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Access product design consultation submission

Transgrid welcomes the opportunity to respond to the NSW Government's further consultation on REZ access rights and scheme design.

As explained in the attached submission, Transgrid supports the NSW Government's objective to develop an access scheme for the Central West Orana REZ. Specifically, Transgrid recognises that an access regime will promote the efficient use of the REZ network infrastructure, ultimately for the benefit of electricity consumers. The access arrangements also provide an opportunity to streamline the connection process, which would result in lower costs for connecting parties.

While the rationale for the development of an access scheme is soundly based, its successful implementation will require the resolution of a number of important issues. In this regard, our principal concerns and observations are set out below.

- **Clear delineation of roles and responsibilities**

  A key issue is that the new REZ network infrastructure will be owned by a third party, the REZ Network Operator, who will be responsible for maintaining that network and its interface with Transgrid's network for the duration of its transmission lease.

  As the Central West Orana REZ will be an integral part of the electricity system in NSW and the ACT, the actions or inactions of the REZ Network Operator could have adverse impacts that go beyond the REZ network infrastructure itself. By the same token, parties connected to the new REZ network infrastructure will be relying on the REZ Network Operator to fulfil its obligations.

  Given these inter-dependencies, it is essential that the roles and responsibilities of the various parties are clearly delineated and defined so that liabilities and risks are attributed to the appropriate party. This process will also assist in identifying any new roles under the framework, such as the proposed undertaking of batch connection system studies by Transgrid. Appropriate cost recovery arrangements are also needed to be developed for any new roles undertaken under the framework.

- **The value of storage capacity must be recognised**

  The consultation paper explains that storage capacity could be included as part of the REZ Specification, providing a central storage capacity for the connecting parties. In addition, storage projects could seek access to the REZ, either as part of a generation project or in their own right.

  Transgrid's view is that storage should be treated on a level playing field so that efficient storage capacity is obtained, whether as part of the REZ Specification and/or as a connecting party to the REZ. In this regard, the design of the REZ access scheme should avoid placing restrictions or additional obligations on storage projects.

- **Lowest cost system strength solutions must be obtained**

  The consultation paper proposes a two-step process for the provision of system strength services, where the REZ Network Operator is responsible for its initial provision as part of the REZ Specification and Transgrid is responsible for its subsequent provision. Transgrid supports this approach, noting that it provides a clear delineation of responsibilities and cost recovery arrangements.

  In developing the arrangements for system strength services, it will be important to ensure that the lowest cost system strength solutions can always be secured. Specifically, Transgrid considers it essential that the REZ Network Operator is able to discharge its system strength obligations by procuring services from Transgrid, if this is the lowest cost solution. Similarly, Transgrid should be able to contract with parties on the new REZ network infrastructure for system strength services.

- **An access control mechanism may not be justified**

  The consultation paper explains that in order to protect the access right of those connecting to the REZ Scheme Network, it is necessary to control access to Transgrid's existing network. The paper describes this arrangement as an 'access control mechanism', and presents two possible options for its design.

  While Transgrid accepts the rationale for an access control mechanism, we are not convinced that the benefits of the mechanism will necessarily outweigh the costs. In particular, the introduction of an access control mechanism in each REZ may add complexity and delays in assessing new connection to Transgrid's existing network. An access control mechanism may therefore discourage new connections to the existing network, which could be contrary to the interests of electricity consumers.

  Transgrid would welcome a careful reconsideration of the case for an access control mechanism, having regard to its likely costs and benefits. In particular, the NSW Government should take into account the views of different groups of project developers in deciding whether to implement an access control mechanism. Our view is that it is relevant to consider project developers as predominantly belonging to one of three broad groups: those that have projects connecting to the existing network underway, those intending to seek to connect to the new REZ Infrastructure, and those intending to seek to connect to the existing network. Each of these three groups of project

developers may bring different perspectives on the potential impact of the access control mechanism.

If you require any further information or clarification, please feel free to contact either me or Eva Hanly, Executive Manager, Strategy, Innovation and Technology at eva.hanly@transgrid.com.au.

