AEMO
AUSTRALIAN ENERGY MARKET OPERATOR

Request for Expressions of Interest for the 2020 Reserve Capacity Cycle

January 2020

Important notice

PURPOSE

The Australian Energy Market Operator (AEMO) has prepared this document to invite proponents to provide Expressions of Interest (EOIs) for the provision of new generation and/or Demand Side Management (DSM) capacity into the Wholesale Electricity Market (WEM) in Western Australia, as at the date of publication.

DISCLAIMER

This document or the information in it may be subsequently updated or amended. This document does not constitute legal or business advice and should not be relied on as a substitute for obtaining detailed advice about the Wholesale Electricity Market, the Wholesale Electricity Market Rules and the Reserve Capacity Mechanism in Western Australia, or any other applicable laws, procedures or policies. AEMO has made every effort to ensure the quality of the information in this document but cannot guarantee its accuracy or completeness.

Accordingly, to the maximum extent permitted by law, AEMO and its officers, employees and consultants involved in the preparation of this document:

- make no representation or warranty, express or implied, as to the currency, accuracy, reliability or completeness of the information in this document; and
- are not liable (whether by reason of negligence or otherwise) for any statements or representations in this document, or any omissions from it, or for any use or reliance on the information in it.

VERSION CONTROL

Version	Release date	Changes
#1	31/01/2020	

Executive summary

This *Request for Expressions of Interest* (REOI) invites proponents to provide information to Australian Energy Market Operator (AEMO) regarding new generation and/or Demand Side Management capacity that will be available for commercial service in the South West interconnected system (SWIS) for the 2022–23 Capacity Year[1].

Expressions of Interest (EOIs) with supporting documentation are due to be submitted to the AEMO by 5:00 PM on 1 May 2020.

The main purpose of this REOI is to inform prospective investors about the Reserve Capacity Mechanism (RCM) and allow proponents to provide information to AEMO regarding projects under consideration for the 2020 Reserve Capacity Cycle for the 2022–23 Capacity Year. Submitting an EOI ensures the proponent receives all information and updates relating to the RCM process.

In addition to submitting an EOI, proponents are encouraged to engage with AEMO to understand the various aspects of the Reserve Capacity Cycle, and to commence processes required to secure all necessary approvals. AEMO encourages engagement regarding network access requirements, which are critical to the assignment of Certified Reserve Capacity.

The RCM ensures sufficient capacity is available to meet future peak demand, plus a reserve margin. An important part of this process is to forecast peak demand for the relevant Capacity Year. For the 2022–23 Capacity Year, the total capacity required to meet the forecast peak demand, plus a reserve margin, is determined through the Long-Term Projected Assessment of System Adequacy. This is expected to be published in the upcoming Wholesale Electricity Market Electricity Statement of Opportunities (ESOO) in June 2020.

Capacity Credit assignments for the 2022–23 Capacity Year are expected to be finalised in August 2020[2]. The latest information on the capacity available in the SWIS is from the Capacity Credit assignment for the 2019 Reserve Capacity Cycle (for the 2021–22 Capacity Year). Information about the three previous Reserve Capacity Cycles for the 2019-20, 2020-21, 2021-22 Capacity Years are included in this report as required under clause 4.3.1(c) of the Wholesale Electricity Market Rules (WEM Rules)[3].

The preliminary Reserve Capacity Requirement (RCR) for the 2022–23 Capacity Year is 4,481 MW[4]. Based on the 2019 WEM ESOO forecasts, it is estimated that there will be 444 megawatts (MW) of excess capacity for the 2022–23 Capacity Year. This assumes the level of Capacity Credits assigned for the 2021–22 Capacity Year remains unchanged at 4,925 MW[5]. Following the retirement of Muja G5 (195 MW) from 1 October 2022, approximately 4,730[6] MW of capacity is expected to be in service for the 2022-23 Capacity Year.

[1] The 2022–23 Capacity Year is for capacity available on Trading Days from 1 October 2022 to 1 October 2023.

[2] Unless an auction is required, in which case it will be finalised in September 2020.

[3] Economic Regulation Authority (WA) 2019. *Wholesale Electricity Market Rules – 11 January 2019 (WA)*, Available at https://www.erawa.com.au/rule-change-panel/wholesale-electricity-market-rules

[4] Key references for data in this document can be found under the "References, measures and abbreviations" section.

[5] Assignment of Capacity Credits since market start is available at: https://www.aemo.com.au/Electricity/Wholesale-Electricity-Market-WEM/Reserve-capacity-mechanism/Assignment-of-capacity-credits.

[6] This includes 4645 MW of generation capacity and 85 MW of DSM capacity.

It is expected that 36 MW of new scheduled generation capacity (33 MW of Capacity Credits) will enter the SWIS for the 2021–22 Capacity Year.

According to the 2019 WEM ESOO forecast, energy consumption in the SWIS is expected to fall at approximately 0.4% per annum between 2019–20 and 2028–29, while peak electricity demand is forecast to grow around 0.4% per annum under the 10% Probability of Exceedance (POE)[7] scenario, in accordance with clause 4.5.9 of the WEM Rules, for the same period.

AEMO will update the demand forecasts and publish the RCR for the 2022–23 Capacity Year in the 2020 WEM ESOO.

For information on any aspect of the RCM, proponents are encouraged to contact Reserve Capacity (WA) at wa.capacity@aemo.com.au.

Energy Transformation Strategy

The Energy Transformation Strategy (ETS) was launched by the WA Minister for Energy in March 2019 to deliver the[8]:

- Whole of System Plan.
- Distributed Energy Resources Roadmap.
- Delivering the future power system, including:
  - Power system security and reliability.
  - Future market operations.

As part of the future market operations workstream, the ETS is progressing changes to the RCM to incorporate constraint information when assigning Capacity Credits. Further information about these changes can be found on Energy Policy WA's website[9].

In October 2019, Energy Policy WA published proposed amendments to the WEM Rules to implement changes to Reserve Capacity Pricing, which will impact the 2019 Reserve Capacity Cycle and future cycles. The final recommendations report and proposed Amending Rules can be found on Energy Policy WA's website[10].

[7] POE means the likelihood a peak demand forecast will be met or exceeded. A 10% POE peak demand forecast is expected to be exceeded, on average, only one in 10 year. A 10% POE forecast assumes more extreme weather.

[8] For more information about each of the workstreams, see https://www.wa.gov.au/organisation/energy-policy-wa/energy-transformation-strategy.

