

**ENERGY SECURITY BOARD  
RENEWABLE ENERGY ZONES  
PLANNING**

Consultation paper and draft Rules  
August 2020

## Executive Summary

This document gives stakeholders the opportunity to comment on draft amendments to the National Electricity Rules (Rules) to support the design of Renewable Energy Zones (REZs). The draft Rules build on the actionable ISP Rule changes to co-ordinate the transmission and generation investments in alignment with the optimal development path for the power system in a way that has regard to the needs of communities and developers.

Over the next 20 years, there is a need for large quantities of renewable generation to connect to the power system. There is insufficient transmission network capacity in the right locations to support this forecast generation. To deliver the additional supply at least cost, a mechanism is required to co-ordinate the transmission and generation investments. Orderly renewables development will help to reduce risk associated with network congestion, low marginal loss factors and technical difficulties. REZs are a means of giving effect to orderly renewables development. They can promote more efficient and effective connection of generators including co-ordinated consideration of security issues.

Special considerations apply to REZs within the transmission planning framework due to:

- the importance of co-ordination with generation developers to deliver an efficient solution and
- the potential for significant local community impacts.

In recognition of these differences, the ESB proposes that REZs are subject to a special planning regime that includes measures to take into account evidence supplied by generation developers and the views of local communities. The REZ planning arrangements should also ensure that the REZ leverages and contributes to the efficient design of the broader power system.

To achieve co-ordinated outcomes, the ESB is consulting on draft Rules that enable Jurisdictional Planning Bodies to prepare REZ design reports that take into account these needs. The draft Rules are an incremental refinement of the recently implemented actionable Integrated System Plan (ISP) Rules. The ESB proposes that these changes should form a permanent part of the actionable ISP framework.

The ESB is undertaking this Rule change process in accordance with section 90F of the National Electricity Law. Under this process the ESB recommends Rule changes to the Energy Ministers which can then recommend to the South Australian Minister that the amending Rule be made.

The ESB invites comments on the draft Rule changes published in conjunction with this document. The due date for submissions is 8 September 2020.

This paper focuses on the Step 1 (planning) elements of the ESB's REZ framework as presented to Energy Ministers in March 2020. The ESB is considering how to progress Step 2 of the ESB's framework, which relates to potential measures to support REZ implementation. Step 2 will be addressed separately.

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# 1. Introduction

## Key points

- The purpose of this document is to give stakeholders the opportunity to comment on draft amendments to the National Electricity Rules (Rules) to include the preparation of REZ design reports within the planning regime.
- The Energy Security Board (ESB) is undertaking the Rule change process in accordance with section 90F of the National Electricity Law (NEL). Under this process the ESB recommends Rule changes to the Energy Ministers which can then recommend to the South Australian Minister that the amending Rule be made.
- The second step of the ESB's REZ framework will consider issues relating to REZ implementation, including whether there is a need for a different way to allocate costs and measures to ensure that generators that participate in the REZ are not adversely affected by subsequent connections. Step 2 will be addressed separately.
- The due date for submissions is 8 September 2020.

## 1.1 Context

The 20 March 2020 meeting of State and Federal Energy Ministers considered the need for interim arrangements to support the development of a small number of REZs in the NEM ahead of longer term access reforms. The ESB proposed a two-step process:

- Step 1 - Rule changes that require the jurisdictional planner to develop a detailed and staged development plan for each priority REZ identified in the ISP. These changes would build on the actionable ISP Rule changes; and
- Step 2 - the development of a policy framework for the staged development of REZs within a REZ development plan.

Ministers requested that the ESB prepares rule changes to support the development of REZs in accordance with the two-step process.<sup>1</sup>

The two work strands are designed to expedite the implementation of the framework. Step 1 is focussed on the planning elements of the framework. By implementing the planning reforms first, AEMO and jurisdictional planning bodies (typically TNSPs) will be able to progress their planning activities concurrently with development of any necessary Step 2 reforms.

This paper is concerned with Step 1 of the ESB's REZ framework. While the project is known as the "Interim REZ framework", the ESB is consulting on whether to make the Step 1 (planning) elements of the project a permanent part of the Rules (see Chapter 3). The ESB proposes that the Step 2 arrangements apply on an interim basis.

## 1.2 Legislative basis

The ESB has undertaken this Rule change process in accordance with section 90F of the National Electricity Law (NEL). The ESB may recommend rules to the Energy Ministers if the following requirements are satisfied:

- the Rules are in connection with energy security and reliability of the NEM or long-term planning for the NEM;
- the Rules are consistent with the national electricity objective; and

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<sup>1</sup> For more information, see <http://www.coagenergycouncil.gov.au/reliability-and-security-measures/renewable-energy-zones>.

- there has been consultation on the Rules in accordance with any requirements determined by the Energy Ministers.

The ESB’s assessment of the draft REZ Planning Rules against these requirements are set out in Chapter 4.

Any final Rules will be made by the South Australian Minister for Energy on the recommendation of the Energy Ministers. Ministers have approved an “ESB Rule Recommendation Process Guide”. The release this Consultation Paper and the Draft REZ Planning Rules is being carried out in accordance with that guidance, which includes public consultation and responses to submissions.

The ESB does not intend for the ISP rules to apply in the Northern Territory, but a differential rule may be required for the NER applying in the Northern Territory.

