



Scope of Work for the WEM Investment Certainty Review

1. Introduction

The Coordinator of Energy (Coordinator) is conducting the Wholesale Electricity Market (WEM) Investment Certainty (WIC) Review under clause 2.2D.1 of the WEM Rules. Clause 2.2D.1(h) confers the function on the Coordinator to consider and, in consultation with the Market Advisory Committee (MAC), progress the evolution and development of the WEM and the WEM Rules.

The WIC Review aims to ensure that the WEM will provide incentives for sufficient new renewable capacity, while maintaining system security and reliability and without unduly increasing the cost to consumers. The WIC Review will address issues that were recognised in the Reserve Capacity Mechanism Review and will consider the following five specific reforms that were announced by the Minister for Energy on 9 May 2023:

- (1) reviewing the Reserve Capacity Price (RCP) curve to determine if it needs to be adjusted to send sharper signals for investment when demand for new capacity is stronger;
- (2) a 10-year RCP guarantee for new technologies, such as long-duration storage;
- (3) a wholesale energy price guarantee for renewable generators, to top up their energy revenues as WEM prices start to decline, in return for them firming up their capacity;
- (4) emission thresholds for existing and new high emission technologies in the WEM; and
- (5) a 10-year exemption from the emission thresholds for existing flexible gas plants that qualify to provide the new flexibility service.

The Coordinator is conducting the WIC Review in 2023 and 2024 and intends to develop changes to the WEM Rules and submit these for approval by the Minister in 2024.

2. Background

2.1 Energy Market Transformation

Electricity markets around the world are undergoing a major transition in the move to a net zero emissions energy sector. The South West Interconnected System (SWIS) continues to experience a significant uptake of distributed photovoltaic and large scale wind generation.

As indicated in the SWIS Demand Assessment that was released by the Minister for Energy on 9 May 2023,¹ a number of factors are likely to influence demand growth in the SWIS in the coming decade, such as the electrification of major industrial processes.

At the same time, the electricity supply mix in the SWIS is rapidly changing with:

- the forthcoming exit of baseload fossil fuelled generators (coal), followed by the progressive exit of the rest of the fossil fuelled facilities (gas and diesel);
- the current and continued entry of renewable intermittent generation (wind and solar); and

¹ [SWIS Demand Assessment 2023 to 2042 \(www.wa.gov.au\)](http://www.wa.gov.au).

- the uptake of electric storage resources (ESR).

Significant network, renewable generation and ESR investment will be required in the SWIS over the next decade to continue to deliver on the energy trilemma of reliable, affordable and environmentally responsible electricity supply.

The Coordinator has commenced a number of electricity market reviews since the start of 2022 to address issues associated with this electricity transformation, including:

- the Reserve Capacity Mechanism (RCM) Review;²
- the Cost Allocation Review;³
- the Market Power Mitigation Strategy review;⁴
- the Supplementary Reserve Capacity (SRC) Review;⁵ and
- the Demand Side Response (DSR) Review.⁶

These reviews address a number of issues associated with the transformation of the SWIS, but have also highlighted the need for further WEM reforms to incentivise investment in new renewable energy facilities and to help the Government achieve its decarbonisation targets, while maintaining system security and reliability without unduly increasing costs to consumers.

2.2 Investment Certainty

Concerns have been raised about the ability of the WEM to deliver price signals that drive efficient investment in renewable generation capacity because of an increased risk that sufficient revenue will not be available to make the investments viable due to:

- the potential decrease in energy market prices when renewable generators with low operating costs set the market price more frequently in the future; and
- the lack of a mechanism to price the market externality associated with greenhouse gas emissions.

EPWA conducted some preliminary economic modelling as part of the RCM Review to forecast the financial viability of new intermittent renewable generation and ESR developments.⁷ While this modelling was based on conservative assumptions, it indicated the following:

² Information on the RCM Review is available at [Reserve Capacity Mechanism Review \(www.wa.gov.au\)](http://www.wa.gov.au). The MAC established a RCM Review Working Group (RCMRWG) to assist with this review. Information on the CARWG is available at [Reserve Capacity Mechanism Review Working Group \(www.wa.gov.au\)](http://www.wa.gov.au).

³ Information on the Cost Allocation Review is available at [Cost Allocation Review \(www.wa.gov.au\)](http://www.wa.gov.au). The MAC established a Cost Allocation Review Working Group (CARWG) to assist with this review. Information on the CARWG is available at [Cost Allocation Review Working Group \(www.wa.gov.au\)](http://www.wa.gov.au).

⁴ Information on the Market Power Mitigation Strategy is available at [Market Power Mitigation Strategy \(www.wa.gov.au\)](http://www.wa.gov.au).

⁵ Information on the SRC Review is available at [Supplementary Reserve Capacity Review \(www.wa.gov.au\)](http://www.wa.gov.au).

