



Economic Regulation Authority  
469 Wellington Street  
Perth WA 6000

To the Economic Regulation Authority (ERA)

## **SUBMISSION ON THE ECONOMIC REGULATION AUTHORITY'S DRAFT DETERMINATION OF THE 2026 BENCHMARK RESERVE CAPACITY PRICES FOR THE 2028/29 CAPACITY YEAR**

The Department of Energy and Economic Diversification (DEED) has reviewed the Economic Regulation Authority's (ERA) draft determination of the 2026 Benchmark Reserve Capacity Prices (BRCPs) for the 2028-29 Capacity Year. Based on this assessment, DEED suggests the ERA reviews some elements of its determination.

### **The Coordinator of Energy's 2025 determination of the Benchmark Technology**

In 2025, the Coordinator reviewed the Benchmark Technologies for setting the BRCPs. The underlying analysis identified that 200 MW / 1200 MWh battery energy storage systems (BESS) would result in the lowest indicative BRCPs (leading to only about 1% increase to the 2025 BRCP) of all the shortlisted technologies. As this was assessed as the lowest cost notional new facility, the Coordinator determined it as the Benchmark Technology to be used by the ERA in the determination of the 2026 BRCPs.

To estimate the capital, and fixed operating and maintenance, costs for the shortlisted technologies, DEED used the Australian Energy Market Operator (AEMO) Inputs Assumptions and Scenarios Report (IASR) values published in 2025. This data was itself derived from the Commonwealth Scientific and Industrial Research Organisation (CSIRO) GenCost (2024-25 Consultation Final).

As the IASR values included only fixed costs figures for 4 hour and 8 hour duration BESS, these figures were interpolated to derive estimates for a 6 hour BESS to meet the availability requirements for Electric Storage Resources in the Reserve Capacity Mechanism.

CSIRO has now released an updated GenCost report<sup>1</sup>. For this latest version the technology cost parameters review was undertaken by GHD and its draft report is published on the AEMO website<sup>2</sup>. In its report, CSIRO noted that "*Battery costs (battery and balance of plant in total) have decreased significantly by 11% to 16% depending on the duration*".

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<sup>1</sup> Graham, P. and Hayward, J. 2025, GenCost 2025-26: Consultation draft, CSIRO, Australia. The version listed on AEMO's website for the Draft 2026 forecasting assumptions consultation is marked as 23 December 2025 at [www.aemo.com.au](http://www.aemo.com.au)

<sup>2</sup> GHD, "2025 Energy Technology Cost and Technical Parameter Review Draft Report (Rev C) 28 November 2025, At [www.aemo.com.au](http://www.aemo.com.au)

DEED has now updated its previous cost analysis for the Benchmark Technology using the most recent figures published by CSIRO (CSIRO's 2025-26 GenCost Draft Report), as presented below and as Attachment 1.

CSIRO's numbers have been used as they are widely regarded as the most accurate assessment of energy costs in Australia.

### **The ERA's draft determination and underlying cost estimates**

The ERA's draft determination of \$491,700 per Megawatt (MW) per year for both the peak and flexible BRCPs represents a 36% increase from the 2025 BRCP of \$360,700 per MW per year.

The ERA's draft determination is based on a consultant report from GHD Advisory for the capital costs, and fixed operating and maintenance costs; a report from Western Power for the transmission connection costs and from Landgate for the land costs. The ERA has made its own adjustments to some of the parameters assessed by GHD.

The ERA's estimates of the electricity connection cost (based on Western Power's report) and the land cost (based on Landgate's report), that have been incorporated into the GHD report and ERA draft determination, are consistent with DEED's previous estimates (see below).

The GHD report is produced to Association for the Advancement of Cost Engineering (AACE) Class 5 accuracy<sup>3</sup>. GHD indicates in its report that this provides for conservative cost estimates aimed at ensuring that capacity providers receive sufficient funding.

### **DEED's updated Capex & Fixed O&M analysis**

DEED has engaged Robinson Bowmaker Paul and the Jacobs Group to validate its assessment of the ERA's draft determination.