[9] At https://www.wa.gov.au/sites/default/files/2019-10/Allocation%20of%20Capacity%20Credits%20in%20a%20constrained%20network%20-%20Design%20Proposal.pdf.

[10] At https://www.wa.gov.au/government/document-collections/improving-reserve-capacity-pricing-signals.

Contents

Tables

Figures

1. Introduction

This *Request for Expressions of Interest* (REOI) relates to the Wholesale Electricity Market (WEM), which operates in the South West interconnected system (SWIS). The SWIS covers the south-west of Western Australia (WA), extending north to Kalbarri, south to Albany, and east to Kalgoorlie as represented in Figure 1.

Figure 1 Map of the SWIS

1.1 Reserve Capacity Mechanism

The SWIS is an isolated system with a high summer peak demand relative to the average load. To ensure sufficient generation and Demand Side Management (DSM) capacity is available to meet future peak demand in the SWIS, the WEM features a capacity market called the Reserve Capacity Mechanism (RCM).

The RCM is built around the concept of a 'Capacity Credit', a notional unit of capacity that can be traded via bilateral contracts among Market Participants, and between Market Participants and the Australian Energy Market Operator (AEMO). Capacity Credits are assigned to individual generation and DSM Facilities, and are valid for a single Capacity Year[11]. All types of generation and DSM capacity that can meet the timelines and requirements outlined in the Wholesale Electricity Market Rules (WEM Rules)[12] may participate in the RCM.

Obligations are imposed on Capacity Credit holders in return for receiving payments for Capacity Credits. The most significant obligation is that capacity must be offered into the SWIS at all times unless the Facility is subject to an approved Planned Outage. If capacity is not offered into the SWIS, such as during a Forced Outage, the Capacity Credit holder is required to pay Reserve Capacity refunds to the market.

Market Customers must purchase Capacity Credits based on their consumption at system peak times in the previous year, through the Individual Reserve Capacity Requirement (IRCR). Market Customers can either purchase Capacity Credits through bilateral contracts with capacity providers or through AEMO at the administered Reserve Capacity Price (RCP).

[11] A Capacity Year is defined in Chapter 11 (Glossary) of the WEM Rules as a period of 12 months commencing at the start of the Trading Day, which commences on 1 October and ending at the end of the Trading Day ending on 1 October of the following calendar year.

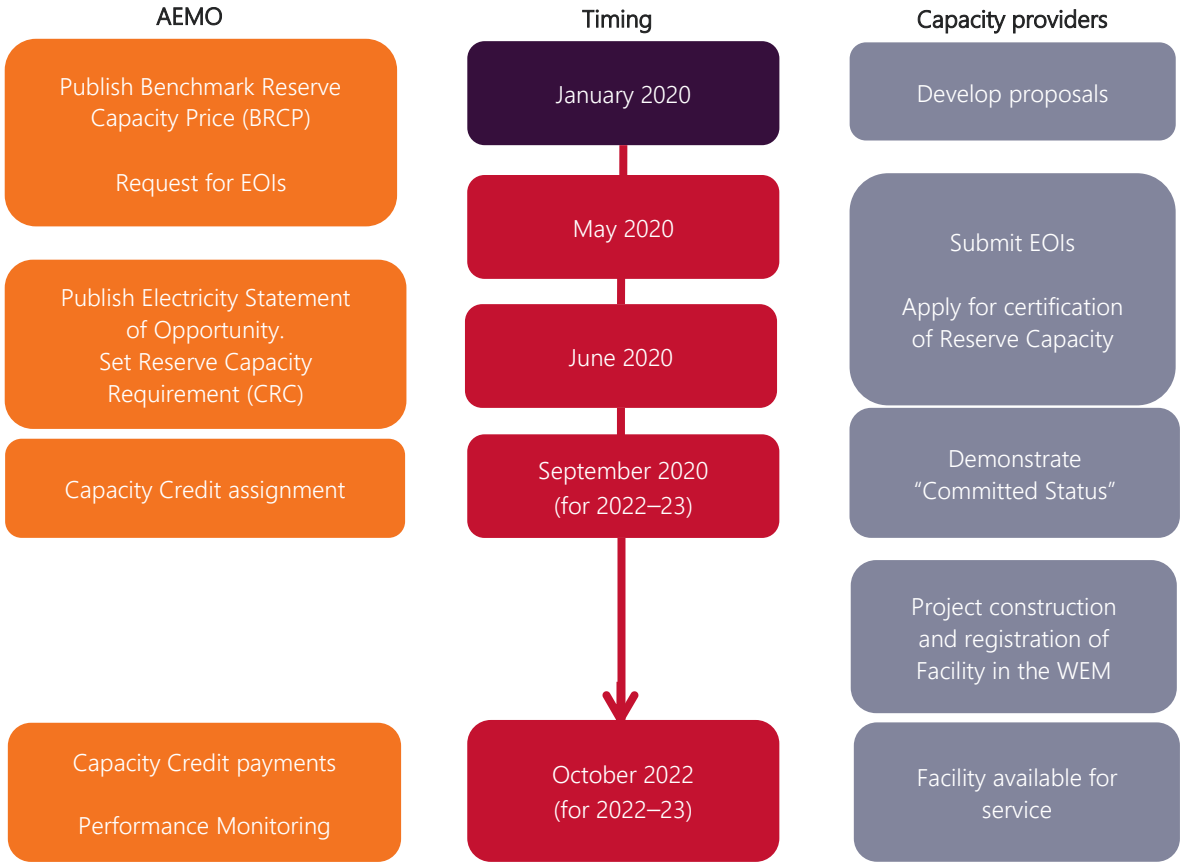
[12] Available at https://www.erawa.com.au/rule-change-panel/wholesale-electricity-market-rules.

If the level of capacity offered through bilateral trades, or settled via AEMO, is insufficient to meet the Reserve Capacity Requirement (RCR) for a Reserve Capacity Cycle, AEMO may conduct a Reserve Capacity Auction to procure additional capacity.

Each year, AEMO forecasts the Reserve Capacity Target (RCT)[13] required to meet forecast peak demand, while ensuring system reliability criteria are met for the following 10 years. This RCT is calculated as the peak demand forecast of 'one-in-10-year' conditions[14], plus a margin to cover any unplanned Facility outages and provide frequency stability.

A summary timeline for the process of the 2020 Reserve Capacity Cycle is shown in Figure 2.

Figure 2 Timeline for bringing new capacity to the SWIS for the 2022–23 Capacity Year



Assuming there are no deferrals, the RCR for the 2020 Reserve Capacity Cycle will be published in the 2020 Wholesale Electricity Market Electricity Statement of Opportunities (ESOO) by 17 June 2020.

