Issues Paper

Guidelines to make the Integrated System Plan actionable

November 2019

AUSTRALIAN ENERGY REGULATOR

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1 Introduction: Consultation on ISP guidelines

This section introduces our task and consultation process. It also sets out the objective and scope of this issues paper, and an invitation for submissions.

1.1 Our task

The Energy Security Board (ESB) is consulting on changes to the National Electricity Rules (NER) to convert the Integrated System Plan (ISP) into an actionable strategic plan. These changes are being made to streamline the regulatory processes for key projects identified in the ISP whilst retaining a rigorous cost benefit assessment.

Under the draft changes to the NER, the Australian Energy Regulator (AER) is required to develop the following binding ISP guidelines:

- cost benefit analysis guideline (CBA guideline), which include changes to the Regulatory Investment Test for transmission (RIT–T) application guideline for projects identified in the ISP (actionable ISP projects)
- forecasting best practice guideline.

The draft changes to the NER may also require that we:

- update our existing RIT–T regulatory instrument[1]
- update the RIT–T application guideline for projects identified outside the ISP process (non-ISP projects)
- consider whether there is a need to update the Regulatory Investment Test for distribution (RIT–D), as well as the RIT–D application guideline.

These guidelines are being developed in line with the NER's *Rules Consultation Procedures,*[2] which ensure a meaningful consultation process is followed.

We note the ESB process of changing the NER to provide for the ISP is still underway. We are developing the guidelines concurrently with the rules development process so the overall framework will be in place earlier and stakeholders can consider the rules and guidelines together. This issues paper is prepared based on the draft rules, which sets the scope and content of the AER guidelines.

1.2 Guidelines consultation process

This issues paper is the first step of our consultation process. Table 1 summarises the main project steps and proposed dates for this consultation process.

1 This is the AER's RIT-T regulatory instrument (published in 2010) required by clause 5.16.1(a). Note that this issues Paper also refers to the RIT-Ts undertaken by TNSPs which apply this AER document. See section 2.3 below.

2 National Electricity Rules (NER), clause 8.9.

Table 1: Indicative project timeline

Project step	Expected date
Draft ISP rule changes published (by the ESB)	20 November 2019
AER issues paper published	20 November 2019
Stakeholder workshop on ESB draft rules and AER issues paper	5 December 2019
Submissions close on AER issues paper	17 January 2020
Final ISP rule change package provided to the COAG Energy Council (by the ESB)	Early 2020
Draft AER guidelines to make the ISP actionable published	March 2020
Stakeholder workshop on draft guidelines	April 2020
Submissions close on draft guidelines	May 2020
Final AER guidelines to make the ISP actionable published	30 June 2020

1.3 Objective and scope of the issues paper

This issues paper forms an important part of the consultation process by providing stakeholders with the opportunity to provide informed and targeted input. To help encourage input, we have included relevant background, our initial views and targeted questions. As such, this issues paper is structured as follows in Table 2.

Table 2: Structure of issues paper

Description	Section of issues paper
Background on the proposed ISP framework	Section 2
Objective and scope of the ISP guidelines (and RIT application guidelines and instruments) we are required to develop / update	Section 3
Issues for stakeholders to consider regarding CBA elements for the ISP process	Section 4
Other issues for stakeholders to consider regarding the CBA guideline	Section 5
Issues for stakeholders to consider regarding the RIT and forecasting best practice guidelines and regulatory instruments	Section 6
Issues for stakeholders to consider regarding dispute resolution, compliance and enforcement	Section 7

For convenience, we have consolidated the questions through the paper in Appendix A.

We also present extended forms for abbreviations in Appendix B.

1.4 Invitation for submissions

We are seeking feedback on this document guided by three broad questions:

(a) Do you agree with our proposed position in developing the guidelines?

(b) Do you agree with the level of prescription we intend to provide in the guidelines?

(c) Do you have anything to add to the thinking and analysis that informs how we propose to deliver the guidelines to make the Integrated System Plan actionable?

We invite submissions by the close of business **17 January 2020**. We prefer stakeholders send submissions electronically to: ISPguidelines@aer.gov.au.

