



Friday, 12 February 2021

Dr Kerry Schott AO
Chair
Energy Security Board

Lodged by email: info@esb.org.au

Dear Dr Schott

RE: Stage 2 REZ consultation

ERM Power Retail Pty Ltd (ERM Power) welcomes the opportunity to respond to the Energy Security Board's (ESB's) consultation paper on an interim Renewable Energy Zone (REZ) framework.

About ERM Power

ERM Power (ERM) is a subsidiary of Shell Energy Australia Pty Ltd (Shell Energy). ERM is one of Australia's leading commercial and industrial electricity retailers, providing large businesses with end to end energy management, from electricity retailing to integrated solutions that improve energy productivity. Market-leading customer satisfaction has fuelled ERM's growth, and today the Company is the second largest electricity provider to commercial businesses and industrials in Australia by load¹. ERM also operates 662 megawatts of low emission, gas-fired peaking power stations in Western Australia and Queensland, supporting the industry's transition to renewables.

<http://www.ermpower.com.au>

<https://www.shell.com.au/business-customers/shell-energy-australia.html>

General comments

Broadly speaking, the ESB's proposed interim REZ framework has four components:

- a process for planning the REZ so that it delivers the greatest net benefit for consumers over the long term
- a process for funding the REZ (noting that the consultation paper focuses on a 'regulated' REZ model)
- a process for establishing the REZ, including an allocation of transmission access rights within the REZ to proponents that become part of it (REZ participants)
- a description of what the access rights could look like in practice.

ERM considers these components to be a sensible starting point for developing a REZ framework². However, ERM disagrees with a range of arguments presented in the consultation paper. Many of these arguments stem from the ESB's view that:

¹ Based on ERM Power analysis of latest published information.

² Note that this submission focuses on the third and fourth components because the first two were largely out of scope of the consultation paper. ERM has previously provided feedback on the first component as part of an earlier ESB consultation process.



“More locational pricing with financial transmission rights appears to be the only alternative put forward to date that can work across the whole of the National Electricity Market and drive both more efficient investment and more efficient dispatch and use of the network.”³

ERM does not understand why the ESB continues to support an access regime based on financial transmission rights (FTR) and locational marginal pricing (LMP). This type of framework was overwhelmingly rejected by industry in its collective response to the Australian Energy Market Commission’s (AEMC’s) proposed Coordination of Generation and Transmission Investment (COGATI) reforms. By framing the interim REZ framework as a ‘stepping stone’ to an FTR/LMP scheme, the ESB has missed an opportunity to consider more appropriate options at a greater level of detail.

To assist the ESB to develop a workable REZ framework, this submission details areas for further consideration. We begin by addressing why an FTR/LMP regime is not appropriate. We then review the ESB’s proposed REZ framework and access options. We conclude by proposing an alternative access option that does not require an FTR/LMP scheme, and is consistent with the AEMC’s designated network asset (DNA) draft rule change.

A REZ framework should not be a ‘stepping stone’ to FTR and LMP

Throughout the consultation paper, the ESB makes positive references to LMP and FTR. The overall sentiment is captured by the following statement:

“The ESB is exploring REZ options that can form a stepping stone towards locational marginal pricing and financial transmission rights as a long term solution for transmission access...”⁴

ERM disagrees that the ESB has done this “in a way that mitigates the important negative impacts identified by stakeholders”.⁵

ERM is concerned that the ESB continues to support an FTR/LMP regime. The ESB appears not to have taken on board industry views provided to the AEMC as part of COGATI consultation. During this process, the vast majority of stakeholders (including investors, generators, retailers and consumer groups) comprehensively rejected that the proposed FTR/LMP framework would be effective or workable. ERM urges the ESB to review the COGATI feedback, and redirect its resources to pursue a more reasonable REZ framework.

Disorderly bidding is not a material issue

Part of the ESB’s preference for an FTR/LMP regime appears to be as a solution to disorderly bidding. Once again, ERM refers the ESB to industry feedback provided as part of the COGATI consultation. As outlined in many submissions (including from ERM⁶ and AEMO⁷):

- disorderly bidding is not currently a material problem
- it is not clear that disorderly bidding will become a material problem in the future
- it is not clear whether LMP would solve or lead to new forms of disorderly bidding.