Yours sincerely

Brett Redman

Chief Executive Officer

REZ access rights and scheme design: Central West Orana REZ

Transgrid submission to NSW Government's further consultation

1. Summary

Transgrid welcomes the opportunity to respond to the NSW Government's further consultation on REZ access rights and scheme design: Central West Orana REZ.

The purpose of the access scheme, according to the NSW Government's consultation paper, is to provide a range of benefits to generators and investors by controlling how projects connect to REZs and defining their rights to access the new REZ Infrastructure. In particular, the access scheme is intended to promote the efficient use of, and investment in, the transmission network by preventing congestion and streamlining the connection process.

In our role as the transmission planner and operator for NSW and the ACT for over 40 years, Transgrid has developed unique expertise and capability in managing one of the key parts of the Australian energy system. Our primary responsibility is to ensure the ongoing security and reliability of the system for the benefit of all energy users. We are not only legally obliged to meet this responsibility under the National Electricity Rules (NER), but we are also subject to a set of comprehensive obligations under our lease and licence with the NSW Government.

Transgrid supports the NSW Government's objective to develop an access scheme for the Central West Orana REZ in order to provide increased investment certainty for generation and storage infrastructure and support the efficient development of the REZ. Increased investment certainty will facilitate more generation and storage investment in the REZ, thereby increasing competition between generators and putting downward pressure on electricity prices for the benefit of electricity consumers.

The establishment of the access scheme will create new roles and responsibilities, which inevitably create risks and uncertainties. It will be essential to work through the arrangements in detail to ensure that these risks and uncertainties are fully understood and mitigated through robust contractual and regulatory arrangements. In this regard, TransGrid is ready to assist the NSW Government to develop an access scheme which resolves the outstanding issues in a manner that maximises benefits for NSW consumers.

While the NSW Government's paper is focused on Central West Orana REZ, Transgrid understands stakeholder feedback on the consultation paper will also inform the high level access scheme concept design for the REZs that follow. It is therefore important to consider how the proposed arrangements for Central West Orana REZ will operate if they are expanded to other REZs in the NSW region.

This submission is structured as follows:

- Section 2 comments on the proposed arrangements for allocating access rights in the REZ;
- Section 3 discusses the contractual arrangements and identifies a number of issues that require further consideration;
- Section 4 comments on Transgrid's role in relation to connections to the new REZ infrastructure;

- Section 5 discusses the arrangements for the provision of system strength services;
- Section 6 comments on the treatment of storage and the importance of ensuring that the economic case for storage capacity is addressed on its merits;
- Section 7 sets out Transgrid's views on the access control mechanism; and
- Appendix A provides our response to the NSW Government's questions in its consultation paper.

2. Allocation of access rights

2.1. The NSW Government's consultation paper

The NSW Government proposes a physical connection access scheme model to mitigate the risk of under utilisation of the REZ. Under the proposed model, the access right is a promise to limit capacity connected to the REZ Network Infrastructure based on a targeted level of transmission curtailment.

2.2. Our view

We support the NSW Government's adoption of the physical connection model for the Central West Orana REZ (as opposed to the more complex models that involve financial compensation). The physical connection access model is more suited to the timeframes required to deliver the Central West Orana REZ because it is simpler to implement and can be more easily understood and considered by generators and storage providers in making investment and operational decisions.

On the basis that the Central West Orana REZ is expected to deliver a mix of wind and solar generation, we support the NSW Government's proposal to set the cap on installed generation capacity to the new REZ Infrastructure at a level greater than the transmission transfer capacity. In particular, by exposing connecting parties to some curtailment risk, the NSW Government's approach will ensure that the available network capacity is utilised to a greater extent and thereby provide additional value to electricity consumers. Transgrid also supports the three stage allocation concept described in the paper and the arrangements for sub-ordinate access rights.

As explained later in this submission, it is important that the access scheme accommodates efficient storage solutions, either through the allocation process or as part of the REZ Network Specification. In particular, the efficient provision of storage capacity is able to add significant value by increasing the realisable maximum capacity of the REZ Scheme Network.

3. Contractual arrangements

3.1. The NSW Government's consultation paper

The paper introduces contractual arrangements between the relevant parties to implement the access scheme. These are:

- A Project Delivery Agreement between the project proponent and the Scheme Financial Vehicle, which will set and monitor tender bid undertakings, including the project development and construction milestones.

