

Meeting Agenda

Meeting Title:	Market Advisory Committee (MAC)
Date:	Thursday 1 May 2025
Time:	1:30 PM – 2:30 PM
Location:	On-line

Item	Item	Responsibility	Type	Duration
1	Welcome and Agenda - Conflicts of interest - Competition Law	Chair	Noting	2 min
2	Meeting Apologies/Attendance	Chair	Noting	1 min
3	Minutes of Meeting 2024_10_17 Approved out of session. Published 19 November 2024	Chair	Noting	1 min
4	Action Items	Chair	Noting	2 min
5	Major Customer Connection Process	Western Power	Discussion	15 min
6	Update on Working Groups			
	(a) AEMO Procedure Change Working Group	AEMO	Noting	5 min
	(b) Essential System Services (ESS) Framework Review Working Group	ESSFRWG Chair	Noting	7 min
	(c) Power System Security and Reliability (PSSR) Standards Review Working Group	PSSRSWG Chair	Noting	5 min
7	Proposal to establish AEMO Major Project Working Group and approval of Terms of Reference	AEMO	Decision	15 min
8	Review of AEMO's Allowable Revenue Framework	EPWA	Noting	4 min
9	Market Development Forward Work Program	Chair/Secretariat	Noting	1 min
10	Overview of Rule Change Proposals	Chair/Secretariat	Noting	1 min
11	General Business	Chair	Discussion	1 min
	Next meeting: 1:30pm Thursday 19 June 2025			

Please note, this meeting will be recorded.

Competition and Consumer Law Obligations

Members of the MAC (**Members**) note their obligations under the *Competition and Consumer Act 2010* (**CCA**).

If a Member has a concern regarding the competition law implications of any issue being discussed at any meeting, please bring the matter to the immediate attention of the Chairperson.

Part IV of the CCA (titled “Restrictive Trade Practices”) contains several prohibitions (rules) targeting anti-competitive conduct. These include:

- (a) **cartel conduct**: cartel conduct is an arrangement or understanding between competitors to fix prices; restrict the supply or acquisition of goods or services by parties to the arrangement; allocate customers or territories; and or rig bids.
- (b) **concerted practices**: a concerted practice can be conceived of as involving cooperation between competitors which has the purpose, effect or likely effect of substantially lessening competition, in particular, sharing Competitively Sensitive Information with competitors such as future pricing intentions and this end:
 - a concerted practice, according to the ACCC, involves a lower threshold between parties than a contract arrangement or understanding; and accordingly; and
 - a forum like the MAC is capable being a place where such cooperation could occur.
- (c) **anti-competitive contracts, arrangements understandings**: any contract, arrangement or understanding which has the purpose, effect or likely effect of substantially lessening competition.
- (d) **anti-competitive conduct (market power)**: any conduct by a company with market power which has the purpose, effect or likely effect of substantially lessening competition.
- (e) **collective boycotts**: where a group of competitors agree not to acquire goods or services from, or not to supply goods or services to, a business with whom the group is negotiating, unless the business accepts the terms and conditions offered by the group.

A contravention of the CCA could result in a significant fine (up to \$500,000 for individuals and more than \$10 million for companies). Cartel conduct may also result in criminal sanctions, including gaol terms for individuals.

Sensitive Information means and includes:

- (a) commercially sensitive information belonging to a Member’s organisation or business (in this document such bodies are referred to as an Industry Stakeholder); and
- (b) information which, if disclosed, would breach an Industry Stakeholder’s obligations of confidence to third parties, be against laws or regulations (including competition laws), would waive legal professional privilege, or cause unreasonable prejudice to the Coordinator of Energy or the State of Western Australia).

Guiding Principle – what not to discuss

In any circumstance in which Industry Stakeholders are or are likely to be in competition with one another a Member must not discuss or exchange with any of the other Members information that is not otherwise in the public domain about commercially sensitive matters, including without limitation the following:

- (a) the rates or prices (including any discounts or rebates) for the goods produced or the services produced by the Industry Stakeholders that are paid by or offered to third parties;
- (b) the confidential details regarding a customer or supplier of an Industry Stakeholder;
- (c) any strategies employed by an Industry Stakeholder to further any business that is or is likely to be in competition with a business of another Industry Stakeholder, (including, without limitation, any strategy related to an Industry Stakeholder’s approach to bilateral contracting or bidding in the energy or ancillary/essential system services markets);
- (d) the prices paid or offered to be paid (including any aspects of a transaction) by an Industry Stakeholder to acquire goods or services from third parties; and
- (e) the confidential particulars of a third party supplier of goods or services to an Industry Stakeholder, including any circumstances in which an Industry Stakeholder has refused to or would refuse to acquire goods or services from a third party supplier or class of third party supplier.

Compliance Procedures for Meetings

If any of the matters listed above is raised for discussion, or information is sought to be exchanged in relation to the matter, the relevant Member must object to the matter being discussed. If, despite the objection, discussion of the relevant matter continues, then the relevant Member should advise the Chairperson and cease participation in the meeting/discussion and the relevant events must be recorded in the minutes for the meeting, including the time at which the relevant Member ceased to participate.

Agenda Item 4: MAC Action Items

Market Advisory Committee (MAC) Meeting 2025_05_01

Shaded	Shaded action items are actions that have been completed since the last MAC meeting. Updates from last MAC meeting provided for information in RED .
Unshaded	Unshaded action items are still being progressed.
Missing	Action items missing in sequence have been completed from previous meetings and subsequently removed from log.

Item	Action	Responsibility	Meeting Arising	Status
11/2024	EPWA to include the Terms of Reference (TOR) for the Procedure Content Assessment Working Group (PCAWG) as an agenda item	EPWA	2024_03_21	Open This project has been delayed. EPWA is updating the TOR to reflect the MAC's and other stakeholder feedback and will provide it at a future MAC meeting
17/2024	Provide a Draft Terms of Reference for the AEMO Major Projects Working Group	AEMO	2024_07_25	Closed Provided at Agenda Item 7

Item	Action	Responsibility	Meeting Arising	Status
22/2024	Provide an update on the WEM Procedure for Low Reserve Condition Declaration before the next MAC Meeting	AEMO	2024_10_17	Open
23/2024	Investigate rescheduling the proposed 30 January 2025 meeting date	EPWA	2024_10_17	Closed The 2025 MAC Meeting schedule has been confirmed.
24/2024	Provide an update on MAC members' expiring membership terms	EPWA	2024_10_17	Closed Appointments for members whose term expired in 2025 were extended to 1 February 2026.

A wide-angle landscape photograph at sunset or sunrise. The sky is a mix of deep blues and oranges. In the foreground, a large metal lattice power line tower stands prominently. Several high-voltage power lines stretch across the frame. In the background, a series of wind turbines are visible on a rolling horizon over a field of low-lying vegetation.

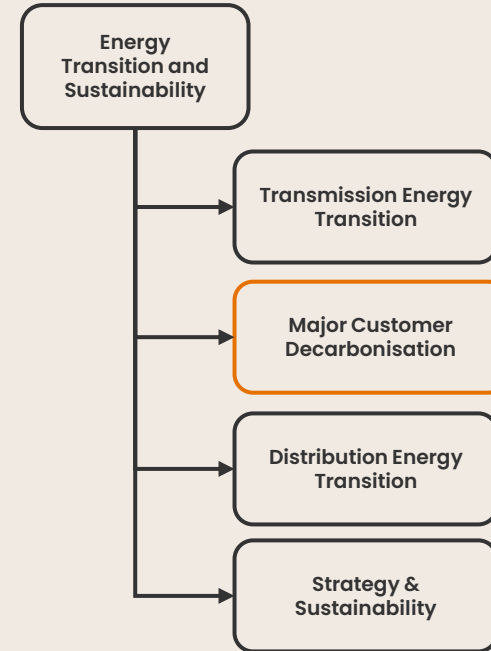
Major Customer Connection Process (MCCP) Improvement Program

MAC Update – May 2025

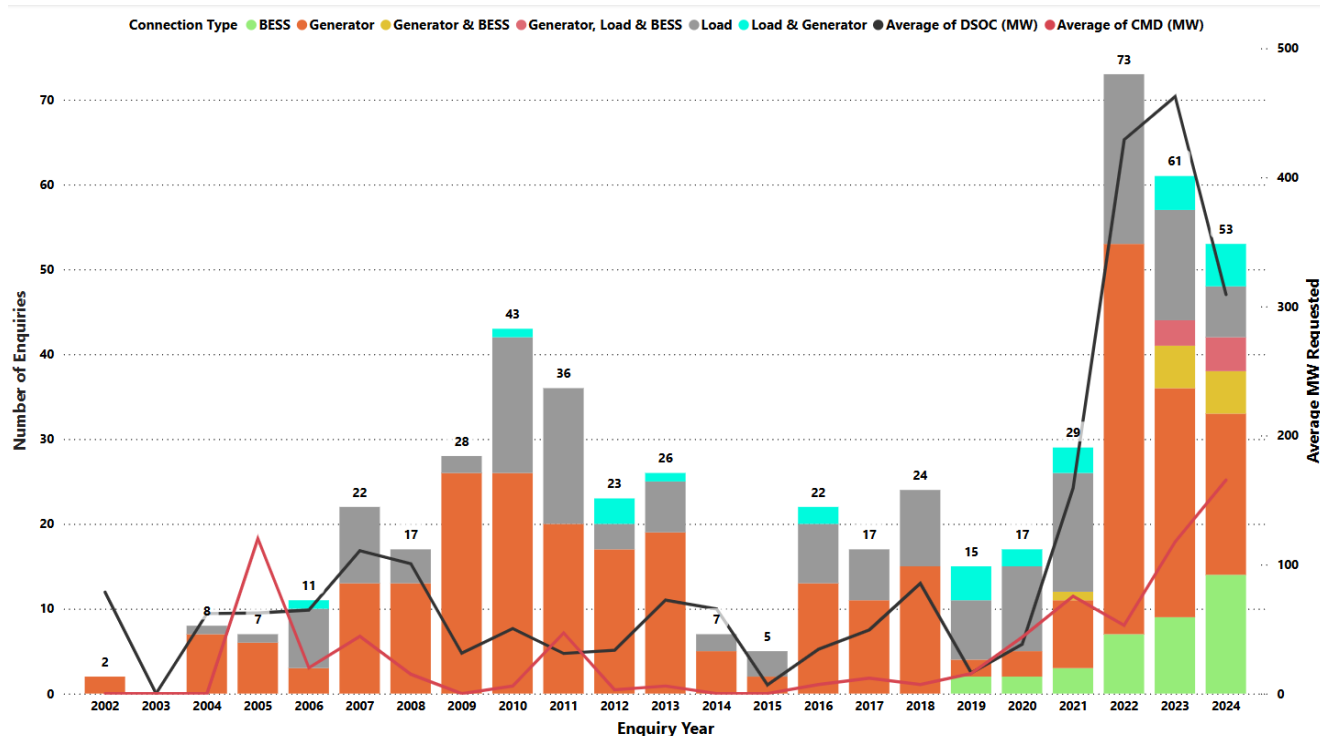
Major Customer Decarbonisation – how do we fit in?

Responsible for:

- Connecting major transmission load and generation customers to the network
- Developing network solutions, scoping and planning for Clean Energy Link projects
- Connection of Distribution major customers
- Transmission and Communications asset relocations
- Industry and Customer business development



Changing our processes for the better – the why



Prior state (2022 MCCP review findings):

Only **5%** of enquiries reached Access Offer

Future state:

~16% of generation enquiries must reach connection to deliver the AEMO ESOO** scenario, which suggests 2.63GW of additional peak demand by 2030 (vs 2025) and 5.40GW additional by 2040.

*24 month rolling forecast FY25–FY27, of 104 active enquiries, includes load and generation

**Based on 10% POE

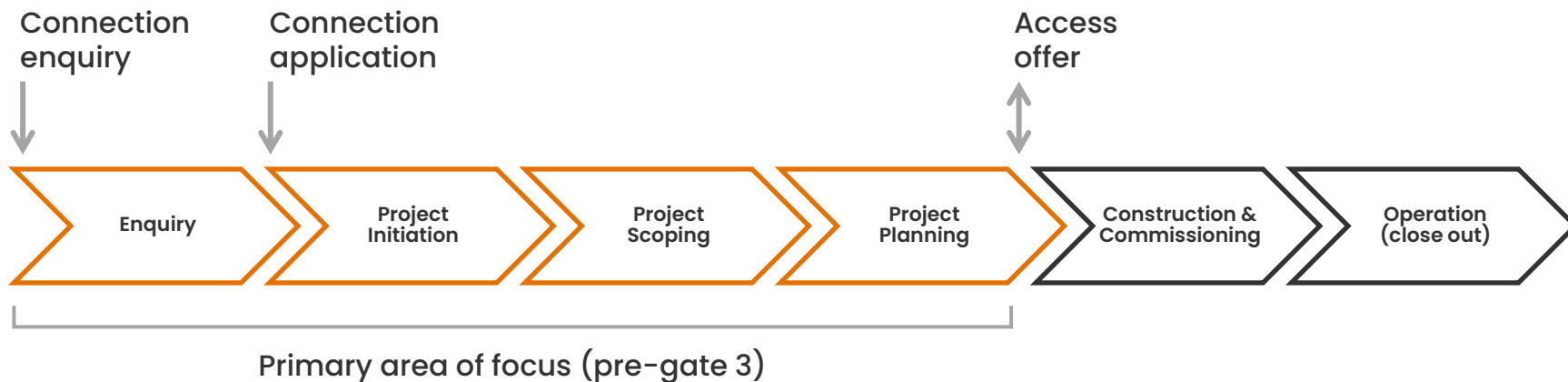
Connection process review and opportunities – the how

Our 2022 review recommended several improvement initiatives to enable a future state process that will be fit for purpose. These opportunities were grouped under five key themes:

1. Reorganise process to eliminate unnecessary work and reduce waiting times
2. Give customers more choice to proceed with higher uncertainty and risk
3. Enable customer self-service to de-constrain studies, design and construction
4. Enable cross-functional collaboration to reduce handovers and re-work
5. Refresh underlying frameworks to enable process change improvements



The MCCP Program delivered several initiatives and benefits



Timeframe to access offer expected to reduce by up to ~50% from baseline 3.5 years



Western Power's Tx Technical Standards accessed **downloaded over 4,000 times** from 1,500 different users