### 1.3 How to make a submission and next steps

The ESB invites comments from interested parties in response to the draft REZ Planning Rules and this consultation paper by 8 September 2020. While stakeholders are invited to provide feedback on any issues raised in this paper, the ESB’s consultation questions are summarised in Attachment A.

Submissions will be published on the ESB’s REZ web page<sup>2</sup>, following a review for claims of confidentiality. All submissions should be sent to [info@esb.org.au](mailto:info@esb.org.au).

<b>Submission close date</b>	<b>8 September 2020</b>
<b>Lodgement details</b>	Email to: <a href="mailto:info@esb.org.au">info@esb.org.au</a>
<b>Naming of submission document</b>	[Company name] Response to Consultation Paper and Draft Rules – Interim REZ framework
<b>Form of submission</b>	Clearly indicate any confidentiality claims by noting “Confidential” in document name and in the body of the email.
<b>Document type</b>	Microsoft Word
<b>Late submissions</b>	Late submissions will not be accepted.
<b>Publication</b>	Submissions will be published on the ESB’s REZ web page, following a review for claims of confidentiality.

The ESB intends to hold a webinar on the material covered in this paper on 20 August 2020. Interested parties are requested to register their interest in participating in the forum by email to [info@esb.org.au](mailto:info@esb.org.au).

Following consideration of submissions made to the consultation on draft REZ Planning Rules, the ESB’s recommended Rule changes will be finalised and presented to the Energy Ministers. The ESB’s proposed timing is set out below:

<b>Deliverable</b>	<b>Indicative timing</b>
Publish consultation paper including draft Rules for REZ planning	11 August 2020
Public forum /webinar	20 August 2020
Submissions due	8 September 2020
Final REZ Planning Rule change package provided to the Energy Ministers	October 2020

<sup>2</sup> <http://www.coagenergycouncil.gov.au/market-bodies/energy-security-board>

## 2. Reasons for proposed reforms

### Key points:

- This chapter explains why the ESB proposes to introduce special arrangements for planning REZs.
- Over the next 20 years, there is a need for large quantities of renewable generation to connect to the power system. There is insufficient transmission network capacity in the right locations to support this forecast generation.
- In order to deliver the additional supply at least cost, a mechanism is required to co-ordinate the transmission and generation investments. Orderly renewables development will help to reduce risk associated with network congestion, low marginal loss factors and technical difficulties with connection. REZs are a means of giving effect to orderly renewables development.
- Due to their function and scale, special considerations apply to REZs within the transmission planning framework. In recognition of these differences, the ESB proposes that REZs can be subject to a special form of preparatory activities that includes extra measures to take into account evidence supplied by generation developers and the views of local communities.
- The REZ planning arrangements should also ensure that the REZ leverages and contributes to the efficient design of the broader power system.

The 2020 Integrated System Plan<sup>3</sup> (ISP) forecasts that around 26 GW of new utility scale renewable generation capacity is required to 2040 for the optimal development of the power system. The volume required is driven by customer need, the comparative cost of renewable energy and by State and Commonwealth targets. The investment required exceeds the currently available hosting capacity in the relevant areas of the grid. Some of those areas of the grid already present difficulties for parties connected to, or committed to connect to, the network.

The NEM has seen a period of intense activity in connecting new renewable generation to the grid. In January 2020, the total capacity of existing and committed utility scale VRE was 13,964 MW. The existing VRE has more than doubled in the two-year period rising from 4,785 MW in December 2017 to 10,300 MW in January 2019. This rapid rate of growth in the connection of new projects is testing the NEM's access regime and is leading to increased network congestion in areas, higher losses (seen as low marginal loss factors) and increased technical difficulties in connecting. Without action, these problems will only worsen and deter future investment. This could impose inefficient costs on new entry and hence increase costs to customers.

### 2.1 Need for connection of further renewable generation in the NEM

#### 2.1.1 Additional capacity to connect to the NEM

In the first decade of the 2020 ISP, ongoing growth in renewable generation is forecast to be driven by its relative cost advantage and by government policies. In the next decade, very strong investment in renewable energy is forecast based on the need to replace the energy from retiring coal fired generation.