Alternatively, stakeholders can mail submissions to:

Mr Mark Feather
General Manager, Policy & Performance
Australian Energy Regulator
GPO Box 520
MELBOURNE VIC 3001

We prefer all submissions be publicly available to facilitate an informed and transparent consultation process. We will therefore treat submissions as public documents unless otherwise requested.

We request parties wishing to submit confidential information to:

- clearly identify the information that is subject of the confidentiality claim, and reasons for the confidentiality claim
- provide a non-confidential version of the submission, in addition to a confidential one.

We will place all non-confidential submissions on our website at www.aer.gov.au. For further information regarding our use and disclosure of information provided to us, see the *ACCC/AER Information Policy*, June 2014 available on our website.

Please direct enquiries about this paper to ISPguidelines@aer.gov.au or to Richard Khoe on (02) 9230 3830.

2 Background: Making the Integrated System Plan actionable

This section sets out key background information to help stakeholders understand and engage with the issues set out in this issues paper. This includes:

- the process to date
- information about the ISP and RIT–T
- how the ISP fits in the transmission planning framework
- our role in the new transmission planning framework
- related work.

2.1 Process to date

In July 2018, the Australian Energy Market Operator (AEMO) published its inaugural ISP as an extension of its national transmission network development plan (NTNDP) functions in the NER and the National Electricity Law (NEL).[3] The ISP stems from a recommendation in the Finkel Review for more strategic planning of transmission infrastructure, including an integrated plan to facilitate the efficient development and connection of new renewable energy zones (REZs) across the National Electricity Market (NEM).[4]

The Council of Australian Governments Energy Council (COAG EC) subsequently requested the ESB develop a plan to make the ISP actionable. In December 2018, the COAG EC endorsed the ESB's plan to make the ISP an actionable strategic plan by strengthening the links between it and the transmission planning process.

Accordingly, the ESB has developed draft rule changes for making the ISP actionable. These were released for consultation on 20 November 2019 and can be found here.[5] The draft rules require us (the AER) to develop new guidelines, and contain new provisions that require some updates to our existing RIT–T regulatory instrument and associated application guideline (see section 1.1).

The final rules are expected to be provided to the COAG Energy Council in early–2020, and the new transmission planning framework integrating the actionable ISP is expected to come into effect in mid–2020. This will include our new ISP guidelines and updated RIT–T regulatory instrument and application guideline.

There will be transitional arrangements in moving from the current to new transmission planning process. These are under consultation as part of the draft rules.

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3 AEMO, *Integrated system plan: For the National Electricity Market*, July 2018.

4 Finkel, A. et al, *Independent review into the future security of the National Electricity Market*, June 2017, p. 24.

5 ESB, *Converting the ISP into action: Consultation on draft ISP rules*, November 2019; ESB, *Draft: Integrated system plan rule changes—Consultation version*, November 2019. Note the ESB does not intend for the rule changes to apply in the Northern Territory (see ESB, *Converting the ISP into action: Consultation on draft ISP rules*, November 2019, p. 6).

2.2 What is the ISP?

The ISP is to provide a biennial whole of system plan for the efficient development of the power system that achieves power system needs for a planning horizon of at least 20 years, for the long term interests of consumers. The purpose of the ISP is to trigger RIT–Ts for actionable ISP projects and inform decisions in relation to ISP development opportunities.[6]

The ISP replaces the NTNDP required under the current transmission planning framework, and has a stronger influence on transmission planning by triggering RIT–Ts and replacing some elements of the RIT–T process (see section 2.4). As such, it is subject to additional governance arrangements through the CBA and forecasting best practice guidelines.

In developing the ISP, the draft rules require AEMO to publish an:[7]

- inputs, assumptions and scenarios report
- ISP methodology
- draft ISP
- final ISP.

