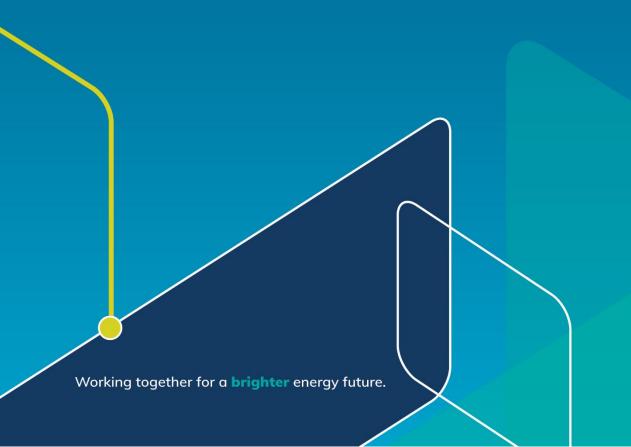


Energy Policy WA

2025 Review of Benchmark Capacity Providers: Coordinator of Energy Determination

30 September 2025



An appropriate citation for this paper is: Coordinator of Energy Determination: 2025 Review of Benchmark Capacity Providers

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1. This Determination

The Coordinator of Energy (Coordinator) has determined, under clause 4.16.11 of the Energy System and Market Rules (ESM Rules), the Benchmark Capacity Providers. The Coordinator has determined that:

- 1. The Benchmark Peak Capacity Provider will be a lithium battery energy storage system with:
 - 200 MW injection;
 - 1200 MWh energy storage; and
 - a 330 kV connection at a location to be determined by the Economic Regulation Authority (ERA)
- 2. The Benchmark Flexible Capacity Provider will be a lithium battery energy storage system with:
 - 200 MW injection;
 - 1200 MWh energy storage; and
 - a 330 kV connection at a location to be determined by the ERA,
- 3. Benchmark Reserve Capacity Prices will be determined on a gross Cost of New Entry (CONE) basis.

2. Background to the Determination

The Benchmark Capacity Providers are the reference technologies used to set the Benchmark Reserve Capacity Prices (BRCPs) for Peak Capacity and Flexible Capacity. As defined in the ESM Rules, Benchmark Capacity Providers are notional technology types. For the remainder of this document, the Benchmark Capacity Providers are referred to as "benchmark technologies".

The Coordinator is required to select the benchmark technologies on the basis that they represent the lowest annual capital cost, and annual fixed operating and maintenance costs. The selected benchmark technologies will be able to recover all of their capital and fixed costs without any other market revenue. All other technologies, with higher capital and fixed costs, will still recover their costs by also receiving energy and Essential System Services (ESS) market revenues.

This determination is required by clause 4.16.11 of the ESM Rules, which requires the Coordinator to complete a determination within six months of the revised Electric Storage Resource (ESR) Duration Requirement being published in the Australian Energy Market Operator's (AEMO) Electricity Statement of Opportunities (ESOO). In the 2025 ESOO, the ESR Duration Requirement changed from 4 hours to 6 hours.

Clause 4.16.12 of the ESM Rules details that the Coordinator must determine:

- a) the appropriate reference technology to be used for each Benchmark Capacity Provider;
- b) the technical parameters to be used for each Benchmark Capacity Provider, including size and capabilities;
- the uncongested network location to be used for each Benchmark Capacity Provider, or if there is no uncongested network location, a network location with relatively low congestion; and
- d) whether the relevant Benchmark Reserve Capacity Price is to be assessed on the basis of:
 - i) the gross capital cost of the relevant Benchmark Capacity Provider; or
 - ii) the capital cost of the relevant Benchmark Capacity Provider less any expected contribution to capital costs from participation in the Real-Time Market.

The current Benchmark Capacity Providers review (the Review) must be concluded in time to allow the ERA to amend the relevant Whole Electricity Market (WEM) Procedure and determine and publish the BRCPs for the 2026 Reserve Capacity Cycle by 15 March 2026.