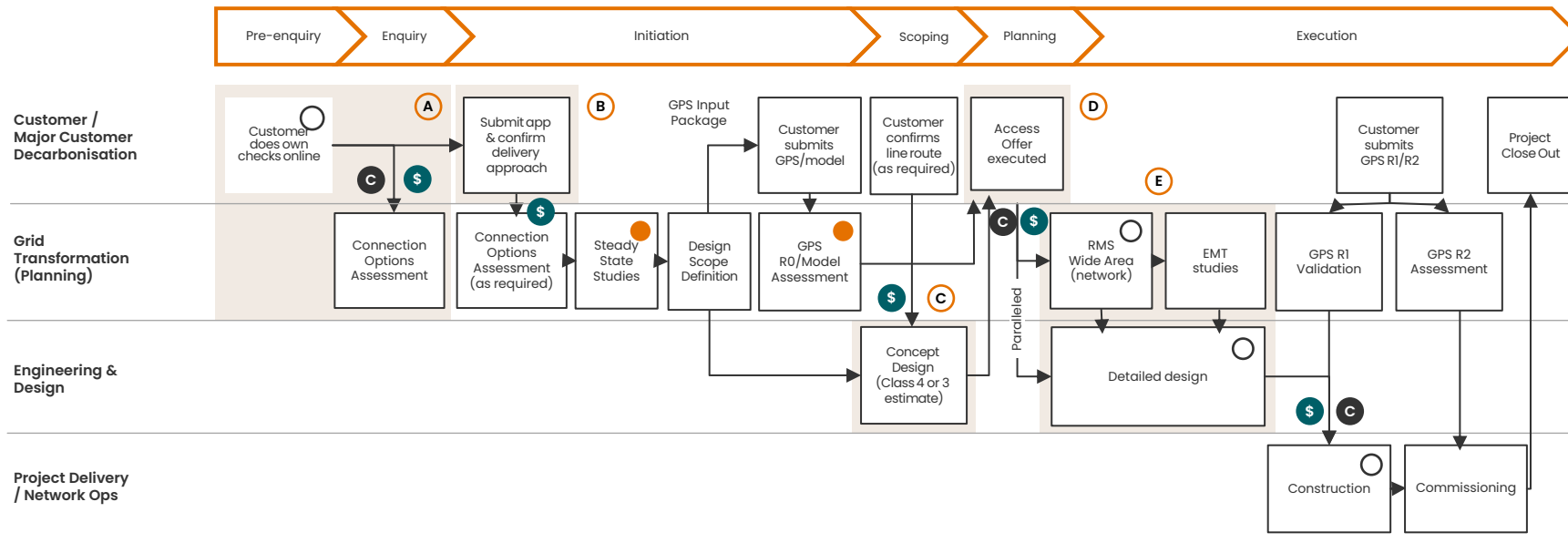


6-month reduction in enquiry phase timeframes, from 9 months originally – with **greater price certainty**



Customer portal providing project lifecycle transparency in real-time

Our new Major Customer Connection Process



A Simplified enquiry phase with collaborative workshop format and Class 5 estimate

B Single contract and pricing structure for all work between Application and Access Offer

C Concept design with option of Class 4 or 3 estimate

D Access Offer made after concept design and GPS R0 validation / load model assessment

E RMS Wide Area (network) and EMT studies paralleled with detailed design

F Customer may self-serve

○ Customer self-serve option planned

□ Default pathway

□ Optional

● Customer signs contract

● Customer makes payment

□ Major process changes

Program implementation timeline



Next steps and industry updates



- Continue to develop and implement remaining improvement initiatives
- Monitor and refine the new process changes to ensure the objectives are achieved and performance benefits are sustained
- We will continue to update industry via the Western Power website; our next update will be in early July 2025
- mccp.program@westernpower.com.au



[Homepage](#) / [Resources & education](#) / [Industry Resources](#) / Large industry customers and generators

Industry will play a critical role in establishing the once-in-a generation transmission network growth required to enable industrial decarbonisation, service renewable generation and support State and regional economic growth as WA moves towards achieving net zero.



Industry decarbonisation energy projects - Registrations of Interest

Large commercial and industrial customers were provided an opportunity to help shape major transmission builds needed to deliver a clean energy...

[Read more](#) →



Major customer connection review

Western Power recently announced a fit-for-purpose streamlined process for industry energy connections as part of its drive to support industry and...

[Read more](#) →



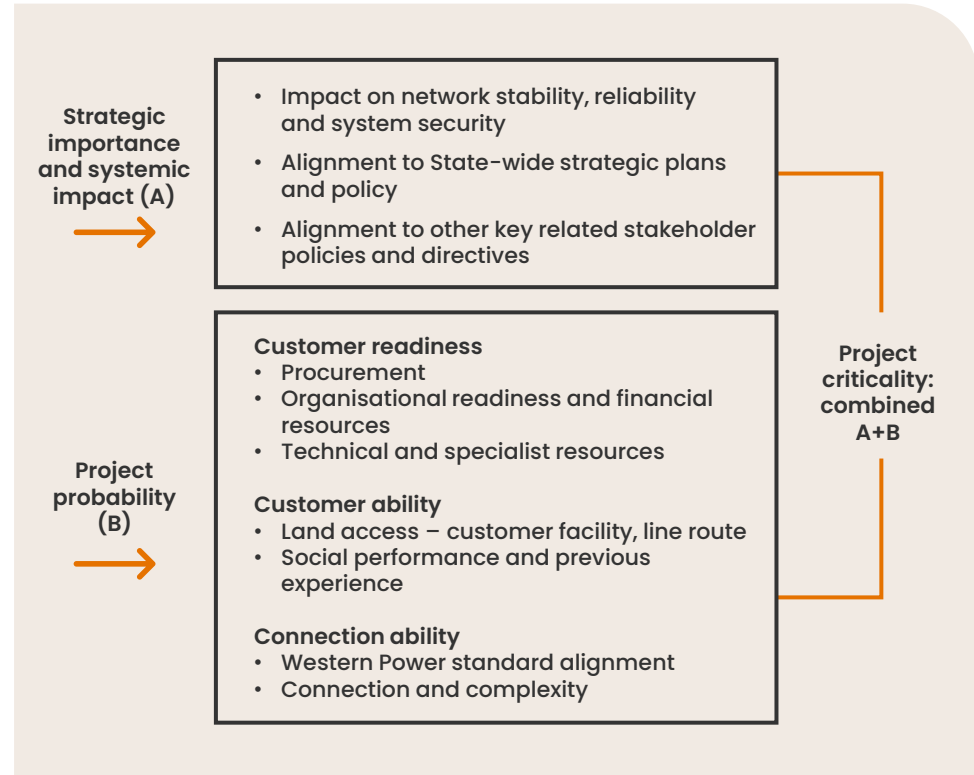
Facilitating timely connection of critical projects

In recognition of the importance of significant major customer connection projects to the state, Western Power has developed a framework to assess...

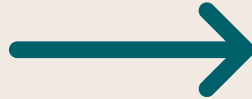
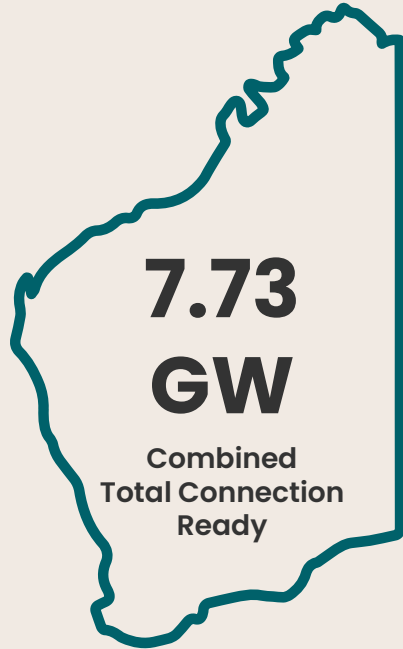
[Read more](#) →

Critical Projects Framework

- In addition to the MCCP, the Critical Projects Framework was implemented to address the challenges of the Access & Queuing Policy; 'Connection Ready' projects now receive 'right of way' to Western Power resources



Critical Project Framework – update



29% wind farms



**26%
BESS**



**25%
hybrid**



**8%
gas**



**4%
hydro**

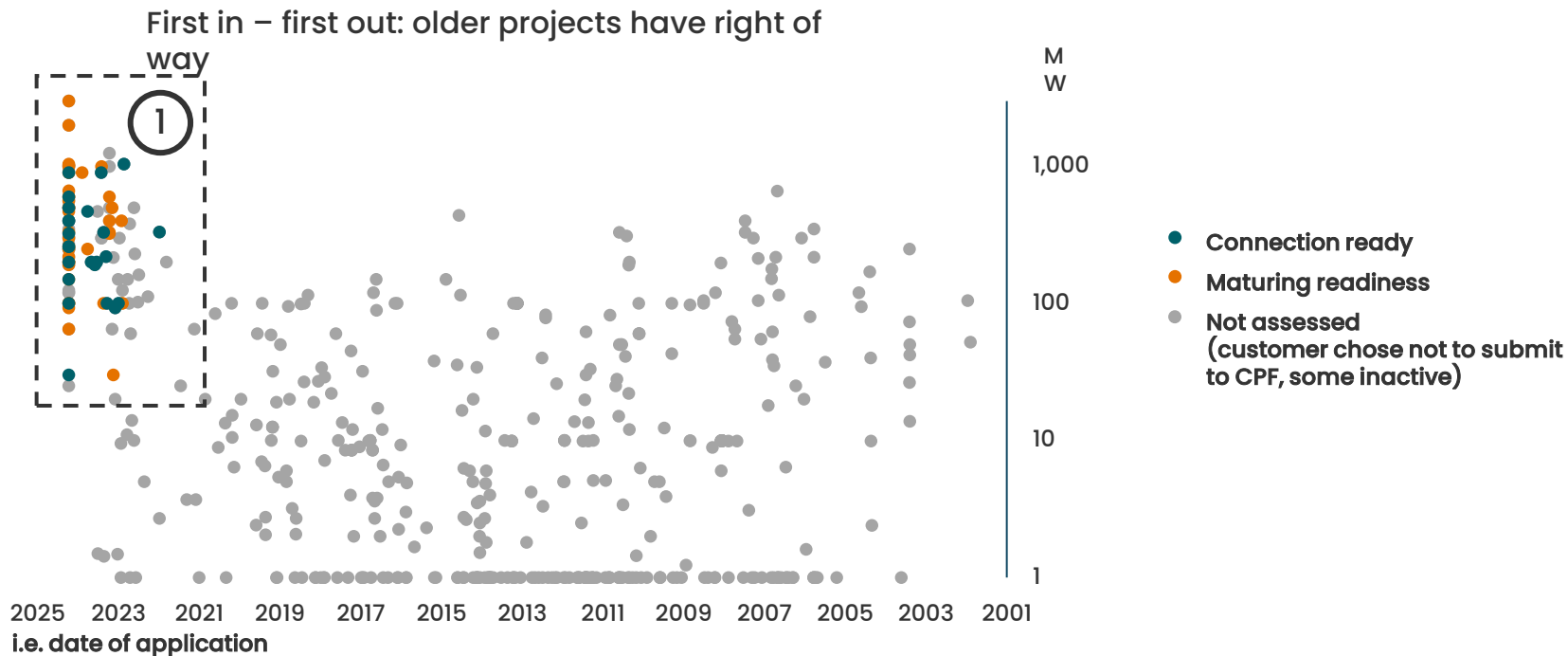


**4%
solar**



4% load

First in First Serve (pursuant to AQP) vs Critical Project Framework outcomes



We are building capability to meet the changing energy needs and expectations of our customers – the how



Business case development centralised in the Major Customer Decarbonisation (MCD) function



Dedicated Major Customer Connections area established in Grid Transformation to support MCD



Dedicated team established in E&D to support MCD, increased outsourcing and scaling of customer-led design & construct



Customer-led approach to Clean Energy Link (CEL) program development



Transmission Program Office established and Project Management Services vendor in place



Capitalising on opportunities to leverage CEL vendors to deliver Major Customer Connections



Questions?

Western Power
363 Wellington Street
Perth WA 6000
westernpower.com.au

Appendix

Supporting Information



— New enquiry process

- In **September 2023** we implemented the following changes as part of an improved Enquiry process, enabling significant value for Western Power and our customers:

Mandated enquiry phase with Detailed Assessment Report



Optional enquiry phase with collaborative workshop format

Enquiry process timeframe (~9 months)



Streamlined enquiry process timeframe (~3 months)

Enquiry fee (\$3.5k) + bespoke variable estimate (~\$50k-\$80k)



Standardised Enquiry Assessment estimate (\$25k)

- These changes have been well received by Industry, with positive feedback from customers that have recently completed an Enquiry Assessment.

—— New Steady State Study self-serve option

- In **February 2024** we implemented a new self-serve option for customers enabling them to directly engage a service provider to complete their Steady State Study, with Western Power validating the results.
- Benefits include:
 - Enhanced customer experience with greater control over the cost, speed, scope and iterations of network studies being undertaken
 - Enables scalability and improves time frames
 - Drives consistency and standardisation in the way network studies are performed and the way the network model is prepared/maintained.
- We will continue to monitor and refine this new process to ensure it remains fit for purpose in delivering the expected benefits.

—— New Steady State Study self-serve option

- To support this new self-serve option, we have released an updated SWIS Base Model, that is supplied with a project specific study package (post connection application only) to help customers undertake their own Steady State Study.
- The SWIS Base Model can be accessed prior to submitting a Connection Application. It excludes the study package and support from our Western Power team. As such only Steady State Studies performed with the study package will be accepted.
- Please refer to the new [Steady State Study](#) page on our website for more information.

—— New GPS/Load Model Assessment self-serve option

- In **April 2024** we implemented a new self-serve option allowing customers to complete their own Generator Performance Standards (GPS) and/or Load model assessment before submission to Western Power for validation of results.
- **Benefits include:**
 - Provide customers with greater control over the cost and speed in progressing their model assessment.
 - Introduction of early GPS registration (R0) provides better visibility on the facility compliance as well as viability of the project at earlier stages and helps with better time/resource investment.
 - Drive consistency and standardisation in the way we perform customer model assessments.
 - Improve the customer experience through rapid feedback on network model validity.
- We will continue to monitor and refine this change to ensure it remains fit for purpose in delivering the expected benefits.

—— Transmission (Tx) Technical Standards published online

- In **June 2024** Western Power's Transmission Technical Standards were published online for external use.
- Major Customers are now able to access Western Power's Network Functional Requirements Standards (5), Customer Connection Requirements Standards (2), Design Standards (43), Standard Designs/engineering drawings (~1500), and relevant supporting documents (3) from the new Technical Standards Hierarchy page on our [website](#).
- This new approach is expected to improve the experience of our major customers through increased transparency and availability of technical information prior to commencing the connection process. It also enables new customer self-serve options and scalability of design and construction activities via external service providers.
- We value your feedback, so please send us any questions or comments regarding these new Tx Technical Documents using the [Technical Standards Feedback form](#).

— New connection process implemented

- On **1st July 2024** we successfully went live with the new improved Major Customer Connection Process. This is now our Business-As-Usual approach for any new major customer project Connection Enquiry and Application, along with some existing in-flight projects that have transitioned to this new process.
- To support this significant change, we have refreshed our [Transmission loads & large generators](#) website page to reflect the new process and supporting information.
- Over the next 12-18 months we will continue to monitor and refine the new process to ensure the original objectives and performance benefits are achieved.
- Thank you to those that contributed to the development and testing of these process improvements, and for your patience while we embed the changes.

—— Digital solutions for major customers

- In **November 2024** we released our new Major Customer Portal, providing customers with visibility of their transmission and large generator project information, including status and a high-level project timeline.
 - You can register and sign in at [MyWP Projects](#).
- The next release during **Q2 2025** will deliver an enhanced streamlined Connection Enquiry form and internal workflow management tool, providing major customers with more granular Enquiry Stage activity information via the portal.
- Further portal and internal workflow releases during **2025** will continue to enhance the customer experience, through increased visibility, control and efficiency of projects through the connection process.

Customer self-serve options

- Unfortunately, development of our customer self-serve dynamic study and customer led design & construct options are behind schedule, with implementation now expected in **late 2025**.
- Once ready, these new self-serve options will enable customers to directly engage a service provider to:
 1. complete their Dynamic Study, with Western Power validating the results, and;
 2. design and construct their own connection assets to be owned by Western Power, using our recently published Network Standards.