⁶ Information on the DSR Review is available at [Demand Side Response Review \(www.wa.gov.au\)](http://www.wa.gov.au). The MAC established a Demand Side Response Review Working Group (DSRRWG) to assist with this review. Information on the DSRRWG is available at [Demand Side Response Review Working Group \(www.wa.gov.au\)](http://www.wa.gov.au).

⁷ See section 9 of the *Reserve Capacity Mechanism Review Information Paper (Stage 1) and Consultation Paper (Stage 2)*, which is available at [epwa_reserve_capacity_mechanism_review_information_and_consultation_paper.pdf \(www.wa.gov.au\)](http://www.wa.gov.au).

The economic modelling under the RCM Review was deliberately conservative on the participation of renewables in non-energy services, so the revenue adequacy for renewables would likely improve with more realistic assumptions.

ESR: Revenues from the RCM (both the peak and flexible capacity products), the energy market and Essential System Service (ESS) markets are likely to be sufficient to support entry of ESR for the whole modelling horizon (to 2050).

Wind: Revenues from the RCM (the peak capacity product only), the energy market and Large-Scale Generation Certificates (LGCs) under the Renewable Energy Target (RET) are likely to be sufficient to support entry of new wind Facilities until around 2030.

Building sufficient new wind Facilities to meet the Planning Criterion past 2030 will likely result in decreasing energy prices to the point that total WEM revenues may be insufficient to cover the fixed and capital costs for new wind Facilities.

Solar: Revenues from the RCM (the peak capacity product only), the energy market and LGCs are likely insufficient to support entry of new utility scale solar generators for the whole modelling horizon.

This risk of non-recovery of the full costs could stall investment in new renewable generation capacity at the required scale and in the required timeframe to meet the State decarbonisation targets. The WIC Review will consider initiatives to address these concerns.

2.3 Emissions Reductions

The RET is the current national scheme to incentivise emissions reductions.⁸ At present, the RET is due to cease in 2030, at which point there will be no specific mechanism to incentivise emissions reductions by electricity generators in Western Australia.

The Minister provided a draft *Statement of Policy Principles: Penalties for High Emission Technologies in the Wholesale Electricity Market* (Policy Statement) to the Coordinator in September 2022 and the Coordinator consulted with the MAC on the draft Policy Statement.⁹

Energy Policy WA (EPWA) subsequently commenced its assessment of options to implement this policy, and consulted on this as part of the RCM Review.¹⁰

The MAC accepted that implementing the penalty on high emissions technologies by establishing two emissions thresholds – an emissions rate threshold (tCO₂e/MWh) and an emissions quantity threshold (tCO₂e/MW) – and only providing Capacity Credits to Facilities that are below the thresholds was the preferred option. However, EPWA did not arrive at a final design for this threshold arrangement under the RCM Review.

The WIC Review will consider initiatives to address the Government's policy to move to a net zero emissions energy sector.

3. Project Scope

The Government is delivering on the outcomes of a number of WEM reviews, the most significant of which is the review of the RCM.

⁸ The RET is an Australian Government scheme that is administered by the Clean Energy Regulator and is designed to reduce greenhouse gas emissions from the electricity sector and to encourage the additional renewable generation. Further information is available at [About the Renewable Energy Target \(cleanenergyregulator.gov.au\)](https://www.cleanenergyregulator.gov.au/about-the-renewable-energy-target).

⁹ The draft Policy Statement was tabled for discussion by the MAC on 13 October 2022 ([Out-of-Session Meeting Papers.pdf \(www.wa.gov.au\)](https://www.wa.gov.au/government/consultation/papers/2022-10-13-out-of-session-meeting-papers)) and a revised draft on 13 December 2022 ([MAC 2022 12 13 - Combined Meeting Papers.pdf \(www.wa.gov.au\)](https://www.wa.gov.au/government/consultation/papers/2022-12-13-combined-meeting-papers)).

¹⁰ The MAC and RCMRWG discussed development of a penalty on high emissions technologies, identified six options, and recommended an emissions threshold as the preferred approach. For more information, see the papers for the MAC meetings on 9 August 2022, 13 December 2022, 2 February 2023 and 16 March 2023; and the papers for the RCMRWG meetings on 13 October 2022, 24 November 2022, 2 March 2023 and 22 March 2023.

The RCM Review will result in more incentives for investment in the type of capacity needed by the WEM. The proposed flexibility product, which will top up capacity revenues for flexible capacity, such as storage and flexible gas plant, is an example of the kind of incentives delivered through the RCM Review.

The RCM Review also assessed options to implement penalties for high emissions technologies, and has highlighted a number of issues related to certainty for investment in reserve capacity. While not directly part of the RCM Review, these issues require attention.

