

# Network Authorisation Process September 2023

Approach Paper for Authorising Renewable Energy Zone Network Infrastructure Projects



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# ACKNOWLEDGEMENT TO COUNTRY

AEMO Services would like to acknowledge the Traditional Owners of country throughout Australia and recognise their continuing connection to land, water and culture.

We pay our respect to their Elders, past and present.

# **Important notice**

# PURPOSE OF THIS DOCUMENT

AEMO Services Limited (AEMO Services) publishes this Network Authorisation Process Approach Paper to set out its approach, as Consumer Trustee, to assessing renewable energy zone (REZ) network infrastructure project recommendations made by the Infrastructure Planner under the Electricity Infrastructure Investment Act 2020 (NSW).

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The contents of this document are for information purposes only. This document is not intended to provide any advice or imply any recommendation or opinion constituting advice.

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# **VERSION CONTROL**

Version	Release date	Changes
1.0	22/09/2022	_

# 1. Introduction

# 1.1 Background

The electricity sector in New South Wales (**NSW**) is embarking on a period of significant change and transformation to deliver cheap, clean, and reliable electricity as coal-fired power stations retire. To achieve this, significant investment is needed in new energy generation, storage, and network infrastructure. To enable this investment the NSW Government has declared five renewable energy zones under the Electricity Infrastructure Roadmap.<sup>1</sup> These are:

- Central-West Orana
- Illawarra
- New England
- South West
- Hunter-Central Coast

Renewable Energy Zones are the modern-day equivalent of traditional power stations. They combine generation, transmission, storage and system strength services to ensure a secure, affordable and reliable energy system. This network infrastructure is necessary to connect new generation and storage in the renewable energy zones to the rest of the grid, and to ensure there is enough available capacity in the network to enable energy to be transported to where it is needed.

The NSW Electricity Infrastructure Roadmap sets out the State's 20-year plan for transforming NSW's electricity system. The Roadmap is enabled by the *Electricity Infrastructure Investment Act 2020* (**Ell Act**), which creates a framework for the delivery of network projects in renewable energy zones (**REZ network infrastructure projects**). In addition to other Objects defined in the Ell Act,<sup>2</sup> the framework is intended to ensure the timely delivery of REZ network infrastructure projects that are in the long-term financial interests of NSW electricity consumers,<sup>3</sup> and in a way that benefits host communities.

## Establishment of key roles

The EII Act framework establishes three statutory roles for supporting the delivery of REZ network infrastructure projects. The statutory roles include:

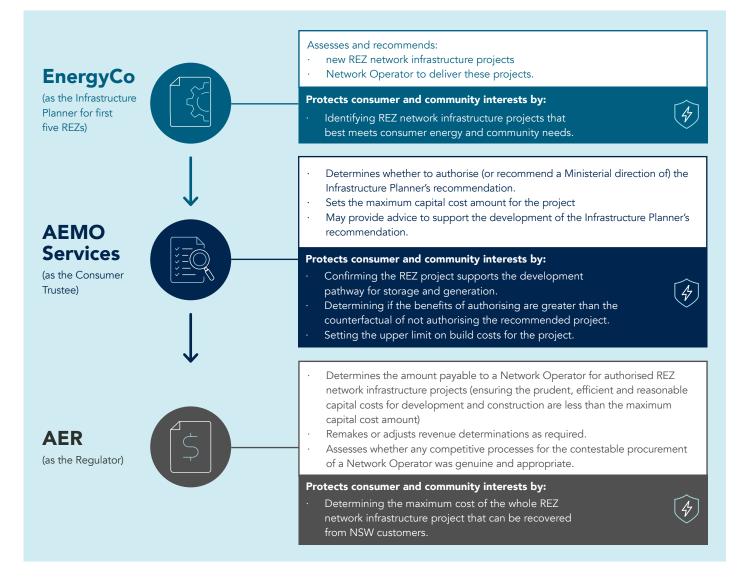
- An Infrastructure Planner role. For the first five renewable energy zones this statutory role will be performed by Energy Corporation NSW (**EnergyCo**). For any future renewable energy zones, this role may be performed by different entities. Consequently, throughout this document we generally refer to the statutory role of the Infrastructure Planner rather than the specific entity performing the role.
- A Consumer Trustee role. AEMO Services has been appointed to perform this role. References to AEMO Services throughout this document are in relation to AEMO Services performing its statutory functions as the Consumer Trustee.
- A Regulator role. The Australian Energy Regulator (**AER**) has been appointed to perform this role. References throughout this document to the AER are in relation to it undertaking its statutory function as the designated Regulator under the EII Act as opposed to its other regulatory functions under the National Electricity and Gas legislation and associated regulations.

The key roles and responsibilities of these entities in performing their statutory functions for REZ network infrastructure projects is outlined in Figure 1 below. An overview of the process for delivering REZ network infrastructure projects, indicating the different functions performed by the roles established under the EII Act is discussed further in section 2.1 and summarised in Figure 1.

<sup>1</sup> See section 23(1), Electricity Infrastructure Investment Act 2020.

<sup>2</sup> See section 3, Electricity Infrastructure Investment Act 2020.

<sup>3</sup> See section 60(3), Electricity Infrastructure Investment Act 2020.



#### What is network authorisation?

The network authorisation process is one of the consumer protections built into the EII Act framework. The network authorisation process is undertaken independently by AEMO Services (in its statutory role as the Consumer Trustee) to help ensure REZ network infrastructure projects are in the long-term interests of NSW electricity consumers and are consistent with the Development Pathway, outlined in <u>AEMO Services' Infrastructure Investment Objectives Report</u>.

The authorisation of REZ network infrastructure projects defines the scope of the project, sets the upper limit on the amount of capital costs that the Regulator (Australian Energy Regulator) determines should be payable to the Network Operator and allows the Regulator to make its determination. This enables the recommended Network Operator to be paid for carrying out the project by the <u>Scheme Financial Vehicle</u>, with costs recoverable from NSW energy consumers.

In authorising a REZ network infrastucture project that is recommended by the Infrastructure Planner, the Consumer Trustee must be satisfied that its decision is in the long term interests of consumers against a counterfactual where the recommended project does not proceed.

# 1.2 Purpose

The Network Authorisation Process and Approach Paper (**this Paper**) focuses on the processes and approach AEMO Services will adopt in performing its role and functions under the EII Act to support the timely and efficient delivery of REZ network infrastructure projects.

This Paper is intended to provide transparency to stakeholders on how AEMO Services will exercise its functions under the EII Act and outlines:

- The framework for delivering REZ network infrastructure projects and where network authorisation fits within this broader process (see section 2.1).
- Key touchpoints in the delivery of REZ network infrastructure projects where stakeholders can provide feedback and input (see section 2.2).
- The different roles and responsibilities of the Consumer Trustee, Infrastructure Planner, and Regulator in supporting the overarching delivery of REZ network infrastructure projects under the EII Act (see section 2.1.).
- The approach and processes that underpin the AEMO Services' exercise of its function under the EII Act to authorise REZ network infrastructure projects (see section 3).

The intended approaches and processes set out in this paper provide a general framework under which AEMO Services will exercise its authorisation function. AEMO Services retains the discretion to apply flexibility to its approach and process to reflect the unique circumstances of each REZ to meet the objects of the EII Act and other requirements set out in the EII Act and *Electricity Infrastructure Investment Regulation 2021* (**the Regulations**).

The approach and processes outlined in this Paper build upon an earlier draft and consultation circulated to stakeholders for comment and feedback in 2022. Figure 2 below outlines what we heard from stakeholders and how AEMO Services has addressed feedback in this document.

#### Figure 2 – Feedback from stakeholders addressed by AEMO Services in this paper

What we heard	What we have done
Greater clarity on the responsibilities of different regulatory bodies in delivering REZ projects	We have added a new section that sets out key roles and responsibilities of the different regulatory bodies in supporting the delivery of REZ network infrastructure projects under the Ell Act to promote greater awareness of these roles. This is set out in section 2.1 of the NAPAP.
Clarifying opportunities for stakeholder engagement	We have highlighted opportunities for stakeholder engagement and feedback throughout the different stages involved in delivering REZ projects in section 2.2 of the NAPAP to provide clarity on engagement opportunities.
Greater clarity and transparency on process and decision-making	We have sought to include more detail on the decision-making criteria that we will apply and key considerations we will take into account in our authorisation decision-making in section 3.1 and 3.2 of the NAPAP to improve transparency.
Greater clarity and transparency on how the Consumer Trustee undertakes cost benefit analysis	We have included more detail in how it will undertake our cost benefit analysis and assessment of long-term financial interests of NSW customers in section 3.3 and 3.4 of the NAPAP to provide greater transparency.