- A Connection Agreement which is proposed to be tripartite between the project proponent, the Primary TNSP, which is TransGrid, and the REZ Network Operator for connection to the REZ Scheme Network (which is the new REZ Infrastructure in the case of Central West Orana REZ).

- A Project Deed between the REZ Network Operator and EnergyCo NSW, which provides the REZ Network Operator with a right to design, build, finance and own the new REZ infrastructure.

- A Transmission Lease between the REZ Network Operator and EnergyCo NSW, which will set out lease payments and obligations for the REZ Network Operator to maintain the new REZ Infrastructure and to comply with licence requirements and regulatory instruments.

3.2. Our view

TransGrid notes that the consultation paper does not provide details of the rights, responsibilities and liabilities for each of the parties to the various contractual agreements. While the high level description of the proposed contractual arrangements appears to be reasonable, the REZ access scheme is a significant change to the existing arrangements that will introduce new risks that need to be fully understood and actively addressed.

From Transgrid's perspective as system operator and TNSP, the following risks need to be managed as described below:

- Transgrid should not be exposed to any actions or inactions by the REZ Network Operator that impact on its ability to deliver its service obligations as TNSP and system operator in accordance with the NER.

- Transgrid should not be liable for the curtailment of generators with access rights to the new REZ Infrastructure in any circumstance. In addition, TransGrid should also not be liable for any failure on the part of the REZ Network Operator to meet its contractual obligations to its connected parties.

- The REZ Network Operator must be required to construct and maintain the new REZ Infrastructure to the appropriate standards, particularly as these assets have the potential to adversely affect Transgrid's service performance in relation to the provision of prescribed transmission services.

- There needs to be a clear delineation of responsibilities between Transgrid as system operator and the REZ Network Operator in respect of the operation of the assets. It will be critical to system security that roles are understood and there are no gaps. To the extent that Transgrid is relying on the REZ Network Operator to undertake system operator functions, there must be a clear regulatory obligation placed on the REZ Network Operator to undertake those functions.

In addition to the above observations, it will also be important to clarify the roles and responsibilities of the REZ Network Operator so that interested parties can formulate any tenders for the provision of new REZ Infrastructure.

TransGrid is currently engaging with EnergyCo to collaborate on clarifying the roles of Transgrid as system operator and the role of the REZ Network Operator. We look forward to continuing to work with EnergyCo in the coming months.

4. Connection process in the REZ

4.1. The NSW Government's consultation paper

The consultation paper comments that the present connection process is lengthy, costly, lacks transparency and is constrained by AEMO's and the Primary TNSP's resources. The NSW Government is also concerned that multiple generators connecting to the REZ Scheme Network at the same time may exacerbate existing resourcing constraints.

One of the measures proposed to address these issues is the introduction of REZ Access Standards, comprising REZ-specific access standards as well as inverter-based resource (IBR) standards. These standards must be met by proponents of generation and storage projects as a condition of their access rights tender. AEMO and the Primary TNSP must also accept the Access Standards without negotiation.

The consultation paper also proposes that Transgrid, as the Primary TNSP, would conduct 'batched' REZ power system and connection studies for all projects that have submitted applications to connect to the REZ Scheme Network within a specified time window (e.g. in the previous 6-month period). The purpose of this batching process is to minimise re-work by completing the connection, limit and stability studies for all projects in one process.

4.2. Our view

Transgrid supports the NSW Government's intention to streamline the connection process. As the connection process will now include AEMO, the REZ Network Operator, and Transgrid (plus multiple generators), there will need to be clarity on the roles of the respective parties and on how the REZ Access Standards are to be enforced.

In relation to the REZ Access Standards, Transgrid agrees that the establishment of predetermined standards would obviate the need to negotiate Generator Performance Standards and expedite the project design, development and connection processes. Transgrid must be comfortable that the REZ Access Standards are appropriate given the potential impact of these standards on the security of its transmission network. Transgrid looks forward to working with EnergyCo in developing the REZ Access Standards.

In relation to the batching process, Transgrid agrees that it has an important role to play in streamlining this aspect of the connection process. As these studies essentially apply to a third party's network, it will be important to ensure that Transgrid is appropriately remunerated for its role in batching connections, including undertaking power system studies, and other connection processes assigned to it under the new framework.

