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Energy Security Board
Secretariat
Energy Ministers Coordination
Department of Industry, Science, Energy and Resources
GPO Box 2013
CANBERRA ACT 2601

Email: info@esb.org.au

Dear Sir/ Madam,

Response to Renewable Energy Zones Consultation Paper

Reach Solar energy (**Reach**) is pleased to provide its response to the Energy Security Board (**ESB**) discussion paper entitled “Renewable Energy Zones Consultation Paper” (**Paper**) dated January 2021.

By way of background, Reach is a developer of large-scale solar photovoltaic (**PV**) and distribution connected energy storage projects. Reach management (www.reachsolarenergy.com.au) have a proven track record with development, large-scale capital raising and operations, for both energy and infrastructure projects in across Australia and internationally.

In mid 2017, Reach raised \$500m of project finance for Bungala One and Two, 2 x 110MWac solar PV in South Australia. Reach is currently developing 450MWac as the first stage of a 900MWac solar PV site in NSW, and distribution-connected batteries in South Australia.

Responses to the specific questions raised by the ESB in its Paper are provided in Appendix A. The Reach response pertains to a national framework not individual State-based renewable energy zone (REZ) schemes.

1. Concept of a REZ, and applicable Market Rules

- a) Reach acknowledges there have been successful examples of large additions to existing grid systems to capture renewable energy resources including in North West Texas (USA) by ERCOT 22GW plan and the UK offshore REZ, by Ofgem 75GW plan. Importantly, projects connected to these REZ operate to the **same market rules** as other projects connected to the rest of the grid system i.e. there is no discrimination between market participants if they are

located inside or outside of the REZ.

- b) Reach **supports the concept** of a more co-ordinated approach to a few new large Renewable Energy Zones (eg 8000MW New England REZ, in NSW), but not to all of the current 35 indicative “candidate REZ” in Appendix 5 of the 2020 ISP. Project developments and investments have been made (and are being) on the basis of the contracting arrangements and the National electricity market rules not if they are in or out of an indicative REZ (the boundary of which can alter over time).
- c) Contractual arrangements **are proven** to share grid infrastructure costs, coordinate and limit MW use in a radial connected transmission network capacity on a project to project basis e.g. during 2016/17 Reach developed a 300MWac stage-build radial dedicated network asset in South Australia.
- d) Reach does **not support** having locational/ **nodal price** rules for REZ’s. The ESB would be better served on reviewing locational/ nodal pricing across the entire NEM for this to work properly. Reach continues to have reservations on the larger design as detailed in item 3 below.
- e) **Prescribing a supply mix** - if the NEM when established in 1998 had prescribed fuel type and/ or technology then it is likely it would have frustrated innovation, lessened competition and increased prices to consumers. Reach continues to not support a prescribed supply mix outcome: “let the market decide”.
- f) The issues mentioned in the Paper including disorderly bidding, grid connection and commissioning process, marginal loss factor and system strength **do not require a REZ policy** to be remedied/ improved. All can be resolved via improved process and/ or market-based solutions. Indeed, all are work in progress by regulators/ business and Reach considers tangible progress is being made.

2. Scope and timing of Interim Renewable Energy Zones (REZ)

Reach understood from the ESB slides (7 May 2020) that the Interim REZ framework was intended to provide regulatory clarity prior to implementation of transmission access reform in 2025. It was intended to have a “**narrow application**” for a **specific period of time**.

Reach consider a number of the points of policy/ market rules broached in the Paper are **much broader** than this and should be considered as part of the 2025 market review.

3. Interim REZ - Principles

Reach suggest the following principles are adopted for the Interim REZ:

- a) Reach supports the ESB comment “...for the competitive market to decide where generators should locate.” ESB Box 1, last paragraph. The selection of project sites has to take into multiple factors including suitable land and renewable resource, local community support, local demand, and existing grid infrastructure. Policy should continue to promote this i.e. renewable projects

are not biased only to indicative “REZ candidate” locations (Appendix 5 of the 2020 ISP, AEMO).