As a result, it does not make sense for a primary objective of the REZ framework to be addressing disorderly bidding – particularly with an FTR/LMP regime. This substantially weakens some of the ESB’s arguments relating to the options in Section 5 of the consultation paper.

³ ESB, *Renewable Energy Zones, Consultation paper*, January 2021, pp 5

⁴ ESB, *Renewable Energy Zones, Consultation paper*, January 2021, pp 16

⁵ ESB, *Renewable Energy Zones, Consultation paper*, January 2021, pp 16

⁶ ERM Power, *RE: Coordination of Generation and Transmission Investment Proposed Access Model – Discussion Paper*, 8 November 2019. Accessed from: www.aemc.gov.au/sites/default/files/2019-11/ERM%20Power%20-%20Proposed%20access%20model.pdf

⁷ AEMO, *Coordination of Generation and Transmission Investment – Proposed Access Model Consultation Paper 2019*, 8 November 2019. Accessed from: www.aemc.gov.au/sites/default/files/2019-11/AEMO%20-%20Proposed%20access%20model.pdf



A new system-wide access model is not necessary

Another reason for the ESB favouring FTR and LMP appears to be a belief that there must eventually be a new transmission access regime that applies equally to all participants across the entire NEM. The ESB explains its rationale as follows:

“REZs are only a partial solution to the broader challenges that access reform seeks to address. This is because REZs provide a localised solution that applies to specific geographic locations within the power system.

Outside the REZs, the problems associated with the access regime would remain. In an interconnected power system, investment decisions elsewhere on the power system resonate across the grid – including within REZs – affecting power flows and the supply and demand balance faced by other market participants. A comprehensive solution needs to apply on a market-wide basis, not in isolated pockets. In essence, REZs need some form of access regime to work.”⁸

ERM agrees that REZs by themselves are only a localised solution to facilitate efficient investment, that investments elsewhere in the power system can impact REZs (either positively or negatively from a network access perspective), and that a solution should consider the system as a whole. We also agree that REZs need some form of access regime to protect the interests of REZ participants from ‘free riders’. However, we disagree that the solution needs to be a uniform access regime across both REZs and the broader shared network. We also disagree that the existing open access framework requires wholesale changes – particularly if those changes fundamentally alter the way the market operates. We do not believe this would result in the most efficient outcome for consumers.

As ERM advised during the COGATI consultation⁹, an appropriate REZ framework—in conjunction with best-practice Integrated System Plan (ISP) development, improvements in information regarding future generator connections including connection point congested headroom data, and a functional regulated investment test for transmission (RIT-T) process—is a solution that could provide appropriate systemwide coordination of transmission and generation investment. The rationale is as follows.

- From a consumer’s perspective, the benefit of a REZ lies in the presupposition that AEMO has correctly identified it as being along the optimal path for minimising total system costs over the long term. AEMO should do this as part of the ISP process, which includes consideration of power flows. The ISP (and subsequent REZ design report by the relevant Jurisdictional Planning Body) should ‘size’ each REZ and facilitate appropriate non-REZ transmission augmentation such that any congestion in the shared network due to the REZ is at an optimal level over the long term.
- There are already a range of locational signals for generation investment. These include marginal loss factors; various reports from AEMO (including the ISP and the System Strength and Inertia Report); and information from TNSPs (e.g. as part of Transmission Annual Planning Reports or Generation Capacity Guides¹⁰) outlining network congestion, future augmentation options, and advice for generators seeking new connections.

While ERM supports efforts to improve the information available to the market, we disagree with the ESB’s view that “the current market design does not provide strong enough signals to encourage generators to locate in an optimal place from a whole-of-system perspective”.¹¹ It tends to be less experienced market participants that choose to build generators in poor network locations, which indicates that signals are

⁸ ESB, *Renewable Energy Zones, Consultation paper*, January 2021, pp 19

⁹ ERM Power, *RE: Transmission access reform: Updated technical specifications and cost benefit analysis*, 7 September 2020, 19 October 2020. Accessed from: www.aemc.gov.au/sites/default/files/documents/epr0073_-_erm_power_submission_cogati_interim_report_19oct2020.pdf

