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08 April 2022

Renewable Energy Zones consultation  
Transpower New Zealand Ltd  
Via [REZ@transpower.co.nz](mailto:REZ@transpower.co.nz)

## Renewable Energy Zones (REZ) National Consultation

Thank you for the opportunity to submit on this consultation. We have answered the specific consultation questions regarding the general concept of Renewable Energy Zones. No portion of this submission is confidential.

Aurecon has significant experience in REZ development and operation:

- Supported the state governments of New South Wales and Victoria develop their REZ frameworks
- Supported the Clean Energy Finance Corp on the potential REZ shortlisting across Australia
- Supported the New South Wales government as REZ technical advisor.
- Produced the Victorian REZ Development Plan for Victorian Government and the AEMO.

We offer our services to support Transpower in this process using our learnings from Australia both in REZ development and developing renewable projects for clients using the REZ framework.

Please contact us if you wish to discuss any details of our responses further.

Ngā mihi,

A handwritten signature in black ink, appearing to read "Blair Walter".

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**Q1. Do you agree that the first mover disadvantage and high connection costs can be challenges for connecting new renewable generation and/or large electricity loads to the electricity network?**

Aurecon has been involved with projects where high connection costs (including first mover disadvantage) were a key component of the commercial viability of the project. We have seen this in the Wairarapa where there are several wind farms yet to be built due to the first mover disadvantage of connecting to the Grid.

Removing the first mover disadvantage and reducing connection costs, especially to the Grid, will encourage renewable generation to be built efficiently and at pace.

**Q2. Do you think the concept of a Renewable Energy Zone could be beneficial in a New Zealand context?**

Based on our experiences supporting the state governments of New South Wales (NSW) and Victoria develop their REZ frameworks, we know that investment in REZ infrastructure is necessary to unlock significant renewable resources and transport that energy to major load centres. In Australia, the existing transmission network in renewable-rich resource areas is inadequate for bulk energy generation, therefore a co-ordinated approach to transmission and generation is needed.

The lack of transmission capacity across regional Aotearoa is negatively affecting economic growth. From our experience developing and consenting wind farms for renewable energy clients, the first mover disadvantage is a key reason why generation is not being built quickly or efficiently. If a REZ allowed connection costs to be proportioned between a group of parties with complimentary construction timelines, then the concept is certainly attractive to Aurecon clients.

We support a REZ pilot in Te Tai Tokerau/Northland to test this concept.

**Q3. What region(s) do you think would be suited to Renewable Energy Zones?**

For wind developments, data on wind speed, terrain and ground cover are the key indicators for appropriate locations. For solar developments, location is primarily dictated by solar irradiance, topography, and transmission proximity.

Therefore, the following regions best suited to wind and solar developments are: Far North, Northland, Waikato, Bay of Plenty, Central Plateau, Taranaki, Hawkes Bay, Wairarapa, Palmerston North, Canterbury, Otago, Southland.

Additionally, many of these regions may have major populations and/or good transport routes which would be attractive for large electricity users to create a supply and demand REZ with generators.

An additional consideration in the Australian context has been downstream transmission network capacity. To unlock full value from the REZ, the transmission corridors between the REZ itself and the major points on consumption need to be adequate to transport the energy unconstrained.

**Q4. What benefits do you think should be considered in the decision-making process for Renewable Energy Zones in New Zealand?**

We support key benefits focusing on the energy trilemma of security of supply, sustainability, and affordability.

Additionally, the following benefits should be included in the decision-making process:

- Alignment with Te Tiriti o Waitangi including iwi-owned land and iwi-owned companies<sup>1</sup>.
- Impacts on regional economic development including increased employment opportunities in the short and long term.
- Development track record – can they do what they said they will.
- The role the REZ plays in the broader transmission system from the perspective of reliability and security of supply. Is the benefit of the REZ to replace retiring fossil fuels, to provide energy storage and “shape” supply, a bulk source of renewable energy or a combination of these?
- The energy market benefits of the REZ and the likely impacts on wholesale prices, generating profiles of “baseload” fossil fuel plants, ancillary services markets etc.

**Q5. Do you agree with the proposed guiding principles? Are there any that you would change or add?**

Regarding number seven regarding minimal change to the regulation, in the Australian context REZs have required several major changes to the regulatory regime to enhance the value proposition to participants. There needs to be a clear value proposition to REZ participants, otherwise they take on risk without reward.

To achieve an optimal solution the problem is best defined as a first step. In NSW, the driver of the Central West REZ was the retirement of Liddell Power Station ~2000MW (energy security and keeping the lights on). In Victoria, the REZ program is in response to the Victorian Renewable Energy Target.

**Q6. Do you agree with the proposed criteria for selecting suitable regions for REZ development? Are there any that you would change or add?**

A key issue in Australia is the community and stakeholder acceptance of new linear infrastructure. Therefore, community acceptance is critical to success.