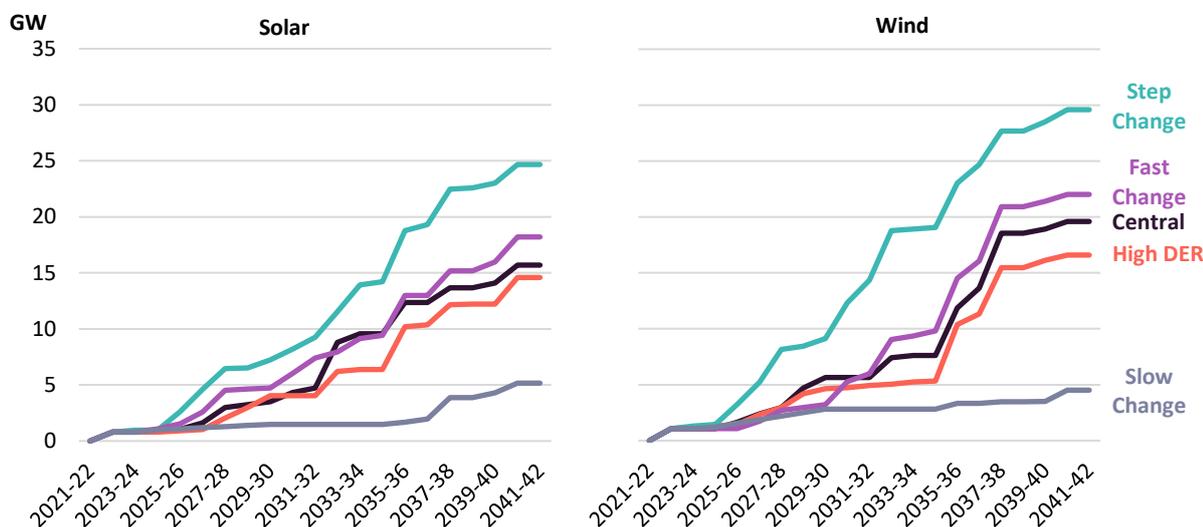
The Clean Energy Regulator expects the Commonwealth Government's Renewable Energy Target to be met this year. While the Renewable Energy Target remains in place until 2030, it is unlikely to drive further investment. Several state-based policies apply and will continue to incentivise investment over the period to 2030.

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<sup>3</sup> AEMO, July 2020, 2020 Integrated System Plan. Available at: <https://www.aemo.com.au/energy-systems/major-publications/integrated-system-plan-isp/2020-integrated-system-plan-isp>

The 2020 ISP outlines the new generation investment needed for optimal development under a number of scenarios. Actual investment may be greater or less than this requirement. The following charts show the projected growth in utility scale solar and in wind through to 2042 under each ISP scenario.

**Figure 1 New NEM VRE build, solar (left) and wind (right)**



Source: AEMO, 2020 Integrated System Plan

There is a steep rise in wind generation investment required in the second decade of the ISP as a significant proportion of Australia’s ageing coal fleet retires. Requirements for new wind investment in the first decade are more modest in all but the step change scenario. Utility scale solar grows steadily after the mid-2020s in all but the slow growth scenario.

This growth in renewable energy is significant, but not as fast as in recent years. Premature development of too many REZs would risk increasing costs to customers and would only be justified if targeting a more rapid deployment of renewable generation and a faster carbon abatement. It is noted that there are currently double the ‘proposed’ renewable energy projects to meet any requirements to 2030.<sup>4</sup>

In considering urgent actions, the ESB has focussed on progressing improvements for the connection of additional renewable generation required for the optimal development of the central scenario in the first decade of the plan. Given the rise in requirements in the second decade, forward planning will be critically important although there remains time to develop longer term strategies to meet these needs.

### 2.1.2 Current capacity of the network to connect additional renewable energy

Depending upon the particular scenario, many gigawatts of new renewable generation needs to be connected to the national grid over the next twenty years. The current grid is essentially designed to shift power from coal fields to major load centres, which are not necessarily aligned with the best locations in terms of wind and solar resources. As the current fleet of fossil fuelled generators retire, the optimal development path for the power system needs to trade off the benefits of being able to access high quality renewable resources against the additional network investment required to deliver those benefits. AEMO’s ISP modelling suggests that the most cost-

<sup>4</sup> Information regarding committed and proposed generation is available on AEMO’s generation information page: <https://aemo.com.au/energy-systems/electricity/national-electricity-market-nem/nem-forecasting-and-planning/forecasting-and-planning-data/generation-information>

effective solution requires significant investment in the network. The network currently has limited capacity to connect additional renewable generation, with some otherwise attractive areas for investment already at or close to capacity.

The ISP envisages that new VRE developments in Queensland, primarily in the Darling Downs and Fitzroy REZs, would take advantage of the existing spare network capacity to meet the Queensland government's renewable energy target. There is adequate existing hosting capacity to meet this need although some local projects to facilitate connection and take advantage of economies of scale in connection would be valuable.

Investment is also required in Victoria to meet the Victorian government's renewable energy target. There is inadequate capacity available at present to meet this need, and the hosting capacity listed in the Western Victorian REZ is contingent on the major transmission investment projects currently being progressed. Planning to design the next stages of REZ development in Victoria is essential to meeting the need for new connections. Additional development is also likely to be justified, at least in part, by reducing constraints on existing generation.

The NSW government has announced a policy to connect three gigawatts in the Central West Orana REZ. This is significantly above the current hosting capacity of the transmission grid in that area and connecting that area to the NEM. A staged plan for the development of this zone is necessary.

## **2.2 Need for arrangements to support co-ordinated REZ developments**

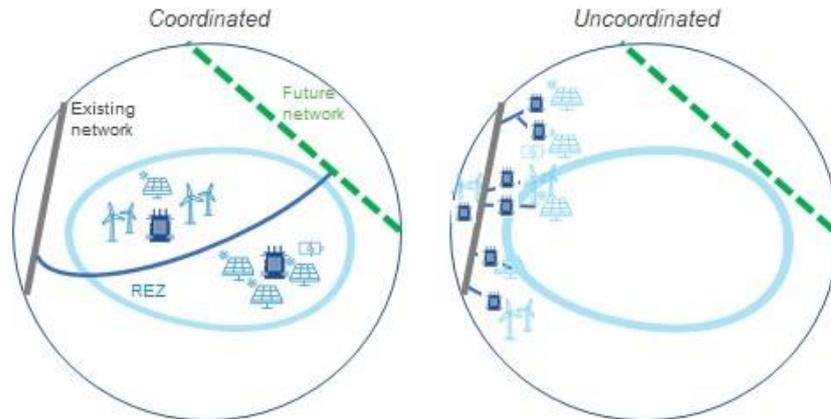
The NEM has operated since its commencement as an open access regime; that is, parties may connect to the grid at any point subject to meeting technical requirements and funding only the cost of the assets required to connect to the shared grid. Over the last twenty years there has only been incremental investment in new generation and this approach has generally proven sufficient.

