

Non-Co-optimised Essential System Services Trigger Submission

12 October 2023

Reliability Service for 2025-27
Capacity Years

A submission to the Coordinator of Energy





Important notice

Purpose

AEMO has prepared this document under clause 3.11A.2A of the Wholesale Electricity Market Rules.

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Version control

Version	Release date	Changes
1	12 October 2023	First issue

1 NCESS assessment template

**Organisation:**

Referring party: AEMO

Date:

12 October 2023

Summary of proposal:

AEMO considers that forecast capacity to meet the 2025-26 Reserve Capacity Requirement presents a significant risk to Power System Security, which will not be fully addressed by the Reserve Capacity Mechanism (RCM) for the 2025-26 Capacity Year. AEMO proposes to procure capacity for two consecutive Capacity Years through this NCESS procurement process. See section 2.1 for further information.

Trigger for assessment:

Expected facility capability in the WEM will be insufficient to manage requirements in the 2025-26 Capacity Year. AEMO considers the existing mechanisms under the WEM Rules may not be sufficient to address this risk. See section 2.5 for further information.

Formal assessment:

AEMO expects the proposed service will remedy the Power System Security and Power System Reliability issues identified for the 2025-26 Capacity Year. See sections 2.5 and 2.6 for further information.

Consultation:

AEMO has consulted with Energy Policy WA and Western Power as required by clause 3.2.1 of the NCESS Guideline. Outcomes from those engagements have been included in this submission. See section 2.7 for further information.

Services required:

AEMO seeks to procure a Reliability Service. Specifically, the capability to increase Injection or decrease Withdrawal at times of supply shortfall. The proposed NCESS services would commence on 1 October 2025 with a 2-year duration.

The service would carry availability obligations for the appropriate Dispatch Intervals, which AEMO considers include intervals where capacity being retired from the WEM would be expected to participate. See section 2.4 for further information.

Attachments:

Not included.



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Notes

This document uses many terms that have meanings defined in the Wholesale Electricity Market Rules (as at 1 October 2023). The WEM Rules meanings are adopted unless otherwise specified. Capitalised terms are defined in the glossary in Appendix A2 or are otherwise defined in the WEM Rules.

2 Reliability service

2.1 Proposal

AEMO has identified material risks that in the absence of a targeted response may prevent the secure and reliable operation of the South West Interconnected System (SWIS) from October 2025 to October 2027. These risks are a consequence of the rapid energy transition in Western Australia and have been discussed in detail in the 2023 Wholesale Electricity Market (WEM) Electricity Statement of Opportunities (ESOO)¹. Several factors have influenced the forecast need for new capacity in the WEM, including:

- strong growth across the forecast horizon as shown in AEMO's peak demand and energy consumption forecasts,
- fuel supply challenges and prolonged unplanned Facility outages which has led to the unavailability of coal and gas capacity, and is considered in the Reserve Capacity Target for each Capacity Year,
- the anticipated exit of coal-fired power generation capacity within the next decade which will result in a substantial reduction in overall supply capacity.

This need for investment led to AEMO's request for the Coordinator of Energy (Coordinator) to trigger a Non-Co-optimised Essential System Service (NCESS) procurement process for reliability services in the 2024-26 Capacity Years (2022 NCESS for Reliability). The 2022 NCESS for Reliability resulted in significant new capacity being contracted by AEMO. However, residual risks remain, which AEMO has quantified based on the results of the 2022 NCESS for Reliability procurement process and the projected entry of new capacity in the 2023 Reserve Capacity Cycle.

2.2 Trigger

As a consequence of the risks identified, clause 3.11A.2A of the Wholesale Electricity Market Rules (WEM Rules) requires AEMO to develop this submission to request the Coordinator to determine whether or not to trigger a NCESS procurement process. This trigger submission must include sufficient information and analysis to allow the Coordinator to consider the following factors outlined in clause 3.11A.7:

- (a) the extent to which an NCESS will address the issue;
- (b) the extent to which an NCESS will minimise costs in the Wholesale Electricity Market (WEM);
- (c) the relative merits between procuring an NCESS or augmenting the network;
- (d) whether it is suspected that there is a potential exercise of market power;
- (e) whether the procurement of an NCESS is consistent with the Wholesale Market Objectives; and
- (f) whether procurement of an NCESS will be in the long-term interests of consumers.

