



2021 Certification of Reserve Capacity workshop – 9 Dec 2021

Presented by

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Agenda

1. Background and Certified Reserve Capacity (CRC) overview
2. Key dates for the 2021 CRC process
3. CRC application requirements
4. Committed status applications
5. Reserve Capacity Security requirements
6. Specific requirements by Facility type
7. Specific requirements by Component type
8. Questions and feedback

Disclaimer

This presentation has been developed in line with the current version of the WEM Rules available on [Energy Policy WA's website](#).

AEMO has taken all due care in preparing this material, but accepts no liability for any errors it may contain.

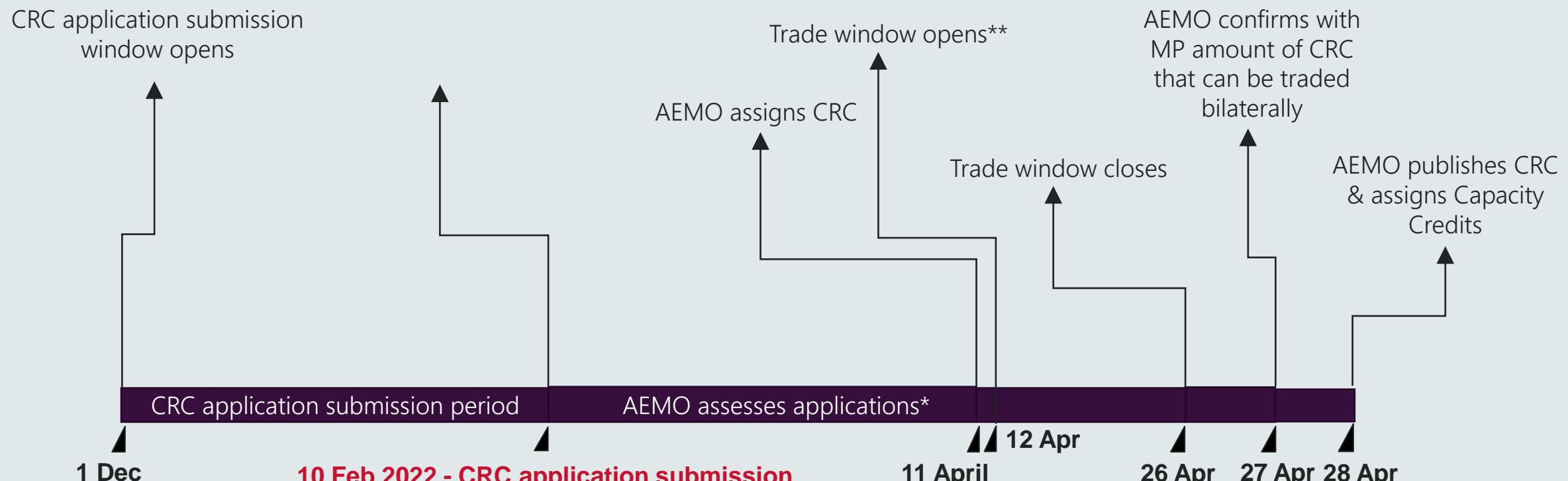
The information may be subject to specific exceptions or may not apply to particular factual circumstances.

To fully understand their obligations, Market Participants should refer to the WEM Rules.

Background and CRC overview

- The 2021 Reserve Capacity Cycle relates to the 2023-24 Capacity Year.
- The CRC process is a key aspect of the RCM.
- The application window is open between 9:00 am on 1 December 2021 to 5:00 pm on 10 February 2022 (deferred timeline).
- Associated WEM Rules and Market Procedures:
 - Sections 4.9, 4.10, and 4.11 of the WEM Rules.
 - [WEM Procedure: Certification of Reserve Capacity for the 2021 Reserve Capacity Cycle](#) (effective 1 November 2021).
- Specifically, Market Participants must provide information required under section 4.10 of the WEM Rules.
- AEMO assesses and sets CRC in accordance with section 4.11 of the WEM Rules.

