



12 February 2020

Dr Kerry Schott
Independent Chair
Energy Security Board

Lodged via email to info@esb.org.au

Dear Dr Schott,

Response to Consultation Paper on Interim REZ Framework

Established in the 1980's within the UK's Sir Robert McAlpine engineering and construction group, today, RES (Renewable Energy Systems) is the world's largest independent renewable energy company, with the expertise to develop, construct and operate projects around the globe. At the forefront of the industry for over 38 years, RES has delivered more than 19GW of renewable energy projects across the globe and support an operational asset portfolio exceeding 7GW worldwide, for a diversified client base. Understanding the unique needs of corporate clients, RES has secured over 1.5GW of Power Purchase Agreements (PPAs) enabling affordable access to zero carbon energy. RES employs more than 3,000 people and is active in 10 countries.

In Australia, RES is an industry leading renewable energy developer specialising in wind, solar and battery storage development and asset management in the NEM, which we can be tailored to meet the load requirements of our customers. With a talented and experienced team, we have 1.3GW of wind and solar assets under operational management. RES Australia has a growing development pipeline in excess of 2.5GW with significant projects located within designated Renewable Energy Zones (REZs) across the National Energy Market (NEM), including:

- Fitzroy
- Darling Downs
- New England
- North West NSW
- Central-West Orana
- Hunter Valley
- Wagga Wagga
- South West NSW
- Southern NSW Tablelands
- Murray River
- West Victoria
- Mid North SA

RES Australia welcomes the opportunity to provide input to the Energy Security Board's (ESB's) Consultation paper on the interim REZ framework. RES Australia supports the establishment of an

interim REZ framework and believe it will help facilitate efficient use of resources and infrastructure while addressing the needs of consumers and generators. In our view, this framework is an essential reform that is required to simplify the delivery of complex renewable generation projects as follows:

1. **Coordinated Process to establish the REZ.**

It is our opinion that the ESB's proposal for a localised interim coordinated process to align generators and network investments will improve investor confidence. However, RES notes that the establishment of the REZ framework in isolation will not resolve the identified challenges. Integrated system planning will be important to ensure that power can be efficiently transmitted from REZs to major load areas without significant transmission constraints. Across the NEM, it will still be important for major network augmentations to be coordinated with REZs to ensure that constraints are identified and resolved in an efficient manner.

Therefore, we request the ESB to reconsider the framing of Locational Marginal Pricing (LMP) and Financial Transmission Rights (FTRs) as a long-term solution to prevent predetermined market movements and allow for experience to be gained through the REZ framework to inform the best way forward.

A specialist government entity constituting of community, regulatory and service provider representatives that appreciates the complexities and challenges identified by the ESB will be best placed to coordinate the development of a REZ. Generators selected to participate in the REZ should form the optimum group of generators that maximises the net economic benefit of the REZ.

2. **Options for access within a REZ.**

RES prefers the financial access protection model because it will improve investor confidence without placing an unnecessary barrier to entry on future generation projects.

Under the financial access protection model, generators without access rights that were dispatched in the presence of congestion would receive zero payment for any generation. It is our view that compensation should accurately reflect the market revenue that the curtailed generators would have received at the time. Therefore, a generator's availability alone may not accurately quantify the generation lost and additional factors such as generation forecast based on the available resources should also be taken into consideration.

RES Australia welcomes the opportunity to respond to the questions posed by the ESB's consultation paper on the interim REZ framework. The remaining sections of this submission address the key questions put forward in the consultation paper.

Question 1: Are REZs an appropriate interim solution to the challenges associated with open access?

The current challenges identified by the ESB are:

- Increased cost in connections
- Delays in connection process
- Falling loss factors
- Increase in constraints

The ESB identified the root cause for these challenges to be the uncoordinated process associated with the existing open access regime. RES agrees that the open access regime has contributed to these challenges and it is our experience that related issues are reducing investor confidence.

It is our opinion that the ESB's proposal for a localised interim coordinated process to align generators and network investments will improve investor confidence. However, the framework aims to alleviate the challenges within a REZ, and generators will still be exposed to the risks introduced by the wider NEM. For example, the development of the Fitzroy REZ in Central Queensland might be limited by transient stability constraints between Central and Southern Queensland. The impact of these constraints on Fitzroy REZ projects could be mitigated by the introduction of additional load or retirement of thermal generation. On the other hand, these constraints would be exacerbated by the connection of new projects in REZs located in North Queensland North may still be exposed to the constraints between Central and Southern Queensland.

