



WEM Investment Certainty Review (WIC Review) Minutes

Date: 16 July 2026

Time: 9:30am – 11:30am

Location: Microsoft Teams

Attendees	Company	Comment
Dora Guzeleva	(Chair) Energy Policy WA	
Sreeparna Saha	AEMO	Proxy for Neetika Kapani
Matthew Fairclough	AEMO	Proxy for Mena Gilchrist
Oscar Carlberg	Alinta Energy	
Duc Tran	APA Group	Proxy for Lizzie O'Brien
Jordan Prainito	AuzVolt	
Daniel Kurz	Bluewaters Power 1 Pty Ltd	
Francis Ip	BLT Energy Pty Ltd	
Tom Frood	Bright Energy Investments	
Aaron Walker	Chamber of Minerals and Energy WA	
Jake Flynn	Collgar Renewables	
Liz Aitken	Empire Carbon and Energy	
Richard Cheng	ERA	
Noel Schubert	Expert Consumer Panel	
Luke Skinner	Expert Consumer Panel	
Warren King	Frontier Energy Ltd	
Max Collins	Neoen	
Wayne Trumble	Newmont	
Patrick Peake	Perth Energy	
Shane Cremin	Summit Southern Cross Power Pty Ltd	
Rhiannon Bedola	Synergy	
Ben Tan	Tesla Corp	
Peter Huxtable	Water Corporation	
Mark McKinnon	Western Power	
Other attendees	From	Comment
Christopher Wilson	AEMO	



Steven Mills	Chamber of Minerals and Energy WA	Observer
Rohan Zauner	Jacobs	Presenter
Richard Bowmaker	RBP	Presenter
Tessa Liddelow	Shell Energy	
Shelley Worthington	EPWA	
Rory Hannon	EPWA	
Lara Bradbury	EPWA	
Apologies	From	Comment
Mena Gilchrist	AEMO	
Neetika Kapani	AEMO	
Lizzie O'Brien	APA Group	
Graham Pearson	Australian Energy Council	
Rachael Smith	Australian Gas Infrastructure Group	
William Street	Entego Group Pty Ltd	
Timothy Edwards	Metro Power	
Paul Arias	Shell Energy	

1. WELCOME

The Chair opened the meeting with an Acknowledgement of Country and welcomed members.

2. MEETING APOLOGIES AND ATTENDANCE

The Chair noted the meeting attendance as listed above.

3. CONFLICTS OF INTEREST AND COMPETITION LAW

The Chair noted the obligations of the Working Group members under Australian Competition Law.

4. 2026 BENCHMARK TECHNOLOGY REVIEW

The Chair presented Slide 5 (scope). She noted that:

- as time to complete the 2026 Benchmark Technologies Review (the Review) is limited, the Working Group is being convened to facilitate industry consultation;
- once the Coordinator has consulted on and determined the technologies, the Economic Regulation Authority (ERA) must adjust its methodology, as required, consult on that and the Benchmark Reserve Capacity Prices (BRCPs) and determine the BRCPs for the 2027 Reserve Capacity Cycle;
- the Electricity System and Market (ESM) Rules require the Coordinator to determine the technologies with the least cost capital and fixed operating and maintenance costs. This may be different for Peak Capacity and Flexible Capacity; and
- there will be two meetings of this group and a short public consultation.



Mr Zauner noted that Jacobs is assisting RBP with the 2026 Benchmark Technologies Review, including items 1 – 6 on Slide 6 (Approach). He noted that the method and approach are the same as in the 2025 Review. However, this year there will be more transparency about the cost parameters so that others can complete their own calculations to interrogate the results.

Mr Zauner presented slides 8-9 (technology long-list). He noted that, with regard to lithium-ion batteries, several durations will be assessed to capture the change from one review to the next.