Following this determination, clause 4.16.11 of the ESM Rules requires the Coordinator to make another determination within three years of the previous determination of the Benchmark Capacity Providers, or within six months of a revised ESR Duration Requirement published in the ESOO.

3. Consultation

Clause 4.16.13 of the ESM Rules requires the Coordinator to consult with Market Participants on the parameters determined under clause 4.16.12.

The Coordinator's proposals for the parameters determined under clause 4.15.12 have been discussed with the WEM Investment Certainty Review Working Group (WICRWG), Market Advisory Committee (MAC) and the Transformation Design and Operation Working Group (TDOWG). A Consultation Paper on these proposals was also published on the Coordinator's website for consultation on 29 August 2025 for submissions by 19 September.

3.1 WEM Investment Certainty Review Working Group

The Review was discussed at the 14 August 2025 meeting of the WEM Investment Certainty Review Working Group (WICRWG). The discussion included:

- the approach to shortlisting technologies for each capacity product and the shortlist determined through this approach;
- capacity service requirements, including those drawn from the published minimum eligibility requirements for Peak and Flexible Capacity providers, and the appropriate size for assumed new build;
- the expected technical and economic life of the shortlisted technologies; and
- the estimates for the upfront capital costs and other fixed costs for each shortlisted technology.

Meeting paper and minutes are available on the WICRWG web page¹.

3.2 Market Advisory Committee

The coordinator sent a draft consultation paper to the MAC out of session for comment. The MAC's feedback included the following comments:

- Regarding the Gross vs Net CONE analysis (section 3 of this paper), a concern was raised
 that the existing Battery Energy Storage System (BESS) facilities may be earning substantial
 revenue through energy arbitrage and ESS, and whether such historical revenues should be
 estimated and considered.
 - As noted in the Consultation Paper, such revenues are unlikely to continue, with substantial quantities of BESS capacity entering the market. Therefore, historical revenues of existing BESS facilities are not relevant to this determination.
- Another concern that the BRCPs resulting from this determination will not incentivise sufficient investment in the capacity required to meet the reliability requirements was raised.

uttoe://www.wa.gov.au/eve

¹ https://www.wa.gov.au/system/files/2025-08/wicrwg meeting 14 august 2025 meeting papers.pdf

As noted in the Consultation Paper and in section 2 of this report, the objective of the Review is to determine the benchmark technologies used to set the Peak and Flexible BRCPs, which ensure system reliability is maintained at the lowest cost. All other technologies, with higher capital and fixed costs, will still recover their costs by also receiving energy and ESS market revenues.

3.3 **Transformation Design and Operation Working Group**

The Benchmark Capacity Providers review was discussed at the 3 September 2025 meeting of the Transformation Design and Operation Working Group (TDOWG). The discussion included:

- the approach to shortlisting technologies for each capacity product and the shortlist determined through this approach;
- capacity service requirements, including those drawn from the published minimum eligibility requirements for Peak and Flexible Capacity providers, and the appropriate size for assumed new build;
- the expected technical and economic life of the shortlisted technologies; and
- the estimates for the upfront capital costs and other fixed costs for each shortlisted technology.

The meeting slides are available at the TDOWG web page². Responses to the issues raised at the TDOWG meeting were provided at that meeting.

Submissions received during public consultation 3.4

After discussing proposals with the MAC, WICRWG, and the TDOWG, submissions were requested in the Consultation Paper published on 29 August 2025³. Submissions were open from 29 August 2025 to 19 September 2025. The Coordinator received submissions from:

- Alinta Energy
- Chamber of Minerals and Energy WA (CME)
- Neoen Australia
- AGL Perth Energy
- Synergy
- Western Power

Copies of the submissions are available in full on the Coordinator's website4.

A summary of common issues raised in the submissions regarding the proposals is provided below, and a response to each of the issues raised can be found in Appendix A.

3.4.1 Proposal A: The reference technologies for the Peak and Flexible **Benchmark Capacity Providers**

In the Consultation Paper, Energy Policy WA (EPWA) proposed that the Benchmark Capacity Provider for both Peak Capacity and Flexible Capacity be determined as a 200 MW/1200 MWh Lithium BESS connected at 330kV. The facility has the lowest capital cost, and fixed operating and maintenance cost per MW per annum for both Peak Capacity and Flexible Capacity.

