ABN 70 250 995 390
180 Thomas Street, Sydney
PO Box A1000 Sydney South
NSW 1235 Australia
T (02) 9284 3000
F (02) 9284 3456

Monday, 15 May 2023

Mr Andrew Lewis
Acting Deputy Secretary, Energy Climate Change and Sustainability
Office of Energy and Climate Change
Lodged via email: electricity.roadmap@dpie.nsw.gov.au

Dear Andrew,

Draft South West REZ Access Scheme Declaration

Transgrid welcomes the opportunity to respond to the *Draft South West REZ Access Scheme Declaration* and supporting *Position Paper* published by the Office of Energy and Climate Change (OECC) on 2 March 2023.

Transgrid operates and manages the high voltage electricity transmission network in NSW and the ACT, connecting generators, distributors and major end users. We have an important role in managing one of the key parts of Australia's National Electricity Market (NEM) as it transitions to higher renewables penetration. We remain committed to playing our part in delivering the major transmission investments in the South West (SW) REZ that will provide significant benefits to consumers.

Transgrid considers that the proposed access scheme has the potential to deliver benefits to host communities, energy consumers and investors when compared to current open access arrangements. To ensure the access scheme gets the balance right, and improve the affordability and reliability of electricity supply in NSW we encourage the NSW Government to, explore opportunities to:

- Reduce any potential renewable generation delays caused by the access scheme that will increase reliability risks in NSW. Transgrid estimates that there may be an up to eight-month delay, due to timing of the first tender for access rights not occurring until 2024[1], for projects seeking to connect to Project EnergyConnect.
- Increase the amount of generation that can connect in the SW REZ given the significant amount of renewable generator development interest.

Our submission provides analysis on the risks and benefits of the proposed access scheme compared to the existing open access arrangements in the NEM, summarised in Table 1 below. We have provided this analysis to assist the NSW Government's decision on whether, on balance, an access scheme should be applied to the SW REZ.

[1] The Office of Energy and Climate Change, together with EnergyCo, hosted an online briefing about the Draft South West REZ Access Scheme and Policy Design on Friday 28 April. At this webinar EnergyCo indicated that the first tender of access rights for the South West REZ would not occur until 2024.

Table 1: Access Scheme vs Open Access.

Objective	Access scheme	Open access
Efficient network utilisation - amount of generator connections to PEC.	• Centrally determined efficient utilisation, which is currently set as a target transmission curtailment level of 0.54%. This is significantly lower than the 4.37% applied to the CWO REZ. • This may or may not turn out to be an efficient level over the 20-year duration of the access scheme. NSW's consumers bear the risk on setting this utilisation level too low. If it is set too high the value of the access scheme to generators may reduce. • Initial stage of access right allocation is proposed to allow ~1200MW of renewables to connect. Second stage, following VNI West and HumeLink, may allow ~3200MW in total.	• The market can determine the efficient amount, from the 34GW of interested generation/storage projects, that should connect to PEC over the 20-year duration of the access scheme. A key benefit of open access is generators not consumers bear the risk of oversubscription and congestion. • During initial stage of PEC, with 800MW transfer capacity, likely to have 1-2 large 500MW+ projects connect. Second stage with 2.5GW transfer capacity likely to result in another 3 or 4 large projects connecting. • PEC is likely to have more renewable connections under open access and a higher amount of congestion. However, under open access the key limitation to the number and scale of connections is generator risk appetite. So, the exact number of connections over the next 20 years is uncertain. • Renewable generator connections could increase if open access risks are mitigated through Energy Security Board (ESB) transmission access reforms.
Fastest path to market for renewables	• Fastest generator connections to PEC may be delayed due to the access scheme by eight months. This is due to projects having to wait to secure an access right at the first tender, delaying the point at which a project can apply to connect, and is an upper bound Transgrid estimate. • This delay applies only to generators connecting to the initial stage of PEC, so likely 1 or 2 large projects, and only if they were to follow the fastest path to connect. There may be no delay to connections to the second stage. • The access scheme may bring financial close forward due to increased investment certainty the access right provides. It may also fast track some projects if proponents fast track development to secure an access right in the first tender.	• Renewables can be connected eight months sooner than under the access scheme following the fastest path to connect. However, there is no certainty that any project would follow the fastest path to connect to PEC. • Additionally, there is currently uncertainty on when a project would have adequate information to prepare and finalise an application to connect. This would delay the point at which a project can submit an application to connect to PEC as finalising an application to connect will be dependent on adequate information and modelling of PEC being available. This information is still under development by Electranet, AEMO and Transgrid. If this delayed the point at which a project could apply to connect, then the eight month delay caused by the access scheme reduces.
Managing investment certainty	• Lower generation capacity connected to PEC with higher investment certainty provided by the access scheme connection limitations. • Increased investment certainty provided by the access scheme may lead to lower cost of capital costs for generators in the SW REZ.	• Higher amount of generation capacity can connect to PEC, however with a higher amount of investment uncertainty due to higher curtailment risks and reduced coordination compared to the access scheme. • Potentially a higher cost of capital for open access generators leading to higher costs. This is potentially mitigated if ESB transmission access reforms implemented.
Social licence – maintaining community support in REZs.	• Community support fostered through EnergyCo led community/employment benefit programs funded through access fees. • Generator commitments on social licence locked in through access right agreements. • Generators can only locate within geographic boundaries of the REZ, avoiding high value and irrigated agricultural land outside this area.	• Social licence largely left to generators. • Generators free to locate in any high value and productive agricultural areas. This may lead to increased difficulty in developing energy infrastructure projects in the wider area.