¹⁰ Powerlink, *Generation Capacity Guide*, August 2020. Accessed from: www.powerlink.com.au/sites/default/files/2020-10/Generation%20Capacity%20Guide%20-%20August%202020.pdf

¹¹ ESB, *Renewable Energy Zones, Consultation paper*, January 2021, pp 16



sufficient but prospective participant decision making can be poor.¹² It is appropriate that new generators that choose to locate in weak parts of the network face the consequences (e.g. poor MLFs, congestion, system strength remediation costs and/or network augmentation costs) of their choices. These are clear signals to invest in more appropriate locations. Interventions to address these issues (e.g. government-directed network augmentation) may distort the efficient locational signals. If the ESB is concerned that these signals are not strong enough, then the ESB should focus on preserving them rather than overhauling the entire market with an FTR/LMP regime.

- REZs (if designed under an appropriate framework) would deliver a range of benefits to REZ participants (e.g. access rights within the REZ, more certainty around connection times and technical requirements, choice of connection point to the shared network and the opportunity to share the costs of system strength solutions with other REZ participants). Therefore, if AEMO has identified an appropriate REZ location (and facilitated appropriate network augmentation to facilitate power transfer), generators will be strongly incentivised to build in a REZ compared with elsewhere in the network.
- ERM acknowledges that it is still possible that generators may choose to connect to the network outside of a REZ, possibly via a privately-funded DNA or Scale Efficient Network Extension. Further, it is possible that this may cause congestion in the shared network that negatively impacts REZ participants. However, this is a risk that is most appropriately borne by private investors who choose where to build their generators (e.g. REZ participants). It can be thought of as a form of locational signalling and can be mitigated if AEMO (through the ISP process) consults effectively with stakeholders and correctly identifies the optimal locations for new generation (including the connection points to the shared network), sizes each REZ appropriately and recommends staged (as opposed to simultaneous) development of REZs. AEMO's central planning role is critical to mitigate risk for REZ participants.

A well-designed REZ framework should be expected to effectively consult with stakeholders and reduce, but potentially not eliminate, risk for REZ participants. With this in mind, ERM does not support restricting connections outside of REZs (Question 19 in the consultation paper). However, we believe all network infrastructure constructed or upgraded to facilitate connection of a REZ, for which connecting participants would contribute to the costs (e.g. via an auction for access rights), should be included when defining the boundary of in-REZ access rights.

ERM acknowledges that this argument is dependent on a high-quality ISP process, followed by functional and timely RIT-Ts that meet stakeholders' expectations and good governance principles, and accurate and well-defined contingent project applications (CPAs) for actionable ISP projects. Meaningful industry consultation through every step is key. ERM will continue to engage with AEMO, the Australian Energy Regulator (AER) and the Australian Energy Market Commission (AEMC) to improve outcomes across the relevant reform areas.

A mechanism to establish REZs and facilitate access rights

ERM agrees that the REZ framework should aim to:

"...overcome current problems associated with an uncoordinated connections process; ensure that the group of projects that become part of the REZ (the REZ participants) is selected on a basis that aligns with the long term interests of consumers; and reduce the level of risk and cost borne by customers".¹³

¹² Simshauser P & Gilmore J, *Is the NEM Broken? Policy discontinuity and the 2017-2020 investment megacycle*, Cambridge Working Paper in Economics 2048, pp 24

¹³ ESB, *Renewable Energy Zones, Consultation paper*, January 2021, pp 29



In principle, ERM considers an approach where a 'REZ coordinator' runs a process to allocate access rights to "the suite of projects that promotes the long-term interests of customers, having regard to the combined costs and benefits of the generation, storage and network elements of the project"¹⁴ to be sensible.

In practice, the details of this process will have substantial bearing on whether it achieves its objective. For example:

