



# Network Authorisation Process

November 2024

Approach Paper for Authorising Renewable  
Energy Zone Network Infrastructure Projects



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## ACKNOWLEDGEMENT OF 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).

## DISCLAIMER

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	22/09/2023	–
2.0	27/03/2024	Minor updates for clarity and alignment with NSW Government Guide to Cost-Benefit Analysis.
3.0	26/09/2024	Substantive updates to reflect amendments to the EII Regulation, which took effect on July 1 2024. This includes: changes to AEMO Services' assessment of the long-term financial interests of NSW electricity customers, including the option of giving primary consideration to the IIO Report instead of CBA; new requirements for CBA; changes to AEMO Services' engagement with the Infrastructure Planner; changes to AEMO Services' consideration of technical information and investigating the accuracy of the Infrastructure Planner's recommendation; and changes to complete information requirements. Updates to timeframes for decision-making.
4.0	29/11/2024	Update to reflect change to the EII Act that provides for sharing the maximum capital cost amount with the Minister.

# 1. Introduction

## 1.1 NSW Government policy background

The state's coal-fired power stations, which have been a reliable source of energy for many generations, are ageing and expensive to operate. With renewables replacing coal-fired power as the most affordable source of new build energy, an electricity network built on the state's abundant solar and wind resources, backed by large-scale storage, will deliver more affordable, clean and reliable energy to everyone in New South Wales (**NSW**). The NSW Government is undertaking a whole-of-government effort to make sure that as coal-fired power stations retire, NSW has enough renewable energy, transmission and storage to meet the energy needs of every household, school, hospital, farm and business across the State. To enable this, the NSW Government is accelerating investment in renewable energy, building five Renewable Energy Zones (**REZs**) across NSW. The five declared REZs are:

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

A REZ is a modern-day power station. They combine renewable energy generation such as wind and solar, storage such as super batteries, and network infrastructure such as high-voltage poles and wires, to deliver energy to the homes, businesses and industries that need it.

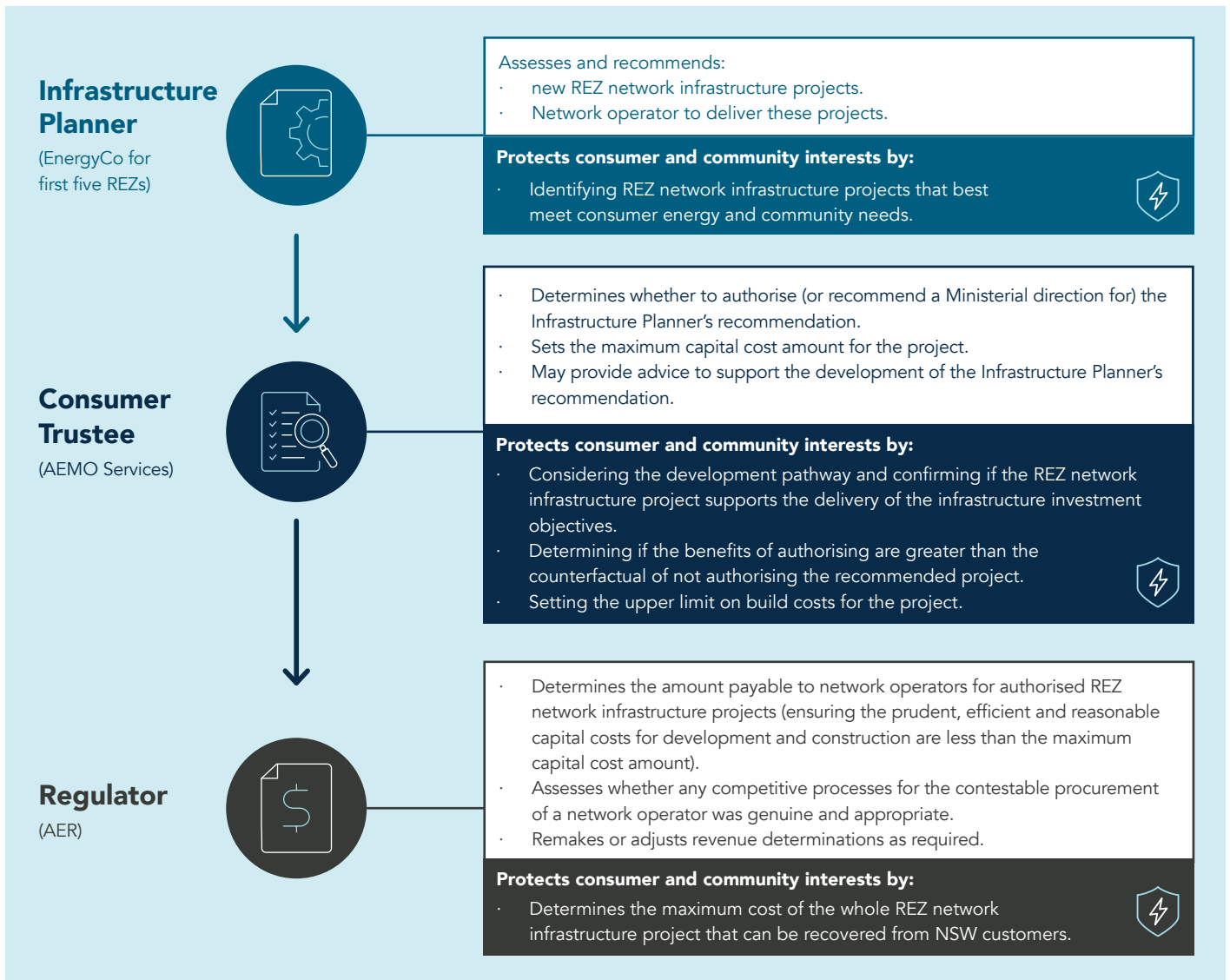
### Establishment of key roles

The Roadmap is enabled by the *Electricity Infrastructure Investment Act 2020 (EII Act)*. The EII Act establishes three statutory roles for supporting the delivery of network projects in REZs (**REZ network infrastructure projects**). These are:

- 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, this document generally refers 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 its capacity 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 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 are 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 2.

Figure 1 - Key roles under the EII Act



## 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 ensure REZ network infrastructure projects deliver a benefit to NSW electricity customers and are consistent with the infrastructure investment objectives, having regard to the Development Pathway, outlined in AEMO Services' [Infrastructure Investment Objectives Report](#).

The authorisation of REZ network infrastructure projects defines the scope of the project consistent with the Infrastructure Planner's recommendation, 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 [Scheme Financial Vehicle, with costs recoverable from NSW electricity customers](#).

In authorising a REZ network infrastructure project recommended by the Infrastructure Planner, AEMO Services must be satisfied that its decision is in the long-term financial interests of customers 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 approach AEMO Services will adopt in performing its role 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).
- 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).
- Key touchpoints in the delivery of REZ network infrastructure projects where stakeholders can provide feedback and input (see Section 2.2).
- The approach and process that underpins AEMO Services' exercise of its function under the EII Act to authorise REZ network infrastructure projects (see Section 3).

The approach and process 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 Regulation)*.

This Paper may be reviewed and updated to reflect any lessons learnt or opportunities for improvement as the framework and AEMO Services' 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.

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 which have a defined meaning under the EII Act.

## 1.3 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 steps is provided in Section 2 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 as these are not subject to the authorisation process.<sup>1</sup>

<sup>1</sup> AEMO Services is not involved in priority transmission infrastructure projects. This is a matter for the Minister and the Infrastructure Planner. See sections 32 and 36 of the EII Act and clauses 43 and 45(1)(b) of the EII Regulation.