- Mr Fairclough asked why hybrid facilities are excluded from the longlist, noting that they may offer the most cost competitive solution.
- Ms Aitken noted that the Department of Energy and Economic Diversification (DEED) is currently running an Expression of Interest (EOI) for a 10-hour duration vanadium flow battery in Kalgoorlie. She asked if vanadium batteries should be included in the Review for the sake of consistency, as this facility has to be in place for the 2029 Capacity Year. She questioned how its competitiveness can be established without a proper assessment and noted that it may be competitive with the subsidy being offered.

The Chair responded that this Review looks for the least fixed cost technology, and that many existing or proposed technologies are not least fixed cost.

Mr Zauner added that subsidies cannot be included in the calculations, and the unsubsidised cost of a vanadium battery will be more than a lithium-ion battery. He offered to provide analysis to this effect, if required.

- Ms Aitken stated that there is nothing to stop a hybrid facility from setting the BRCP, per the ERA's WEM Procedure.

The Chair responded that this review is concerned with determining the technology with the lowest annualised fixed cost per MW.

- Mr Fairclough noted that Capacity Credits for wind and solar PV will increase with the new Relevant Level Method (RLM) which could make them more competitive.
- Mr Prainito asked if the total Capacity Credits for a hybrid facility was the sum of the Capacity Credits for its separately certified components or whether the total Capacity Credits for the facility are capped at the Declared Sent Out Capacity (DSOC).

The Chair confirmed that the number of Capacity Credits a hybrid facility receives is limited by the DSOC at the connection point and the Network Access Quantities (NAQs) for the facility.

- Ms Aitken noted that if a facility can set up as a hybrid to meet the duration requirement in a more cost-effective way than a standalone technology it should be considered the lowest cost for BRCP purposes.

The Chair reiterated that each component behind the connection point needs to be assessed separately against the requirements relevant to that technology. Then, if the Capacity Credits are capped by its DSOC or NAQ, the facility can choose which ones to reduce.

- Ms Aitken suggested a rule change may be necessary.

Mr Zauner noted that:



- it is the fixed cost that is being assessed in the Review, not the levelized cost;
- solar and wind components built in conjunction with a battery energy storage system (BESS) behind the same connection may have a lower dollars per MW hour lifecycle cost, but unless they have a lower annualised fixed capital cost relative to their Capacity Credit allocation, they're not competitive for the purposes of a BRCP calculation; and
- many hybrid Facilities fall into this category, as the solar component reduces the lifetime cost of the energy produced but it can only add to the capital cost of the plant. On a fixed cost basis, a hybrid facility is likely to be higher cost than a stand-alone battery.
- Mr Schubert stated that the review should consider technologies that meet system needs over a longer timeframe, noting that the market bears the cost of the Reserve Capacity Target (RCT) uplift required when technologies that don't meet future needs have been chosen. He stated that the Review should compare technologies that will last for the duration the system is likely to need them.

The Chair noted that this would require a rule change, as the current ESM Rules require that the Review assess the benchmark technology based on the Electric Storage Resource (ESR) Duration Requirement (ESRDR) in the Capacity Cycle for which the Review is undertaken.

- Mr Fairclough commented that there is a possibility that the ESRDR reduces in the future.

The Chair agreed this is unlikely but possible.

- Mr Schubert noted that the number of utility scale and behind the meter batteries being installed meant that the evening peak is likely to flatten further and increase the ESRDR. He stated that consideration of a rule change to ensure future system needs and the cost of the RCT uplift are considered was important.

The Chair noted this was outside the scope of the Review and that a rule change is needed to allow consideration of this.

- Mr Walker asked Mr Zauner if batteries with durations below 7 hours will be assessed in this Review.

Mr Zauner responded that 6, 7 and 8 hour durations are being assessed to allow for continuity in assessing cost changes between one review and the next. However, a 6 hour battery would not be eligible, and an 8 hour battery would only get seven eighths of its certified capacity for the purposes of the cost assessment.