Additional analysis is provided below on the following matters:

- Network utilisation.
- Fastest path to market.
- Future SW REZ network opportunities.

Network utilisation

Long-term market modelling was carried out by AEMO Services to identify the economically optimal amount of generation capacity in SW REZ once PEC, HumeLink and the Dinawan to Wagga Wagga upgrade are completed. This modelling planted approximately 3,230 MW of renewable generation capacity in 2037/38 in the SW REZ. Based on this generation capacity, and a SW REZ network transfer capacity of 2500MW, the draft SW REZ target transmission curtailment level (TTCL) was calculated at 0.54%.

The position paper noted that the TTCL at this level was designed to prevent excessive planting of new generation along PEC that would increase curtailment in the region and displace imports from existing, lower cost, South Australian renewables. This was stated in the position paper as being in the long-term interest of consumers given it prevents overcapitalisation and unnecessary curtailment in the area.

In setting the final access scheme limitations we encourage the potential consumer benefits of a greater number of renewable generators connecting to PEC, due to lower wholesale prices, to be weighed up against the noted negative impacts due to overcapitalisation and unnecessary curtailment.

Modelling an efficient level of network utilisation balancing consumer and generator outcomes is a difficult task given the various aspects that can have a significant impact on modelling results. This is especially relevant on such a dynamic area of the meshed transmission network with planned interconnection to both South Australia and Victoria.

Transgrid has recently carried out market modelling to inform the Project Assessment Conclusions Report for VNI West. This modelling has identified an economically optimal amount of new wind and solar capacity in the SW REZ as roughly 4000MW by 2043 and up to around 4500MW when looking out to 2050. This is an increase in wind and solar capacity beyond the 2037-38 estimated capacity in the position paper. We encourage the NSW Government to consider these modelling results in finalising the access scheme.

Given the 34GW of potential generation and storage projects in the SW REZ the network utilisation settings will be instrumental in unlocking as much of this capacity as possible. To support this decision, Transgrid provides the following ideas that may be helpful in finalising the access scheme network utilisation settings:

- Introduction of a modelling sensitivity that results in a higher build out of generation in the area to stress test consumer benefit outcomes. This could be achieved through:
    - Higher renewable resource quality assumptions than was assumed in the 2022 ISP. This is an ongoing point of feedback from some developers to AEMO's consultation on its 2023 Inputs, Assumptions and Scenarios (IASR) Report.
    - Alternative assumptions that reflect greater limitations and higher cost, to address social licence issues in some areas of the NEM, as is being considered by AEMO in its development of the 2023 IASR report.

- Including improved triggers in the access scheme design that allow for changes to capacity allocation and the TTCL following revised Integrated System Plan (ISP) modelling updates or new actionable ISP projects being identified in future ISP optimal development pathways.
- Providing additional information on potential access right allocation outcomes with a focus on how storage would interact with any final TTCL limits. Providing guidance on the amount of generation that could connect, given different technology mixes allocated access rights, would assist in increasing investment confidence.
- Given the high level of generator and storage interest in the area, reducing the duration of the access scheme may reduce consumer risk of potentially setting the network utilisation settings too low.

ESB transmission access reform

The ESB transmission access reform work may result in improvements to the way congestion and network utilisation risks are managed compared to open access. Transgrid agrees with the position paper that given the implementation timeframes and final design of these reforms are uncertain, it is difficult to design an access scheme that complements these reforms.