As a result, Government is considering a package of specific WEM reform initiatives aimed at enhancing investment certainty for renewable and storage proponents. Better certainty for investors in new flexible energy technologies will help meet emission reduction targets while maintaining reliability in the SWIS. These initiatives were announced by the Minister for Energy on 9 May 2023.

3.1 Initiative 1: Changing the Reserve Capacity Price curve so it sends sharper signals for investment when demand for new capacity is stronger

Objective

The current RCP curve was established in the WEM Rules when there was significant excess of reserve capacity in the WEM. Recent market developments, including fuel supply limitations and increases in forecast demand, have resulted in capacity margins being tighter than the WEM has typically experienced.

While the existing mechanisms in the WEM are designed to address such circumstances, the objective of Initiative 1 is to change the RCP curve so it is steeper if capacity is short but flatter if capacity is oversupplied. This will provide stronger incentives for investment in capacity by increasing the RCP faster when AEMO projects a capacity “shortage”.

Issues

The review of the RCP will consider:

- (1) whether the overall methodology for setting the RCP is appropriate;
- (2) whether the shape of the price curve (i.e. the segments of the price curve) is appropriate;
- (3) whether the parameters for the price curve are appropriate, including:
 - (a) the Price Cap;
 - (b) the Absolute Zero Point;
 - (c) the Economic Zero Point;
- (4) whether the Transitional Arrangements are appropriate (i.e. the price floor and price cap);
- (5) what changes need to be made to the WEM Rules to enable the outcomes of the review of the RCP; and
- (6) any other RCP-related issues identified in the course of the review.

3.2 Initiative 2: A 10-year RCP guarantee for new technologies, such as long-duration storage

Objective

Under the current WEM Rules, proponents of new facilities can request to fix their RCP for five years. The objective of Initiative 2 is to allow proponents of new flexible technologies, such as long-duration storage, to increase the length of the RCP to 10 years, from five.

This will provide longer price certainty for long-duration storage, additional incentive for investment in these technologies, and allow more variable renewable generation to connect without compromising reliability.

Issues

The options for implementing this initiative will examine:

- (1) what “new” technologies should be eligible for a 10-year RCP guarantee; and
- (2) what does “long-duration” storage mean in the application of this initiative and should this change over time.

3.3 Initiative 3: A wholesale energy price guarantee for renewable generators, to top up their energy revenues as WEM prices start to decline, in return for them firming up their capacity

Objective

The RCM Review modelling indicated that the profitability of wind and solar generation may decrease in the later part of the decade, potentially resulting in insufficient WEM revenues for renewable generation past 2030. This is driven by:

- a potential decrease in average wholesale electricity prices (renewable generators have very low variable cost, so WEM energy prices are likely to rapidly decline as fossil fuel plant exits the market); and
- the lack of a mechanism to price the market externality associated with greenhouse gas emissions once the LGC revenues are not available.

The objective of Initiative 3 is to consider the need for a “top-up” of WEM revenues for renewable generators to address the risk that the renewable generators may not recover enough revenue to justify investment due to the potential for declining WEM prices. The intent is to create revenue certainty for renewable generators, while not increasing energy prices.

The top-up of WEM revenues would be available to renewable generators that can demonstrate in the RCM certification that they have firming up their capacity by, for example, contracting with a storage facility.

Issues

The development of options for the application of this initiative is to consider:

- (1) the overall approach to the scheme;
- (2) when should the scheme commence and when should it end;
- (3) under what circumstances should the top-up be provided, including:
 - (a) what should be the trigger for the commencement of the scheme;
 - (b) which types of technologies should be eligible;
- (4) what firming requirements should be put in place;
- (5) how should the top-up be calculated, including determining:
 - (a) when there is a revenue adequacy problem and what is the magnitude of the problem;

- (b) the projected revenues for an eligible Facility, including from:
 - (i) the RCM (both the peak and flexible capacity products);
 - (ii) the energy market;
 - (iii) the ESS markets;
 - (iv) LGCs or any other mechanism(s) to price carbon emissions externalities;
- (6) how should the cost of the top-up be recovered in the WEM;
- (7) how should the scheme be administered;
- (8) what arrangements are required to amend or cease the scheme if another (State and/or Commonwealth) regime is established to price the carbon externality;
- (9) the design of the Amending Rules to implement the scheme and
- (10) any other issues that are identified in the course of developing the scheme.

3.4 Initiative 4: Emission thresholds for existing and new high emission technologies in the WEM

Objective

The objective of Initiative 4 is to introduce emission thresholds into the WEM Rules for both existing and new generators and to only provide Capacity Credits to facilities with emissions below these thresholds. The intent would be to gradually reduce the thresholds for existing facilities.

Signalling the emissions thresholds years in advance will provide increased certainty to AEMO of the ongoing viability of existing thermal generators and when existing generators are likely to no longer be available to contribute to the Reserve Capacity Target. This would also create opportunity for low emission technologies, such as renewable generators, to enter the market once fossil fuel plants lose their Capacity Credits.