- Mr Walker asked if the cost calculation takes into account the cost of the uplift in the RCT required to compensate for the fact that previously certified facilities are grandfathered from having to meet a higher ESRDR for 10 years, and that, as such, these facilities cannot necessarily meet the top of the demand curve.

The Chair responded that is not what the ESM Rules require.

- Ms Bedola agreed with Mr Schubert's comment on the uplift portion of the RCT and proposed that, given that the BRCP is also increasing, efforts should be made to understand the costs to customers and revenue to ESRs.

The Chair agreed that the additions to the RCT, that result from the grandfathering arrangements, lead to additional costs to consumers but noted that this is outside the scope of this Review.



- Mr Frood questioned whether under the ESM Rules, pre-existing Facilities that have less than 7-hours will still get the full, rather than a pro rata, Capacity Credits .

The Chair clarified that they are certified based on the ESRDR in their first year of certification. The consequence is they do get their full Capacity Credits even as the ESRDR increases.

- Mr Schubert suggested that the Review should assess the cost of the RCT uplift that is likely to be incurred in future and add that to the fixed costs.
- Mr Frood questioned what reliable sources could be used to determine the longer duration that may be required in the future.
- Mr Skinner agreed with Mr Frood, noting that the Capacity Year in question is already years in advance and any future projection beyond that is less likely to be accurate given the rate of change in energy systems across the board at the moment.

The Chair responded that the cost of the RCT uplift cannot be taken into account in the evaluation as this is outside the scope of the ESM Rules. The Chair reiterated that this review must assess the least fixed cost technology, that being capital and fixed operating and maintenance costs, and that accounting for any other variables would inflate the cost to consumers.

- Mr Schubert stated that he understood that this may cost more, but he is seeking a proper assessment of the appropriate technology that meets the system needs.
- Mr Schubert noted that one of the issues was with windfall gains, and that DEED was to work with the ERA to ensure alignment on certain assumptions.

The Chair confirmed that DEED is working with the ERA on these matters.

- Mr Cheng noted that the ERA will update its BRCP Procedure and the BRCP Determination will be based on the outcome of the Review.

Mr Zauner presented slide 10 (candidate configurations). He noted that the size chosen for each candidate (including BESS) reflects the least cost configuration that a prudent person would build.

- Mrs Bedola asked whether emissions were accounted for in these configurations, to understand how the State Electricity Objective (SEO) has been considered.

The Chair noted that previous assessments applied an emissions threshold of 550 kilograms of CO₂ per megawatt hour, noting that this was in the context of a draft policy proposal to include this in the Reserve Capacity Mechanism (RCM) at the time. She noted that, while the target for emissions is net-zero by 2050, the 550kg Co₂/MWh draft policy has not been progressed and as such cannot be taken into account.

- Mr Skinner commented that, while technologies cannot be excluded based on emissions if it's not in the ESM Rules, the Review should be transparent regarding any differences in emissions amongst the technologies. He suggested that the SEO requires this group to at least consider this.

The Chair noted that, given retirement plans for some of the gas fleet, any more efficient technology in terms of both emissions and round-trip efficiency will reduce emissions.



- Mr Fairclough noted that the candidate gas facilities assume dedicated gas laterals and onsite storage. He asked if shared fuel supply infrastructure has been considered.

The Chair confirmed that reservation costs for the pipeline have been considered.

- Mr Schubert stated that emissions should be considered, even if not prescribed in the ESM Rules.
- Mrs Bedola suggested that the change in emissions considerations should be included in DEED's Consultation Paper for public comment.
- Mr Carlberg asked if a return to a diesel fired Open Cycle Gas Turbine (OCGT) is likely.

The Chair responded that diesel fired only technologies are not being considered, but in recent cycles dual fuel facilities have been certified on diesel with gas being the preferred fuel for operation. Dual fuel facilities that certify on diesel but run on gas require some pipeline capacity reservation and a gas lateral will be examined.