This Paper may be reviewed and updated from time to time, to reflect lessons learnt or opportunities for improvement that are identified as the framework and our experience in REZ network infrastructure projects matures.

AEMO Services values stakeholder input and where material changes are made to this paper, intends to engage with stakeholders on these changes.

# 1.3 Document structure

The Paper is structured around two main parts:

- Delivering REZ network infrastructure projects this section is aimed at providing an overview of the process for delivering REZ network infrastructure projects and outlines the different roles and responsibilities performed by the statutory roles established by the EII Act. This section also details key opportunities for stakeholders to provide feedback to help inform the delivery of REZ network infrastructure projects.
- Authorisation process and approach this section sets out the detailed process and criteria AEMO Services intends to adopt in exercising its functions under the EII Act to authorise renewable energy zone projects or recommending the Minister direct a Network Operator to carry out a REZ network infrastructure projects.

A summary of key terms and definitions used throughout this paper is included in Appendix A. This is intended to provide further context and detail on key terminology used throughout this Paper which have a defined meaning under the *EII Act*.

# 1.4 Scope

This Paper does not cover:

- Detailed approaches or processes for all steps involved in supporting the delivery of REZ network infrastructure projects under the EII Act outside of the authorisation process. A summary of these are described in 'Delivering Network Infrastructure Projects' section for context.
- The specific approaches and processes to be adopted by EnergyCo, as Infrastructure Planner, or the AER, as Regulator, in undertaking their respective functions under the EII Act framework.
- Approaches or processes for delivering priority transmission infrastructure projects, which are not subject to the authorisation process.<sup>4</sup>

<sup>4</sup> The Consumer Trustee is not involved in priority transmission infrastructure projects. This is matter for the Minister and the Infrastructure Planner; see, sections 32 and 36 of the EII Act and regulations 43 45(1)(b) of the Regulations.

# 2. Delivering REZ network infrastructure projects

# 2.1 Overview of Ell Act framework

The EII Act introduces a NSW-specific framework for identifying, developing and delivering network infrastructure projects in renewable energy zones in NSW, and determining the costs for these projects that can be recovered from electricity consumers. These projects are known as REZ network infrastructure projects. The intent of this NSW-specific framework is to provide a process for regulatory approval of network infrastructure investment in REZs that is streamlined and more certain, relative to equivalent processes under the National Electricity Rules (**NER**).

Under the EII Act, a REZ network infrastructure project is a project that forms part of a REZ and consists of network infrastructure of a class prescribed by the Regulations.<sup>5</sup> A REZ may include more than one REZ network infrastructure project. Figure 3 below, provides an overview of the EII Act framework for delivering REZ network infrastructure projects. It illustrates the different roles and functions of the Infrastructure Planner, Consumer Trustee, and Regulator, and shows how these roles fit within the broader end-to-end process of planning and delivering REZ network infrastructure projects. The steps in this process are described in more detail below.

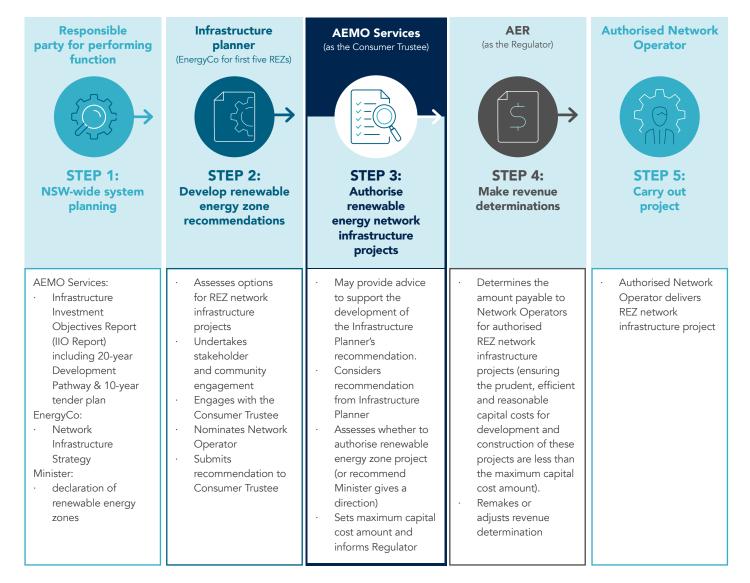


Figure 3 – Overview of process for delivering REZ network infrastructure projects

5 Clause 17 of the Regulations sets out the classes of network infrastructure.

# Step 1: System planning for NSW

System planning forms an important part of the delivery of REZ network infrastructure projects for REZs identified under the EII Act. This includes:

- Infrastructure Investment Objectives (IIO) Report which sets a Development Pathway and 10-year tender plan for generation, long-duration storage and firming infrastructure (prepared by AEMO Services)
- Network Infrastructure Strategy which sets out a 20-year strategy for coordinating network infrastructure in renewable energy zones (prepared by EnergyCo)
- The declaration of Renewable Energy Zones by the Minister which set out the geographic location of the zone as well as its intended network capacity.

#### Step 2: Development of REZ network infrastructure project options and recommendations

Once a REZ has been declared, the Infrastructure Planner must:

- 1. assess different options for REZ network infrastructure projects,
- 2. identify and recommend its preferred REZ network project, staging and sequencing of the project and how the project should be procured and funded,
- 3. demonstrate how the preferred REZ network project best meets the Objects of the EII Act and the long-term financial interests of NSW electricity consumers
- 4. consult with AEMO, relevant operators in the REZ (generally Transgrid and/or relevant distribution network operators) and each local council in the REZ.
- 5. identify a preferred Network Operator to deliver the project.

AEMO Services may also provide advice to help inform the Infrastructure Planner's assessment of options.<sup>6</sup> Once it has identified a preferred project and Network Operator, the Infrastructure Planner recommends these to AEMO Services.

## Step 3: Authorisation of REZ network infrastructure project(s)

Once a recommendation has been received by the Infrastructure Planner, AEMO Services must decide whether to authorise the network operator to carry out the REZ network infrastructure project. If a direction is required to achieve the infrastructure investment objectives, AEMO Services may decide to recommend the Minister direct the network operator.

AEMO Services independently assesses the recommendation against the requirements of the EII Act and Regulations. This process and key steps involved are described in further detail in section 3.1. At its core this process ensures the REZ network infrastructure project is in the long-term financial interests of NSW electricity consumers.<sup>7</sup> In particular, that the benefit of authorising the recommended REZ network infrastructure project is greater than the counterfactual of not authorising the recommended REZ network infrastructure project.

In assessing whether to authorise or recommend a Ministerial direction, AEMO Services does not intend to engage in its own fact finding exercise in considering the contents of the Infrastructure Planner recommendation, with the exception of modelling to determine whether the recommendation is in the long-term financial interests of NSW electricity consumers<sup>8</sup>. Rather AEMO Services will satisfy itself that the information provided by the Infrastructure Planner (including information pertaining to consultation undertaken to inform its recommendation), is adequate to properly make a decision and may request additional information where required.

<sup>6</sup> See section 60(4) of the EII Act.

<sup>7</sup> See section 60(3) of the EII Act.

<sup>8</sup> See section 31(3) of the EII Act.

Where the information is adequate, AEMO Services aims to decide whether to authorise or recommend the Minister for Energy direct a REZ network infrastructure project within 60-business days. Once AEMO Services has decided to authorise, it must then determine the maximum cost for the development and construction of the project that can be recovered by the Network Operator (**maximum capital cost amount**).<sup>9</sup> This is provided to the Regulator on a confidential basis.<sup>10</sup> Further details on the approach AEMO Services intends on taking in calculating the maximum capital cost amount are outlined in section 3.3.4.

#### **Step 4: Revenue determinations**

Once a REZ network infrastructure project has been authorised, the AER must determine the amount payable to the Network Operator for carrying out the project. The AER's revenue determination protects consumers by ensuring the Network Operator can only recover the prudent, efficient, and reasonable costs associated with the delivery of REZ network infrastructure projects.