Issues

The design of the Emissions Thresholds Scheme is to be based on the work on the penalties on high emissions technologies that was done under the RCM Review and is to include:

- (1) the type(s) of thresholds that are to apply to existing and new Facilities, including consideration of:
 - (a) an emissions rate threshold (tCO₂_e/MWh);
 - (b) an emissions quantity threshold (tCO₂_e/MW);
- (2) the level of the thresholds for existing and new Facilities at the commencement of the scheme;
- (3) the rate of decline for the thresholds over time;
- (4) timing for commencement of the arrangements;
- (5) the design of the Amending Rules to implement the Emissions Thresholds Scheme; and
- (6) any other issues identified in the course of developing the Emissions Thresholds Scheme.

3.5 Initiative 5: Introducing a 10-year exemption from the emission thresholds for existing flexible gas plants that qualify to provide the new flexibility service

Objective

The objective of Initiative 5 is to ensure an orderly transition to a zero carbon emissions system and to maintain system reliability, by providing a 10-year exemption from the emission thresholds for existing flexible gas plant.

This will ensure that the flexible gas plant that is required to maintain reliability does not prematurely exit the market. Together with the penalties regime, this would allow the exit of high emission generators from the RCM, while maintaining the presence of efficient gas generation and reliability in the WEM.

Issues

The design of this initiative is to include:

- (1) the conditions of the exemption and whether it should apply to existing plant only;
- (2) timing for commencement of the arrangements;
- (3) the design of the Amending Rules to implement the Emissions Thresholds Scheme; and
- (4) any other issues identified in the course of developing the Emissions Thresholds Scheme.

4. General Principle

All reforms under the WIC Review must meet the Wholesale Market Objectives, as well as being simple, flexible, sustainable and practical.

The Government is currently undertaking a process to enact a new State Electricity Objective¹¹ that will replace the Wholesale Market Objectives. The general principle will be that all of the above reforms must be consistent with the State Electricity Objective.

5. Out of Scope

The following is Out of Scope for the WIC Review:

- a review of the fundamentals of the WEM established by the Energy Reform Taskforce;
- matters already covered by other market development reviews; and
- recommending direct cash injections or other direct subsidies for new projects.

6. Stakeholder Engagement

EPWA will consult on the WIC Review via:

¹¹ The proposed State Electricity Objective is to:

promote efficient investment in, and efficient operation and use of, electricity services for the long-term interests of consumers of electricity in relation to:

- the quality, safety, security and reliability of supply of electricity; and
- the price of electricity; and
- the environment, including the reduction in greenhouse gas emissions.

Further information on the process to enact the new State Electricity Objective is available at [Project Eagle Energy and Governance Legislation Reform \(www.wa.gov.au\)](http://www.wa.gov.au).

- discussions with the MAC;
- forming a MAC working group – the WEM Investment Certainty Working Group (WICWG) – to discuss:
 - the market modelling approach and assumptions to support the WIC Review;
 - detailed design elements of all five reforms initiatives under the WIC Review;
- publication of a public Consultation Paper and seeking submissions on that paper;
- publication of an Information Paper to advise on the outcomes of the WIC Review; and
- publication of draft Amending Rules to implement the outcomes of the WIC Review and seeking submissions on the draft Amending Rules.

7. Project Schedule

Tasks/Milestones	Timing
(1) Preliminary Steps	
(a) MAC comments on the Scope of Work for the review	8 June 2023
(b) Coordinator approval and publication of the Scope of Work	30 June 2023
(c) MAC approval of the Terms of Reference for the WICWG	20 July 2023
(d) Appointment of consultants	28 July 2023
(e) First meeting of the WICWG	10 August 2023
(2) Initial Assessment	
(a) Initiatives (2), (4) and (5)	August 2023 – November 2023
(b) Initiative (1)	November 2023 – December 2023
(c) Initiative (3)	December 2023 – March 2024
(3) Consultation Paper	
(a) Consult with the MAC on a draft of the Consultation Paper	April 2024
(b) Publish the Consultation Paper	April 2024
(c) Submissions on the Consultation Paper	May 2024
(4) Further Assessment	
(a) All Initiatives	May – June 2024
(5) Information Paper and Draft Amending Rules	
(a) Consult with the MAC on: <ul style="list-style-type: none"> • a draft of the Information Paper • draft WEM Amending Rules 	June 2024
(b) Publish the Information Paper and draft WEM Amending Rules	July 2024

Tasks/Milestones	Timing
(c) Submissions on the draft WEM Amending Rules	August 2024
(6) Finalisation and Commencement	
(a) Ministerial approval of the WEM Amending Rules	September 2024
(b) Commencement	Various