- Mr Carlberg noted that the Coordinator's last determination assumed that gas-fired facilities costs should include the Dampier to Bunbury Natural Gas Pipeline (DBNGP) fixed haulage charges (sufficient to account for the 14-hour fuel requirement). He asked if that assumption is continuing.

The Chair responded that the last assessment of open cycle turbines considered a skinny lateral with diesel tank, and that this study also considers a fat lateral configuration, which is now present in WA, Queensland and NSW (Karikari).

Mr Zauner clarified that a fat lateral is a configuration that is certified on gas, on the basis that it can contain fuel sufficient for 14 hours of generation with (for this study) an allowance to be replenished over three days.

- Mr Tan noted that a diesel fuelled OCGT will be cheaper than dual fuel and asked if that option would be considered.

The Chair stated that this could be considered but it would not be justifiable on the basis of the SEO as, while there is not a formal emissions threshold being applied, diesel only facilities have significantly higher emissions than dual fuel facilities which typically run on gas.

- Mrs Bedola noted that even though a dual fuel facility can run on gas but be certified on diesel, if the participant does not secure sufficient pipeline transport, it will not be able to regularly run on gas.

The Chair responded that this hasn't been observed to date.

- Ms Aitken asked if the fuel requirement should be 7 hours rather than 14 hours in order for a BRCP assessment to be consistent.

The Chair responded that the ESM Rule requirement for gas facilities is 14 hours.

- Mr Collins asked if the 14 hours over 3 days (Karikari style gas turbine) will have a requirement to be fully charged at the start of its ESR Obligation Intervals each day.

The Chair clarified that the fat lateral needs to at any point in time have 14 hours of fuel and continue to be recharged with whatever reservation the facility has in the pipeline.

- Mr Collins noted that this is a problem in Karikari because the fat lateral takes 3 days to replenish.



Mr Zauner noted that he would discuss this with the Chair offline. The assumption for the DBNGP charge last year was that refilling was spread over three days. If that is not appropriate, a discussion about the Maximum Daily Quantity (MDQ) and a one-day refill should be had.

- Mr Walker commented that this Review is required to determine the lowest cost technology while also having some transparency about the trade-offs around emissions.

The Chair noted Mr Skinner's comment that technologies that will worsen emissions should not be considered, noting the support for this comment from other members.

- Mr Carlberg asked if the assumptions around the fat lateral are going to increase or decrease the fixed transport charge assumption compared to previous determinations.

Mr Zauner noted that gas lateral assumptions vary between technologies because different gas turbines have different usage rates and pressure requirements. Typically, 20 to 30 kilometres of 36 inch, 15 megapascal pipe to get 14-hours is required.

The Chair noted that the assessment will size these elements to meet the 14-hour fuel ESM Rule requirements, and this will impact on the cost.

Mr Zauner noted that the largest practical pipe buildable in Australia is a 36 inch 15 megapascals, and so it comes down to the length required to get an amount of fuel required. The calculation will determine the length required to get the required amount of storage.

- Mr Cremin noted that a diesel facility operating 100 hours a year to meet the peak has negligible overall emissions and low fixed costs. He commented that the market has drifted from its original design and making decisions on this matter based on emissions is leading to choosing technologies with higher fixed costs. He noted that incremental changes are leading to increased costs.

The Chair noted the market has changed due to the 20250 emissions target and the existence of the SEO. She noted that another consequence of selecting a diesel only technology would be increased energy costs in the Real-Time Market.

- Mrs Bedola asked if the requirement for 14-hour gas is necessary if this is for a least cost technology only intended to be there for peak periods and for contingency.

The Chair noted that this is an existing requirement and that current analysis suggests that gas facilities will need to run for 14 hours on certain days in the future.

- Mr Skinner noted the liquid fuel crisis in 2026 and the potential need to consider this from a reliability perspective.