RES notes that the establishment of the REZ framework in isolation will not resolve the identified challenges. Integrated system planning will be important to ensure that power can be efficiently transmitted from REZs to major load areas without significant transmission constraints. Across the NEM, it will still be important for major network augmentations to be coordinated with REZs to ensure that constraints are identified and resolved in an efficient manner.

How the REZ generators will be exposed to the NEM and to what degree improvements will be gained compared to the existing uncoordinated open access regime is not clear. An opportunity exists to evaluate the proposed interim framework on a system wide basis to promote overall efficiency gains and investor confidence.

Question 2: What are the likely consequences of a framework that addresses these challenges on a localised rather than a system wide basis?

RES appreciates the need to resolve current challenges in the NEM and introducing changes on a localised basis is a practical interim step that allow for assessment and refinement of the framework. However, a localised approach is reactive and short term compared to a system wide approach that aims to deliver a sustainable solution by resolving the root cause.

Using the Fitzroy REZ as an example, RES assessed the proposed framework while taking into consideration the challenges it aims to resolve. The main challenge for generators in the Fitzroy REZ are network constraints introduced by limited power transfer capacity to the Gladstone load centre

and between the Central and Southern Queensland regions. A localised approach, unless it takes these constraints into consideration, will not reduce constraints external to the REZ and as a result it may fail in addressing the challenges identified by the ESB. The localised approach needs to be coupled with integrated system planning to ensure that an efficient level of transmission capacity is provided to transmit power between REZs and major loads areas.

The Murray River REZ is another example of where a local focus did not result in a sustainable outcome. With this example, the assessment of a single generator did not pose a risk to system performance, but when combined with the generators in the region, resulted in major system performance issues and curtailment of generators.

A localised solution will only partially address the challenges identified by the ESB and constraints, loss factors and connection delays may still create uncertainty with stakeholders when taking the whole of project life into consideration.

Question 3: Do stakeholders agree with the proposed objectives for a regulated REZ development model?

RES supports these objectives as they align with the national electricity objective and benefit both the generator and consumer. In addition, it is our view that, the REZ development model ought to facilitate a just transition to affordable zero carbon energy whilst carefully considering the specific sociological, environmental and economic needs of the community in which each REZ is located.

Question 4: Are there alternative, preferable options for deciding which generators become part of the REZ?

The REZ coordinator could undertake a cost benefit analysis to select the optimum group of generators that maximises the net economic benefit of the REZ. The analysis would take a similar form to existing methodologies utilised for the RIT-T and ISP but would take each generator's commercial bid into account. This approach would help increase the utilisation of the REZ infrastructure and would lead to better outcomes compared to a selection based purely on commercial bids. Like the approach proposed by the NSW Government, it would also be important for the specific sociological, environmental and economic needs of the community to form part of the evaluation criteria.

RES does hold some concern that the likely requirement for the successful generator developers to pay a deposit to the REZ coordinator prior to their own projects reaching financial close could prove to be a challenge. RES recommends that this potential requirement should be further investigated, while taking into account that projects are typically financed once all necessary permits and approvals are achieved - including grid connection.

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.

The parties proposed by the ESB each have their advantages and disadvantages that needs to be considered when appointing a REZ coordinator. RES believes that a specialist government entity

constituting of community, regulatory and service provider representatives that appreciates the complexities and challenges identified by the ESB will be best placed to coordinate the development of a REZ. Coordinators that will require third party consultation during the development or selection process will add delays, which can be avoided through the development of a specialist entity that has been appropriately resourced.

Regarding the identity of the coordinator, RES encourages the development of a REZ to be a transparent and collaborative process.

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

The functions mentioned are appropriate for the proposed framework and will need to be adjusted to complement the needs of each REZ under development.

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

RES supports the criteria proposed and propose the following for consideration by the ESB:

- **Value of Energy** - The impact on costs incurred by other generators (fuel prices) and wholesale prices of energy to consumers.
- **Use of Resources** - Developers should also be assessed for their ability to maximise the use of resources as to optimise the overall utilisation of the REZ. In other words, the methodology needs to reflect the benefits of diversity in generation profiles between wind, solar and storage assets.
- **Just Transition** - A developer's ability to promote wellbeing of residents and whether there is consensus from the community to develop the project e.g. via local employment.