¹ Available at: https://aemo.com.au/-/media/files/electricity/wem/planning_and_forecasting/esoo/2023/2023-wholesale-electricity-market-electricity-statement-of-opportunities-wem-esoo.pdf?la=en.

AEMO's analysis indicates there is a material risk that expected facility capability in the WEM will be insufficient to manage forecast demand. AEMO considers the existing mechanisms under the WEM Rules may not be sufficient to address this risk. This trigger submission summarises AEMO's technical and economic assessment of this risk and proposes procurement of services under the NCESS framework.

2.3 Background

AEMO considers that emerging facility availability issues are a significant risk to Power System Security and the effectiveness of the Reserve Capacity Mechanism (RCM) for the 2025-26 Capacity Year, for which it will procure capacity for two consecutive Capacity Years through this NCESS procurement process.

The existing mechanism under the WEM Rules to mitigate capacity shortfalls is the RCM, including the Supplementary Reserve Capacity (SRC) mechanism. The Certified Reserve Capacity process for the 2023 Reserve Capacity Cycle (2025-26 Capacity Year) is underway. AEMO expects assigned Certified Reserve Capacity will not meet the requirement, leading to a shortfall of Reserve Capacity.

As such, AEMO considers that the existing mechanisms under the WEM Rules may not be sufficient to address the identified risks.

2.3.1 Reliability NCESS for 2024-25 Capacity Year

This submission follows AEMO's procurement process for the 2022 NCESS for Reliability, which sought services including a peak demand service for the 2024-25 and 2025-26 Capacity Years. The timing of the 2022 NCESS for Reliability reflected the lead-time for construction of new Facilities to mitigate peak demand risks.

2.4 Service required

The service AEMO seeks to procure, in the event that the Coordinator decides to trigger an NCESS procurement process, is a Reliability Service. Specifically, the capability to increase Injection or decrease Withdrawal at times of supply shortfall.

The service would carry availability obligations for the appropriate Dispatch Intervals, which AEMO considers include intervals where capacity being retired from the WEM would be expected to participate.

The contract term for the proposed NCESS services would commence on 1 October 2025 with a 2-year duration. The quantity of service will be set at the forecasted shortfalls for the 2025-26 Capacity Year described in section 2.5.1. AEMO expects to gain feedback under the Expressions of Interest process to understand any economic or technical benefits associated with a different contract duration or a change to the commencement date.

NCESS Contracts will be structured in a manner that ensures availability and delivery of the service without exceeding the value of the service to consumers, by, for example, accounting for any relevant market revenues received outside of the NCESS Contract². Given the size of the identified risks, AEMO will require that each service be operationally dispatchable and will therefore set a minimum service size of 1 MW. Should AEMO not receive a sufficient quantity of each service, AEMO may determine that not proceeding with the NCESS is the best option.

² See Clause 5.2A.2 of the WEM Rules.

AEMO considers that services may be delivered by either new Registered Facilities through offer obligations for Injection or Withdrawal in the appropriate Dispatch Intervals, or by unregistered generation or load equipment activated through alternative methods³. To encourage development of new projects, AEMO will structure the NCESS Service Specification to preclude submissions from projects assigned Certified Reserve Capacity by AEMO in the 2023 Reserve Capacity Cycle.

If the Coordinator decides to trigger an NCESS procurement process, the draft NCESS Service Specification, released alongside a request for Expressions of Interest would outline the full requirements for these services.