- The capacity and mix of generation should be chosen with the broader system in mind, as per the ISP. If it isn't, then the net benefit to consumers is likely to be reduced. The party that becomes the 'REZ coordinator' must be independent from, and work closely with, AEMO and the relevant TNSP(s) to ensure the amount and mix of REZ generation is in the best interests of the broader system.
- The auction/tender process needs to be carefully designed to efficiently apportion the costs between REZ participants and consumers. The amount a proponent is willing to bid will depend on the maximum level of 'in-REZ' congestion to which they will be exposed. This will be impacted by the mix of generators in the REZ), and the level of 'designed' congestion¹⁵. For participants to make informed bids, the REZ coordinator would need to release detailed information about the REZ design well in advance of the auction taking place. If the auction/tender process has multiple stages, this information may need to be updated at each stage.
- Government schemes to encourage REZ participation will need to be carefully coordinated with REZ coordinator's process to efficiently allocate the REZ's 'hosting capacity'.
- It is not clear to ERM whether an existing generator that has paid for their own connection assets would need to participate in the auction/tender to gain access rights if their connection asset is subsumed into a REZ. As discussed in ERM's submission to the AEMC's draft DNA determination,¹⁶ if a private proponent has paid for a transmission asset (e.g. a DNA), their transmission rights should be protected.

It is important for the ESB to further develop and consult on the details of the REZ coordinator's role. The above points are likely only a small subset of issues that will need to be identified and resolved.

A review of the ESB's four proposed access models

Chapter 5 of the consultation paper describes four options for access rights within a REZ:

- Option 1: Connection access protection
- Option 2: Financial access protection
- Option 3: REZ as a region
- Option 4: Early allocation of FTR.

In ERM's view, none of the four options as described by the ESB are appropriate. As discussed earlier in this submission, we strongly oppose the FTR/LMP regime outlined in Option 4. Option 3 is also unsuitable on the grounds that it appears to rely on an FTR/LMP regime for the REZ, which would be a "stepping stone" to "the wider introduction of [LMP] and [FTR] elsewhere across the NEM"¹⁷. Additionally, introducing a new REZ region would be harmful to contract liquidity as it would fragment the existing region.

As outlined in ERM's submission to the AEMC's draft DNA determination, it is appropriate to protect transmission rights of private proponents who have paid to develop the infrastructure. Therefore, ERM supports the principle that

¹⁴ ESB, *Renewable Energy Zones, Consultation paper*, January 2021, pp 25

¹⁵ ESB, *Renewable Energy Zones, Consultation paper*, January 2021, pp 19-20

¹⁶ ERM Power, *RE: Connection to dedicated connection assets*, 28 January 2021. Accessed from:

https://www.aemc.gov.au/sites/default/files/documents/rule_change_submission_-_erc0294_-_erm_power_-_20210128.pdf

¹⁷ ESB, *Renewable Energy Zones, Consultation paper*, January 2021, pp 42



subsequent entrants to a REZ “should ‘do no harm’ to REZ generators that have bid and acquired access rights”¹⁸. While both Options 1 and 2 are based on this principle, each has its own strengths and weaknesses.

Physically preventing new connections in the REZ that would negatively impact REZ participants as per Option 1 would be a positive outcome. However, the ESB correctly identifies that it could be difficult to plan for all possible scenarios in which a new connection may do harm to REZ participants. In particular, it would take substantial time and resources to plan for changed congestion within a meshed REZ due to load or network configuration changes outside the REZ that are exacerbated by a new REZ connection. This is an inherent weakness of a ‘connection only’ physical access right, but could potentially be addressed through dispatch protection and/or financial protection for the REZ participants. These concepts are explored further in the next section of this submission.

Option 2 also has promising elements. The concept of new-entrant generators financially compensating REZ participants if they operate while other REZ generators are constrained appears sensible. Similarly, a revenue-sharing regime within the REZ to prevent ‘winner takes all’ outcomes is also worth investigating further.¹⁹ However, Option 2 has drawbacks in its current form.

- There does not appear to be a process whereby a new-entrant generator could have its ‘harm’ assessed during the connection process, and subsequently pay for the necessary upgrades to the REZ to address it. This is an unnecessary barrier to entry.
- Consider a scenario where AEMO requires a new-entrant generator to operate (e.g. to maintain system strength) during a time of in-REZ congestion. It is not clear what revenue this plant would receive under Option 2. One interpretation is that the new entrant would receive zero revenue, and the revenue would be added to the pool shared between the available REZ participants. Another interpretation is that the new entrant would receive a portion of the revenue based on total availability of generators within the REZ. Neither of these interpretations is appropriate – particularly if the new-entrant generator has a non-zero fuel cost. At minimum, the new entrant should be entitled to recover costs if subject to AEMO Direction.
- The revenue sharing model appears to incentivise disorderly bidding of REZ participants, particularly those that would benefit from the shared compensation pool. The exact type of disorderly bidding would depend on the REZ’s location in the network, and the REZ participants’ marginal cost and location within the REZ. However, the likelihood and materiality of disorderly bidding may be insignificant.
- The exact metric used to allocate shared revenue within the REZ needs to be carefully designed to avoid gaming. Pure bid availability is not appropriate. VRE generation availability should be based on the Unconstrained Intermittent Generation Forecast, and a generator bidding in at greater than the RRP should not be allocated part of the revenue, despite being available.

