

Dr Kerry Schott AO
Energy Security Board

12th February 2021

Submitted via e-mail to: info@esb.org.au

Dear Dr Schott,

Renewable Energy Zones Consultation Paper

The Australian Energy Council (the “**Energy Council**”) welcomes the opportunity to make a submission in response to the *Renewable Energy Zones Consultation Paper*.

The Energy Council is the industry body representing 21 electricity and downstream natural gas businesses operating in the competitive wholesale and retail energy markets. These businesses collectively generate the overwhelming majority of electricity in Australia, sell gas and electricity to over ten million homes and businesses, and are major investors in renewable energy generation.

Introduction

The Energy Council appreciates that the Energy Security Board (“**ESB**”) has been charged with developing a workable framework for Renewable Energy Zones (“**REZs**”), which will form part of the path towards a long-term solution for transmission access, but remains cautious about the proposals set forth in the Consultation Paper.

The proposals effectively set out access arrangements for REZs. While this is helpful to assist in the development of radially-configured REZs, the utility of the proposals diminishes when meshed networks are considered, and with the knowledge that access rights are limited to the defined REZ, with there being no certainty of access beyond the geographically-constrained REZ.

The Energy Council notes the ESB’s statement that, “a stand-alone REZ model, without additional reform, will not be fit for the future”,¹ and encourages the ESB to consider whether, although the current proposals are intended to be compatible with future market design, the development of the suggested REZ framework should be suspended while the ESB continues its work on Post-2025 Market Design over the coming months.

The paper acknowledges that:

“The output of every generator and electricity drawn by every electrical appliance at every location affects the flows on each and every line in the meshed network, to varying degrees, depending on the relative location and concentration of generation and load.”²

In the Energy Council’s recent submission to the *Renewable Energy Zones Planning Consultation Paper* and *Draft Rules*, the Energy Council reflected on the artificiality of defining a segment of that interconnected grid for special treatment within a planning context. REZ boundary issues bedevil the planning framework, and throughout this Paper, the ESB acknowledges boundary issues plaguing the purchase and operation of access rights.

¹ Consultation Paper, p.6

² p.20

On consideration of all these matters, it would appear that, with hindsight, governments seized on the political attractions of artificially sub-dividing the network, before properly contemplating whether doing so was sensible within a network subject to the laws of physics. The Energy Council encourages the ESB to reconsider whether, having now investigated these issues and inevitably run into these laws, the REZ concept should revert to simply an area of planning focus, without special rules applied to artificially classified network assets.

Discussion

Coordination of Connections

The difficulty with REZs is their discrete nature. Not only are they geographically defined, but their maximum capacity is also defined under a given set of conditions. While the geographic limitation is straightforward, the capacity limitation means that new applications will need to be coordinated.

The Consultation Paper proposes that a tender process be held to allow proponents to bid for the available capacity, noting that those who seek connection in a REZ outside the tender process will still be able to connect, but they won't enjoy the benefits of any proposed access rights framework.

The rules under which the tender process operate will be key to ensuring the success of REZs. For example, consideration needs to be given to:

- what occurs if the REZ is oversubscribed. Will the REZ design size be increased to the next appropriate capacity point?
- what incentives will exist to ensure that successful tenderers remain committed to their projects.

REZ Coordinator

Clearly one of the critical roles in the development of REZs will be that of REZ Coordinator. The ESB proposes that responsibility for this decision should rest with State Governments.

The state borders are also artificial boundaries that are ignored by the laws of physics. Indeed, AEMO's Integrated System Plan ("ISP") has proposed major projects that simultaneously provide deeper NEM-wide interconnection, along with renewable energy connection opportunities on both sides of state borders. This sensible and efficient planning approach seems fundamentally incompatible with the recommendation to establish a REZ Coordinator. In vesting this decision with state governments, the ESB is effectively separating from the ISP network planning for the purpose of connecting generators, and delegating it instead to intra-state policy considerations.

