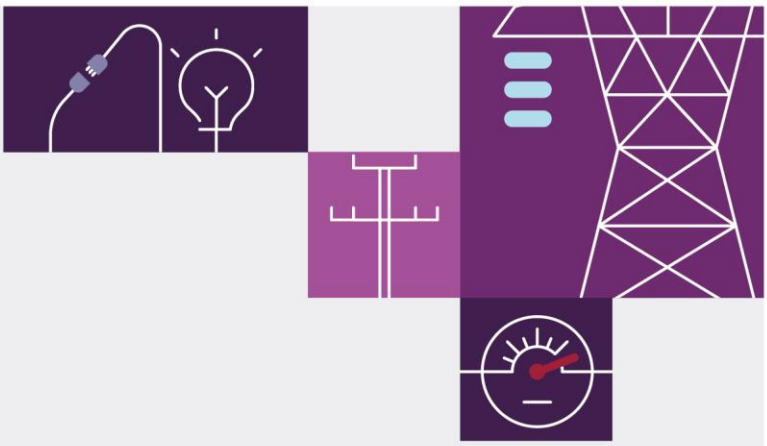
AEMO
AUSTRALIAN ENERGY MARKET OPERATOR

Summary of Submissions

1 March 2023

Network Access Quantity Model
WEM Procedure



Important notice

Purpose

AEMO must publish, together with a final WEM Procedure, a summary of submissions received and the response of AEMO to issues raised in those submissions, with respect to amendments to Procedures required to be developed under:

- For clause 1.36.7(b) – Wholesale Electricity Market Amendment (Tranche 1 Amendments) Rules 2020.
- For clause 1.43.7(b) – Wholesale Electricity Market Amendment (Tranche 2 and 3 Amendments) Rules 2020.
- For clause 1.43A.6 – Wholesale Electricity Market Amendment (Tranche 5 Amendments) Rules 2021.

Disclaimer

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

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

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

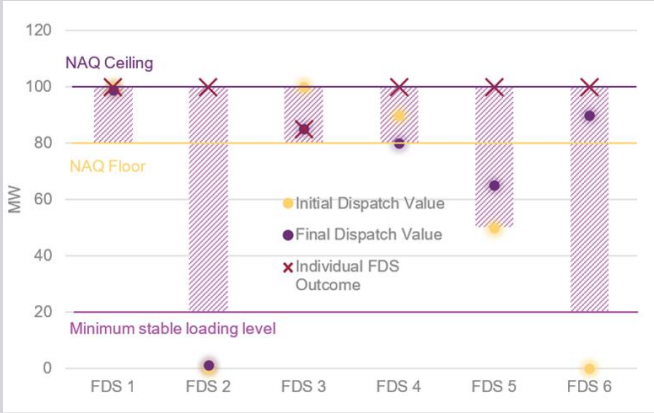
Submissions and AEMO's Response

The following written submissions were received as part of AEMO's stakeholder consultation.

Relevant Procedure Paragraph(s)	Submission	AEMO's Response
General	Stakeholder advised that the WEM Procedure is difficult to follow and understand. Stakeholder suggested that due to the NAQ model being a critical part of the NAQ Framework and the model outcomes directly impact Market Participants (via their Capacity Credit Allocations), it would be beneficial if the Procedure was amended to increase clarity and understanding of the processes being used by AEMO.	AEMO appreciates this is a complex process which is why significant amounts of explanatory notes, examples, figures and a process flow chart are included to assist readers and improve clarity. Without specific examples of areas that are difficult to follow, it is hard for AEMO to amend areas of concern to improve clarity.
5.2 E[B], 5.2.7, 5.3.4(f), 6.3.4(e)	Stakeholder raised concern that the proposed treatment of Non-Scheduled Facilities within the NAQ model might inadvertently result in a biased outcome for the NAQ allocation. As the Non-Scheduled Facilities are always being dispatched at its NAQ Ceiling, which may result in NAQs being allocated to Non-Scheduled Facilities in preference to other Facility types. If this is the case, the stakeholder advised they do not believe this outcome aligns with the WEM Objectives.	In accordance with clause 4.15.9(d) a Non-Scheduled Facility cannot be constrained in the NAQ Model. This means a Non-Scheduled Facility will always be dispatched at its NAQ Ceiling, which will generally (subject to the Prioritisation Step) represent their Certified Reserve Capacity (CRC) amount. For the vast majority of Non-Scheduled Facilities, the CRC value is calculated based on the Relevant Level Methodology which represents what AEMO expects the Non-Scheduled Facilities to be exporting at peak times. This is generally measured at 20-30% of a Facilities nameplate capacity. A Non-Scheduled Facility will be modelled on the Right Hand Side of the RCM Constraint Equations, ensuring their dispatch value cannot be changed by the NAQ Model (see explanatory box E(C) and the WEM Procedure: Constraint Formulation). This ensures AEMO remains complaint with clause 4.15.9(d) and the policy decision that Non-Scheduled Facilities are not subject to constraints (see Information Paper Reserve Capacity Mechanism: Changes to support the implementation of constrained access and facilitate storage participation).

