Contracted Percentage is the percentage of a Project's total registered capacity that a LTESA relates to. For example, a project with a registered capacity of 500MW may request an LTESA for 250MW by nominating a Contracted Percentage of 50%. The Contracted Percentage will apply to a Project's total Net Operational Revenue to determine the portion relevant for calculating the LTESA annuity payment.
Forecast LTESA Cost	The present value of forecast costs that may be incurred by the Scheme Financial Vehicle for an LTESA, weighted across a range of future potential scenarios.
LTESA annuity payment calculation	The annuity payment is limited such that it equals the lesser of: • Annuity Cap, or • Annuity Cap – 75% × (Net Operational Revenues – (Net Revenue Threshold – Annuity Cap)).
Maximum Liability	Equal to the sum of the full Annuity Cap being paid in every Annuity Period over the Contract Term.
Net Operational Revenue	Intended to cover all revenue streams for the Project that are received by the LTES Operator, netted off against permitted costs. This would include gross revenue generated through the wholesale energy market, ancillary markets, network support, any future emerging markets and any other eligible contracts, minus certain costs including the cost of purchasing energy to generate these revenues.
Net Revenue Threshold	The Net Revenue Threshold is a bid variable. As a Project's Net Operational Revenue increases toward the Net Revenue Threshold, the annuity payment from SFV reduces below the Annuity Cap. If Net Operational Revenue exceeds the Net Revenue Threshold, a repayment to the SFV may apply. A lower Net Revenue Threshold may reduce the Forecast LTESA Cost, all else being equal, but it had a lesser impact on Forecast LTESA Cost than minimising an Annuity Cap.

This publication has been prepared by AEMO Services using information available at 13 November 2023.