In recent years that approach has been tested as the generation mix has changed and the capacity of generation seeking to connect to new and different areas of the grid in areas with favourable renewable resources has gone well beyond incremental investment. The need for generation investment to be co-ordinated with transmission network investment has become clearly evident.

There are already areas in the NEM, where a lack of coordination, compounded by lack of transparency regarding future investments and available capacity, has resulted in network congestion, low marginal loss factors and technical difficulties. Generators have been exposed to additional costs from their commissioning and lower revenues until remedies can be devised, approved and implemented. Ad hoc generation developments have also precipitated a need for major transmission investments which might not have been needed if the network had evolved differently.

A lack of coordination between generation and transmission investment potentially exposes customers to higher network costs than optimal as there is no assurance that the overall development of the power system through this approach will deliver the most efficient outcome. As generation investment is market driven, commercial investors bear the risk that their investment will not deliver the anticipated benefits. However, where the access regime imposes systemic inefficiencies on connecting generators more broadly, customers will ultimately bear higher costs. Under the current framework, each generator connects on a piecemeal basis, and funds its own individual transmission line, substation and (in some cases) system security assets. This approach is likely to be more expensive than a co-ordinated approach that takes advantage of economies of scale.

**Figure 2 Depiction of coordinated vs uncoordinated REZ development**



The ESB's actionable ISP Rules help to coordinate power system development by driving transmission investment in line with a whole of system plan. The ESB considers that some REZ-specific enhancements to this framework are warranted, as outlined in Chapter 3.

Special considerations apply to REZs within the transmission planning framework. As well as the economic and technical considerations assessed in the ISP, a REZ that is selected for development needs to have state government and community support. While many transmission investments can have visual amenity impacts, the development of a REZ can also have impacts on land use, as well as an economic impact on affected communities. Social licence, and the ability to obtain the required permits, is critical. These issues can have just as big an impact on developer costs as network connection issues.

Transmission developments that are intended to connect new generation require more granular local knowledge than projects that seek to transfer bulk energy between regions. REZs can be thought of as cities within the transmission network, where the main transmission flow paths are the highways.

Analysis by AEMO in 2018 suggested that almost 70 per cent of renewable energy developments in the National Electricity Market were located within five kilometres of the pre-existing network.<sup>5</sup> As the function of a REZ is to connect generators, there needs to be strong interest by potential investors in the proposed location. The REZs identified in the ISP each cover large geographic areas. In some cases, the areas identified for development cover tens of thousands of square kilometres.

In recognition of these differences, the ESB proposes that the transmission planning framework that applies to REZs should include extra measures to take into account evidence supplied by generation developers and the views of local communities. The REZ planning arrangements should also ensure that the REZ leverages and contributes to the efficient design of the broader power system.

Chapter 3 describes the ESB's proposed approach and reasoning, in order to seek stakeholder feedback.

<sup>5</sup> AEMO, Submission to COGATI Review, May 2018, pg 7. <https://www.aemc.gov.au/sites/default/files/2018-05/AEMO.pdf>

### 3. REZ planning framework

#### Key points:

- This chapter explains and provides the rationale for the ESB's proposed approach to planning REZs.
- To achieve co-ordinated outcomes, the ESB is consulting on draft Rules where AEMO may require Jurisdictional Planning Bodies to prepare REZ design reports.
- In preparing a REZ design report the JPB must:
  - give interested parties who wish to develop energy projects within the REZ the opportunity to submit information about their project, and give local communities the opportunity to present information relevant to the plans set out in the REZ design report.
  - meet certain REZ design principles, which ensure that the resulting developments are consistent with the achievement of power system needs, including reliability and security.
- The draft Rules include new joint planning provisions that require the JPB and AEMO to work together on the REZ design report.
- The ESB invites comments on the draft Rule changes published in conjunction with this document.

To achieve co-ordinated outcomes, the ESB proposes to amend the transmission planning framework to support the preparation of REZ design reports that take into account technical, economic and social factors. The ESB proposes that these planning arrangements should apply to all REZs, not just those developed in accordance with the potential interim (Step 2) framework.

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**Question 1** If implemented, should the REZ planning arrangements outlined in Chapter 3 be a permanent feature of the regulatory framework or only apply on an interim basis?

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#### 3.1 Overarching framework for REZ design

This section discusses the objective of the REZ design framework, who should be responsible and when REZ design reports should be prepared.

##### 3.1.1 Staged approach to REZ development

Many of the REZs identified in the ISP rely upon development of the broader national grid as the interconnector augmentations proposed in the ISP both provide benefits of trade across the NEM and allow the connection of additional renewable generation. This reduces some of the financial risks in developing generators within a REZ, but not all.