Mr Zauner noted, with regard to slide 10, that the parameters are unchanged from last year except for the additional BESS duration option.

- Mr Prainito asked, regarding credible delivery for 2029, what order timeline and OEM slot availability is assumed for each gas option treated as credible in the list.

The Chair responded that this assessment assumes that facilities are participating in the RCM, are committed and have fulfilled all other requirements to be RCM ready.

Mr Zauner presented slide 12 (peak service requirements).



- Mr Fairclough asked if a 6-hour BESS could apply for certification as a 7-hour BESS and whether this would change the outcome.

Mr Zauner confirmed that, in theory, but this would be more expensive than a 7-hour BESS.

- Mr Carlberg asked where the single contingency limit comes from.

The Chair responded that that is based on the existing largest single contingency which cannot be exceeded for the purposes of this assessment.

Mr Zauner presented slide 13 (flex service requirements). He noted that the Closed Cycle Gas Turbine with bypass stacks is scaled up in costs as the steam turbine cannot meet the flex service requirements.

Mr Zauner presented slide 14 (proposed configuration shortlist), noting that there was an error in the slides and that there should be a cross against the 1xGE 9FA.04 1+1 ss in the 'peak service' row.

Mr Zauner presented the cost calculation methodology, noting that it is similar to the 2025 review. He presented other materials to indicate how construction cost multipliers in different areas of the South West Interconnected System will be calculated.

- Mrs Bedola asked if there is alignment between DEED and the ERA on what cost assumption sources will be used.

The Chair responded that DEED proposes to use only publicly available information to calculate costs and that she cannot make commitments on what the ERA will consider, but noted the submissions made on the ERA's previous BRCP determination expressed a preference for full transparency.

Mr Zauner added that the methodology presented today has been shared with the ERA.

Mr Zauner presented slide 17 (calculation basis).

- Mr Frood asked how the Review accounts for capacity factors.

The Chair responded that this Review does not account for capacity factors, as the objective of the Review is to assess \$/MW fixed capital and fixed operating and maintenance costs. However, net vs. gross cost of new entry (CONE) will be assessed to determine if there is any over-recovery in the energy market.

Mr Zauner presented slides 18-19 (thermal plant configuration), noting that the configuration has been tailored according to Jacobs' expectations. The configurations can be shared to enable parties to reproduce the analysis and feedback is welcomed.

- Mrs Bedola asked if NAQs are taken into consideration.

The Chair confirmed this, noting that last year the Review found an unconstrained location, but that this will need to be examined again this year.

- Mr Peake asked to clarify the meaning of "soft ground" in the configuration options.

Mr Zauner responded that this is ground that doesn't require rock excavation for foundation build.

Mr Zauner presented slide 20 (additional costs).

- Ms Aitken noted the connection contribution charge of \$100k per MW.



Mr Zauner noted that the network uplift is included.

Mr Zauner presented slide 21 (fixed operations and maintenance costs), noting that:

- these base costs are the fixed operations and maintenance costs for the relevant technology from the Inputs Assumptions and Scenarios Report. The listed factors are adjustments to those, where required; and
- the MDQ will be adjusted based on the discussion earlier in the meeting.

Mr Zauner presented slide 22 (other parameters).

- Mrs Bedola asked if there is consideration of the costs associated with community benefits investment, as in the Community Benefits Guideline.

The Chair noted that the team will review the ERA's consideration of this.

- Mr Fairclough noted that the ERA's 2026 BRCP Final Determination used a Weighted Average Cost of Capital of 10.85 per cent.

The Chair confirmed that this will be used.

- Mr Peake asked if an allowance to cover the early payment of deposits to secure equipment should be included.

Mr Zauner noted this is effectively interest during construction and the ERA have a fixed formula for this that will be used.

5. NEXT STEPS

The Chair noted the next steps of the Review as per slide 25.

6. GENERAL BUSINESS

No general business was discussed.

The meeting closed at 11.29am.