Perth Office
363 Wellington Street
Perth WA 6000
westernpower.com.au



MARKET ADVISORY COMMITTEE MEETING, 1 May 2025

FOR DISCUSSION

SUBJECT: UPDATE ON AEMO'S WEM PROCEDURES

AGENDA ITEM: 6(A)

1. PURPOSE

Provide a status update on the activities of the AEMO Procedure Change Working Group and AEMO Procedure Change Proposals.

2. AEMO PROCEDURE CHANGE WORKING GROUP (APCWG)

	Most recent meetings	Next meeting
Date	17 February 2025	As required (likely May).
WEM Procedures for discussion at APCWG	- Dispatch Settlement and Monitoring Data - Certification of Reserve Capacity	
Date	16 December 2024	
WEM Procedures for discussion at APCWG	- Outage Intention Plan - Facility Sub-Metering - Credible Contingency Events - Direction of Registered Facilities in Scarcity Conditions	

3. AEMO PROCEDURE CHANGE PROPOSALS

The status of AEMO Procedure Change Proposals is described below, current as at ~~13 November 2024~~ 11 April 2025. Changes since the previous MAC meeting are in **red text**. A procedure change is removed from this report after its commencement has been reported or a decision has been taken not to proceed with a potential Procedure Change Proposal.

ID	Summary of changes	Status	Next steps	Indicative Date
Procedure Change Proposal AEPC_2024_14 WEM Procedure: Reliability Standard Implementation	AEMO has initiated this Procedure Change Proposal to for a new WEM Procedure, as required under clause 3.3.2 of the WEM Rules. The WEM Procedure sets out the process AEMO will follow to assess reliability to facilitate the operation of the South West Interconnected System (SWIS) in a Reliable Operating State. As part of undertaking the reliability assessment, the WEM Procedure: • specifies the 'planning criteria' to be used in the various planning horizons to inform assessments of risks to adequacy. • identifies the power system conditions and other factors to be taken into consideration as part of the risk assessment. • sets-out the matters AEMO will take into account when assessing risks to adequacy as part of Outage assessment and approval. • specifies what matters AEMO must, and must not, include when measuring Unserved Energy.	Commenced	N/A	2 December 2024

ID	Summary of changes	Status	Next steps	Indicative Date
Procedure Change Proposal AEPC_2024_12 WEM Procedure: Real-Time Market Suspension	AEMO has initiated this Procedure Change Proposal to for a new WEM Procedure, as required under clause 2.9.3 of the WEM Rules. The WEM Procedure sets out: - the reasons for Real-Time Market Suspension. - AEMO's process for determining to suspend. - AEMO's process during Real-Time Market Suspension. - The obligations imposed on Market Participants during a Real-Time Market Suspension. - The process for resuming the operation of the Real-Time Market.	Commenced	N/A	20 December 2024
Procedure Change Proposal AEPC_2024_15 WEM Procedure: Determination of Market Schedules	AEMO has commenced the Procedure Change Process to propose amendments to the Determination of Market Schedules WEM Procedure as a result of the Frequency Co-optimised Essential System Services (FCESS) Cost Review Amending Rules. Amendments as a result of the FCESS Cost Review Amending Rules include: Amendments to clarify that AEMO will produce scenarios in accordance with the amended clauses 7.8.4 and 7.8.6A of the WEM Rules.	Commenced	N/A	6 January 2025

ID	Summary of changes	Status	Next steps	Indicative Date
	• Removal of the requirement to produce scenarios under clause 7.8.6(a) of the WEM Rules. • Amendments to include reference to “Available Capacity Scenario” (where applicable). • Amendments to replace “Market Schedules” with “Pre-Dispatch Schedules” and “Week-Ahead Schedules” (where applicable), in response to amendments to clauses 7.8.6 and 7.8.6A of the WEM Rules. AEMO have also taken the opportunity to make the following minor amendments: • A new definition for Underlying System Load has been added to the WEM Procedure to replace the use of Operational Demand and Forecast Unscheduled Operational Demand. This ensures consistency with the WEM Procedure: Essential System Service Quantities. • Amendments to scope of the WEM Procedure to include reference to a requirement of the WEM Rules that is captured under the WEM Procedure, but was inadvertently not listed in previous revisions.			

ID	Summary of changes	Status	Next steps	Indicative Date
Procedure Change Proposal AEPC_2024_13 WEM Procedure: Dispatch Algorithm	AEMO has commenced the Procedure Change Process to propose amendments to the Determination of Market Schedules WEM Procedure as a result of the Frequency Co-optimised Essential System Services (FCESS) Cost Review Amending Rules. Amendments as a result of the FCESS Cost Review Amending Rules include: • Various amendments to outline how the updated tiebreak process is represented in the Dispatch Algorithm. • Amendments to Table 5 to include two new tiebreak Constraint Violation Quantity variables. • A new Appendix G, to outline the process for determining Facility Tiebreak Numbers and the priority order to give effect to the new tiebreaking rules. AEMO have also taken the opportunity to make the following minor amendments: • Minor wording amendments throughout the WEM Procedure to improve clarity. • Separating Active Fast Start Facilities with a Fast Start Target Mode of 0 to 4 in optimisation problems to better reflect the operating behaviour of these Facilities.	Commenced	N/A	6 January 2025
Procedure Change Proposal AEPC_2024_16	AEMO has initiated this Procedure Change Proposal to for a new WEM Procedure, as	Commenced	N/A	15 January

ID	Summary of changes	Status	Next steps	Indicative Date
WEM Procedure: Minimum Eligibility Requirements for Flexible CRC	required under clause 4.10.1A(e) of the WEM Rules. The WEM Procedure sets out the processes AEMO is required to follow to determine, consult with Market Participants and publish the Minimum Eligibility Requirements for receiving Flexible Capacity.			
Procedure Change Proposal AEPC_2024_17 WEM Procedure: Outage Intention Plans	AEMO commenced the Procedure Change Process to implement the new Procedure as a result of the Wholesale Electricity Market Amendment (Tranches 2 and 3 Amendments) Rules 2020, Schedule C which included the replacement of section 3.19 on Outage Intention Plans. The WEM Procedure: Outage Intention Plans provides clarity to Rule Participants and Network Operators of how an Outage Intention Plan can be submitted to AEMO, what information will be included in the Interim and Final Annual Consolidated Outage Intention Plans, and explains how revisions, resubmissions and withdrawals of Outage Intention Plans can be made. Outage Intention Plans assist AEMO in managing generation capacity to determine how much capacity is available to maintain system security. This better achieves the Wholesale Market Objective of promoting economically efficient, safe and reliable production and supply of electricity in the South West Interconnected System.	Commenced	N/A	6 February 2025

ID	Summary of changes	Status	Next steps	Indicative Date
	This new WEM Procedure fulfils AEMO's requirements under clause 3.19.11 of the WEM Rules.			
Procedure Change Proposal AEPC_2024_18 WEM Procedure: Facility Sub-Metering	AEMO initiated this Procedure Change Proposal to update WEM Procedure: Facility Sub-Metering to reflect the implementation of the new Wholesale Electricity Market System Market Participant Interface (WEMS MPI) systems functionality, which enables the direct receipt of Facility Sub-Metering data by AEMO's systems, making the receipt of data via email redundant. Other amendments are also proposed to improve the Procedure's prescriptive accuracy and update its descriptive accuracy (as indicated below). The amendments: • reflect the new WEMS MPI systems functionality, communication requirements and protocols between a Market Participant and AEMO • update references to the current version of the Metering Code 2012 and its clauses, and to other relevant WEM Procedures; • clarifies the Facility Sub-Metering requirements in respect of Interval Energy Data collected via a non-SCADA source (that is not Alternating Current Metering) and updates the accuracy requirement; • insert a requirement on the timing of the submission to AEMO of the audit	Commenced	N/A	17 February 2025

ID	Summary of changes	Status	Next steps	Indicative Date
	report of a Market Participant's Facility Sub-Metering; and - make minor modifications to paragraph structure, remove redundant text and correct minor grammatical errors. AEMO sought comment and feedback on: - Whether there were likely to be any unintended issues stemming from the proposed drafting for the Procedure, with particular focus on the proposed amendments to - accuracy requirements for 'SCADA' and 'Interval Energy Data recorded by a device other than SCADA' as sources of Facility Sub-Metering; - differentiated requirements between 'SCADA' and 'Interval Energy Data recorded by a device other than SCADA' and use of WEMS MPI portal for submission of Facility Sub-Metering data; and - the timing of submission of audit report to AEMO.			
Procedure Change Proposal AEPC_2024_19 WEM Procedure: Direction of Registered Facilities in Scarcity Conditions	AEMO initiated this Procedure Change Proposal to update WEM Procedure: Direction of Registered Facilities in Scarcity Conditions to reflect amendments to clause 7.7.14 of the WEM Rules (the head of power of this Procedure), via the Wholesale Electricity Market Amendment (FCESS Cost Review) Rules 2024, Schedule 3 which commenced on 1 February 2025. Other amendments were	Commenced	N/A	1 February 2025

ID	Summary of changes	Status	Next steps	Indicative Date
	also proposed to correct an omission in the Procedure's original drafting and improve its descriptive accuracy (as indicated below). The amendments: • Set out the process AEMO will use to determine which Registered Facility to direct to synchronise to provide RoCoF Control Service under clause 3.4.4(d) of the WEM Rules; • Inserted a new sub-paragraph to allow AEMO, when assessing the availability of Registered Facilities for direction, to preference Registered Facilities with a sufficient MW quantity of Capacity Credits to meet the direction; • Better aligned the wording of existing with new drafting; and • Updated references to related clauses and procedures and correct minor grammatical or typographical errors to improve descriptive accuracy. AEMO sought comment and feedback on: • The proposed drafting for the Procedure, specifically how well the proposed drafting reflects the intent of clause 7.7.14(b) of the WEM Rules.			
Procedure Change Proposal AEPC_2024_20	AEMO initiated this Procedure Change Proposal to amend the WEM Procedure: Credible Contingency Events to clarify elements of the Procedure and improve	Commenced	N/A	12 February 2025

ID	Summary of changes	Status	Next steps	Indicative Date
WEM Procedure: Credible Contingency Events	alignment with the WEM Rules. The proposed amendments included: • Clarifying the application of the Credible Contingency Event framework for the potential loss of a node created by a substation busbar. • Redrafting provisions to better align with the WEM Rules, including the description of Credible Contingency Events under clause 3.8A.2 and Non-Credible Contingency Events under clause 3.8A.3. • Undertaking minor editorial and typographical changes to improve readability and clarity, including new definitions for specific Power System Elements, redrafting provisions relating to information requests, and updating parts of Appendix B. • Moving the Procedure to the updated AEMO WEM Procedure template.			
Procedure Change Proposal AEPC_2025_01 WEM Procedure: Dispatch Settlement and Monitoring Data	AEMO has commenced the Procedure Change Process to refine the drafting of the WEM Procedure for Dispatch Settlement and Monitoring Data which commenced on 1 October 2023. Minor improvements to the WEM Procedure provide a clearer description of the procedure to be followed by Rule Participants providing settlement and monitoring data and clarify the description of methods, processes, and information AEMO will use to determine	Commenced	N/A	31 March 2025

ID	Summary of changes	Status	Next steps	Indicative Date
	estimates to support the Relevant Level Method. These changes better achieve the WEM Objective of promoting economically efficient electricity related services in the South West interconnected system (clause 1.2.1(a) of the WEM Rules).			
Procedure Change Proposal AEPC_2025_02 WEM Procedure: Certification of Reserve Capacity	AEMO has commenced the Procedure Change Process to propose amendments to the Certification of Reserve Capacity Procedure, as a result of the Wholesale Electricity Market Amendment (RCM Reviews Sequencing) Rules 2025 (Amending Rules). Schedule 1 of the Amending Rules introduced a new Flexible Capacity product in time for the 2025 Reserve Capacity Cycle, to incentivise capacity that can start, stop and ramp quickly. AEMO has proposed the following amendments to the Procedure to ensure consistency with the Amending Rules: • Amendments to outline the processes Market Participants must follow when applying for Flexible Certified Reserve Capacity. • Amendments to outline the processes AEMO must follow when assessing applications and assigning Flexible Certified Reserve Capacity. • Changing “Certified Reserve Capacity” to “Peak Certified Reserve Capacity”	Out for consultation	Consultation closure	14 April 2025

ID	Summary of changes	Status	Next steps	Indicative Date
	where relevant, as the definition for Certified Reserve Capacity now includes both Flexible Certified Reserve Capacity and Peak Certified Reserve Capacity. AEMO has also proposed the following minor amendments to the Procedure: • Minor updates to Table 1, including introducing a definition for Significant Maintenance. • Amendment to clarify the specific application requirements where major modifications are completed or intended to be completed to an existing Separately Certified Component. • Amendment to clarify how AEMO will calculate Forced Outage rates when a Facility is not assigned Capacity Credits during the relevant period. • Amendment to clarify how a Component or Facility Upgrade will be assessed in relation to the fuel nominated in the Certified Reserve Capacity application.			

4. INDICATIVE SCHEDULE OF AEMO PROCEDURE CHANGE PROPOSALS

AEMO has prepared an indicative schedule of its Procedure Change Proposals expected to ~~commence shortly be progressed before 31 December 2024 11 April 2025~~. Changes since the previous MAC meeting are in red text. While every effort has been made to ensure the quality of the information contained in the indicative schedule, the content (including timeframes) may be subject to change (e.g. due to availability of staffing resources, unforeseen competing priorities etc).

WEM Procedure	Summary of changes	Status	Next steps	Indicative date of next step
WEM Procedure: Facility Registration Processes and NDL Association Processes	AEMO will be initiating this Procedure Change Proposal to accommodate changes resulting from WEM Reform and the Wholesale Electricity Market Amendment (Miscellaneous Amendments No. 3) Rules 2024.	Drafting in progress	Consultation	November/December 2024 May 2025
WEM Procedure: IMS Interface for Network Operators	These WEM Procedures are delayed until the new year due to interdependencies. The IMS Interface for Network Operators WEM Procedure will be replaced with the amended Network Modelling Data WEM and Communications and Control Systems WEM Procedure.	Drafting in progress	Consultation	December 2024 April/May 2025
WEM Procedure: Network Modelling Data				
WEM Procedure: Communications and Control Systems				
WEM Procedure: MT PASA	AEMO will be initiating this Procedure Change Proposal to update the WEM Procedure arising from WEM Reform. This WEM Procedure outlines the information AEMO requires and the process it will follow in conducting the Medium-Term Projected Assessment of System Adequacy.	Drafting in progress	Consultation	May 2025

Agenda Item 6(b): Update on the ESS Framework Review Working Group

Market Advisory Committee (MAC) Meeting 2025_05_01

1. Purpose

- The Chair of the Essential System Services (ESS) Framework Review Working Group (ESSFRWG) to provide an update on the activities of the ESSFRWG since the last MAC meeting.

2. Recommendation

That the MAC notes the update from the ESSFRWG meetings on 6 November 2024, 26 February and 26 March 2025.

3. Background

The Coordinator of Energy (Coordinator) is conducting a review of the ESS Processes and Standards ¹(the Review) as required by Section 3.15 of the Electricity System and Market (ESM) (formerly WEM) Rules. This incorporates a review of the Supplementary Essential Systems Services Procurement Mechanism (SESSM).

The review of the ESS Process and Standards and the basis for setting the ESS requirements aims to assess whether the existing framework is effective to ensure power system security and reliability can be maintained at the lowest cost to consumers as the energy transition continues.