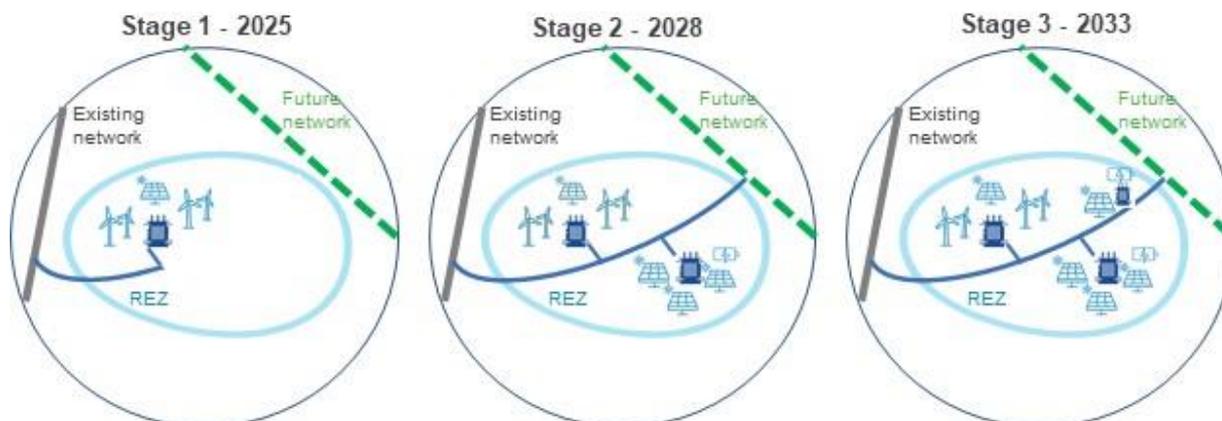
Under a staged approach to REZ development, the REZ design reports would set out a cohesive, long term plan for the development of the REZ that leverages and contributes to the broader development of the power system. This holistic plan could be broken down into a sequence of projects which are able to be delivered over an extended period (e.g. a decade). A staged approach reduces risk by building in flexibility to adapt to changing market conditions, since stages within the REZ can be accelerated or deferred.

Staging can also help to reduce costs by leveraging planned power system developments beyond the REZ. For instance, a REZ may be designed to take advantage of a future interconnector upgrade which does not occur until after the first part of the REZ is established.

The planning framework needs to take into account not only the transfer capability of the planned network expansion, but also power system security issues and hence effective and efficient

hosting capacity released in each stage. This would provide that each stage could be configured and include additional plant that would provide scale efficiencies to parties connecting to that stage of the REZ.

**Figure 3 Depiction of a staged REZ development**



Development within a given REZ should be prioritised based on:

- Minimising the overall cost consistent with connecting the capacity of renewable generation investment projected in the ISP and the timing of that investment,
- Integrating consideration of the associated land use, environmental and development planning issues, and
- The ability to deliver immediate benefits as well as securing additional, cost effective, capacity to connect new generators.

Once a staged plan has been established, this can feed into AEMO's assessment of the optimal development plan in an ISP, and then whether the REZ (or a stage of it) should be an actionable ISP project. Then each stage would be subject to further development and implementation as part of a regulatory investment test for transmission (RIT-T). Different stages of each REZ often have a different character and may be more, or less, dependent upon future generation connection.

By developing the REZ in stages, there is scope for bespoke implementation models that are tailored to the funding and revenue recovery risks associated with each stage. The first stage of a REZ might pass the RIT-T and be suitable for development as a regulated transmission investment, and a subsequent stage might be more speculative and better suited to a commercial development model. Matters relating to the implementation of a REZ will be discussed further in a subsequent paper.

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**Question 2**      Should the REZ planning framework promote a staged approach to REZ development?

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### 3.1.2 Who is responsible for planning REZs?

The ESB proposes that the jurisdictional planning body (a function under the NER, which has been given to the local TNSP in New South Wales, Queensland, South Australia and Tasmania; and AEMO in Victoria) could be made responsible for the preparation of a detailed plan for each REZ nominated for development. The jurisdictional planning body would consider what transmission infrastructure is required for a REZ and consider the best place to locate clusters of generation within a REZ. This approach reflects the actionable ISP framework, where AEMO

develops the ISP and TNSPs then do the detailed assessment through the RIT-Ts having regard to the ISP.

We propose to confer the obligation on JPBs, rather than TNSPs, in recognition of the potential for significant community impacts associated with the development of REZs and hence the need to coordinate with the relevant government planning authorities. Under the Rules, the JPB is nominated by the relevant State government. State governments with REZ developments located within their jurisdiction may wish to enter into a Memorandum of Understanding or other arrangement with their JPB to provide a clear framework for government input to the REZ design report. However, these arrangements would sit outside of the NER regulatory framework.

As per the actionable ISP framework, there would also be a key role for AEMO in identifying the core characteristics of the REZ, and how the REZ should integrate with the broader power system. AEMO's role is discussed further below.

