

Draft NCESS Service Specification (Reliability 25-27)

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1. Introduction

1.1. Purpose and scope

- 1.1.1. AEMO has prepared this NCESS Service Specification in accordance with clauses 3.11B.1, 3.11B.4(b) and 3.11B.5 of the Wholesale Electricity Market Rules (**WEM Rules**). This NCESS Service Specification 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 expected commencement and duration of the service;
 - (f) the reasonable expectation of the frequency of service utilisation, the expected duration of each utilisation and when the service is expected to be utilised during typical days;
 - (g) any operational requirements or limitations;
 - (h) the material contractual terms associated with the NCESS, including required pricing structure;
 - (i) the selection criteria that may apply to the NCESS Submissions; and
 - (j) 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 meaning in this document unless the context requires otherwise.
- 1.2.2. Capitalised terms used in this document:
- (a) (for terms that are currently defined in the WEM Rules) have the meaning given in the WEM Rules; and
 - (b) otherwise have the meaning set out in Table 1.

Table 1 Definitions

Term	Meaning
Baseline Quantity	The baseline quantity, calculated under paragraph 5.2.2 of this document, that is used to measure the quantity of the Service provided in a Relevant Interval.
Contract Term	The period (specified in paragraph 2.2 of this document) during which the NCESS provider must make the Service available.
Maximum NCESS Contract Amount	The maximum amount that is payable to the NCESS provider under the NCESS Contract on the assumed basis that the Service is available during each Dispatch Interval in the Service Period.
Relevant Interval	For a <i>Registered Facility</i> , a <i>Dispatch Interval</i> within the Service Period. For Unregistered Equipment, a <i>Trading Interval</i> within the Service Period.
Service	Has the meaning given in paragraph 2.1.2 of this document.

Term	Meaning
Service Equipment	The <i>Registered Facility</i> or Unregistered Equipment from which the Service is required to be provided under the NCESS Contract.
Service Period	Has the meaning given in paragraph 2.2.4 of this document.
Service Quantity	The quantity of the Service that the NCESS provider is required to provide under the NCESS Contract.
Unregistered Equipment	Means any facility or equipment that is not registered and not required to be registered under this document.

2. Service details

2.1. Service requirements

- 2.1.1. This NCESS Service Specification is for a reliability service.
- 2.1.2. The reliability service (measured in MW of response capability) is to increase Injection or decrease Withdrawal.

Maximum quantity of Service required

- 2.1.3. An NCESS Submission must specify a Service Quantity between 1 MW and 354 MW.
- 2.1.4. The maximum quantity of the Service required (from all NCESS providers) is 354 MW.

Minimum and maximum Service Quantity

AEMO has specified a minimum quantity of 1 MW to account for contract-specific activation and operational impacts.

The maximum quantity reflects that a single facility or equipment may be able to provide the Service. However, the eligibility criteria will preclude AEMO from accepting submissions from facilities or equipment that provides a single point of failure which exceeds the Largest Credible Supply Contingency for a Facility Risk (currently, 330 MW) or the Largest Credible Load Contingency (currently, ca. 200 MW). For example, a facility providing a Service Quantity of Injection of 354 MW would be considered eligible, provided that the facility has two connection points. Paragraph 7 indicates AEMO's selection criteria, which indicates that the ideal single facility size is 200 MW.

2.2. Contract Term, timing and duration

- 2.2.1. The commencement date for the Service is:
 - (a) 8 am on 1 October 2025; or
 - (b) (where all conditions precedent are not satisfied by the date in paragraph 2.2.1(a)) the date when all conditions precedent are satisfied.
- 2.2.2. The final date when all condition precedents must be met is 1 October 2026 (which can only be extended for Registered Facilities that qualify for force majeure as detailed in paragraph 6.3).
- 2.2.3. The end date for the Service is 8 am on 1 October 2027 (which can only be extended for Registered Facilities that qualify for force majeure as detailed in paragraph 6.3). This results in

a maximum Contract Term of 24 months, or less, depending on the date when all conditions precedent are satisfied.