² https://www.wa.gov.au/system/files/2025-09/tdowg 2025 09 03 meeting 56 slides 2025 benchmark capacity providers review.pdf

³ 2025 Benchmark Capacity Providers Review Consultation Paper

⁴ 2025 Benchmark Capacity Providers Review (www.wa.gov.au)

The CME, Neoen and Synergy broadly supported the proposal.

Alinta Energy proposed that a gas-fired power station as the Benchmark Capacity Providers would better serve the State Electricity Objective (SEO) and requested clarification on the treatment of maintenance costs.

Neoen considered that the review was being optimistic regarding BESS build times, and that developers typically don't treat degradation as an operating expenditure (OPEX) cost.

Perth Energy raised concerns that the WEM may become over reliant on BESS systems. It considered that a new high efficiency gas plant may be a better overall investment for the system, and that plant lead times are currently longer than the construction time considered in this review.

The Coordinator's responses to these issues are provided in Appendix A.

3.4.2 Proposal B: Approach to Cost of New Entry

In the Consultation Paper, EPWA proposed to retain a gross cost CONE approach to the BRCPs determination.

Alinta Energy, CME and Synergy all supported the proposal. No submissions proposed an alternative approach.

4. Coordinator's Assessment

In accordance with clause 4.16.12 of the ESM Rules, the Coordinator is required to determine and publish specific parameters for the Benchmark Capacity Provider. This section provides a summary of the Coordinator's assessment of these parameters.

4.1 The appropriate reference technologies to be used for each Benchmark Capacity Provider

The ESM Rules define the Benchmark Capacity Provider for Peak Capacity or Flexible Capacity as a notional new entrant Facility based on the technology which is expected to be able to provide (Peak or Flexible) Capacity at the lowest annual capital cost.

The Coordinator has determined that the technology that is able to provide Peak Capacity at the lowest annual capital cost (including fixed operation and maintenance costs) is a lithium BESS.

The Coordinator has determined that the technology that is able to provide Flexible Capacity at the lowest annual capital cost (including fixed operator costs) is a lithium BESS.

This is consistent with the proposals in the Consultation Paper. See Section 2 of the Consultation Paper for more information.

4.2 The technical parameters to be used for each Benchmark Capacity Provider, including size and capabilities

The Coordinator has determined that the parameters of the Benchmark Capacity Provider are:

- 200 MW injection capability
- 1200 MWh of energy storage

This is consistent with the proposals in the Consultation paper. See Section 2 of the Consultation Paper for more information, including the assumptions around service requirements for Peak Capacity and Flexible Capacity, economic life, and other factors that influence these parameters.

4.3 Whether the relevant BRCP is to be assessed on the basis of gross CONE or net CONE

The Coordinator assessed whether the relevant BRCP is to be determined based on gross cost of new entry (gross CONE) or capital cost less than expected contribution to capital costs from participant Real-Time Market (net CONE). The Coordinator has determined that the relevant BRCP is to be calculated on a gross CONE basis.

This is consistent with the proposal in the Consultation Paper. See Section 3 of the Consultation Paper.

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Appendix A. Responses to submissions received in the consultation period