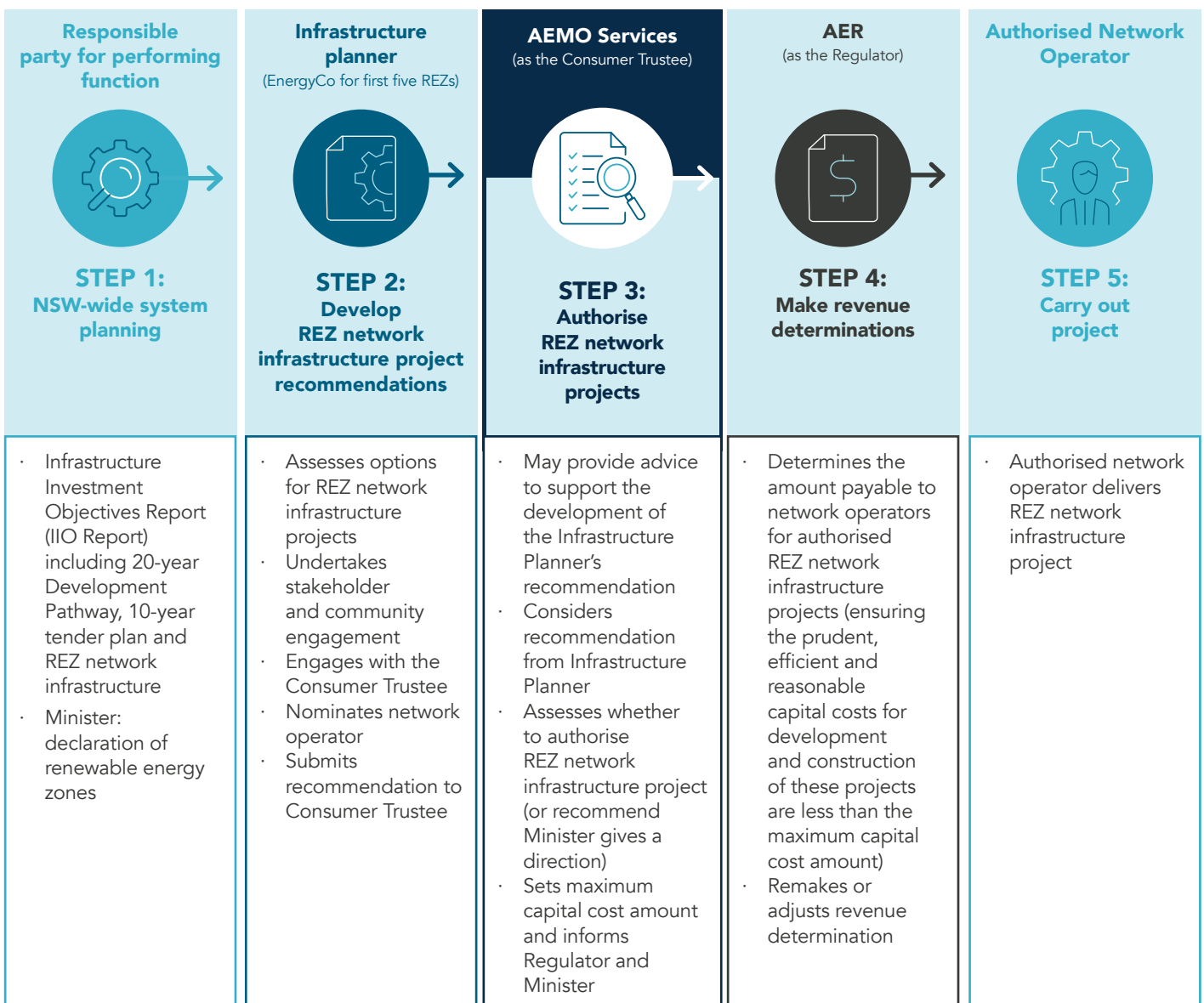
# 2. Delivering REZ network infrastructure projects

## 2.1 Overview of EII 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 customers. These projects are known as REZ network infrastructure projects. The intent of this NSW-specific framework is to support timely regulatory decisions for network infrastructure investment in REZs.

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 Regulation.<sup>2</sup> A REZ may include more than one REZ network infrastructure project. Figure 2 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 2 – Overview of process for delivering REZ network infrastructure projects**



<sup>2</sup> Clause 17 EII Regulation.

## Step 1: NSW-wide system planning

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 out a Development Pathway and 10-year tender plan for generation, long-duration storage and firming infrastructure (prepared by AEMO Services), and the REZ network infrastructure required to enable the Development Pathway.
- The declaration of renewable energy zones by the Minister for Energy which set out the geographic location of the zone as well as its intended network capacity.

## Step 2: Develop REZ network infrastructure project 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,
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 provide advice to help inform the Infrastructure Planner's assessment of options.<sup>3</sup> Once it has identified a preferred project and network operator, the Infrastructure Planner recommends these to AEMO Services.

## Step 3: Authorise REZ network infrastructure projects

Once a recommendation has been received from 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 instead recommend that the Minister direct the network operator to carry out the recommended works.

AEMO Services independently assesses the recommendation against the requirements of the EII Act and Regulation. This process is described in further detail in Section 3.1. This process ensures the REZ network infrastructure project is in the long-term financial interests of NSW electricity customers,<sup>4</sup> by considering whether the benefit of authorising the recommended REZ network infrastructure project is greater than not authorising the recommended REZ network infrastructure project.

In assessing whether to authorise or recommend a Ministerial direction, AEMO Services does not engage in its own fact-finding exercise in considering the contents of the Infrastructure Planner recommendation, nor investigate the accuracy of the Infrastructure Planner's recommendation.<sup>5</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), covers all the matters necessary to enable AEMO Services to make a decision and may request additional information where required.

Where the information is adequate, AEMO Services will then decide whether to authorise or recommend the Minister direct a REZ network infrastructure project. 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>6</sup> The intent of the maximum capital cost amount is to set an upper limit on the capital costs that reflect the point at which the costs of the project would exceed its benefit to NSW electricity customers. This is provided to the Regulator and the Minister on a confidential basis.<sup>7</sup> This cost is kept confidential to ensure that 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. Further details on this and how the maximum capital cost is calculated is included in Section 3.4.2.

<sup>3</sup> Section 60(4) EII Act, and Clause 18(1) EII Regulation.

<sup>4</sup> Section 60(3) EII Act.

<sup>5</sup> Clause 19B(5)(a) EII Regulation.

<sup>6</sup> Section 31(2) EII Act.

<sup>7</sup> Section 31(2) and Section 31(2A) EII Act.



## **Step 4: Make 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 customers by ensuring the network operator can only recover the prudent, efficient, and reasonable costs for delivering REZ network infrastructure projects.

As part of determining the costs that can be recovered from NSW electricity customers, the AER must ensure that the capital cost component of the infrastructure project (i.e. the development and construction costs) does not exceed the maximum capital cost amount set by AEMO Services.

The AER makes its revenue determination in accordance with its Revenue Determination Guidelines.<sup>8</sup> The AER process for determining the amount payable to the network operator varies based on whether the authorisation relates to a contestable or non-contestable project.

## **Step 5: Carry out project**

Once the AER determines the amount payable for carrying out the REZ network infrastructure project, the Scheme Financial Vehicle pays the network operator who then delivers the project in accordance with the terms of its authorisation. The Scheme Financial Vehicle collects the funds 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 pass these costs onto their customers via network charges.

<sup>8</sup> See AER, Revenue determination guideline for NSW contestable network projects, August 2022; and AER, Transmission Efficiency Test and revenue determination guideline for non-contestable network infrastructure projects, July 2024..

## 2.2 Stakeholder input on REZ network infrastructure projects

The EII Act framework for delivering REZ network infrastructure projects is intended to support timely regulatory approval for REZ network infrastructure projects. The framework contains opportunities for consultation on REZ network infrastructure projects, including 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 supporting timely regulatory decisions for REZ network infrastructure projects, and the Infrastructure Planner's consultation obligation, AEMO Services does not intend to undertake public consultation in making its authorisation decisions. Instead AEMO Services will consider consultation undertaken by the Infrastructure Planner (to the extent that this consultation is relevant to AEMO Services' decision-making process). AEMO Services will publish a notice of its authorisation decision, to provide transparency on the outcome of the 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 3 below. These include:

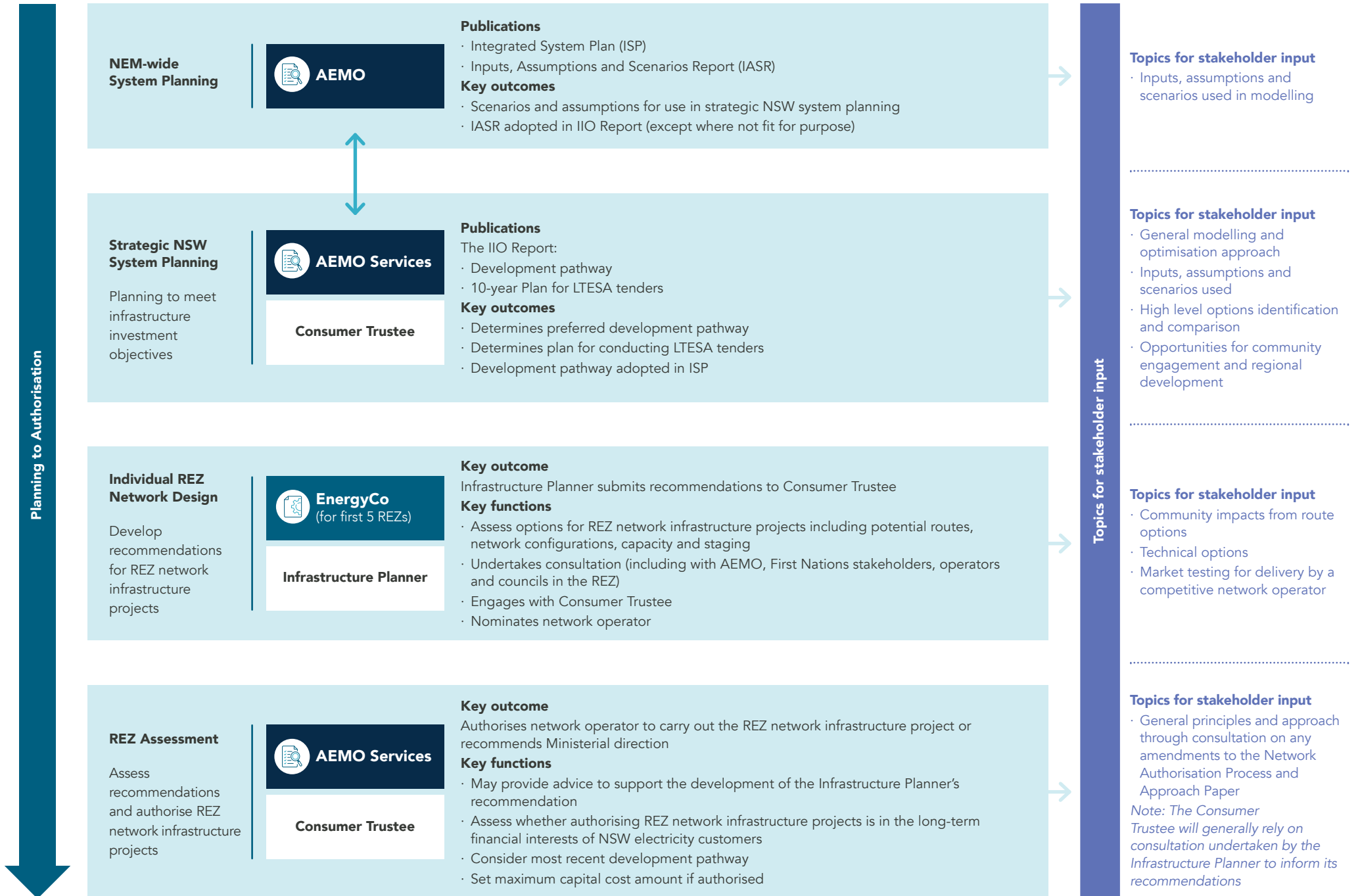
- AEMO's public consultation on its Integrated System Plan (**ISP**) and Inputs Assumptions and Scenarios Report. These documents are publicly consulted on and form a key input into strategic NSW system-wide planning.
- AEMO Services' consultation on the development of its IIO Report. This determines the preferred Development Pathway that must be considered by the Infrastructure Planner in developing its recommendations and is a criterion that AEMO Services has regard to in making its authorisation decision-making.<sup>9</sup>
- The Infrastructure Planner's targeted consultation with AEMO, REZ network operators, First Nations people and REZ local council areas to inform the development of its recommendation.<sup>10</sup>
- The development of AEMO Services' Network Authorisation Process and Approach Paper has been informed by public consultation on the draft Network Authorisation Guidelines.<sup>11</sup> AEMO Services endeavours to keep stakeholders informed of any material change to the approach and processes outlined in this paper and in some cases, may choose to undertake further consultation on any such change.
- The AER's public consultation on the revenue determination for REZ network infrastructure projects.

<sup>9</sup> Refer to Section 3.3 for further details on AEMO Services authorisation decision-making criteria.

<sup>10</sup> Section 30 EII Act.

<sup>11</sup> The Draft Network Authorisation Guidelines were open for public consultation until 1 June 2022. Available at [energyco.nsw.gov.au/draft-network-authorisation-guidelines](https://energyco.nsw.gov.au/draft-network-authorisation-guidelines).

Figure 3 – 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 in relation to recommendations from the Infrastructure Planner, under its EII Act functions.

AEMO Services intends to apply 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 Regulation. While the precise application may differ on a case-by-case basis, this paper aims to provide stakeholders with clarity on how the functions are expected to be performed.

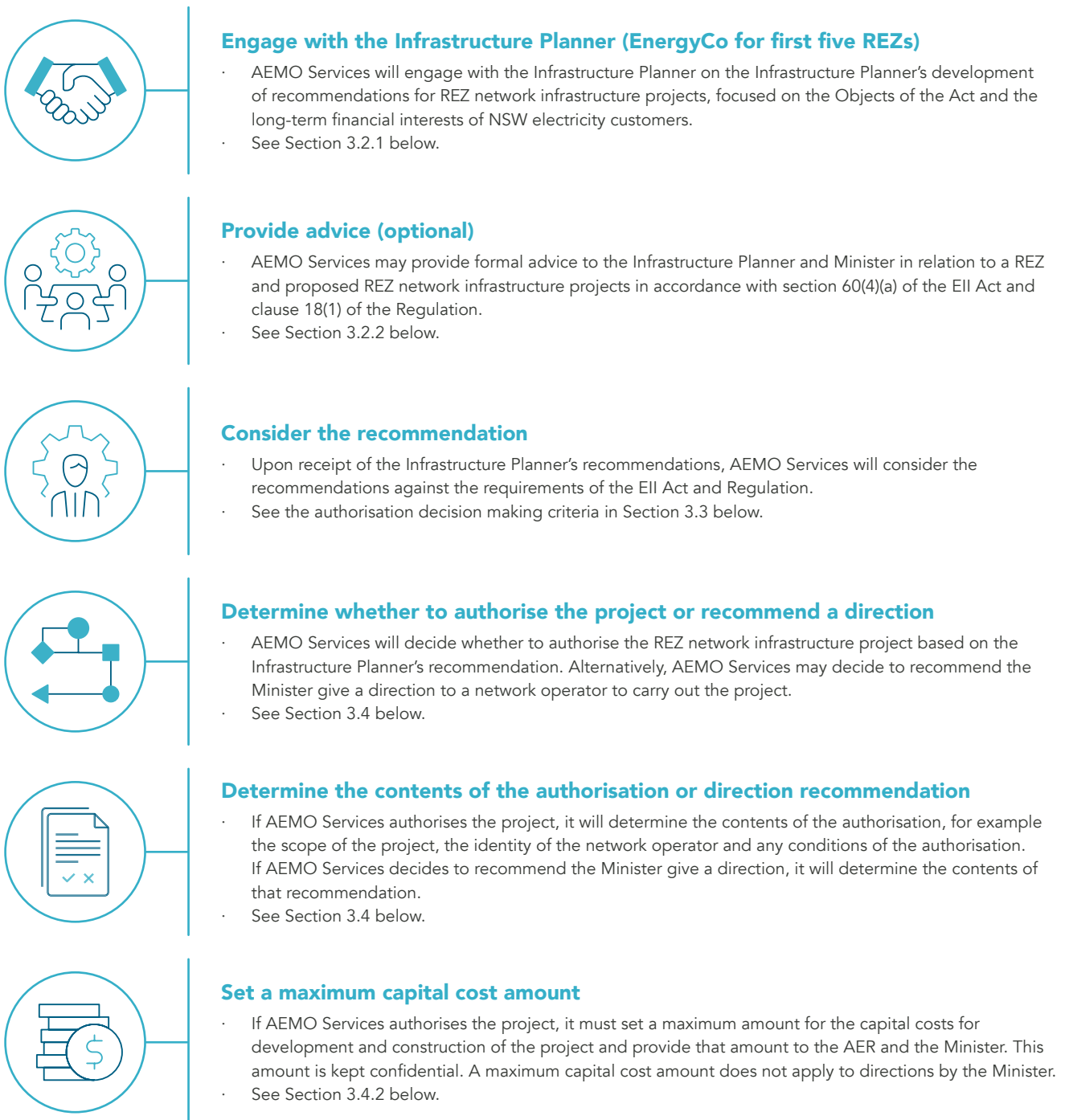
In developing its approach for assessing and making decisions about REZ network infrastructure projects, AEMO Services has had regard to:

- How to best meet the statutory requirements for these decisions, including acting in the long-term financial interests of NSW electricity customers.
- 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 4 below.