2.2.4. The timing of the Service (subject to paragraphs 2.2.5 and 4.2), during which the Service Quantity must be available, is the Electric Storage Resource Obligation Intervals¹.

2.2.5. The duration of the Service is:

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

2.3. Expectation of the frequency of Service utilisation

2.3.1. The expected frequency of Service utilisation for the Service is shown in Figure 1.

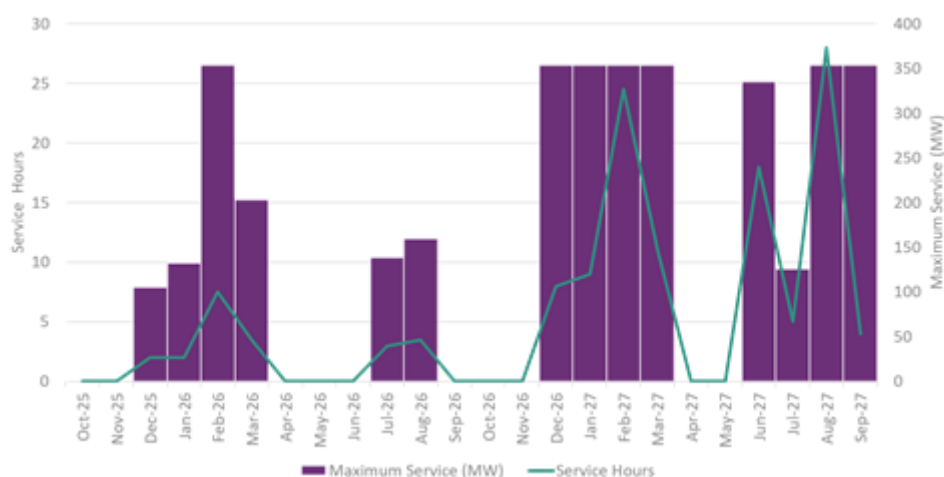


Figure 1. Expected utilisation of Service.

3. Who can provide the Service

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

3.1.1. The expected technical capability of a facility or equipment that may be able to provide the Service is as follows:

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

¹ 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 intends or is required in accordance with paragraph 3.4.1 or the WEM Rules to register as a Scheduled Facility or Semi-Scheduled; or
 - (iii) Unregistered Equipment that meets the control and communication requirements specified in paragraphs 3.1.2 and 3.1.2; and
 - (b) the capability to deliver the Service Quantity continuously for 48 consecutive Dispatch Intervals at all relevant times during the Contract Term.
- 3.1.2. The control and communication requirements for Unregistered Equipment are:
- (a) a single point of communication for activation;
 - (b) a capability to activate the Service Quantity in accordance with paragraph 4.1.3; and
 - (c) visibility, through communication protocols approved by AEMO, at a granularity of no more than 5 minutes (unless AEMO agrees to a different granularity), of:
 - (i) Injection or Withdrawal of the Service Equipment; and
 - (ii) expected Service Quantity availability during the next Service Period; and
 - (iii) the data specified in paragraphs 3.1.2(c)(i) and 3.1.2(c)(ii) (to be maintained by the Service Provider) for each of the previous 30 Trading Days.
- 3.1.3. Where the Service Quantity for Unregistered Equipment comprises more than 10 MW behind a single Transmission Node, AEMO may require aggregated visibility under paragraph 3.1.2(c) for connection points at that Transmission Node.

