28 September 2023

Anna Collyer
Chair
Australian Energy Market Commission

Lodged online: www.aemc.gov.au

Dear Ms Collyer,

Enhancing investment certainty in the R1 process – Consultation Paper

Origin Energy Limited (Origin) welcomes the opportunity to provide feedback to the AEMC's Consultation Paper on the rule change request to enhance investment certainty in the R1 process.

Origin agrees with the issues raised in the rule change request. The R1 process, whereby AEMO and Network Service Providers (NSPs) assess how the connecting plant will perform against agreed upon technical standards, is inefficient, unclear and uncertain. This has led to delays and created risks in project timelines that are difficult to manage. It has also led to sub-optimal outcomes, such as disincentivising changes to equipment settings that would benefit the power system.

We therefore support the solutions proposed by the CEC at a high level:

- We support the proposed changes to the assessment and evaluation framework and consider they would improve the R1 process if the guidelines for assessing modelling outcomes are clear enough to provide additional certainty.
- We support the new obligations on AEMO and NSPs when assessing R1 outcomes, including new timeframes for approving the R1 package. To support efficiency, we suggest the new obligations should not preclude NSPs from discussing any issues with connection applicants during the assessment process. The AEMC should also consider a shorter approval timeframe (e.g., a total of 15 business days) for outcomes where all standards are met, and no action is needed.
- We support the introduction of a formal facilitated review process. This would provide additional certainty to proponents that there is an avenue for escalation when disputes occur.

In addition, we consider that efficiency of the R1 process could be improved by requiring:

- AEMO to give connection applicants access to the user guides underpinning the power system model used in the R1 process to promote modelling efficiency; and
- NSPs to identify potential material power system issues during the connection enquiry phase, prior to R1 process.

A clear and transparent framework in the rules consistent with the CEC's proposal is necessary to reduce uncertainty and promote efficient connections. We discuss these points further in Attachment I.

If you wish to discuss any aspect of this submission further, please contact me at Sarah-Jane.Derby@originenergy.com.au or on 02 8345 5101.

Yours Sincerely,

Sarah-Jane Derby
Senior Manager, Regulatory Policy

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Attachment I

The R1 process is inefficient, uncertain and unclear

We generally agree with the issues the CEC raised in its rule change request. The R1 stage is a crucial step in the connections process whereby a connecting plant's agreed upon generator performance standards (GPS) is assessed through modelling studies. These studies are complex and require significant human resource and power system engineering capability. In our experience, uncertainty around timing of the R1 process, and lack of clarity and inflexibility around modelling expectations have been significant barriers to timely project development. For example:

- Connection applicants are often required to undertake extensive modelling repeatedly, even when there are minor changes in the technical parameters of the asset which have non-material impacts on the power system. This can lead to unintended consequences, such as disincentivising project developers from improving equipment settings even when this would lead to better outcomes for the power system. This is because even minor changes require significant additional modelling which puts pressure on resources and time.
- There is a general lack of transparency in the model used for power system studies (including at the R1 stage) as connection applicants do not have access to the power system model (known as the PSCAD[1] model) or its user guides (known as PSCAD-RUG)[2] when undertaking their modelling studies. However, we understand that AEMO and TNSPs have access to the full model and its user guides when assessing outcomes. While we understand that the PSCAD model is unlikely to be made available to applicants due to confidentiality and intellectual property concerns, the lack of transparency on user guides creates undue burden on modelling requirements, lengthening and complicating the process.
- Connection applicants do not have a clear view of how long AEMO and TNSPs will take to approve R1 outcomes if changes are required (which is the case most of the time). Given that there are no timeframes for final approval in the rules, this iterative process can be lengthy, which means that project milestones could be missed.

These issues generally delay projects and the risk of milestones being missed due to uncertainty in the R1 process is difficult for investors to manage.

We also agree with the AEMC's reflections that there is an industry-wide shortage of experienced power systems engineering human resource capability, which has affected the efficiency of the R1 process. We acknowledge that AEMO and NSPs are working on process improvements and better information sharing to facilitate more efficient connections.

However, the issues raised by the CEC are a significant barrier to connections and should be addressed regardless of human resourcing challenges and process improvements. In addition, to the extent the efficiency of the process is affected by staff shortages or inexperienced human capability, a more streamlined and certain process, as proposed by the CEC, should alleviate some of these issues. Similarly, having clear obligations and a transparent framework for R1 in the rules would make any process changes that are under way easier to implement, i.e., they are complementary solutions.

We broadly support the CEC's solution with some tweaks

We acknowledge that modelling studies are highly technical and that getting generator performance standards right is critical to maintaining power system security. However, we generally consider that a more flexible, more certain and clearer approach in the R1 process is warranted to support timely

[1] PSCAD stands for power systems computed aided design.
[2] Whereby RUG stands for releasable user guides.