Figure 4 – AEMO Services process for considering and responding to recommendations



### 3.1.2 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>12</sup>

### 3.1.3 Timing

AEMO Services aims to make its authorisation decision as soon as practicable after receiving the Infrastructure Planner's recommendations.

Where complex modelling is required for cost-benefit analysis (CBA) to inform the Consumer Trustee's authorisation decision, this modelling may take up to 5 months. Modelling may commence in advance of receiving a final recommendation from the Infrastructure Planner, in circumstances where the Infrastructure Planner is able to provide relevant inputs earlier.

Another factor that will impact the timeframe for making an assessment is whether the Infrastructure Planner provides all information required by AEMO Services to make its assessment. Reduced timeframes for a decision may be supported by the Infrastructure Planner providing draft recommendations to AEMO Services for review and feedback in advance of a final recommendation.

### 3.1.4 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 in its recommendation regarding consultation with relevant stakeholders, including AEMO, local councils, and relevant network operators.<sup>13</sup>

To support timely decision-making, AEMO Services does not intend to undertake public consultation on its authorisation decision. AEMO Services may, however, seek to inform its decision-making, via advice from subject matter experts on aspects of its assessment, which may result in further information being sought from the Infrastructure Planner.

<sup>12</sup> See Section 3.4.2 for how AEMO Services intends to determine this amount.

<sup>13</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.

## 3.2 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 may engage with the Infrastructure Planner on matters relevant to AEMO Services' authorisation decision-making criteria prior to the final Infrastructure Planner recommendation. Such updates may relate to:

- The net financial benefit of the recommended REZ network infrastructure project and risks to the net financial benefit;
- The objects of the Act and risks to the objects of the Act; and
- Network operator commitments on First Nations Guidelines and Renewable Energy Sector Board (**RES Board**) Plan.

This process will allow AEMO Services to independently consider the information provided by the Infrastructure Planner and provide feedback on matters that may affect whether AEMO Services is likely to consider that the final recommendation satisfies requirements for an authorisation decision. The Infrastructure Planner may then decide whether to give effect to this feedback in its final recommendations. By engaging with the Infrastructure Planner in the early stages of the recommendation process, AEMO Services can help to support timely delivery of authorisation decisions.

In some cases, AEMO Services may also provide feedback to the Infrastructure Planner in the form of formal advice under its advisory functions (refer to Section 3.2.2).<sup>14</sup>

### 3.2.2 AEMO Services advice to the Infrastructure Planner

To assist it in forming its REZ network infrastructure project recommendations, the Infrastructure Planner may request advice from AEMO Services under its EII Act or Regulation advisory functions.<sup>15</sup>

For example, this could include a request by the Infrastructure Planner for AEMO Services to conduct CBA, or other quantitative analysis of the benefits of different technical options for REZ network infrastructure projects to NSW electricity customers.

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.

<sup>14</sup> Section 60(4) EII Act.

<sup>15</sup> Section 60(4) EII Act and Clause 18(1) EII Regulation.

### 3.3 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 5 – AEMO Services decision-making criteria for authorisations**

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



be satisfied that the Infrastructure Planner's recommendations provide all necessary information to enable AEMO Services to make a decision



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



consider the Development Pathway in the latest IIO Report



take into account the First Nations Guidelines and Renewable Energy Sector Board Plan and decide whether to impose or recommend a condition to give effect to these documents



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



### 3.3.1 Complete information

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.<sup>16</sup> AEMO Services requires recommendations to contain all relevant information necessary:

- to enable AEMO Services to independently make a section 31 decision consistent with the legal requirements for an authorisation under the EII Act;
- to enable AEMO Services to accurately describe the project in its authorisation or recommendation to the Minister so that there is a clear basis for the network operator to claim amounts when seeking a revenue determination from the Regulator; and
- to enable AEMO Services to conduct an authorisation CBA.

Consistent with the Regulation, AEMO Services does not intend to:

- Investigate the accuracy of the Infrastructure Planner's recommendations, except where required to confirm that AEMO Services will be able to make a legally valid authorisation;<sup>17</sup>
- Consider technical matters beyond those specified in clause 44 of the Regulation, with the exception of information required to conduct an authorisation CBA;<sup>18</sup> and
- Include an analysis of options or alternatives to the recommended REZ network infrastructure project in its CBA,<sup>19</sup> nor generally consider options analysis as part of its assessment of the Infrastructure Planner's recommendation.

### 3.3.2 Long-term financial interests of NSW electricity customers

AEMO Services is required to act independently and in the long-term financial interests of NSW electricity customers.<sup>20</sup> For the purposes of deciding whether to authorise or recommend that the Minister direct a REZ network infrastructure project, AEMO Services must be satisfied that authorising or recommending the Minister direct a network operator to carry out a REZ network infrastructure project (as compared to not authorising or not recommending it) would be in the long-term financial interests of NSW electricity customers.

In addition to this statutory requirement, the Regulation provides that:

*The consumer trustee must not authorise a network operator to carry out a REZ network infrastructure project unless satisfied the project is in the long-term financial interests of NSW electricity customers.*<sup>21</sup>

The Regulation further provides that:

*In determining whether it is satisfied the project is in the long-term financial interests of NSW electricity consumers... the consumer trustee must –*

- undertake a cost benefit analysis of the project in accordance with clause 19C and give primary consideration to the analysis [the CBA], or*
- give primary consideration to the most recent infrastructure investment objectives report as at the time of the infrastructure planner's recommendation in relation to the authorisation.*<sup>22</sup>

Consistent with these legal requirements, AEMO Services intends to undertake the analysis described below and summarised in Figure 6 to determine whether authorising a network operator to carry out the recommended project is in the long-term financial interests of NSW electricity customers.

16 Section 31(1) EII Act.

17 Clause 19B(5) EII Regulation.

18 Clause 19B(5) EII Regulation.

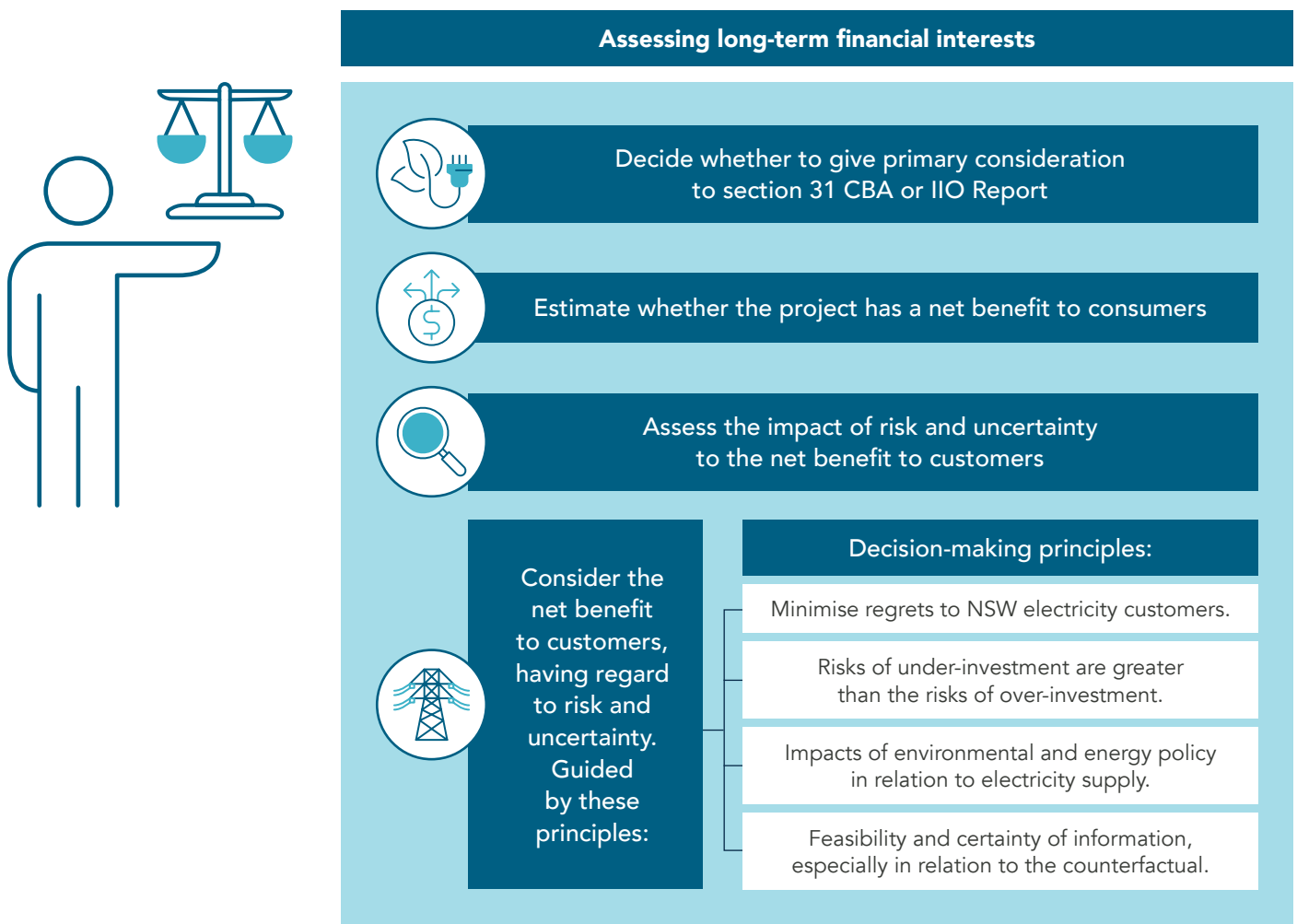
19 Clause 19C(2)(b) EII Regulation.