To estimate the BESS supply, installation and construction capex for the 2025 analysis, DEED used costs provided in the (December 2025 draft) CSIRO GenCost for 2028 in real 2025 Australian Dollars. DEED has now updated these analysis using the updated values sourced from CSIRO and the GHD report prepared for CRSRO.<sup>4</sup>

In addition, DEED has also estimated the BESS supply, installation and construction capex using CSIRO GenCost values for 2025 to align with the ERA's approach of using 2025 cost estimates.

DEED applied the ERA's values for the Weighted Average Cost of Capital (WACC) in both the 2025 and the updated analysis.

DEED's assessment of the GHD parameter values, the ERA's proposed values, and their consequences for the calculated BRCP is provided in Appendix 1 of this submission.

### **Issues for the ERA to consider**

The ERA's cost estimates for the BESS supply, installation and construction warrant further consideration. This cost has a large impact on the BRCP and the ERA's 2026 draft value is 40% higher than the estimate in DEED's 2026 analysis.

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<sup>3</sup> Low Expected Actual Cost -50% to -20%, High Expected Actual Cost +30% to +100%

<sup>4</sup> DEED used the information for costs including Land and development costs as these are included separately for the BRCP determination and adjusted the values from the CSIRO GenCost report to account for auxiliary loads.

DEED notes that GHD developed the estimates for the ERA based on its discussions with Original Equipment Manufacturers (OEMs) for the BESS modules and Power Conversion System (PCS), plus GHD margins for Engineering, Procurement and Construction (EPC) contractor overheads (25%) and margins (12%). Construction and Balance of Plant (BoP) are added separately as allowances.

The underlying analysis cannot be adequately reviewed as GHD's OEM discussions are (naturally) individually confidential.

DEED agrees with the ERA's decision to exclude the contingency allowance in estimating the BESS supply, installation and construction capex. However, DEED notes that the total capital cost included by the ERA through using the estimates provided by GHD has a similar effect to the previously included "contingency allowance".

DEED suggests that the BRCPs might be more appropriately based on expected cost rather than a conservative 'risked' cost, such as a P90. While GHD does not identify what the contingency allowance is (scope contingency, growth contingency, risk contingency etc), it is not clear that a risk contingency is appropriate for the BRCP calculation. This is because DEED expects that no significant contingencies should apply for a BESS technology of specified size (given that existing designs are re-applied with very little site-to-site changes required for the key components).

Given the wide uncertainty band of a Class 5 assessment and the significant impact the BRCPs would have on the costs to consumers, the ERA could consider benchmarking the cost estimates GHD provided to it against other sources.

In Australia, it is common practice to benchmark such cost estimates against CSIRO GenCost and there is published data that can be used as additional evidence (making appropriate adjustments for scale, BESS duration and timing as may be necessary).

DEED notes that the CSIRO GenCost values are derived through extensive consultation processes and are published, providing an adequate level of transparency, and widely applied in the industry.

DEED's analysis shows that the ERA's cost estimate for the ESS supply, installation and construction is about 40% higher than the cost DEED estimated by using the values provided in the CSIRO GenCost report if using the 2028 values and more than 20% higher if using the 2025 values.

DEED notes that there are additional published comparators that can be considered to support the evaluation such as historical information, which generally needs to be adjusted for any intervening escalation or to reflect the cost reduction of new technologies (the "learning rates"). DEED considers that such information should be considered as it enhances the evidence base for the BESS fixed costs.

For example, AGL announced<sup>5</sup> its Financial Investment Decision (FID) for the Tomago BESS (500 MW / 2000 MWh) in July 2025 with an indicated Total Construction Cost<sup>6</sup> of "approximately \$800M". This (\$1600/kW nominal) is consistent with the 2025 IASR value for a 4h BESS in 2025-26 (\$1548/kW real \$2025).