As part of determining the total allowable costs that can be recovered from NSW electricity consumers for the REZ network infrastructure project, the AER must ensure that the capital cost component of the infrastructure project costs (i.e. the development and construction costs) do not exceed the maximum capital cost amount set by AEMO Services. While the AER determines the amount payable to the Network Operator, the intent of the maximum capital costs amount is to set an upper limit on the allowed capital costs that reflects the point at which the capital costs of the project would exceed its benefit to NSW electricity consumers.<sup>11</sup> This cost is kept confidential between AEMO Services and the AER to ensure the Network Operator does not increase the amount it seeks to recover for the project up to the point of the maximum capital cost amount where these costs are not prudent efficient and reasonable. Further details on this are discussed in sections 3.3 and 3.4.

The AER makes its revenue determination in accordance with its Revenue Determination Guidelines.<sup>12</sup> The AER applies different processes for determining the amount payable to the Network Operator based on whether the authorisation relates to a contestable or non-contestable REZ network infrastructure project.

#### Step 5: Project delivery

Once the AER determines the amount payable for carrying out the REZ network infrastructure project, the Scheme Financial Vehicle then pays the Network Operator. The Scheme Financial vehicle collects the revenue it pays to authorised Network Operators from distribution network service providers in accordance with the AER's yearly contribution determination. The distribution network service providers then pass these costs onto their customers via network charges. The authorised Network Operator then delivers the project in accordance with the terms of its authorisation.

<sup>9</sup> See section 31(2) of the EII Act.

<sup>10</sup> See section 31(3) of the EII Act.

<sup>11</sup> Legislative Assembly Hansard, Electricity Infrastructure Investment Bill 2020: Second Reading Speech, 10 November 2020.

<sup>12</sup> See AER, Revenue determination guideline for NSW contestable network projects, August 2022; and AER, Transmission Efficiency Test and revenue determination final guideline non-contestable network infrastructure projects, April 2023.

# 2.2 Stakeholder input on REZ Network Infrastructure Projects

The EII Act framework for delivering REZ network infrastructure projects is intended to support timely delivery of projects by streamlining processes relative to the current national network investment and cost recovery frameworks. The framework contains two key touchpoints for consultation on REZ network infrastructure projects, these are in relation to the development of the Infrastructure Planner's recommendation, and the AER's consultation for determining the amount payable to the Network Operator.

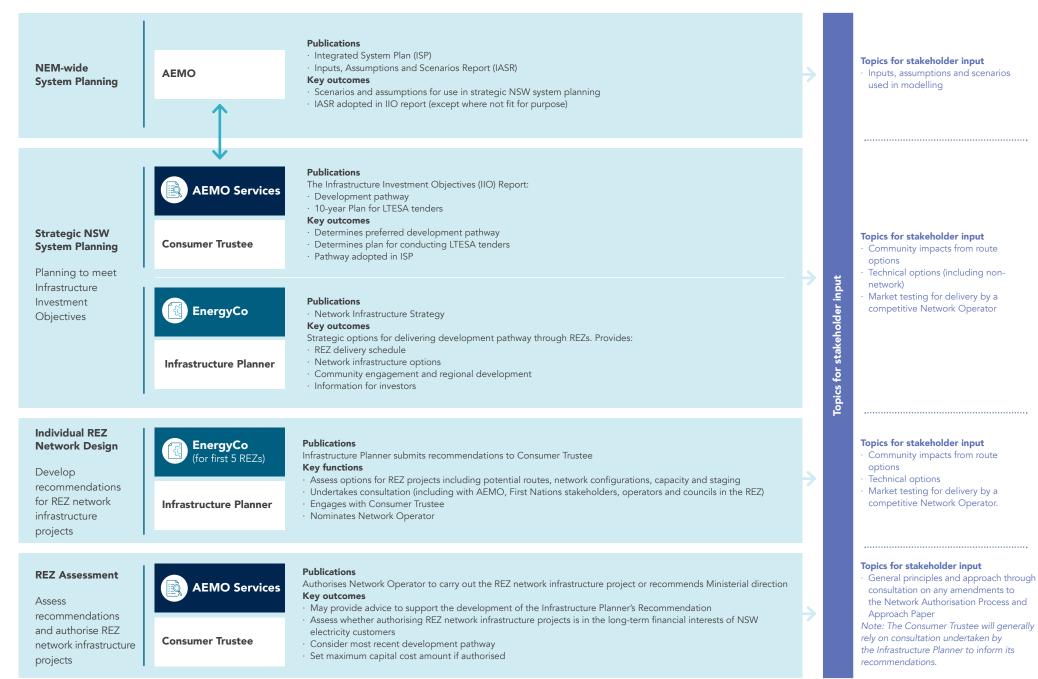
Consistent with the objective of streamlining processes relative to the national network investment framework and the Infrastructure Planner's consultation obligation, AEMO Services does not intend on undertaking public consultation in making its authorisation decisions. Instead, as part of our authorisation decision-making criteria, we will take into account how the Infrastructure Planner's recommendation has been informed by consultation in accordance with the First Nations Guideline and Renewable Energy Sector Board Plan (**RES Board Plan**). We will also publish a notice of authorisation decision, to provide transparency on the outcome of our authorisation assessment.

There are multiple opportunities for stakeholders to provide input to help inform the delivery of REZ network infrastructure projects, as set out in Figure 4 below. These include:

- AEMO's public consultation on its Integrated System Plan (**ISP**) and Inputs Assumptions and Scenarios Report. These documents are publicly consulted on and form a key input into strategic NSW system wide planning.
- AEMO Services public consultation on the development of its Infrastructure Investment Objective Report (IIO Report). This determines the preferred Development Pathway that must be considered by the Infrastructure Planner in developing its recommendations and is a criteria that AEMO Services has regard to in making its authorisation decision-making.<sup>13</sup>
- EnergyCo's public consultation on the development of its Network Infrastructure Strategy. This document complements AEMO Services IIO Report and sets out the 20-year strategy for the practical coordination of NSW network infrastructure to connect new generation and storage in the five declared REZ.
- The Infrastructure Planner's targeted consultation with AEMO, REZ operators, First Nations people and REZ local council areas to inform the development of its recommendation.<sup>14</sup>
- The development of AEMO Services Network Authorisation Process and Approach Paper has been informed by
  public consultation on the draft Network Authorisation Guidelines. AEMO Services intends on undertaking public
  consultation in the event that it identifies the need to make any material change to the approach and processes
  outlined in this paper.
- The AER's public consultation on the revenue determination for REZ network infrastructure projects.

13 Refer to section 3.3.1 for further details on AEMO Services authorisation decision-making criteria.14 See section 30 of the EII Act.

#### Figure 4 – Stakeholder engagement under NSW EII Act framework for REZ network infrastructure projects



# 3. Authorisation process and approach

# 3.1 Overview and process

This section sets out the process and approach AEMO Services will take in considering and making decisions about responding to recommendations from the Infrastructure Planner, under its EII Act functions.

AEMO Services intends on applying the processes and approach set out in this paper flexibly to reflect the unique circumstances of each REZ and to meet the requirements set out in the EII Act and Regulations. While the precise application may differ on a case-by-case basis, this paper aims to provide greater clarity in how the functions are expected to be performed.

In developing its approach for assessing and making decisions about REZ network infrastructure projects, AEMO Services has had regard to:

- How to best meet the statutory requirements for these decisions, including acting in the long-term financial interests of NSW electricity consumers.
- Operational ways of supporting timely delivery of REZ network infrastructure projects, including by working cooperatively with the Infrastructure Planner to streamline processes.
- The need to act independently in applying its expertise in assessing recommendations from the Infrastructure Planner against the criteria set out in this Section 3.

#### 3.1.1 Process

AEMO Services' process for considering and making decisions on recommendations is summarised in Figure 5 below.

#### Figure 5 – AEMO Services process for considering and responding to recommendations





#### Engage with the Infrastructure Planner (EnergyCo for first five REZs)

- AEMO Services will engage with the Infrastructure Planner on the Infrastructure Planner's development of recommendations for REZ network infrastructure projects, focused on the Objects of the Act and the long-term financial interests of NSW electricity customers.
- See section 3.2.1 below.

