



Government of Western Australia
Energy Policy WA

Reserve Capacity Mechanism Review Working Group Meeting 2023_08_30

30 August 2023

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brighter energy future.

Meeting Protocols

- Please place your microphone on mute, unless you are asking a question or making a comment
- Please keep questions relevant to the agenda item being discussed
- If there is not a break in discussion and you would like to say something, you can use the 'raise your hand' function in Teams or comment in the meeting chat
- Questions and comments can also be emailed to EPWA - Energy Markets energymarkets@dmirs.wa.gov.au after the meeting
- The meeting will be recorded and minutes will be taken (actions and recommendations only)
- Please state your name and organisation when you ask a question
- If you are having connection/bandwidth issues, you may want to disable the incoming and/or outgoing video

Agenda

	Item	Responsibility	Type	Duration
1	Welcome and Agenda	Chair	Noting	2 min
2	Meeting Apologies/Attendance	Chair	Noting	2 min
3	What constitutes a Transitional Facility	RBP	Discussion	10 min
4	Rules to introduce Flexible Capacity	RBP	Discussion	45 min
5	Capability Classes Rules	RBP	Discussion	25 min
6	Peak IRCR Rules	RBP	Discussion	20 min
7	Flexible IRCR Rules	RBP	Discussion	20 min
8	General business	Chair	Discussion	5 min
9	Next Steps	Chair	Noting	5 min

3. What Constitutes a Transitional Facility

Upgrades and Additions Are Part of the Original Facility

Most WEM Facilities fall under clause 2.29.1B:

all Facility Technology Types that are connected behind a single network connection point or electrically connected behind two or more shared network connection points

If new equipment (e.g. additional solar panels, or a battery) is added behind the meter at the same site, it will be part of the same Facility. It will only be a separate Facility if there is no electrical connection behind the meter.

Upgrades and Additions Are Treated Separately in the RCM

For Reserve Capacity Mechanism purposes, an upgrade is treated as separate to the original facility when assessing Certified Reserve Capacity.

This is the case no matter whether it is a new Separately Certified Component, or additional capacity associated with an existing Separately Certified Component or the Facility as a whole.

The upgrade or addition is treated as a new Facility for Network Access Quantity purposes, and can be classified as a proposed Facility even though the existing Facility is in commercial operation.

However: while different Facilities can have different Reserve Capacity Prices, upgrades and additions within a Facility can not. All Separately Certified Components within a Facility have the same Facility Reserve Capacity Price.

Pricing for Transitional and Fixed Price Facilities

Facilities that were assigned Capacity Credits for the 2018 Reserve Capacity Cycle have special treatment for reserve capacity pricing purposes:

- They are guaranteed a minimum Facility Reserve Capacity Price (based on the prevailing Reserve Capacity Price at the start of the transitional period) even if the Reserve Capacity Price drops below that.
- Similarly, their Facility Reserve Capacity Price is capped at a rate based on the prevailing Reserve Capacity Price at the start of the transitional period.
- These transitional arrangements will lapse after the 2028 Capacity Year (2026 Reserve Capacity Cycle).

New Facilities can apply to have their Facility Reserve Capacity Price fixed for five years. Facilities will only be granted a fixed price if there is a shortage of capacity, no fixed price Facilities exist in the current WEM.

Upgrades and Additions to Transitional and Fixed Price Facilities

Because all capacity at a Facility is priced at the single Facility Reserve Capacity Price, the current rules mean that:

- The Reserve Capacity Price paid for a new upgrade or a new Separately Certified Component in a Transitional Facility is capped and floored
- A new upgrade or a Separate Certified Component added to a Fixed Price Facility would receive the guaranteed fixed price

With upcoming retirements, the prevailing Reserve Capacity Price will likely be above the transitional cap for the next few years. EPWA considers that it is reasonable to expose any new Separately Certified Components to the prevailing Reserve Capacity Price

However, it would be extremely difficult and costly to afford the same treatment to an upgrade of the same technology as the Transitional Facility (i.e. which is not a Separately Certified Component)

There are three high-level approaches to deal with this issue:

1. Require participants to have separate network connections for new Separately Certified Components, with no electrical connection behind the meter
2. Allow participants to register more than one facility even where electrically connected behind the meter
3. Allow facility components to have different capacity prices.

Preferred Option – Separate Prices for Components

EPWA considers that the status quo is inefficient. Participants with Transitional Facilities:

- While providing new investment in capacity, are unable to take advantage of increases in the reserve capacity price
- Have less incentive to respond to a capacity shortfall by adding capacity at their existing sites

Option 1 is also inefficient, as it may be cost prohibitive and blocks the ability to better use existing DSOC.