The MAC established the ESSFRWG to support the Review at the 2 May 2024 MAC meeting. GHD was subsequently appointed by EPWA to provide technical analysis and support to the Review.

On the 6 November 2024, the ESSFRWG met for the first time to discuss the Scope of Work for the Review (as presented to the MAC on 2 May 2024).

ESSFRWG members suggested there was a need to:

- be mindful of the differences in the market and ESS requirements pre- and post- 1 October 2023 in the economic analysis, noting in particular that prior to new-WEM commencement the actual use of ESS (compared to what was scheduled) was hidden due to the approach to dispatching Synergy's portfolio;

¹ There are three types of ESS in the WEM however only the Frequency Co-optimised Essential System Services (FCESS) are being considered as part of this Review.

- account for any potential impacts following the commencement of the Amending Rules set out in Schedule 2 of the WEM Amendment (FCESS Cost Review) Rules 2024 on 20 November 2024;
- consider optimising the participation of generators in the SWIS, as more generators being required to contribute to Regulation services through Automatic Generator Control (as a condition of connection) would reduce the need to procure and dispatch these services; and
- consider the current accreditation rules to determine if there are any impediments to certain types of energy producing technologies providing ESS.

Several members also made comments regarding cost allocation and uplift payments, and the Chair noted that there had recently been a comprehensive Cost Allocation Review and that it was out of scope for this review, as the focus is on whether the ESS requirements are fit for purpose.

On 26 February 2025, the ESSFRWG discussed:

- ESS requirements in the WEM in comparison to other jurisdictions;
- the approach to setting the ESS requirements in the WEM including:
 - how the Regulation Baseline Model is used to determine Regulation quantities;
 - how the Dynamic Frequency Control Model (DFCM) is used to calculate Contingency Reserve Raise (CRR) quantities;
 - how Contingency Reserve Lower quantities are calculated; and
 - the process for calculating the minimum RoCoF Control Service (CS) requirement.
- frequency performance since new WEM commencement; and
- issues to be discussed further.

ESSFRWG members suggested there was a need to consider:

- how the mandatory droop response of online generators could be optimised to assist to recover frequency in contingency events and reduce the quantity of CRR that needs to be procured in the WEM.
- what the impact on ESS requirements would be if the DFCM could capture the mandatory droop response and behind-the-meter response distributed energy resources of rooftop PV.
- what impediments there may be to intermittent generators providing primary frequency response.

On 26 March 2025, the ESSFRWG discussed:

- a very high-level overview of the assessment of the frequency performance;
- key findings of the technical assessment including:
 - conservatism in technical parameters for RoCoF;
 - a lack of transparency around processes and methodology for setting ESS requirements;
 - conservative approach to the application of Performance Factors;

- a need to better understand the process for defining the inputs of the DFCM;
- a lack of clarity regarding the contribution mandatory primary frequency response to frequency management; and
- a lack of consideration of new technologies in the provision of FCESS.
- a very high-level overview of the jurisdictional comparison conclusions and the insights of the technical analysis including the potential for primary frequency response to contribute to both Contingency Reserve and Regulation
- the sensitivity analysis, and in particular the challenges associated with the data extraction and availability which had impacted:
 - the assessment of the relationship between the technical parameters and the total cost; and
 - the ability to establish relationships between parameters and costs.
- an overview of the SESSM.

ESSFRWG members suggested there was a need to consider:

- the impact of high Contingency Reserve Raise requirements constraining generation and the flow on effect of this to Real-Time Market prices;
- the broader impacts on the market if new, non-energy producing technologies were able to provide RoCoF (i.e. the need to reassess price caps);
- what the most appropriate mechanism is to procure and compensate additional inertia from non-energy producing systems (e.g. synchronous condensers);
- the effect of droop settings and performance factors on a generators ability to provide primary frequency response;
- what the appropriate data set was to use for the sensitivity analysis noting that:
 - the period October 2023 to September 2024 was prior to significant ESS rule changes that occurred in November 2024;
 - excluding those periods would also exclude significant periods of low load, which will have a strong influence on ESS quantities;
- the need to explicitly specify what the sensitivity analysis is trying to uncover to determine whether the ESS requirements are set at the most cost-efficient level;
- the need for further discussion on what the appropriate mechanism was to enable synthetic inertia in the WEM.

The next ESSFRWG meeting will focus the sensitivity analysis and the provision of synthetic inertia to be provided by grid forming inverters in the WEM

The Terms of Refence, papers and minutes for the ESSFRWG meetings are available on the ESSFRWG [webpage](#). Further information on the ESS Review, including the Scope of Works are available on the ESS Review [webpage](#).

4. Next Steps

- The table below shows the proposed next steps:

Activity	Timing
----------	--------

Asses the ESS standards and the basis for setting the ESS requirements	Oct 2024 – Jan 2025
Develop proposed metrics to be used for the ongoing monitoring of ESS	Dec 2024 – Apr 2025
Analysis of the existing SESSM ESM Rules and jurisdictional comparison	Jan 2025 – Apr 2025
Consultation with the ESSFRWG and the MAC on analysis and proposals for improvements to the ESS and SESSM frameworks and development of any relevant ESM Rules	ongoing
Consultation with the MAC on a draft Consultation Paper	June 2025
Consultation with the MAC on a draft Information Paper	TBC
Exposure draft of Draft Amending ESM Rules	TBC
Amending ESM Rules submitted to Minister for Energy	TBC

5. Attachments

Agenda Item 6(b) - Attachment 1 - Update on the ESS Framework Review Working Group - Draft Minutes for the 26 March 2025 Meeting



Minutes

Meeting Title:	Essential System Services Framework Review Working Group (ESSFRWG)	
Date:	26 March 2025	
Time:	3:00pm – 4.50pm	
Location:	Online, via TEAMS	
Attendees	Company	Comment
Dora Guzeleva	Chair, Energy Policy WA (EPWA)	
Alex Gillespie	Australian Energy Market Operator (AEMO)	
Christopher Wilson	AEMO	
Oscar Carlberg	Alinta Energy	
Andrew Scarfone	AGL	
Lekshmi Jaya Mohan	BP Australia	
Stefan Scagnetti	Bluewaters Power	Proxy for Dimitri Lorenzo
James Eastcott	Clean Energy Council	
Julian Fairhall	Economic Regulation Authority (ERA)	
Bronwyn Gunn	EPWA	
Jenny Laidlaw	EPWA	
Shelley Worthington	EPWA	
Noel Schubert	Expert Consumer Panel	
Ali Kharrazi	GHD	
Christian Schaefer	GHD	
Jesse Singh	GHD	
Dennis Stanley	GHD	
Max Collins	Neoen	
Daniel Randazzo	Shell Energy	
Bobby Ditric	Summit Southern Cross Power	
Brad Huppatz	Synergy	
Rhiannon Bedola	Synergy	
Peter Huxtable	Water Corporation	
Mark McKinnon	Western Power	

Apologies

Dimitri Lorenzo	Bluewaters Power	
Mark Lee	GridBeyond	
Mark McPartland	Nomad Energy Pty Ltd	
Graeme Ross	Simcoa	
Charlie Caruso	Smart Energy Council	
Dev Tayal	Tesla	
Reece Tonkin	Woodside	

1. WELCOME

The Chair opened the meeting with an Acknowledgement of Country and asked members to note the Competition and Consumer Law obligations.

2. INTRODUCTIONS AND ATTENDANCE

The Chair noted the attendance, including new members and apologies as above.

3. ESSENTIAL SYSTEM SERVICES FRAMEWORK REVIEW

The Chair opened the discussion noting that:

- the Essential System Services (ESS) Framework Review (Review) is a statutory review under Section 3.15 of the Wholesale Electricity Market (WEM) Rules;
- it is a technical review of the ESS requirements against the Standards, that incorporates a sensitivity analysis to assess the impacts of increasing or decreasing the requirements;
- it includes a review of the Supplementary Essential System Services (SESSM);
- the ESSFRWG 26 February meeting minutes are out for comment and will be provided to the Market Advisory Committee at its next meeting.

Mr Schaefer stated that the slides would be assumed to have been read.

Mr Schaefer presented slides 4 – 5 (technical issues identified).

Mr Schaefer presented slide 6 (key findings of the technical assessment) noting that, given frequency has been maintained within the prescribed limits, the focus is on the methods of quantification of ESS requirements and procurement, and whether they are fit for purpose.

- With regard to Issue 1, Mr Ditric noted that when there is a very high Contingency Reserve Raise (CRR) requirement, NewGen Kwinana (NewGen) is often turned down by quite a large margin creating unnecessary shortfalls, and this can cause increases to the Real-Time Market prices. He offered to provide GHD with examples of this.

Mr Schaefer presented slide 7 (FOS technical parameters - impact of conservatism), noting that:

- the DFCM is used to define the CRR offset that goes into WEMDE for the purpose of dispatch, whereas the Real Time Frequency Stability Tool is used by the control room to verify system security and is the basis for decisions by the AEMO control room to intervene and direct when more CRR is required - both processes look to achieve the same thing but appear to have different inputs; and

- the GPS Ride Through Requirements as listed on the slide are significantly higher than the Rate of Change of Frequency (RoCoF) Safe Limit. He acknowledged that, while the Technical Requirements do need to be a higher than the RoCoF Safe Limit, they may be set unnecessarily high in this instance.
- Mr Carlberg asked if increasing the RoCoF Safe Limit decreased the amount of CRR AEMO was required to procure.

In response to Mr Carlberg's question, Mr Schaefer noted that increasing the RoCoF Safe Limit would mean a steeper RoCoF, necessitating either more, or faster CRR as the frequency nadir would be reached more quickly, and that the interdependencies between the variables that are involved in managing frequency present challenges.

Mr Schaefer presented slide 8 (frequency of AEMO market intervention).

Mr Schaefer presented slide 9 (transparency of the process), noting that in many cases documentation is either inadequate or non-existent. This makes it:

- difficult for Market Participants to understand the processes;
- challenging for the Coordinator of Energy to review the effectiveness of the market;
- challenging for AEMO to communicate why certain actions are needed.

He added that GHD considers that the establishment of a register of the required documentation and content specification, as well as visibility about timelines for yet-to-be published documentation, will be of benefit.

Mr Schaefer presented slide 10 (impact of the largest credible supply contingency (LCSC) on RoCoF services).

Mr Schaefer presented slide 11 (ignoring Primary Frequency Response (PFR) of unaccredited facilities), noting that most jurisdictions examined require a mandatory 4% droop to assist with frequency management. He added that ignoring these contributions could be overlooking material benefits to frequency management, and the mandatory PFR could be the underlying reason for the good management of frequency in the WEM. He suggested a monitoring program to track the amount of headroom available from unaccredited or non-dispatched FCESS facilities to understand the potential contribution of mandatory PFR.

Mr Schaefer presented slide 12 (performance factors), noting that performance factors are a multiplier to the effectiveness of the CRR services that could be provided and change dynamically with the size of the LCSC and system inertia. He noted that excluding generators based on their performance factor may create shortfalls or require the dispatch of more expensive facilities.

Mr Schaefer presented slide 13 (expansion of the ESS resource pool), noting that other jurisdictions (e.g. Ireland) procure CRR services from wind farms. Mr Schubert asked if there are barriers to renewables with headroom being able to participate and if this has been considered.

- Mr Wilson confirmed there are currently no barriers in place should a semi-scheduled facility wish to accredit, but that AEMO would need to be able to assume that a certain amount of headroom could be maintained.

The Chair noted that aggregators have advised that they are very willing to participate in CRR services, subject to some of the requirements being relaxed, but that there is 1.3 gigawatts of very fast responding Electric Storage Resources (ESR) currently assigned Capacity Credits and another 640 megawatts (MW) of very fast responding ESR entering through the Capacity Investment Scheme (pending certification) from 1 October 2027. The least cost provision of CR services needs to be considered, as the new State Electricity Objective requires security to be balanced with cost and emissions.

- Mr Fairhall noted that new technologies are not likely to be zero cost and:

- currently RoCoF Control Service (RCS) is provided by conventional generators, who cannot separate the inertia from their energy market offers, hence the offer price cap being zero;
- new technologies entering, i.e. synchronous condensers (syncons) or batteries providing synthetic inertia, will require the ERA to revisit those price caps;
- it will still be weighted towards those zero cost services from conventional generators.

The Chair noted that up to a third of Capacity Credits may be allocated to ESR capable of providing CRR and synthetic inertia in the future.

- In response to Mr Fairhall, Mr Ditric noted that the provision of RoCoF is only provided at zero cost by a facility when they are making money from producing energy, and that it is not provided at zero cost if energy prices were negative/below short run marginal cost, which is typically when intervention events/directions occur.
- Mr Fairhall noted that this was when uplift payments come into play but agreed that this is not properly accounted for in the co-optimisation process.

The Chair agreed and noted that:

- Procurement and compensation for inertia brought on to address shortfalls required consideration, particularly for resources that may not be energy producing.
- Since November 2024, AEMO has had to manually direct facilities to either synchronise or remain synchronised to provide inertia to the system. This was an effective short-term backstop to make sure sufficient inertia was available while not paying for services that are provided as a by-product of producing electricity. However, this was unlikely to be sustainable in the long run.
- Mr Schubert noted that the Australian Electricity Market Commission was currently looking into [inertia services](#).

Mr Schaefer presented slides 14 and 15 (jurisdictional comparison), making the following points on the insights/observations listed on the slides:

- 1: other jurisdictions have multiple markets and services, for example the National Electricity Market (NEM) has a very fast frequency response market for a one second response and a fast frequency response market for six seconds, meaning that it's relatively simpler to procure the right service. The shallow market in the WEM means there is not enough competition for multiple markets, but the single market for each type of service creates more complexity in dispatch;
- 2: in New Zealand (NZ), the provision of mandatory primary frequency response (PFR) is the reason very little Regulation services are procured, other than for the correction of the area control error;
- 3: in the NEM and Ireland minimum synchronous generation requirements are mandated for system strength purposes, and facilities are often dispatched at minimum generation levels leaving significant headroom;
- 4: system inertia is set at minimum levels in both the NEM and Ireland. NZ has not done so because 90% of the fleet is synchronous, but will likely do so once instantaneous non-synchronous generation penetration levels reach 50%, which is likely five to ten years away;
- 6: in other systems it is the single largest generator rather than a single line contingency (that considers multiple generators) that sets the LCSC;
- 9: in Ireland most of the renewable generation is wind, which is susceptible to voltage drops arising from power reduction. The small geographic area means weather fronts affect a large portion of the fleet. Ireland has a frequency ramping service driven by voltage fluctuations;
- 10: Ireland is moving away from a contract-based to a market-based structure.

Mr Schaefer presented slide 16 (PFR and minimum conventional generation) and noted that retaining more headroom has shown benefits in other jurisdictions and may be worth considering in the WEM.

- Mr Schubert asked if there is a technical reason for preventing faster acting generators and batteries from having lower droop settings so that they contribute more through mandatory PFR. He stated that, as demand and generation increase in variability, this should be a focus.

Mr Schaefer responded that the droop settings for some batteries in South Australia were as low as 1.2%, and noted that AEMO has indicated that any lower than that means power is injected so quickly that special protection schemes on other facilities respond as though a contingency has occurred. He added that lower droop settings create more wear and tear on mechanical governors, which is why synchronous generators are usually set to 4-5%, and that a droop change is still limited by the ramping rate of the synchronous generator (i.e. lowering the setting may create more droop response but not necessarily faster response).