The benefit of a National Electricity Market is that it has uniformity of rules and administrative arrangements. To the Energy Council this suggests that arrangements between states should be as consistent as possible. In this way, the administrative and compliance burden on project proponents will be minimised.

While ideally a national coordinator would be helpful, there remains a risk that establishing one will result in additional costs to industry (and ultimately consumers), in addition to adding bureaucracy to the connection process. To avoid this situation, the Energy Council recommends that the appropriate Jurisdictional Planning Bodies be appointed to the role for each state. This will ensure that the bodies, who will remain subject to the existing national rules, will be obliged to work within the ISP and Australian Energy Regulator frameworks to ensure national co-ordination.

Aligning Projects with the Long-term Interests of Consumers

While the National Electricity Objective is clear that National Electricity Market design should promote efficient investment, which in turn should benefit the long-term interests of consumers, the

extent to which regulatory bodies such as the proposed REZ Coordinator need to intervene to facilitate this objective is unclear.

The Consultation Paper proposes that qualification criteria should be established to ensure that tenderers are bona fide. The Energy Council agrees this is reasonable, although cautions against using the suggested “pre-qualifying round or multi-round auction”,³ since this will have the effect of lengthening the connection process, for little additional gain.

The Paper also suggests establishing “a framework to ensure that the REZ delivers an optimal supply mix”.⁴ Such a framework would require that the REZ Coordinator considers “the combined costs and benefits of the generation, storage and network elements of the project”.

The Energy Council regards this assessment process as unnecessarily interventionist and restrictive in the facilitation of a free market where generators reveal their own preferences. Instead the Energy Council suggests that tenderers be accepted based on the capacity available in the proposed REZ, the generators’ bid values, and the form of access that they have requested in their bids. For example, solar generators will bid purely for daytime access, while wind generators may be happy to accept non-firm daytime access if they can purchase low-cost night-time firm access.

Development of REZs in Stages

The Energy Council agrees that the risk of REZs being underutilised, and having the additional costs placed onto consumers needs to be minimised, and supports REZs being developed in stages which align with the capacity demanded by projects.

However transmission capacity can only be developed in discrete sizes, therefore for each REZ (even if developed in stages), there will be thresholds which will either leave unused capacity (because projects can fill all the available capacity), or result in some projects being unable to be commissioned (because the aggregate is larger than the available capacity).

To address this problem, the Energy Council would err on having the smallest amount of unused capacity possible, to ensure that all projects seeking connection are successful. This strategy would favour an oversupply scenario, with its likely depression in prices which customers ultimately pay, which would go some way to offsetting the cost of the unused capacity.

Alternative Options for Reallocating Risk and Cost

The Energy Council acknowledges the work of the Public Interest Advocacy Centre in proposing an alternative funding model for REZs, however the Energy Council believes that the ESB should not be distracted from its primary goal of determining the most appropriate post-2025 market design, and these matters would be better considered in the ESB’s work, and the ongoing work of the Australian Energy Market Commission in its Coordination of Generation and Transmission Investment implementation work.⁵

Transitional Arrangements

Establishment of a REZ may encompass existing generators. The Energy Council suggests that while access rights should be allocated to new generators connecting to a portion of the transmission network with expanded capacity, it is reasonable for existing generators to retain the right to their existing access capacities. To this end, it will be important for the REZ development process to take into account existing generation, and the Energy Council recommends drawing from the Australian

³ p.29

⁴ *ibid.*

⁵ Available at <https://www.aemc.gov.au/market-reviews-advice/coordination-generation-and-transmission-investment-implementation-access-and>

Energy Market Commission's proposals for transitional access from its Co-ordination of Generation and Transmission Investment ("COGATI") review.

In addition, there is a risk that existing developments, either committed, or on the cusp of commitment, will be put on hold, withdrawn, or repackaged to take advantage of any new rules. The Energy Council recommends that the rules to be developed include provision for planned projects to be absorbed into the new process as simply as possible.