Option 2 is not acceptable, as it would require complex changes and may ignore configuration complexity in a way that could increase risks to power system security and reliability.

Option 3 is EPWA's preferred option. Separately Certified Components were introduced to allow differential treatment of different technology types for Certified Reserve Capacity allocation and Reserve Capacity Obligation Quantity calculations, and the approach to extend that differentiation to capacity pricing would be simpler than Option 2. The overall effect would be that new capacity of a different technology at an existing site would be exposed to the prevailing Reserve Capacity Price.

Changes to the treatment of upgrades to Transitional Facilities that are of the same technology (i.e. are not separately certified) are not proposed.

4. Rules to Introduce Flexible Capacity

Purpose of Discussing the Rules

EPWA is seeking feedback from the RCM Review Working Group before finalising the rules for public consultation.

Objectives for today's meeting:

- Point out the key changes to the WEM Rules to implement the outcomes of the RCM Review
- Note important drafting choices that affect implementation or market functioning
- Opportunity for questions and clarifications

RCM Review Working Group members will have another opportunity to provide feedback through the public consultation.

In these slides, text in *italics* is directly from the draft Rules.

Definition of Flexible Capacity

Reserve Capacity: Capacity associated with a Facility. Capacity may be either Peak Capacity or both Peak Capacity and Flexible Capacity, and may be:

- (a) the capacity of Energy Producing Systems to produce electricity and send it out into a Network forming part of the SWIS; or*
- (b) the capability of a Demand Side Programme to reduce the consumption of electricity at connection points to a Network forming part of the SWIS.*

Peak Capacity: Reserve Capacity that contributes to meeting peak demand.

*Flexible Capacity: Reserve Capacity that meets the requirements determined under **clause 4.10.1A** for the relevant Reserve Capacity Cycle, such that it is able to respond at very short notice to manage variations in load and Intermittent Generating System output during high ramp periods.*

4.10.1A AEMO will set minimum requirements for certification as Flexible Capacity: minimum stable load, ramp rates, startup time, min running time, shutdown time, restart time.

AEMO must set minimum eligibility requirements so that a Facility holding Flexible CRC “*will be capable of providing all of its capacity promptly and flexibly during the expected period of the highest Four-Hour Demand Increase*”

Key Flexible Capacity Rules (1)

Most defined terms referencing capacity or Reserve Capacity have been duplicated, and now there are two terms, one for Peak Capacity and one for Flexible Capacity. There may also be a catch-all term which encompasses both the peak and flexible concepts (e.g. Certified Reserve Capacity).

4.5.9 The Planning Criterion has a new limb:

there should be sufficient available capacity in each Capacity Year during the Long Term PASA Study Horizon to...meet the highest forecast Four-Hour Demand Increase, plus a reserve margin equal to:

- i. the highest forecast Four-Hour Demand Increase; multiplied by*
- ii. the proportion of Flexible Capacity expected to be unavailable at the time of the highest forecast Four-Hour Demand Increase due to Forced Outages*

Appendix 1 New standing data parameters for Flexible Capacity capabilities

Key Flexible Capacity Rules (2)

- 4.5.10 The *Flexible Reserve Capacity Target* is driven by the highest expected *Four-Hour Demand Increase* in year 3 of the Reserve Capacity Cycle (as published in the ESOO).
- 4.10.1(fE) Applications for *Flexible Certified Reserve Capacity* must include details of ramping, operational limits, and expected FCESS capabilities.
- 4.11.1 Flexible CRC can't exceed *Peak Certified Reserve Capacity*, and Non-Scheduled Facilities can't hold Flexible Certified Reserve Capacity.
- 4.12.2 Facilities with *Flexible Capacity Credits* must seek accreditation for any FCESS they are capable of. There is no requirement to offer FCESS.
- 4.13 Reserve Capacity Security is held and surrendered in relation to Peak Capacity only.
- 4.14 Participants can trade Flexible Capacity bilaterally using the same process as for Peak Capacity.
- 4.16.11 The Coordinator must determine the *Benchmark Capacity Providers* (currently underway, and will be discussed with the RCM Review Working Group)

ESR RCOQs

- 4.12.5(c) *Electric Storage Resources (ESR) are eligible for Flexible Capacity Credits, and will have non-zero Reserve Capacity Obligation Quantities (RCOQ) in the **Flexible Electric Storage Resource Obligation Intervals (FESROI)**, which AEMO sets under 4.11.3A(aA). Unlike the **Peak Electric Storage Resource Obligation Intervals (PESROI)**, they are based on the highest Four-Hour Demand Increase, and cannot be changed once set. They may overlap with the PESROI, and only occur outside the Hot Season.*
- 4.12.5(h) Where an ESR is dispatched outside the PESROI, its RCOQ in the PESROI is reduced by the amount of energy used.
- 4.12.5(g) Where an ESR is dispatched for more than its RCOQ, its RCOQ in subsequent intervals is no longer reduced to zero, but rather by the amount of energy used in excess of the RCOQ.