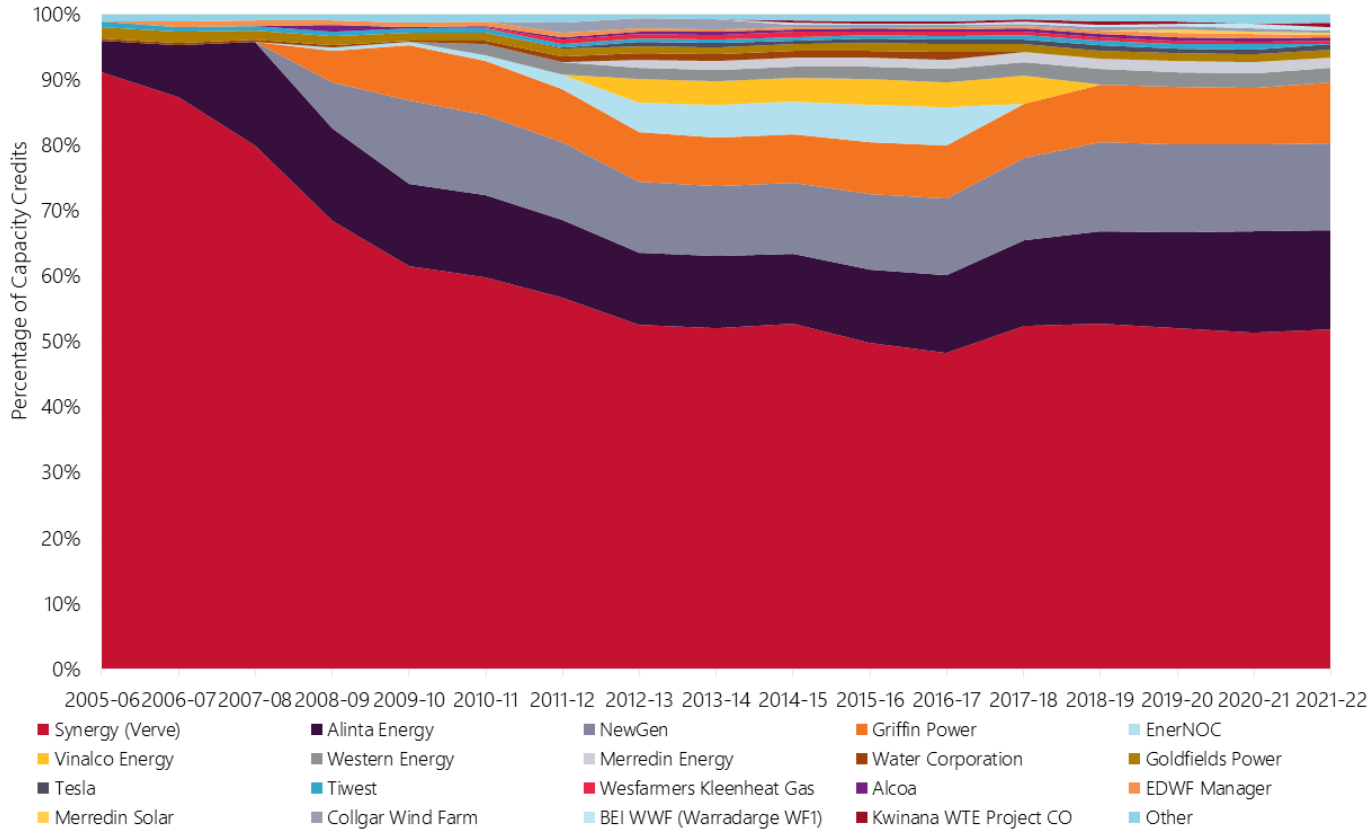
[13] AEMO's estimate of the total level of generation or DSM capacity required in the SWIS to satisfy the Planning Criterion.

[14] One-in-ten-year demand conditions are a common benchmark in electricity markets when considering reserve margin levels, including major US electricity markets including Pennsylvania, Jersey, Maryland (PJM) (regional transmission organisation for at least 13 states), New York Independent System Operator, and New England Independent System Operator.

1.2 Existing generation and DSM capacity

The number of Market Participants participating in the WEM has increased more than three-fold since the commencement of the WEM in 2006[15]. The proportion of capacity of the total SWIS capacity provided by Synergy[16] has fallen from 91% in 2005–06 to 52% in 2021–22, as shown in Figure 3. With the exception of Synergy (+1%), Capacity Credits have been maintained at similar levels in the 2021–22 Capacity Year compared to the 2020–21 Capacity Year for Market Participants.

Figure 3 Proportion of Capacity Credits by Market Participant, 2005–06 to 2019–20 Capacity Years



Source: *Capacity Credits since market start up to 2021–22.* Available at https://www.aemo.com.au/Electricity/Wholesale-Electricity-Market-WEM/Reserve-capacity-mechanism/Assignment-of-capacity-credits.

1.3 Future electricity demand and supply-demand balance

The historically assigned Capacity Credits and the forecast RCT are shown in Figure 4. Excess capacity increased from 4.9% for the 2019-20 Capacity Year to 8.4% for the 2020-21 Capacity year. This is largely due to new large-scale renewable generation, with an estimated nameplate capacity of 400 MW, that was assigned Capacity Credits for the 2020-21 Capacity Year.

For the 2021-22 Capacity Year, excess capacity increased to 443 MW (9.9% of the RCR), which is partly due to 33[17] MW of new scheduled generation capacity entering the market.