However, Transgrid considers the previously proposed subordinate access right framework should be reconsidered for the SW REZ Access Scheme.[2] This subordinate access right framework could be a prudent addition given it may be facilitated by the ESB's priority access model.[3] This addition would ensure that the scheme can complement potentially beneficial ESB reforms and allow additional renewables to connect in the SW REZ.

Fastest path to market

The position paper noted the potential for the access scheme to cause a delay to some projects seeking to connect to PEC. This was considered in the position paper as a necessary outcome for the access scheme to perform its function of ensuring efficient utilisation of the network.

Transgrid analysis on expected timeframes for connections to PEC under open access compared to the draft SW REZ Access Scheme is set out below in Figure 2. Key assumptions for these timeframes are listed in Attachment A.

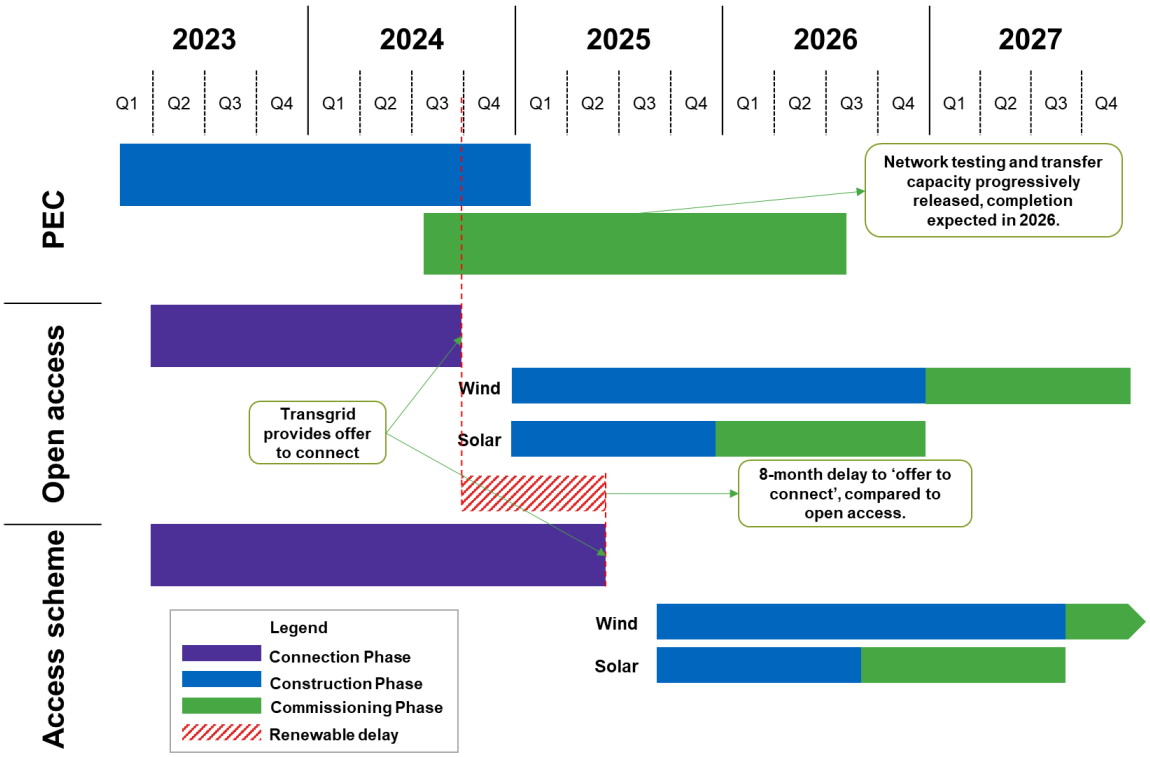
This analysis indicated that under open access the earliest point at which Transgrid may be able to provide an 'offer to connect' to a project, is October 2024, with construction assumed to start three months later. This allows a project, assuming it is solar, to potentially be fully commissioned and connected to PEC at the end of 2026, assuming two years for construction and commissioning.

If the access scheme was implemented, the 'offer to connect' to the project would potentially not be provided until June 2025, a delay of eight months, and completion of commissioning similarly delayed to the second half of 2027.

This delay of eight months is due to projects having to tender for an access right, with the earliest tender for SW REZ access rights assumed to run from Q1 2024 to Q3 2024. Having to wait for an access right delays the point at which a project can apply to connect. If a project was not successful in seeking an access right at this tender initially it would be delayed waiting for a subsequent tender.