- b) Reach consider there should continue to be a **market incentive to use existing grid infrastructure**. There continues to be residual capacity in the meshed grid system for connections. This will increase as fossil-fuels exit the energy market. Provide improved visibility on the consequence of new connections, to ensure the barrier to new-entrants is not raised and competition lessened.
- c) Reach consider there are three main connection regimes for renewable energy:

1. Dedicated radial

Dedicated network assets “DNA” (large and small) where a project or a number of projects can be connected to the main grid system via a radial line. A proven model to raise private funds and share the cost of the grid infrastructure assets. No RIT-T process by AER. Reach did this for the 300MWac Bungala solar project in 2016/17.

Within the DNA there is no open access, but there is assured physical MW capacity to connect. There is no nodal price within the DNA. MLF is at the project connection points (as per the AEC draft ruling ERC0294). From the DNA connection to the mesh grid system, then open access and NEM rules apply with no overspill of firm access rights;

2. Large REZ

REZ which are expected to be large-scale MW and little to no grid infrastructure exists today eg NW REZ for ERCOT, UK offshore REZ and New England REZ in NSW. This is likely to be large-scale and have more than one connection to the meshed grid system.

The State and/ or Federal Governments could underwrite new large REZ network infrastructure, and promote competition to fund and construct the new large REZ grid infrastructure. Underwriting the new large REZ leverages off the Government balance sheet to secure the keenest prices from equity investors, and it does not require ownership of the asset(s) by Government. RIT-T process by AER is favoured by some States.

Again, within the **Large REZ** there is no open access, and an assured physical MW capacity to connect. Reach does not favour separate REZ pricing. MLF is at the project connection points (as per the AEC draft ruling ERC 0294). From the Large REZ connection to main grid, then open access and NEM rules apply with no overspill of access rights;

3. Meshed renewable

Renewable energy projects which are located in and around the mesh grid system eg South West Victoria REZ and South West REZ in NSW.

With the **meshed renewable** there is open-access, and no assured physical MW capacity to connect. NEM rules apply. A RIT-T process by AER and approved grid infrastructure is included in the AER approved network charge.

MLF is at the project connection point. Projects connected to an integrated meshed grid system. They could be inside or outside of an indicative candidate REZ and all use multiple shared-transmission assets;

- d) **Wide-spread planned connection regime.** Consider if the NEM in 1998 had guaranteed grid infrastructure with firm unconstrained access to the prevailing fossil-fired generators for say 30 years. In this scenario new technologies including the reduced cost of renewables, (and potentially) distributed demand/ generation schemes, would have been frustrated from entering the market and competition would have been lessened: adversely affecting the electricity price to customers.
- e) **Transitional arrangements** should exist to recognise existing renewable energy projects which are within or adjacent to a REZ (existing or future). Care should be taken to ensure project value is not destroyed as part of the REZ process (\$ millions per project) and projects well advanced in their development.
- f) Government and Regulators need to reinforce the message that **equal importance** is placed on the development of renewable projects inside or outside of REZ's with no firm-access and an open-access connection.
- g) **Nodal pricing.** Nodal pricing is **not mandatory** to remedy the issues mentioned in the Paper. For example, Ofgem in the UK did not adopt locational marginal pricing in the energy market and provided firm access where market participants are kept commercially whole from grid congestion, and also changed the rules to "*what you bid is what you get*" to cure "disorderly bidding" behaviour caused by using negative prices.

New Zealand has nodal pricing but in reality only a fraction of the nodes actually trade i.e. more granular and complexity for no tangible benefit. Intuitively, Reach consider the same will happen in Australia.