3.2. Likely network location where the Service may be provided

- 3.2.1. The Service may be delivered at any location in the SWIS, excluding areas which are likely to be subject to frequent constrained operation for Injection or Withdrawal during the Service Period.
- 3.2.2. AEMO (as part of the selection criteria under paragraph 7.1.1) may consider 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 as follows:
- (a) for existing registered Scheduled Facilities or Semi-Scheduled Facilities:
 - (i) AEMO has not assigned Capacity Credits for either of the 2023/24 and 2024/25 Capacity Years with respect to the Service Quantity;
 - (ii) AEMO has not assigned Certified Reserve Capacity for the 2025/26 Capacity Year with respect to the Service Quantity; and
 - (iii) AEMO has not reduced the Capacity Credits of the facility during the 2023/24 Capacity Year at the time of NCESS submission evaluation under clause 3.11B.9(a)(ii) of the WEM Rules;
 - (b) for a facility that is intended to be registered 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 2026/27 Capacity Year;
 - (c) for a Load:

- (i) the Load is not (and has not been) associated with any Demand Side Programme during the 2023/24 or 2024/25 Capacity Years; and
 - (ii) where the Load relates to a customer who is not a Contestable Customer, the Load has an Interval Meter that records usage by Trading Interval;
- (d) as required under clause 3.11B.10(b)(i) of the WEM Rules – the facility or equipment will be able to provide the Service Quantity by the date specified in paragraph 2.2.1(a);
- (e) as required under clause 3.11B.10(b)(ii) of the WEM Rules – for a new facility or load, sufficient Environmental Approvals have been granted; and
- (f) 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. For the avoidance of doubt, this includes any NCESS Contract for provision of a similar service during the Service Period.

3.4. Registration and certification

- 3.4.1. Any facility or equipment with a System Size greater than 10 MW will be required to be registered in accordance with the WEM Rules as a Scheduled Facility or Semi-Scheduled Facility.
- 3.4.2. All NCESS providers will be required to provide progress reports every 3 months after contract execution until the commencement date specified in paragraph 2.2.1.
- 3.4.3. 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 the Service and is measured by reference to the relevant Baseline Quantity, calculated in accordance with paragraphs 5.2.2.
- 3.5.2. The Service Quantity for a Registered Facility must be a quantity of Injection, net of Parasitic Loads, determined with reference to an ambient temperature of 41 degrees Celsius.

4. How the Service is to be provided

4.1. Operational requirements and limitations

- 4.1.1. The Service must be offered for every Relevant Interval:
- (a) for a Scheduled Facility or Semi-Scheduled Facility – as Real-Time Market Submissions for energy with an In-Service Capacity for Injection greater than or equal to the sum of the Service Quantity and the Baseline Quantity; and
 - (b) for Unregistered Equipment – as a standing contractual offer to Inject or Withdraw a quantity greater than or equal to the sum of the relevant Service Quantity and the Baseline Quantity.
- 4.1.2. Where an NCESS provider provides the Service through a Scheduled Facility or a Semi-Scheduled Facility, the NCESS provider may offer a Frequency Co-optimised Essential System Services quantity that includes the Service Quantity in its Real-Time Market Submissions.

- 4.1.3. Where an NCESS provider provides the Service from Unregistered Equipment, AEMO may require the NCESS provider to activate the Service for any quantity up to the relevant 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 Dispatch Intervals and the quantity required.
- 4.1.4. AEMO will use reasonable endeavours to only activate Unregistered Equipment when it considers that Real-Time Market outcomes may be insufficient to ensure Power System Security and Power System Reliability during the Service Period.
- 4.1.5. AEMO will require the NCESS provider of Unregistered Equipment utilising customers who are not Contestable Customers to provide Interval Meter data for all designated connection points (as defined in the NCESS Contract) in a reasonable timeframe, where this information is not provided to AEMO by the Meter Data Agent.
- 4.1.6. AEMO must exclude any connection point from a NCESS provider that is not the Market Participant for the connection point where the connection point is included in any existing or expected NCESS Contract with the relevant Market Participant.