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connections and ultimately, the energy transition. We consider that this can be achieved without compromising power system security.

To that end, we support the broad framework that the CEC proposes in its rule change request, including a more prescriptive pathway for self-assessment and evaluation of R1 studies; new obligations on AEMO and NSPs; and a facilitated review process. The proposed solutions could address the issues we have experienced during the connections process and would improve the efficiency, clarity, and certainty of the R1 process.

Self-assessment and evaluation pathway

We broadly support the proposed new pathway for assessing R1 outcomes. We agree that it would be appropriate for materiality thresholds to be determined through AEMO guidelines rather than embedded in the rules given that determining materiality would be a highly technical task. However, it is critical that the guidelines are as objective as possible, clear and transparent to reduce uncertainty and ambiguity in the R1 process. This also applies to any guidelines by AEMO or the AER to determine what would constitute an external network environment for the purpose of the assessment.

On the specific categories proposed in the rule change request:

- *Type 1 – there are non-material deviations between the R1 model and negotiated access standard and the R1 modelled plant capability should replace the original GPS*: We agree that Type 1 issues should not lead to re-negotiation of technical standards. Instead, the 5.3.4A requirements should automatically be replaced by the modelled capabilities.
- *Type 2 – there are material issues due to changes in the external network environment that should be addressed by NSPs*: We agree that connection applicants should not be held responsible for changes in the external network environment that are outside of their control and that this risk best sits with the NSPs. The proposed approach on how TNSPs would address Type 2 issues, including cost recovery, is supported.
- *Type 3 – there are minor issues and registration should be approved with conditions and a defined plan for meeting those conditions*: We agree that Type 3 issues should proceed to registration and outstanding issues post commissioning that have an impact on the power system, if any, could be managed by AEMO using constraints to limit plant output as a last resort.
- *Type 4 – there are major issues that need to be rectified before registration*: To support timely resolution of Type 4 issues, the AEMC should consider an obligation on NSPs to identify potential major issues early in the connections process. Specifically, this should be through the NSP's Preliminary Impact Assessment (PIA) during the connection enquiry stage.

Self-assessment and efficiency of the R1 process could also be further improved by requiring AEMO to provide to connection applicants the user guides (PSCAD-RUG) that are made available to it by third-party providers of the power system modelling software (PSCAD). It is not clear to us that there are confidentiality or intellectual property concerns in providing the user guides to connection applicants. At present, modellers may be able to deduce information that a user guide would provide through a time- and resource-intensive trial and error process. Having access to the user guides would improve timeliness and the efficiency of the modelling process.

Timeframe obligation for AEMO and NSPs

At present, for outcomes that would fall under the proposed Types 1-4 categories (some action required), the rules do not prescribe a deadline for AEMO and NSPs to approve the R1 package. The CEC proposes that AEMO would be required to provide its advice to the NSP on the R1 package within 20 business days of the connection applicant submitting the results. The NSP would then have a further 10 business days to decide on the approval of the R1 model.

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We broadly support approval within 30 business days, subject to the understanding that the NSP's decision would be final, i.e., post any necessary negotiations or discussions with applicants to clarify the outcomes. In other words, the rules should not preclude an iterative process with applicants during the 30 business days. An iterative process will ensure any remediation or changes that are needed can be implemented swiftly. The AEMC should also consider whether a shorter timeframe could apply to Type 0 outcomes (i.e., whereby all obligations are met and no action is needed to proceed to registration). For example, the requirement could be 15 business days to align with the current rules regarding approvals when there are no changes.[3]

Facilitated review process

We support the introduction of a facilitated review process to provide some guidance and certainty to connection applicants that there is a pathway for disputes to be resolved. At present, there is no governance around how disputes are to be resolved, which creates uncertainty.

While AEMO can and does seek to resolve disputes through third-party modelling at present (as acknowledged in the Consultation Paper), there is no transparency or governance structure around how the consultant is chosen. Having a clear rules framework around third-party arbitration would reduce uncertainty, although it is important that the third party is independent and has the relevant expertise and experience to do so.

Alternatives and implementation

Relying on process improvements being undertaken by AEMO and TNSPs alone is not sufficient to reduce uncertainty for investors. We also do not consider that the lighter touch review of the R1 package approach discussed as an alternative in the Consultation Paper would sufficiently address concerns around uncertainty in the R1 process. In our view, a more prescriptive approach, such as the one proposed by the CEC is needed to fully address connections concerns.

If the AEMC proceeds with a solution, the new framework should commence as soon as practicable following establishment of the relevant guidelines. Timely implementation is critical to facilitating connections and supporting the transition.

[3] Clause 5.8.4(c)

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