Key dates for the 2021 CRC process



* Note AEMO's internal approval process takes four weeks.

** Including window for Reserve Capacity Security, DSM Reserve Capacity Security, and nominations for the Fixed Price.

CRC application requirements

- Applications must be submitted via WEMS MPI only.
- Formal applications for CRC may only be lodged during the CRC application window (1 Dec to 10 February) [MR 4.9.1].
- Must include supporting documentation required under MR 4.10.
- **No new or updated supporting documentation can be submitted after 10 Feb 2022 (step 4.2.5 of the Market Procedure: Certification of Reserve Capacity).**
- AEMO will reject an application that does not include all information required under MR 4.10 (step 4.2.4 of the WEM Procedure: Certification of Reserve Capacity for the 2021 Reserve Capacity Cycle).

Prerequisite

- An indicative Facility Class (or RCM Facility Class) and one or more associated indicative Technology Types associated with each Facility.

Note: AEMO will not assign CRC to a Facility that is not expected to be a registered Facility by the time its Reserve Capacity Obligations commence for the 2021 Reserve Capacity Cycle (normally 1 October 2023).

Amendments to the CRC Process

- Introduction of a Component level to the CRC process.
- CRC assigned at the Component level (Capacity Credits still assigned at the Facility level).
 - Enables Energy Storage Resources to be certified as a new technology type.
 - New Facilities and Facility Upgrades need to have submitted a valid EOI application.
 - Upgrades are created by AEMO as part of the Indicative Facility Class process and will appear in the Component table in the CRC application.

| Home | CRC Application | Security | Trade Declaration | CDA | NTDL | Capacity Allocation | IRCR | Peak Intervals | RC Testing |
|------|-----------------|-------------|-------------------|-------------|-------------|---------------------|------|----------------|------------|
| ➤ | 2019 - 2020 | 2020 - 2021 | 2021 - 2022 | 2022 - 2023 | 2023 - 2024 | | | | |

Applications for Certification

Certification Submission Window 01/12/2021 09:00 - 10/02/2022 17:00

Closes in 2 months

| Application | Facility Class | Facility Status | Application Status | Submitted On |
|-------------|----------------|-----------------|--------------------|--------------|
| | NSF | O | OPEN | - |
| | SF | O | OPEN | - |
| | SF | O | OPEN | - |
| | NSF | O | OPEN | - |
| | SF | O | OPEN | - |
| | SF | O | OPEN | - |
| | SF | P | OPEN | - |

| Home | CRC Application | Security | Trade Declaration | CDA | NTDL | Capacity Allocation | IRCR | Peak Intervals | RC Testing |
|------|-----------------|----------|-------------------|-----|-------------|---------------------|-------------|----------------|--------------------|
| > | 2019 - 2020 | | 2020 - 2021 | | 2021 - 2022 | | 2022 - 2023 | | 2023 - 2024 |

Application for Certification

Participant: Capacity Year: 2023 - 2024
Facility Name: Certification Window: 01/12/2021 09:00 - 10/02/2022 17:00
Facility Class: Scheduled Facility
Facility Status: Commercial Operation
Application Status: OPEN
Assigned CRC: -
Application Type: Existing

Facility Requirements

Edit

Components

| Components | Technology Type | Assigned CRC (MW) | Include  | Updated On |
|-----------------|--------------------------------|-------------------|---|------------|
| FACILITY_ESR_01 | Electric Storage Resource | - | INCLUDED | |
| FACILITY_JGS_01 | Intermittent Generating System | - | INCLUDED | |