5. System strength

5.1. NSW Government's consultation paper

As part of the REZ Network Specification, REZ Network Operators will deliver the initial system strength services for the new REZ Infrastructure. Transgrid (as the Jurisdictional Planning Body in NSW) will meet any system strength requirements for the new REZ Infrastructure following its construction, consistent with the NER.

5.2. Our view

TransGrid supports the respective roles of the REZ Network Operator and TransGrid, as the Primary TNSP, in providing system strength services. In particular, the proposed arrangements will remove uncertainty for project proponents and provide appropriate arrangements for recovering the costs of providing system strength services.

As part of these arrangements, it will be important to ensure that the lowest cost system strength services can be procured by the REZ Network Operator and TransGrid. For example, it should be open to the REZ Network Operator to meet the REZ Network Specification by procuring system strength services from Transgrid or a third party. Similarly, TransGrid should also be able to procure system strength services from the REZ Network Operator and/or connected parties to the REZ in order to fulfil its system strength obligations.

6. Treatment of centralised storage

6.1. The NSW Government's consultation paper

The NSW Government recognises that bringing storage into the market in a coordinated, centralised manner may be a more cost-effective process than the counterfactual of smaller storage projects entering in an uncoordinated, decentralised manner. The consultation paper explains that centralised storage may:

- be provided as a shared asset or as part of the specifications for the new REZ Infrastructure; and/or
- improve network utilisation and reduce transmission curtailment risk within the REZ Scheme Network and provide a generation firming service for REZ projects.

6.2. Our view

We support the NSW Government's observation that centralised storage solutions have a key role to play in developing the REZ. System wide energy storage will provide better outcomes for consumers as system services provided by storage technology are most efficiently provided when considered on a whole of network basis due to the highly complex and interdependent nature of the network.

Transgrid considers that storage capacity is likely to play an important role in the REZ Network Specification by providing centralised capacity in the REZ. Equally, once the REZ Network Specification is completed, storage projects may seek to connect to the REZ Scheme Network and create further additional capacity. Transgrid's view is that the REZ access scheme should provide for both types of storage projects, in addition to allowing storage projects to be located outside of the REZ.

7. Access control mechanism

7.1. The NSW Government's consultation paper

The NSW Government proposes to control projects connecting to existing transmission network infrastructure inside or outside of the geographical boundary of the REZ to ensure these connections do not impact on the intended network capacity of the new REZ Infrastructure.

7.2. Our view

We recognise that it may be necessary to manage new connections to existing infrastructure inside or outside of the REZ geographic area in order to ensure that the access rights of parties connecting to the new REZ Infrastructure are appropriately recognised and protected.

The case for introducing a control mechanism needs to be considered further to ensure that the process for establishing connections to Transgrid's existing transmission network, inside or outside of the REZ geographic area, does not become inefficient, unpredictable or difficult to administer. At this stage, the extent to which existing infrastructure will be affected by the application of a control mechanism is unclear. However, if substantial areas of Transgrid's existing infrastructure could be impacted by the access control mechanism, our view is that the case for such a mechanism would need to be reconsidered.

Specifically, a control mechanism could add significant complexity and delays to the connection process and inadvertently disadvantage new generation and storage projects in NSW compared to other states in the NEM. These costs could outweigh the benefits that a control mechanism would provide in protecting the access rights of those parties connected to the REZ Network Scheme. With this in mind, the broader REZ development plan being implemented by the NSW Government as part of its Electricity Infrastructure Roadmap should be taken into account in deciding on whether to provide an access control mechanism. This should also include consideration of the views of different groups of project developers. Our view is that it is relevant to consider project developers as predominantly belonging to one of three broad groups: those that have projects connecting to the existing network underway, those intending to seek to connect to the new REZ Infrastructure, and those intending to seek to connect to the existing network. Each of these three groups of project developers may bring different perspectives on the potential impact of the access control mechanism.