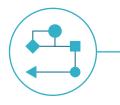
#### Provide advice (optional)

AEMO Services may provide formal advice to the Infrastructure Planner and Minister in relation to a REZ and proposed REZ network infrastructure projects in accordance with section 60(4)(a) of the EII Act. See section 3.2.2 below.



#### **Consider the recommendation**

- Upon receipt of the Infrastructure Planner's recommendations, AEMO Services will consider the recommendations against the requirements of the EII Act and Regulations and decide whether to authorise the project.
- See the authorisation decision making criteria in section 3.3.1 below.



#### Determine whether to authorise the project or recommend a direction

- AEMO Services will decide whether to authorise the REZ network infrastructure project based on the Infrastructure Planner's recommendation. Alternatively, AEMO Services may decide to recommend the Minister give a direction to a Network Operator to carry out the project.
- · See section 3.3.2 below in relation to authorisation decisions and section 3.4 in relation to directions.



#### Determine the contents of the authorisation or direction recommendation

- If AEMO Services authorises the project, it will determine the contents of the authorisation, for example the scope of the project, the identity of the Network Operator and any conditions of the authorisation. If AEMO Services decides to recommend the Minister give a direction, it will determine the contents of that recommendation.
- · See section 3.3.2 below in relation to authorisation decisions and section 3.4 in relation to directions.



#### Set a maximum capital cost amount

- If AEMO Services authorises the project, it must set a maximum amount for the capital costs for development and construction of the project and provide that amount to the AER. This amount is confidential to AEMO Services and the AER. A maximum capital cost amount does not apply to directions by the Minister.
- $\cdot$  See sections 3.3.3 and 3.5 below.

## 3.1.2 Considering the Infrastructure Planner's recommendations

AEMO Services is required to consider the Infrastructure Planner's recommendations in making its decision to authorise or recommend that the Minister direct a REZ Network Infrastructure Project be carried out. AEMO Services will not develop or propose an alternative project or vary elements of the Infrastructure Planner's recommendations in relation to the project. AEMO Services role is to determine whether it would be appropriate to authorise the recommended REZ network infrastructure project in accordance with the terms of the recommendation, having regard to criteria discussed in section 3.3.1.

#### 3.1.3 Multiple authorisations

A REZ may involve more than one REZ network infrastructure project. For example, there may be separate REZ network infrastructure projects within a single REZ for:

- new greenfield network infrastructure;
- enabling works by an incumbent Network Operator to connect the REZ to the existing network (where the greenfield infrastructure is delivered by a different Network Operator);
- augmentations to the existing network by one or more incumbent network service providers to unlock transfer capacity within a REZ;
- future or optional augmentations or expansions where the REZ is developed in stages.

Where a REZ involves more than one REZ network infrastructure project, each project will have a separate authorisation by AEMO Services (or recommendation for a Ministerial direction) and a separate maximum capital cost amount.<sup>15</sup>

## 3.1.4 Timing

AEMO Services aims to make its authorisation decision within 60-business days from the later of:

- a) the date AEMO Services receives the recommendation; and
- b) the date AEMO Services receives any additional information it has requested from the Infrastructure Planner.

AEMO Services ability to meet this timeframe is contingent on it having a clear view over key aspects of the Infrastructure Planner recommendation ahead of receiving the final recommendation. This may include AEMO Services being able to undertake modelling to support its quantitative analysis of the costs and benefits of the REZ network infrastructure project and being provided the necessary information from the Infrastructure Planner to do so.

Where additional time for consideration is required, AEMO Services intends to notify the Infrastructure Planner of this in writing and may also notify other stakeholders as appropriate.

Where it is identified that additional information is required, AEMO Services may request this information in writing and explain why the additional information may be necessary for it to make its authorisation decision. In considering whether to request additional information, AEMO Services may consider the costs to the Infrastructure Planner and the time implications of collecting this information.

## 3.1.5 Stakeholder input

AEMO Services expects the Infrastructure Planner's recommendations to be informed by consultation and stakeholder engagement. In exercising its functions to authorise or recommend a Ministerial direction under the EII Act, AEMO Services will rely on information provided by the Infrastructure Planner regarding consultation with stakeholders. To support timely decision-making within the 60-business day target timeframe noted above and avoid duplication, AEMO Services does not intend to undertake public consultation on its authorisation decision.

<sup>15</sup> See section for how the Consumer Trustee intends to determine this amount and apportion costs and benefits between projects.

The Infrastructure Planner's recommendation is expected to explain how feedback from consultation was incorporated into the recommendation, including feedback from AEMO, relevant Network Operators and local councils.<sup>16</sup> AEMO Services will have regard to this feedback when considering the recommendation and deciding whether to authorise the project.

AEMO Services may also, where it considers appropriate, seek advice from relevant subject matter experts to help inform its authorisation decision-making.

# 3.2 Engagement with the Infrastructure Planner and providing advice

#### 3.2.1 Engagement on the Infrastructure Planner's recommendations

The Infrastructure Planner and AEMO Services each perform distinct roles and functions under the EII Act and are required to act independently of one another in discharging their statutory functions.

To help promote the timely delivery of REZ network infrastructure projects, AEMO Services intends to work in a coordinated and cooperative way with the Infrastructure Planner (whilst still maintaining its independence) during the development of REZ network infrastructure project recommendations.

AEMO Services will seek early engagement with the Infrastructure Planner in its development of REZ network infrastructure project recommendations. Early engagement between AEMO Services and the Infrastructure Planner is particularly important during the design and procurement phases, which substantially shape the development of the Infrastructure Planner's recommendation to AEMO Services. This is because a number of project development or procurement decisions are likely to be made during this process which may be difficult for the Infrastructure Planner to revise without significant cost and delay implications after it has submitted its recommendation to AEMO Services. Consequently, early engagement will allow AEMO Services to provide feedback on key aspects of the recommendation at a stage in the process where there is still a meaningful and practical opportunity for the Infrastructure Planner to implement this feedback if it chooses.

This approach also supports timely decision-making by helping to ensure that the Infrastructure Planner recommendations contain the information required for AEMO Services to decide whether it is appropriate to authorise (or recommend the Minister make a direction) the REZ network infrastructure project. This approach is intended to minimise the need for AEMO Services to request additional information and minimise the risk of delays to the process, while retaining the independence of AEMO Services decision making.

## 3.2.2 AEMO Services advice to the Infrastructure Planner

To assist in forming its REZ network infrastructure project recommendations, the Infrastructure Planner may request the advice from AEMO Services under its EII Act or Regulations advisory functions.<sup>17</sup>

For example, advice may be sought where the different network options being considered by the Infrastructure Planner have materially different consumer benefits. In this case, AEMO Services may conduct modelling and other assessments to indicate the consumer benefits of, and risk associated with, these options.

Typically, this advice will be provided to the Infrastructure Planner prior to making its recommendation.

Any advice provided does not in any way fetter AEMO Services' discretion or decision-making in respect of its decision to authorise or recommend that the Minister direct a REZ network infrastructure project under section 31 of the EII Act.

17 See, section 60(3) of the EII Act and clause 18 of the Regulations.

<sup>16</sup> Section 30(3) of the EII Act requires the Infrastructure Planner to consult with AEMO, relevant operators in the REZ and local councils in the REZ when making recommendations.

# 3.3 Authorisations

# 3.3.1 Decision making criteria

AEMO Services must consider recommendations submitted to it by the Infrastructure Planner about REZ network infrastructure projects and decide whether to authorise the project or recommend the Minister make a direction.

The criteria AEMO Services will apply in deciding whether to authorise or recommend a Ministerial direction are summarised below. Additional criteria apply when considering whether to recommend that the Minister direct a Network Operator to carry out a project, which are discussed in section 3.3.2.

#### Figure 6 – Consumer Trustee decision making criteria for authorisation

To authorise a REZ network infrastructure project (or recommend a Ministerial direction), AEMO Services needs to:





be satisfied that authorising the project or recommending a Ministerial direction would be in the longterm financial interests of NSW electricity customers



consider the Development Pathway in the latest IIO Report



be satisfied that authorising the project or recommending a Ministerial direction would be consistent with the objects of the EII Act

## **Complete information**

AEMO Services will review the recommendations to check they provide sufficient information to enable it to make an authorisation decision under the EII Act and Regulations.