Components

| Components | Technology Type | Assigned CRC (MW) | Include  | Updated On |
|-------------------------|------------------------------------|-------------------|---|------------|
| FACILITY_NIGS_01 | Non-Intermittent Generating System | - | EXCLUDED | |
| FACILITY_NIGS_01_UPG_01 | Non-Intermittent Generating System | - | EXCLUDED | |

| | | | | | | | | | |
|---|----------------------------------|-------------|-------------------|-------------|---|---------------------|------|----------------|------------|
| Home | CRC Application | Security | Trade Declaration | CDA | NTDL | Capacity Allocation | IRCR | Peak Intervals | RC Testing |
| > | 2019 - 2020 | 2020 - 2021 | 2021 - 2022 | 2022 - 2023 | 2023 - 2024 | | | | |
| Component CRC Application ⓘ | | | | | Back Edit | | | | |
| Facility Class: | Scheduled Facility | | | | | | | | |
| Component Name: | FACILITY_NIGS_01 | | | | | | | | |
| Assigned CRC: | - | | | | | | | | |
| <input type="checkbox"/> Include component in CRC application | | | | | | | | | |
| Non-Intermittent Generating System ⓘ | | | | | | | | | |

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|----------------------|-----------------------|-------------------------------------|-------------|-------------|---------------------|------|----------------|------------|--------------|--|----------------|-------------|----------------|--|-----------------------|-------------------------------------|-----------------|--------------------|--|--|------------------|----------------------|--|--|---------------------|---------|--|--|---------------|---|--|--|-------------------|----------|--|--|
| Home | CRC Application | Security | Trade Declaration | CDA | NTDL | Capacity Allocation | IRCR | Peak Intervals | RC Testing | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| > | 2019 - 2020 | 2020 - 2021 | 2021 - 2022 | 2022 - 2023 | 2023 - 2024 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <h2>Application for Certification</h2> <p>Submit</p> <table><tr><td>Participant:</td><td></td><td>Capacity Year:</td><td>2023 - 2024</td></tr><tr><td>Facility Name:</td><td></td><td>Certification Window:</td><td>01/12/2021 09:00 - 10/02/2022 17:00</td></tr><tr><td>Facility Class:</td><td>Scheduled Facility</td><td></td><td></td></tr><tr><td>Facility Status:</td><td>Commercial Operation</td><td></td><td></td></tr><tr><td>Application Status:</td><td>PENDING</td><td></td><td></td></tr><tr><td>Assigned CRC:</td><td>-</td><td></td><td></td></tr><tr><td>Application Type:</td><td>Existing</td><td></td><td></td></tr></table> | | | | | | | | | | Participant: | | Capacity Year: | 2023 - 2024 | Facility Name: | | Certification Window: | 01/12/2021 09:00 - 10/02/2022 17:00 | Facility Class: | Scheduled Facility | | | Facility Status: | Commercial Operation | | | Application Status: | PENDING | | | Assigned CRC: | - | | | Application Type: | Existing | | |
| Participant: | | Capacity Year: | 2023 - 2024 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Facility Name: | | Certification Window: | 01/12/2021 09:00 - 10/02/2022 17:00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Facility Class: | Scheduled Facility | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Facility Status: | Commercial Operation | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Application Status: | PENDING | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Assigned CRC: | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Application Type: | Existing | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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|------|------------------------|-------------|-------------------|-------------|-------------|---------------------|------|----------------|------------|
| Home | CRC Application | Security | Trade Declaration | CDA | NTDL | Capacity Allocation | IRCR | Peak Intervals | RC Testing |
| | ➤ 2019 - 2020 | 2020 - 2021 | 2021 - 2022 | 2022 - 2023 | 2023 - 2024 | | | | |

Application for Certification

Your application has been submitted with the following components:

| | | |
|---------------------|-----------------------|-------------------------------------|
| Participant: | Capacity Year: | 2023 - 2024 |
| Facility Name: | Certification Window: | 01/12/2021 09:00 - 10/02/2022 17:00 |
| Facility Class: | Scheduled Facility | |
| Facility Status: | Commercial Operation | |
| Application Status: | SUBMITTED | |
| Assigned CRC: | - | |
| Application Type: | Existing | |

Trade declaration

Market Participants nominate (via the RCM portal) the amount of assigned CRC that:

- is intended to be traded bilaterally; or
- will be made unavailable (withdrawn).