Flexible Supplementary Capacity

4.24.1AA – 4.24.1AD

AEMO can now seek supplementary capacity for Flexible Capacity.

Two time thresholds apply – one for October/November, and the other for April-September.

4.24.3A Peak Eligible Services and Flexible Eligible Services are separately defined.

4.24.13(h) Supplementary Flexible Capacity can only relate to periods outside the Hot Season.

The costs of supplementary Flexible Capacity will be recovered on the basis of *Flexible Individual Reserve Capacity Requirements*.

Funding Reserve Capacity

- 4.28.1A Flexible Capacity costs are separated into Targeted (up to the Flexible Reserve Capacity Requirement) and Shared (above the Flexible Reserve Capacity Requirement) Reserve Capacity Cost. Peak Capacity costs are similarly separated.
- 4.28.4 *Peak Shared Reserve Capacity Cost* now includes an offset for any refunds paid by capacity providers who fail to provide capacity.
- 4.28.4A *Flexible Shared Reserve Capacity Cost* does not include a term for Reserve Capacity Security distributions, as this relates only to Peak Capacity.

Flexible Capacity Settlement

4.29.1(b) The *Flexible Reserve Capacity Price* is calculated using the same shaped curve as the *Peak Reserve Capacity Price*, but is:

Based on the *Flexible Benchmark Reserve Capacity Price* and *Flexible Reserve Capacity Requirement*

Floored at the *Peak Reserve Capacity Price*

Floored at the Transitional Floor for Transitional Facilities

Fixed at the relevant historical Flexible Reserve Capacity Price for Fixed Price Facilities

9.8.6 New calculation for *Flexible Capacity Provider Payment*, where the amount paid is based on the difference between the *Facility Daily Flexible Reserve Capacity Price* and the *Facility Daily Peak Reserve Capacity Price* (i.e. Flexible Capacity payments are incremental to Peak payments).

9.8.7 New calculation for *Flexible Capacity Purchaser Payment*, using the Flexible Targeted and Shared Reserve Capacity Costs from 4.28.

5. Capability Classes Rules

Capability Classes

The two Availability Classes are replaced by three Capability Classes:

Capability Class 1: The Capability Class assigned by AEMO under clause 4.11.4(a) to a Facility or Separately Certified Component of a Facility, that:

- (a) is registered as, or is expected to be registered as, either a Scheduled Facility or a Demand Side Programme; and*
- (b) allowing for Outages, is reasonably expected to be available for Injection in all Trading Intervals in a Capacity Year.*

Capability Class 2: The Capability Class assigned by AEMO under clause 4.11.4(b) to a Facility, or Separately Certified Component of a Facility, that:

- (a) is registered as, or is expected to be registered as, either a Scheduled Facility or a Demand Side Programme; and*
- (b) has energy or availability limitations such that it is not expected to be available to be dispatched for all Trading Intervals in a Capacity Year.*

Capability Class 3: The Capability Class assigned by AEMO under clause 4.11.4(c) to a Facility, or Separately Certified Component of a Facility, that is registered as, or is expected to be registered, as a Semi-Scheduled Facility or a Non-Scheduled Facility.

Key Capability Class Rules

4.5.12 AEMO must determine:

the *Availability Duration Gap Load Scenario*, which is the 10% POE peak load scenario, with existing capability Class 2 capacity dispatched to shave the peak.

the *Availability Duration Gap*, which is non-zero if demand outside the Peak Electric Storage Resource Obligation Intervals is higher than demand inside the Peak Electric Storage Resource Obligation Intervals

This sets the *ESR Duration Requirement* for year 3 of the RC Cycle.

4.7.3 AEMO must publish an indication of the Availability Duration Gap Load Scenario in the Reserve Capacity Information Pack.

4.11.1 Capability Class 1 Facilities are no longer assessed for their expected availability in Peak Trading Intervals (8am to 10pm), but instead in Capability Class 1 Availability Assessment Intervals. This removes the mid-day trough from the period under consideration.

4.11.2B. Certified Reserve Capacity for Capability Class 2 Facilities is derated from their nameplate capability based on the Capability Class 1 Availability Assessment Duration of 14 hours.

4.11B Where the ESR Duration Requirement increases, existing Electric Storage Resources get an *ESR CRC Uplift Quantity*, which translates into a Capacity Credit uplift for the facility as a whole. The uplift is limited to 5 years.