20 Section 60(3) EII Act.

21 Clause 19B(2) EII Regulation.

22 Clause 19B(3) EII Regulation.

Figure 6 – Approach for assessing long-term financial interests of NSW electricity customers



## Step 1: Giving primary consideration to CBA or IIO Report

AEMO Services is required to publish an IIO Report approximately every 2 years. The modelling for the IIO Report optimises REZ network infrastructure projects with the development pathway for generation and storage so that the IIO Report can include information about the expected timing, staging and sequencing of the construction of REZ network infrastructure projects that may be required.<sup>23</sup> The identification of these projects in the IIO Report indicates that these projects, if delivered in the timeframes identified in the report, will deliver a net-benefit to NSW electricity customers.

When AEMO Services is determining whether a REZ network infrastructure project is in the long-term financial interests of NSW electricity customers, AEMO Services will, in the first instance, consider whether the IIO Report is fit-for-purpose before giving it primary consideration. In circumstances where the IIO Report is considered not fit-for-purpose, AEMO Services will conduct a CBA, and this will be given primary consideration. This is because, as discussed above, the modelling for the IIO Report may already indicate whether a project will be in the long-term financial interests of NSW electricity customers and adopting it as the primary consideration will generally result in time and resource efficiencies. When assessing whether the IIO Report is fit-for-purpose, AEMO Services will consider:

- Whether the most recent IIO Report demonstrates that the project has benefits under conservative scenario(s);
- Whether there have been material changes in the electricity market since the most recent IIO Report, with particular consideration to be given to the currency of assumptions relating to network options (in terms of size, cost, configuration or timing), demand and changes to policy objectives; and
- Whether the contents of the most recent IIO Report allow for a sufficiently robust assessment of the long-term financial interests of NSW electricity customers against the principles outlined in step 4 below.

Further information about how AEMO Services will conduct a CBA is set out in Section 3.5.

<sup>23</sup> Clause 24(1)b EII Regulation.

## Step 2: Estimate whether the project has a net benefit to customers

AEMO Services will give primary consideration to either CBA or the most recent IIO Report to estimate whether a REZ network infrastructure project has a net benefit to customers. AEMO Services may make such an estimate for each of the different scenarios in the CBA or the IIO Report. Where different scenarios are modelled, these will generally reflect upside and downside scenarios. The intended approach to CBA is discussed in Section 3.5, including adaptations of the approach for different types of REZ network infrastructure projects.

AEMO Services may also give consideration (though not primary consideration) to other quantitative or qualitative analysis which is relevant to indicating whether the project will have a net benefit to customers (e.g. AEMO's Integrated System Plan or analysis tracking progress towards meeting the development pathway and the infrastructure investment objectives).

## Step 3: Assess the impact of risk and uncertainty to the net benefit to customers

### CBA

When giving primary consideration to CBA, AEMO Services will consider the impact of risk and uncertainty to the estimated net benefit as part of this CBA via quantitative analysis. AEMO Services' consideration of risk will generally be informed by risk analysis in the Infrastructure Planner's recommendation.

AEMO Services will consider the following two categories of risk:

- Risks that some or all of the planned benefits to customers cannot be realised; and
- Risks that some or all of the planned costs to customers are exceeded.

AEMO Services will also consider how the impact of uncertainty could result in either a higher or lower net benefit for the REZ network infrastructure project.

When undertaking sensitivity analysis, risk and uncertainty will generally be assessed through probabilistic analysis. Where this is not possible, AEMO Services will undertake post-processing sensitivity analysis or estimated quantification of plausible worst-case outcomes on the net benefits of the project. This approach is consistent with the approach to considering risk and uncertainty as outlined in the NSW Government Guide to Cost-Benefit Analysis.

As with step 1, AEMO Services may also give consideration (though not primary consideration) to other quantitative or qualitative analysis which is relevant to indicating the impact of risk and uncertainty on the estimated benefit of the REZ network infrastructure project.

### IIO Report

When giving primary consideration to the most recent IIO Report, AEMO Services will have regard to analysis of risks in the IIO Report, including consideration of the scenarios and/or sensitivities undertaken for that report.

As a non-primary consideration, AEMO Services may undertake further assessment of the impact of risk and uncertainty to the estimated net benefits where it considers that this impact has not been sufficiently assessed as part of the IIO Report, including where new risks are identified in the Infrastructure Planner's recommendation which were not assessed as part of the IIO Report. This further assessment may occur using the same approaches and analysis as described above for the CBA.

## Step 4: Consider the net benefit to customers, having regard to risk and uncertainty

Having regard to its analysis in steps 1 and 2, AEMO Services will then form a view on whether and how the estimate of net benefits (including across different scenarios) should be adjusted or considered in its authorisation decision.

This may include a quantitative adjustment of the estimate or a qualitative assessment of the impact of the risks or uncertainty upon the authorisation decision. This assessment will be guided by principles that consider the following (subject to any amendments required to reflect the features of the specific recommended REZ network infrastructure project):

- **Tolerable quantum of impacts** – AEMO Services will seek to minimise regrets to NSW electricity customers in deciding whether to authorise the recommended project, generally considering upside and downside risk.
- **Asymmetrical investment risks** – AEMO Services considers that risks of under-investment in new network infrastructure are greater than risks 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.
- **Policy intent and regulations** – AEMO Services will consider the impact(s) of environmental and energy policy in relation to electricity supply in NSW.
- **Reliance on other projects** – AEMO Services will consider feasibility and certainty of information, especially in relation to the counterfactual.

### 3.3.3 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, consideration of the development pathway will occur through giving primary consideration to the CBA or the most recent IIO Report.

In the case of giving primary consideration to CBA, this will involve assessment of the net-benefit of the recommended project under circumstances where the infrastructure investment objectives are met either:

- on the same trajectory as the development pathway from the most recent IIO Report; or
- where in considering the development pathway, AEMO Services forms the view that it is in the long-term financial interests of customers to update the development pathway, re-optimising the trajectory of build in the CBA modelling to meet the infrastructure investment objectives.

In the case of giving primary consideration to the IIO Report, consideration of the development pathway will occur by referring to the contents of the IIO Report, and the extent to which this indicates the recommended REZ network infrastructure project and its recommended timing enable the delivery of the development pathway.