The output of the ISP will include an optimal development path. This will be chosen from a range of development paths, each containing a set of investments or 'ISP projects' that together address power system needs. Each ISP project will be classified as follows:

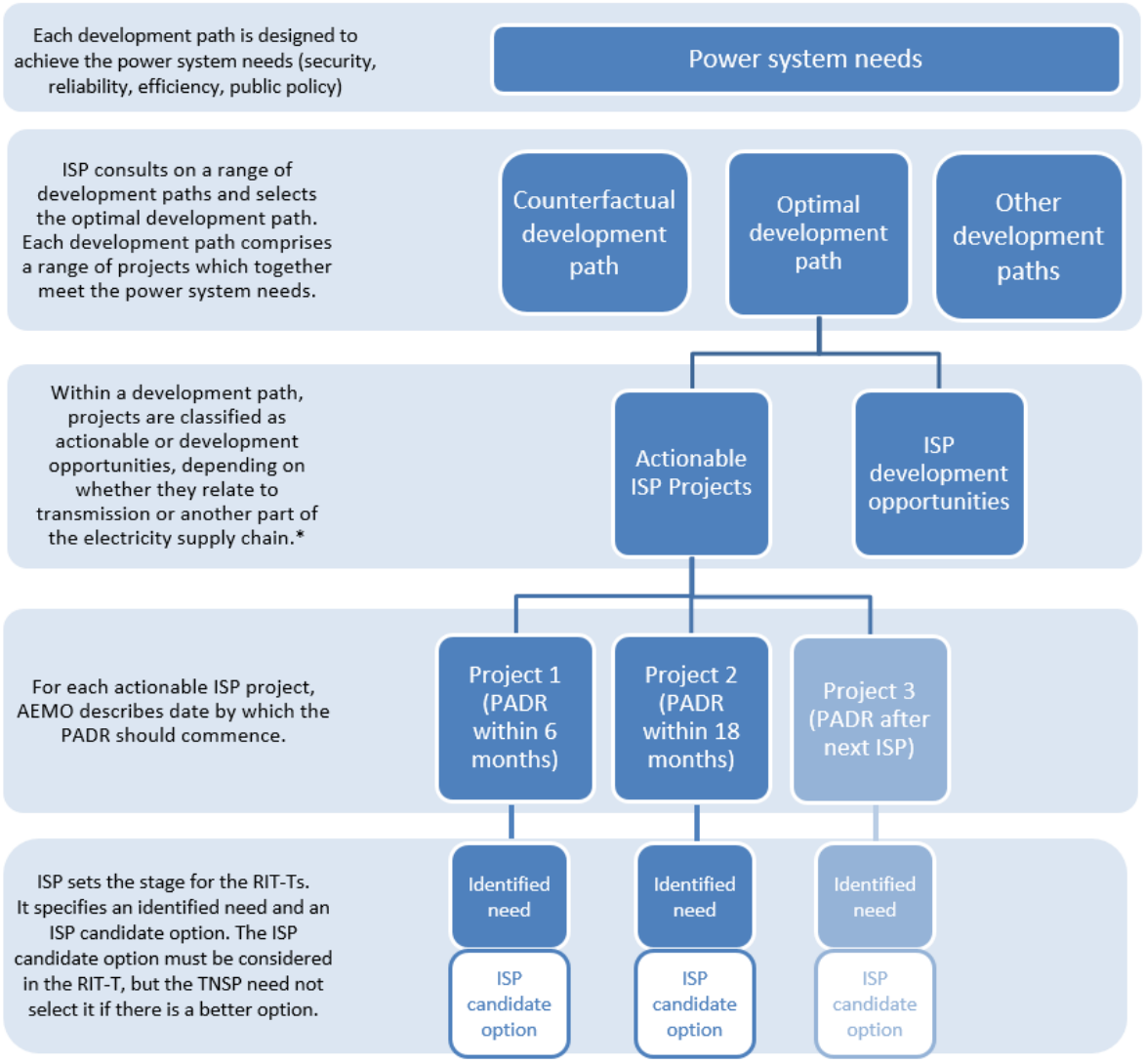
- Actionable ISP projects, which relate to a transmission asset or a non-network option relating to a transmission service. These are to trigger RIT–Ts and will be further classified depending on when their RIT–T needs to commence.
- ISP development opportunities, which do not relate to a transmission service, such as a distribution, generation, storage or demand response service—these are to inform market participants and policy makers.