Issue	Submitter	Comment/Issue Raised	Coordinator's Response		
Propo	Proposal A: Benchmark Capacity Providers (reference technologies) for Peak Capacity and Flexible Capacity				
1	Alinta Energy	A short-listed gas-fired generation Benchmark Capacity Provider would better serve the SEO The determination does not appear to include a robust assessment of the BESS technology's contribution to the aspects of supply quality and reliability to support the future needs of the SWIS. While BESS can provide fast-response capacity, their effectiveness in terms of maintaining reliability is contingent on adequate charge levels and the level of energy producing capacity on the system. The 2025 WEM Electricity Statement of Opportunities indicates that the SWIS requires substantial new energy-producing generation capacity to complement storage and maintain reliability. It is acknowledged that the Benchmark Capacity Providers are not intended to represent the actual technologies that will or should enter the market. However, because they are used to set the BRCP, they must reflect the return on capital required to incentivise the right mix of generation and storage technologies.	 The Benchmark Capacity Provider reference technologies: represent the marginal cost providers of Peak and Flexible Capacity; are determined for a notional new facility that meets the Peak and Flexible Capacity criteria; do not represent an expectation of the actual technologies what will or should enter the market in the future. The BRCP is not intended to reflect the costs of any other capacity providers, as they would be able to recover part of their capital costs through the energy and ESS markets. Further, the ESM Rules include other mechanisms to provide additional incentives for generation capacity to enter the WEM when needed. For example, if AEMO has determined that further Capability Class 1 and Capability Class 3 capacity would be required to make up a shortfall, any Capability Class 1 and Capability Class 3 Facility that has not been assigned a Network Access Quantity in any previous Reserve Capacity Cycle will be prioritised in the NAQ process over other new Facilities. These Facilities will also be able to fix the Reserve Capacity Price for 5 or 10 years depending on the requirements they meet. 		
2	Alinta Energy	Query regarding fixed maintenance costs We note that operations and maintenance costs appear to be an important factor in the BESS emerging as the least cost outcome compared to alternatives. We request further information to demonstrate that the maintenance costs included in the calculation for gas-fired capacity excludes	The Operating and Maintenance (O&M) costs for all technologies include: Fixed O&M (FOM) costs derived from AEMO IASR (and in turn from CSIRO GenCost and Aurecon). Only the FOM costs have been applied and not the Variable O&M (VOM) costs. The costs for future hours/starts-based overhaul type maintenance are considered VOM cost and hence excluded.		

Issue	Submitter	Comment/Issue Raised	Coordinator's Response
		all maintenance costs that would be included as input costs in market submissions.	 Adjustments (additions) as considered appropriate for inclusion, all of which are considered to be FOM and not input costs to market submissions (i.e. not variable or operationally dependent costs): Transmission connection asset maintenance Transmission NUOS (fixed component) Pipeline (i.e. DBNGP) capacity Gas connection FOM Corporate overheads, etc Insurance adjustment Site security Rates
3	CME	CME supports the provision of reserve capacity at lowest possible cost and is broadly comfortable with EPWA's proposed reference technologies for the Peak and Flexible BRCPs to be a 200 MW/1200 MWh Lithium BESS connected at 330 kV.	Noted
4	Neoen	Neoen broadly supports the review's recommendations and appreciates the detailed consultation undertaken by EPWA. A more transparent and predictable process reduces risk for proponents, enabling developers to access cheaper capital and lowering the overall cost of the transition.	Noted
5	Neoen	Neoen also notes that the build times assumed by the review are unreasonably optimistic. While it is technically possible to construct a 6-hour battery in 1.3 years, this would increase overall costs due to the need to compensate suppliers for priority delivery and would also require that detailed engineering and procurement processes had already been completed. Such a pathway would only be possible if the business case placed a very high value on an earlier start date. For a typical greenfield BESS, Neoen assumes a 2–3 year construction period. We do not consider the necessary premium to reduce this	The ERA's WEM Procedure outlining the method for setting the BRCP explicitly considers construction time only. The 2026 BRCP will be based on a hypothetical plant commencing commercial operation in 2028. In reality, several project development steps, such as negotiating network access, applying for environmental approvals, securing finance, ordering critical equipment must be progressed well before the certification process. The underlying assumption in this review and the relevant analysis is that any of the proponents of the technologies assessed would have

