



Draft NCESS Service Specification (Reliability)

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1. Introduction

1.1. Purpose and scope

1.1.1. This draft NCESS Service Specification has been prepared in accordance with clauses 3.11B.1 and 3.11B.5 of the Wholesale Electricity Market Rules (WEM Rules). It includes:

- (a) the service requirements;
- (b) the expected technical capability of a facility or equipment that may be able to provide the service;
- (c) where applicable, the likely network location where the service is to be provided;
- (d) the maximum quantity of the service required;
- (e) the timing and duration of the service;
- (f) any operational requirements or limitations;
- (g) the material contractual terms associated with the NCESS, including required pricing structure;
- (h) the selection criteria that may apply to the NCESS Submissions; and
- (i) any other relevant matters.

1.2. Definitions

1.2.1. Terms defined in the Electricity Industry Act 2004, the WEM Regulations and the WEM Rules have the same meanings in this document unless the context requires otherwise.

1.2.2. Capitalised terms used in this document are:

- (a) (for terms that are currently defined in the WEM Rules) have the meaning given in the WEM Rules;
- (b) (for terms that will be defined in the WEM Rules from 1 October 2023) the corresponding meaning¹; and
- (c) otherwise have the meaning set out in Table 1.

Table 1 Definitions

| Term | Meaning |
|-------------------------------|--|
| Availability Period | The period during which the NCESS provider must make the service available, as specified in paragraph 2.3.2 of this document. |
| Benchmark Quantity | The baseline quantity from which the Service Quantity is measured, as calculated in paragraph 5.2.2 for the Peak Demand Service and paragraph 5.2.3 for the Minimum Demand Service. |
| Maximum NCESS Contract Amount | The maximum amount payable to the NCESS provider under the NCESS Contract based on an assumption that each Service is available during each Trading Interval in the Availability Period. |
| Minimum Demand Service | Has the meaning given in paragraph 2.1.3 of this document. |

¹ Amending Rules gazetted and awaiting commencement can be found here: <https://www.wa.gov.au/government/document-collections/wholesale-electricity-market-rules>.

| Term | Meaning |
|------------------------|--|
| Peak Demand Service | Has the meaning given in paragraph 2.1.2 of this document. |
| Service Quantity | The quantity of Peak Demand Service or Minimum Demand Service provided by a facility or equipment, as determined in accordance with paragraph 3.5.1. |
| Unregistered Equipment | Means any facility or equipment that is not registered and not required to be registered under the WEM Rules. |

2. Service details

2.1. Service requirements

- 2.1.1. This draft NCESS Service Specification relates to the services specified in paragraphs 2.1.2 and 2.1.3.
- 2.1.2. A Peak Demand Service is an NCESS (measured in MW of response capability) to increase Injection or decrease Withdrawal.
- 2.1.3. A Minimum Demand Service is an NCESS (measured in MW of response capability) to decrease Injection or increase Withdrawal.

Draft NCESS Service Specification feedback

AEMO considers that existing Facilities are unable to provide a Minimum Demand Service as a decrease of Injection. This is because the Central Dispatch Process would already ensure that any relevant Energy Producing System has an Injection of zero through security constrained economic dispatch. Consequently, a decrease of Injection may only be provided by Unregistered Equipment.

2.2. Maximum quantity of service required

- 2.2.1. The maximum quantity of the Peak Demand Service required is 830 MW.
- 2.2.2. The maximum quantity of the Minimum Demand Service required is 269 MW.
- 2.2.3. An expression of interest submitted in response to this draft NCESS Service Specification must specify a maximum Service Quantity for each service (up to, but not exceeding, the maximum quantity for each service as specified in paragraphs 2.2.1 and 2.2.2) that is:
- any value greater than or equal to 10 MW; or
 - 0 MW if the relevant service is not included in the expression of interest.

Draft NCESS Service Specification feedback

For the avoidance of doubt, offers for quantities less than the maximum quantity of either service are deemed to be compliant with this draft NCESS Service Specification. AEMO has introduced a minimum quantity for proponents offering the service to reflect the need for contract-specific activation and operational impacts.

Submissions may offer for a single service, by offering a zero Service Quantity for the relevant service not provided in the submission.

2.3. Contract term, timing and duration

2.3.1. The contract term for both services is 1 October 2024 to 1 October 2026.

2.3.2. Subject to paragraphs 4.2 and 2.3.3, the NCESS provider must make the relevant Service Quantity available:

- (a) for the Peak Demand Service, during the Electric Storage Resource Obligation Intervals² on each Trading Day during the contract term; and
- (b) for the Minimum Demand Service, between 09:00 and 15:00 on each Trading Day during the contract term.

