

AEMO Procedure Change Working Group (APCWG)

4 September 2024



Ground rules and recording



Keep questions on topic



Mute when not speaking



Identify yourself



WA.MarketDevelopment@aemo.com.au for other questions



Meetings are recorded for the purpose of taking meeting minutes

Recording our meetings

This meeting will be recorded by AEMO for minute taking purposes.

By attending the meeting, you consent to AEMO recording the meeting and using the record for this purpose.

No other recording of the meeting is permitted.



We acknowledge the Traditional Custodians of the land, seas and waters across Australia. We honour the wisdom of Aboriginal and Torres Strait Islander Elders past and present and embrace future generations.

We acknowledge that, wherever we work, we do so on Aboriginal and Torres Strait Islander lands. We pay respect to the world's oldest continuing culture and First Nations peoples' deep and continuing connection to Country; and hope that our work can benefit both people and Country.

'Journey of unity: AEMO's Reconciliation Path' by Lani Balzan

AEMO Group is proud to have delivered its first Reconciliation Action Plan in May 2024. 'Journey of unity: AEMO's Reconciliation Path' was created by Wiradjuri artist Lani Balzan to visually narrate our ongoing journey towards reconciliation - a collaborative endeavour that honours First Nations cultures, fosters mutual understanding, and paves the way for a brighter, more inclusive future.

Read our
RAP



Agenda

1. Welcome
2. Role of APCWG, AEMO and others in the Procedure Change Process
3. Discussion Item: WEM Procedure Dispatch Compliance
4. Discussion Item: WEM Procedure Supplementary Capacity
5. Discussion Item: WEM Procedure Reserve Capacity Testing
6. Discussion Item: WEM Procedure Network Access Quantities
7. Next Steps
8. Other Business

APCWG's Role in the Procedure Change Process

Inform



- The APCWG was established by the Market Advisory Committee (MAC) for the purpose of providing advice to AEMO regarding AEMO Procedure Change Proposals.
- AEMO reports to the MAC on the progress of Procedure changes under the APCWG, including APCWG feedback.

Discuss



- APCWG meetings are called to seek industry feedback on proposals to develop (new) or amend (existing) AEMO WEM Procedures.
- APCWG meetings provide the rationale and form of proposed amendments.
- Attendees are encouraged to ask questions and provide their thoughts.
- You may also contact us outside of APCWG meetings.

MAC advice



- AEMO notifies MAC within 1 day of publishing a Procedure Change Proposal and recommends whether to call a MAC meeting to seek MAC's advice [para 2.5.1 Procedure Administration Procedure].
- Any two MAC members, the MAC Chair, the Coordinator, or the ERA, may also request a MAC meeting is convened to discuss a Procedure Change Proposal [cl 2.10.9 WEM Rules].

AEMO Role in the Procedure Change Process

Identify



- AEMO must develop WEM Procedures where required under the WEM Rules and ensure they are up to date in response to Amending Rules [cl 2.9.2A WEM Rules].
- AEMO must ensure WEM Procedures are consistent with the WEM Rules and WEM Objectives [cl 2.9.3 WEM Rules].
- Each Procedure has a head of power under the WEM Rules that guides the Procedure's scope.

Consult



- AEMO calls an APCWG when it has developed a Procedure Change Proposal for public consultation.
- AEMO must consult on Procedure Change Proposals for 20 Business Days.
- AEMO must publish its response to feedback received at consultation in a Procedure Change Report.

Commence



- AEMO's Procedure Change Report specifies the date and time for commencement. An indicative time is also communicated throughout consultation.
- The commencement date must allow sufficient time for Rule Participants to implement any required changes.
- AEMO must report any WEM Procedure non-compliance by a Rule Participant.

Rule Participants' (and others) Role in the Procedure Change Process

Identify



- The WEM Rules provide that a Rule Participant may notify AEMO (or other relevant party) that they consider a Procedure Change is required [cl 2.10.2A].
- Although not explicitly required to do so, AEMO will consider Procedure Changes requested by persons that are not Rule Participants.

Engage



- Attend APCWG and prepare by reading any materials circulated by AEMO before the meeting.
- Review Procedure Change Proposals and submit any feedback within the consultation period.
- Review Procedure Change Reports to ensure you are aware of when new obligations commence (where applicable).

Speak up



- Parties are encouraged to advise AEMO where they disagree with a decision made by AEMO.
- A Rule Participant may apply to the Electricity Review Board for a Procedure Review where they believe AEMO (or other relevant party) has not followed the Procedure Change Process, set out in section 2.10 of the WEM Rules [cl. 2.11.1 WEM Rules].