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. Where AEMO approves maintenance plans under paragraph 4.2.2, the NCESS provider will not be deemed unavailable under paragraph 5.4.1 for the duration of the approval.
- 4.2.4. 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:
 - (a) for Registered Facilities:
 - (i) for relevant Trading Intervals, using Interval Meter data; and
 - (ii) for relevant Dispatch Intervals, using SCADA end-of-interval values; and
 - (b) for Unregistered Equipment utilising:

- (i) a NMI associated with a Contestable Customer – Interval Meter data provided by the Meter Data Agent; and
- (ii) a NMI not associated with a Contestable Customer – Interval Meter data provided by the Meter Data Agent or the NCESS provider.

5.2. Baseline Quantity

5.2.1. The Baseline Quantity will determine the baseline from which the Service Quantity is measured.

5.2.2. The Baseline Quantity for the Service is determined as:

- (a) for Non-Intermittent Generating Systems or Electric Storage Resources to increase Injection or decrease Withdrawal (as appropriate) – the Capacity Credits held by the Registered Facility for the 2024-25 Capacity Year; or
- (b) for Unregistered Equipment to increase Injection or decrease Withdrawal – the MW quantity determined by one of the following methods:
 - (i) the method described in Appendix A; or
 - (ii) where the NCESS provider can demonstrate to AEMO's satisfaction that the method described in Appendix A is not appropriate, a method to identify a baseline Injection or Withdrawal proposed by the NCESS provider and approved by AEMO.

5.3. Minimum availability requirement

5.3.1. A minimum availability requirement applies for the 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 Relevant Intervals during which the Service is deemed unavailable in the relevant period as determined by paragraph 5.4; and

B = the total number of Relevant Intervals within the Service Period for the relevant period.

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

5.4. Unavailability

5.4.1. The Service will be deemed unavailable in any Relevant Interval within the Service Period 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 (including by not offering in accordance with paragraph 4.1.1) except where AEMO approves maintenance plans under paragraph 4.2.2;
- (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:
 - (i) SCADA visibility of the Registered Facility for the entire Dispatch Interval; or
 - (ii) communication with, or visibility of, Unregistered Equipment for the entire Trading Interval;
 - (e) the Registered Facility is subject to a Commissioning Test Plan in the Dispatch Interval that does not occur as part of a Planned Outage;
 - (f) for Unregistered Equipment, the minimum availability requirement in paragraph 5.3 is not met for the Relevant Interval; or
 - (g) AEMO otherwise reasonably determines, based on energy or fuel storage information or other relevant information available to AEMO, including with respect to Outages not approved under paragraph 4.2.2, that the facility or equipment is unable to provide the Service Quantity.
- 5.4.2. AEMO may require the Service Provider to carry out a test if the Service Equipment does not operate at a level equal to or greater than the Service Quantity at any time in a 3-month period.
- 5.4.3. The Service will be deemed unavailable from any Relevant Interval where the facility or equipment fails any test required by AEMO until the Service Equipment passes a test or AEMO otherwise reasonably considers the Service is available.

5.5. Payment

- 5.5.1. The contract amount payable will consist of:
- (a) for a Registered Facility and Unregistered Equipment – an availability payment (which is not payable unless and until the NCESS provider satisfies the conditions precedent specified in paragraph 6.2); and
 - (b) for Unregistered Equipment – an activation payment.
- 5.5.2. The availability payment will be payable for all Relevant Intervals within the Service Period, excluding Relevant Intervals during which the facility or equipment is deemed to be unavailable as specified in paragraph 5.4.
- 5.5.3. Due to the nature of the Service:
- (a) (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; and
 - (b) AEMO will vary the NCESS Contract payment as indicated in Appendix B.
- 5.5.4. The activation payment for Unregistered Equipment will be payable for all Trading Intervals within the Service Period for which AEMO has activated the Service in accordance with paragraph 4.1.3, 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;

- (b) for Unregistered Equipment provided by a Market Participant – in accordance with the WEM Rules; or
- (c) for Unregistered Equipment provided by an unregistered NCESS provider – in accordance with a monthly 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 the date under paragraph 2.2.2:

- (a) the Service Equipment must complete all tests required by AEMO (to AEMO's satisfaction) to demonstrate compliance with the Service requirements specified in this document;
- (b) the NCESS provider must demonstrate (at its own cost and based on Interval Meter data or Facility Sub-Metering data, as applicable, for any period on or after 1 June 2025) that the Service Equipment is capable of:
 - (i) for Registered Facilities, increasing Injection or reducing Withdrawal (as applicable) by a quantity greater or equal to the relevant Service Quantity (relative to the Baseline Quantity) for 48 consecutive Dispatch Intervals during the Service Period; or
 - (ii) for Unregistered Equipment, increasing Injection or reducing Withdrawal (as applicable) for 8 consecutive Trading Intervals during the Service Period by a quantity greater or equal to the relevant Service Quantity (relative to the Baseline Quantity) for the relevant Trading Interval; and
- (c) where the Service is to be provided by a Registered Facility, that facility is:
 - (i) registered in accordance with the WEM Rules;
 - (ii) if Injecting, has received an Interim Approval to Generate Notification relating to the Service Quantity.

6.2.2. The NCESS Contract must not include any Conditions Precedent that are expressed to apply for the NCESS provider's benefit.

6.3. Force Majeure

6.3.1. There are no force majeure conditions associated with the Service for Unregistered Equipment.

6.3.2. Force majeure in relation to Registered Facilities is applicable for:

- (a) new Registered Facilities; or
- (b) existing Registered Facilities, where AEMO determines (as part of the selection process under clause 3.11B.9 of the WEM Rules) that a major modification to provide the Service is required.

6.3.3. A force majeure event is any event or circumstance to the extent that it is not within the reasonable control of the NCESS provider and reasonably prevents the NCESS provider from performing its obligations under the NCESS Contract, and:

- (a) without limiting the generality of the foregoing, includes fire (other than fire caused by the Service Provider), flood or earthquake, war, terrorist threats or acts or other civil unrest, piracy, lock-outs, strikes or other labour disputes; and
 - (b) excludes:
 - (i) any occurrence which results from the wrongful or negligent act or omission of the Service Provider or the failure by the Service Provider to act in a prudent and proper manner and in accordance with Good Electricity Industry Practice; and
 - (ii) financial cost as the sole or a principal factor.
- 6.3.4. Where an event specified in paragraph 6.3.3 occurs before the date specified in paragraph 2.2.1:
- (a) the date specified in paragraph 2.2.2 will be extended by the duration of the event, up to a maximum extension of 2 months; and
 - (b) the date specified in paragraph 2.2.3 will be extended by the duration of the event, up to a maximum extension of 2 months.

6.4. Security

- 6.4.1. For a Registered Facility or Unregistered 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 6.4.2 for the amount specified in paragraph 6.4.3.
- 6.4.2. 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;
 - (e) permits drawings or claims by AEMO up to a stated amount;
 - (f) has an effective date on or before the date specified in the NCESS Contract, which must be before the date specified in paragraph 2.2.1(a); and
 - (g) has an expiry date on or following a date specified in the NCESS Contract, which must be following the date specified in paragraph 2.2.2.
- 6.4.3. The amount of security required to be provided is equal to 20% of the NCESS Contract value. If an NCESS provider has provided Reserve Capacity Security for the Service Quantity, the NCESS Security will be reduced commensurately.
- 6.4.4. AEMO will return the security to the NCESS provider as soon as practicable following the date the NCESS provider meets the conditions precedent in paragraph 6.2.
- 6.4.5. An NCESS provider who fails to satisfy the conditions precedent in paragraph 6.2 before the date specified in the NCESS Contract will forfeit the security amount.

6.5. General

- 6.5.1. AEMO is contracting the Service on behalf of the Wholesale Electricity Market and therefore the following do not apply:
- (a) sole remedy clauses in favour of the NCESS provider; and

- (b) NCESS provider rights in respect of default (by AEMO) on the basis that AEMO must comply with the WEM Rules and therefore cannot be in default.