Selection criteria that will **not** further the ESB's cause and should therefore be avoided include:

- **Highest Bidder** - although developers should be encouraged to pay for the benefits provided by the REZ, payment alone should not be used as an assessment to prevent monopolisation, favouring of technology and overall underutilisation of the REZ.
- **Generator performance standard** - including generator performance standard as part of the selection criteria will exacerbate connection costs and delays and should only be assessed if successful and during the connection application process. Instead, the coordinator could consider locking in the minimum levels for key access standards upfront.

Other qualification criteria that will promote the objectives of the REZ this could include:

- System security
- Asset utilisation
- Total quantum of energy generated
- Daily and seasonal generation profile
- Energy storage attributes

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

Aligning the objectives with the options for deciding which generators become part of the REZ in Question 4, coordinators should consider the cost benefit analysis to select the optimum group of generators that maximises the net economic benefit of the REZ through a just transition that promotes:

- Improved utilisation of network infrastructure
- Sustainable network reliability
- Ability to accommodate existing and integrate future generators
- Social, environmental and economic outcomes for the local community

Overall, the objectives must aim to achieve a net economic benefit for consumers and generators.

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

RES does not believe there is a need to introduce a specific rule to require an optimum supply mix. As discussed in our response to question 4, we believe the supply mix within the REZ can be optimised through the evaluation process utilising existing cost benefit methodologies. We also note that the existing NEM energy market provides a strong signal regarding the value of energy throughout the day and across the seasons. In support, developers and investors have access to and are already making use of sophisticated market modelling information from a range of consultants experienced in forecasting granular wholesale prices in the NEM.

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?

No, the purpose of the REZ framework is to remove the chicken and egg scenario currently limiting establishment of transmission infrastructure to support REZs. In developing the REZ, the coordinator needs to establish the economic benefit and certainty of the REZ so that the benefits of improved investor confidence can be realised. In doing so, projects will have the opportunity to be developed as standalone projects and reduce complexity while putting a minimum subscription requirement on the REZ will diminish investor confidence due the potential interdependencies of development projects.

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

RES supports the funding arrangement identified by the ESB, where the initial investment in the REZ is recovered from consumers via TUOS which will improve investment confidence and improve overall outcomes for consumers. The REZ coordinator then seeks to maximise the benefit of the investment, including financial contributions from generators. In some cases, generator contributions may fall short of the initial investment. In other cases, surplus proceeds should flow through to consumers and TUOS may be one avenue of achieving this.

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)

We consider the interim REZ framework should be kept as simple as possible, rather than trying to contemplate or anticipate new and varied versions of the REZ model and to cater for all of them. The ISP already contains many augmentations related to the delivery of REZs and it will be a major task to enable any of them to be operational on this side of the year 2030. The ESB's reforms should focus on delivering the ISP first before considering additional projects or models. We also note that the establishment of Dedicated Network Assets (DNAs) under the AEMC's connection to dedicated connection assets rule change can effectively support speculative investment in radially connected infrastructure by TNSPs and TransGrid's proposed NETI project is one example of this.

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?

A project should be considered pre-existing if it has satisfied the commitment criteria. At present, the pre-requisites outlined in AEMO's System Strength Impact Assessment Guideline are used by NSPs and AEMO to determine commitment status. Pre-existing projects should be considered part of the NEM when developing the REZ, they will inherently receive the benefits from improvements to power transfers and systems strength and should be given the opportunity to participate in bidding for access rights. We note the importance of ensuring consistency in the definition and interpretation of "committed" to avoid damaging investor confidence. If the REZ is properly planned, we do not see the need to grant pre-existing projects with access rights.

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?

There are currently significant opportunities to develop both greenfield and brownfield REZs within the NEM. The Central West NSW Orana REZ is a good example of a greenfield development whilst the Fitzroy REZ in Central Queensland typifies a brownfield development. Brownfield REZs such as Fitzroy require specific consideration of local constraints alongside transmission challenges that may be external to the REZ.