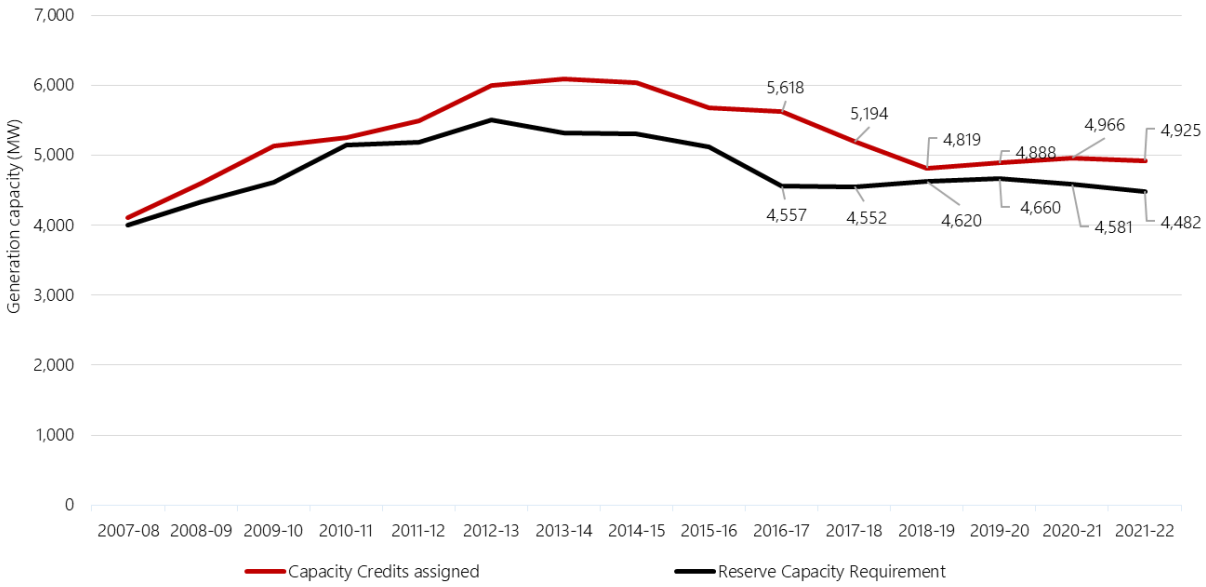
[15] For Capacity Credits by fuel type since market start, see *2018 Request for EOI* at: http://aemo.com.au/-/media/Files/Electricity/WEM/Reserve_Capacity_Mechanism/EOI/2018/2018-Request-for-Expressions-of-Interest.pdf.

[16] This includes the generation capacity previously provided by Verve Energy and DSM capacity provided by Synergy. The two entities merged on 1 January 2014.

[17] Rounded to the nearest whole MW of Capacity Credits.

Total capacity in the SWIS is expected to increase over the next year due to additional renewable generation connecting to the SWIS.

Figure 4 Assigned Capacity Credits[18] and the RCR[19], Capacity Year 2007-08 to 2021-22



Source: AEMO

The RCR decreased between the 2020-21 and 2021-22 Capacity Years as shown in Figure 4. The decrease can be attributed to a lower 10% probability of exceedance (POE) peak demand forecast in the 2019 WEM ESOO as a result of:

- Continued rapid uptake of behind the meter photovoltaic (PV).
- Increased customer IRCR response.
- Variation in weather patterns.
- Potential uptake of battery storage.
- Ongoing energy efficiency improvements.

The preliminary estimated RCR for the 2022–23 Capacity Year is 4,481 MW, as reported in the 2019 WEM ESOO.

Following the retirement of Muja G5 (195 MW) from 1 October 2022, approximately 4,730 MW of capacity is expected to be in service for the 2022-23 Capacity Year. This includes 4,645 MW[20] of generation capacity and 85 MW of DSM capacity.

Assuming there are no changes to the current level of installed and committed capacity, based on forecast demand, excess capacity is forecast to increase to 444 MW[21] for the 2022-23 Capacity Year (9.9% of the RCR) which indicates no capacity is expected to be required from new Facilities.

This is almost the same as an estimated 443 MW, for the 2021-22 Capacity Year[22]. However, the level of excess capacity is likely to differ from the preliminary value, due to changes in forecast electricity demand, new generation and DSM capacity being considered, or unannounced retirement of Facilities.

[18] Included in accordance with clause 4.3.1(c)(iv) of the WEM Rules.

[19] Included in accordance with clause 4.3.1(c)(i) of the WEM Rules.

[20] Expected to be traded bilaterally in accordance with clause 4.3.1 (d) of the WEM Rules

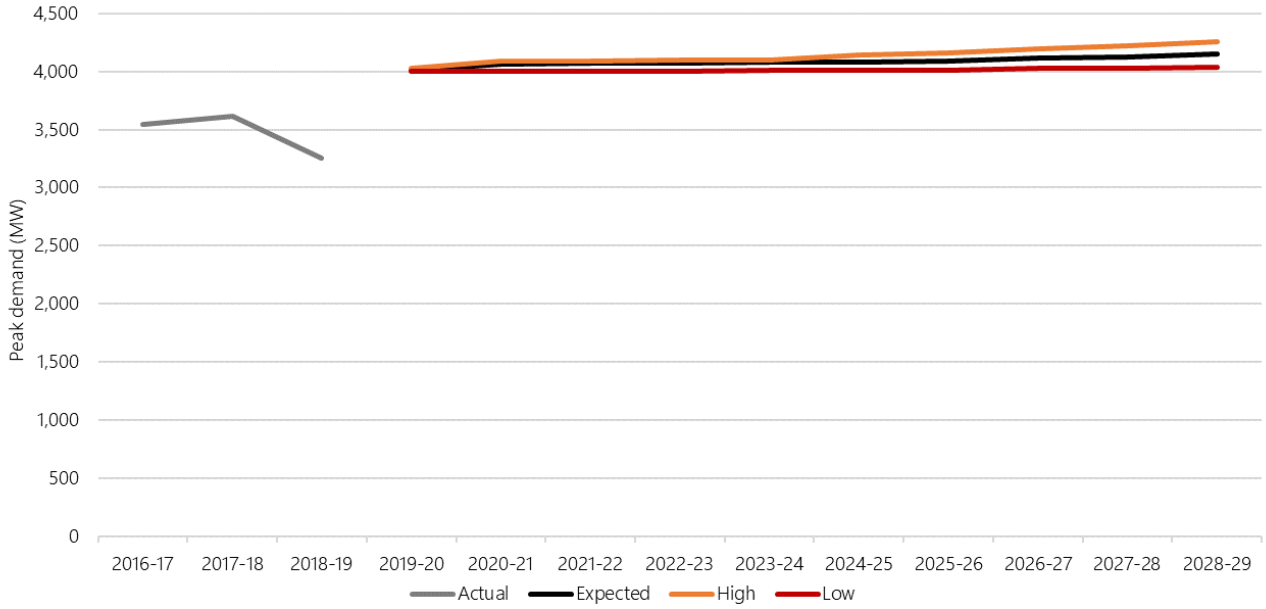
[21] In accordance with clause 4.3.1 (e) of WEM rules.

[22] Assuming that the level of Capacity Credits assigned for the 2020-21 Capacity Year remains the same.

Both the historical and the 10% POE forecast peak demand for different demand growth scenarios are shown in Figure 5. The low, expected and high scenarios reflect different economic growth forecasts, as well as changes in rooftop PV and battery storage assumptions.