2.5 Analysis

Additional information relating to the identified shortfalls will become available as the 2023 Reserve Capacity Cycle progresses, which may alter the input assumptions associated with quantification of this service. However, industry feedback and AEMO's own assessment of the development time to deliver new capacity in the SWIS suggests that the NCESS procurement needs to be initiated ahead of completion of the 2023 Reserve Capacity Cycle to allow sufficient time for proponents to deliver capacity.

2.5.1 Service Requirement

AEMO has assessed fleet sufficiency to meet peak demand through analysis of the Reserve Capacity Requirement for the 2025-26 Capacity Year according to the 2023 WEM ESOO⁴, in line with the Planning Criterion under clause 4.5.9 of the WEM Rules. Figure 1 shows the input factors that include new entrants, announced retirements, expected increase and reductions in capacity in the 2023 Reserve Capacity Cycle, capacity secured through the 2022 NCESS for Reliability, and any reductions due to constrained Network Access Quantities (NAQ).

Figure 2 shows changes to capacity forecasted for the 2025-26 Capacity Year from the 2023-24 Capacity Year and identifies a **354 MW shortfall** based on AEMO's best estimates at the time of this submission. The shortfall calculation uses the input factors detailed in Figure 1, which are described in further detail below. AEMO expects to refine this analysis following the Expressions of Interest phase of procurement, should the Coordinator determine to trigger this NCESS procurement process.

AEMO's assessment of capacity in the 2025-26 Capacity Year, shown in Figure 2, includes the following increases and decreases from Capacity Credits in the 2023-24 Capacity Year:

- announced plant retirements by October 2025⁵;
- expected reductions in capacity from existing facilities for the 2025-26 Capacity Year⁶;
- entry of new facilities for the 2024-25 Capacity Year and forecast for 2025-26 Capacity Year⁷;
- expected increases in capacity from existing facilities for the 2025-26 Capacity Year; and
- capacity from the 2022 NCESS for Reliability that is not otherwise expected to receive Capacity Credits.

³ Subject to AEMO's operational review of the nominated activation process.

⁴ Available at https://aemo.com.au/-/media/files/electricity/wem/planning_and_forecasting/esoo/2023/2023-wholesale-electricity-market-electricity-statement-of-opportunities-wem-esoo.pdf.

⁵ Retirement of Muja 6 (193 MW).

⁶ Based on known reductions in Capacity Credits for the 2024-25 Capacity Year.

⁷ Based on feedback from Western Power and applications for Certified Reserve Capacity for the 2023 Capacity Cycle.