6.6. Extent of liability

6.6.1. Separate liability caps will apply for AEMO and the NCESS provider.

6.6.2. For AEMO:

- (a) subject to paragraph 6.6.2(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.

6.6.3. For the NCESS provider:

- (a) subject to paragraph 6.6.3(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 lesser of the NCESS Contract value and \$5 million.
- (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.

6.7. Termination clauses

6.7.1. 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 6.4.1) the NCESS provider fails to satisfy the conditions precedent in paragraph 6.2, before the date specified in paragraph 2.2.2;
- (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 30 days 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 90-day period during the Contract Term;
- (c) the NCESS provider materially breaches the NCESS Contract and, in the case of a breach that is capable of remedy, does not remedy that breach within 20 Business Days (or, if AEMO approves a longer period for a specific breach, within that longer period) after AEMO notifies the NCESS provider of the breach; or
- (d) an insolvency event occurs in relation to the NCESS provider, and the NCESS provider does not remedy the insolvency event within 20 Business Days after the insolvency event

occurs (or, if AEMO approves a longer period for the insolvency event, within that longer period).

6.7.2. The NCESS Contract must not include termination rights for 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)
Environmental Approvals	As required under clause 3.11B.10(b)(ii) of the WEM Rules, for new facilities or equipment, sufficient Environmental Approvals have been granted.	Pass/ Fail/ N/A (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)
Progression	The progress of the project to achieve all conditions precedent and AEMO's assessment of likelihood that the project will achieve key dates, including with regard to connection feasibility informed by consultation with the Network Operator.	Moderate (10%)
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 (for example, Grid-Forming capability for inverter-based resources).	Moderate (10%)
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%)
Size	The ideal Service is a larger Service Quantity (with a single contingency size less than 200 MW) to provide additional benefit to system reliability and overall costs, but which does not impose extra security requirements such as Contingency Reserve Raise.	High (30%)
Cost	The estimated total cost of the Service compared to other proposals.	High (30%)

Appendix A. Baseline Quantity and Actual Service Quantity for Unregistered Equipment

AEMO must determine the Baseline Quantity and the Actual Service Quantity (both in MWh per Trading Interval) in accordance with this **Appendix A**.

Summary

The Baseline Quantity is calculated with respect to each Activation Event.

The Baseline Quantity is calculated by reference to the aggregated electricity demand of all NMIs from the Designated Connection Points. A separate Baseline Quantity is not calculated for individual NMIs forming part of an aggregation.

AEMO must calculate the Baseline Quantity as follows:

- Step 1 – determine a set of Selected Days for each Activation Event;
- Step 2 – determine the Preliminary Quantity for each relevant Trading Interval in each Activation Event;
- Step 3 – calculate a Relative Root Mean Squared Error for each Preliminary Quantity (and if the Relative Root Mean Squared Error for any Preliminary Quantity is greater than 20%, then (in AEMO's sole discretion) either go back to Step 1 or redetermine the Preliminary Quantity using an adjusted Injection or Withdrawal quantity based on the set of designated connection points (as defined in the NCESS Contract) that AEMO reasonably considers more accurately reflects the NCESS provider's typical demand);
- Step 4 – determine and apply an Adjustment Factor for each Activation Event; and
- Step 5 – calculate the Baseline Quantity for each Trading Interval in each Activation Event.

AEMO then uses the Baseline Quantity to determine the Actual Service Quantity for each Trading Interval in each Activation Event.

Definitions

The following definitions apply for the purposes of this **Appendix A**:

60-Day Period means the 60 calendar days immediately preceding the calendar day that relates to the first Trading Interval for which the calculation is made.

Activated Day means a day on which an Activation Event occurs.

Activation Event means:

- (before the Commencement Date) the set of Trading Intervals indicated by the NCESS provider; and
- (after the Commencement Date) the set of Trading Intervals specified in an Activation Notice.