Market Participants may nominate a new generation Facility as a Fixed Price Facility (if it meets certain conditions).

Associated WEM Rules and Procedures:

- MR 4.14
- Market Procedure: Declaration of Bilateral Trades and the Reserve Capacity Auction (to be updated for the 2021 Reserve Capacity Cycle)

Committed status

- New Facilities and Upgrades need to be obtain Committed Status and choose the Reserve Capacity Price (floating price) to be assured Capacity Credits*.
- Made as a separate application to CRC.
- The submission must present a case as to how the project has progressed further than a "Proposed" Facility and what irrevocable financial commitments have been made.
- AEMO's approval decision is made prior to the trade window close.
- A Network Control Service (NCS) Facility is exempt from applying for Committed Status (and submitting a trade declaration).

How to demonstrate committed status

Assessed by AEMO on a case-by-case basis.

Some examples of supporting documentation include:

- Construction contracts
- Site works contracts
- Financial commitment (e.g. Board approval)
- Evidence that the Facility is under construction (e.g. photos)
- Power purchase agreements with a customer

Guidelines for assessing Reserve Capacity Facility status are in Appendix A of [Market Procedure: Declaration of Bilateral Trade and the Reserve Capacity Auction](#).

Security

Reserve Capacity Security

- Applies to new Facilities, upgrades, and Facilities returning to service after significant maintenance (generation only).
- Equal to 25% of the BRCP multiplied by the number of Capacity Credits.
- Relevant Rules: MR 4.13.

DSM Reserve Capacity Security

- Applies to all DSPs – required to be provided each year.
- Equals 25% of the BRCP multiplied by the number of Capacity Credits (or max of DSM RCS held for other Capacity Years).
- Requirement can be waived.
- Relevant Rules: MR 4.13A.

Questions

Facility and component information

For Scheduled Facilities and Semi-Scheduled Facilities, applications consist of:

- Facility level information (e.g. network access confirmation).
- Component level information (e.g. fuel contracts for Non-Intermittent Generating System components).
- At least one component must be included in the application.

For Non-Scheduled Facilities and Demand Side Programmes, all information is provided at the Facility level.

- For Non-Scheduled Facilities, components are displayed but cannot be selected.

General requirements for documents

Supporting documentation provided by 10 February must (step 3.1.7 of the [WEM Procedure: Certification of Reserve Capacity for the 2021 Reserve Capacity Cycle](#)):

- Relate to the Facility or component and cover the entire relevant Capacity Year.
- Be duly executed by an Authorised Officer of the Market Participant and all other parties.
- Be complete, with the exception that commercially sensitive information may be redacted.
- If applicable, include evidence that any conditions precedent have been satisfied or waived.

Scheduled Facilities and Semi-Scheduled Facilities – Facility information

| Supporting information | What AEMO requires | Requirement |
|-------------------------|---|-------------|
| Network access | <p>Market Rule reference: 4.10.1(bA)</p> <p>Evidence that the Facility has a network access arrangement with Western Power that <i>states the level of unconstrained capacity the Facility can offer into the network from a specified date</i>. The contract must be attached in full and may be in the form of an Electricity Transfer Access Contract (ETAC) or Network Access Agreement (NAA). All documents must clearly show the expiry date, the Declared Sent Out Capacity (DSOC), details of any network access constraints such as runback schemes, and include all amendments and other changes. All documents must be executed by both Western Power and the entity responsible for the Facility.</p> | Mandatory |
| Description of Facility | <p>Market Rule reference: 4.10.1(dA)</p> <p>Description and configuration of the main components of the Facility. This must include generator nameplate rating and age along with any major upgrades that have been performed.</p> | Mandatory |
| Operating restrictions | <p>Market Rule reference: 4.10.1(g)</p> <p>Note any restrictions on the availability of the Facility. This may include staffing restrictions, lease conditions, and any other factors that may prevent the Facility from operating during peak periods in the relevant Capacity Year.</p> | Mandatory |