5.2 E[B1], 5.2.5, 5.3.4(b), E[C], E[D], E[F]	Stakeholder raised concerns that the NAQ model is unduly restricting the total number of NAQs to near the POE10 value. Stakeholder advised that within the WEM Procedure, the modelling is applying a constraint within the FDS scenarios that restricts the total of the NAQ values to be less than or equal to the Peak Demand (POE10). The RCM allows for capacity to be procured in excess of the POE10 (noting that the target itself is greater than the POE10). Stakeholder suggested that by applying this restriction, the NAQ is limited to the POE10, whereas the network is likely to be capable of delivery capacity higher than the POE10. Stakeholder asked how the NAQ model works out what the total NAQ limit is on the network and how does it ensure that where there are "spare" NAQs in terms of network capability, that the NAQ model accounts for these and allows for NAQs to exceed the POE10? Further the stakeholder noted that in AEMO's NCESS trigger submission, AEMO included "Forecast Reductions or NAQ" of 75MW. The Stakeholder requested that this outcome is further investigated and explained to Market Participants as this outcome does not align with expectations by the market	In accordance with clause 4.15.3(c) and clause 4.15.4, AEMO must create Facility Dispatch Scenarios that represent how Facilities could be dispatched at Peak Demand (10 PoE scenario). In accordance with clause 4.4B, Western Power must provide Limit Advice to AEMO based on the configuration of the network at peak demand periods, and in accordance with the WEM Procedure: Constraint Formulation, AEMO must formulate the RCM Constraint Equations for the Peak Demand period. This ensures the NAQ Model reflects the physical requirements of the system in peak demand periods. For the majority of historical Reserve Capacity Cycles there has been excess capacity. In the scenario covered in paragraph 5, given AEMO is required to model a Peak Demand period it is not possible to dispatch all Facilities to their max given this would exceed the Peak Demand value. However, this does not mean that the maximum number of NAQs assigned is restricted by the Peak Demand value. Table 14 within E(F) provides an example of solving one Facility Dispatch Scenario. In this example the Peak Demand equals 1,100 MW, and there are only 3 Facilities, as such the sum of all Facilities Initial Dispatch Values must equal 1,100 MW. The NAQ Model will assess the Facility Dispatch Scenarios against the RCM Constraint Equations, in this example the Constraint Equation has been violated and it is deemed the GenB has a negative impact on congestion and was therefore constrained (Final dispatch Value < Initial Dispatch Value). The Individual FDS Outcome determined for each Facility is per the table below: GenA / GenB / GenC / Sum Individual FDS Outcome: NAQ Ceiling / Final Dispatch Value / NAQ Ceiling / 400 / 213.333 / 500 / 1,113.333 Even though GenA was dispatched below its NAQ Ceiling (Initial Dispatch Value = 300 MW), the Facility did not contribute to congestion and they are not penalised, the outcome of the Facility Dispatch Scenario is their NAQ Ceiling (see "Benefit-of-the-doubt" in E(E)). All Individual FDS Outcomes in the scenario are greater than the Peak Demand value. The NAQ Result for each Facility will then be calculated as the 5th percentile of all Individual FDS Outcomes calculated.

Relevant Procedure Paragraph(s)	Submission	AEMO's Response
		As the stakeholder highlighted, AEMO will continue to assign NAQs/CC until the Reserve Capacity Requirement (10PoE + margin) has been met in accordance with the priority order in Appendix 3. Therefore, the number of NAQs assigned is not limited by the Peak Demand value. The NCESS trigger submission was a conservative preliminary estimate that was based on thermal limit advice (excluded non-thermal), preliminary modelling and informal AEMO experience with real time operation during extreme peak events. The final NAQ model processes and relevant Constraint Equations were still being developed when this estimate was provided.
Figure 2	Stakeholder advised Figure 2 appears to be incomplete. The "Initial Dispatch Value" has not been provided for each of the FDS scenarios.	Unfortunately, some errors were created in the figures when the document was converted to a pdf, this will be fixed for the final publication. There should be a distinct Initial Dispatch Value for each FDS. Figure 2 is as follows: 

Relevant Procedure Paragraph(s)	Submission	AEMO's Response
Figure 3	Stakeholder advised Figure 3 appears to be incomplete. The "Initial Dispatch Value" and the "Final Dispatch Value" have not been provided for each of the FDS scenarios.	Unfortunately, some errors were created in the figures when the document was converted to a pdf, this will be fixed for the final publication. There should be a distinct Initial Dispatch Value and Final Dispatch Value for each FDS. Figure 3 is as follows: 
7.1.1	Stakeholder suggested that paragraph 7.1.1 doesn't appear to be in accordance with clause 4.15.17e of the WEM Rules which requires the WEM Procedure to describe the specific information a Network Operator or Market Participants must provide to AEMO and the format it must be provided in for the purposes of the Network Access Quantity Model. Stakeholder advised paragraph 7.1.1 does not provide any specific information requirements on these parties and as such the paragraph should be removed.	AEMO does not require any additional information from the Network Operator or Market Participants that is not already covered in AEMO's WEM Procedures to complete the NAQ process. AEMO already gathers all required information via other processes, such as Certification applications, or Limit Advice. Those processes are governed by the WEM procedure: Certification of Reserve Capacity and WEM Procedure: Limit Advice. AEMO included paragraph 7.1.1 in the Procedure to ensure AEMO's obligations under clause 4.15.17(e) are met. AEMO takes its compliance with the WEM Rules very seriously and aims to ensure all rule obligations are explicitly met. AEMO does not consider this paragraph, as drafted, requires anything additional from the Network Operator or Market Participants. Furthermore, AEMO does not intend to request anything from Network Operators or Market Participants under this catch all paragraph.