2.3.3. The duration of each service is:

- (a) for Registered Facilities, as dispatched in accordance with the Central Dispatch Process during any Dispatch Intervals specified in paragraph 2.3.2; and
- (b) for Unregistered Equipment, as activated by AEMO for one or more Trading Intervals specified in paragraph 2.3.2, up to a maximum of 8 consecutive Trading Intervals per activation.

Draft NCESS Service Specification feedback

AEMO seeks feedback (through expressions of interest in response to this draft NCESS Service Specification) on the ability of potential providers to provide the services based on the dates and times specified, and any commercial benefits for the WEM associated with any alternative durations or extensions to the contract term.

3. Who can provide the services

3.1. Expected technical capability of facility or equipment that may be able to provide service

3.1.1. The expected technical capability of a facility or equipment that may be able to provide the services are:

- (a) one of the following:
 - (i) a Scheduled Facility or Semi-Scheduled Facility that is currently registered;

² Determined and published in accordance with clause 4.11.3A(a) of the WEM Rules.

- (ii) a facility or equipment that is currently unregistered but, in order to provide one of the services, would be required to register as a Scheduled Facility or Semi-Scheduled; or
 - (iii) Unregistered Equipment that meets the communication and control requirements specified in paragraph 3.1.2; and
 - (b) for both services, an ability to deliver the Service Quantity continuously for 8 consecutive Trading Intervals.
- 3.1.2. A NCESS provider must be capable of providing the quantity of service (up to the Service Quantity) as specified:
- (a) in the case of a Registered Facility, in a Dispatch Instruction; and
 - (b) in the case of Unregistered Equipment, in AEMO's activation instruction.
- 3.1.3. For the purposes of paragraph 3.1.2(a), a Semi-Scheduled Facility must be capable of delivering the quantity specified in a Dispatch Instruction as if it were a Dispatch Target.

Draft NCESS Service Specification feedback

AEMO considers that Demand Side Programmes are unable to meet a dispatch target and therefore would not meet the technical requirements.

- 3.1.4. The control and communications requirements for Unregistered Equipment that provides either service include:
- (a) a single point of communication for activation;
 - (b) a process to enable activation in accordance with paragraph 4.1.3; and
 - (c) visibility, through communication protocols agreed to by AEMO, of Injection or Withdrawal at a granularity of no more than 5 minutes.

Draft NCESS Service Specification feedback

AEMO has specified visibility requirements of 5-minute granularity. AEMO requests feedback on this requirement, noting AEMO's preference for more granular visibility for these Essential System Services.

3.2. Likely network location where service to be provided

- 3.2.1. The services may be delivered at any location in the SWIS, excluding areas which are likely to be subject to frequent constrained operation for:
- (a) Withdrawal at SWIS minimum demand; and
 - (b) Injection at SWIS peak demand.
- 3.2.2. AEMO may consider as part of the selection criteria under paragraph 7.1.1 the level of constrained operation that the facility or equipment may be subject to.

3.3. Eligibility

- 3.3.1. The eligibility requirements for all NCESS providers are:
- (a) for Scheduled Facilities or Semi-Scheduled Facilities:

- (i) AEMO has not assigned Capacity Credits for either the 2022/23 or 2023/24 Capacity Years with respect to the Service Quantity;
- (ii) AEMO has not reduced the Capacity Credits of the facility during the 2022/23 Capacity Year at the time of NCESS submission evaluation under clause 3.11B.9(a)(ii) of the WEM Rules; and
- (b) for a facility intending to register as a Scheduled Facility or Semi-Scheduled Facility, the facility is or is expected to be eligible to receive Capacity Credits for the Service Quantity in the 2025/26 Capacity Year; and
- (c) for Loads, the Load is not (and has not been) associated with any Demand Side Programme during the 2022/23 Capacity Year; and
- (d) no other relevant contractual or legal arrangement relating to the Service Quantity is expected to exist at any time during the contract term that may adversely affect service delivery.

Draft NCESS Service Specification feedback

For the avoidance of doubt, the eligibility requirements for this NCESS procurement process do not preclude participation in the 2022 Reserve Capacity Cycle.

3.4. Registration and certification

- 3.4.1. Any equipment other than Unregistered Equipment will be required to register in accordance with the WEM Rules.
- 3.4.2. NCESS providers with any Service Quantity capable of receiving Certified Reserve Capacity will be required to apply for certification for each relevant Capacity Year during the contract term in accordance with clause 5.2A.2 of the WEM Rules.