WEM Procedure: Dispatch Compliance

Vinay Chandrasekaran



Proposed Amendments

The replacement Procedure will:

- update provisions and specify new provisions around the processes for determining, consulting on and reviewing the Tolerance Range and any applicable Facility Tolerance Ranges;
- describe the matters, events or circumstances that may trigger a review of the Tolerance Range or a Facility Tolerance Range, as applicable;
- specify provisions for monitoring dispatch compliance before, during or after a Dispatch Instruction event in the new WEM, including AEMO processes where repeated non-compliance is observed;
- describe the method for calculating an Electric Storage Resource's (ESR) contribution to a Semi-Scheduled Facility's deviation from its Dispatch Forecast;

Some matters relating to determining and reviewing the Tolerance Range and any Facility Tolerance Range were previously included in the *WEM Procedure: Tolerance Ranges* under clause 2.13.6K of the pre-amended WEM Rules.

Tolerance Range and Facility Tolerance Ranges

The Replacement Procedure has reworked, updated and re-ordered relevant provisions of the *WEM Procedure: Tolerance Ranges* to:

- Provide a logical sequence that flows from determining to consulting, publishing and reviewing the Tolerance Range and any Facility Tolerance Range, ensuring consistency across these two sections of the Procedure.
- Adequately capture matters, events or circumstances that may trigger a review of the Tolerance Range or any Facility Tolerance Ranges, noting that the triggers for TR/FTR vary slightly.
- Include consideration of matters relating to Tolerance Ranges that exist in the new market, including the provision of Essential System Services (ESS).
- Improve alignment with the amended WEM Rules and consistency in the drafting of AEMO WEM Procedures, including the removal of duplicated WEM Rule references.

Monitoring of dispatch compliance

A new section (paragraph 4) - *Monitoring dispatch compliance before, during or after a Dispatch Instruction Event* - has been proposed to specify:

- The elements of a Dispatch Instruction Event, which include:
 - the issuing of a Dispatch Instruction;
 - the Dispatch Instruction itself;
 - acknowledgement of Dispatch Instruction (where required); and
 - the Injection or Withdrawal of a Facility for the relevant period.
- Methods for real-time monitoring of dispatch compliance, and the factors being monitored in real-time.
- Methods for ex-post monitoring of dispatch compliance, and the factors being monitored after the Dispatch Instruction Event, including Forced Outage Submissions and droop response.

Repeated non-compliance by a Market Participant

- A new section (paragraph 5) is proposed to specify the process AEMO will undertake when it observes repeated non-compliance by a Market Participant before, during or after Dispatch Instruction Events.
- Repeated non-compliance is not defined in the WEM Rules, and AEMO proposes a definition in the Procedure that reflects the fact that the materiality of repeated non-compliance is highly variable and context specific.
- Where AEMO observes repeated non-compliance of a sufficient frequency or materiality, AEMO will assess the relevant Standing Data for the Facility and other inputs to the Dispatch Algorithm to determine whether they accurately reflect the capability of the Facility.
- Where AEMO determines that the Standing Data or other inputs to the Dispatch Algorithm are inaccurate or no longer accurate, the Procedure details the steps that AEMO will follow to update these parameters to more accurately reflect the capability of the Facility, for the benefit of maintaining PSSR.

Assessment of ESR interaction with a Semi-Scheduled Facility's output

- The WEM Rules prohibit Market Participants from operating an ESR within a Semi-Scheduled Facility in such a way that it increases the Facility's deviation from its Dispatch Forecast, except in certain circumstances set out in clause 7.10.4.
- To assist Market Participants in meeting this obligation, the WEM Rules require AEMO to specify a method to calculate the contribution of an ESR within a Semi-Scheduled Facility and this has been provided in a new section (paragraph 6).

Other minor and administrative amendments

- The proposed replacement Procedure contains several minor administrative amendments to align the document with AEMO's current template and to improve alignment with the WEM Rules, including:
 - Aligning the Procedure with the updated template, including changes to Paragraph 1; and
 - Removing duplicative Rule references from the Procedure.

Questions

Questions regarding the proposed amendments

- Are there any questions regarding the proposed amendments?