The 2019 WEM ESOO forecast that the 10% POE peak demand in the expected demand growth scenario will increase at an average annual rate of 0.4%, growing from 4,007 MW in 2019–20 to 4,152 MW in 2028–29. This is slightly lower than the 0.6% growth rate projected in the 2018 WEM ESOO. For 2022-23, the peak demand forecast is 4,074 MW[23].

Figure 5 Historical and forecast peak demand, 10% POE, under different demand growth scenarios



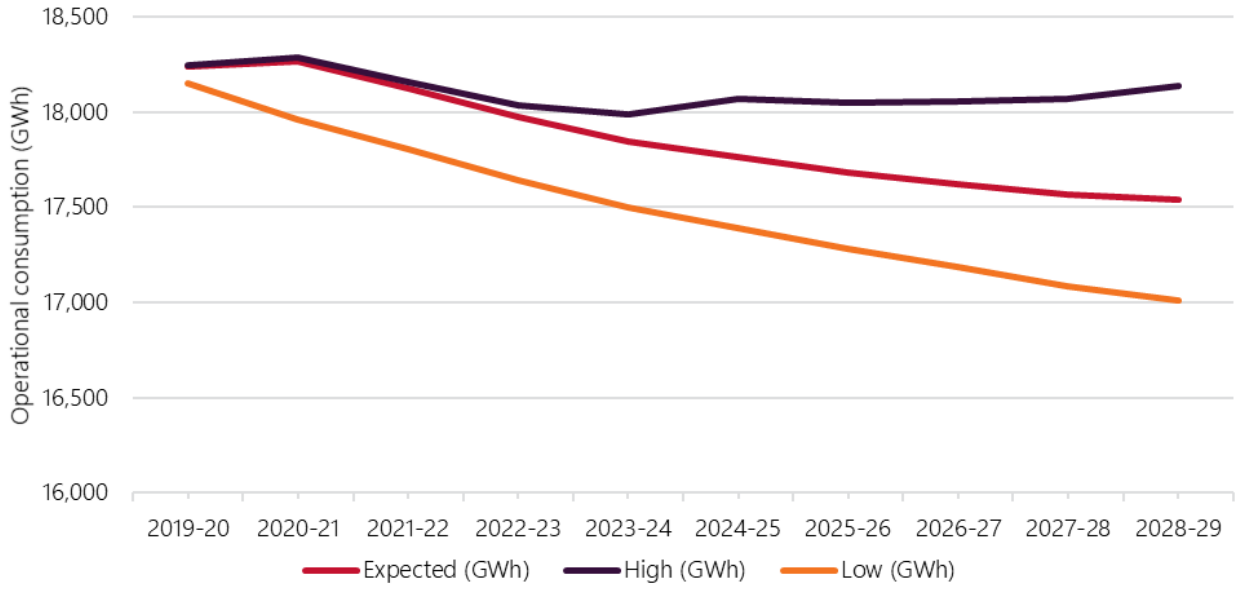
Source: 2019 *WEM ESOO*.

The operational consumption forecasts under different demand growth scenarios are presented in Figure 6. The 2019 WEM ESOO forecasts suggest that:

- Annual operational consumption in the expected demand growth scenario will decrease at an average rate of 0.4% per annum for the 2019–20 to 2028–29 period.
- Energy output supplied by the SWIS grid in the expected demand scenario will decrease by 3.8% over the forecast period, from 18,241 gigawatt hours (GWh) in the 2019–20 Capacity Year to 17,543 GWh in the 2028–29 Capacity Year. The energy output is forecast to be 17,978 GWh in the 2022-23 Capacity Year.

[23] See 2019 WEM ESOO data register available at https://www.aemo.com.au/energy-systems/electricity/wholesale-electricity-market-wem/wem-forecasting-and-planning/wem-electricity-statement-of-opportunities-wem-esoo .

Figure 6 Operational consumption[24] forecasts under different demand growth scenarios



Source: 2019 *WEM ESOO*.

Proposed new projects data and information received through this REOI process will be used to estimate the future supply-demand balance in the 2020 WEM ESOO.

1.4 Capacity Credit payment and expected DSM dispatch quantity

Proponents should note that RCP arrangements are currently under review as part of the State Government's Energy Transformation Strategy. Further information on proposed changes to the RCP can be found on Energy Policy WA's website[25]. Table 1 outlines the Benchmark Reserve Capacity Prices (BRCP) for the 2018-19 to 2022-23 Capacity Years.

Table 1 Reserve Capacity Auction Requirement[26], BRCPs[27], Reserve Capacity Price[28], and Monthly Reserve Capacity Price[29] in the WEM

Applicable Capacity Year	Reserve Capacity Auction Requirement	BRCP ($/MW/year)	RCP ($/MW/year)	Monthly Reserve Capacity Price ($/MW/month)
2018-19	No Auction	$159,800	$138,760.39	$11,563.37
2019-20	No Auction	$149,800	$126,683.47	$10,556.96
2020-21	No Auction	$153,600	$114,134.15	$9,511.18
2021-22	No Auction	$154,200	To be determined	To be determined
2022-23	Not applicable	$141,900	To be determined	To be determined

The Expected DSM Dispatch Quantity and the DSM Activation Price for the 2020 Reserve Capacity Cycle will be published in the 2020 ESOO, as required by clause 4.5.13(h) and 4.5.13(k) of the WEM Rules. The DSM RCP for the 2021-22 Capacity Year will be published in the 2021 ESOO.

[24] Operational consumption refers to electricity used over a period of time that is supplied by the transmission grid.

[25] At https://www.wa.gov.au/government/document-collections/improving-reserve-capacity-pricing-signals.

[26] Included in accordance with clause 4.3.1(c)(iii) of the WEM Rules

[27] Included in accordance with clauses 4.3.1(c)(v) and 4.3.1(f) of the WEM Rules.

[28] Included in accordance with clause 4.3.1(c)(vi) of the WEM Rules

[29] Included in accordance with clause 4.3.1(c)(vii) of the WEM Rules

The preliminary DSM Activation Price is $33,460/MWh. The preliminary expected DSM Dispatch Quantity is 0.0027, as shown in Table 2.