- Mr Schubert agreed that there were some limitations, but that the mechanical limitations were not the case for inverter connected batteries and asked whether it was worth exploring if they could provide a more mandatory frequency response. He noted that there were systems that have some generators in isochronous (0% droop) that manage the system frequency completely.
- Mr Wilson advised there was a Facility operating in the WEM at 2% droop.

Mr Schaefer agreed that there is certainly an opportunity to consider it, but that the impact needed to be considered. He noted that a droop setting of 2% would mean that for 1 Hertz change in frequency a facility would go from zero to full output, subject to energy availability.

- Mr Schubert noted that this effectively means that the faster machines grab more load.
- Mr Huppatz noted that lower droop settings for batteries would increase the cycle related degradation rate.
- Mr Wilson reiterated that AEMO is looking into the RoCoF Safe Limit, use of synthetic inertia and documentation for the Regulation Baseline Model.
- Mr Gillespie added that AEMO will continue to work with GHD and EPWA on how documentation can be improved to ensure transparency.

The Chair noted that the work was underway by AEMO, but highlighted that given this is a statutory review and AEMO had not yet completed the work, these will still be included as recommendations, including the expected timeframes for completion.

- Mr Wilson agreed and noted that timeframes could be discussed in due course.

Mr Schaefer presented slide 18 (sensitivity analysis), noting that this was more of an economic benefits assessment as required under the rules.

Mr Schaefer explained the assessment process of the relationship between the technical parameters and the total cost as presented on slide 19 and 20 and noted that:

- sets of data were selected to run a multiple linear regression analysis, using large amounts of data to develop a correlation between input variables and outputs;
- the process was very challenging, and it became apparent that a multiple linear regression was not feasible using the datasets.

Mr Schaefer presented slide 21 (sensitivity analysis – challenges with linearising a non-linear process), noting that:

- the cost of CRR services fluctuated and did not include the CRR offset costs that might be associated with it;
- there was no correlation between CRR FCESS uplift and market prices.

Mr Schaefer presented slide 21 (sensitivity analysis – preliminary insights) and noted that linear regression would require variation of input variables that are fixed in the WEM (e.g. the FOS, RoCoF Safe Limit). With regard to the pattern of CRR dispatch following the pattern of energy demand, uplift payments are the largest cost component, as when demand is high, energy prices are high and so are the uplift payments.

Mr Schaefer noted that given these challenges, the sensitivity assessment would be limited to observing general trends and identifying relationships, and speculating on the potential effect or outcome of changes without quantifying them.

- Mr Ditric considered that uplift payments should be higher when energy prices are lower, as uplift payments are compensating for lost revenue/costs incurred.

The Chair agreed.

- Mr Ditric added that when there are high CRR costs there tends to be more constraints imposed to reduce the LCSC, which can increase energy costs. As an example, when there are very high CRR prices NewGen tends to be constrained as WEMDE considers that cheaper than acquiring more CRR, but this loss of comparatively cheaper generation increases the energy price.

The Chair noted that decreasing any of the service requirements may carry some risk and would need to be done carefully, but reiterated the need to determine whether the requirements are set at a conservative level and, if so, examine the materiality of that on the costs in the market (including flow on costs).

- Mr Schubert noted that on slide 22, the period of October 23 to September 24 was prior to the November 2024 ESS rule changes. He asked if GHD anticipated getting good results from examining market behaviour prior to those November rule changes, or whether the analysis should start at November 2024.

Mr Schaefer responded that only 12 months of data had been extracted, that this was a very challenging process and consideration needed to be given to whether it was possible to extract more within the project timeframes.

The Chair advised that looking at prices or costs before 20 November 2024 would likely not be meaningful due the November 2024 changes, and the \$500 FCESS price cap that was in place from May to November 2024. She acknowledged that the data extraction had been a painful process and that the AEMO may need to assist with any further extraction. She further noted that the analysis will need to focus on the requirements, the way they are set and the impact of that on costs across the market rather than looking at market behaviour or market pricing data, and that the sensitivity analysis should be put on hold until the approach is clarified and the appropriate data sets to use defined.

The Chair and GHD agreed to discuss data extraction and the nature of the sensitivity analysis offline.

- Mr Schubert agreed with Ms Guzeleva and noted that, while it's difficult, that the purpose is to try and vary some of those static inputs in WEMDE and see what the effect of that is.

Mr Schaefer replied that this would require use of AEMO's DFCM to run different scenarios.

- Mr Huppertz noted that excluding the periods prior to November 2024 would exclude periods of low load, which is an area of concern as they are periods with high levels of PV penetration and low inertia from scheduled generation, which drives higher FCESS quantities.

The Chair reiterated that:

- the review must determine whether the requirements are set at the most cost-efficient level;
- there is a need to specify exactly what the sensitivity analysis is trying to do against the requirement of the rules, and what the right data to achieve this is;

- the intent is not to analyse pricing trends in the market more generally, but rather it is about the level at which the requirement, for a particular service, in a particular scenario or number of scenarios, is set and examining limited sets of data for those scenarios;
- the scenarios should reflect times when there is concerns about over procurement of FCESS (may be minimum or peak load);
- the sensitivity analysis does not need to produce an exact dollar value of adjusting the requirements, but is an assessment of materiality;
- EPWA and GHD will liaise to ensure that the data set that is used is sufficient.

Mr Schaefer presented slide 24 (SESSM – intent and purpose) and noted that the SESSM to date has not been triggered.

Mr Schaefer presented slide 25 (SESSM in action) nothing that he considered that the SESSM process could take 1-3 years and won't address immediate shortfalls.

The Chair noted that NCESS and SESSM timeframes are likely to be similar, but the question is do the rules need to differentiate between services procured through the SESSM that can be fully co-optimised, or those that cannot be fully co-optimised (under the current rules) because they are not provided by energy producing facilities and therefore need to be compensated in some other way for the services they provide.

Mr Schaefer explained that he did not consider that the NCESS was a short-term fix, rather that there were similar aspects between the NCESS and SESSM procurement processes.

The Chair agreed and noted that the requirement needs to be projected well in advance for either of those processes.

Mr Schaefer presented slide 26 (SESSM – challenges and inadequacies of the existing process).

Mr Schaefer presented slide 27 (SESSM – case study), noting that:

- GHD is looking to test the gaps in the SESSM process;
- RCS is challenging to work through as the price for it is zero on the assumption that it's a by-product of producing energy;
- a case study to ascertain whether the SESSM was fit for purpose using RCS had been planned but that was now paused to focus more on assessing the process, applicability and implementation of the SESSM for the other four FCESS;
- Mr Fairhall noted that, if syncons were used to provide RCS, that would likely trigger a review of the offer price ceiling for RCS. Currently it is set as zero because the only Facilities that are accredited to provide it cannot differentiate the RCS they provide from their energy. He added that an increase in the offer price ceiling may then result in more offers to the market.

The Chair agreed with Mr Fairhall and noted that:

- a non-energy producing RCS cannot be accommodated within the current market design. Many current rules, including the cap would not work, for this circumstance;
- it is likely more practicable to review the NCESS framework to make sure that such a service can be procured and compensated separately;
- it would be beneficial to explore any synergies between the need of Western Power to procure System Strength Services and AEMO's need for RCS from services like syncons, at the same time.

The Chair advised that the SESSM portion of the review would be placed on hold to consider the above issues.

- Mr Schubert stated that the WEM was more likely to get synthetic inertia and RCS from the batteries. He agreed that redesigning the SESSM to procure syncons would be complicated and questioned the need to do so with so much battery capacity coming in.
- Mr Wilson confirmed that AEMO was actively looking into synthetic inertia and that one of the advantages with synthetic inertia is that there is no longer a commitment issue in the market. This was largely because inverters, even if they are at 0 MW can still remain synchronised to the grid, allowing an inertia like service without any energy associated with it.

The Chair noted that, if there are any costs to provide synthetic inertia, those costs should be compensated.

- Mr Collins advised that providing synthetic inertia does come at a cost, but this is very small. He advised that a good case study to consider would be the UK, in particular the stability Pathfinder contracts which show that the battery contracts are virtually free when compared to syncons. He added that a market signal for participants to be developing batteries with grid forming inverters could yield good results. He suggested that there could be a mechanism for new batteries connecting to offer a price for 15 years of an inertia service.

The Chair agreed that the mechanism would need to be worked through as this currently is not enabled by the rules, and that there was a Power System Security and Reliability Standards Review with a Consultation Paper (yet to be published) that covers connection standards for grid forming inverters.

- Mr Schubert asked Mr Collins whether existing batteries, including those being built right now, were able to be reprogrammed to provide RCS or if they would require different inverters.
- Mr Collins replied that the Collie 1 battery would be able to do grid-forming and, while it would require some CapEx and protection work, this is not significant.

The Chair noted that if a process can be created to enable the re-programming to happen and be compensated to make the service available, then that is something that should be considered.

- Mr Wilson added that, in the event that synthetic inertia is considered appropriate for RCS, the one distinction AEMO need to consider is the maximum power output of the inverters. If the battery is operating at its maximum output, there is no additional energy injection coming from it unlike physical inertia.
- Mr Collins noted that in the Pathfinder projects, the final inertia quantity was the amount that could be produced when the battery is at full import or full export, but that much more could be produced if the battery was at 0MW. He added that, if the service was rewarded, than battery operators may add additional inverters to be able to produce more inertia at full export or full import.

The Chair suggested that this would be good to discuss in another session of the ESSFRWG and to draw on the experience of Mr Collins and others as to what can be achieved in the WEM.

4. GENERAL BUSINESS

No general business was discussed.

5. NEXT STEPS

The Chair advised that there would be another working group meeting to complete discussion on the sensitivity analysis and synthetic inertia.

The Chair advised that GHD would be drafting a Consultation Paper and closed the meeting.

The meeting closed at 4.50pm.

Agenda Item 6(c): Update on the Power System Security and Reliability Standards Working Group

Market Advisory Committee (MAC) Meeting 2025_05_01

1. Purpose

- The Chair of Power System Security and Reliability (PSSR) Standards Working Group (PSSRSWG) to provide an update on the activities of the PSSRSWG since the last MAC meeting.

2. Recommendation

That the MAC:

- notes the update from the PSSRSWG meeting on 31 October 2024;
- notes the minutes from the 10 October and 31 October 2024 PSSRSWG meetings - [Power System Security and Reliability \(PSSR\) Standards Working Group](#).

3. Background

- The purpose of the PSSR Standards Review (the Review) is to implement the Energy Transformation Taskforce's recommendation to develop a consistent, single end-to-end PSSR standard for the SWIS with a centralised governance framework that will be implemented in the ESM Rules.
- The Review is being conducted in four stages, as follows:
 1. Assess the existing PSSR standards framework;
 2. Identify any gaps, duplications, and inconsistencies in the existing framework;
 3. Develop proposals for a single end-to-end PSSR standard and a centralised governance framework governed by the Coordinator under the ESM Rules; and
 4. Draft rules to implement the proposals.
- The MAC established the PSSRWG to support the review of the PSSR standards for the South West Interconnected System (SWIS).
- Given that the roles and responsibilities for managing the PSSR standards are largely undertaken by AEMO and Western Power through their planning and operation processes, a Technical Working Group consisting of EPWA, AEMO and Western Power was also established to provide technical input at each stage of this review.
- At the PSSRSWG meeting on 31 October 2024, the proposed User Facility Standards and the PSSR Standards Governance Framework, as outlined in the minutes from the meeting.
- Since the last PSSRWG meeting, further work has been carried out by Etik Energy, overseen by Western Power and reviewed by AEMO, to assess the suitability of the access standards in Appendix 12 with regard to inverter-based resources. This work has focused on the changes most urgently required to remove barriers to the connection of inverter-based resources in the SWIS, with a focus on grid forming inverters that can

offer valuable system services, rather than developing a comprehensive list of requirements that may be necessary in the medium-term future.

- The next PSSRSWG meeting is yet to be scheduled.
- Further information on the PSSR Standards Review, including Papers and minutes are available on the PSSRSWG webpage at [Power System Security and Reliability \(PSSR\) Standards Working Group \(www.wa.gov.au\)](http://www.wa.gov.au)

5. Next Steps

<u>Stage</u>	<u>Activity</u>	<u>Timing</u>
3 – Develop Design proposals	Consult with the MAC on a draft Consultation Paper	TBC
	Consult with the MAC on a draft Information Paper	TBC
	Exposure draft of Draft Amending ESM Rules	TBC
4 - Develop amending rules	Amending ESM Rules submitted to Minister for Energy	TBC



Agenda Item 7: Major Projects Working Group Draft Terms of Reference

Market Advisory Committee (MAC) Meeting 2025_05_01

1. Purpose

For the Australian Energy Market Operator (AEMO) to provide an overview of the draft Terms of Reference for the Major Projects Working Group (MPWG), for which the MAC provided support to establish at the 25 July 2024 MAC meeting.

2. Recommendation

That the MAC:

- Notes this paper was prepared by AEMO, and any views expressed in it are AEMO's views.
- Considers the draft Terms of Reference and provides feedback on:
 1. The proposed functions and scope of the MPWG.
 2. The proposed governance and administration arrangements.
 3. The proposal to develop a WEM Implementation Roadmap (the Roadmap) and the proposed scope of the Roadmap.
- Approves the finalisation of the MPWG Terms of Reference (subject to any feedback provided by the MAC).
- Approves the next steps proposed by AEMO (including convening the MPWG and scheduling the first meeting).

4. Background

- AEMO tabled the proposal to establish the MPWG under clause 2.3.17 of the Wholesale Electricity Market (WEM) Rules and section 9 of the MAC Constitution at the 25 July 2024 MAC meeting.
- The MPWG was proposed to be established to provide input and strategic advice to support the planning and implementation of major AEMO projects.
- The MAC provided support for the proposal and requested that AEMO develop a draft Terms of Reference for consideration by the MAC.
- AEMO initially developed a draft Terms of Reference and submitted the relevant materials for tabling at the November 2024 MAC meeting. As AEMO has progressed further details around the proposed processes since this date, the materials have been updated accordingly.
- The attached MPWG draft Terms of Reference (Attachment 1) includes the following key components:
 - Clearly defined functions and scope – the MPWG is proposed to provide advice on the planning, implementation, and management of Major Projects and

associated key changes and challenges identified through consideration of the WEM Implementation Roadmap.

- Overview of Major Projects – how they are to be determined by AEMO and subject to more detailed consideration by the MPWG.
- Overview of the Roadmap – which aims to provide transparency and accountability on the implementation projects impacting the WEM (includes a holistic view of both Major Projects and other projects relevant to the WEM).
- Membership and participation – restricted to one member per organisation (with an appropriate level of expertise and seniority).
- Governance and administration – these arrangements are consistent with the requirements under the MAC Constitution. AEMO proposes to chair and provide secretariat support to the MPWG.
- The draft MPWG Terms of Reference and WEM Implementation Roadmap proposal have been modelled on AEMO's National Electricity Market (NEM) Reform Delivery Committee, which has successfully facilitated industry collaboration and input into sequencing and implementation of key NEM reforms since 2021.
- AEMO WEM Rule Change Proposal:
 - The MPWG was initially proposed alongside the Allowable Revenue Framework Rule Change Proposal, which the Coordinator of Energy has since rejected.
 - AEMO and EPWA propose to establish the MPWG regardless of the Coordinator of Energy's decision.

