28 September 2023

Australian Energy Market Commission
Level 15
60 Castlereagh Street
Sydney NSW 2000
Submitted Electronically

RE: ERC0363 - Enhancing Investment Certainty in the R1 Process

About Shell Energy in Australia

Shell Energy is Shell's renewables and energy solutions business in Australia, helping its customers to decarbonise and reduce their environmental footprint. Shell Energy delivers business energy solutions and innovation across a portfolio of electricity, gas, environmental products and energy productivity for commercial and industrial customers, while our residential energy retailing business Powershop, acquired in 2022, serves households and small business customers in Australia.

As the second largest electricity provider to commercial and industrial businesses in Australia[1], Shell Energy offers integrated solutions and market-leading[2] customer satisfaction, built on industry expertise and personalised relationships. The company's generation assets include 662 megawatts of gas-fired peaking power stations in Western Australia and Queensland, supporting the transition to renewables, and the 120 megawatt Gangarri solar energy development in Queensland. Shell Energy Australia Pty Ltd and its subsidiaries trade as Shell Energy, while Powershop Australia Pty Ltd trades as Powershop. Further information about Shell Energy and our operations can be found on our website here.

General Comments

Shell Energy Australia Pty Ltd (Shell Energy) welcomes the opportunity to respond to the AEMC's consultation on Enhancing Investment Certainty in the R1 Process. As an active project developer, Shell Energy supports the intent of the rule change under consideration. Greater definition of the R1 process has the potential to greatly enhance the efficiency and speed of deployment of new energy supply resources. The key points highlighted in this submission include:

[1]By load, based on Shell Energy analysis of publicly available data.
[2] Utility Market Intelligence (UMI) survey of large commercial and industrial electricity customers of major electricity retailers, including ERM Power (now known as Shell Energy) by independent research company NTF Group in 2011-2021.

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- Support for the development of a materiality definition within an AEMO guideline, noting that this development should be guided by principles in the Rules to ensure that the definition does not remain unduly conservative and improves connection outcomes.
- Support the pathway definition approach for connections but suggest three categories instead of five to reduce complexity and administrative burden.
- Suggest that remedial action taken by TNSPs should be guided by the materiality threshold to limit costs.
- Suggest a conditional approval approach be taken when subsequent projects are expected to require retuning by a connecting participant. Once the limits of retuning are reached on the earliest project we recommend that the onus be placed on later project applicants to avoid output impacts on the earliest project.

More detailed discussion is contained in responses to the consultation questions below.

Question 1: Do you agree that the absence of NER obligations on parties to the R1 process is contributing to poor engagement and process delays?

Shell Energy agrees that the timely deployment of supply side resources depends on efficient engagement from all parties throughout the connection process. We therefore agree that providing greater structure to the R1 process by codifying within the Rules is appropriate.

Shell Energy supports reducing the complexity of the proposed categories for pathway definition. Three pathways would be sufficient to avoid confusion and limit administrative burden:

Type 1: zero or minor differences (proponent)
Type 2: major differences (proponent)
Type 3: changes due to external factors

Shell Energy supports the materiality definition being codified in an AEMO guideline. The guidelines must be created in consultation with all stakeholders. It would be helpful to include a guiding principle in the rules that would place boundaries on the development of the materiality definition. This principle should encourage loosening the current, highly restrictive approach taken by many TNSPs. The potential for a highly restrictive materiality definition which results in a similar outcome to the current process could be avoided if the rules contain robust guidance in this area. The underlying principals should ensure that network reliability, security of supply and power quality are maintained. Arbitrary requirements such as speed of response and damping ratios - which have little or no bearing on reliability, security of supply or power quality - should not be used as they will contribute to unnecessary delays in the connection process.

Remedial action taken by TNSPs to correct external network changes should be limited to works required to comply with the materiality threshold. There should be transparency over any spending by TNSPs through regular (potentially annual) reporting to the AER on the costs incurred for these works across their networks. Reporting should include details of works and projects and before and after electrical characteristics at the relevant connection points, noting compliance with materiality thresholds. Shell Energy supports these reports being made public and published on the AER web site to ensure transparency and incentivise cost control.