3.5. Service Quantity

- 3.5.1. The Service Quantity is the MW quantity provided for each service and is measured by reference to the relevant Benchmark Quantity for each service, calculated in accordance with paragraph 5.2.

4. How the service is to be provided

4.1. Operational requirements and limitations

- 4.1.1. The services under paragraphs 2.1.1 and 2.1.2 must be offered for every Trading Interval required by paragraph 2.3.2 for each service that facility or equipment provides:
 - (a) for a Scheduled Facility or Semi-Scheduled, as Real-Time Market Submissions for energy for:
 - (i) the Peak Demand Service, as offers for Injection greater than or equal to the sum of the Service Quantity and the Benchmark Quantity; and
 - (ii) the Minimum Demand Service, as offers for Withdrawal greater than or equal to the sum of the Service Quantity and the Benchmark Quantity; and

- (b) for Unregistered Equipment, as a standing contractual offer for:
 - (i) the Peak Demand Service, as notification of capability to increase Injection or reduce Withdrawal by a quantity greater than or equal to the sum of the Service Quantity and the Benchmark Quantity; and
 - (ii) the Minimum Demand Service, as notification of capability to increase Withdrawal or reduce Injection by a quantity greater than or equal to the sum of the Service Quantity and the Benchmark Quantity.
- 4.1.2. The services under paragraph 2.1.2 and 2.1.3 for a Scheduled Facility or Semi-Scheduled Facility do not preclude an NCESS provider from offering a Frequency Co-optimised Essential System Services quantity in its Real-Time Market Submissions that include the Service Quantity.

Draft NCESS Service Specification feedback

Obligations for the Peak Demand Service and Minimum Demand Service may also be met whilst simultaneously offering for Frequency Co-optimised Essential System Services (FCESS). This aligns with the obligations for the Reserve Capacity Mechanism. As such, an accredited Registered Facility may be enabled for FCESS in preference to energy through Central Dispatch.

- 4.1.3. Where a NCESS provider offers the services from Unregistered Equipment, AEMO may require the NCESS provider to activate the service for any quantity up to the Service Quantity by giving notice to the NCESS provider up to 12 Dispatch Intervals (corresponding to 1 hour) in advance. The notice will specify the relevant Trading Intervals and the quantity required.

Draft NCESS Service Specification feedback

AEMO is seeking feedback on an appropriate notice period to be specified in paragraph 2.7.1. AEMO is currently considering a notice period between 15 minutes and 2 hours.

- 4.1.4. AEMO will require the NCESS provider of Unregistered Equipment to activate the service when AEMO considers that other actions AEMO may take under the WEM Rules are likely to be insufficient to manage the peak demand or minimum demand conditions.

4.2. Maintenance and reliability

- 4.2.1. The NCESS provider must:
- (a) maintain the facility or equipment in accordance with good electricity industry practice; and
 - (b) notify AEMO as soon as the NCESS provider becomes aware of any requirement for unplanned maintenance that affects or could reasonably be expected to affect the ability of the facility or equipment to provide the Service Quantity.
- 4.2.2. The NCESS provider must plan maintenance in accordance with clause 3.18 of the WEM Rules, unless AEMO determines another process is more appropriate.
- 4.2.3. The NCESS provider must notify AEMO promptly after changing or modifying the facility or equipment in a way that reduces or could reasonably be expected to reduce the availability of the service. AEMO may require the NCESS provider (at the NCESS provider's cost) to conduct

a test of the facility or equipment (in its changed or modified configuration) to demonstrate that the service is available.

5. Measurement, unavailability and payment

5.1. Measurement

5.1.1. AEMO will determine historical and actual Injection or Withdrawal from Interval Meter Data provided by the Meter Data Agent or SCADA data.

5.2. Benchmark Quantity

5.2.1. The Benchmark Quantity will determine the baseline from which the Service Quantity is measured, calculated in paragraph 5.2.2 for the Peak Demand Service and paragraph 5.2.3 for the Minimum Demand Service.

5.2.2. The Benchmark Quantity for the Peak Demand Service is determined as:

- (a) for Scheduled Facilities or Semi-Scheduled Facilities to increase Injection, the Capacity Credits for the relevant Capacity Year as at the time of contract commencement; or
- (b) for Unregistered Equipment to increase Injection or decrease Withdrawal, the MW quantity determined by calculating the aggregate historical median Injection or Withdrawal for each Designated Connection Point during the 12 Trading Intervals with the highest demand in the preceding Hot Season (or an alternative method for determining a baseline Injection or Withdrawal proposed by the NCESS provider and agreed by AEMO).