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<b>Question 3</b>	Should the Jurisdictional Planning Body (JPB) be responsible for designing REZs?
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### 3.1.3 Initiating a REZ design report

The ESB proposes that the Rules establish criteria that must be met for a REZ to be selected for development as part of the transmission planning framework. The purpose of the criteria is to ensure that REZs selected for planned development have a baseline level of merit in each of the technical, economic and social realms. Under the ESB's draft Rules, AEMO may trigger the preparation of REZ design report as part of the ISP. When selecting a REZ for development, AEMO must have regard to the following criteria:

- the development of the REZ must be on the optimal development path within 12 years; or
- the decision to trigger a REZ design report must have the support of the relevant State government.

The ESB considered whether further criteria were required – for instance in relation to developer interest – and concluded that the above criteria were sufficient. The ESB's initial view is that commercial interest typically aligns with the existing criteria, which means that extra Rules are not needed. The ESB's expectation is that if a REZ was already actionable in an ISP it would move straight to the RIT-T stage and would not be subject to the REZ design report process.

AEMO's decision to initiate a REZ design report should occur as part of the ISP process. This allows the decision to benefit from the ISP's comprehensive and transparent stakeholder engagement process. However, in practice, changing circumstances can necessitate changes outside the two-yearly cycle. The ISP Rules provide for ISP updates to ensure that the ISP can adapt in response to new information as part of an ISP update.

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<b>Question 4</b>	Should the ISP be the primary vehicle for triggering a REZ design report? Should there be other ways to trigger a REZ design report?
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<b>Question 5</b>	Are the proposed criteria for selecting REZs for planned development appropriate? Are there other criteria that should be taken into account?
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### 3.2 Objectives and principles to be achieved by the REZ design report

In preparing the REZ design report, the JPB should be required to meet certain overarching principles set out in the Rules. These principles would be designed to ensure that the resulting

developments are consistent with the achievement of power system needs, including reliability and security.

The ESB also proposes to include measures to ensure that the REZ design fits within the broader plan. The draft Rules require AEMO to specify a set of REZ design parameters, which would be specific to the relevant REZ. The REZ design parameters would provide guidance to the JPB in designing a REZ design report that aligns with the ISP.

**Table 4 Draft REZ design principles and parameters**

REZ design principles	REZ design parameters
<p><i>Overarching principles to be defined in the Rules</i></p> <p>The REZ design report must set out a plan for the development of the REZ that:</p> <ul style="list-style-type: none"> <li>• is consistent with the achievement of power system needs set out in NER 5.22.3</li> <li>• contributes to the efficient development of the power system, consistent with the ISP</li> <li>• reflects the REZ design parameters.</li> </ul>	<p><i>Project specific requirements to be defined in the ISP</i></p> <p>When initiating a REZ design report, AEMO must specify the following REZ design parameters:</p> <ul style="list-style-type: none"> <li>• MW of generation capacity projected in each stage of the REZ</li> <li>• the forecast timing for each stage under the optimal development path</li> <li>• the proposed location at which each REZ stage will connect to or be integrated with the rest of the transmission network</li> <li>• any other matters that AEMO considers relevant, including forecast system security needs.</li> </ul>

As transmission planning is an iterative process, the REZ design parameters would not be fixed. Instead they would be refined over time via the joint planning process, as new information becomes available. The JPB would need to ensure that its plans deliver the minimum generation capacity required at each stage to efficiently meet power system needs, but there would be scope to accelerate the project beyond minimum requirements and explore the option value associated with different approaches. Each stage of development within a given REZ would form part of an integrated plan for projected hosting capacity of the REZ.

This detailed assessment of a REZ and its breakdown into a sequence of stages will increase understanding of the relevant zone and may modify the understanding of its costs.

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<b>Question 6</b>	Do the REZ design principles require amendments or additions?
<b>Question 7</b>	Do the REZ design parameters require amendments or additions?

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### 3.3 Preparation of REZ design report

The REZ design report is intended to act as a bridge between the concept outlined in the ISP and a substantive investment proposal. For instance, the REZ design report could take a future ISP project<sup>6</sup> and develop the project to a level of detail where its first stage is able to be subject to an investment decision making process. In this respect, the REZ design report is an upscaled form of preparatory activities that recognises the special considerations that pertain to REZs.

In terms of scope, the REZ design report would set out plans for the shared transmission infrastructure, taking into account the likely options for generation and storage located within the REZ. The REZ design report would not need to involve detailed plans for negotiated transmission

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<sup>6</sup> A future ISP project is a project that is forecast to become an actionable ISP project in the future (but is not needed in the short term).

services such as generation connection assets. However, the JPB would need to have considered likely options in sufficient detail to be able to design the shared network in a way that accommodates the optimal overall solution.

In order to perform this function, the ESB proposes that REZ design report must include, for each REZ stage:

- (a) the outputs of the JPB's preparatory activities, including:
  - i. proposed engineering design
  - ii. proposed route
  - iii. initial cost estimation
- (b) the reasons for the proposed REZ design, including consideration of non-network options; and
- (c) if appropriate, an assessment of potential variations.

The optimal design of the shared transmission assets is influenced by the characteristics of the connecting generation. Accordingly, the REZ design process should have visibility of what generation is likely to connect. For instance, the NSW government is conducting a registration of interest process to gain an understanding of potential developments within the Central West Orana REZ.

In preparing a REZ design report the JPB must give interested parties who wish to develop energy projects within the REZ the opportunity to submit information about their project, and give local communities the opportunity to present information relevant to the plans set out in the REZ design report. A minimum consultation period of 4 weeks should apply, and the REZ design report should describe how the JPB has taken into account information provided by interested parties.