Actual Service Quantity means the quantity of Service provided by Unregistered Equipment in a Trading Interval (calculated in accordance with this **Appendix A**) relative to the Baseline Quantity and measured in MW or MWh per Trading Interval, as applicable.

Adjustment Factor means the adjustment factor calculated in accordance with Step 4 of this **Appendix A**.

Non-Activated Day means a day on which an Activation Event does not occur.

Preliminary Quantity means a preliminary quantity calculated in accordance with Step 2 of this **Appendix A**.

Relative Root Mean Squared Error means a relative root mean squared error calculated in accordance with Step 3 of this **Appendix A**.

Selected Day means an Activated Day or a Non-Activated Day in the 60-Day Period selected by AEMO in accordance with Step 1 of this **Appendix A**.

Calculation of Baseline Quantity

Step 1: Determine a set of Selected Days for each Activation Event

The set of Selected Days comprises the 10 most recent Non-Activated Days within the 60-Day Period.

If the 60-Day Period does not contain 10 Non-Activated Days:

- where there are more than 5 Non-Activated Days, the set of Selected Days comprises the Non-Activated Days; and
- otherwise, the set of Selected Days comprises the Non-Activated Days plus one or more Activated Days within the 60-Day Period so that there are 5 Selected Days. The Activated Days will be selected in order of highest demand of any Trading Interval relevant to an Activation Event. Where 2 or more Activated Days are ranked the same, the Activated Day closest in time to the first Trading Interval in the Activation Event will be ranked higher.

The NCESS provider may request that AEMO exclude a day from the 60-Day Period. AEMO (in its sole discretion) may exclude a day from the 60-Day Period where AEMO reasonably considers that the day is not representative of the NCESS provider's Injection or Withdrawal on the Activated Day, having regard to the NCESS provider's historical Injection or Withdrawal quantities on similar days. If AEMO excludes a day, AEMO must perform Step 1 again excluding the day from the 60-Day Period.

Step 2: Determine the Preliminary Quantity for each Trading Interval in each Activation Event

AEMO must determine the Preliminary Quantity for each Trading Interval in each Activation Event as follows:

$$b_t = \frac{1}{S} \sum_{i=1,2,\dots,S} -c_{ti}$$

Where:

b_t = the Preliminary Quantity (in MWh) for a given Trading Interval (t)

i = a Selected Day

t = a Trading Interval

c = the Injection or Withdrawal quantity (in MWh) for a given Trading Interval (t) occurring on Selected Day (i)

S = the number of days in the set of Selected Days.

Step 3: Calculate a Relative Root Mean Squared Error for each Preliminary Quantity

AEMO must determine a Relative Root Mean Squared Error for each Preliminary Quantity (relative to the 60 Non-Activated Days immediately preceding the Trading Interval for which the calculation is being made) as follows:

$$\text{RRMSE} = \frac{\sqrt{\frac{\sum_{i \in I} (\sum_{t \in T} (b_t - (-c_{ti}))^2)}{N}}{\frac{1}{N} \times \sum_{t \in T} b_t}}}$$

Where:

I is the set of 60 Non-Activated Days (i) immediately preceding the Activation Event

T is the set of Trading Intervals (t) from which Interval Meter data is taken for the Preliminary Quantity

N is the total number of Trading Intervals in set (T) across all the days in set (I)

b_t is the Preliminary Quantity associated with Trading Interval (t) as calculated in Step 2

c_{ti} is the Injection or Withdrawal quantity (in MWh) for a given Trading Interval (t) on day (i).

If the Relative Root Mean Squared Error is 20% or greater, then AEMO (in its sole discretion) may:

- go back to Step 1; or
- redetermine the Preliminary Quantity using an adjusted Injection or Withdrawal quantity based on the set of designated connection points (as defined in the NCESS Contract) that AEMO reasonably considers more accurately reflects the NCESS provider's typical demand.