Issue	Submitter	Comment/Issue Raised	Coordinator's Response
		timeframe is reflected in the assumed capital expenditure (CAPEX) costs in the Review.	started project development long before applying for Capacity Credits.
			This has been consistently applied to all the technologies considered. There is no accelerated delivery/construction CAPEX premium added (nor considered appropriate to add) for any of the technologies in this evaluation.
			EPWA notes that the purpose of the review is to find the least fixed costs technologies to set the Benchmark Reserve Capacity Prices.
6	Neoen	Degradation is not typically addressed in OPEX costs, instead it is accounted for by overbuilding in the first year i.e. increased CAPEX.	The ERA has confirmed that refurbishment (such as replacement of battery cells to maintain capacity level) is considered a variable maintenance cost and reflected in RTM submissions. Therefore, degradation is not included in the BRCP calculation in the analysis to determine the Benchmark Capacity Providers.
7	Neoen	We recognise that changes to timing of the broader processes surrounding the BRCP may be beyond the scope of this review; however, we consider that alignment of the BRCP with capacity cycles must be improved to support efficient investment decisions. Neoen believes that a shift to longer-duration BESS (6+ hours) is likely by the 2028 Reserve Capacity Cycle. It would therefore be beneficial if the ERA's decision included provisions—such as an appendix noting an 8-hour BESS as a candidate facility—in anticipation of this shift.	The Benchmark Capacity Provider Review is based on the capacity requirements that are known at the time of the review. Any changes to the ESR Duration Requirement for the 2026 Reserve Capacity Cycle are speculative until the publication of the 2026 ESOO. As with any other Reserve Capacity Cycle, the timing of the Benchmark Capacity Provider Review and the ERA's determination of the 2026 BRCP is set to ensure that a BRCP is published before certification in the 2026 Reserve Capacity Cycle. This is to provide certainty for investors participating in the relevant cycle. EPWA notes, that changes to the BRCP after it has already been published will undermine this investment certainty, especially if the replacement BRCP is lower as a result of the change.
8	Perth Energy	Future plant mix There has been some concern expressed that the WEM is potentially becoming over reliant on BESS systems and that setting these as the Benchmark Capacity Providers, for both Peak and Flexibility, will accentuate this. Limb B of	Please refer to the response to Alinta's comment (Issue 1) above.

Issue	Submitter	Comment/Issue Raised	Coordinator's Response
		the reliability criterion, which limits expected energy shortfalls to 0.0002% of annual energy consumption, addresses this in part but not necessarily in full compliance with the SEO.	
		If no new generation capacity is brought online, existing plant must run harder to meet increasing demand and increasing BESS losses. This will significantly lift the output required from older, less efficient generating plant raising overall system operating costs and greenhouse gas emissions. New, higher efficiency plant, with lower operating costs and emissions levels, may be a better overall investment for the system.	
9	Perth Energy	Lead times for some of the plant considered in the Review are currently well beyond the period from plant certification to required operation. Because the BRCP Procedure only considers construction time this is not an issue for the Review, but it does highlight the mismatch between the reserve capacity process and much utility sized non-intermittent generation. Developers of such facilities must make substantial binding financial commitments well before certification and assignment of capacity credits. These facilities are effectively ruled out as potential benchmark capacity providers in the future. Further, bringing such plant into the market to maintain an optimum plant mix which meets the SEO, presents major challenges.	Please refer to the response to NEOEN's comment (Issue 5) above.
10	Perth Energy	Fuel supply for firming capacity Much of the firming capacity now in service on the WEM is certified on diesel fuel. This is a reliable and relatively low-cost approach to meeting the fuel security requirements within the Electricity System and Market Rules. The Review notes that expected potential limits on carbon emissions intensity effectively exclude the use of diesel in	The 14-hour fuel availability is a requirement for receiving Capacity Credits. Therefore, it must be reflected in the Benchmark Capacity Provider Review. EPWA notes that assessing the fuel requirements for the different Capability Classes is not within the scope of this review.