The objective of the consultation process should be to design a REZ that strikes an appropriate balance between technical, economic and social licence considerations. The ESB's initial view is that the draft Rules should not prescribe the precise nature of the consultation process given the diversity of potential REZ projects, and the fact that the broader transmission planning framework already includes extensive consultation requirements. However, meaningful engagement during the early stages of REZ design is likely to facilitate and streamline the later stages of the project.

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**Question 8** Is the proposed content of the REZ design report appropriate?

**Question 9** Is the proposed process for preparing a REZ design report appropriate?

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### 3.4 Incorporating input from AEMO via the joint planning process

Efficient REZ development is a key component of the ISP and as such, the proposed planning arrangements confer a number of key roles on AEMO, including initiating the REZ design report process and specifying the REZ design parameters.

The actionable ISP Rules establish a continuous planning cycle. Shortly after the publication of a final ISP, work begins on the next one. Hence, while the ISP triggers a REZ design report, the preparation of the REZ design report will occur in tandem with the preparation of a subsequent ISP. The ISP process and REZ design process should be iterative and each should incorporate learnings from the other.

The draft Rules include new joint planning provisions that require the JPB and AEMO to work together on the REZ design report. Joint planning permits each party to contribute their strengths in order to build robust plans. While both parties have technical expertise, the JPB has specialist knowledge in relation to on the ground community and local network conditions. AEMO

contributes expertise in terms of market modelling, the broader development of the power system and any flow on technical impacts, such as in relation to system security.

Following completion of a REZ design report, AEMO will also have a role in triggering the process to implement a stage of a REZ. The engineering options identified in the REZ design report should be included as credible options in the ISP modelling. Where the REZ project forms part of the optimal development path, AEMO would designate the project as an actionable ISP project as part of a subsequent iteration of the ISP or ISP update.

Alternatively, special arrangements for the development and funding of the REZ may apply. These arrangements would be guided by the policy framework to be developed in Step 2 of the ESB's interim REZ framework and subject to their own Rule change process.

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**Question 10** Do the draft Rules effectively integrate both local and system-wide considerations?

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### 3.5 Funding of REZ design activities

The draft Rules are intended to deliver efficient REZ designs that meet power system needs and integrate effectively with the broader power system. The ESB's initial view is that the REZ design activities should be treated as core planning activities of the TNSP (in their role as JPB). This view implies that REZ design activities do not require any special treatment for the purposes of the economic regulation framework set out in Chapter 6A of the Rules.

As such, the efficient costs of REZ design would be considered by the AER when it assesses the operating expenditure allowance as part of a revenue determination. With respect to the TNSPs' current revenue determinations, if the costs associated with REZ design exceed the minimum cost pass through threshold<sup>7</sup>, then TNSPs may seek an AER determination on a cost pass through under NER 6A.7.3.

If the participating jurisdiction nominates a party other than a TNSP as the JPB, then the Chapter 6A regulatory framework would not apply and alternative funding arrangements would be required.

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**Question 11** Do the proposed funding arrangements support the delivery of the REZ planning framework?

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### 3.6 Transitional arrangements

The ESB proposes that the draft Rules could come into effect immediately on completion of the s90F Rule change process.

The ESB is considering whether transitional arrangements are required for in train REZ developments. The purpose of any transitional arrangements would be to avoid and delay or duplication of work where REZ design processes are already underway.

As the draft Rules are an enhancement to the actionable ISP framework rather than a replacement for it, transitional arrangements may not be necessary for in-train projects. For instance, REZ design activities very similar to those proposed in the draft Rules are already underway in relation to the Central West Orana REZ. AEMO could determine that this project

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<sup>7</sup> In order to meet the minimum threshold for a cost pass through, the TNSP must incur, or be likely to incur, costs that exceed one per cent of its maximum allowed revenues for that regulatory year.

should be an actionable ISP project on the basis of this work, without the need to replicate it in a REZ design report.

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**Question 11**     What, if any, transitional arrangements are required to give effect to the REZ planning framework?

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## 4. Assessment framework

The ESB is required to publish certain information when it conducts a Rule change process in accordance with section 90F of the National Electricity Law. This section describes the ESB's assessment of the REZ planning arrangements as described in Chapter 3 and detailed in draft Rules published in conjunction with this document.

### 4.1 Consistency with the national electricity objective and Strategic Energy Plan

Under the National Electricity Law, the ESB may recommend rules to the Energy Ministers if the following requirements are satisfied:<sup>8</sup>

- the Rules are in connection with energy security and reliability of the NEM or long-term planning for the NEM.
- the Rules are consistent with the national electricity objective; and
- there has been consultation on the Rules in accordance with any requirements determined by the Energy Ministers.

The national electricity objective is “to promote efficient investment in, and efficient operation and use of, electricity services for the longer-term interests of consumers of electricity with respect to

- (a) price, quality, safety, reliability and security of supply of electricity; and
- (b) the reliability, safety and security of the national electricity system.”<sup>9</sup>

The ESB's initial view is that the draft REZ Planning Rules are consistent with the NEO because they will help to efficiently develop the national transmission network and integrate renewable energy into the power system. Given the expected importance of renewable generation in the future supply mix, its efficient connection will minimise future costs for customers. By undertaking more detailed local network design and amending the Rules to require planning bodies to consult with generation developers as they develop detailed proposals for REZs, these provisions would promote efficient investment in the network and generation. The staging of implementation will also assist in managing risks.