[2] The December 2021 *REZ access rights and scheme design: Central-West Orana - Consultation paper* published by the NSW Department of Planning, Industry and Environment proposed a subordinate access right framework for the CWO REZ.
[3] The ESB's priority access model introduces a mechanism by which generators are assigned a priority level in the energy market. The mechanism occurs during the investment time period, and the priority level is given effect in dispatch during operational timeframes.

Figure 2 Open access vs Access scheme - indicative project development timeframes



It is important to note that the timeline for the hypothetical projects connecting under open access is a best-case scenario, with no certainty it would be followed. For example, projects could have delays for a host of reasons from financing, supply chain and construction issues or simply be targeting a later commercial operations date.

Additionally, there is currently uncertainty on when a project will be able to submit an application to connect to PEC as it is dependent on adequate information and modelling being available to allow a project to begin preparing its application. This information is still under development by Electranet, AEMO and Transgrid. If this delayed the point at which a project could apply to connect, then the eight-month delay caused by the access scheme reduces.

In contrast, Transgrid considers that the access scheme and access right allocation is likely to fast track and lead to a more certain process for other projects that do not follow the fastest path under open access. This could occur due to:

- The competitive tender for a limited number of access rights leading to increased early efforts to develop and arrange financing for projects to gain a competitive advantage in a tender.
- The access scheme itself may make projects that do secure an access right more bankable, bringing forward financial close.
- Likely contractual milestones and sunset-type clauses in the access right agreement may give hard dates for projects to work towards across financing, construction, and commissioning timelines.

Transgrid encourages consideration of opportunities to reduce the potential delay to renewable connections caused by the access scheme. This could be achieved through fast-tracking or streamlining the initial allocation of SW REZ access rights.

Another option to reduce this initial delay would be to allow projects to start their application to connect before receiving an access right.[4] This could be a transitional measure that allows projects this exemption only for the first 1200MW allocation of access rights given there is unlikely to be the same delay for the second stage.

These projects would be taking-on the risk that they carry out work related to the connection application that may be wasted if they are not successful in the initial tender. However, with the scale of interest in the SW REZ there may be some generators willing to take this risk. Transgrid is interested in exploring all options available to ensure any delays to renewable connections can be reduced to increase the benefits and value to NSW consumers from the construction of PEC.

Further network opportunities

Regardless of whether the access scheme proceeds Transgrid is interested in working collaboratively with EnergyCo to explore opportunities to further expand the network in the SW REZ to allow more renewables to connect.

Transgrid considers that further clarity and transparency on the process to determine whether a network upgrade in the area would be specified as access right network could be beneficial. This would give interested generators greater investment certainty on where to plan their projects and the access frameworks that would apply. This is especially relevant for parts of the network to which EnergyCo would prohibit connection.

Next steps

We will continue to work collaboratively with the OECC and EnergyCo NSW on the development of the South West REZ Access Scheme. If you require any further information or clarification on this submission, please feel free to contact me or Sam Martin at sam.martin@transgrid.com.au.

Yours faithfully

Kasia Kulbacka
Acting Executive General Manager
Network

[4] The draft South West REZ Access Scheme currently prohibits a project from submitting an application to connect if it does not hold an access right.

Attachment 1

Figure 2 assumptions

The following assumptions are based of Transgrid's experience in connecting customers to our Transmission network developed for guidance purposes only:

- Connection Phase under open access is ~18 months. This includes the following key blocks of time:
  - Enquiry timeline = ~2 months (Transgrid is required, under the national electricity rules, to provide a connection enquiry response within 30 or 40 business days depending on the type of enquiry).
  - Proponent prepares application = ~6 months. This is dependent on adequate information and modelling of PEC being available to prepare, as the detailed design of PEC is still ongoing the modelling information is still under development.
  - 'Application to connect' to 'Offer to connect' = ~10 months.
- Time between receiving 'Offer to connect' and start of construction = ~3 months.
- Solar construction timeline = 12 months, Wind construction timeline = ~24 months.
- Commissioning to take ~12 months for both solar and wind projects. This includes AEMO registration and progressive energization through hold point testing.
- Connection process under the access scheme is consistent with open access timelines except the 'application to connect' is assumed to be submitted following access right award. SW REZ Access Rights assumed to be available in a tender beginning Q1 2024 with tender results known and access rights awarded in Q3 2024. Given this, access rights are assumed to be awarded in July 2024 and connection application submission following in August 2024, is assumed as the key difference for the representative project under the access scheme compared to open access.