Table 2 Expected DSM Dispatch Quantity[30], DSM Activation Price[31], and DSM RCP

Reserve Capacity Cycle	Capacity Year	Total Unserved Energy deemed to be avoided by dispatch of Facilities with DSM Capacity Credits (MWh)	Expected DSM Dispatch Quantity (MWh)	DSM Activation Price ($/MWh)	Estimated DSM RCP ($/MW)
2016	2018–19	19.9845	0.2063	33,460	23,631[32]
2017	2019–20	0.9484	0.0144	33,460	17,210
2018	2020-21	0.3584	0.0027	33,460	16,820

Sources: 2017 WEM ESOO, Tables 21 and 25; AEMO. 2018 WEM ESOO, Tables 16 and 19; 2019 WEM ESOO, Tables 17 & 23.

[30] Included in accordance with clause 4.3.1(c)(viii)(A) of the WEM Rules.

[31] Included in accordance with clause 4.3.1(c)(viii)(B) of the WEM Rules.

[32] Rounded to the nearest dollar.

2. Key CRC requirements

AEMO undertakes an annual certification process to confirm that:

- An existing Facility can deliver the capacity (in MW) that the Market Participant has applied for.
- A new Facility (or additional capacity at an existing Facility) that is yet to commence operation will be able to provide capacity to the SWIS by 1 October, at the latest, in the Capacity Year it is due to start operating.

All Market Participants (new and existing) wishing to receive Capacity Credits must apply for certification of their Facility during the application window. The principles applied by AEMO when assessing the level of Certified Reserve Capacity (CRC) to be assigned to a Facility are outlined in clause 4.11.1 of the WEM Rules.

Typically, the level of Capacity Credits assigned to a Facility is equal to the level of CRC assigned by AEMO to a Facility. Capacity Credits are assigned through either the trade declaration process or the Reserve Capacity Auction if one is held.

A Market Participant may submit an application to AEMO for CRC for the 2022–23 Capacity Year between 1 May 2020 and 1 July 2020. To be eligible for CRC, new Facilities must be capable of meeting Reserve Capacity Obligations by no later than 1 October 2022 for the 2022–23 Capacity Year.

Sections 4.9 to 4.11 of the WEM Rules describe the CRC application process and the process for determining the level of CRC to be assigned to Facilities. Information that must be provided for the CRC application process[33] is listed in clause 4.10.1 of the WEM Rules and the Certification of Reserve Capacity Market Procedure[34]. Details of registration as a Rule Participant with AEMO, network access, and environmental approvals are provided in the sections below.

2.1 Participant Registration and Facility creation

A brief summary of the eligibility requirements for Reserve Capacity to be certified under section 4.11 of the WEM Rules are as follows:

- The proponent must be registered as a Market Participant in the WEM. The Market Participant registration process, including the application for Wholesale Electricity Market System (WEMS) access, is outlined in the Rule Participant Registration and De-Registration Market Procedure.[35]
- The Facility must have been created in WEMS. It is important to note that Facility creation is different from Facility registration – Facility creation merely creates a Facility name in WEMS and reflects the Market Participant's intention to register a Facility under the WEM Rules in the future. The Facility creation process is outlined in section 3.11 of the Facility Registration, De-Registration and Transfer Market Procedure. [36]

Market Participant registration and Facility creation must be completed before applying for CRC.

Satisfying these registration conditions, from the lodgement of an application for WEMS access to the creation of a Facility, generally takes between 15 to 30 business days. However, this process can take longer, depending on the completeness of the information provided by the proponent. AEMO encourages project

[33] See *Certification of Reserve Capacity* available at https://www.aemo.com.au/Electricity/Wholesale-Electricity-Market-WEM/Reserve-capacity-mechanism/Certification-of-reserve-capacity.

[34] See *Market Procedure: Certification of Reserve Capacity* available at https://www.aemo.com.au/-/media/Files/Electricity/WEM/Procedures/2017/Certification-of-Reserve-Capacity.pdf.

[35] See https://www.aemo.com.au/Electricity/Wholesale-Electricity-Market-WEM/Procedures.

[36] See *Market Procedure: Facility Registration, De-Registration and Transfer* available at https://www.aemo.com.au/-/media/Files/Electricity/WEM/Procedures/2017/MOMarket-Procedure-Facility-Registration-DeRegistration-and-Transfer--clean--18Apr2017.pdf.

proponents to contact the Market Operations (WA) team at wa.operations@aemo.com.au as early as possible to ensure they can satisfy these requirements prior to submitting a CRC application.

2.2 Network Access

For CRC applications for a Scheduled Generator or a Non-Scheduled Generator, a proponent is required to provide evidence of access to Western Power's network for each Facility.

As required by clause 4.10.1(bA) of the WEM Rules, the documentation must outline the terms and timing of access and details of any constraints, such as runback schemes or Declared Sent Out Capacity (DSOC) arrangements that apply. It must contain information that validates the ability of the network to accommodate the connection of the Facility to the SWIS grid. In general, the network access requirements can be satisfied by providing an unconditional executed electricity transfer access contract, and interconnection works contract.[37]

The timeframe for a proponent to receive network access varies with the type of generation, location, and existing queue of applicants. Network access is a critical pre-condition for CRC. In many cases, access to the network may take longer than the two-year time horizon of the RCM. For this reason, AEMO encourages project proponents to contact Western Power as early as possible to ensure that their project can progress through the RCM process.

2.3 Environmental approvals

Clause 4.10.1(c)(ii) of the WEM Rules requires a CRC application to include evidence with respect to any necessary Environmental Approvals.

As the first step in securing Environmental Approvals, developers of generation Facilities must conduct environmental impact assessments and determine whether referrals to the Environmental Protection Authority (EPA) are required for their projects. The EPA provides information that may help in making this assessment on its website. Proponents are encouraged to read this information and to allow enough time to obtain any necessary Environmental Approvals[38].

[37] See network access requirements at http://aemo.com.au/Electricity/Wholesale-Electricity-Market-WEM/Reserve-capacity-mechanism/Certification-of-reserve-capacity.

[38] See http://www.epa.wa.gov.au.

3. Proposed changes to the RCM

3.1 WA Government's Energy Transformation Strategy

The Energy Transformation Strategy (ETS) was launched by the WA Minister for Energy in March 2019 to deliver the[39]:

- Whole of System Plan.
- Distributed Energy Resources Roadmap.
- Delivering the future power system, including:
  - Power system security and reliability.
  - Future market operations.

As part of the future market operations workstream, the ETS is progressing changes to the RCM to incorporate constraint information when assigning Capacity Credits. Further information about these changes can be found on Energy Policy WA's website[40].

In October 2019, Energy Policy WA published proposed amendments to the WEM Rules to implement changes to Reserve Capacity Pricing, which will affect the 2019 Reserve Capacity Cycle and future cycles. The final recommendations report and proposed WEM Rule amendments can be found on Energy Policy WA's website[41.]