Notwithstanding the concerns noted above, in relation to the options for access control mechanisms discussed in the consultation paper, Transgrid's preference is for Option 2. The primary rationale for this preference is that in order to achieve efficient and timely connections, Transgrid considers it important that it remains the party responsible for making connection offers to its transmission network. It will also be important to work through any proposed mechanism to ensure it does not have any unintended consequences on the reliability and security of the electricity system.

We support proposals to exempt projects that are in the process of connecting to Transgrid's existing transmission network from the access scheme control mechanism. These projects should proceed as planned under the current arrangements in the NER.

Appendix A Response to NSW Government's Questions

Section 1. Access at a glance

	Question	Transgrid response
1.	What details should an access scheme declaration include to provide clarity and certainty for the access scheme?	The matters listed on page 51 of the NSW Government's consultation paper are appropriate. Clarity on the existing transmission infrastructure that will be subject to access controls is essential.
2.	What continuous or regular reporting information will be required to enable proponents to mitigate the risk of any New REZ Infrastructure delay?	Project proponents are better placed to respond to this question.

Section 2. Staying connected: allocation approach in detail

	Question	Transgrid response
3.	What aspects should be considered in setting the time periods for the Project Maximum Capacity Profile?	Project proponents are better placed to respond to this question.
4.	What approach should be taken to implement the Project Maximum Capacity Profile?	Project proponents are better placed to respond to this question.
5.	Are there any unintended consequences of introducing a Project Maximum Capacity Profile, including implementation and/or operation implications?	Project proponents are better placed to respond to this question.
6.	Does the approach to modifications to Project Characteristics pre- and post-project commissioning allow for sufficient flexibility?	Project proponents are better placed to respond to this question.
7.	What factors will drive a project's decision to materially modify its Project Characteristics?	Project proponents are better placed to respond to this question.
8.	What additional factors should be considered when calculating the Project Expected Capacity Profile for a project?	Project proponents are better placed to respond to this question.
9.	How should the Project Expected Capacity Profile of a storage or hybrid project be calculated?	Project proponents are better placed to respond to this question.
10.	Does the target transmission curtailment level provide value to proponents?	Project proponents are better placed to respond to this question.

Question	Transgrid response
11. What additional considerations are relevant to setting the target transmission curtailment level?	Project proponents are better placed to respond to this question.
12. What additional considerations are relevant when forecasting if the target transmission curtailment level has been met or exceeded at the end of Allocation 1? (a) Should there be regulator oversight of the decision?	Project proponents are better placed to respond to this question.
13. Does the proposed allocation approach (a) allow an efficient level of generation and storage projects to connect above the transfer capacity of the REZ? (b) improve investor certainty for curtailment risk of their projects?	Storage capacity is likely to have an important role in the REZ Specification by providing centralised capacity in the REZ. Equally, once the REZ Specification is completed, storage projects may seek to connect to the REZ and create further additional capacity. Transgrid supports both types of storage projects, in addition to storage projects outside of the REZ.
14. Does the proposed access right duration suffice for projects to reduce curtailment risks across its asset life?	Project proponents are better placed to respond to this question.
15. Are there high-level elements regarding the interaction of the LTESA and REZ access right allocation processes that need to be regulated?	Project proponents are better placed to respond to this question.
16. What are the primary considerations for a framework for subordinate access rights to ensure they do no harm to existing access right holders?	A framework for subordinate access rights to provide efficient utilisation of the new REZ Infrastructure is appropriate.
17. What is the materiality of leaving in-REZ storage projects exposed to the potential for negotiated use-of-system charges related to the cost of shared network services up to the boundary point of the REZ? (a) Should additional measures be considered to address the uncertainty a negotiation process introduces?	The REZ Network Operator would need to pay for load connection charges at the connection point in accordance with Transgrid's approved methodology. The charging arrangements between the REZ Network Operator and the connecting parties are a matter for these parties and not for Transgrid.