Questions outside of APCWG

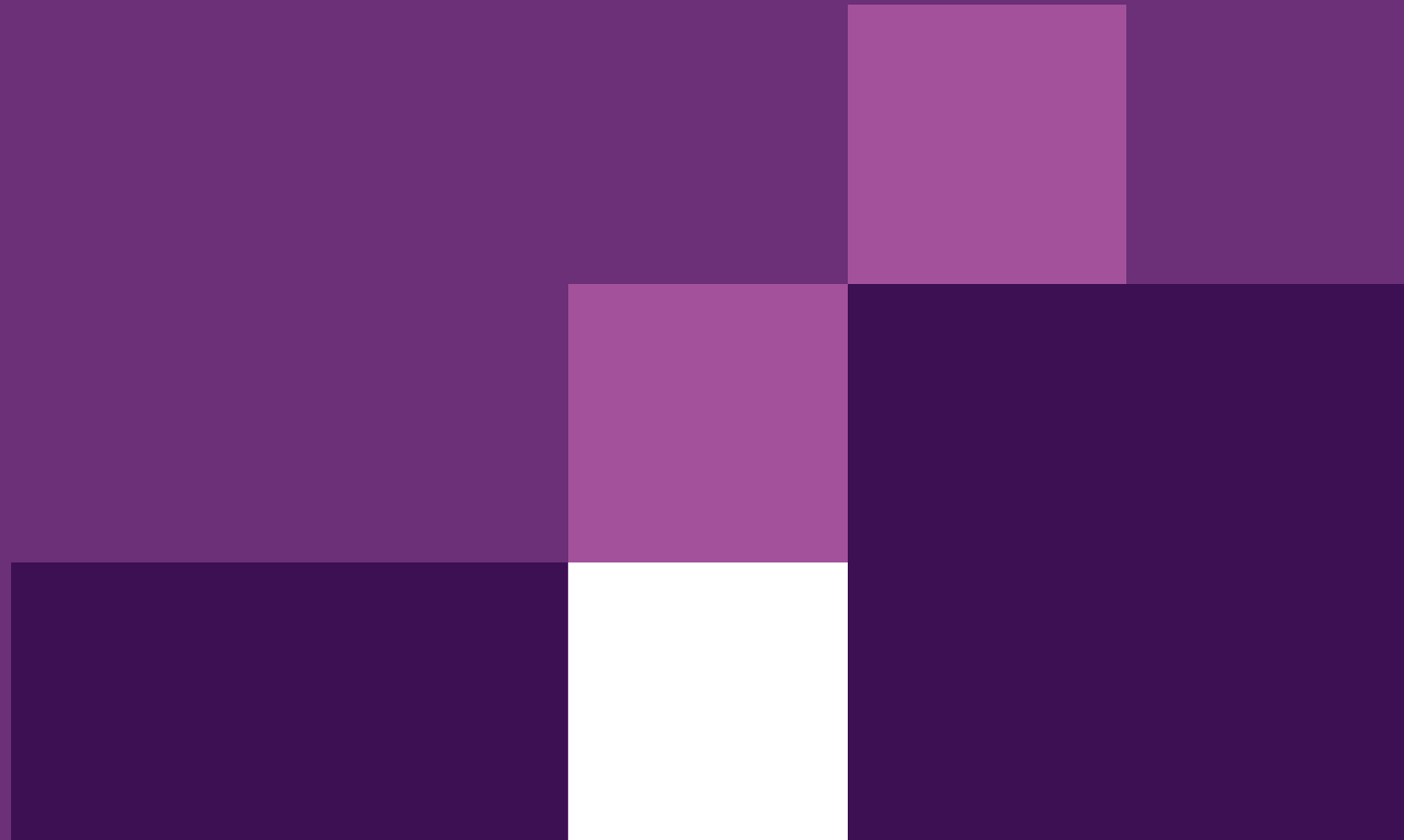
- Any questions regarding proposed amendments should be sent to WA.MarketDevelopment@aemo.com.au, allowing enough time for a response prior to the closure of the consultation period.

Next Steps

- Consultation on the proposed amendments to WEM Procedure: Dispatch Compliance closes on **6 September 2024**
- The expected commencement date is **13 September 2024**
- All submissions should be submitted to WA.MarketDevelopment@aemo.com.au by COB on the date of closure

WEM Procedure: Supplementary Capacity

Ingrid Hopley



Background

- Amendments arising from Coordinator's 2024 Supplementary Capacity review that affect the Procedure include:
 - amendments to improve competitiveness and efficiency of procuring supplementary capacity, including the removal of the requirement for AEMO to document the method for determining the maximum contract value per hour of availability in the Procedure.
 - amendments that provide for an alternative supplementary capacity service, whereby providers who cannot commit to the standing obligations around availability to provide services and receive remuneration on an 'activation only' basis.
- Amendments relating to the Procedure commenced on 27 July 2024 and this Procedure Change Proposal will ensure that the amended Procedure aligns with the Amending Rules as soon as possible, and with the intent of having the amended Procedure published prior to the assessment of tender responses.

Proposed Amendments

- The proposed Procedure has been updated to reflect the amendment to clause 4.24.18(a)(iii), which removes the requirement for AEMO to publish the maximum contract value per hour of availability for any Supplementary Capacity Contract.
 - Consequently, paragraph 9 and associated definitions have been removed from the Procedure.
- Paragraphs 3.2.9 and 4.1.4 to include reference to new clause 4.24.8A(c) when specifying how AEMO will determine that a Potential Provider engaging in a tender process or direct negotiation, respectively, has access to the network.
- Amendments to paragraphs 3.1.1(d) and 3.2.3 to ensure that the new provisions of clause 4.24.8A relating to the new activation-only service are adequately captured in AEMO's tender processes.