Scheduled Facilities and Semi-Scheduled Facilities – Facility information

| Supporting information | What AEMO requires | Requirement |
|---|--|---|
| Network Control Services Contract | Market Rule reference: 4.10.1(j) If applicable, a full copy of any Network Control Services Contract, specifying the terms and conditions. Price information may be redacted. | For Facilities that are subject to a Network Contract Service contract. |
| Offtake agreement or Power Purchase Agreement | <u>Market Procedure reference: Appendix A of Declaration of Bilateral Trades and the Reserve Capacity Auction</u> (to be updated) Where a Facility is being built primarily to supply energy to one or more foundation customers, evidence that relevant power supply contracts are in place. | Optional |
| Balancing Facility status | If the Facility is Balancing Active, evidence to what extent the Facility meets the Balancing Facility Requirements | Mandatory |
| Other | Any other documentation to support the application. | Optional |

Non-Intermittent Generating Systems

| Supporting information | What AEMO requires | Requirement |
|------------------------------------|---|-------------|
| Temperature Dependence information | <p>Market Rule reference: 4.10.1(e)(i)</p> <p>Provided on a <i>Sent Out</i> basis (please note that information in standing data must be <i>As Generated</i>). Must be supported by the manufacturer's technical specifications or as determined by an independent engineering firm.</p> | Mandatory |
| Fuel supply | <p>Market Rule reference: 4.10.1(e)(v) and section 5.3 of the WEM Procedure: Certification of Reserve Capacity for the 2021 Reserve Capacity Cycle</p> <p>Evidence that the Market Participant has secured sufficient fuel supplies (diesel, coal or gas) to operate the Facility and, if applicable, its fleet of Facilities. This may include demonstrated ability to procure additional fuel through the spot market. Full contracts must be provided which include full details of the fuel quantity to be delivered, signatory pages, expiry dates as well as any restrictions on quantities (for example, take or pay clauses, maximum contract quantities). Price information may be redacted.</p> | Mandatory |
| Fuel transport | <p>Market Rule reference: 4.10.1(e)(v) and section 5.3 of the WEM Procedure: Certification of Reserve Capacity for the 2021 Reserve Capacity Cycle</p> <p>Evidence that the fuel being procured by the Market Participant is able to be delivered to the Facility. Full contracts must be provided and include contract expiry dates and delivery lead times. A Market Participant may demonstrate its ability to source transport through the spot market. Price information may be redacted.</p> | Mandatory |

Intermittent Generating Systems

| Supporting information | What AEMO requires | Requirement |
|--------------------------|---|--|
| Accredited expert report | <p>Market Rule reference: 4.10.3 and 4.10.3A</p> <p>IER and supporting data required under clause 4.10.3 of the Market Rules (the data submission template is available in the RCM portal). The IER must include the expected output of the Facility from 1 April 2016 to 1 April 2021 and the 5% probability of exceedance (PoE). Note the 5% PoE is used to calculate the Required Level of a INSG. A new INSG must meet this level by the end of October 2023 to ensure Capacity Credit payments.</p> <ul style="list-style-type: none">• Information guide for IERs is here• List of accredited independent experts located here | For a Facility that has been in operation for less than five years or an Upgrade |

Independent Expert Report

While AEMO is not an expert, it expects that a reasonable estimate of the expected energy (as required under MR 4.10.3A(a)) includes a reasonable estimate of loss factors that are applicable to the Facility. The estimates of loss factors should be reflective of industry accepted typical loss categories and calculation standards, such as for:

- Wind farms: availability loss, electrical loss, turbine performance loss etc.
- Solar farms: soiling loss, module quality loss, light induced degradation etc.
- Biogas and landfill: availability loss etc.