Shell Energy does not support the imposition of civil penalties to enforce commitments during the R1 process. NSPs and AEMO have the ability to apply security constraints to plant dispatch. These should be applied to limit plant operation until conditions are met. We view this approach as much more effective and more likely to encourage compliance.

Shell Energy's experience indicates that it is common for connections to be held up in the R1 process due to overly conservative approaches to possible impacts that other projects, or non-credible scenarios, may have on the project connection. Shell Energy supports the assessment of materiality approach proposed by the rule change proponent which should be used to screen out time consuming studies of extraneous factors. This should focus the efforts on essential impacts which would lead to a more cost effective and reduced risk approach.

Shell Energy has observed that inappropriately imposed technical solutions to an identified issue can often frustrate the connection process, and have in the past led to excessively expensive technical solutions being implemented with little or no benefit to the operation of the network. For these reasons we support a more structured approach to the identification and resolution of technical issues.

Question 2: How do connecting parties currently manage uncertainty regarding timeframes for the R1 modelling package assessment and to what extent does public data (e.g. AEMO connection scorecards) assist?

Uncertainty is currently managed through project timeline flexibility and allowance for the potential incorporation of additional equipment such as capacitor banks, harmonic filters, and/or synchronous condensers. This is not an efficient approach as it carries significant cost to project developers which is ultimately borne by consumers.

Wide area network modelling is currently carried out exclusively by TNSPs and AEMO, the detailed results of which are not made public or shared with project developers. This is a suboptimal approach because it prevents a full and open assessment of the various technical options that could be employed. Although some progress in this area has been made with the introduction of the connections tool by AEMO, the approach of selling limited PSCAD modelling services to developers in a piecemeal fashion is not appropriate for developing robust technical solutions to complex technical issues. Consequently, project developers are operating in an opaque environment with respect to network planning, competing project rollouts and technical issues which leads to additional costs.

The connections scorecard initiative by AEMO provides a good overview of the connection statistics for all consolidated projects on the NEM. However, from an individual project's viewpoint this information is not

sufficient to inform market or technical risk assessments. Individual projects require a more detailed assessment of local network conditions, technical issues and the staging of nearby project connections.

Question 3: Does the existing process for renegotiating technical performance standards create barriers for enabling connecting parties to negotiate efficient system security and reliability outcomes?

Shell Energy considers that the existing renegotiation process creates substantial barriers and inefficiencies. This is most clearly seen through the outcomes and practices in the market. It has been the practice of TNSPs and AEMO to increase the requirements for technical performance standards even if the network performance would be improved by some reductions. For example:

- Reactive power requirements are rarely allowed to be below the level for automatic access even in cases where these required levels can be demonstrated to lead to excessive voltage levels on the network.
- Shell Energy understands it to be common practice to require the installation of capacitor banks or harmonic filters and for this equipment to then rarely be put into service because it is surplus to requirements.
- The required speed of response of control systems is typically not conducive to ensuring control system stability under all operating conditions. This often leads to delays in the registration process. Often slower control systems would be appropriate in order to avoid the possibility of control system instabilities.

Question 4: Do you agree that there are problems with the way the R1 process seeks to resolve external system security issues?

Shell Energy agrees that a major issue with the current process is that project proponents are responsible for external changes beyond their control. Re-modelling in response to these external changes causes material project delays and imposes considerable costs on proponents. However, the proposed solution of coordinated retuning may need additional clarification.

In the case where future connecting plant impose changes to the project, Shell Energy suggests that approval be granted to the proponent on the condition that retuning be undertaken at a later date, noting that any changes that would limit the planned output from the first project should not be required. Shell Energy has a strong preference that in cases where a project has received conditional approval and has undertaken any required retuning, all onus then be placed on the most recent connection applicant or TNSP to avoid output impacts on earlier projects.

Question 5: How material is the absence of an independent, external dispute resolution process for the efficient negotiation of technical performance parameters before registration approval?