Key terms associated with the ISP are summarised in Figure 1. The ESB draft rules consultation paper sets out more information on the ISP.

6 ESB, *Draft: Integrated system plan rule changes—Consultation version*, November 2019, clause 5.22.2.

7 ESB, *Draft: Integrated system plan rule changes—Consultation version*, November 2019, clause 5.22.4.

Figure 1: Overview of actionable ISP terminology



Source: ESB, *Converting the ISP into action: Consultation on draft ISP rules*, November 2019, p. 10.
Note: * Transmission projects may include non-network options, as per the current RIT–T framework.

2.3 What is a RIT–T?

The RIT–T is a binding AER regulatory instrument published (in 2010) in accordance with NER clause 5.16.1(a).[8] RIT–T proponents (usually transmission network service providers (TNSPs)) must apply the RIT–T to all proposed transmission investments, except in the circumstances described in NER clause 5.16.3.

The AER's RIT–T application guideline provides guidance on the operation and application of the RIT–T, the process for RIT–T proponents to follow in applying the RIT–T, and how we will address and resolve disputes regarding the RIT–T.[9]

8 AER, *Regulatory investment test for transmission*, June 2010.
9 AER, *RIT T Application Guidelines*, December 2018.

The RIT–T requires RIT–T proponents to assess the economic efficiency of proposed investment options. Its purpose, as stated in NER clause 5.16.1 is to '… identify the credible option that maximises the present value of net economic benefit to all those who produce, consume and transport electricity in the market (the preferred option)…' Through this, it aims to promote efficient transmission investment in the NEM by promoting greater consistency, transparency, accountability and predictability in transmission investment decision making.

Another key component of the RIT–T process is stakeholder engagement. Under the current framework, NER clause 5.16.4 establishes a three-stage process, including consulting on a:

- project specification consultation report (PSCR)—this sets out the detailed identified need for the investment and information about all credible options the TNSP considers address the identified need
- project assessment draft report (PADR)—this sets out the cost benefit analysis for each credible option, proposes a preferred option, and responds to submissions on the PSCR
- project assessment conclusions report (PACR)— provides final cost benefit analysis and preferred option, taking into account submissions on the PADR.

2.3.1 How the RIT–T interacts with TNSP revenue determinations

Where the RIT–T proponent is a TNSP, the RIT–T does not provide for funding, or regulated revenue, approval. Rather, its intention is to provide confidence that TNSPs assess the economic efficiency of proposed investment options in consultation with stakeholders.

Regulated revenue for a TNSP is determined solely through our revenue determination process (also known as 'resets'), and is not allocated to specific projects. Rather, our determinations set out the total revenue a TNSP can recover from customers for the provision of particular transmission services over a set 'regulatory control period'. To make this determination, we forecast how much revenue a TNSP needs to cover its efficient costs and provide a commercial return on capital. This requires capital and operating expenditure assessments, including of individual investment projects.

A project that has been through the RIT–T process can form the basis for TNSP revenue in two ways, it can:

- be incorporated into a TNSP's revenue proposal as proposed capital and/or operating expenditure—we would consider this in making our revenue determination for the upcoming regulatory control period
- be incorporated into a TNSP's revenue proposal as a contingent project (if the need and/or timing is uncertain)—this does not form part of our assessment of the total forecast capital expenditure we approve in a determination for an upcoming regulatory control period, but can be included later in the total revenue allowance if a number of conditions are met.

2.4 How the ISP will fit in the transmission planning framework

The draft rules for making the ISP actionable integrate the ISP into the transmission planning process, making changes to the current transmission planning framework. The draft rules establish processes, roles and responsibilities. They aim to strike a balance between the requirements for efficiency of process, accountability and transparency in decision making, and the necessary flexibility to respond to new information. The key changes to the current transmission planning framework will:

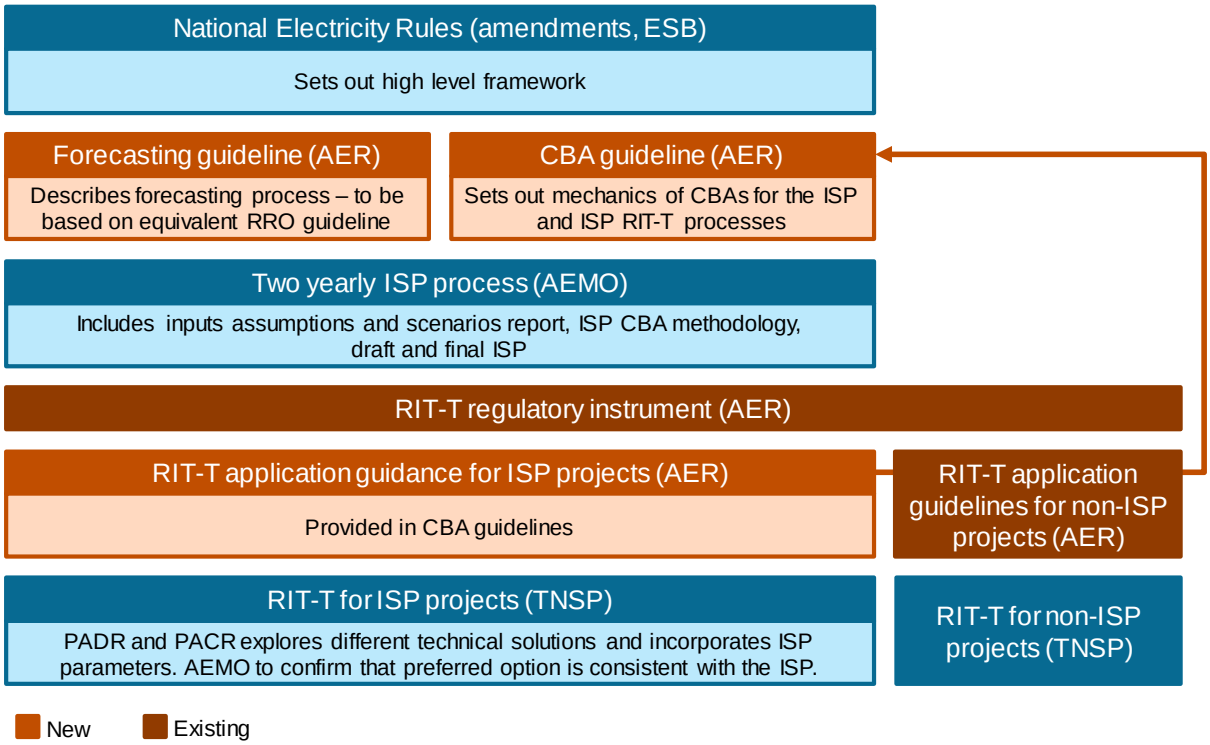
- require the AER to develop/adapt the CBA and forecasting best practice guidelines
- replace the NTNDP with the ISP process
- remove and amend elements of the RIT–T and post-RIT–T process for ISP projects.

We note that not all RIT–Ts will flow from actionable ISP projects under the proposed framework. There will remain RIT–Ts that will be initiated by a TNSP separately, such as RIT–Ts for transmission asset replacement capital expenditure projects. The current transmission planning framework will apply largely unchanged to these projects.

2.4.1 Regulatory governance framework

The proposed regulatory governance framework for the actionable ISP is set out in Figure 2. This shows the CBA and forecasting best practice guidelines must be guided by the NEL and NER, and provide additional information to guide AEMO's ISP process.

Figure 2: ISP governance framework



Source: AER analysis; ESB, *Converting the ISP into action: Consultation on draft rules*, November 2019, p. 12.