Reach does **not support** having locational/ **nodal price** rules for REZ's. The ESB would be better served on reviewing locational/ nodal pricing across the entire NEM for this to work properly. Reach made a detailed response to the AEMC dated 8 August 2019 where the key two main concerns raised by Reach points were as detailed below. Both remain:

1. Transmission hedges will have limited commercial value because the transmission hedge contract terms will ultimately not be considered "firm" and cover market loss. There will likely be several gaps between the electricity and transmission hedge arrangements e.g.,

the electricity hedge liability, currently up to \$14,800/ MWh, and recourse to the Transmission Network System Provider (“TNSP”) using the proposed transmission hedge. Reach expects the TNSP will insist on a modest liability cap which in turn will severely limit the commercial value of the transmission hedge; and

2. The creditworthiness of disparate project companies will be far less than the current retailers meaning a premium is likely to be charged for additional credit support, if indeed it can be obtained. Reach considers at best it will be a “nil sum game”, and at worst electricity prices and risk will increase to consumers as well as a lessening of competition.

I hope the ESB find the Reach response useful in forming its views on the Interim REZ arrangements. Reach considers the policy is important and is concerned proven policy/ principles will be compromised in a rush to put something in. Please do not hesitate to contact Reach management using the email below if you have any questions.

Yours faithfully,

info@reachsolarenergy.com.au

Reach Solar energy

Enclosures:

Appendix A: detailed response to ESB consultation paper dated January 2021

APPENDIX A

SPECIFIC RESPONSES TO ESB QUESTIONS

No.	Issue
Question 1	<p data-bbox="422 515 1402 616">Are REZs an appropriate interim solution to the challenges associated with open access? The ESB preference is to develop a REZ model that can also support meshed network solutions.</p> <p data-bbox="422 638 1402 918">Reach supports the concept of a more co-ordinated approach to a few new large Renewable Energy Zones (eg 8000MW New England REZ, in NSW), but not to all of the current 35 indicative “candidate REZ” in Appendix 5 of the 2020 ISP. Project developments and investments have been made (and are being) on the basis of the contracting arrangements and the National electricity market rules not if they are in or out of an indicative REZ (the boundary of which can alter over time).</p> <p data-bbox="422 940 1402 1120">Reach acknowledges that there have been successful examples of large renewable energy zones being established including Texas, USA by ERCOT and in the UK by Ofgem. The new large REZ have been planned, funded and auctioned but the REZ participants have operated to the Rules applied in the main energy markets i.e., not market rules specific to the REZ.</p> <p data-bbox="422 1142 1402 1276">There is already work in progress including market-based solutions to resolve the problems listed in the ESB paper e.g. dysfunctional bidding, grid connection, and MLF. A proposed Interim REZ rules is not required to fix these. Reach consider progress is being made on all fronts.</p> <p data-bbox="422 1299 1402 1512">Furthermore, reserving capacity for 30 years or more will inhibit the development and implementation of future technologies, thereby not displacing contractually protected incumbents. Consider if today’s market had guaranteed network capacity to existing coal-fired generators. In this case new technology renewables would have been prevented from entering the market and consumers would still be paying black-coal and GPG electricity prices.</p> <p data-bbox="422 1534 1402 1668">Maintaining the open-access regime for all connections that are not Dedicated Network Assets whether they are in a REZ or not. This, together with improved visibility on the consequence of the new connection, ensures the barrier to new-entrants is not raised and competition lessened.</p> <p data-bbox="422 1691 1402 1792">This will ensure other benefits derived from “Open Access” (e.g., competition and/ or innovation including better use of existing infrastructure) are not lost with a more planned regime.</p> <p data-bbox="422 1814 1402 1915">Reach considers the interim arrangements should be specific to radial connected REZ (as defined in the AEMC preferred rule determination ER C0294), not meshed REZ.</p> <p data-bbox="422 1937 1402 1998">If a large transmission project passes through one or multiple existing REZ (e.g., HumeLink or EnergyConnect), and is already well-advanced through its RIT-T</p>

process, then would the interim renewable framework apply to a portion of it or all of it?

If it applies to a portion, then could this affect the access rights and costs for a generator i.e., some generators could have open access (as per NER), and other controlled access creating division with market participants. The situation is likely to become more confusing as more REZ's have the interim renewable framework applied to them.

Question 2

What are the likely consequences of a framework that addresses these challenges on a localised rather than a system wide basis?