Appendix 3 Amended to remove calculation of separate capacity shortfall for each Availability Class

6. Peak IRCR Rules

Key Peak IRCR Rules

Existing meters are assessed for their *Peak Individual Reserve Capacity Requirement* (Peak IRCR) based on their consumption in selected high demand intervals in the previous Hot Season.

New meters are assessed for Peak IRCR based on their highest median consumption in the four highest demand Trading Intervals in any previous month.

Indicative Peak IRCRs are published a week at a time, 10 days ahead of the start of the Trading Week. Actual Peak IRCRs are published with settlement statements.

4.28.5B AEMO must identify the Peak IRCR Intervals starting from the 12 highest demand intervals in the previous hot season.

4.28.11A AEMO must recalculate Peak IRCR in each settlement adjustment.

Appendices 4A, 5 and 5A

The introductory section of Appendix 5 is largely the same as the current rules, but Steps 1 through 11 are replaced with new Steps 1 to 3. The simplification largely relates to no longer distinguishing between Temperature Dependent and Non-Temperature Dependent Loads.

Step 1: Determine the contribution of each meter to the Peak Reserve Capacity Requirement, with different treatment for:

- meters that existed in the previous hot season

- meters that are new since the previous hot season

- the Notional Wholesale meter

- Grandfathered Intermittent Load meters

Step 2: Determine participant contributions as the sum of the contributions of their meters

Step 3: Calculate participant Peak Individual Reserve Capacity Requirement as its contribution divided by total participant contributions, multiplied by the Peak Reserve Capacity Requirement

Appendix 4A is deleted, as special treatment of grandfathered Intermittent Loads is covered by Step 1(d).

Appendix 5A is deleted, as meters are no longer assessed as Non-Temperature Dependent Loads.

7. Flexible IRCR Rules

Key Flexible IRCR Rules

Existing meters are assessed for *Flexible Individual Reserve Capacity Requirements* (Flexible IRCR) based on the highest ramp days in the previous Capacity Year. These Flexible IRCR intervals are published shortly after the end of the Capacity Year.

New meters are assessed for Flexible IRCR based on the *3 High-Ramp Trading Days* in a month, published in line with the equivalent Peak IRCR.

Indicative Flexible IRCRs are published with the Indicative Peak IRCRs. Actual Flexible IRCRs are published with settlement statements.

4.28.5C AEMO must identify the Flexible IRCR Intervals based on the three days in the previous Capacity Year with the highest *Four-Hour Demand Increase*.

4.28.11B AEMO must recalculate Flexible IRCR in each settlement adjustment.

Appendix 4

New Appendix 4 sets out the Flexible Individual Reserve Capacity Requirement method:

Step 1: Determine the contribution of each meter to the Flexible Reserve Capacity Requirement.

This is the meter's contribution to the ramp during the highest ramp periods in the previous Capacity Year

Step 2: Determine participant contributions as the sum of the contributions of their meters

Step 3: Calculate participant Flexible Individual Reserve Capacity Requirement as its contribution divided by total participant contributions, multiplied by the Flexible Reserve Capacity Requirement.

Flexible IRCR Method – Recap for Existing Loads

1. For each Trading Interval in the previous Capacity Year, find the difference between the operational load at the end of the Trading Interval and the load at the end of the Trading Interval four hours prior.
2. Select the three Trading Days with the highest four-hour ramp value calculated under step 1.
3. For each Trading Day selected under step 2:
 - a. select the Trading Interval with the largest value calculated under step 1; and
 - b. select all Trading Intervals in the previous four hours.
4. For each participant load portfolio:
 - a. calculate the portfolio ramp contribution for each Trading Interval selected in step 3, as the difference between consumption at the start of that trading interval and consumption at the end of the latest selected trading interval;
 - b. Calculate the portfolio ramp contribution for each Trading Day selected in step 2 as the maximum portfolio ramp contribution identified under step 4a for Trading Intervals in that Trading Day.
 - c. calculate the portfolio annual ramp contribution as the mean of the portfolio ramp contributions determined in step 4b.
5. Calculate scaling factor R as the Reserve Capacity Requirement for flexible capacity divided by the sum of all portfolio annual ramp contributions.
6. For each participant load portfolio, set the Flexible Individual Reserve Capacity Requirement as the portfolio annual ramp contribution multiplied by the scaling factor.

8. General Business

9. Next Steps

Next Steps

- Next session on draft Amending Rules: 4 September:
 - Optional Expressions of Interest
 - Testing, outages, and refunds
 - DSP certification
 - New Relevant Level Method
- Questions or feedback can be emailed to energymarkets@energy.wa.gov.au

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