### **Additional issues for consideration**

The BRCP construct is for a hypothetical project for assumed use by 1 April 2028. The relevant Wholesale Electricity Market Procedure<sup>7</sup> requires that:

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<sup>5</sup> [FID on the 500 MW Tomago battery](#)

<sup>6</sup> Noted to include "engineering, procurement and construction costs, project management costs, overheads, contingency, and interest during construction"

<sup>7</sup> [ERA WEM Procedure - BRCP](#) at Clause 3.10.2

*Where capital cost components have been estimated at a date that is different to 1 April in Year 3 of the Reserve Capacity Cycle, and the ERA reasonably expects these costs to change over time, the ERA must adjust the costs by using a reasonable adjustment method and use these adjusted costs in its BRCP determination*

The ERA's draft determination is based on escalated cost estimates for 2025, applying the Consumer Price Index and the Wage Price Index to 2028. However, the ERA has not adjusted the cost estimates for the BESS modules and PCS components to reflect the "learning rate" (the cost reductions associated with BESS as a new technology(ies)). This approach effectively applies a learning rate of negative CPI on those particular components (i.e. not on the overall fixed cost).

**Cost estimates must be reconsidered by the ERA for its final determination**

DEED's estimate of the BESS supply, installation and construction costs, based on the analysis in this submission is lower than the estimate the ERA used in its draft determination.

DEED suggests the ERA re-examines the cost estimates provided by GHD Advisory, taking into account the points raised and the analysis provided by DEED in this submission.

Please feel free to contact me on [REDACTED] if you have any queries or would like further information.

Yours sincerely

Jai Thomas  
COORDINATOR OF ENERGY

13 February 2026

## Appendix 1

The below tables provide a comparison of the cost estimates for the BRCPs presenting the values provided by GHD to the ERA (where applicable), the values used by the ERA, the values DEED applied in 2025 and the values from DEED's updated analysis as verified by Robinson Bowmaker Paul and Jacobs Group.

Table 1: Capital costs estimates

Parameter	GHD 2026	ERA 2026	DEED 2025	DEED 2026	Comment
BESS supply, installation and construction capex excl contingency	\$489.36M (\$2447/kW)	\$487.96M (\$2440/kW)	\$401.8M (\$2009/kW)	\$348.5M (\$1743/kW) (5M using CSIRO learning rates to 2028) or \$402.6M (\$2013/kW) (using ERA/GHD learning rates)	The ERA draft value is significantly higher than DEED's estimates and DEED requests that it is reconsidered by the ERA for its final determination.
Electrical connection capex	\$26.55M	\$33.9M + new charge of \$20M "Fixed Capital Charge"	\$36.29M	\$33.9M+\$20M	The Fixed Capital Charge is a new proposed inclusion and was not considered in DEED's 2025 analysis.
Land capex	\$3.91M	\$4.34M	\$7.22M	\$4.34M	DEED applied the 2025 Landgate value and it has observed that the 2026 value is lower. DEED has no concern with the value proposed by the ERA.
Other indirect capex <sup>8</sup> (excl contingency)	\$47.2M	\$47.2M	\$56.1M	\$47.2M	DEED has no concern with the value proposed by the ERA.
Contingency capex	\$82.76M + esc	\$0	\$0	\$0	DEED agrees with the ERA's proposal.

<sup>8</sup> Becomes the "M" factor, when expressed as a fraction of the other capital costs

Parameter	GHD 2026	ERA 2026	DEED 2025	DEED 2026	Comment
Fixed O&M	\$12.94M/y	\$14.1M/y	\$10.57M/year	\$12.4M/year	DEED has no concerns with the ERA's proposed value.

Table 2: Fixed O&M Cost estimates

Parameter	ERA 2026	DEED 2025	DEED 2026	Comment
BESS O&M	10.5M	6.4M	8.9M	DEED has no concerns with the ERA's proposed value.
Transmission O&M	0.13M	0.18M	0.13M	DEED has no concerns with the ERA's proposed value.
NUOS	1.55M	1.3M	1.55M	DEED has no concerns with the ERA's proposed value.
Corporate o/h	1.46M	1.2M	1.46	DEED has no concerns with the ERA's proposed value.
Site security	0.19M	0.17M	0.19M	DEED has no concerns with the ERA's proposed value.
Rates	0.24M	0.19M	0.24M	DEED has no concerns with the ERA's proposed value.
Insurance adjustment		1.1M	Incl above	DEED revised its 2025 estimate as an appropriate allowance is included in the CSIRO GenCost values.
Annualised Fixed O&M	14.1M	10.6	12.5M	DEED has no concerns with the ERA's proposed value.