### 3.3.4 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 include preparing a plan for the NSW renewable energy sector, including the manufacture and construction of infrastructure in the 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>24</sup> AEMO Services is also required to consider the RES Board Plan in exercising its functions under the EII Act.<sup>25</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, relying on the information provided by the Infrastructure Planner;
- consider whether the recommendations (including quantitative minimum or stretch targets) in each document are met through the commitments made by the network operator; and
- consider whether imposing or recommending a condition to give effect to the RES Board Plan or the First Nations Guidelines is consistent with the objects of the EII Act and in the long-term financial interests of NSW electricity customers.

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. This will enhance the Infrastructure Planner's ability to gather relevant information and ensure that there is a practical mechanism to monitor and enforce the network operator's commitments.

<sup>24</sup> Sections 4(5)(b) and 9(4) EII Act.

<sup>25</sup> Section 9(1) EII Act.

### 3.3.5 Objects of the EII 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 EII Act**

<b>Objects of the EII Act</b>
· 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
· to invest in education and training
· to promote local industry, manufacturing and jobs
· to promote export opportunities for generation, storage and network technology
<b>Additional objects of Parts 4 to 6 of the EII Act</b>
· 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 rely on evidence provided by the Infrastructure Planner to satisfy itself that authorising the project would be consistent with the objects. In making this assessment, any trade-offs between the extent to which individual objects will be supported are likely to be identified. 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.

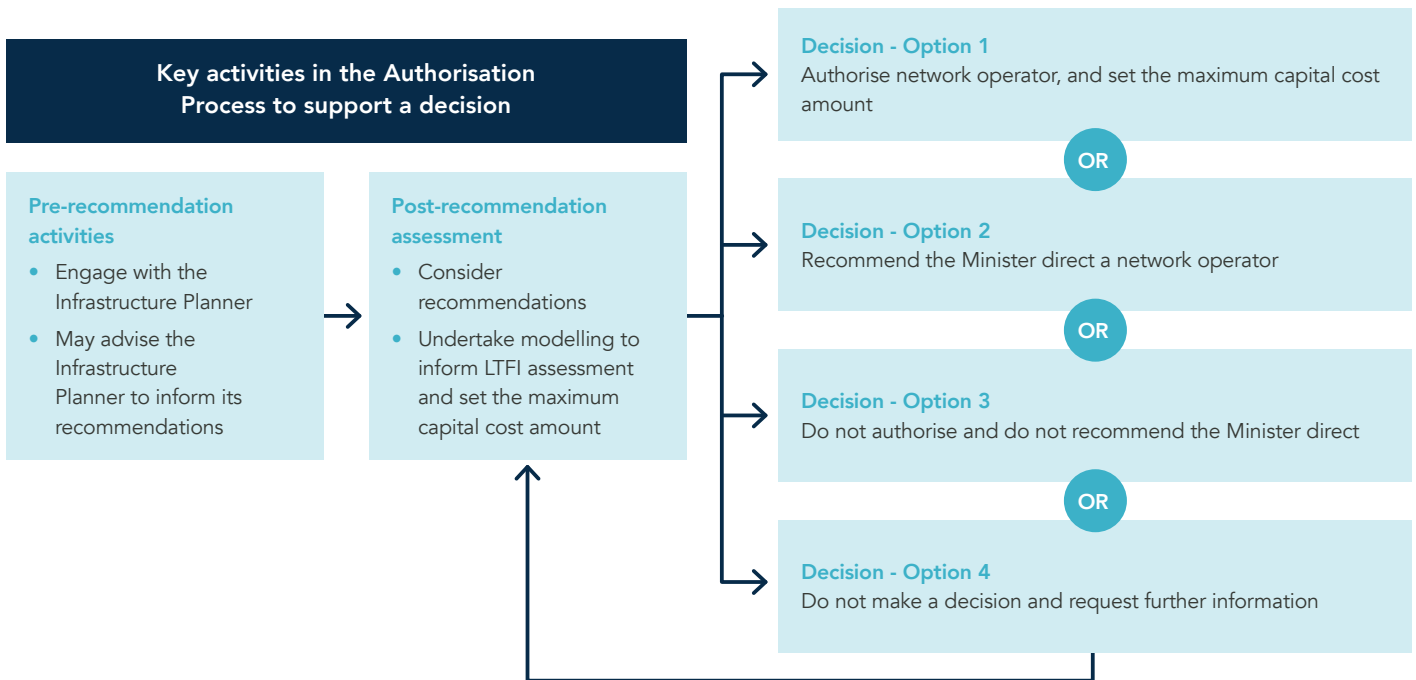
## 3.4 Decision process

### Decision options and process

Figure 7 highlights the general process AEMO Services adopts and decision options available to AEMO Services after receiving a recommendation from the Infrastructure Planner. As shown on the right-hand side of Figure 7, 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; or
- 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
- not authorise or recommend a direction in relation to the REZ network infrastructure project; or
- request that the Infrastructure Planner provide more information prior to AEMO Services making a final decision.

Figure 7 – Process for exercising EII Act section 31 functions



After reaching a decision as to 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 or might reveal the maximum capital cost amount.

## 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;
- inform the Minister of the maximum capital cost amount set for the project under section 31(2A) 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 that the network operator must not, without reasonable excuse, fail to comply with the direction.

Under the Regulation, AEMO Services must not recommend a direction unless it is satisfied the direction is reasonably necessary to achieve the infrastructure investment objectives.<sup>26</sup>

AEMO Services expects that it will only recommend that the Minister direct 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. 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>27</sup>

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

AEMO Services may decide not to authorise nor recommend a Ministerial direction if it considers that the decision-making criteria discussed above in Section 3.3 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>26</sup> Clause 19(1) EII Regulation.

<sup>27</sup> Section 32 EII Act.



### 3.4.1 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>28</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 EII Act.<sup>29</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.

### 3.4.2 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.<sup>30</sup>

The maximum capital cost amount is intended to serve as a protection for customers 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>31</sup> Consistent with this, AEMO Services proposes to set the maximum capital cost amount by reference to the net benefit to NSW electricity customers of carrying out the REZ network infrastructure project.

The net benefit will generally be determined as the cost savings that accrue to NSW electricity customers 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.

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 CBA to determine the net benefit of the project, they will not be included in the maximum capital cost amount.

Figure 8 below summarises this general approach to estimating the net benefit of the project and setting the maximum capital cost amount.

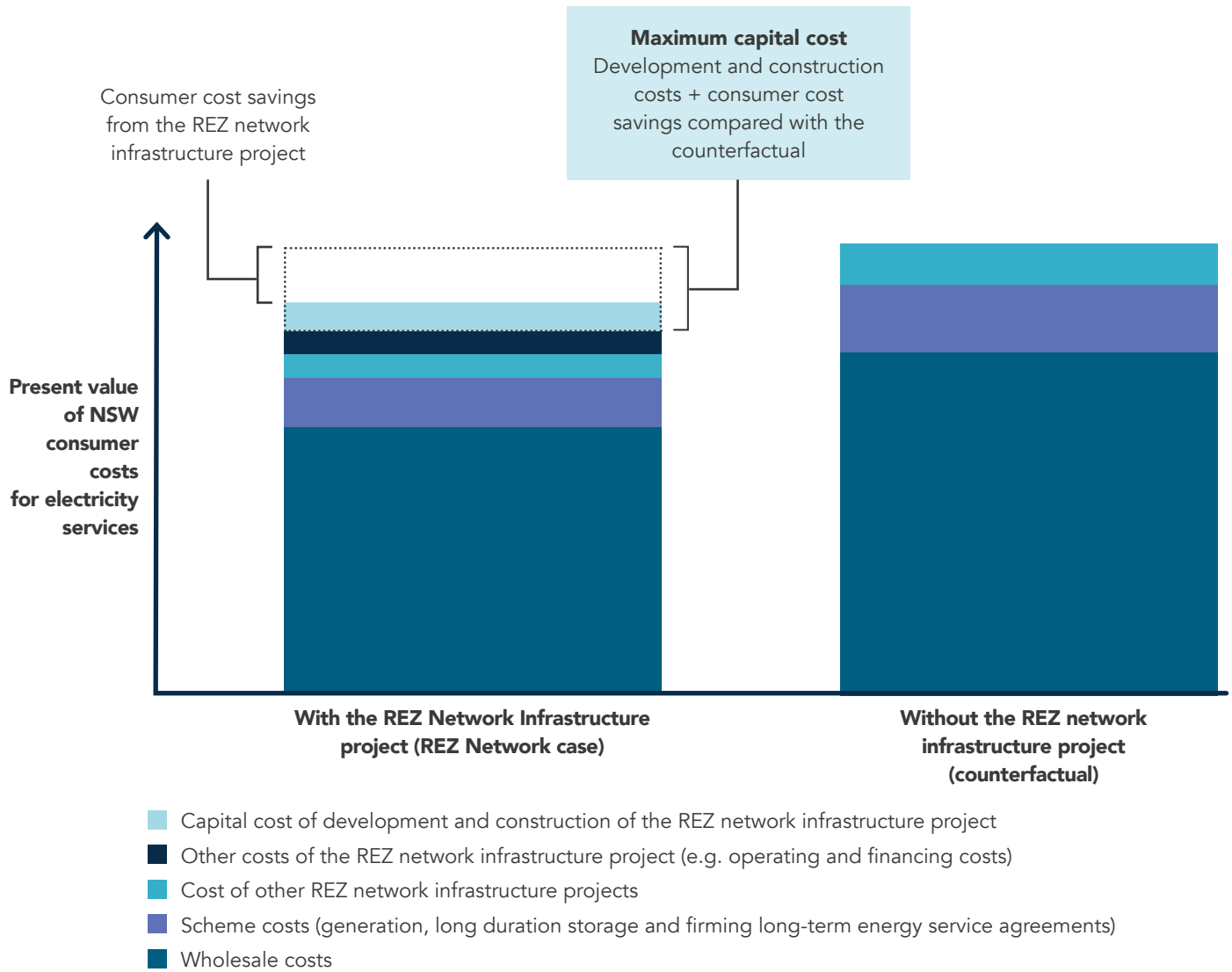
<sup>28</sup> Clause 19A(4) EII Regulation.