5.2.3. The Benchmark Quantity for the Minimum Demand Service will be determined by a method to identify a baseline Injection or Withdrawal proposed by the NCESS provider and agreed by AEMO for:

- (a) Scheduled Facilities or Semi-Scheduled Facilities, to increase Withdrawal; or
- (b) Unregistered Equipment, to decrease Injection or increase Withdrawal.

Draft NCESS Service Specification feedback

AEMO is seeking feedback on determining the Benchmark Quantity as appropriate for different technology types. AEMO may specify a single Benchmark Quantity process in the final NCESS Service Specification.

5.3. Minimum availability requirement

- 5.3.1. A minimum availability requirement will apply for each service.
- 5.3.2. For the purposes of determining whether the minimum availability requirement for the service has been met, and the extent of any shortfall, the availability of the service will be measured over a relevant period in accordance with paragraph 5.3.3.
- 5.3.3. The availability of the service for a relevant period is calculated as $(B-U)/B \times 100$, expressed as a percentage, where:

U = the number of Trading Intervals during which the service is deemed unavailable in the relevant period as determined by paragraph 5.4; and

B = the total number of Trading Intervals required by paragraph 2.3.2 for the relevant service in the relevant period.

- 5.3.4. The minimum availability requirement for each service in each relevant period is 90%.

5.4. Unavailability

- 5.4.1. The service will be deemed unavailable in any Trading Interval required by paragraph 2.3.2 where:
 - (a) the conditions precedent specified in paragraph 6.2 have not been met;
 - (b) the NCESS provider notifies AEMO of an inability to provide the Service Quantity.
 - (c) the NCESS provider does not provide the quantity specified in a Dispatch Instruction or activated under paragraph 4.1.4, as applicable, with respect to the service;
 - (d) AEMO loses communication with, or SCADA visibility, of the facility or equipment;
 - (e) the facility or equipment is subject to a Commissioning Test Plan; or
 - (f) AEMO otherwise reasonably determines, based on energy or fuel storage information or other relevant information available to AEMO, including with respect to Outages, that the facility or equipment is unable to provide the Service Quantity.
- 5.4.2. Until remedied, the service will be deemed unavailable from any Trading Interval where:
 - (a) AEMO reduces Capacity Credits for the facility;
 - (b) the facility or equipment fails any test required by AEMO; or
 - (c) AEMO acting reasonably, at its sole discretion, declares the facility or equipment unresponsive.

5.5. Payment

- 5.5.1. The contract amount payable will consist of:
- (a) an availability payment, for which no amounts will be payable unless and until the NCESS provider satisfies the conditions precedent specified in paragraph 6.2; and
 - (a) a service provided by Unregistered Equipment, an activation payment.
- 5.5.2. The availability payment will be payable for all relevant Trading Intervals required by paragraph 2.3.2, excluding Trading Intervals during which the facility or equipment is deemed to be unavailable as specified in paragraph 5.4.
- 5.5.3. As required by clause 5.3.1(a) of the WEM Rules, AEMO must vary the payment terms of the NCESS Contract such that the total payment under the NCESS Contract is reduced by the value of the total amount of the expected Capacity Credit payments to be paid to the relevant Market Participant for that Reserve Capacity Cycle.
- 5.5.4. The activation payment will be payable for all relevant Trading Intervals required by paragraph 2.3.2 for which AEMO has activated the service in accordance with paragraph 4.1.4, excluding Trading Intervals during which the facility or equipment is deemed to be unavailable as specified in paragraph 5.4.
- 5.5.5. Availability payments and activation payments will be made:
- (a) for Registered Facilities, in accordance with the WEM Rules; or
 - (b) for Unregistered Equipment, weekly in accordance with a payment mechanism specified by AEMO.

6. General

6.1. Material contract terms

- 6.1.1. All items identified in this NCESS Service Specification are material contract terms.

6.2. Conditions Precedent

- 6.2.1. The NCESS Contract will be subject to the following conditions precedent, which must be satisfied by 1 October 2024 or any later date that AEMO determines in its sole discretion:
- (a) the facility or equipment must complete all tests required by AEMO (to AEMO's satisfaction) to demonstrate compliance with the service requirements specified in this document; and
 - (b) where the services are to be provided by a Registered Facility, that facility is registered and in Commercial Operation.

Draft NCESS Service Specification feedback

The conditions precedent date specified is subject to feedback from the Expressions of Interest process.