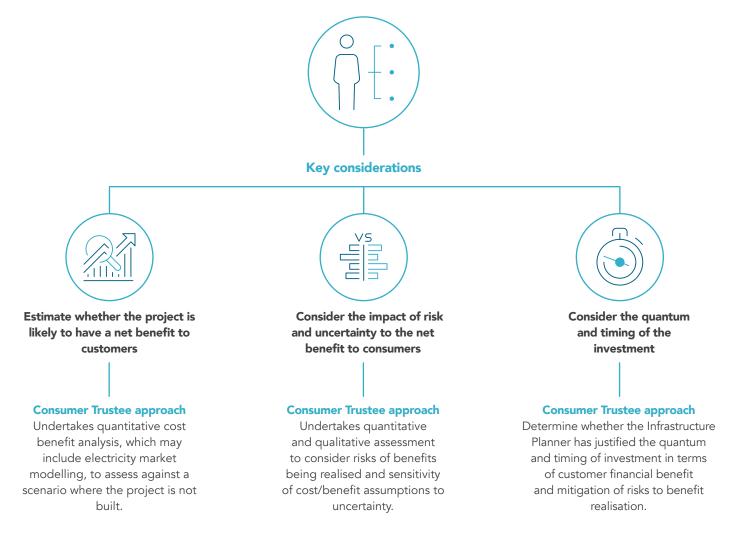
AEMO Services does not exercise a compliance role and will not assess whether the Infrastructure Planner's recommendations comply with the EII Act and Regulations.

#### Long-term financial interests of NSW electricity consumers

AEMO Services will assess whether making an authorisation decision would be in the long-term financial interests of NSW electricity consumers.<sup>18</sup> AEMO Services intends to undertake the analysis described below and summarised in Figure 7 to inform its assessment of this criterion.

In weighing up the considerations outlined here, AEMO Services generally expects that, in the context of the energy transition, the risk to electricity consumers of under-investment in new network infrastructure will be greater than the risk of over-investment. This is because the increase in wholesale costs associated with a lack of available network, generation and storage capacity at high-demand periods will generally outweigh the cost-savings from deferring network investment.

#### Figure 7 – Approach for assessing long-term financial interests of consumers



## 1) Estimate whether the project is likely to have a net benefit to consumers

AEMO Services will undertake quantitative cost-benefit analysis, which may include electricity market modelling, to estimate whether the recommended project has a net financial benefit to NSW electricity consumers under the most likely scenario. AEMO Services will generally adopt inputs and assumptions that align with the 'most likely' scenario from AEMO's most recent Integrated System Plan (ISP) or from more recent AEMO ISP assumptions at the time of modelling (for example, draft ISP or draft or Final Inputs Assumptions and Scenarios Report). The intended approach to this analysis is discussed in Section 3.4, including adaptations of the approach for different types of REZ network infrastructure projects. This quantitative analysis will also be used to inform the maximum capital cost amount notified to the AER as explained in Section 3.3.4 below.

## 2) Consider the impact of risk and uncertainty to the net benefit to consumers

AEMO Services will consider the impact of risk and uncertainty to the estimated net benefit.

Where the recommended REZ network infrastructure project is estimated to have a positive net benefit, AEMO Services will consider risks to the realisation of the net benefit. In considering these risks, AEMO Services will look to satisfy itself that the Infrastructure Planner's recommendations have identified relevant risks and reasonably formed a view that these do not present significant risk to the realisation of a net benefit to NSW electricity consumers.

Where the recommended REZ network infrastructure project is estimated to have a negative net benefit to consumers, particularly where this is marginal, AEMO Services will consider the sensitivity of the estimate to assumptions where there is a high degree of uncertainty. This aligns with the principle noted above, that generally AEMO Services will consider the risk of under-investment in new network infrastructure will be greater than the risk of over-investment. Further consideration of sensitivities may be undertaken using quantitative or qualitative analysis with regard to the long-term financial interests of NSW electricity consumers.

Having regard to these qualitative or quantitative considerations, AEMO Services will then form a view on whether and how the estimate of net benefits should be adjusted or considered in its authorisation decision.

## 3) Consider risks that the quantum and timing of the investment are not justified

In addition to assessing whether the project is likely to have a net financial benefit to NSW electricity consumers, AEMO Services will consider whether recommendations made by the Infrastructure Planner create risks of over-investment, under-investment, premature or delayed investment. This will include consideration of the recommendations by the Infrastructure Planner, such as how REZ network infrastructure project design choices promote affordability outcomes.

AEMO Services will look to satisfy itself that the Infrastructure Planner's recommendations have reasonably justified the quantum and timing of the investment by reference to consumer financial benefits or the mitigation of risks to the realisation of these benefits, including through achievement of the objects of the EII Act. For example, where the Infrastructure Planner's recommended staging and sequencing brings forward investment, this may be able to be reasonably justified on the basis that this staging and sequencing will foster local community support,<sup>19</sup> or deliverability considerations.

## **Development Pathway**

AEMO Services will consider the Development Pathway in the latest IIO Report in making its decision regarding a REZ network infrastructure project.

Generally, this will occur via the quantitative analysis undertaken under the long-term financial interests of consumers criterion above and further described in 3.4. This analysis will generally compare the cost savings that accrue to NSW consumers where the REZ network infrastructure project is built, to a REZ counterfactual where the REZ network infrastructure project is not built, with the development pathway met in both cases.

In some cases, AEMO Services may decide to adopt an update to the Development Pathway in its most recent IIO Report in this modelling, where it considers that this will produce results that provide the best view of whether a decision is in the long-term financial interests of NSW electricity consumers. This is likely to be the case where the Development Pathway in the most recent IIO report is outdated, due to changes in the market or to assumptions.

#### First Nations Guidelines and RES Board Plan

Section 4 of the EII Act requires the Minister to issue guidelines about consultation and negotiation with the local Aboriginal community in relation to relevant REZ network infrastructure projects for the purpose of increasing employment and income opportunities for the local Aboriginal community (**First Nations Guidelines**).

Section 7 of the EII Act requires the Minister to establish the NSW Renewable Energy Sector Board (**RES Board**). The RES Board's functions including preparing a plan for the NSW renewable energy sector, including the manufacture and construction of infrastructure in the renewable sector (**RES Board Plan**).

The EII Act further provides that AEMO Services may impose a condition on an authorisation to give effect to the First Nations Guidelines or the RES Board Plan or recommend that such a condition be included in a Minister's direction.<sup>20</sup> AEMO Services is also required to consider the RES Board Plan in exercising its functions under the EII Act.<sup>21</sup>

AEMO Services will consider the First Nations Guidelines and RES Board Plan when assessing the Infrastructure Planner's recommendations.

In making its decision, AEMO Services intends to:

- compare the recommendations in the First Nations Guidelines and RES Board Plan to the commitments made by the Network Operator to give effect to these documents;
- consider whether the proposed commitments support or create risks for the achievement of the other criteria for authorisation. For example, do the commitments support the achievement of the Objects of the Act and the longterm financial interests of NSW electricity consumers;
- consider whether to impose any conditions on an authorisation (or recommend that conditions be imposed on the Minister's direction) in relation to these issues.

While it is open to AEMO Services in all cases to impose or recommend conditions to give effect to the First Nations Guidelines and RES Board Plan, generally AEMO Services will consider it preferable that the commitments made by a Network Operator to give effect to these documents are negotiated and enforced by the Infrastructure Planner through contractual arrangements.

#### 21 Section 9(1) Ell Act.

<sup>20</sup> Sections 4(5)(b) and 9(4) EII Act.

# **Objects of the Ell Act**

All entities established or appointed under the EII Act are required to exercise their functions in a way consistent with the Objects set out in section 3 of the EII Act.

The objects of the EII Act are summarised in Table 1 below.