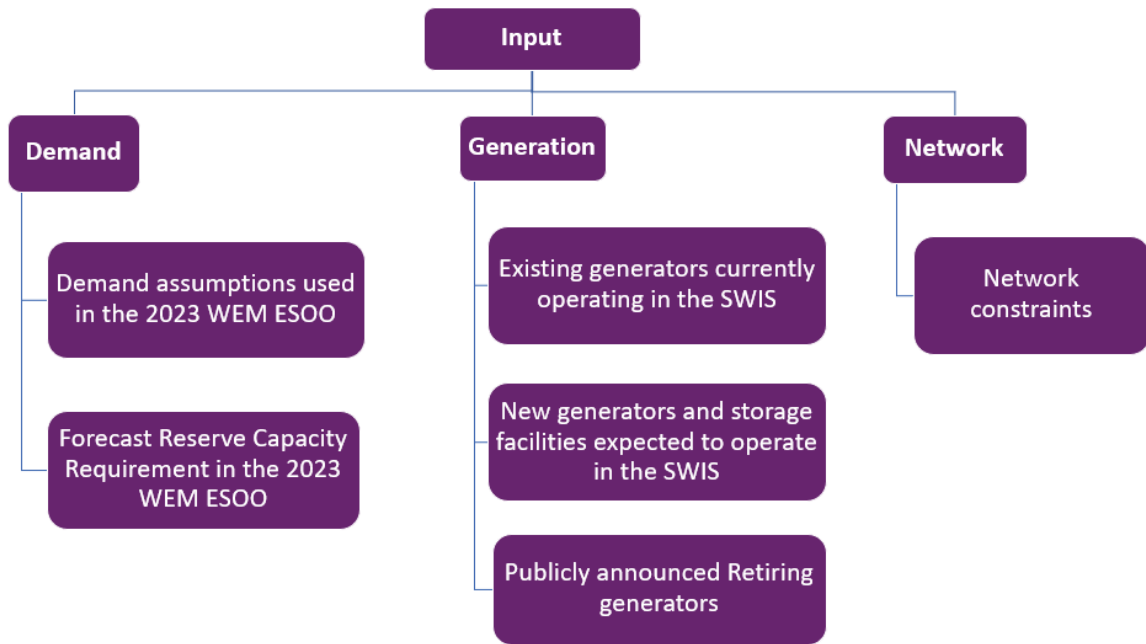


Figure 1 Model inputs for peak demand

This trigger sets the Maximum Service Quantity as the forecasted shortfall in the 2025-26 Capacity Year (354 MW). AEMO considers that this shortfall exceeds the quantity that may be accessed through any SRC process.