3.2 WEM reviews

The Economic Regulation Authority (ERA) must complete several five-yearly reviews of methods underpinning various processes and calculations in the WEM Rules, including:

- Relevant Level Methodology.
- BRCP.
- Planning Criterion and Peak Demand forecasting.

The RLM review (used to certify capacity for intermittent generators) was completed by the ERA in March 2019[42]. This review concluded that the current methodology does not provide an accurate forecast of the capacity contribution of Non-Scheduled Generators to reliability in the SWIS and a new method is required. The ERA has proposed a new method, to be developed as a Rule Change Proposal specifying the details.

Further information on the proposed five-yearly reviews is expected to be made available on the ERA's website[43].

[39] For more information about each of the workstreams, see https://www.wa.gov.au/organisation/energy-policy-wa/energy-transformation-strategy.

[40] At https://www.wa.gov.au/sites/default/files/2019-10/Allocation%20of%20Capacity%20Credits%20in%20a%20constrained%20network%20-%20Design%20Proposal.pdf.

[41] At https://www.wa.gov.au/government/document-collections/improving-reserve-capacity-pricing-signals.

[42] See https://www.erawa.com.au/cproot/20328/2/Relevant%20level%20method%20review%202018%20-%20Final%20report.pdf

[43] See https://www.erawa.com.au/electricity/wholesale-electricity-market/methodology-reviews.

3.3 Rule Change Proposals

There are multiple Rule Change Proposals currently under development that may affect the RCM, including:

- The Relevant Demand calculation (RC_2019_01).
- Capacity Credit Allocation Methodology for Intermittent Generators (RC_2018_03).
- Reduced frequency of the review of the energy price limits and the Maximum Reserve Capacity Price (RC_2014_05).

Further information about these Rule Change Proposals can be found on the Rule Change Panel's website[44].

[44] See https://www.erawa.com.au/rule-change-panel/market-rule-changes.

4. Proponent requirements

4.1 Submitting an EOI for the 2020 Reserve Capacity Cycle

To submit an Expression of Interest (EOI) for the 2020 Reserve Capacity Cycle, the proponent is required to develop a proposal outline for a specific Facility (generation or DSP) for the 2022-23 Capacity Year.

The proponent's EOI must be submitted by 5:00 PM (Australian Western Standard Time (AWST)) on 1 May 2020, as required by clause 4.1.5 of the WEM Rules.

The EOI submission must include:

- A completed EOI form for each Facility, available in Appendix A of this REOI and in Microsoft Excel format on AEMO's website[45].
- Relevant supporting documentation.

Any queries in relation to this REOI should be addressed by contacting the Reserve Capacity team on (08) 9469 9800 or at wa.capacity@aemo.com.au.

EOI forms must be submitted.

a) Electronically to wa.capacity@aemo.com.au; or

b) Via mail to

Manager, Reserve Capacity (WA)

Australian Energy Market Operator

PO Box 7096

Cloisters Square

PERTH WA 6850, AUSTRALIA.

4.2 Certified Reserve Capacity applications

The current timeline for the 2020 Reserve Capacity Cycle is shown in Table 3.

Applications for CRC for the 2020 Reserve Capacity Cycle may be submitted through WEMS from 1 May 2020 and must be lodged by 5:00 PM (AWST) on 1 July 2020, under clause 4.9.1 of the WEM Rules. A Market Participant applying for CRC must provide all the information specified in clause 4.10.1 of the WEM Rules before the CRC window closes.

An application for a Non-Scheduled Generator that is yet to enter service must include an independent expert report[46] as described in clause 4.10.3 of the WEM Rules.

[45] At: https://aemo.com.au/energy-systems/electricity/wholesale-electricity-market-wem/wa-reserve-capacity-mechanism/expressions-of-interest

[46] See Relevant Level Methodology information. AEMO. *Certification of Reserve Capacity*. Available at https://www.aemo.com.au/Electricity/Wholesale-Electricity-Market-WEM/Reserve-capacity-mechanism/Certification-of-reserve-capacity.

Table 3 2020 Reserve Capacity Cycle timetable[47] for the WEM

Date	Time	Action
Friday 31 January 2020	5:00 pm	AEMO publishes the Request for Expressions of Interest (EOI).
Friday 1 May 2020	9:00 am	Market Participants may apply for Certified Reserve Capacity (CRC).
Friday 1 May 2020	5:00 pm	EOI submissions close.
Friday 15 May 2020	5:00 pm	Announcement of the results of the EOI.
Wednesday 17 June 2020	5:00 pm	AEMO publishes the: • Electricity Statement of Opportunities for the Wholesale Electricity Market. • Reserve Capacity Information Pack.
Wednesday 1 July 2020	5:00 pm	CRC applications close.
Wednesday 19 August 2020	5:00 pm	AEMO advises assignment of CRC.
Wednesday 2 September 2020	5:00 pm	Market Participants who hold Certified Reserve Capacity must notify AEMO as to how their Reserve Capacity will be dealt with as follows[48]: • The total amount of Reserve Capacity the Market Participant intends to make available in a Reserve Capacity Auction, if held for the current Reserve Capacity Cycle; • Advise the total amount of Reserve Capacity they intend will be traded bilaterally; • For Demand Side Management Capacity Credits only, provide RCS for and advise the total amount of Reserve Capacity that they intend to supply to AEMO[49]; and • Provide Reserve Capacity Security (RCS) for and advise the total amount of Reserve Capacity that they have decided will not now be made available to the market.
Thursday 3 September 2020	5:00 pm	AEMO confirms to Market Participants the amount of CRC that can be traded bilaterally.
Friday 4 September 2020	5:00 pm	AEMO: • Publishes CRC for each Facility. • Advises whether the Reserve Capacity Auction is required or cancelled. • Assigns Capacity Credits (if the Reserve Capacity Auction is cancelled). • Determines whether the Reserve Capacity Requirement (RCR) has been met or exceeded with the Capacity Credits for which no RCS was required.
Monday 7 September 2020	9:00 am	• Lodgement of Reserve Capacity Offers opens (if Reserve Capacity Auction is required).
Monday 14 September 2020	5:00 pm	• Market Participants provide RCS for new capacity entered into the Reserve Capacity Auction. • Lodgement of Reserve Capacity Offers closes.
Tuesday 15 September 2020	5:00 pm	AEMO runs the Reserve Capacity Auction (if required) and publishes the results.
Monday 21 September 2020	5:00 pm	Market Participants advise AEMO how many Capacity Credits each Facility will provide and of any Long-Term Special Price Arrangements to be accepted (if the Reserve Capacity Auction is required).
Thursday 24 September 2020	5:00 pm	• Market Participants may apply to AEMO for a recalculation of the amount of RCS required to be held for a Facility (applications may be received after this date/time). • If the Reserve Capacity Auction is required, AEMO: – Assigns Capacity Credits. – Determines whether the RCR has been met or exceeded with the Capacity Credits for which no RCS was required.