Issue	Submitter	Comment/Issue Raised	Coordinator's Response
		the future requiring gas fired plant to certify only on gas. As set out in section 2.3.2, to secure certification, a gas fired facility will incur the fixed charges associated with firm full haul gas transport as well as purchase of sufficient firm gas supply to service a 14-hour run time, potentially partially offset with storage.	EPWA also notes that, during the recent Reserve Capacity Mechanism (RCM) Review, the 14-hour fuel availability requirement for Capability Class 1 Facilities was identified as crucial for maintaining reliability in accordance the ESM Rules. As a result, this was retained as a requirement for Capability Class 1 Facilities.
		This approach ensures virtually absolute certainty of secure plant availability but gives no consideration to cost. Perth Energy suggests that a probability-based approach, as is used to set the maximum demand forecast or the capacity contribution of intermittent generation, may better comply with the SEO.	
11	Synergy	EPWA have proposed that the reference technologies for setting both the Peak and Flexible BRCPs are a 200MW / 1200MWh (six-hour) lithium Battery Energy Storage System (BESS) connected at 330kV. At a high-level Synergy supports this proposal.	Noted
12	Synergy	Better alignment of timelines within the Reserve Capacity Mechanism In Synergy's November 2023 submission1 in response to EPWA's BRCP Reference Technology Review – Consultation Paper, Synergy raised the concern that the allowance for the availability requirement of ESRs to increase over time to counter any Availability Duration Gap could create the scenario where the ESR Duration Requirement announced during the middle of Year 1 of a Capacity Cycle exceeds the availability requirement of the incumbent reference technology, which could have been the basis for setting the Capacity Cycle's BRCP at the beginning of Year 1. This has the potential to distort investment signals within the WEM. Synergy notes that this scenario has eventuated in the 2025 Capacity Cycle, the current Capacity Cycle at the time of this consultation period. For the 2025 Capacity Cycle, the Economic Regulatory Authority (ERA) issued its	Please refer to the response to NEOEN's comment (Issue 7) above.

Issue	Submitter	Comment/Issue Raised	Coordinator's Response	
		final determination of the 2025 Peak and Flexible BRCPs (applicable for 2027/28 Capacity Year) in December 2024, both being \$360,700 per MW per year, based on a 200MW / 800MWh (four-hour) lithium BESS. Subsequently, AEMO's 2025 WEM ESOO, released in June 2025, saw the ESR Duration Requirement increasing from four to six hours for the 2025 Capacity Cycle. The outcome for the 2025 Capacity Cycle is such that new entrant BESS facilities will be assessed based on a six-hour ESR Duration Requirement; however, the resulting Reserve Capacity Prices will be set based on the costs of a four-hour BESS.		
		Therefore, Synergy reiterates its concern of the potential for this mismatch in the BRCP and ESR Duration Requirement occurring and suggests this matter requires further consideration. It is likely that amendments to the ESM Rules will be required to remove the potential mismatch between the duration of the reference technologies used to set the BRCP and the ESR Duration Requirement that is used to determine Certified Reserve Capacity.		
13	Western Power	Western Power considers the RCM to be central to securing timely and efficient capacity investment. Appropriate selection of the Benchmark Capacity Providers is foundational to the RCM, as it underpins the Benchmark Reserve Capacity Price (BRCP) and the market signals needed to incentivise the optimal mix of capacity at the most efficient cost to consumers. Western Power supports proposals that strengthen these signals and reinforce investor confidence in the WEM.	Noted.	
Proposal B: Retain a gross Cost of New Entry approach				
1	Alinta Energy	We support the proposal to retain a gross Cost of New Entry (CONE) approach. This methodology ensures that the BRCP reflects the full cost of investment required to	Noted	

Issue	Submitter	Comment/Issue Raised	Coordinator's Response
		deliver new capacity to the SWIS. Retaining this approach is essential to maintain investor confidence and to ensure appropriate long-term investment signals.	
2	CME	CME supports retaining a gross Cost of New Entry (CONE) approach to the Benchmark Reserve Capacity Price (BRCP) determination.	Noted
3	Synergy	The Consultation Paper investigates the application of both a Gross Cost of New Entry (CONE) and a Net CONE approach for BRCP determination and proposes that the Gross CONE approach is retained. Synergy agrees with EPWA's analysis and assessment of the Gross CONE and Net CONE approaches and agrees a Gross CONE approach should be retained. Synergy considers that although a Net CONE approach has the potential outcome of a lower BRCP, the additional complexity, investment risks and implementation costs would likely far outweigh any potential cost reductions in the BRCP.	Noted

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