Section 3. Staying connected: streamlined connection process

Question	Transgrid response
18. Which negotiated standards are often agreed during the connection process for generation and storage projects? (a) Are there any concerns or unintended consequences that arise from removing the option to negotiate Generator Performance Standards?	TransGrid recognises that identifying unintended consequences is challenging and we look forward to working with EnergyCo and AEMO on these issues.
19. Will the streamlined connection process, as currently proposed, provide developers with improved certainty of timeframes and technical requirements? (a) Will it minimise the amount of power system modelling required?	Yes. The streamlined process as proposed is designed to avoid the two stages of power system modelling that are currently required (at the connection application stage, and again at the registration stage). The batching of connections will also mitigate the risk of having to redo studies as new generators are committed.
20. What level of risk or uncertainty is introduced by: (a) removing the option for system strength self-remediation for proponents when connecting to the REZ Scheme Network? (b) leaving any future system strength requirements for the REZ Scheme Network to the National Electricity Rules which opens the possibility that access right holders will be liable for future incremental system strength requirements?	TransGrid agrees with the consultation paper's observation that the proposed approach to delivering system strength will avoid the need to model the system strength impacts of each project individually and the inefficiencies that can be created by decentralised provision of system strength (i.e. each project remediating its own adverse system strength impact through investment in synchronous condensers or other assets or services that can provide system strength). TransGrid also supports the respective roles of the REZ Network Operator and TransGrid in providing system strength services. We note that if the REZ Network Operator is the only source of additional system strength at a node, then there should be some arrangements to ensure that such services can be procured at a reasonable cost for the benefit of consumers.

Question	Transgrid response
21. How will a centralised storage facility interact with an access scheme and will this provide value to access right holders? (a) Should it operate only where it benefits REZ projects or in the best commercial interest with the profits shared between invested parties? (b) Should funding a centralised storage facility be a network augmentation option for the creation of an Allocation 3 access right?	A centralised storage facility will enable more access rights to be available and make more efficient use of the new REZ Infrastructure. Storage should be able to be provided: (1) As part of the REZ network specification; and/or (2) As a project proponent, including a hybrid project; and/or (3) Outside of the geographic area of the REZ. The case for storage should be considered on a level playing field in all instances without additional requirements or conditions applying. The most prudent and efficient option should prevail.
22. What would be the impact of the REZ Network Operator either providing or facilitating connection assets for access right holders?	Project proponents are better placed to respond to this question.

Section 4. Access scheme control mechanism

Question	Transgrid response
23. What is your view on the materiality of the impact of Category C and D projects on REZ projects?	There is the potential for these projects to have a material impact, depending on their size and location. Category C may be expected to have a more material impact, but it will depend on the specifics of any project. The potential for the existing network to constrain access right holders should also be taken into account when allocating access rights.
24. Which of the two proposed options are preferred to manage connections to existing declared network infrastructure for Category C and Category D Projects?	Please refer to section 7 of our submission. We support option 2 over option 1 as it is appropriate that Transgrid has responsibility for connections to its network.
25. Does the cut-off date for the application of the access control mechanism provide sufficient certainty to projects currently under development?	Project proponents are better placed to respond to this question.

Section 5. Setting and usage of access fees

Question	Transgrid response
26. What is an appropriate format and quantity for access fees?	Other stakeholders are better placed to respond to this question. However, we note that as connecting parties are competing for access rights through a tender process, if access fees apply, these fees would be taken into account when making bids.
27. Should this recover a component of the REZ network infrastructure costs?	Please refer to our answer above.
28. How should regulations prescribe the minimum and maximum amounts or proportions for the community and employment components of the fee?	Other stakeholders are better placed to respond to this question.
29. What other principles should be prescribed by the regulations for AEMO Services to consider when setting the access fees?	Other stakeholders are better placed to respond to this question.

Section 6. Changing regulatory environments

Question	Transgrid response
30. Are the proposed derogations and modifications to the National Electricity Rules appropriate to deliver the access scheme?	We note that the details underpinning the overarching design of the access scheme are yet to be developed. It is appropriate that these are set out in Regulations and derogations to the NER as proposed. In particular, we note the need to set out the allocation of responsibilities and liabilities between the relevant parties as set out in the main body of our submission.
31. What are the key considerations in designing a dispute resolution mechanism to apply to the access scheme?	An appropriate dispute resolution mechanism is an important feature of the access scheme. The mechanism should support quick resolution of any disputes.
32. How would the ESB's proposed congestion management model, or a similar reform, impact the value of the REZ access scheme?	We support the NSW Government evaluating the impact of any national reforms and acting to protect and maintain the substance of the access scheme.