5. Next Steps

- Once the MAC has provided its feedback and approval, AEMO will finalise and publish the Terms of Reference on the AEMO's website. Relevant updates will also be undertaken to EPWA's website.
- AEMO will publish a call for nominations for the MPWG.
- AEMO intends to schedule the first MPWG meeting for June 2025.
 - At that meeting, AEMO intends to table a draft Roadmap Governance Document, which will provide further detail on the inputs to the Roadmap and processes for seeking feedback from the MPWG.

6. Attachments

- (1) Agenda Item 7 – Attachment 1 – Major Projects Working Group Draft Terms of Reference.
- (2) Agenda Item 7 - Attachment 2 – Major Projects Working Group Slide presentation

Terms of Reference

Major Projects Working Group

1 Background

Australia's energy landscape is undergoing significant change, transitioning from a power system dominated by traditional thermal generation to a modern low-emissions system with flexibility to meet evolving consumer requirements.

To support the ongoing energy transition, and the Western Australian State Electricity Objective, AEMO is developing the Wholesale Electricity Market (WEM) Implementation Roadmap, a multi-year program of works to deliver major reform projects. AEMO is also delivering key foundational and strategic initiatives that deliver an uplift to base capability on which reforms are dependent.

The Market Advisory Committee (MAC) has established the Major Projects Working Group (MPWG) to facilitate effective engagement between AEMO, Energy Policy WA (EPWA), Rule Participants and consumer representatives on the planning, implementation, and management of Major Projects. Further information on Major Projects and the WEM Implementation Roadmap is provided in section 3.

The MPWG is established in accordance with clause 2.3.17 of the WEM Rules and section 9 of the MAC Constitution.

2 Objective and Scope

Through the MPWG, AEMO aims to provide transparency and accountability to stakeholders on the efficient and timely delivery of Major Projects throughout the project lifecycle, including tracking against key project parameters.

Key areas of focus for the MPWG include providing advice on Major Projects and the key changes and challenges identified through consideration of the WEM Implementation Roadmap, including Rule Participant impacts and opportunities to drive efficiencies and minimise risk.

2.1 In Scope

The scope of matters for the MPWG includes:

aemo.com.au

- Consideration of the WEM Implementation Roadmap, including driving efficiencies with bundling and sequencing.
- Providing feedback on the implementation approach and scheduling for Major Projects, including highlighting issues and interdependencies, to reduce risk.
- Advising on changes required to Rule Participants' processes and systems to implement Major Projects, including highlighting opportunities to reduce overall implementation costs.
- Visibility of costs and delivery schedules of projects on the WEM Implementation Roadmap, throughout delivery.

3 Major Projects and WEM Implementation Roadmap

3.1 Major Projects

AEMO will be responsible for determining a project to be a Major Project by applying a materiality test. This will include considering the potential impact of the project on AEMO, Rule Participants and the operation of the WEM, having regard to the scope of the change and the estimated timing, cost, and risk.

The types of projects that are likely to be determined as Major Projects will include major WA Government-led reforms and projects involving major changes to AEMO's and industry's systems in the WEM. Major Projects will be subject to detailed implementation consideration by the MPWG.

Major Projects will be added to the WEM Implementation Roadmap alongside "Other Projects", which may include other AEMO-initiated projects and smaller or in-flight WA Government-led reforms. Other Projects will not be subject to the same detailed implementation consideration by the MPWG. AEMO may add additional projects to the WEM Implementation Roadmap at its discretion.

Type of Project	Likely categorisation	Detailed consideration by MPWG	Appear on Roadmap
Major WA Government-led reforms	Major Project	Yes	Yes
Major AEMO-initiated WEM project (e.g. operational uplift)	Major Project	Yes	Yes
Other AEMO-initiated WEM projects	Other Project	No	Yes
Other WA Government-led Reforms	Other Project	No	Yes

Other relevant considerations

- AEMO will only commence the determination process for Major Projects following the establishment of the MPWG.
- In-flight projects, that have been scheduled for implementation prior to establishment of the MPWG, will not be determined as Major Projects. The timing and scope of these projects will proceed as currently scheduled, unless advised otherwise by AEMO or EPWA. These in-flight projects will be added to the WEM Implementation Roadmap as “Other Projects” for visibility.
- Major WA Government-led reforms will only be open for determination as a Major Project after EPWA has published the relevant draft Amending Electricity System and Market Rules for consultation.
- On an ongoing basis, once a Major Project is scheduled for implementation, it will proceed in accordance with that schedule unless advised otherwise by AEMO or EPWA.

3.2 WEM Implementation Roadmap

AEMO will develop and maintain a WEM Implementation Roadmap, which will provide a holistic view of the implementation of the projects impacting the WEM. This will include Major Projects and Other Projects.

The WEM Implementation Roadmap aims to:

- Provide transparency and accountability to stakeholders on project implementation.
- Provide information on key project parameters, which can be tracked, updated, and reported throughout the life of the project.
- Balance the prioritisation of Major Projects with efficient delivery options.
- Facilitate the coordination of regulatory and IT changes and alignment of system changes (where possible) to improve cost outcomes.

The MPWG will also utilise the WEM Implementation Roadmap as a tool to inform its feedback and advice on Major Projects.

AEMO will engage with EPWA and the MPWG on the first iteration of the WEM Implementation Roadmap in mid-2025, and will ensure it is periodically updated with current information.

Note: Projects on the WEM Implementation Roadmap will be subject to AEMO’s internal financial and risk governance and will not progress to implementation until approved by AEMO’s Board or authorised delegate, to ensure they are both prudent and efficient.

4 Out of Scope

Decision making

The MPWG is not a decision-making body, but rather provides advice for consideration by the appropriate decision-making entity.

Policy making

The MPWG is not a forum to consult on, or influence decisions regarding, policy matters or rule changes. EPWA provides other forums and opportunities for such consultation.

Non-WEM projects

Projects that are not specific to the WEM are outside of the remit of the MPWG. For example, a project to implement changes to the National Electricity Rules or to change an application that supports a company-wide corporate function would be out of scope. Notwithstanding, AEMO may discuss non-WEM projects as they relate to the scheduling and prioritisation of Major Projects (e.g. where a Major Project can be implemented alongside another project to reduce costs).

AEMO implementation costs

AEMO will provide cost estimates at various stages of project development and implementation, with the WEM Implementation Roadmap tracking project expenditure against expectations. While the MPWG may ask questions on costs, and provide feedback on potential cost reductions, it does not approve project costs or make any other decisions regarding project expenditure. Governance of project delivery is the responsibility of AEMO's Board, and/or executive steering committees.

5 Membership and participation

AEMO will appoint a permanent Chair to the MPWG.

EPWA, Rule Participants and consumer representatives may nominate a person for membership on the MPWG, for approval by the Chair.

There are no restrictions on the number of MPWG members. However, only one member from each organisation¹ may be nominated, unless otherwise approved by the Chair. Where the nominated member is unavailable, the relevant organisation may nominate a proxy, with advance notice by email to the Chair.

Where a member leaves their nominee organisation, they must resign from the MPWG. The organisation may nominate a replacement for consideration of the Chair.

The Chair of the MPWG will have discretion to allow additional subject matter experts, consultants, or observers to attend specific meetings or workshops, either generally or on a case-by-case basis, and with advance notice by email to the Chair.

A person attending a meeting of the MPWG is expected to:

¹ For the purposes of this Terms of Reference, the term 'Organisation' includes the Expert Consumer Panel.

- Prepare for the meeting, including by reading any meeting papers distributed before the meeting.
- Provide advice and input on implementation planning matters that are in the long-term interests of consumers, consistent with the State Electricity Objective.
- Have sufficient expertise to discuss the subject matter to be covered and be of an appropriate level of seniority within their organisation to provide organisational views on the matters covered.
- Have a detailed understanding of their own organisation's program's timelines, deliverables, and business impacts and how their program interfaces with AEMO's program.
- Seek permission from the Chair before reporting on the operation or outcomes of forum meetings in the media or on social media, unless referencing the official minutes.
- If using a proxy, ensure the proxy is well informed and briefed ahead of the meeting.

Non-member stakeholders may register to receive information relating to MPWG activities.

6 Administration and governance

6.1 Meeting arrangements

Timing

The MPWG will meet at least three times per year for approximately two hours duration.

Additional MPWG meetings may be scheduled, or information updates provided between meeting dates, as required. AEMO will endeavour to provide notice of any additional meetings at least 10 Business Days prior to the meeting. Meetings will principally take place online via MS Teams.

Secretariat services

AEMO will provide secretariat services, including convening meetings, and preparing and distributing all meeting correspondence and will provide reports to the MAC (see section 6.2 below)

AEMO will endeavour to provide MPWG members with:

- Draft agenda seven business days prior to a meeting.
- Final agenda and relevant meeting papers five business days prior to a meeting.
- Draft minutes within ten business days of a meeting. Minutes will include a record of all actions, as well as consensus and dissenting positions expressed at the meeting.
- Meeting papers and final minutes will be published on AEMO's website within 15 business days of the meeting.

Expenses

Any expenses incurred as a result of attending meetings or activities associated with the MPWG are at the expense of the MPWG participant or their employer.

6.2 Reporting arrangements

The MPWG must provide a report to the MAC on the activities of the MPWG at each MAC meeting, as well as reporting at other times requested by the MAC.

The reports to the MAC must include, at a minimum:

- If a meeting has been held since the last MAC meeting, details of the most recent meeting, including the date, the list of the matters considered, and summary of views expressed.
- To the extent known, the future schedule of meetings and matters to be considered.

6.3 Relationship with other Working Groups and Committees

The MPWG's remit is distinct from other working groups, as outlined below.

WA Reform Implementation Group (WRIG)

The WRIG provides information to support Market Participants in preparing their systems and processes for upcoming changes. WRIG meetings focus on operational readiness, whereas the MPWG focuses earlier in the project lifecycle, engaging on matters such as implementation approach and scheduling.

Financial Consultation Committee (FCC)

The FCC considers and provides feedback on the development of AEMO's budget, fees, and corporate plan priorities. In 2024, FCC was expanded to include WA, to increase accountability through consultation on AEMO's proposed WA Budget and Fees. By contrast, the MPWG will receive specific cost information for projects on the WEM Implementation Roadmap.

Transformation Design and Operation Working Group (TDOWG)

The TDOWG is chaired by EPWA and provides a forum for discussing policy design and implementation matters associated with proposed WA Government-led reforms. The MPWG will not be a forum for policy discussion.

6.4 Contact details

Rule Participants and other interested stakeholders may contact the MPWG Secretariat at majorprojects@aemo.com.au.

Documentation and information related to the MPWG will be published on AEMO's [website](#).

Major Projects Working Group

Draft Terms of Reference

1 May 2025



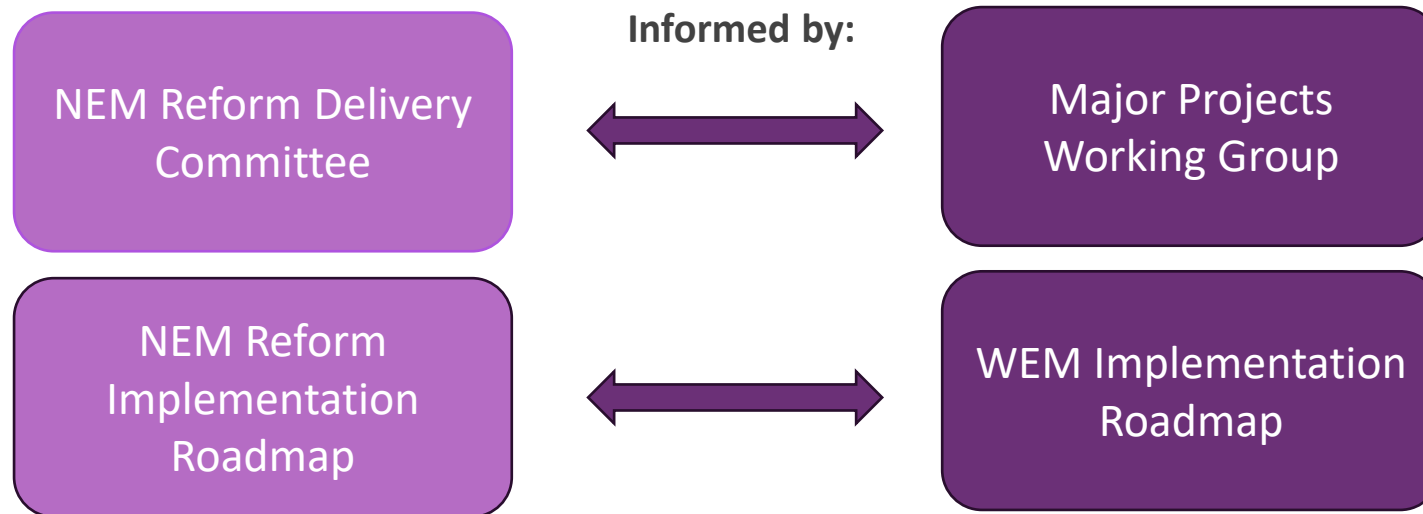
Background

The story so far...

- AEMO tabled a Draft Rule Change Proposal at the 25 July 2024 Market Advisory Committee (MAC), which included a proposal to introduce a Major Projects framework under the WEM Rules.
 - At the same meeting, AEMO proposed that a Major Projects Working Group (MPWG) is established – modelled off the NEM Reform Steering Committee – to “support the planning and implementation of WEM reforms and major AEMO projects.”
- The MAC supported the proposal and suggested AEMO develop a draft Terms of Reference for discussion.
- While the Rule Change Proposal has since been rejected, AEMO and EPWA propose to progress with establishing the MPWG.
- As the materials were first tabled for the November 2024 MAC, AEMO has since progressed more detailed work on the design of the process.

Context for the MPWG

The proposed MPWG & Roadmap has been modelled from AEMO's National Electricity Market (NEM) Reform program and the success of the NEM Reform Delivery Committee.



Draft Terms of Reference – summary

Overview of the MPWG

- The MPWG is established by the MAC under clause 2.3.17 of the WEM Rules.
- Objective of the MPWG:
 - To enable AEMO to provide transparency and accountability on the delivery of Major Projects throughout the project lifecycle.
 - To facilitate effective engagement between AEMO, Energy Policy WA and stakeholders on the planning, implementation and management of Major Projects.
 - To provide advice on the development and implementation of the WEM Implementation Roadmap, including Rule Participant impacts and opportunities to drive efficiencies.

What is a Major Project?

AEMO will determine a project to be a Major Project by applying a materiality test.

Type of Project	Likely categorisation	Detailed consideration by MPWG	Appear on Roadmap
Major WA Government-led reforms	Major Project	Yes	Yes
Major AEMO-initiated WEM project (e.g. operational uplift)	Major Project	Yes	Yes
Other AEMO-initiated WEM projects	Other Project	No	Yes
Other WA Government-led Reforms	Other Project	No	Yes

Proposed scope of the MPWG

In scope:

- Consideration of the WEM Implementation Roadmap, including options to drive efficiencies with bundling and sequencing.
- Providing feedback on the implementation approach and scheduling for Major Projects, including highlighting issues and interdependencies, to reduce risk.
- Advising on changes required to Rule Participants' processes and systems to implement Major Projects, including highlighting opportunities to reduce overall implementation costs.
- Visibility of costs and delivery schedules of projects on the WEM Implementation Roadmap, throughout delivery.