<sup>29</sup> Clause 21 EII Regulation.

<sup>30</sup> AEMO Services must not publish or otherwise disclose the maximum capital cost amount to any person other than the AER and the Minister. See Sections 31(2) and 31(2A) EII Act.

<sup>31</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).

Figure 8 – Illustration of basis for setting a maximum capital cost amount



## 3.5 Cost-benefit analysis methodology

This section sets out AEMO Services' intended general approach to undertaking CBA to inform AEMO Services' consideration of the long-term financial interests of NSW electricity customers. This approach will generally be appropriate for recommendations that involve REZ network infrastructure projects that deliver benefits to customers through increasing REZ network capacity and lowering generation curtailment.

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 an alternative approach. Example alternative approaches are set out in Section 3.5.2.

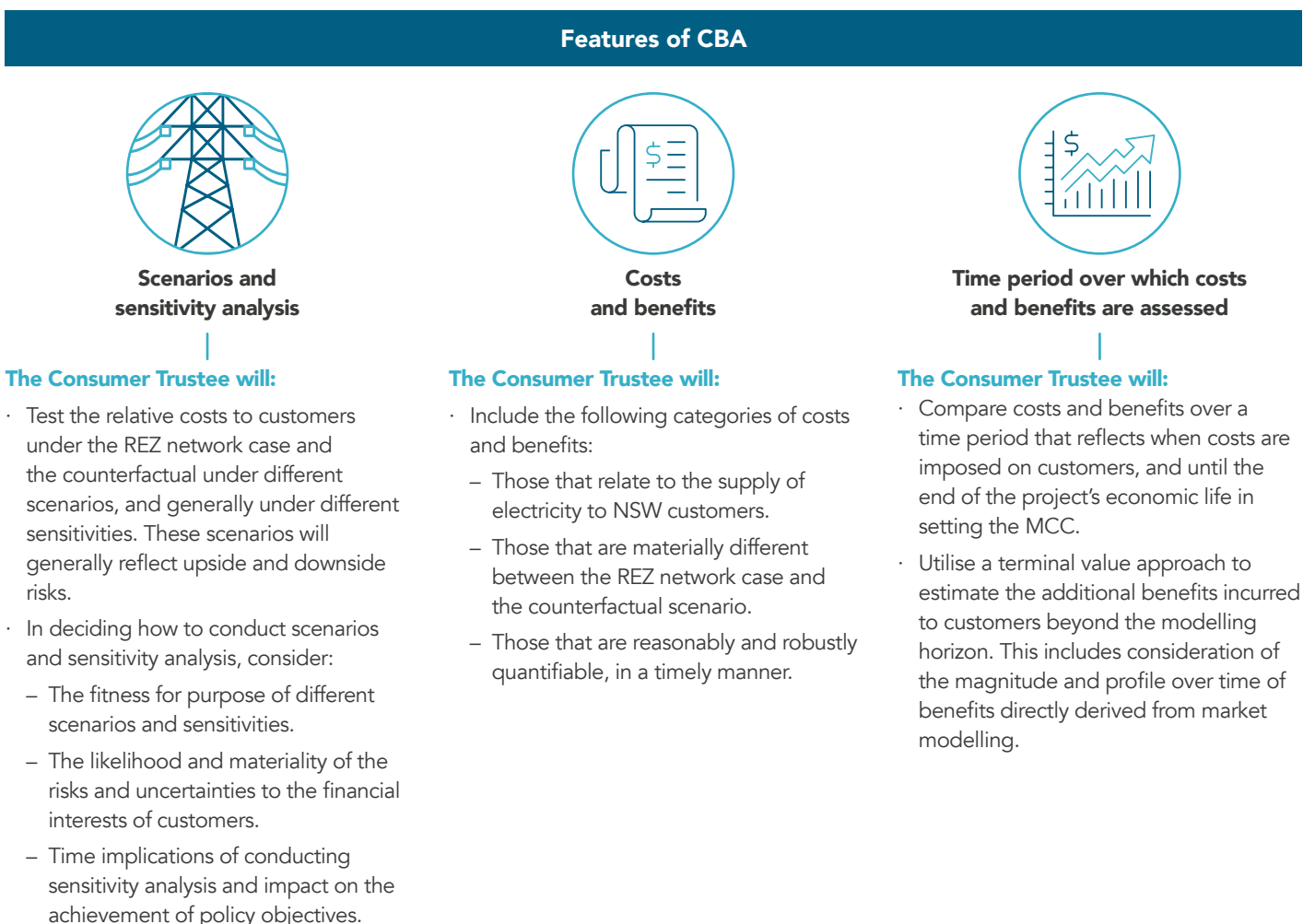
### 3.5.1 General approach to cost-benefit analysis

To inform its view on whether authorising a project is in the long-term financial interests of NSW electricity customers, AEMO Services will undertake a CBA to estimate whether the recommended project has a net benefit to NSW electricity customers (unless giving primary consideration to the most recent IIO Report). This analysis will generally compare the cost savings that accrue to NSW electricity customers where the REZ network infrastructure project is built, to a counterfactual where the REZ network infrastructure project is not built.

The Regulation sets out certain requirements that must be met when AEMO Services undertakes a CBA.<sup>32</sup> This includes that the CBA must be in accordance with the NSW Government Guide to Cost-Benefit Analysis (the Guide) published by the NSW Treasury, except where the Regulation requires that AEMO Services depart from the Guide.<sup>33</sup> The Guide is a policy paper that describes how to undertake CBA for NSW Government initiatives and provides guidance regarding the role of CBA in supporting decision-making.<sup>34</sup>

Figure 9 below, summarises the general approach that AEMO Services will take in undertaking CBA, which is described in further detail in the section below.

**Figure 9 – Cost-benefit analysis approach**



<sup>32</sup> Clause 19C EII Regulation.

<sup>33</sup> Clause 19C(4) EII Regulation.

<sup>34</sup> TPG23-08 NSW Government Guide to Cost-Benefit Analysis, issued 27 February 2023, is available on NSW Treasury's website: [treasury.nsw.gov.au/finance-resource/guidelines-cost-benefit-analysis](https://treasury.nsw.gov.au/finance-resource/guidelines-cost-benefit-analysis)

## Scenarios and sensitivity analysis

### The REZ network case and counterfactual

In the REZ network case, the REZ network infrastructure project recommended by the Infrastructure Planner is assumed to be commissioned consistent with the timing in 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, or a reoptimized development pathway that meets the infrastructure investment objectives, at lowest cost to customers.

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 or a reoptimised development pathway that meets the infrastructure investment objectives, at lowest cost to customers.