Results in a two-tiered system where different generation access have differing access rights creating the issues including:

- A likely increase in project costs.
- Complex project to project cross indemnities.
- Stifles innovation by creating incumbents unable to be dislodged by new entrant technology.
- Ultimately discourages efficient use of the transmission system.

Reach favour:

- a. No separate locational/ **nodal price** rules for REZ's. The ESB would be better served on reviewing locational/ nodal pricing across the entire NEM for this to work properly within the REZ. Existing NEM pricing and rules should apply.

Reach reaffirms the comments it made to the AEMC in its letter dated 9 August 2019. Reach is not convinced "more granular" locational/nodal pricing will yield a reduced cost to consumers and promote more competition.

Reach believes the AEMC proposal detailed in the Coordination of Generation and Transmission Investment (COGATI) will not remedy transmission congestion.

1. Transmission hedges will have limited commercial value because the transmission hedge contract terms will ultimately not be considered "firm". There will likely be several gaps between the electricity and transmission hedge arrangements e.g., the electricity hedge liability, currently up to \$14,800/ MWh, and recourse to the Transmission Network System Provider ("**TNSP**") using the proposed transmission hedge. Reach expects the TNSP will insist on a modest liability cap which in turn will severely limit the commercial value of the transmission hedge.
2. The creditworthiness of disparate project companies will be far less than the current retailers meaning a premium is likely to be charged for additional credit support, if indeed it can be obtained. Reach considers at best it will be a "nil sum game", and at worst electricity prices and risk will increase to consumers as well as a lessening of competition.

- b. Meshed connected projects continue to use open access as per the NER. This enables untapped capacity to continue to be used as coal-fired power plants exit.
- c. Not sterilising opportunities “...for the competitive market to decide where generators should locate.” as ESB mention in Box 1, last paragraph. The selection of project sites has to take into multiple factors including suitable land and renewable resource, local community support, local demand, and existing grid infrastructure; and
- d. Market-led mechanisms can address other services the ESB have termed “essential services” to encourage innovation and competition.

Question 3

Do stakeholders agree with the proposed objectives for a regulated REZ development model?

Reach does not consider a regulated REZ development model is necessary to achieve the ESB proposed objectives.

ESB’s stated objectives:

- A. *Overcome current problems associated with uncoordinated connections process*
- B. *Ensure that the group of projects that become part of the REZ is selected on a basis that aligns with the long-term interests of consumers; and*
- C. *Reduce the level of risk and cost borne by customers*

Objective C above should be the ESB’s primary objective.

Objective A is already being addressed by both TNSP’s and AEMO. Reach has previously provided suggested solutions to resolve these and details can be provided on request.

Objective B is attained by the government inviting bids for a least cost tariff, from any projects within NSW, irrespective or not of being in a REZ. The NEM rules apply.

Question 4

Are there alternative, preferable options for deciding which generators become part of the REZ?

Reach considers the open access regime has enabled the efficient utilisation of transmission capacity throughout the NEM. If the open access regime can deliver certainty of access to transmission, projects will be developed on a least cost basis.

Our preferred alternative is to build the REZ transmission assets underwritten by Government but procured by competitive process to determine the ownership of the asset. This provides certainty to new entrant generators and enables those with the lowest cost of capital.

Connecting generating projects will not be burdened with the additional costs, ultimately delivering lower costs to the consumer.

Question 5 **Which party is best placed to perform the role of REZ coordinator where the REZ is being developed in accordance with the regulatory framework? Should the decision regarding the identity of the REZ coordinator lie with the State government?**

Reach does not favour establishing a new REZ Coordinator, but the responsibilities be undertaken by an existing regulatory body e.g., as ERCOT and Ofgem did in Texas, USA and the UK respectively for both energy grid reinforcement and the auction tender process.

Question 6 **Are the functions to be undertaken by the REZ coordinator in the regulated model appropriate?**

Please refer to response to Q5.