Out of scope:

- The MPWG is not a decision-making body.
- Not a forum to consult on or make decisions regarding policy matters or rule changes.
- Projects that are not specific to the WEM are outside of the remit of the MPWG.
- The MPWG will not approve project costs or make decisions regarding AEMO expenditure.

Proposed MPWG Administration

- AEMO will Chair and provide secretariat services.
- Meet at least three times a year (via Teams) with additional meetings scheduled as required.
- Membership – one person per organisation (including the Expert Consumer Panel) with sufficient level of expertise and seniority.
- Report to the MAC in accordance with the MAC constitution (standing update at each meeting).
- Minutes and papers will be published on the WEM Website.

WEM Implementation Roadmap (the Roadmap)

The Roadmap will aim to:

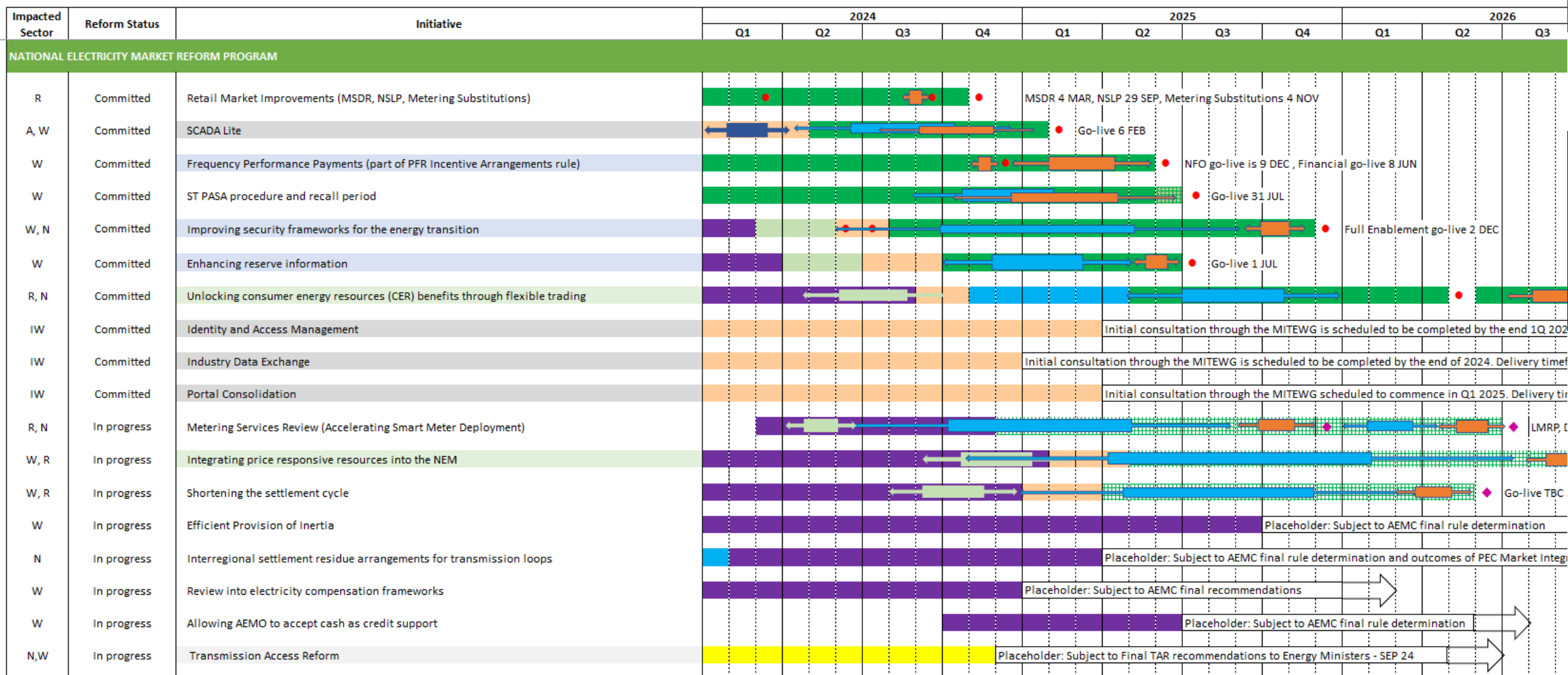
- Provide transparency and accountability to stakeholders on project implementation.
- Provide information on key project parameters, which can be tracked, updated, and reported throughout the life of the project.
- Balance the prioritisation of Major Projects with efficient delivery options.
- Facilitate the coordination of regulatory and IT changes and alignment of system changes (where possible) to improve cost outcomes.

AEMO intends to publish a 'Roadmap Governance document' which will provide further detail on the Roadmap inputs and process for seeking feedback from the MPWG. This will include a new implementation assessment process for Major Projects.

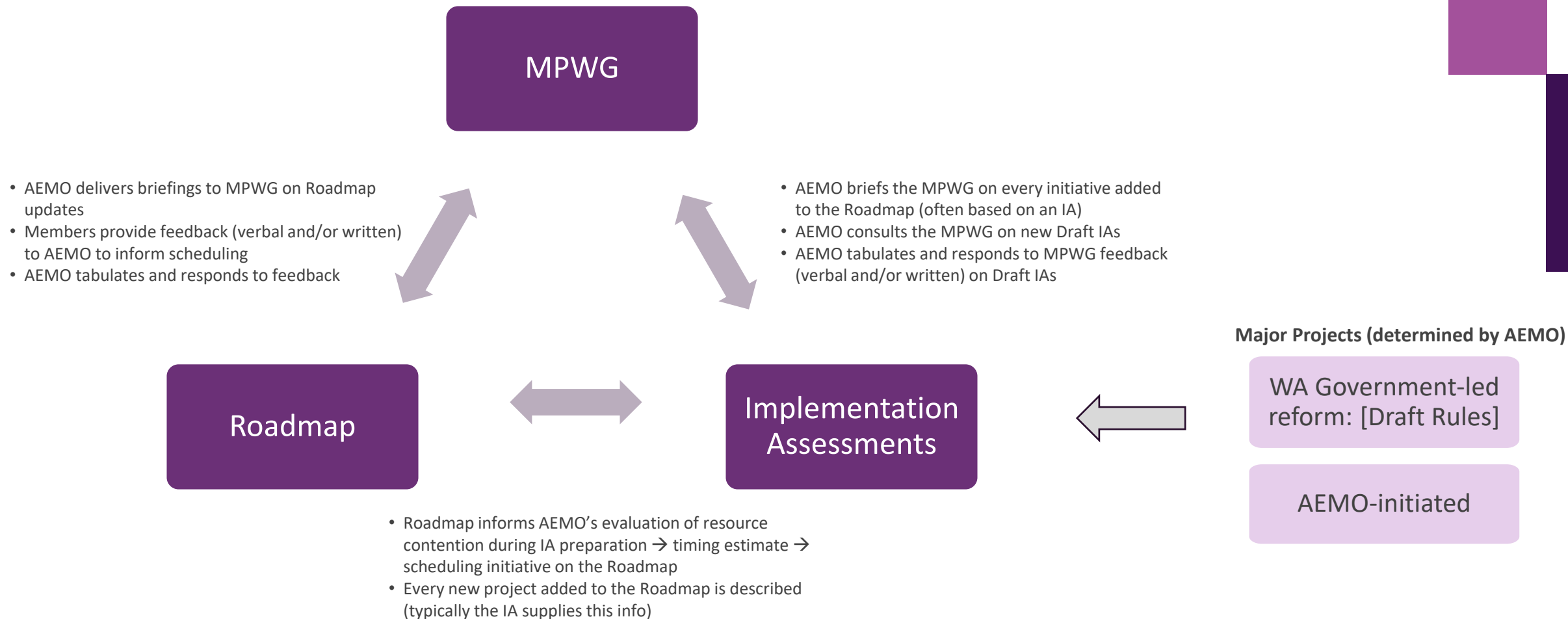
NEM Reform Implementation Roadmap (v.5 excerpt)

[Link to Legend & Assumptions](#)

↑ Expand group for 2020 - 2023 roadmap info, codes, updates and callouts



Overview | Linkages



Proposed Next Steps

- Consider and incorporate MAC feedback on the Terms of Reference.
- Finalise and publish the Terms of Reference.
- AEMO to publish call for MPWG membership.
- AEMO to schedule first MPWG meeting (proposed to be June 2025).
- AEMO to publish the Roadmap Governance document and develop the first iteration of WEM Implementation Roadmap by mid-2025.



For more information visit
aemo.com.au

Agenda Item 8: Review of AEMO's Allowable Revenue Framework

Market Advisory Committee (MAC) Meeting 2025_05_01

1. Purpose

- To provide the MAC with an update on the work of the Review of the Australian Energy Market Operator's (AEMO) Allowable Revenue Framework (ARF).

2. Recommendation

That the MAC notes:

- the update on the Review of AEMO's Allowable Revenue Framework; and
- that a stakeholder workshop will serve as the primary forum for receiving feedback from stakeholders on the policy proposals prior to the release of a Consultation Paper.

3. Background

- The Coordinator of Energy (Coordinator) is conducting a review of AEMO's ARF under the Electricity System and Market (ESM) Rules and the Gas Services Information (GSI) Rules, to identify and implement changes necessary to improve the frameworks.
- This review has been initiated following two rule change proposals by AEMO, which sought to address challenges with the ARF and replace the current Allowable Revenue and Forecast Capital Expenditure processes¹.
- In the Final Rule Change Reports², the Coordinator signalled the intent to undertake a fulsome review of the ARF under each set of Rules to:
 - identify any issues and inefficiencies regarding the current AEMO Allowable Revenue and Forecast Capital Expenditure processes; and
 - undertake a jurisdictional scan of similar revenue setting mechanisms and performance reviews; and
 - develop a new fit-for-purpose replacement framework for the determination of AEMO's Allowable Revenue and Forecast Capital Expenditure under the ESMR and GSI Rules.
- Until the new replacement framework is in place, Amending Rules have been implemented that provide market certainty for fees during the transition period through a Consumer Price Index and Wage Price Index adjustment.
- Energy Policy WA (EPWA) has developed and published a [Scope of Work](#) and commenced its review.

¹ [Rule Change Notice: Allowable Revenue Framework \(RC 2024_01\)](#) and [Rule Change Notice: Allowable Revenue Framework \(GRC 2024_01\)](#)

² [Final Rule Change Report – AEMO's Allowable Revenue Framework \(RC 2024_01\)](#) and [Final Rule Change Report – AEMO's Allowable Revenue Framework \(GRC 2024_01\)](#)

- The review is being undertaken in three stages:
 - **Stage one:** Assessment of existing frameworks.
 - **Stage two:** Options development and assessment, proposals development.
 - **Stage three:** Proposed policy position and implementation.

4. Stakeholder Engagement

- Given the roles and responsibilities of AEMO and the Economic Regulation Authority (ERA) in relation to the ARF, close consultation with AEMO and the ERA will be required throughout the project to ensure that the replacement framework is fit-for-purpose.
- To date, EPWA, AEMO, and the ERA have met six times—two meetings between EPWA and AEMO, one between EPWA and ERA, as well as four joint meetings. Discussions have focused on issues and inefficiencies with the current framework, as well as identifying and discussing options for aspects of the ARF.
- Additionally, Energy Policy WA plans to consult with key stakeholders, including members of the MAC and Gas Advisory Board (GAB), on the policy proposal and detailed design.
- During Stage three, a stakeholder workshop will be the primary forum for gathering feedback from stakeholders on the policy proposals before the release of a Consultation Paper. Meeting invitations are anticipated to be circulated to stakeholders in early May, with the meeting anticipated to be scheduled for end-May.

5. Next Steps

Tasks/Milestones	Timing (by When)
Stage 2 – Options development and assessment, proposals development	
Develop and assess options. Develop design proposals for a preferred replacement ARF.	March/April 2025
Consultation with AEMO and the ERA	March/April 2025
Develop draft Consultation Paper with proposed outputs from the Review	April/May 2025
Stage 3 – Proposed policy position and implementation	
Stakeholder workshop	Mid/End-May 2025
Publish Consultation Paper for four weeks consultation	End-May – Early July 2025
Publish the Information paper together with an Exposure Draft of the Amending ESMR.	Mid-July – Early -August 2025
Amending ESMR	
Amending ESMR submitted to Minister for Energy	End- August 2025

Agenda Item 9: Market Development Forward Work Program

Market Advisory Committee (MAC) Meeting 2025_05_01

1. Purpose

- To provide an update on the Market Development Forward Work Program and an overview of the status of MAC working groups.
- Changes to the Market Development Forward Work Program since the previous MAC meeting are shown in red in the Tables below.

2. Recommendation

- The MAC Secretariat recommends:
 - that the MAC closes the Reserve Capacity Mechanism Review Working Group and the Demand Side Response Review Working Group; and
 - that the MAC notes the updates to the Market Development Forward Work Program provided in Tables 1-3.

3. Process

Stakeholders may raise issues for consideration by the MAC at any time by sending an email to the MAC Secretariat at energymarkets@demirs.wa.gov.au.

Stakeholders should submit issues for consideration by the MAC two weeks before a MAC meeting so that the MAC Secretariat can include the issue in the papers for the MAC meeting, which are circulated one week before the meeting.

Table 1 – Current MAC Working Groups

Working Group	Established	Status	Next steps
WEM Procedures Content Assessment	2 May 2024 MAC Meeting	Delayed	The project has been rescheduled for 2025 because of resource constraints and to better align with other projects
Essential Systems Services Framework Review	2 May 2024 MAC Meeting	Open	Review the ESS Standards and the basis for setting ESS requirements, and develop metrics to be used for ongoing monitoring of ESS
AEMO Procedure Change	1 May 2017 MAC Meeting	Open	Ongoing process
Power System Security and Reliability Standards	23 November 2023 MAC Meeting	Open	Publication of the Consultation Paper
Wholesale Electricity Market Investment Certainty Review	20 July 2023 MAC Meeting	Open	The ESM Rules implementing the Review Outcomes for Initiatives 1 and 2 of the WIC Review were in Electricity System and Market Amendment (RCM Reviews Sequencing) Rules 2025. The Rules were approved by the Minister for Energy and published in the Government Gazette on 14 January 2025
Reserve Capacity Mechanism Review	21 September 2021 MAC Meeting	Finishing Pending the MAC's decision	The Wholesale Electricity Market Amendment (RCM Review Sequencing) Rules were approved by the Minister for Energy and published in a Government Gazette 14 January 2025
Cost Allocation Review	14 December 2021 MAC Meeting	Finishing	Outstanding Amending Rules will come into operation at a time determined by the Minister and published in a Gazette
Demand Side Response Review	16 March 2023 MAC Meeting	Finishing Pending the MAC's decision	The DSP dynamic baselines were in the Wholesale Electricity Market Amendment (RCM Review Sequencing) Rules. The Rules were approved by the Minister for Energy and published in the Government Gazette on 14 January 2025

Table 2 – Market Development Forward Work Program

Review	Issues	Status and Next Steps
Reserve Capacity Mechanism (RCM) Review	A review of the RCM, including a review of the Planning Criterion.	- The MAC established the RCM Review Working Group (RCMRWG). Information on the Working Group is available at Reserve Capacity Mechanism Review Working Group, including: - the Terms of RCMRWG, as approved by the MAC; - the list of RCMRWG members; - meeting papers and minutes from the RCMRWG meeting on 20 January 2022, 17 February 2022, 17 March 2022, 5 May 2022, 2 June 2022, 16 June 2022, 14 July 2022, 2 July 2022, 13 October 2022, 24 November 2022; 15 December 2022, 1 February 2023, 16 February 2023, 2 March 2023, 22 March 2023, 6 July 2023, 13 July, 30 August 2023. - The following papers have been released and are available on the RCM Review webpage at Reserve Capacity Mechanism Review: - the Scope of Works for the review, as approved by the Coordinator; - the Stage 1 Consultation Paper; - the Paper on the Review of International Capacity Mechanisms; - submissions on the Stage 1 Consultation Paper; - the RCM Review Information Paper (Stage 1) and Consultation Paper (Stage 2); - submissions on the RCM Review Consultation Paper (Stage 2);

Table 2 – Market Development Forward Work Program

Review	Issues	Status and Next Steps
		- the RCM Review Information Paper (Stage 2); - the RCM – ESM Amending Rules Exposure Draft; - submissions on the RCM – ESM Amending Rules Exposure Draft; - responses to stakeholder submissions on the Exposure Draft if the RCM Review ESM Amending Rules; - the Wholesale Electricity Market Amendment (Reserve Capacity Reform) Rules 2023 available at Wholesale Electricity Market Amendment (Reserve Capacity Reform) Rules 2023 (www.wa.gov.au); - the Exposure Draft on re-sequencing RCM Review ESM Amending Rules; - submissions on the Exposure Draft on re-sequencing RCM Review ESM Amending Rules; and - response to stakeholder submissions on the Exposure Draft on re-sequencing RCM Review ESM Amending Rules - The Wholesale Electricity Market Amendment (RCM Review Sequencing) Rules were approved by the Minister for Energy and published in a government gazette 14 January 2025.