#### Table 1 - Objects of the Ell Act

#### **Objects of the Ell Act**

- · to improve the affordability, reliability, security and sustainability of electricity supply
- to co-ordinate investment in new generation, storage, network and related infrastructure
- to encourage investment in new generation, storage, network and related infrastructure by reducing risk for investors
- · to foster local community support for investment in new generation, storage, network and related infrastructure
- to support economic development and manufacturing
- to create employment, including employment for Aboriginal and Torres Strait Islander people
- $\cdot$   $\,$  to invest in education and training
- · to promote local industry, manufacturing and jobs
- · to promote export opportunities for generation, storage and network technology

#### Additional objects of Parts 4 to 6 of the EII Act

- to increase employment and income opportunities for Aboriginal and Torres Strait Islander people in NSW
- to promote consultation and negotiation with the traditional Aboriginal owners of land on which generation, storage and network infrastructure is proposed to be constructed or operated under the Act

AEMO Services will review evidence provided by the Infrastructure Planner to assess whether authorising the project would be consistent with the objects of the EII Act. In making this assessment, AEMO Services will identify and consider trade-offs made by the Infrastructure Planner between individual objects.

In making its authorisation decision, AEMO Services will also consider the extent to which not authorising, or delaying authorisation to seek further information, is consistent with the objects.

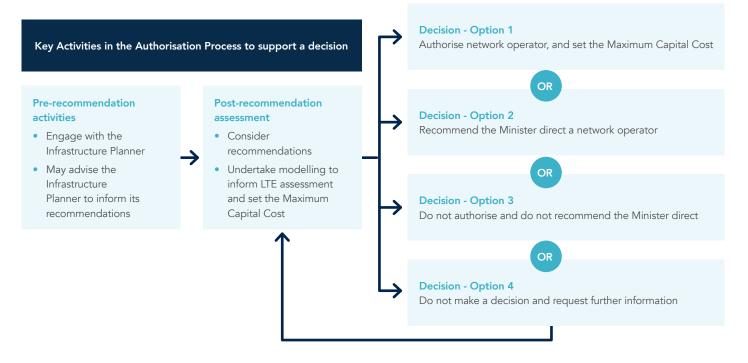
## 3.3.2 Decision process

#### **Decision options and process**

Figure 8 highlights the general process AEMO Services adopts and decision options available to AEMO Services in relation to receiving a recommendation from the Infrastructure Planner. As shown after applying the decision-making criteria above, AEMO Services can decide to:

- authorise a Network Operator to carry out the REZ network infrastructure project based on the contents of the Infrastructure Planner's recommendation;
- recommend the Minister give a direction to a Network Operator to carry out the REZ network infrastructure project based on the contents of the Infrastructure Planner's recommendation; or
- request that the Infrastructure Planner provide more information prior to AEMO Services making a final decision; or
- not authorise or recommend a direction in relation to the REZ network infrastructure project.

#### Figure 8 – Process for exercising Ell Act section 31 functions



After reaching a decision whether to authorise or recommend a Ministerial direction, AEMO Services will generally publish its decision to provide stakeholders with transparency of the outcome from the network authorisation process and intends to include details of the underlying reasoning for making its decision under the EII Act. In publishing its decision, AEMO Services may choose not to publish any information considered confidential in nature or commercially sensitive, particularly where it has the potential to affect a competitive tender process for selecting a Network Operator.

#### **Option 1 – Authorise Network Operator**

If AEMO Services decides to authorise a Network Operator to carry out a REZ network infrastructure project recommended to it by the Infrastructure Planner, AEMO Services proposes to:

- inform the Infrastructure Planner of its decision, with the Infrastructure Planner to notify the Network Operator of AEMO Services' decision;
- inform the AER of its decision and the maximum capital cost amount set for the project under section 31(2) of the EII Act; and
- publish its decision.

#### **Option 2 – Recommend Minister directs Network Operator**

After considering the Infrastructure Planner's recommendations in relation to a REZ network infrastructure project, AEMO Services may, in accordance with section 31(1)(a) of the EII Act, recommend that the Minister direct a Network Operator to carry out a REZ network infrastructure project.

Once directed by the Minister, section 35 of the EII Act provides the Network Operator must not, without reasonable excuse, fail to comply with the direction.

Under the Regulations, AEMO Services must not recommend a direction unless it is satisfied the direction is reasonably necessary to achieve the infrastructure investment objectives.<sup>22</sup>

AEMO Services expects that it will generally only recommend that the Minister directs a Network Operator to carry out a REZ network infrastructure project where the direction is required to ensure that the project is delivered (and delivered on time to achieve the Investment Infrastructure Objectives). AEMO Services expects to rely on information in the Infrastructure Planner's recommendation regarding the need for the Network Operator to be directed to carry out the project. It is anticipated that directions are likely to only be appropriate where a Network Operator has not been selected via a competitive assessment process and/or the direction is considered necessary to ensure timely delivery of critical enabling infrastructure.

In deciding whether to recommend the Minister direct a Network Operator to carry out a project, AEMO Services intends to consider whether a project should proceed having regard to the same general criteria for authorisation outlined in section 3.3.1. In this instance, the proposed approach for satisfying these criteria may be adapted to reflect the specific features of the project being considered for recommendation to the Minister, including the legal requirements the Minister must apply when deciding whether to act on AEMO Services' recommendation.<sup>23</sup>

#### Option 3 – Do not authorise or recommend a Ministerial direction

AEMO Services may decide not to authorise nor recommend that the Minister direct if it considers the decisionmaking criteria discussed above in Section 3.3.1 have not been met.

In these circumstances the Infrastructure Planner may resubmit an amended recommendation for the REZ network infrastructure project. AEMO Services intends to treat an amended recommendation as a new recommendation and consider it in full, including setting a new maximum capital cost amount as appropriate.

#### Option 4 – Do not make a decision and request further information

Where AEMO Services identifies that there is insufficient information to make an authorisation decision, it will seek further information from the Infrastructure Planner, consistent with its obligation to act reasonably in exercising its functions.

<sup>22</sup> Clause 19(1) of the Regulations.

<sup>23</sup> Section 32 of the Ell Act.

#### 3.3.3 Authorisation transfer or cessation

An authorisation will cease to have effect on the termination or expiry of the contractual arrangements entered into by the Network Operator (i.e. the Project Deed with the Infrastructure Planner and/or any other agreements required to be entered into by the Network Operator as conditions of the authorisation).<sup>24</sup>

Network infrastructure may be transferred from a Network Operator who is subject to an authorisation to another person who becomes an authorised Network Operator under the Ell Act.<sup>25</sup> In the event of a proposed transfer of network infrastructure, the Infrastructure Planner will need to recommend a new Network Operator for authorisation by AEMO Services. AEMO Services intends to follow the normal authorisation decision-making criteria above to assess whether to approve the transfer of the authorisation to the new Network Operator.

## 3.3.4 Maximum capital cost amount

Section 31(2) of the EII Act provides that, if AEMO Services authorises a Network Operator, it must, by written notice to the Regulator, set a maximum amount for the prudent, efficient and reasonable capital costs for development and construction of the REZ network infrastructure project that may be determined by the AER under section 38(4) of the EII Act.

The maximum capital cost is intended to serve as a protection for consumers by reflecting the threshold above which the direct costs of a REZ network infrastructure project will exceed the benefits that flow from the network project (including the generation it connects).<sup>26</sup>

Consistent with this, AEMO Services generally proposes to set the maximum capital cost amount by reference to the net financial benefit to NSW electricity consumers of carrying out the REZ network infrastructure project. The net financial benefit will generally be determined as the cost savings that accrue to NSW consumers where the REZ network infrastructure project is built (**the REZ network case**), compared to a counterfactual where the REZ network infrastructure project is not built (**the REZ project counterfactual**), with the development pathway met in both cases. This will utilise the same quantitative analysis described in section 3.4.1. The intended approach to this analysis is discussed in section 3.4.

Where the Infrastructure Planner recommends multiple REZ network infrastructure projects AEMO Services intends to set separate maximum capital costs for each project.