Questions

Questions regarding the proposed amendments

- Are there any questions regarding the proposed amendments?

Questions outside of APCWG

- Any questions regarding proposed amendments should be sent to WA.MarketDevelopment@aemo.com.au, allowing enough time for a response prior to the closure of the consultation period.

Next Steps

- Consultation on the proposed amendments to WEM Procedure: Supplementary Capacity closes on **6 September 2024**
- The expected commencement date is **13 September 2024**
- All submissions should be submitted to WA.MarketDevelopment@aemo.com.au by COB on the date of closure

WEM Procedure: Reserve Capacity Testing

Louise Walker



Proposed Amendments

- AEMO has initiated this Procedure Change Proposal to provide clarity on the Reserve Capacity Testing communication protocol following the retirement of Operating Instructions since new market start on 1 October 2023.
- The amendments being proposed include:
 - Information about the form of notification AEMO provides to Market Participants for Reserve Capacity Tests. This includes specifying the Trading Intervals the Reserve Capacity Test is to be conducted over.
 - Minor administrative amendments to improve alignment with the WEM Rules.

Questions

Questions regarding the proposed amendments

- Are there any questions regarding the proposed amendments?

Questions outside of APCWG

- Any questions regarding proposed amendments should be sent to WA.MarketDevelopment@aemo.com.au, allowing enough time for a response prior to the closure of the consultation period.

Next Steps

- Consultation on the proposed amendments to WEM Procedure: Reserve Capacity Testing closes on **24 September 2024**
- The expected commencement date is **30 September 2024**
- More information on the consultation is available by emailing WA.Capacity@aemo.com.au
- All submissions should be submitted to WA.MarketDevelopment@aemo.com.au by COB on the date of closure

WEM Procedure: Network Access Quantity (NAQ)

Stéphane Dellac



NAQ WEMP – Purpose and Timing

- **Network Access Quantity (NAQ):**
 - Considers the Facility's capabilities (CRC) and the electric network limits to evaluate capacity
 - Is used to assign Capacity Credits (Final NAQ = CC)
- **RCM Cycle 2024 timing and NAQ related activities:**
 - On 27 August 2024, AEMO published the level of CRC assigned to each Facility
 - AEMO runs the NAQ process during September 2024, by:
 - creating the RCM Constraint Equations including all Facilities with assigned CRC; and
 - **running of NAQ model to determine NAQ according so section 4.15 and Appendix 3 of WEM Rules**
 - On 30 September 2024:
 - **AEMO assigns NAQ and publish NAQ Results**
 - AEMO assigns Capacity Credits
 - AEMO publishes the Reserve Capacity Prices
- **NAQ WEM Procedure :**
 - Describe process and methodologies used to determine NAQ and publish NAQ related information as per **Clause 4.15.17.**

NAQ WEMP – Reasons for Update

- **NAQ Framework introduced for Reserve Capacity Cycle 2022** and run twice (RCC2022 and RCC2023)
- **The WEM Procedure is being updated to:**
 1. Align with amendments to Appendix 3 of the WEM Rules.
 2. Remove transitional requirements associated with the RCC2022 only.
 3. Incorporate concepts that were in explanatory notes into the body of the procedure.
 4. Update the process in relation to the number of scenarios to be run and convergence check.
 5. Incorporate a process to cater for Overconstrained Scenarios.
 6. Improve wording, add new definitions and amend existing definitions.

NAQ WEMP Proposed Amendments

1. Alignment to Appendix 3 amendments in the WEM Rules:

- Replacement of Availability 1&2 Class by Capability Class 1,2 & 3
- Adjustment of Prioritisation Steps:

No more separate Prioritisation Step for Availability Class. Example below for part A.

Table 7 NAQ Ceiling for each Prioritisation Step of Part A Appendix 3 of the WEM Rules from the 2023 Reserve Capacity Cycle **OLD**

Prioritisation Step	NAQ Ceiling
3A	Minimum (Network Access Quantity, Certified Reserve Capacity)
3B	Minimum (Highest Network Access Quantity, Certified Reserve Capacity)
3C	Certified Reserve Capacity
4	Certified Reserve Capacity
5	Certified Reserve Capacity
6	Certified Reserve Capacity
9	Certified Reserve Capacity
13(a) (Capacity Year +1)	Certified Reserve Capacity
13(b) (Capacity Year +1)	Certified Reserve Capacity
13(a) (Capacity Year +2)	Certified Reserve Capacity
13(b) (Capacity Year +2)	Certified Reserve Capacity

Proposed AC 1
Proposed AC 2

Table 5 NAQ Ceiling for each Prioritisation Step of Part A Appendix 3 of the WEM Rules **NEW**