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>35</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 (or a reoptimized development pathway that meets the infrastructure investment objectives). That is, the Roadmap is still in place, but its objectives are achieved by alternative REZ projects.

Requiring the infrastructure investment objectives to be met in both the REZ network case and the counterfactual is consistent with the Regulation,<sup>36</sup> and reflects the intent of the EII Act that a consumer cost-minimised development pathway for generation and long-duration storage infrastructure be achieved.

The benefits to customers 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.

### Different scenarios and sensitivities

The Regulation requires that CBA consider the costs and benefits under different scenarios, and a sensitivity analysis if required, to understand the impact of uncertainty in the project's costs and benefits.<sup>37</sup> Consistent with this, AEMO Services will test the relative costs to customers under the REZ network case and the counterfactual under different scenarios, and generally under different sensitivities, to understand the impact of uncertainty in relation to AEMO Services' authorisation decision.

Different scenarios modelled in CBA will generally reflect upside and downside scenarios. Each of these scenarios will be consistent with the infrastructure investment objectives as required by the Regulation.<sup>38</sup>

When undertaking sensitivity analysis, risk and uncertainty will be assessed through probabilistic analysis. Where this is not possible, AEMO Services will undertake post-processing sensitivity analysis or estimated quantification of plausible worst-case outcomes on the net-benefits of the project. This approach is consistent with the approach to considering risk and uncertainty as outlined in the Guide. AEMO Services' consideration of risk through sensitivity analysis will generally be informed by the Infrastructure Planner's risk analysis.

In deciding how to conduct scenario and sensitivity analysis, AEMO Services will have regard to the following matters:

- The **fitness for purpose** of different scenarios and sensitivities to enable AEMO Services to consider whether the project is in the long-term financial interest of electricity customers consistent with the approach described in Section 3.3.2 of this paper.
- The **likelihood and materiality** of the risks and uncertainties to the financial interests of NSW electricity customers that could be tested through sensitivity analysis.
- The **time implications** of conducting sensitivity analysis, and the extent to which this impacts achievement of the policy intent of timely decision-making.

<sup>35</sup> This includes the 'No Roadmap' modelling conducted by the NSW Government, which seeks to estimate the overall consumer benefit of the roadmap.

<sup>36</sup> Clause 19C(2)(a) EII Regulation.

<sup>37</sup> Clause 19C(1)(c) and (d) EII Regulation.

<sup>38</sup> Clause 19C(2)(a) EII Regulation.

AEMO Services intends to exercise judgment in adopting a least-regrets assessment approach to considering scenarios and sensitivities in its CBA, consistent with the objects and frameworks established under the EII Act which go to coordinating and encouraging investment in new electricity infrastructure and improving the affordability of electricity supply.

## Costs and benefits

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

- **Relate to the supply of electricity to NSW customers**

In conducting its CBA, AEMO Services is focused on cost and benefit categories that relate to the supply of electricity to customers. Consistent with the Regulation, in its CBA, AEMO Services:

- considers the costs to NSW electricity customers from the project;<sup>39</sup>
- considers the benefits to NSW electricity customers from generation and storage infrastructure connecting to the project;<sup>40</sup>
- considers the costs or benefits from the expected change in greenhouse gas emissions as a result of the project;<sup>41</sup>
- considers the costs to finance the project, including interest costs;<sup>42</sup>
- does not consider the costs and benefits to government or electricity producers.<sup>43</sup>

- **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 CBA as they will have an offsetting effect. For example, where both scenarios are defined to meet the infrastructure investment objectives, the costs of community impacts may be largely the same between the two cases.

- **Are reasonably and robustly quantifiable, in a timely manner**

Some types of costs and 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 example, the cost of planning approvals where this differs between the REZ network case and the counterfactual). These types of costs and benefits would only be included if their likely impact justified 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 not considered sunk by electricity customers.

## 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 customers, it is important that benefits and costs are compared over a time period that reflects the extent of contractual obligations that impose costs on customers, and until the end of the REZ network infrastructure project's economic life.

Generally, the economic life over which benefits are expected to be incurred will extend 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 customers from the REZ network infrastructure project beyond the modelling horizon and until the end of its economic life in setting the maximum capital cost amount. This terminal value approach considers the magnitude, and profile over time, of benefits directly derived from electricity market modelling.

39 Clause 19C(1)(a) EII Regulation.

40 Clause 19C(1)(b) EII Regulation.

41 Clause 19C(1)(e) EII Regulation.

42 Clause 19C(1)(f) EII Regulation.

43 Clause 19C(1)(d) EII Regulation.

## 3.5.2 Example alternative approaches to quantitative analysis

Section 3.5.1 sets out a general approach to assessing the costs and benefits of REZ network infrastructure projects. This approach will generally be applicable to 'main' REZ network infrastructure projects that deliver benefits to customers through increasing the REZ network capacity and lowering generation curtailment. In other cases, AEMO Services may adopt an alternative approach. This section provides some examples of how quantitative analysis may be undertaken for different types of REZ network infrastructure projects.

### 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 or could only connect via higher cost dedicated connection assets. Where these assets are expected to be fully funded by access fees, AEMO Services will generally not adopt an alternative approach to considering these assets in the CBA.

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 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, AEMO Services will separately authorise and set a maximum capital cost amount for the 'enabling' project. AEMO Services' 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 (including operations and maintenance) of the main REZ network infrastructure project, AEMO Services intends to attribute the full net benefit to both projects in setting the maximum capital cost amount.

This is because the relative immateriality of the costs of the 'enabling' project lowers the materiality of cost-escalation risk to customers. 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 amount for those works.

# A1. Definitions and interpretations

Term	Definition or interpretation
<b>Consumer Trustee</b>	<p>The Consumer Trustee is an entity appointed under the EII Act to act independently and in the long-term financial interests of NSW electricity customers to improve the affordability, reliability, security and sustainability of electricity supply.</p> <p>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 service agreements.</p> <p>The Minister appointed AEMO Services as the NSW Consumer Trustee.</p>
<b>Counterfactual</b>	<p>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 customers.</p>
<b>Development Pathway</b>	<p>The Development Pathway prepared by AEMO Services for the infrastructure required to be constructed over the following 20 years to achieve the infrastructure investment objectives.</p>
<b>EII Act</b>	<p>The Electricity Infrastructure Investment Act 2020.</p>
<b>Energy Corporation of NSW (EnergyCo)</b>	<p>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.</p>
<b>First Nations Guidelines</b>	<p>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.</p>
<b>Infrastructure Investment Objectives (IIO) Report</b>	<p>The report prepared by AEMO Services under section 45 of the EII Act.</p>
<b>Infrastructure Planner</b>	<p>A person authorised to exercise the functions of an infrastructure planner under section 63 of the EII Act.</p> <p>Its functions include preparing recommendations for network operators to carry out REZ network infrastructure projects to submit to AEMO Services.</p> <p>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.</p>
<b>Infrastructure Planner's recommendation</b>	<p>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.</p>
<b>Maximum capital cost amount</b>	<p>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 AEMO Services under section 31(2) of the EII Act.</p>
<b>Network authorisation</b>	<p>An authorisation of a recommendation from the Infrastructure Planner made by AEMO Services under section 31 of the EII Act.</p> <p>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.</p>

<b>Term</b>	<b>Definition or interpretation</b>
<b>Network Authorisation Process and Approach Paper</b>	This paper.
<b>Network Infrastructure Strategy</b>	A document prepared by EnergyCo which sets out a 20-year strategy for coordinating network infrastructure in renewable energy zones.
<b>Network operator</b>	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.
<b>Objects</b>	The objects of the EII Act specified in section 3(1) and (2) of the EII Act.
<b>Regulation</b>	The Electricity Infrastructure Investment Regulation 2021 (NSW).
<b>Regulator</b>	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.
<b>Renewable Energy Sector Board Plan</b>	The plan developed by the Renewable Energy Sector Board under section 7(4) of the EII Act.
<b>REZ</b>	Renewable energy zone.
<b>REZ network infrastructure project</b>	A network infrastructure project that (a) forms part of a REZ and (b) consists of network infrastructure of a class prescribed by the Regulation.
<b>Roadmap</b>	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.
<b>Transmission Efficiency Test (TET)</b>	The Regulator's test to calculate the prudent, efficient and reasonable capital costs for development and construction of a REZ network infrastructure project.
<b>TET and Revenue Determination Guidelines</b>	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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