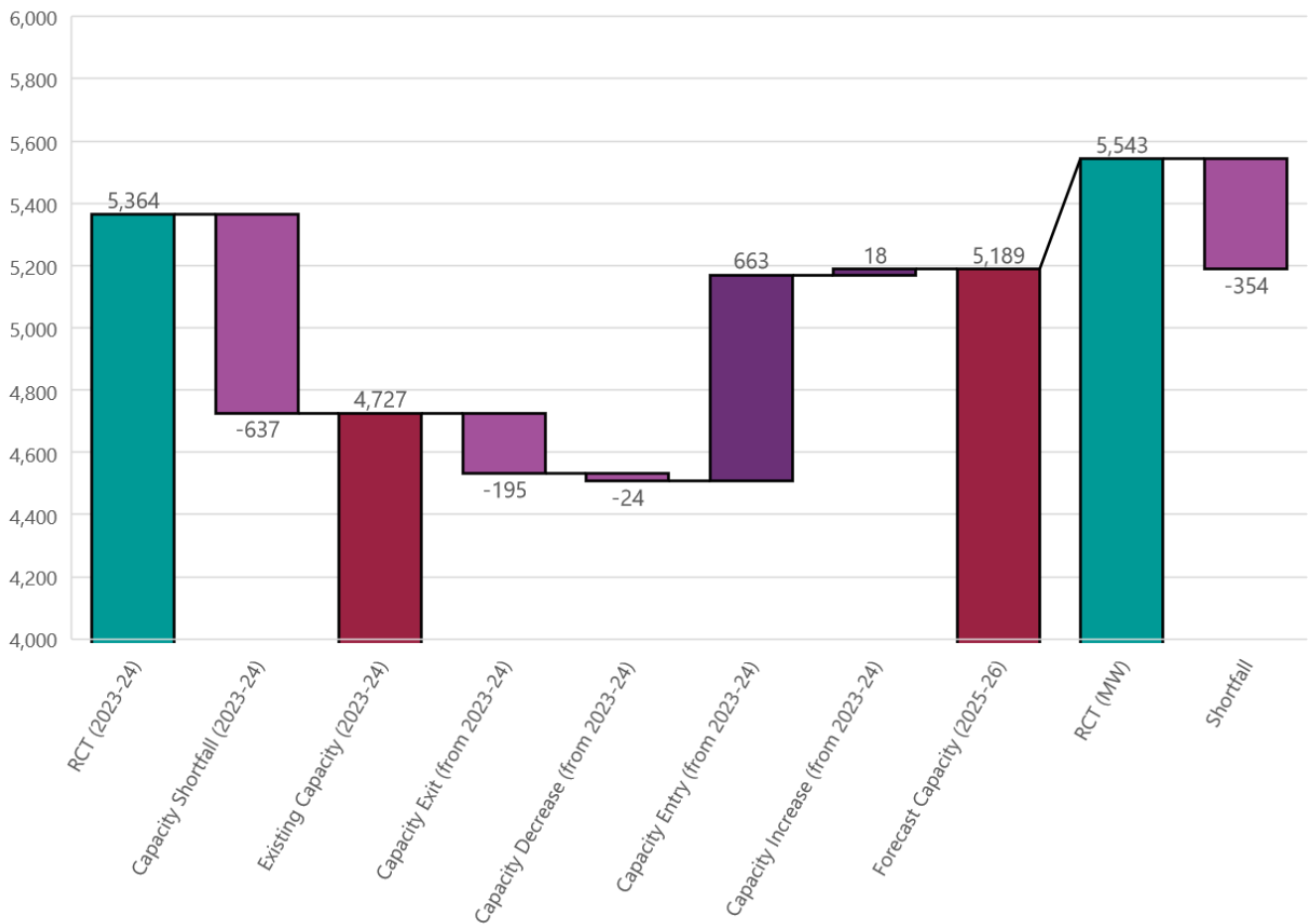


Figure 2 Waterfall chart of forecast capacity for the 2025-26 Capacity Year

2.5.2 Service duration

AEMO has set the service duration as a two-year period, to reduce the annual impact of NCESS Costs to the market and ensure that eligible facilities are able to participate in the 2024 Reserve Capacity Cycle. As outlined in the 2023 WEM ES00, shortfalls are projected across the 10-year outlook, identifying the need for sustained investment in new generation.

2.6 Other factors for consideration

Trigger Determination – Other factors

This section presents relevant analysis to allow the Coordinator to consider the extent to which an NCESS will meet factors under clauses 3.11A.7(c) – (f) of the WEM Rules:

- (c) the relative merits between procuring an NCESS or augmenting the network;
- (d) whether it is suspected that there is a potential exercise of market power;
- (e) whether the procurement of an NCESS is consistent with the Wholesale Market Objectives; and
- (f) whether procurement of an NCESS will be in the long-term interests of consumers.

2.6.1 Considerations under 3.11A.7(c)

In making its assessment of the emergent risks to its ability to manage Power System Security, AEMO did not find any instances of relevant network augmentation able to mitigate the risks identified.

2.6.2 Considerations under 3.11A.7(d)

AEMO is not aware of any market power aspects relating to the identified trigger.

2.6.3 Considerations under 3.11A.7(e)

AEMO considers that the mitigation of issues identified in this submission are consistent with the Wholesale Market Objectives, and that the NCESS Service Specification can be developed in accordance with the Wholesale Market Objectives. Specifically:

- the specification can be developed such that the service can be delivered by a range of technologies, in accordance with the Wholesale Market Objectives under clause 1.2.1(c); and
- a competitive procurement process for the NCESS which will ensure the cost of the service is as efficient as possible, in accordance with the Wholesale Market Objectives in clauses 1.2.1(a), (b) and (d).

2.6.4 Considerations under 3.11A.7(f)

AEMO considers that the mitigation of issues identified in this submission are in the long-term interest of consumers based on the alternative of insecure operation of the SWIS and the potential for load-shedding.

2.7 Consultation

AEMO has consulted with Energy Policy WA and Western Power as required by section 3.2 of the NCESS Guideline (published in accordance with clause 3.11A.2A of the WEM Rules) and meeting the requirements of clause 3.11A.2(f) of the WEM Rules. Outcomes from this engagement have been included in this submission.



A1. Redacted



A2. Glossary and acronyms

The following definitions apply in this document unless the context requires otherwise.

Table 1 Glossary and acronyms

Term	Definition
2022 NCESS for Reliability	NCESS for Peak Demand Service and Minimum Demand Service for 2024/25 and 2025/26
2023 NCESS for Minimum Demand	NCESS for Minimum Demand Service for 2023/24
2023 NCESS for Peak Demand	NCESS for Peak Demand Service for 2025/26 and 2026/27