Prioritisation Step	NAQ Ceiling
3A	Minimum (Network Access Quantity, Peak Certified Reserve Capacity)
3B	Minimum (Highest Network Access Quantity, Peak Certified Reserve Capacity)
3C	Peak Certified Reserve Capacity
4	Peak Certified Reserve Capacity
5	Peak Certified Reserve Capacity
6	Peak Certified Reserve Capacity
10(a) (Capacity Year +1)	Peak Certified Reserve Capacity
10(b) (Capacity Year +1)	Peak Certified Reserve Capacity
10(a) (Capacity Year +2)	Peak Certified Reserve Capacity
10(b) (Capacity Year +2)	Peak Certified Reserve Capacity

Proposed Capability Class 1,2,3

- New Terminology from “Certified Reserve Capacity” to “Peak Certified Reserve Capacity”

NAQ WEMP Proposed Amendments

2. Removal of transitional requirements associated to RCC2022 only

Table 5 NAQ Ceiling for each Prioritisation Step of Part A Appendix 3 of the **WEM Rules for the 2022 Reserve Capacity Cycle**

Prioritisation Step	NAQ Ceiling
3A_2022 (non-GIA Facility) ¹	Initial NAQ
3C_2022 (non-GIA Facility) ²	Certified Reserve Capacity
3A	Certified Reserve Capacity
3C	Certified Reserve Capacity
4	Certified Reserve Capacity
5	Certified Reserve Capacity
6	Certified Reserve Capacity
9	Certified Reserve Capacity
13(a) (Capacity Year +1)	Certified Reserve Capacity
13(b) (Capacity Year +1)	Certified Reserve Capacity
13(a) (Capacity Year +2)	Certified Reserve Capacity
13(b) (Capacity Year +2)	Certified Reserve Capacity

NAQ WEMP Proposed Amendments

3. Incorporate concepts that were in explanatory notes into the body of the procedure.