**Q7. Do you agree with using a tender process for committing projects in a REZ? Are there alternative processes that could be considered?**

An EOI process should be run first to gauge market interest. Market interest was high in Australia due to the severe issues with grid connection and integration of renewables currently being experienced across the Australian NEM.

Assuming market interest exists, a tender process makes sense, but a clear value proposition needs to be present to attract high quality participants. The REZ custodian needs to be clear about what pain-points (for renewables developers) they are relieving with a REZ.

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<sup>1</sup> Including hapu and whānau owned land and companies.

Aurecon supported the Clean Energy Finance Corp on the potential REZ shortlisting across Australia., We also supported NSW Gov as REZ technical advisor. We produced the Victorian REZ Development Plan for Victorian Government and the AEMO. We offer our services to support Transpower in this process using our learnings from Australia both in REZ development and developing renewable projects for clients using the REZ framework.

**Q8. Who should be involved with co-ordinating and undertaking the various steps within a REZ development process?**

Stakeholders	Commercial	Technical and environment
Landowners Community Iwi Government Network owner/operators Market operators	Developers Financiers (Debt & Equity) Consultants Public Trustees Government funding agencies	Government Consultants Network owner/operators Market operators Landowners Community Iwi

The renewable energy development industry is relatively small, and parties are often well known to each other, are using the same consultants, and/or a landowner and developer are introduced by a third party. Therefore, there is opportunity for other parties undertake some, if not all, of the tasks outlined in the tender process (Figure 12) in the REZ consultation document. For example, Aurecon has Aotearoa’s leading renewable energy development team, comprising engineering, commercial, and environmental specialists in wind and solar farms, who already undertake most of the tasks in Figure 12 for local and international clients.

**Q9. Do you agree with the proposed project criteria? Are there any that you would change or add?**

We suggest the inclusion of the following:

- Project developer experience
- Projects having a Power Purchase Agreement/Revenue underwriting
- Cultural impact and alignment with Te Tiriti o Waitangi

**Q10. Do you agree with the challenges we have identified?**

We agree with the challenges identified and consider that it’s likely that some regulatory change will be required to enhance the value proposition to participants. Additionally, there needs to be a clear value position to REZ participants, otherwise they take on risk without reward.

**Q11. What are some of the ways to overcome these challenges and who should be involved?**

With regard to **access and capacity rights**, we agree that developing grid scale battery solutions is an opportunity to not only mitigate open access issues, but also allow renewable developments in the areas furthest away from Grid infrastructure to be buffered as much as possible from security of supply issues.

Clients would support customer-owned connection assets, especially because they can be designed and built in a manner and timeframe aligned to the renewable development timeframe and managed as one project.

**Funding and cost recovery** is a significant concern for developers in a REZ. The timing of developments in a REZ is a key risk and the recovery of costs for network upgrades (and the proportioning of the costs) needs careful thought and discussion. In the circumstance that a REZ party pulls out there needs to be a mechanism for the other parties to continue their construction and have the network upgrades continue uninterrupted. Some solutions to ensure projects aren't delayed in this situation are:

- Introduce a 'REZ bridging finance' type product that can be drawn down in the event a REZ party withdraws and a replacement party is not readily available (timing difference). This will enable the project to proceed and mitigate project delays until a replacement party is confirmed.
- Introduce a 'EECA GIDI' fund type programme provided by Government where grant funding is provided for transmission related infrastructure projects only (say max funding of \$5M per project). This could apply to parties wanting to join the REZ later who missed the opportunity to join initially. This fund could also apply for a project that is completely isolated and / or unable to collaborate with other parties for a variety of reasons.
- A 'Transpower REZ' fund provided by Government to enable transmission upgrade works downstream of the REZ (benefits an entire region or zone, not just the REZ) which could potentially be very costly.

We support the ability to future proof capacity, especially in an area where there is potential for significant development and requires strategic investment. However, current projects in an area might not be able to, not should be expected to, afford the transmission upgrades, but suitable upgrades would encourage future renewable growth. Therefore, some funding mechanisms as described in the previous paragraph would allow 'over-sizing' without the financial burden falling to the first movers.

#### **Q12. Do you see any other potential challenges that need to be considered?**

A potential challenge to the REZ model is the ability to be flexible. When agreeing to a REZ it is important that flexibility is retained so that developers can reassess their contractual REZ commitment should the process not go to plan e.g. other parties pull out and leave developments significantly delayed or stranded in a worst case scenario. The design and construction programme for the developments in an individual REZ is of utmost importance. Delaying the wind farm because another REZ party pulled out has downstream effects on commercial viability and staff employment.

The REZ model should include guidance to those developers who would like to join a REZ after it has been established. Or have they missed the boat entirely?

The ongoing reform of the Transmission Pricing Methodology provides uncertainty to developers, especially when it can be unclear the financial impacts of any changes. We suggest that Transpower provide a service to developers to provide accurate transmission charge figures (best- and worst-case scenarios) and refined over time.