The plans must also contribute to the efficient design and development of the shared transmission network as set out in the ISP. The purpose of the ISP is to plan the efficient development of the power system to meet power system needs in the long-term interests of consumers. Power system needs includes the market reliability standard, relevant transmission reliability standards and power system security. The current set of Rule changes refine the planning framework to better equip the JPBs, in collaboration with AEMO, to assess the special issues that arise in relation to REZs.

The ESB is also required by the MCE-approved guidance to consider whether the recommended ISP Rules are consistent with one or more of the high-level outcomes set out in the Strategic Energy Plan.<sup>10</sup> The ESB's draft Rules promote several of the high-level outcomes set out in the Strategic Energy Plan, including:

- Secure electricity and gas system - system planning and development is informed by clear and transparent rules (S01); and
- Reliable and low emissions electricity and gas supply - electricity and gas sectors efficiently deliver at least their share of emissions reduction target/s while ensuring reliable supply (R01)

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<sup>8</sup> Section 90F of the National Electricity Law.

<sup>9</sup> Section 7 of the National Electricity Law.

<sup>10</sup> Council of Australian Governments Energy Council, Strategic Energy Plan, November 2019. Available at: <http://www.coagenergycouncil.gov.au/sites/prod.energycouncil/files/publications/documents/Strategic%20Energy%20Plan%20November%202019%20-%2020200120.pdf>

- Efficient and timely investment in networks - investment solutions are optimal across all resources (N01).

## 4.2 Costs and benefits of the draft REZ planning Rules

The effect of the draft Rules is to require JPBs to prepare REZ design reports that:

- take into account evidence supplied by generation developers and the views of local communities
- explore options for staging; and
- leverages and contributes to the efficient design of the broader power system.

The costs associated with the draft Rules relate to the additional costs incurred by JPBs and AEMO in preparing the REZ design reports, and the additional time required to complete these activities.

The cost of preparing a REZ design report is likely to be less than \$20 million for a large, complex REZ, and less than \$10 million for a smaller project.<sup>11</sup> However, the majority of these costs would be incurred in any event under the existing transmission planning framework. The ESB estimates that the incremental costs associated with the proposed Rule changes are likely to be less than \$5 million per REZ.

Given the need to coordinate with other parties to deliver an efficient solution, and the fact that that the REZ may involve investment worth billions of dollars (when both transmission and generation costs are taken into account), the additional costs of enhanced planning are amply justified.

In terms of the additional time required to conduct the consultation and analysis, the ESB has sought to design a flexible framework that can adapt according to circumstances. Ideally, REZ design reports would be triggered in a timeframe that permits thorough, unhurried consultation. However, the framework includes features to support expedited REZ design report where appropriate:

- the ISP update arrangements can be used to progress REZ projects outside the main ISP cycle; and
- the ESB has adopted light handed approach to describing the process requirements associated with a REZ design report.

On this basis, the ESB considers that the benefits associated with the draft REZ planning Rules exceed the costs.

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<sup>11</sup> For instance, the detailed scoping study for the Central West Orana REZ is expected to cost \$16.2 million. See ARENA, Scoping NSW's Central-West Orana as a Renewable Energy Zone, 23 June 2020. Available at <https://arena.gov.au/news/scoping-nsws-central-west-orana-as-a-renewable-energy-zone/>

## A Summary of consultation questions

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<b>Question 1</b>	If implemented, should the REZ planning arrangements outlined in Chapter 3 be a permanent feature of the regulatory framework or only apply on an interim basis?
<b>Question 2</b>	Should the REZ planning framework promote a staged approach to REZ development?
<b>Question 3</b>	Should the Jurisdictional Planning Body (JPB) be responsible for designing REZs?
<b>Question 4</b>	Should the ISP be the vehicle for triggering a REZ design report?
<b>Question 5</b>	Are the proposed criteria for selecting REZs for planned development appropriate? Are there other criteria that should be taken into account?
<b>Question 6</b>	Do the REZ design principles require amendments or additions?
<b>Question 7</b>	Do the REZ design parameters require amendments or additions?
<b>Question 8</b>	Is the proposed content of the REZ design report appropriate?
<b>Question 9</b>	Is the proposed process for preparing a REZ design report appropriate?
<b>Question 10</b>	Do the draft Rules effectively integrate both local and system-wide considerations?
<b>Question 11</b>	Do the proposed funding arrangements support the delivery of the REZ planning framework?
<b>Question 12</b>	What, if any, transitional arrangements are required to give effect to the REZ planning framework?

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## **B Abbreviations and Technical Terms**

AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
CBA	Cost Benefit Analysis
COGATI	Coordination of Generation and Transmission Investment
ECA	Energy Consumers Australia
ESB	Energy Security Board
JPB	Jurisdictional Planning Body
NEL	National Electricity Law
NEM	National Electricity Market
NER	National Electricity Rules
NSCAS	Network Support and Control Ancillary Services
NTNDP	National Transmission Network Develop Plan
REZ	Renewable Energy Zone
RIT-T	Regulatory Investment Test for Transmission
TNSP	Transmission Network Service Providers

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