[47] In accordance with clause 4.3.1 (i) of the WEM Rules.

[48] Included in accordance with clause 4.3.1(i)(iv) of the WEM Rules.

[49] If relevant at the time of making a trade declaration.

This timetable is intended to confirm dates for Year 1 of the Reserve Capacity Cycle only. Refer to section 4.1 of the Wholesale Electricity Market Rules (WEM Rules) for key events occurring in Years 2, 3, and 4 of this Reserve Capacity Cycle. AEMO may amend certain dates in the Reserve Capacity timetable according to clause 4.1.32 of the WEM Rules.

A1. Expression of Interest form

Important Note: As part of your EOI submission, please provide additional accompanying documentation and relevant information that supports your project, in addition to the completed EOI form.

Proponent	Response	Option
Application date		
Proponent name		
Contact person		
Contact person's position		
Address of company		
Phone		
Email		
Fax		
Registered in WEMS?		Yes
(Please cross the option which applies)		No
Facility	**Response**	
Facility name		
Location of Facility		
Is the Facility:		An intermittent generator.
(Please cross (X) the option which applies)		A non-intermittent generator serving an intermittent load.
		A non-intermittent generator not serving an intermittent load.
		A form of demand side management.
Primary fuel to be used in the Facility		
Quantity of primary fuel expected to be available to the Facility (number of days)		
Back-up fuel to be used by the Facility (if any)		
Quantity of back-up fuel expected to be available to the Facility (if any)		
Hours during a typical week when the Facility will not be available to be dispatched due to staffing restrictions or other factor		
Maximum Reserve Capacity anticipated to be available (MW)		
For non-Intermittent Generators: capacity at 41°C (MW)		
For non-Intermittent Generators serving an Intermittent Load: maximum capacity anticipated to be required to serve Intermittent Load (MW)		
For Intermittent Generators, anticipated Capacity Credit assignment (MW)		
For Demand Side Management, expected hours of availability per year		
Expected earliest date that the Facility will be available to be fully operational		
Offer for network access:		Has been made by Western Power networks. .
(Please cross the option which applies)		Has been applied for and is being processed.
		Has not been applied for.
Environmental approvals:		Have been granted.
(Please cross the option which applies)		Have been applied for and are being processed.
		Have not been applied for.

A2. Results from previous Reserve Capacity Cycles

The following information is presented in accordance with clause 4.3.1(c)(ii) of the WEM Rules. The Availability Curve information for the last three Reserve Capacity Cycles is given in Table 4.

Two Availability Classes are defined in accordance with clause 4.11.4 of the WEM Rules, as follows:

- Availability Class 1 – all generation capacity, and any other capacity that is expected to be available to be dispatched for all Trading Intervals in a Capacity Year, under clause 4.11.4(a) of the WEM Rules.
- Availability Class 2 – other capacity, that is not expected to be available to be dispatched for all Trading Intervals in a Capacity Year, under clause 4.11.4(b) of the WEM Rules.

Table 4 Availability Curve data for the relevant Capacity Years for the last three Reserve Capacity Cycles[50]

Availability Curve Information Clause 4.5.12(b) of the WEM Rules	2019–20 (MW) (2017 WEM ESOO)	2020–21 (MW) (2018 WEM ESOO)	2021-2022 (MW) (2019 WEM ESOO)
Capacity associated with Availability Class 1	3,823	3,946	3,657
Capacity associated with Availability Class 2	837	635	825

The figures presented for each year are for the relevant Reserve Capacity Cycles. The latest Availability Curve data can be found in the 2019 ESOO (p. 58).

[50] Included in accordance with clause 4.3.1(c)(ii) of the WEM Rules.

A3. References, measures and abbreviations

Key references for data in this document

Topic	Source
RCR/RCT	2019 WEM ESOO, p. 56 Available at https://www.aemo.com.au/-/media/Files/Electricity/WEM/Planning_and_Forecasting/ESOO/2019/2019-WEM-ESOO-report.pdf
Capacity Credits assigned	Capacity Credits since market start up to 2021-22. Available at https://www.aemo.com.au/Electricity/Wholesale-Electricity-Market-WEM/Reserve-capacity-mechanism/Assignment-of-capacity-credits
Energy consumption forecasts for the SWIS	2019 WEM ESOO, p. 4
Peak electricity demand forecasts for the SWIS	2019 WEM ESOO, p. 5
Estimated excess capacity	2019 WEM ESOO, p. 49 and p. 61
Total Unserved Energy, expected DSM dispatch quantity, activation price, estimated RCP	2017 WEM ESOO, Tables 21 and 25 and 2018 ESOO, Tables 16 and 19, 2019 WEM ESOO Tables 17 & 23.
Availability Curve data	2017 WEM ESOO, Table 20, p. 58, 2018 WEM ESOO, Table 15, p. 46 and 2019 WEM ESOO, Table 16, p. 58

Units of measure

Abbreviation	Unit of measure
MW	Megawatts
GWh	Gigawatt hours
MWh	Megawatt hours

Abbreviations

Abbreviation	Expanded name
AEMO	Australian Energy Market Operator
BRCP	Benchmark Reserve Capacity Price
CRC	Certified Reserve Capacity
DSM	Demand Side Management
DSP	Demand Side Programme
EOI	Expressions of Interest
EPA	Environmental Protection Authority
ERA	Economic Regulation Authority
ESOO	Electricity Statement of Opportunities

EPWA	Energy Policy WA
NSGs	Non-Scheduled Generators
IRCR	Individual Reserve Capacity Requirement
POE	Probability of Exceedance
PV	Photovoltaics
RCM	Reserve Capacity Mechanism
RCP	Reserve Capacity Price
RCR	Reserve Capacity Requirement
REOI	Request for Expressions of Interest
RCT	Reserve Capacity Target
RCS	Reserve Capacity Security
SWIS	South West interconnected system
WA	Western Australia
WEM	Wholesale Electricity Market
WEMS	Wholesale Electricity Market System