- Gives more certainty to the process applied.
- Example of updated sections below:

- Facility Dispatch Scenario (FDS) creation method

Entities due to size.

E[B1] Process

AEMO will endeavour, where possible, to use the following process to create Facility Dispatch Scenarios in accordance with paragraphs 5.2.4 to 5.2.7:

1. Set the Initial Dispatch Value of all Non-Scheduled Facilities to the NAQ Ceiling
2. Organise all remaining NAQ Entities in the relevant Prioritisation Step in a random order
3. Dispatch each NAQ Entity based on the random order up to its MaxContRange.
 - a. for each NAQ Entity dispatched, check if the sum of all Initial Dispatch Values determined so far is less than Peak Demand:
 - i. if true, calculate the difference between the sum of all Initial Dispatch Values and Peak Demand.
 1. Check if the difference is greater than or equal to

5.2. Facility Dispatch Scenarios

5.2.1. AEMO will use the following process to create Facility Dispatch Scenarios:

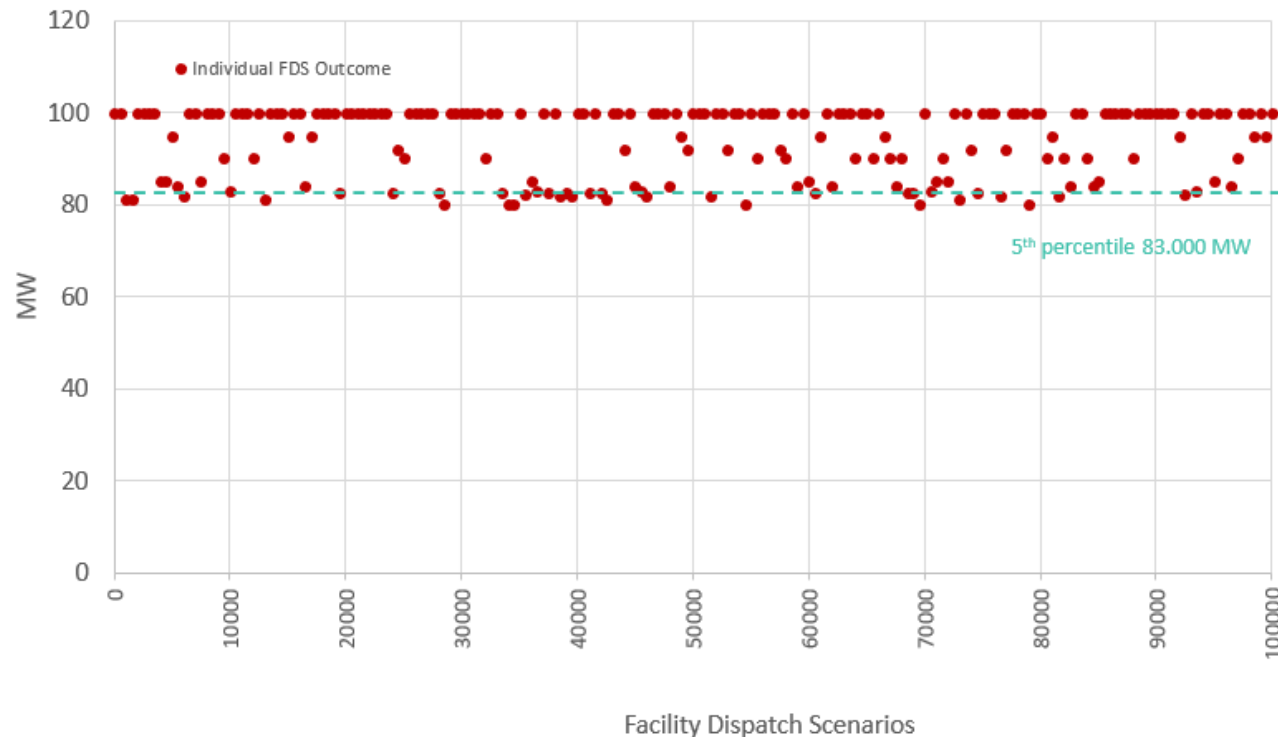
- (a) Set the Initial Dispatch Value of all Non-Scheduled Facilities to the NAQ Ceiling, as indicated by clause 4.15.9(d).
- (b) Organise all remaining NAQ Entities in the relevant Prioritisation Step in a random order.
- (c) Dispatch each NAQ Entity based on the random order created under paragraph 5.2.1(b) up to its MaxContRange (as described in Table 7) for each NAQ Entity dispatched, check if the sum of all Initial Dispatch Values determined in paragraphs 5.2.1(a) and (c) is less than Peak Demand:

- Convergence check method

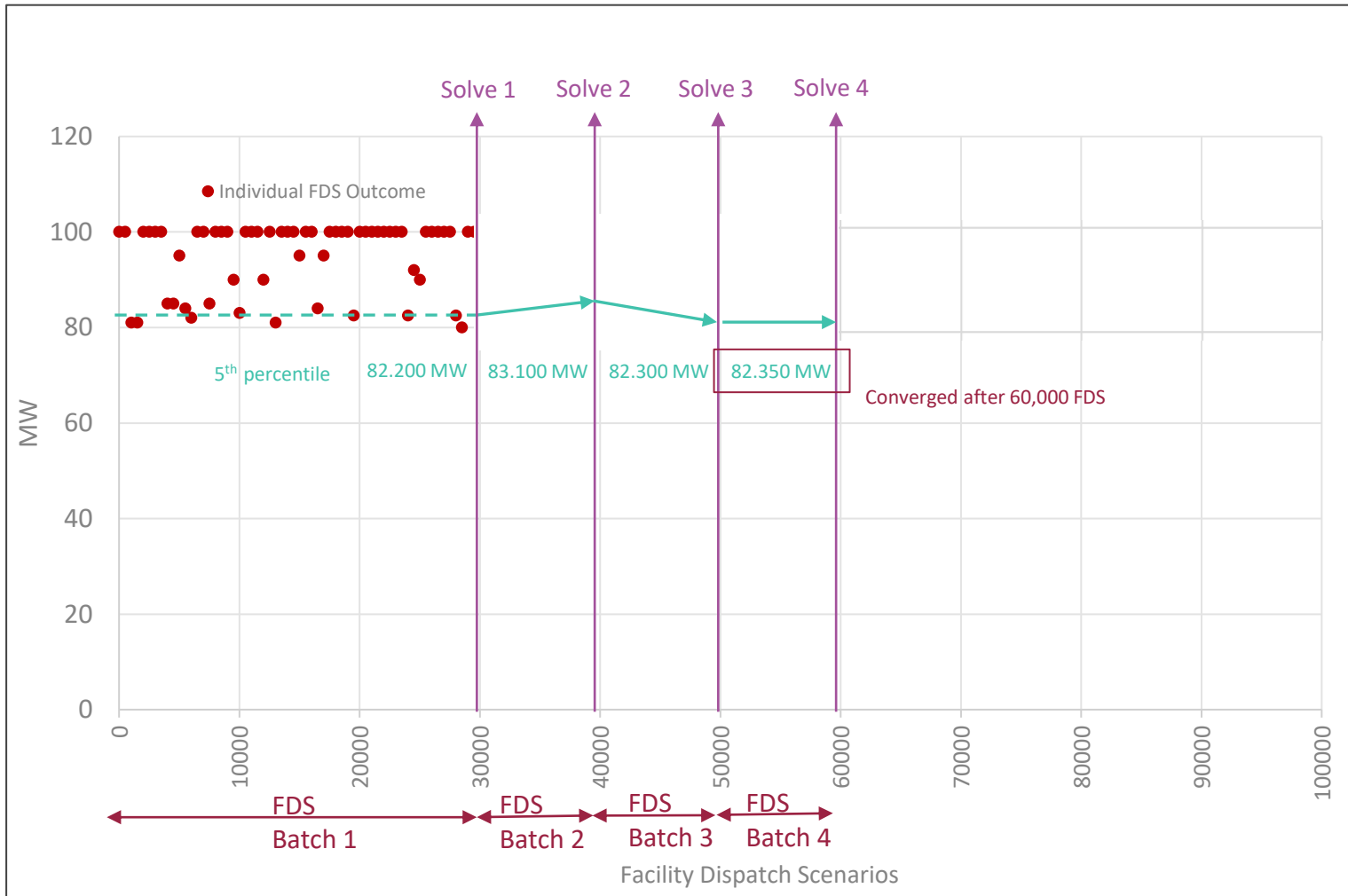
NAQ WEMP Proposed Amendments

4. Number of FDS solved and convergence check.

- Reminder on NAQ Result computation: 5th Percentile of Individual FDS Outcomes



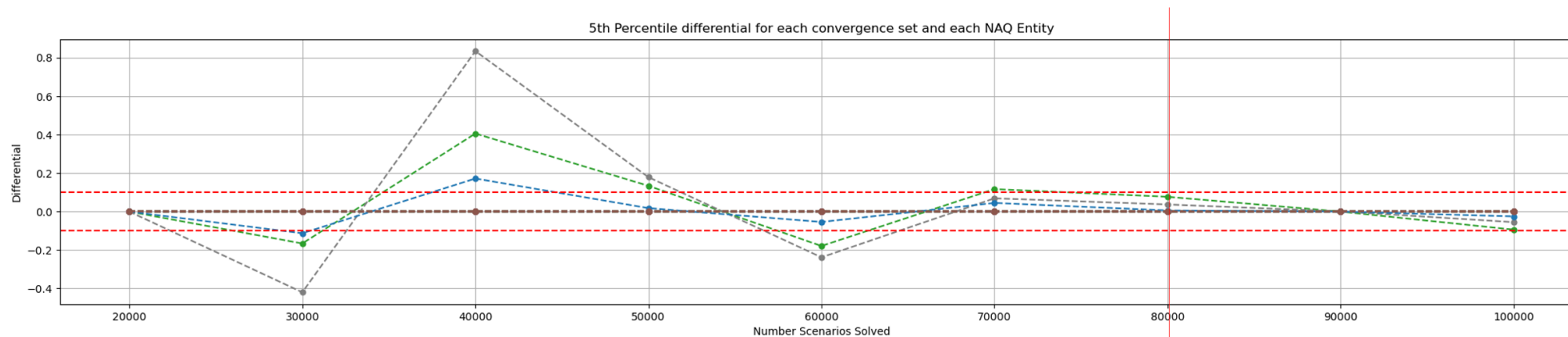
NAQ WEMP Proposed Amendments



- Solving by batch and checking convergence
- Converged when for all NAQ Entities the difference between the last two values of the 5th percentile is less than 0.1MW.