Options for Access within a REZ

The Consultation Paper suggests four options for access within a REZ.

As outlined above, the Energy Council believes the discrete nature of REZs causes significant problems. While access rights within a REZ are certainly helpful, it is very problematic that generators can connect outside a REZ's boundary, and cause congestion for generators within that REZ, irrespective of the access rights they have been granted within that REZ.

The Energy Council is doubtful regarding the value of further investigating these options:

- The *Connection Access Protection* model, being physical, is challenging and controversial for the REZ Co-ordinator to operate, and leads to inefficient underuse and/or overbuild of the network. For these reasons the Wholesale Electricity Market of Western Australia is moving away from this approach.
- *REZ as a region* seems impractical for non-radial REZs both in terms of providing access with confidence to the REZ generators, and in terms of the impact on the broader region(s) within which it sits.
- *Early allocation of financial transmission rights* would achieve the objective, but only if and when COGATI reforms are introduced. Notwithstanding the ESB's intention of introducing this in the long-term, it is doubtful that investors would have sufficient confidence of that future to commit to parting with substantial funds now, in anticipation of the REZ construction.

Conceptually the Energy Council favours the Financial Access Protection Model. This option supports efficient transmission investment and dispatch, and seems to provide the most flexibility in terms of risk management, secondary trading and liquidity. It also does not require the REZ coordinator to become involved in complex and contested decisions around the quantity of capacity that is permitted to connect.

Nevertheless, without knowing the detail of what has been proposed, the Energy Council makes the following comments :

- The paper has not discussed how the financial settlements during congestion would be calculated. The current dispatch engine uses "hub and spoke" constraints oriented to each region's Regional Reference Node ("RRN"), which, within each constraint equation, describe the entire region. The shadow price of these constraints can provide a difference in the Locational Marginal Price ("LMP") between a generator's terminals and the RRN, but they cannot identify the share of the difference that results from any specific network asset, e.g. a REZ versus other assets. Thus constraint construction would have to significantly change. Each constraint would require tagging as one that either triggers REZ compensation payments or does not. The constraint building function would also need to take into account the nature of the commitment made when buying a REZ access right, and as each new physical network limit emerges, the constraint builder will have to judge whether protection from this limit falls within the REZ's access regime. There will be many uncertain cases.

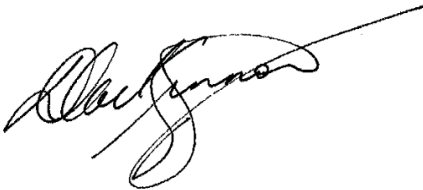
- The Consultation Paper discusses paying zero \$/MWh to subsequent entrant generation during congestion. It is not clear if this was by design or simply an illustrative calculation based on the expected Short Run Marginal Cost (“**SRMC**”) of the affected generation. Rather than zero, the compensation mechanisms should relate to the difference between the LMP at the generator and the LMP at the edge of the REZ.⁶ Where congestion occurs within the REZ, the result of bidding incentives should see the generator receiving SRMC, which, in the case of a gas-fired generator, would be above zero.

Conclusion

In conclusion, despite the impetus for change, the Energy Council believes that the proposed REZ development will have significant limitations which mean that its utility will be restricted. Acknowledging the Consultation Paper has attempted to provide a solution which is consistent across jurisdictions and will be compatible with the future market design, the Energy Council is of the opinion that factors external to the REZ will be such that its value will be compromised, and suggests that work be suspended until such time as Post-2025 Market Design becomes clearer.

Any questions about this submission should be addressed to the writer, by e-mail to Duncan.MacKinnon@energycouncil.com.au.

Yours sincerely,



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⁶ Noting that for looped REZs, there will be no discrete REZ “edge”. For those, determining the REZ “edge” will be the result of judgement exercised by dispatch engine constraint builders