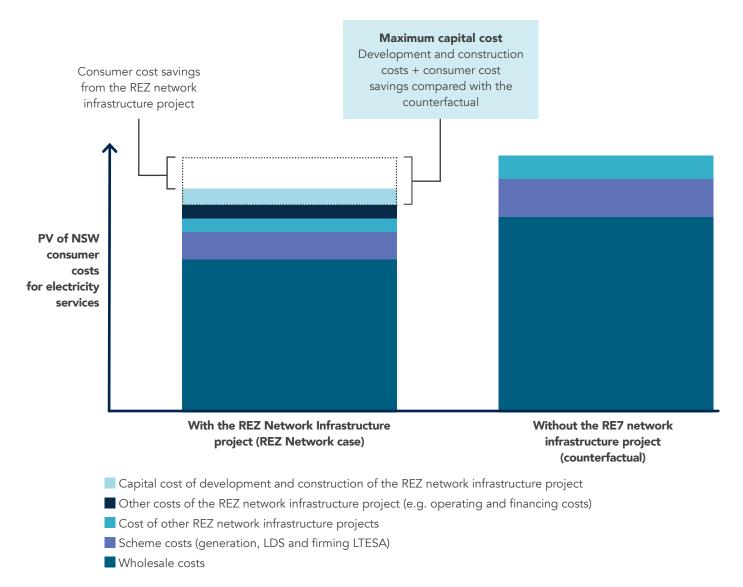
Under the EII Act, the maximum capital cost amount relates to the capital costs for the development and construction of a REZ network infrastructure project. It does not apply to other costs, for example, the costs of the ongoing operation and maintenance of a project. Therefore, while these costs will be considered as part of the quantitative analysis to determine the net benefit of the project, they will not be included in the maximum capital cost amount.

Figure 9 summarises this general approach to estimating the net benefit of the project and setting the maximum capital cost amount.

<sup>24</sup> Clause 19A(4) of the Ell Regulations.

<sup>25</sup> Clause 21 of the EII Regulations

<sup>26</sup> Second Reading Speech, Electricity Infrastructure investment Bill, New South Wales, Parliamentary Debates, House of Assembly, 10 November 2020, 3446 (Matt Kean, Minister for Energy and Environment).



# 3.4 Quantitative analysis methodology

As noted above, quantitative analysis will be undertaken by AEMO Services to determine the net financial benefit to consumers of building the REZ network infrastructure project, and to inform the setting of the maximum capital cost amount.

Section 3.4.1 sets out AEMO Services' intended general approach to undertaking this analysis. This approach will generally be appropriate for recommendations that involve 'main' REZ network infrastructure projects that deliver benefits to consumers through increasing the REZ network capacity and lowering generation curtailment, and which are not subject to optionality.

Where this is not the case, or where the recommended REZ network infrastructure project has other features that require a bespoke approach, AEMO Services may adopt alternative approaches. Example alternative approaches are set out in section 3.4.2.

# 3.4.1 General approach to quantitative analysis

AEMO Services will undertake quantitative cost-benefit analysis, which may include electricity market modelling, to estimate whether the recommended project has a net financial benefit to NSW electricity consumers. This analysis will generally compare the cost savings that accrue to NSW consumers where the REZ network infrastructure project is built, to a counterfactual where the REZ network infrastructure project is not built.

Figure 10, summarises the general approach that AEMO Services will take in undertaking cost benefit analysis, which is described in further detail in the section below.



#### **Key considerations**



REZ project counterfactual

#### **Counterfactual approach**

A quantitative analysis scenario to test the impact of not delivering the project, where:

- Recommended REZ network infrastructure project and any future augmentations dependent on the project are excluded from the modelling analysis.
- Alternative network projects in other REZs are selected with generation and long-duration storage built in alternative locations to test if REZ network case meets development pathway at lowest cost to consumers.



#### In calculating benefits the Consumer Trustee will consider those benefits that:

- Directly accrue to NSW electricity customers
- Are materially different between the REZ network case and counterfactual scenario
- Are reasonably and robustly quantifiable in a timely manner

# Time period in which costs and benefits are assessed

- Time period will generally represent the economic lifetime of REZ network infrastructure project
- A terminal value approach will be used for estimating additional benefits beyond the modelling horizon



#### Scenarios and sensitivity analysis

#### The Consumer Trustee:

- Intends to adopt a 'most likely' scenario based on AEMO's most likely scenario from the most recent Integrated System Plan.
- Does not intend on testing relative costs under different scenarios for the REZ network case and REZ project counterfactual.
- In deciding whether to conduct sensitivity analysis will consider:
- Probability and materiality of risks and uncertainty to financial interests of customers
- Whether risks and issues could be considered through qualitative analysis
- Time implications of conducting sensitivity analysis and impact on the achievement of policy objectives

#### The REZ network case

The REZ network infrastructure project recommended by the Infrastructure Planner is assumed to be commissioned with timing consistent with the Infrastructure Planner's recommendation. Further network projects are then selected, either in other REZs or in the same REZ, to enable the connection of generation, long duration storage and firming infrastructure to meet the development pathway at lowest cost to consumers.

## The REZ project counterfactual

In the counterfactual scenario, the REZ network infrastructure project recommended by the Infrastructure Planner and any future augmentations that are dependent on this project are excluded from the modelling analysis. Under this scenario, alternative network projects in other REZs are selected, and generation and long-duration storage infrastructure are built in alternative locations and likely with a different technology mix. This counterfactual is then compared to the REZ network case to test if that scenario meets the development pathway at lowest cost to consumers.

It is important to note that this exercise is distinct from, and differs to, other broader counterfactual scenarios that might be published under the Roadmap.<sup>27</sup> The focus of the REZ project counterfactual is to assess the impact of not delivering the project recommended by the Infrastructure Planner while still meeting the development pathway for generation and long-duration storage infrastructure. That is, the Roadmap is still in place, but its objectives are achieved by alternative REZ projects.

Requiring the development pathway to be met in both the REZ network case and the counterfactual reflects the intent of the EII Act that a consumer cost-minimised development pathway for generation and storage infrastructure be achieved.

The benefits to consumers under the counterfactual are expected to be lower than under the REZ network case where the counterfactual:

- lacks efficiencies,
- reduces access to high quality renewable energy resources, and/or
- creates delays that would otherwise be avoided by the recommended REZ network infrastructure project.

#### **Costs and benefits**

In calculating the benefits of a REZ network infrastructure project, AEMO Services will consider those benefits that:

#### • Directly accrue to NSW electricity consumers

It is appropriate that AEMO Services' cost-benefit analysis includes only cost and benefit categories that directly accrue to consumers. While other approaches to cost-benefit analysis incorporate an assessment of broader electricity system or economic benefits, the EII Act is concerned with consumer cost outcomes. The objects of the EII Act include improving the affordability of electricity supply and the Act establishes frameworks to achieve a development pathway that minimises costs to consumers.

#### • Are materially different between the REZ network case and the counterfactual scenario

Costs that do not vary materially between the REZ network case and the counterfactual scenario are excluded from the cost benefit analysis as they will have an offsetting effect. For instance, where both scenarios are defined to meet the same trajectory of renewable energy generation, the benefits of emissions reduction are likely to be similar between the scenarios.

#### • Are reasonably and robustly quantifiable, in a timely manner

Some types of benefits may require more resource-intensive or time-consuming analysis to robustly quantify. This may occur where more detailed and site-specific modelling is required to quantify the benefits (for instance the cost of planning approvals where this differs between the REZ network infrastructure projects built under the REZ network case or the counterfactual). These types of benefits would only be included if their likely impact was justified by or proportionate to the resources required to quantify it.

Where the Infrastructure Planner has undertaken significant work in developing the recommended REZ network infrastructure project prior to the recommendation and there would be additional costs associated with changing course to assess and develop a different option, AEMO Services may reflect this cost in the counterfactual (to the extent not already included in the costs of other REZ network infrastructure projects). Costs already incurred on the development works for the recommended REZ network infrastructure project are not included in the REZ network case or counterfactual as these are considered sunk.

27 This includes the 'No Roadmap' modelling conducted by the NSW Government, which seeks to estimate the overall consumer benefit of the roadmap.

#### Scenarios and sensitivity analysis

In undertaking its cost-benefit analysis, AEMO Services intends to adopt a 'most likely' scenario based predominantly on AEMO's most recent likely scenario for the current or upcoming ISP (with changes to meet EII Act objectives where necessary). Where inputs and assumptions under this scenario are materially outdated or not fit for-purpose in the context of AEMO Services' functions, AEMO Services may instead adopt alternative credible inputs and assumptions.

AEMO Services does not propose to test the relative costs to consumers under different scenarios for the REZ network case and the REZ project counterfactual, although it may test sensitivities. This is because the most likely scenario is expected to be the most relevant scenario for the purposes of AEMO Services' decision-making and testing scenarios would require a material increase in modelling effort and time which would be inconsistent with the policy intent of accelerating regulatory decisions on transmission investment relative to the current NER process.