Question 7 **What, if any, qualification criteria should the REZ coordinator apply to prospective REZ participants?**

No specific qualifications should apply with a competitive market process. Today the market determines whether a project is going to be viable based on a number of key criteria including:

- Strong community support
- Ability to raise capital (debt and equity)
- Grid connection
- Competitive EPC and O&M; and
- Planning approval
- Competitive tariff

Introducing an additional layer of criteria is likely to increase the barrier to new entrants and this will result in lessening of competition.

Question 8 **What objective or objectives should the REZ coordinator seek to achieve when selecting successful tenderer?**

Please refer to the response provided in Q7 above.

Question 9 **Should the Rules establish a framework to ensure that the REZ delivers an optimal supply mix?**

Reach suggest the market should decide the type of technology to be used.

Prescribing a supply mix – if the NEM when established in 1998 had prescribed fuel type and/ or technology then it is likely it would have frustrated innovation and not be least cost.

Question 10 **Should REZ developments be subject to a requirement that they may only proceed if a certain proportion of the planned capacity of the preceding REZ stage is subscribed?**

Individual projects cannot be contingent on the success or otherwise of third party projects.

A staged approach for the build of the REZ appears to be sensible although a view will need to be taken to optimise the sizing and scope of the stages. Reach favours good design (eg. Leave space) and plan to optimise the build of transmission infrastructure such that it is ready to accommodate future expansion.

There is however a risk of incomplete (or delayed) REZ developments if the phases are a mix of regulated and commercial transmission assets.

The auction process rules should be clear to avoid participants “banking” on being able to complete more than one phase of the project.

Question 11 **Should the REZ coordinator return any surplus auction proceeds to customers in the form of a reduction in TUOS charges?**

The market should determine if there are any residual funds to offset TUOS or not.

The regulator should avoid an arrangement which effectively internalises a premium payable for this concept.

Question 12 **Should the ESB consider REZ models that allow for speculative investment that departs from the ISP, in order to reallocate risk away from customers, such as the one put forward by the Public Interest Advocacy Centre (PIAC)?**

The NEM should continue to provide a trusted framework for speculative investment.

Whatever is adopted will need to resolve the points mentioned in the response to Q10 above.

Question 13 **How should pre-existing developments be treated within a REZ framework? At what stage of development should a project be considered a pre-existing development?**

Reach consider there should be recognition of existing assets and/ or advanced developments.

Question 14 **Should the interim REZ framework contemplate brownfields developments? If so, should developers have the ability to influence the location and configuration of the REZ transmission assets within a brownfields REZ?**

Reach is not quite clear as to what is meant by “brownfield” (in this context), and refers ESB to the response provided in Q10 above.

Question 15 **Are the evaluation criteria set out in the introduction to Chapter 5 appropriate?**

Reach refers ESB to the response provided in Q7 above.

- Question 16 **Which option for access within a REZ is preferable?**
- Reach favours Open access continuing i.e. same market rules for all market participants.
- Question 17 **Are there alternative options that the ESB should consider?**
- The ESB should review the experience in the UK and Texas which are well-advanced with the transition of their generation and transmission infrastructure.
- Question 18 **Are there potential improvements to the options that the ESB should consider?**
- Please refer to the Reach responses.
- Question 19 **If the ESB were to adopt one of the access options outlined in this chapter, would it be necessary to restrict connections outside of REZs?**
- Reach consider an arrangement which resulted in restricting connections outside of the REZ – either new or existing connections - would be flawed and counter to the NER principle of open access.
- Question 20 **If the ESB were to adopt the financial access protection model, should it also adopt measures to avoid winner takes all outcomes?**
- Reach does not agree with separate pricing mechanisms within the REZ. This is likely to attract a premium and not provide least cost.
- Question 21 **If the ESB were to adopt the financial access protection model, should subsequent connecting generators be required to provide compensation that reflects the regional reference price?**
- This is likely to lead to a more expensive outcome (as seen by its application by AEMC for the existing system strength ruling), or stifle new developments in the REZ.
- Question 22 **If the ESB were to adopt the financial access protection model, how should financial compensation be allocated between REZ generators? Is generator availability an appropriate metric?**
- Please refer to the response provided in Q21 above.