AEMO expects an IER to include assumptions and explanations on the loss factors considered for the Facility. AEMO intends to update the [information guide for independent expert reports](#) on the website to clarify this requirement.

Electric Storage Resources

| Supporting information | What AEMO requires | Requirement |
|---|---|-------------|
| Temperature dependence information | <p>Market Rule reference: 4.10.1(fA) or 4.10.1(fB)</p> <p>The temperature dependence of the nameplate capacity, Maximum Charge level capability, and Minimum Charge level capability. Must be supported by the manufacturer's technical specifications or as determined by an independent engineering firm.</p> | Mandatory |
| Sent out capacity over 4 hours for each year of the ESR's expected life | <p>Market Rule reference: 4.10.1(fA)(iii) or 4.10.1(fB)(iii)</p> <p>The sent out capacity, net of Parasitic Loads, that can be guaranteed to be available for supply across the Electric Storage Resource Obligation Duration, to the relevant network when the ESR is operated at an ambient temperature of 41°C, over each year of its expected life. Must be supported by manufacturer's data.</p> | Mandatory |
| Outage rates supporting documents | <p>Market Rule reference: 4.10.1(fA)(v) or 4.10.1(fB)(v)</p> <p>Supporting information from the ESR's manufacturer that shows the expected forced and unforced outage rates, accounting for the Electric Storage Resource Obligation Duration.</p> | Mandatory |

Non-Scheduled Facilities

| Supporting information | What AEMO requires | Requirement |
|-------------------------|---|-------------|
| Network access | <p>Market Rule reference: 4.10.1(bA)</p> <p>Evidence that the Facility has a network access arrangement with Western Power that <i>states the level of unconstrained capacity the Facility can offer into the network from a specified date</i>. The contract must be attached in full and may be in the form of an Electricity Transfer Access Contract (ETAC) or Network Access Agreement (NAA). All documents must clearly show the expiry date, the Declared Sent Out Capacity (DSOC), details of any network access constraints such as runback schemes, and include all amendments and other changes. All documents must be executed by both Western Power and the entity responsible for the Facility.</p> | Mandatory |
| Description of Facility | <p>Market Rule reference: 4.10.1(dA)</p> <p>Description and configuration of the main components of the Facility. This must include generator nameplate rating and age along with any major upgrades that have been performed.</p> | Mandatory |
| Operating restrictions | <p>Market Rule reference: 4.10.1(g)</p> <p>Note any restrictions on the availability of the Facility. This may include staffing restrictions, lease conditions, and any other factors that may prevent the Facility from operating during peak periods in the relevant Capacity Year.</p> | Mandatory |

Non-Scheduled Facilities

| Supporting information | What AEMO requires | Requirement |
|---|--|--|
| Accredited expert report | <p>Market Rule reference: 4.10.3 and 4.10.3A</p> <p>IER and supporting data required under clause 4.10.3 of the Market Rules (the data submission template is available in the RCM portal). The IER must include the expected output of the Facility from 1 April 2016 to 1 April 2021 and the 5% probability of exceedance (PoE). Note the 5% PoE is used to calculate the Required Level of a INSG. A new INSG must meet this level by the end of October 2023 to ensure Capacity Credit payments.</p> <ul style="list-style-type: none"> Information guide for IERs is here List of accredited independent experts located here | For a Facility that has been in operation for less than five years or an Upgrade |
| Network Control Services Contract | <p>Market Rule reference: 4.10.1(j)</p> <p>If applicable, a full copy of any Network Control Services Contract, specifying the terms and conditions. Price information may be redacted.</p> | For Facilities that are subject to a Network Contract Service contract. |
| Offtake agreement or Power Purchase Agreement | <p>Market Procedure reference: Appendix A of Declaration of Bilateral Trades and the Reserve Capacity Auction (to be updated)</p> <p>Where a Facility is being built primarily to supply energy to one or more foundation customers, evidence that relevant power supply contracts are in place.</p> | Optional |
| Balancing Facility status | If the Facility is Balancing Active, evidence to what extent the Facility meets the Balancing Facility Requirements | Mandatory |
| Other | Any other documentation to support the application. | Optional |