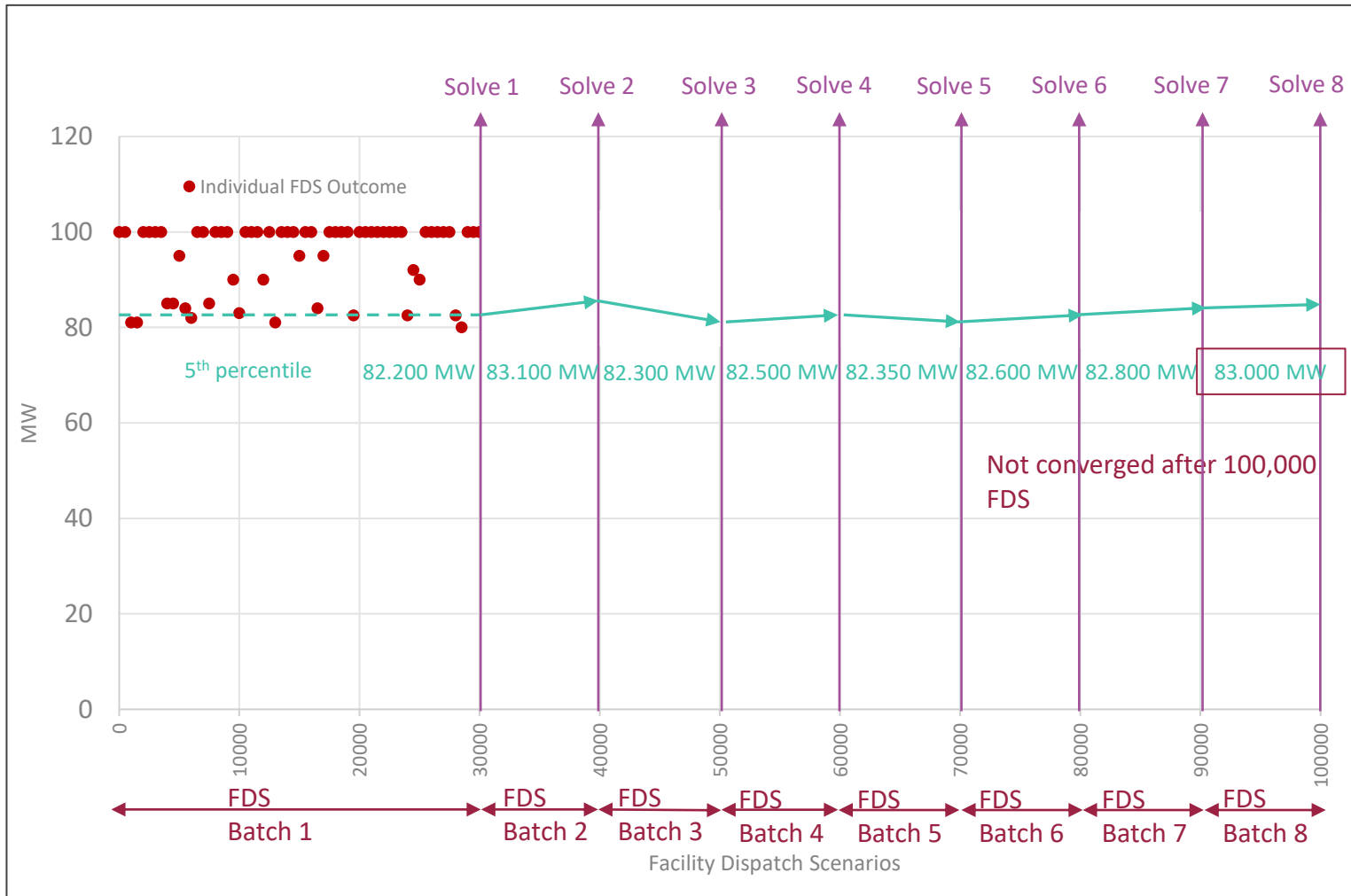
NAQ WEMP Proposed Amendments

- Possibility that the 0.1 limit is marginally exceeded for a NAQ Entity
- It has not happened in previous run but was observed to be close even after 100,000 FDS
- Need to clarify how the NAQ Result is determined in such scenario



Example showing the convergence check after each batch solve for all NAQ Entities (each colour is one NAQ Entity)

NAQ WEMP Proposed Amendments



- Increase of the minimum number of FDS to solve from 1,000 to 40,000
- Maximum of FDS solved set to 100,000 as cut off point.
- Stop before solving all FDS if convergence criteria reached for all NAQ Entities otherwise take the value after solving 100,000 FDS

NAQ WEMP Proposed Amendments

5. Incorporating a process to cater for Overconstrained Scenarios.

- Reminder on NAQ Floor concept (implementation of the first NAQ Rule)

“NAQ rules” means:

- the preliminary Network Access Quantity determined for a Facility under a step in Part A or Part B, as applicable, cannot be reduced, but can be increased, in a subsequent step; and

- The NAQ Floor corresponds to the NAQ Result from a previous Step.
- The NAQ Engine cannot reduce the dispatch of a NAQ Entity below its NAQ Floor.

NAQ WEMP Proposed Amendments

- Overconstrained Scenario
 - Potential issue when the Solver cannot find a solution satisfying all constraints.
 - More likely in later steps when a lot of NAQ Entities have a Floor constraint.
 - Possible to solve using slack variable “NAQFloorDeficit” for the Floor constraint, releasing that constraint as last resort.

$$DispF_e + NAQFloorDeficit_e \geq NAQFloor_e \quad (\text{with DispF is Final Dispatch})$$

- Consequence :
 - The Individual FDS Outcome can be below the NAQ Floor.
 - If this occurs more than 5% of the time the 5th Percentile of Individual FDS Outcomes can be lower than the NAQ Floor
 - **In this scenario the NAQ Result is equal to NAQ Floor instead of 5th percentile**

Questions

Questions regarding the proposed amendments

- Are there any questions regarding the proposed amendments?

Questions outside of APCWG

- Any questions regarding proposed amendments should be sent to WA.MarketDevelopment@aemo.com.au, allowing enough time for a response prior to the closure of the consultation period.

Next Steps

- Consultation on the proposed amendments to WEM Procedure: Network Access Quantity closes on **24 September 2024**
- The expected commencement date is **30 September 2024**
- All submissions should be submitted to WA.MarketDevelopment@aemo.com.au by COB on the date of closure

Any Other business?



For more information visit
demo.com.au