Table 2 – Market Development Forward Work Program

Review	Issues	Status and Next Steps
Cost Allocation Review (CAR)	A review of: - the allocation of Market Fees, including behind the meter (BTM) and Distributed Energy Resources (DER) issues; - cost allocation for Essential System Services; and - Issues 2, 16, 23 and 35 from the MAC Issues List.	- The MAC established the Cost Allocation Review Working Group (CARWG). Information on the CARWG is available at Cost Allocation Review Working Group, including: - the Scope of Work for the review, as approved by the Coordinator; - the Terms of Reference for the CARWG, as approved by the MAC; - the list of CARWG members; - meeting papers and minutes from the CARWG meetings on 9 May 2022, 7 June 2022, 30 August 2022, 27 September 2022, 25 October 2022, 29 November 2022, 21 March 2023, 2 May 2023 and 29 August 2023. - The following papers have been released and are available on the CAR webpage at Cost Allocation Review: - the Consultation Paper; - the International Review; - submissions on the Consultation Paper; - the CAR Information Paper; - the Exposure Draft of the ESM Amending Rules implementing the outcomes of the CAR; - submissions on the CAR ESM Amending Rules Exposure Draft; and - response to submissions on the CAR ESM Amending Rules Exposure Draft.

Table 2 – Market Development Forward Work Program

Review	Issues	Status and Next Steps
		- the Wholesale Electricity Market Amendment (Cost Allocation Reform) Rules 2024 available at Wholesale Electricity Market Amendment (Cost Allocation Reform) Rules 2024. - Further changes to refine the cost allocation method for the Contingency Reserve Raise Service were presented at the 18 June 2024 TDOWG and consulted on within the Miscellaneous Amendments No. 3 Exposure Draft. - The last set of changes (to Contingency Reserve Raise cost allocation) implementing the outcomes of this Review were included in the Amending Rules made by the Minister on 2 October 2024.
Review of the Participation of Demand Side in the Wholesale Electricity Market	The scope of this review is to: - identify the different ways that Loads/Demand Side Response can participate across the different WEM components; - identify and remove any disincentives or barriers for Loads/Demand Side Response participating across the different WEM components; and - identify any potential for over- or under-compensation of Loads/Demand Side Response (including as part of 'hybrid' facilities") as a result of their participation in the various market mechanisms.	- The MAC established the Demand Side Response Review Working Group (DSRRWG). Information on the DSRRWG is available at Demand Side Response Review Working Group, including: - the Terms of Reference for the DSRRWG, as approved by the MAC; - the list of DSRRWG members; - meeting papers and minutes from the DSRRWG meeting on 10 May 2023, 7 June 2023, 5 July 2023, 2 August 2023 and 29 November 2023, 7 February 2024 and 15 February 2024. - The following papers have been released and are available on the DSR Review webpage at Demand Side Response Review - the Scope of Work for the review, as approved by the Coordinator;

Table 2 – Market Development Forward Work Program

Review	Issues	Status and Next Steps
		• the Demand Side Response Review Consultation paper; • the submissions received on the Demand Side Response Review Consultation paper; • the Demand Side Response Review Information Paper; • the Demand Side Response Review – ESM Amending Rules Exposure Draft; • the submissions received on the Demand Side Response Review – ESM Amending Rules Exposure Draft; • response to submissions on the DSR ESM Amending Rules Exposure Draft; and • response to stakeholder submissions Demand Side Response Review – ESM Amending Rules Exposure Draft. • Review outcomes 1, 2 and 12 were included in the Amending Rules made by the Minister on 2 October 2024. • Review outcome 3 was superseded by changes to registration of separate facilities where the connection point and measuring point are not electrically equivalent that was included in the Amending Rules made by the Minister on 2 October 2024. • Review outcome 4 about the dynamic baseline method will remain open until rule changes to facilitate AEMO's timeline for implementing the outstanding elements of the Reserve Capacity Mechanism Review Rules are made. • Amending Rules for the outstanding elements of the Reserve Capacity Mechanism Review Rules were approved by the Minister for Energy and published in a Government Gazette 14 January 2025.

Table 2 – Market Development Forward Work Program

Review	Issues	Status and Next Steps
WEM Procedure Content Assessment project	The scope of this project is to: Review current WEM Procedures against a criterion developed by the Procedure Change Process Review and determine if a matter should be addressed in the ESM Rules or WEM Procedures.	- At the 2 May 2024 MAC meeting, the MAC established the WEM Procedure Content Assessment Working Group and: - supported the Scope of Work; and - requested that the project schedule be revised. - Following feedback at the 2 May 2024 MAC meeting and other discussions, the Terms of Reference is being revised.
Review of the Market Advisory Committee (MAC)	The scope of this review is to ensure that the purpose, representation, process and operations of the MAC are fit for purpose, and in particular, that it operates efficiently and provides balanced, timely and useful advice to the Coordinator.	- The MAC supported a Scope of Works for this review at its meeting on 8 June 2023 and advised EPWA to further consider the timing of the review. EPWA has updated the Scope of Works to reflect the MAC discussions. - The Scope of Work for the review, as approved by the Coordinator is available at Market Advisory Committee Review - ACIL Allen was appointed to assist with the MAC Review. - On 7 May 2024, the Consultation paper was released for public consultation. Submissions closed 31 May 2024 with stakeholder submissions published on the Coordinator's website. - The Coordinator received the ACIL Allen report on 28 June 2024 and will publish a response in due course.
Procedure Change Process (PCP) Review	A review of the PCP to address issues identified through Energy Policy WA's consultation on governance changes.	- The MAC discussed a draft Scope of Work for this review at its meeting on 11 October 2022. EPWA has updated the Scope of Works to reflect the MAC discussions. - The Scope of Work for the review, as approved by the Coordinator is available here Wholesale Electricity Market Procedure Change Process Review (www.wa.gov.au)

Table 2 – Market Development Forward Work Program

Review	Issues	Status and Next Steps
		- ACIL Allen has been appointed to assist with the PCP review. - ACIL Allen engaged with MAC members through a survey and one-on-one consultations between 12 March and 18 April 2024. There were 11 respondents to the PCP survey, out of 19 requests. - On 6 May 2024, the Consultation Paper was released for public consultation. Submissions closed 31 May 2024 with stakeholder submissions published on the Coordinator's website. - On 9 August 2024, the Coordinator finished stage 1 by publishing the ACIL Allen report and his response on the Coordinator's website. - EPWA is progressing stages 2 and 3 of the review and is revising a draft consultation paper to reflect the MAC's feedback from the 5 September 2024 MAC meeting.
Review of the Power System Security and Reliability (PSSR) Standards	The scope of this review is to: - review the various PSSR related provisions in the instruments governing power system security and reliability in the SWIS; - assess whether the combination of existing standards is effective to ensure power system security and reliability can be maintained; - develop proposals for a single end-to-end PSSR standard and a centralised governance framework; and	- The MAC established the PSSR Standards Working Group (PSSRSWG). Information on the PSSRWG is available at Power System Security and Reliability (PSSR) Standards Working Group including: - the Terms of Reference for the PSSRSWG, as approved by the MAC; - the Scope of Work - the list of PSSRSWG members; and - meeting papers and minutes for the 14 December 2023, 1 February 2024, 29 February 2024, 18 April 2024, 25 July

Table 2 – Market Development Forward Work Program

Review	Issues	Status and Next Steps
	draft amending Rules and other regulatory changes, as necessary.	2024, 10 October 2024 and 31 October 2024 PSSRSWG meetings.
Review of the Essential Systems Services (ESS) Framework	The Coordinator of Energy (Coordinator) is conducting a review of the ESS Framework (the Review), incorporating: • a review of the ESS Process and Standards under Section 3.15 of the ESM Rules; and • a review of the Supplementary Essential Systems Services Procurement Mechanism (SESSM) under clause 2.2D.1(h). The purpose of this Review is to assess whether the FCESS framework in the ESM Rules is operating efficiently to ensure power system security and reliability can be maintained at the lowest cost to consumer.	• The MAC approved the establishment of the ESS Framework Working Group (ESSFRWG) to support the ESS Framework Review. Information on the ESSFRWG is available at Essential System Services Framework Review Working Group including: • The Terms of Reference for the ESSFRWG, as approved by the MAC; • The list of ESSFRWG members; • Meeting papers and minutes for 6 November 2024 and 26 February 2025 meetings; and • Meeting papers for 26 March 2025 meeting. • The following papers have been released and are available on the ESS Framework Review webpage: • The Scope of Work for the Review.

WEM Investment Certainty (WIC) Review	The WIC Review will consider, design and implement the following five reforms that have been announced by the Minister for Energy, which are aimed at providing further investment certainty to assist the decarbonisation of the WEM: (1) changing the Reserve Capacity Price (RCP) curve so it sends 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 emissions thresholds for existing flexible gas plants that qualify to provide the new flexibility service.	• The MAC established the WIC Review Working Group (WICRWG). Information on the WICRWG is available at Wholesale Electricity Market Investment Certainty (WIC) Review Working Group including: • the Terms of Reference for the WICRWG, as approved by the MAC; • the list of WICRWG members; • meeting papers and minutes from the 31 August 2023, 11 October, 8 November, the 6 December 2023, 24 January, the 24 April and 29 May 2024 WICRWG meeting. • The following papers have been released and are available on the WIC Review webpage, including: • the Scope of Work for the review, as approved by the Coordinator; • the WIC Review (Initiatives 1 and 2) Consultation Paper; • the submissions received on the WIC Review (Initiatives 1 and 2) Consultation Paper; • the WIC Review (Initiatives 1 and 2) Information Paper; • The Exposure Draft of ESM Amending Rules to implement Initiatives 1 and 2; • Submissions for the Exposure Draft of WEM Investment Certainty and RCM Review Amending Rules; and • Response to Submissions for the Exposure Draft of WEM Investment Certainty and RCM Review Amending Rules. • The ESM Rules implementing the Review Outcomes for Initiatives 1 and 2 of the WIC Review are in Wholesale Electricity Market Amendment (RCM Reviews Sequencing) Rules 2025. The Rules were approved by the Minister for
--	--	--

Table 2 – Market Development Forward Work Program

Review	Issues	Status and Next Steps
		Energy and published in the Government Gazette on 14 January 2025.
Forecast quality	Review of Issue 9 from the MAC Issues List.	This review has been deferred.
Network Access Quantity (NAQ) Review	Assess the performance of the NAQ regime, including policy related to replacement capacity, and address issues identified during implementation of the Energy Transformation Strategy (ETS).	The timing for this review is to be determined.
Short Term Energy Market (STEM) Review	Review the performance of the STEM to address issues identified during implementation of the ETS.	This review has been deferred.

Table 3 – Other Issues			
Id	Submitter/Date	Issue	Status
9	Community Electricity November 2017	Improvement of AEMO forecasts of System Load; real-time and day-ahead.	EPWA has commenced work to improve AEMO's operational forecasting that will consider this issue.

Agenda Item 10: Overview of Rule Change Proposals (as of 11 April 2025)

Market Advisory Committee (MAC) Meeting 2025_05_01

- Changes to the report since the previous MAC meeting are shown in red font.
- The next steps and the timing for the next steps are provided for Rule Change Proposals that are currently being actively progressed by the Coordinator of Energy (Coordinator) or the Minister.

Rule Change Proposals Commenced since the Report presented at the last MAC Meeting

None

Rule Change Proposals Awaiting Commencement

None

Rule Change Proposals Rejected since Report presented at the last MAC Meeting

Reference	Submitted	Proponent	Title	Rejected
RC_2024_01	28/08/2024	AEMO	AEMO's Allowable Revenue Framework	26/02/2025 The Final Rule Change Report included Amending Rules were published and the Amending Rules commenced on 10 March 2025.

Rule Change Proposals Awaiting Approval by the Minister

None

Formally Submitted Rule Change Proposal

None

Pre-Rule Change Proposals

None

Rule Changes Made by the Minister since Report presented at the 17 October MAC Meeting

Gazette	Date	Title	Commencement
2024/131	29/10/2024	Wholesale Electricity Market Amendment (FCESS Cost Review) Rules 2024	Schedule 1 commenced 30 October 2024. Schedule 2 commenced 20 November 2024. Schedule 3 commenced 1 February 2025. Schedule 4 commenced 1 March 2025.
2024/120	4/10/2024	Wholesale Electricity Market Amendment (Miscellaneous Amendments No 3) Rules 2024	Schedule 3 commenced 1 January 2025.
2025/3	14/01/2025	Wholesale Electricity Market Amendment (RCM Reviews Sequencing) Rules 2025	Schedule 1 – commenced 15 January 2025 Schedule 2 will commence 1 January 2026. Schedule 3 will commence 1 October 2024. Schedule 4 will commence 1 October 2027. Schedules 5, 6 and 7 will commence at a time specified by the Minister in a notice published in the Gazette.

Rule Change Made by the Minister and Awaiting Commencement

Gazette	Date	Title	Commencement
2023/165	12/12/2023	Wholesale Electricity Market Amendment (Reserve Capacity Reform) Rules 2023	Schedules 2, 3 and 4 will commence at a time specified by the Minister in a notice published in the Gazette.
2024/66	7/06/2024	Wholesale Electricity Market Amendment (Cost Allocation Reform) Rules 2024	Schedules 2, 3 and 4 will commence at a time specified by the Minister in a notice published in the Gazette.
2024/89	26/07/2024	Wholesale Electricity Market Amendment (Supplementary Capacity No. 3) Rules 2024	Schedule 2 will commence at a time specified by the Minister in a notice published in the Gazette.
2024/120	4/10/2024	Wholesale Electricity Market Amendment (Miscellaneous Amendments No 3) Rules 2024	Schedule 4 will commence at a time specified by the Minister in a notice published in the Gazette.