6.3. Security

- 6.3.1. For a Facility or equipment that is yet to enter service (or re-enter service after an upgrade), the relevant NCESS provider must ensure that AEMO holds the benefit of a security that is specified in paragraph 6.3.2.
- 6.3.2. The security must be an obligation in writing that:
- (a) is from a Security Provider;
 - (b) is a guarantee or bank undertaking in a form prescribed by AEMO;
 - (c) is duly executed by the Security Provider and delivered unconditionally to AEMO;
 - (d) constitutes valid and binding unsubordinated obligations of the Security Provider to pay to AEMO amounts in accordance with its terms; and
 - (e) permits drawings or claims by AEMO up to a stated amount.
- 6.3.3. The amount of security required to be provided is equal to 20% of the contract value.
- 6.3.4. If a NCESS provider meets the conditions precedent in paragraph 6.2, then AEMO will return the security to the NCESS provider.
- 6.3.5. If a NCESS provider who provides security in respect of a Facility or equipment fails to satisfy the conditions precedent in paragraph 6.2, before the end of the first year of the NCESS Contract then the NCESS provider forfeits the security amount.

Draft NCESS Service Specification feedback

Security associated with an NCESS Contract is based on the Reserve Capacity Security provisions under the WEM Rules. AEMO seeks any feedback on the suitability of this framework for the purposes of this NCESS procurement process.

6.4. Extent of liability

- 6.4.1. Separate liability caps will apply for AEMO and the NCESS provider.
- 6.4.2. For AEMO:
- (a) Subject to paragraph 6.4.2(b) and other than in respect of any unpaid availability payment or activation payment amounts, AEMO's liability is limited to the prescribed maximum amount for the purposes of section 126 of the Electricity Industry Act and regulation 52 of the WEM Regulations.
 - (b) AEMO is not liable for:
 - (i) indirect damages or losses;
 - (ii) loss of market, opportunity or profit (whether direct or indirect); or
 - (iii) damages or losses to the extent that they arise from the NCESS provider's failure to act in accordance with the NCESS Contract, a law (including the WEM Rules) or good electricity industry practice.
- 6.4.3. For the NCESS provider:
- (a) Subject to paragraph 6.4.3(b), the total amount recoverable from the NCESS provider in respect of any and all claims arising out of any one or more events during the contract term with respect to, arising from, or in connection with, the NCESS Contract or the provision of the service is limited to the Maximum NCESS Contract Amount.

- (b) The NCESS provider is not liable for:
 - (i) indirect damages or losses;
 - (ii) loss of market, opportunity or profit (whether direct or indirect); or
 - (iii) damages or losses to the extent that they arise from AEMO's failure to act in accordance with the NCESS Contract, a law (including the WEM Rules) or good electricity industry practice.

6.5. Termination clauses

6.5.1. AEMO may terminate the NCESS Contract by giving notice to the NCESS provider if:

- (a) (for a NCESS provider who provides security in respect of a Facility or equipment under paragraph 6.3.1) the NCESS provider fails to satisfy the conditions precedent in paragraph 6.2, before the end of the first year of the NCESS Contract;
- (b) for any period after the NCESS provider satisfies the conditions precedent;
 - (i) the service is unavailable as determined under paragraph 5.4 for a continuous period of more than 1 month during the contract term; or
 - (ii) the NCESS provider fails to meet the minimum availability requirement under paragraph 5.3 in respect of the service over any 3-month period;
- (c) the NCESS provider breaches the NCESS Contract; and
- (d) an insolvency event occurs in relation to the NCESS provider.

7. Selection Criteria

7.1.1. In accordance with clauses 3.11B.9 and 3.11B.11 of the WEM Rules, AEMO must apply the selection criteria summarised in the following table for NCESS Submissions:

| Criteria | Description | Weighting |
|-------------------------------|---|-----------------|
| Compliance with specification | The service complies with the specification as described in the tender or referenced WEM Procedures. | Pass/Fail (1/0) |
| Value for money | The estimated total cost of the service over the period represents value for money to market participants when considering the counterfactual approach or outcome. | Pass/Fail (1/0) |
| Enhanced participation | The ideal NCESS provider would meet the service requirements whilst offering enhanced system benefits, specifically participation in Frequency Co-optimised Essential System Services and any system supporting capabilities (e.g. Grid-Forming capability for inverter based resources). | Moderate (20%) |
| Network location | The ideal service is in a network area that is free from network congestion. AEMO will assess in coordination with Western Power any relevant network constraints that may impact NCESS providers. The power system will benefit from geographical diversity of providers; therefore, this criterion will also include consideration where several providers propose to locate in the same area, or there's lack of providers in a specific area. | Moderate (20%) |
| Availability | The ideal service is available earlier to provide immediate benefit to system reliability and overall costs. | Low (10%) |
| Cost | The estimated total cost of the service compared to other proposals weighted for equal comparison of quantity, duration, and proportionality. | High (50%) |