We encourage the ESB to further consider the complexities of brownfield developments, particularly access rights. We support the introduction of provisions that facilitate developers influencing the location and configuration of new transmission assets with REZs but understand that this must be in collaboration with the primary TNSP. The introduction of DNAs may be helpful but may have limited effectiveness due to the inability to develop meshed transmission solutions.

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

In RES's view, the evaluation criterion will support the ESB in reducing the challenges and promote a sustainable solution.

RES also proposes an additional measure to assess an option's ability to facilitate a just transition and allow for the integration of new projects after the REZ has been established.

Question 16: Which option for access within a REZ is preferable?

RES prefers the financial access protection model (option 2) because it will improve investor confidence without placing an unnecessary barrier to entry on future generation projects.

It is our opinion that the connection access protection model (option 1) will not address all the challenges currently experienced and unnecessarily increases the barrier to entry for subsequent projects. Under option 2, future projects could evaluate the expected level of financial compensation under a range of plausible scenarios and decide to proceed with their investment. Under option 1, future projects would be forced to fund additional transmission assets that would often exceed the forecast cost of compensation by several orders of magnitude. We hold a concern that option 1 would create a barrier to entry like that historically experienced by project developers in Western Australia.

Further, we do not support options 3 and 4 due to the complexity and related uncertainties leading to lack of investor confidence.

Question 17: Are there alternative options that the ESB should consider?

Renewables projects typically sell their energy to corporate or retail offtakers via Power Purchase Agreements (PPAs). These offtakers are often motivated by sustainability objectives and it is their expectation that zero-carbon energy is delivered. The financial access protection hedges the commercial risk of curtailment, but further work is required to consider the appropriate contractual guarantees can be provided regarding the carbon contribution of the energy that has displaced the original project.

Question 18: Are there potential improvements to the options that the ESB should consider?

Under the financial access protection model, generators without access rights that were dispatched in the presence of congestion would receive zero payment for any generation. An improvement to this arrangement will penalise new generators only for the excess generation that resulted in congestion and should receive payment for the maximum amount of generation that can be exported within the capacity of the REZ.

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?

RES notes that the establishment of the REZ framework in isolation will not resolve the identified challenges. Integrated system planning will be important to ensure that power can be efficiently transmitted from REZs to major load areas without significant transmission constraints.

Across the NEM, it will still be important for major network augmentations to be coordinated with REZs to ensure that constraints are identified and resolved in an efficient manner. In doing so the REZ will be developed such that developers will value the benefits for connecting the REZ. However, the coordinator of a REZ needs to have physical or financial mechanisms to prevent damages to the generators connected to the REZ, by other projects being developed after the establishment of the

REZ. For projects outside the REZ the transmission network needs be planned accordingly to allow for the integration of new generators.

Question 20: If the ESB were to adopt the financial access protection model, should it also adopt measures to avoid winner takes all outcomes?

RES believes it is **not** necessary to prevent winner takes all dispatch within the financial access protection model. The winner takes all scenario is an outcome of AEMO dispatching the most efficient generators to minimise the total cost of the energy for each dispatch interval whilst respecting the technical constraints of the transmission network. In our view, prohibiting winner takes all outcomes will almost certainly lead to a reduced dispatch of low cost renewable generation and an increase in output of the marginal generator for each dispatch interval, thereby increasing costs for consumers. It is more efficient to curtail and financially compensate the generator(s) that can most effectively resolve the constraint.

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?

In RES's view, a financial protection model that accurately compensates curtailed generators based on market revenue supports the development of a REZ and allows for ongoing investment from new generators. Methodologies to quantify the compensation need to transparent so that new generators can take it into consideration during the development stages of the project in order to promote confidence with investors.

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?

Compensation should accurately reflect the market revenue that the curtailed generators would have received at the time. Therefore, generator availability alone may not accurately quantify the generation lost and additional factors such as generation forecast based on the available resources should also be taken into consideration.

Conclusion

Thank you for the opportunity to provide feedback on the draft determination we are encouraged by this process and will be following the progress. For further discussion on the feedback provided in our submission, please reach out to Duan Serfontein (duan.serfontein@res-group.com) or myself at martin.hemphill@res-group.com.

Yours sincerely,



Martin Hemphill

Manager – Grid Connections

martin.hemphill@res-group.com