An alternative access model

If a private proponent pays for a transmission asset to secure access, they should get their access protected. This should apply regardless of whether the asset is radial or is part of a network mesh. If amended as per ERM’s submission to the AEMC,²⁰ the principles underpinning third-party access in the AEMC’s draft DNA determination would be an appropriate framework for radial REZs.

For a REZ that is part of a network mesh or loop, the general principal of protecting the REZ participants could be similarly applied, with some extra processes to account for the complexity of a REZ that is not radial. A hybrid model combining the advantages of Options 1 and 2 could be appropriate. The hybrid model could work as follows.

¹⁸ ESB, *Renewable Energy Zones, Consultation paper*, January 2021, pp 36

¹⁹ Noting that this should be designed carefully so as not to disadvantage proponents subsumed into a REZ that had already paid for network assets.

²⁰ ERM Power, *RE: Connection to dedicated connection assets*, 28 January 2021. Accessed from: https://www.aemc.gov.au/sites/default/files/documents/rule_change_submission_-_erc0294_-_erm_power_-_20210128.pdf



- Define the REZ boundary.
- Undertake the auction/tender process and allocate the REZ hosting capacity via access rights, which would formalise the remaining steps in this process.
- Allow new connections to the REZ only if the new entrants meet sensible 'do no harm' criteria and fund any necessary augmentations for this to be the case. Note that the 'do no harm' criteria are not intended to be exhaustive, as it may be impractical (from a time and cost perspective) to assess and address every possible instance of harm caused by a new connection. Any residual risk of harm to REZ participants would be addressed in the remaining steps of this process.
- Require new-entrant generation to be constrained down prior to the other REZ participants. This could be efficiently achieved via AEMO's dispatch engine²¹, or the connection NSP implementing a generator output tripping or a runback scheme²². If this is not possible for a particular dispatch period (e.g. if AEMO directs a new-entrant generator to operate for system security reasons), share the revenue between the new-entrant generator and the REZ participants that had their output constrained. In this case, the revenue for the new-entrant generation that got dispatched should, at a minimum, cover costs.
- Incorporate a revenue sharing regime within the REZ to avoid 'winner-takes all' outcomes as per Option 2, noting ERM's earlier comments on an appropriate revenue-sharing metric. Consider how to design the revenue sharing scheme to minimise disorderly bidding within the REZ, noting that it may not be practical to eliminate the risk entirely.
- Allow both storage and flexible load to benefit from zero-cost consumption (charging) to alleviate congestion (discussed further in the next section).

Note that the details for each step above need further development and consultation. Despite this, ERM considers this hybrid model to be more appropriate than any of the four options in the ESB's consultation paper.

Storage and dispatchable load

ERM agrees that "REZ frameworks need to be designed in a way that rewards storage for contributing to efficient overall outcomes"²³. However, given that storage is effectively a combined load/generator, this principle should be extended. In particular, the framework should encourage supply-following dispatchable load more broadly (not just storage charging) to alleviate congestion within the REZ.

If you would like to discuss this submission further, please contact Matthew Ladewig, Policy Adviser at mladewig@ermpower.com.au or on 03 9214 9397.

Yours sincerely,

[signed]

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²¹ Generators holding REZ access rights could be positioned on the uncontrolled right-hand side of the constraint equation.

²² TransGrid, *Renewable Energy Hub Knowledge Sharing Report, Version 2.3.0*, 2 June 2016, pp19. Accessed from: www.transgrid.com.au/news-views/lets-connect/consultations/current-consultations/Documents/Renewable%20Hub_Knowledge%20Report_TransGrid.pdf

²³ ESB, *Renewable Energy Zones, Consultation paper*, January 2021, pp 37