Shell Energy shares the rule change proponent's view that the current process is inappropriate as it does not provide for review of R1 decisions. The need for the R1 connection process to provide opportunities for external review and resolution of all decisions is critical to ensuring that timely and efficient decisions are made by network businesses.

Question 6: Would the proposed timelines provide sufficient certainty about the duration of the R1 model assessment phase?

Shell Energy supports the implementation of defined timelines for AEMO and NSPs within the R1 process. Inclusion of these timelines in the Rules will limit the delays experienced by project proponents. However, we note that the certainty provided by implementation of the timelines will not remove project risk due to the possibility of multiple rounds of review. We also note that this timeline certainty could act as a target for the organisations that it applies to, rather than as an upper limit. As such we expect the timelines to provide certainty but not to encourage increased efficiency of processing. Nevertheless, we encourage the AEMC to apply these time limits to each round of review to improve the certainty to project developers.

Question 7: Do you agree with the CEC's proposal for materiality guidelines, including whether they could appropriately define materiality thresholds for the categorisation of connection types?

Shell Energy supports the implementation of a materiality guideline. As noted previously the definition of materiality must be targeted at relieving the current constraints on processing applications and must therefore be less conservative than the approach taken currently. We suggest that the rules contain guidance on the key variables that need to be defined within the guideline to determine materiality. We recommend consideration of the following variables:

- Generator of "X" MW connecting closer than "Y" ohms from project. The "Y" should be based on the electrical distance of the projects which considers the ways in which "close" projects may interact with each other.
- The voltage impact of network switching or faults (both in terms of voltage magnitude and voltage phase angle) at the connection point should be considered in the connection studies as this can have a bearing on the control system stability.

Question 8: What are your views about the proposed pathway for each connection type, including the assignment of obligations and the allocation of costs and risks?

Shell Energy supports the proposed pathway approach which clearly delineates between categories of technical issues. However, we recommend additional clarity be provided as to how specific connections can be objectively assigned to one or other of the defined categories.

The proposed Type 0, type 1 and type 3 categories are envisaged to be relatively easy to assign, although a well defined procedure is required to define (for type 1 and 3) what non-material or minor deviations are allowable before a project is deemed to be categorized as such. Shell Energy suggests that the underlying principles should be guided by the effect of the project on security and reliability of supply; and on power quality considerations.

In contrast, Type 2 and 4 categories assume material deviations between the Generator Performance Standards and the R1 package that may require changes to project design and/or changes to the network. These issues by their nature require close coordination between the NSP and the project developer which is currently hampered by a lack of information flow between parties. Shell Energy suggests that, assuming confidentiality agreements are in place, there should be no barriers for the sharing of technical information between parties to allow them to arrive at the most technically appropriate solution.

However, as discussed in our reply to question 1, having 5 categories seems to be unduly complicated. For this reason, Shell Energy proposes rationalizing the proposed breakdown to 3 categories which we believe will lead to a process which is much easier to manage.

Reiterating the list above, the proposed breakdown is as follows:

Type 1: zero or minor differences (proponent)
Type 2: major differences (proponent)
Type 3: changes due to external factors

Shell Energy believe these are much easier to understand and apply in practice.

Question 9: What are your views about the CEC's proposal for dispute resolution?

Shell Energy supports the proposed dispute resolution process. In our view AEMO's internal processes may need to be codified within the rules to ensure that appropriate negotiating power is available to all participants.

Question 10: Do you support the CEC's proposed model or do you prefer an alternative approach? Are there any modifications to the CEC proposals that you believe may improve it?

See above.

Question 11: Do you agree with the proposed assessment criteria? Are there additional criteria that the commission should consider or criteria included here that are not relevant?

Shell Energy supports the proposed assessment criteria. In particularly, we support the principle that AEMO and networks should be incentivised to undertake ongoing process innovation to ensure that connections are assessed and progressed as efficiently as possible. However, this needs to be balanced with a minimum

requirement that should be specified in the Rules to ensure that standards cannot regress as a result of process change within these organisations.

For further detail or questions on this submission, please contact Peter Wormald, Policy Advisor (peter.wormald@shellenergy.com.au)

Yours sincerely

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