Step 4: Determine and apply an Adjustment Factor for each Activation Event

AEMO must determine and apply an Adjustment Factor for each Activation Event as follows:

$$a = \frac{\sum_{t=s-8}^{t=s-3} (c_t - b_t)}{6}$$

Where:

a = Adjustment Factor (this may be positive or negative)

s = the start of the first Trading Interval (t) in the Activation Event, which may be adjusted by AEMO to reflect operational conditions on the day if required

c = the Injection or Withdrawal quantity (in MWh) for Trading Interval (t)

b = the Preliminary Quantity (in MWh) for Trading Interval (t)

$s-n$ = the Trading Intervals before the activation start time.

Where the Adjustment Factor is a positive amount, the Adjustment Factor must not exceed a quantity equivalent to 20% of the amount of the Service Quantity (converted to MWh per Trading Interval).

If the Service has for two or more Activation Events on the same day, then the Adjustment Factor for each Activation Event is the Adjustment Factor calculated for the first Activation Event on that day.

Step 5: Calculate the Baseline Quantity for each Trading Interval in the Activation Event

$$B_t = b_t + a$$

Where:

B = the Baseline Quantity (in MWh) for Trading Interval (t)

a = the Adjustment Factor (this may be positive or negative)

b = the Preliminary Quantity (in MWh) for Trading Interval (t).

Calculation of the Actual Service Quantity

AEMO must determine the Actual Service Quantity for each Trading Interval in the Activation Event as follows:

$$D_t = (B_t - c_t)/0.5$$

Where:

B = the Baseline Quantity (in MWh) for Trading Interval (t)

c = the Injection or Withdrawal quantity (in MWh) for the Trading Interval in the Activation Event

D = the Actual Service Quantity (in MW) for Trading Interval (t) determined as follows:

- if the Actual Service Quantity is less than zero, the Actual Service Quantity equals zero;
- if the Actual Service Quantity is greater than the quantity specified in the relevant Activation Notice, the Actual Service Quantity is the level specified in the Activation Notice; and
- otherwise, the Actual Service Quantity is as calculated in accordance with the formula.

Appendix B. NCESS Payment and Capacity Credit payments for Registered Facilities

This **Appendix B** applies if clause 5.3.1 of the WEM Rules requires AEMO to amend the NCESS Payment to account for expected Capacity Credit payments.

AEMO must complete the following steps to determine the amended availability price for the Service in Capacity Year **y**.

Step 1:

The amended availability price for the Service in Capacity Year **y** (in \$ per MW per Trading Interval) is:

$$\text{Availability Price}_y = \frac{AP}{AAP} \times ((SEC_y - CC_y) \times RCP_y + AAP)$$

where:

AP (in \$ per MW per Trading Interval) is the availability price specified in the NCESS Contract;

AAP (in \$ per year) equals **AP** multiplied by the relevant Service Quantity for each Trading Interval in the Service Period for each relevant day in Capacity Year **y**;

SEC_y represents the Service Equipment's capacity that is not related to the Service Quantity for the Service for Capacity Year **y**, as calculated in accordance with the formula below;

CC_y is the quantity of Capacity Credits assigned to the Service Equipment for Capacity Year **y**;

RCP_y is the Reserve Capacity Price for Capacity Year **y**.

$$SEC_y = BQ + \max(0, CC_y - BQ - SQ)$$

where:

BQ represents the Baseline Quantity for the Service;

CC_y is the quantity of Capacity Credits assigned to the Service Equipment for Capacity Year **y**;

SQ is the Service Quantity.

Step 2:

If the result of step 1 is less than zero, the amended availability price for the Service in Capacity Year **y** (in \$ per MW per Trading Interval) equals zero.

If the result of step 1 is greater than the availability price specified in the NCESS Contract, the amended availability price for the Service in Capacity Year **y** (in \$ per MW per Trading Interval) equals the availability price specified in the NCESS Contract.