Notwithstanding, AEMO Services may under some circumstances conduct sensitivity analysis to test the robustness of the most likely scenario estimate of net benefits, for example where the project could have material option or insurance value. In deciding whether to conduct sensitivity analysis AEMO Services will have regard to the following matters:

- The probability and materiality of the risks and uncertainties to the financial interests of NSW electricity consumers that would be tested through sensitivity analysis.
- Whether these risks and uncertainties could instead be appropriately considered through qualitative analysis.
- The time implications of conducting sensitivity analysis and the extent to which this impacts achievement of the policy intent of accelerating regulatory decisions.

#### Time period over which costs and benefits are assessed

In assessing whether the REZ network infrastructure project is in the long-term financial interests of consumers, it is important that benefits and costs are compared over a time period that reflects as far as practicable the furthest temporal extent of the benefits. Generally, this time period will represent the economic lifetime of the REZ network infrastructure project which extends beyond what can reasonably be modelled given future uncertainty.

AEMO Services intends to utilise a terminal value approach to estimate the additional benefits incurred to consumers from the REZ network infrastructure project beyond the modelling horizon and until the end of its economic life.

## 3.4.2 Example alternative approaches to quantitative analysis

Section 3.4.1 sets out a general approach to assessing the costs and benefits of REZ network infrastructure projects. These approaches will generally be applicable to 'main' REZ network infrastructure projects. In other cases, the Consumer Trustee may adopt alternative approaches. This section provides some examples of how quantitative analysis may be undertaken for different types of REZ network infrastructure projects.

#### Optional expansions to the main project

In some cases, the Infrastructure Planner may recommend projects that are optional expansions to the main project, contingent on certain conditions which are expected to be met either at the same time or shortly after development of the main works commences. Such an optional expansion may create additional benefits to consumers compared with the 'main' project, by enabling a greater amount of generation to be exported from the REZ and further reducing wholesale costs to consumers. It may be appropriate to assess the benefit of this expansion separate to the 'main' REZ network infrastructure project to ensure that the Consumer Trustee's assessment of the long-term financial interests of consumers and the maximum capital cost amount for the main project does not incorporate benefits that may not be realised where the option to build the expansion is not exercised.

Where the benefits of an optional expansion to a REZ network infrastructure project need to be estimated separate to the 'main' project, AEMO Services expects to adopt a REZ network case which includes the delivery of the 'main' REZ network infrastructure project and the optional expansion, and a counterfactual which also includes the delivery of the 'main' REZ 'main' REZ network infrastructure project without the optional expansion.

#### **Connection infrastructure**

Some projects may not alter the REZ network capacity but provide benefits by extending to a broader geographic region within the REZ. This would enable the connection of specific generation or long duration storage infrastructure which would not otherwise connect at all or could only connect via higher cost dedicated connection assets. The benefits of these types of projects require a bespoke consideration of the resource potential of the specific generation or long duration storage projects, whether or not that generation would have connected anyway (and if so, at what cost) and the cost of the recommended project. For these types of projects, AEMO Services intends that the REZ network case identifies the benefits associated with connecting the specific infrastructure via the recommended project and that the counterfactual either assumes that the specific generation or long duration storage does not connect at all or connects at higher cost.

#### **Enabling works**

Where the Infrastructure Planner intends to recommend not only the 'main' REZ network infrastructure project but also a separate 'enabling' REZ network infrastructure project delivered by a different Network Operator, the Consumer Trustee will separately authorise and set a maximum capital cost amount for the 'enabling' project. The Consumer Trustee's approach to setting the maximum capital cost amount for this infrastructure will likely vary depending upon the materiality of the costs of this infrastructure, relative to the 'main REZ project.'

For example, where the cost of the 'enabling' project does not reflect a significant proportion of the overall total costs of the main REZ network infrastructure projects, the Consumer Trustee intends to attribute the full net benefit to both projects in setting the maximum capital cost. This is because the relative immateriality of the costs of the 'enabling project' lowers the materiality of cost-escalation risk to consumers. Further, in a case where the costs of the 'enabling' project are not yet certain, an alternative approach of apportioning benefits between the 'main' and 'enabling' project risks creating a barrier to the project proceeding if the costs of the 'enabling' works exceed the apportioned maximum capital cost for those works.

# A1. Definitions and interpretations

Term	Definition or interpretation
Consumer Trustee	The Consumer Trustee is an entity appointed under the EII Act to act independently and in the long-term financial interests of NSW electricity consumers to improve the affordability, reliability, security and sustainability of electricity supply. Its functions include considering recommendations for REZ network infrastructure projects from the Infrastructure Planner, publishing the IIO report and conducting competitive tenders for long-term energy services agreements. The Minister appointed AEMO Services Ltd as the NSW Consumer Trustee.
Counterfactual	The REZ project counterfactual is a scenario where the REZ network infrastructure project recommended by the Infrastructure Planner and any future augmentations that are dependent on this project are excluded from the analysis. This counterfactual is compared to the REZ network case to test if that scenario meets the development pathway at lowest cost to consumers.
Development Pathway	The development pathway prepared by the Consumer Trustee for the infrastructure required to be constructed over the following 20 years to achieve the infrastructure investment objectives.
Ell Act	The Electricity Infrastructure Investment Act 2020.
Energy Corporation of NSW (EnergyCo)	The Energy Corporation of New South Wales constituted by section 7 of the Energy and Utilities Administration Act 1987. The EII Act requires EnergyCo to be the Infrastructure Planner for the five NSW Renewable Energy Zones set out in section 23 of the EII Act.
First Nations Guidelines	The Guidelines issued by the Minister under section 4 of the EII Act about consultation and negotiation with the local Aboriginal community in relation to relevant projects.
Infrastructure Planner	A person authorised to exercise the functions of an infrastructure planner under section 63 of the EII Act. It functions include preparing recommendations for Network Operators to carry out REZ network infrastructure projects to submit to the Consumer Trustee. EnergyCo is the appointed Infrastructure Planner for the first five declared REZs. The EII Act requires these functions be carried out by EnergyCo at any time during which a person is not appointed.
Infrastructure Investment Objectives (IIO) Report	The report prepared by the Consumer Trustee under section 45 of the EII Act.
Infrastructure Planner's recommendation	The recommendation for a Network Operator to carry out a REZ network infrastructure project prepared by the Infrastructure Planner under section 30 of the EII Act.
Consumer Trustee's authorisation	An authorisation of a recommendation from the Infrastructure Planner made by the Consumer Trustee under section 31 of the EII Act. The authorisation is based on a recommendation from the Infrastructure Planner and relates to a Network Operator to carry out a REZ network infrastructure project.
Maximum capital cost amount	The maximum amount for the prudent, efficient and reasonable capital costs for the development and construction of a REZ network infrastructure project that may be determined by the Regulator, as determined by the Consumer Trustee under section 31(2) of the EII Act.

Term	Definition or interpretation
Network Authorisation Process and Approach Paper (NAPAAP)	This paper.
Network Infrastructure Strategy	A document prepared by EnergyCo which sets out a 20-year strategy for coordinating network infrastructure in renewable energy zones.
Network Operator	A person who owns, controls or operates, or proposes to own, control or operate, network infrastructure. This may include either transmission or distribution network infrastructure.
Objects	The objects of the EII Act specified in section 3(1) and (2) of the EII Act.
Roadmap	The Electricity Infrastructure Roadmap is the NSW Government's plan to transform the NSW electricity sector into one that is cheap, clean and reliable. It is enabled by the EII Act.
Regulator	A person or body appointed under section 64 of the EII Act to exercise the functions of a regulator. The Australian Energy Regulator (AER) has been appointed as a Regulator for the purposes of Part 5 of the EII Act.
Regulations	Electricity Infrastructure Investment Regulation 2021 (NSW).
Renewable Energy Sector Board Plan	The plan developed by the Renewable Energy Sector Board under section 7(4) of the Ell Act.
REZ	Renewable Energy Zone.
REZ network infrastructure project	A network infrastructure project that (a) forms part of a REZ and (b) consists of network infrastructure of a class prescribed by the Regulations.
Transmission Efficiency Test (TET)	The Regulator's test to calculate the prudent, efficient and reasonable capital costs for development and construction of a REZ network infrastructure project.
TET and Revenue Determination Guidelines	The Regulator's guidelines setting out its approach in making a revenue determination under the EII Act including conducting the TET.



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