

16 May 2025

Email: Contact.connections@aemo.com.au

AEMO Draft Registration R1 Capability Assessment Guideline

Energy Networks Australia (ENA) welcomes the opportunity to make this submission in response to the Australian Energy Market Operator's (AEMO) Draft R1 Capability Assessment Guideline (the Draft Guidelines).

ENA represents Australia's electricity transmission and distribution and gas distribution networks. Our members provide more than 16 million electricity and gas connections to almost every home and business across Australia.

ENA welcomes the development of a guideline that offers a consistent and predictable process for generation and storage connection applicants. We appreciate that AEMO has worked with a streamlined connection process focus group to develop the draft documents and is running an expedited process. We understand AEMO's intent is that this new process be effective from 27 June 2025.

We support a flexible and collaborative R1 capability assessment process

We strongly support the decision not to take a highly prescriptive 'one size fits all' approach to the Draft Guidelines. We agree with observations made in the AEMC's R1 Final Determination that a successful R1 process:

- (1) Offers flexibility to adapt to the specific circumstances of a connection application, which may include project and network specific requirements, as well as new understandings of the power system.
- (2) Promotes Network Service Providers (NSPs), AEMO and developers to work collaboratively together to balance risks borne by all parties. A clear guideline that outlines what is needed and who has to provide what information can assist with this.

The Draft Guidelines would benefit from a greater focus on meeting or exceeding agreed performance standards, rather than alternative pathways

The Draft Guidelines (including process flow diagrams) appear to place a large emphasis on alternative pathways to approval, rather than the standard R1 capability assessment process.

While ENA understands the need for these alternative pathways, the primary goal of the R1 Capability Assessment is to validate plant performance using detailed design data (R1) against the agreed Generator Performance Standards (GPS) in the executed connection agreement. Meeting or exceeding the agreed performance standards should remain the key responsibility of Connection Applicants. If any material non-compliances are identified during the assessment, Applicants should take necessary steps to rectify them as much as possible.

ENA suggests the Final Guidelines:

- Reinforce the importance of upfront assessments by the connection applicant to demonstrate whether it has met its agreed GPS. Assets built to align with the GPS /connection agreement will have a faster path through the registration process.

- Clearly communicate that alternative pathways should be used as the exception not the norm. For example, relevant National Electricity Rules (NER) processes to amend the performance standards (i.e., 4.14(p)) should only be considered once other options, such as plant tuning, to meet the agreed GPS, have been exhausted.

Connection Applicants should be made aware that other NSP-specific or project-specific assessments may be necessary for Registration, in addition to the R1 Capability Assessment

The R1 Capability Assessment Guideline details the process to verify if a Generator or Integrated Resource Provider (IRP) can meet agreed performance standards. It is worth noting that in addition to AEMO's R1 Capability Assessment, other assessments may be required for Registration, such as System strength re-assessment, Stability analysis, Harmonic assessments, Network impact assessments, energisation studies, Protection and SCADA (supervisory control and data acquisition) reviews, small signal assessments etc.

It is recommended to provide an overview of these other assessments for clarity. Additionally, it is important to clarify that the Capability Assessment is just one part of the R1 process, and other NSP-specific or project-specific assessments may be necessary depending on the connection location. Highlighting these additional requirements in the guideline will more clearly articulate expectations for the R1 process and ensure transparency.

Requirements for Initial data and information could better align with AEMO's Generator Connection R1 Submission Checklist

The R1 Capability Assessment Guideline process specifies the Initial data and information which the Applicant is required to submit for AEMO (in consultation with NSPs) to initiate the Capability assessment. The requirements for the Initial data and information submission are specified in Appendix A. While Appendix A captures the requirement to identify changes in the plant from Connection Application to R1 (detailed-design) stage, it doesn't include certain data and information which is essential to start the capability assessment. In the experience of NSPs, piecemeal submission of information will lead to delays and rework, hence a complete submission is preferred. These include:

- a. Where relevant (based on changes from Connection Application to R1), update of Connection application package with the R1 (detail design) data as evidence for GPS compliance.
- b. Evidence of the efforts in trying to achieve best possible performance if non-compliance is observed.
- c. Inclusion of additional information required for Registration which is not provided/available during Connection application stage (for example: Protection Design Report, detailed harmonic assessment and filter design report etc.)

Also, Connection applicants should verify with NSPs for any updates to network data since the Connection Agreement and identify any changes to external network conditions (e.g., newly committed generators or considered network projects since project commitment) before preparing the initial data and submission for capability assessment. As per the process outlined in the Draft Guideline, these activities are only undertaken after the initial data and information submission for capability assessment.

Many of these requirements are currently captured in AEMO's *Generator Connection R1 Submission checklist* in detail. It is recommended to use this checklist as the basis for identifying the essential Initial data and information.

Quality of Supply is a matter to consult with NSPs on

Section 4.4. of the Draft Guidelines makes observations around harmonics, where emissions are non-compliant. NSPs hold the primary responsibility for maintaining the quality of supply in the network. Generator/IRP technical standards related to power quality in the NER are not advisory matters for AEMO.

It is recommended Quality of Supply to be outlined as an item to be consulted with the relevant NSP based on the connecting location (specifically, in Section 5.2–*Nature of terms and Conditions* and

Appendix C—*examples of conditions that AEMO considers would reflect an adverse impact*), as it directly affects the NSP's obligations to maintain Quality of Supply to other network users in accordance with the relevant system standards.

Other points

ENA suggests:

- **Section 4 provide examples of when applicants could proceed without incorporating all R1 data into the capability assessment model.** Section 4.1 of the Draft Guidelines describes an alternative pathway for progressing a connection application when R1 data has not been included in the capability assessment model.

ENA would welcome some examples of what types of applicants or situations could proceed without providing modelling data. This recognises there remain minimum modelling information requirements to conduct the capability assessment and provide confidence that impacts on power system security or quality of supply are not material.

- **Table 3 in Section B.2 would benefit from clarity on the instances where simulation results and/ or technical notes are required.**
- **Table 4 in Section B.3 be reviewed to consider whether there are any additional support documentation requirements that are in fact mandatory and worthy of inclusion in Table 3.** For example, schematics showing the protection details and measurements and monitor locations.

In the meantime, if you would like to discuss this submission, please contact Verity Watson (vwatson@energynetworks.com.au) in the first instance.

Yours sincerely,



Dominic Adams
General Manager Networks