Demand Side Programmes

| Supporting information | What AEMO requires | Requirement |
|-------------------------------|---|-------------|
| Operating Restrictions | <p>Market Rule reference: 4.10.1(g)</p> <p>Note any restrictions on the availability of the Facility. This may include staffing restrictions, lease conditions, and any other factors that may prevent the Facility from operating during peak periods in the relevant Capacity Year.</p> | Mandatory |
| Loads associated with the DSP | <p><u>WEM Procedure: Certification of Reserve Capacity for the 2021 Reserve Capacity Cycle</u></p> <p>A list of all loads, including the National Meter Identifier (NMI), associated to the DSP. Where contracts are not in place, a list of loads (with NMIs) that are intended to be included.</p> | Mandatory |
| Contracts for curtailment | <p><u>WEM Procedure: Certification of Reserve Capacity for the 2021 Reserve Capacity Cycle</u></p> <p>Evidence of capacity already procured (for example, contracts for load curtailment) or evidence of capacity procurement activity (on a per load basis). Full contracts must be provided and include commencement and end dates, terms outlining curtailment and signatory pages. Price information may be redacted.</p> | Mandatory |

Additional information for new Facilities and upgrades

| Supporting information | What AEMO requires | Requirement |
|---|--|----------------------------------|
| Project plan | Market Rule reference: 4.10.1(c)(iii) Key project dates as outlined in clause 4.10.1(c)(iii) of the Market Rules. | For New Facility or Upgrade only |
| Environmental approvals | Market Rule reference: 4.10.1(c)(ii) Evidence that any necessary environmental approvals have been granted or evidence supporting the Market Participant's expectation that any necessary environmental approvals will be granted in time to have the Facility meet its Reserve Capacity Obligations by the date specified in clause 4.10.1(c)(iii)(7) of the Market Rules. | For New Facility or Upgrade only |
| Financial commitment and funding arrangements | Market Rule reference: 4.10.1(c)(iii) Evidence of funding arrangements for the Facility, financial commitment by the Market Participant to a primary equipment supplier (this would usually take the form of a signed contract indicating purchase of the main plant equipment, including penalty clauses associated with non-compliance of the purchase agreement), and formal commitment, including financial approval, on behalf of the company in respect to the project (for example, Board approval). | For New Facility or Upgrade only |
| Local government approvals | Market Rule reference: 4.10.1(c)(iii) Details of relevant local government approvals to operate a power station. | For New Facility or Upgrade only |

Additional information for new Facilities and upgrades

| Supporting information | What AEMO requires | Requirement |
|------------------------|--|----------------------------------|
| Land leases | <p>Market Rule reference: 4.10.1(c)(iii)</p> <p>Details of access rights to land, either through ownership or an appropriate leasing agreement. Leasing arrangements to include duration of tenure, renewal options and signatory pages.</p> | For New Facility or Upgrade only |

Useful links

WEMS Production (<https://wems.aemo.com.au>)

The documents below will assist with submitting an application:

- WEMS MPI User Guide (<http://www.aemo.com.au/Electricity/Wholesale-Electricity-Market-WEM/Participant-information/Guides-and-useful-information>)
- WEMS Submission Specifications (<http://www.aemo.com.au/Electricity/Wholesale-Electricity-Market-WEM/Participant-information/Guides-and-useful-information>)
- WEMS Submission Validation (<http://www.aemo.com.au/Electricity/Wholesale-Electricity-Market-WEM/Participant-information/Guides-and-useful-information>)



Questions and feedback

Reserve Capacity (WA)

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