2.4.2 Transmission planning process

The changes to the current transmission planning framework strengthen the role of the ISP relative to the NTNDP, and streamline timeframes. Key components of the proposed transmission planning process (for actionable ISP projects) include:[10]

- TNSPs continue to develop annual planning reports and engage in joint planning, which will include joint planning with AEMO.
- In the ISP, AEMO will develop an optimal development path which comprises a set of ISP projects that meet the power system needs over the 20 year planning horizon.
- From the ISP, AEMO will describe each actionable ISP project from the optimal development path in terms of an identified need. This then triggers the appropriate TNSP(s) to apply the RIT–T and publish their PADR within set timeframes.
- The ISP will streamline the RIT–T process and allow the TNSP to consider granular and technical information in respect of the identified need in the ISP. The ISP will replace the PSCR required in the current RIT–T process.
- The AER will no longer approve RIT–Ts through a preferred option assessment.
- The preferred option in a RIT–T can go through the contingent project process provided:
    - there is AEMO confirmation (a 'feedback loop') that the preferred option is the same as the ISP candidate option, or is otherwise aligned with the ISP; or
    - the triggers in an AER revenue determination are met.
- The ISP and the RIT–T will have dispute resolution mechanisms.

2.5 Our role in the new transmission planning framework

The AER is responsible for the economic regulation of electricity transmission and distribution services in the NEM,[11] which promotes efficient investment in, and efficient operation and use of, these services for the long term interests of consumers. We are also responsible for monitoring, investigating and enforcing compliance with obligations under the NEL, NER and other respective regulations. As such, our role in the new transmission planning framework (with the actionable ISP) includes:

- providing guidance to AEMO and RIT-T proponents (and stakeholders) on the application of the NER through development and application of guidelines (see section 1.1)
- monitoring compliance with the NER, including RITs and binding guidelines, and taking enforcement action where necessary and appropriate (see section 7.2)
- identifying best practice CBA to promote investment efficiency given our expertise as an economic regulator, consistent with our role in the current RIT processes
- making determinations to settle ISP and/or RIT disputes

10 ESB, *Draft: Integrated system plan rule changes—Consultation version*, November 2019, various clauses.

11 And Northern Territory

- assessing efficient proposed expenditure associated with actionable ISP projects within the amended contingent project application framework.

2.6 Key terms used in this issues paper

Table 3 sets out the key terms we use in this issues paper, largely related to the ISP and RIT–T processes.

Table 3: Key terms used in this issues paper

Term	Explanation
Development path	A set of projects in an ISP that together address power system needs.
Optimal development path	The development path identified by AEMO as optimal in the most recent final ISP or ISP update—determined in accordance with the framework set out in the CBA guidelines.
ISP project	An individual investment project within an optimal development path. It can be a transmission project (actionable ISP project), or a project related to another part of the supply chain (ISP development opportunity).
ISP candidate option	This is an actionable ISP project that forms part of the optimal development path in the ISP. It is subsequently considered as a credible option in the RIT–T process.
Credible option	Credible options in this transmission planning context are projects that address an identified need for a RIT–T application.
Preferred option	The credible option that maximises the present value of net economic benefit to all those who produce, consume and transport electricity in the market.
Counterfactual or base case	The status quo or reference option against which costs and market benefits of alternative options are assessed in a CBA. The ISP uses the term counterfactual, and the RIT–T currently uses the term base case. The RIT–T regulatory instrument defines the base case as a situation in which no option is implemented by, on behalf of the TNSP.
Power system needs	The power system needs are set out in the draft rules (clause 5.22.3) and include the reliability standard, power system security, system standards, other standards / technical requirements, and public policy requirements.
Identified need	The objective a network service provider seeks to achieve by investing in the network in accordance with planning requirements under the rules or a final ISP update.
Reasonable scenario	Different plausible future market environments. They can consider macroeconomic variables such as population growth, economic growth, consumption, and technology related parameters such as fuel costs, etc.
Planning scenario	The most likely of the scenarios AEMO determines.

Costs	The present value of the direct costs of a credible option or development path. The classes of costs are set out in the draft rules (clause 5.15A.2(b)(8), 5.15A.3(b)(6), 5.22.8(d)).
Market benefits	The present value of the benefits of a credible option or development path, or a benefit to those who consume, produce and transport electricity in the market, that is, the change in producer plus consumer surplus. The classes of market benefits are set out in the draft rules (clause 5.15A.2(b)(4), 5.15A.3(b)(4), 5.22.8(c)).
Net economic benefit	Net economic benefit equals the market benefits less costs.

Source: ESB, *Draft: Integrated system plan rule changes—Consultation version*, November 2019, clause 5.10.2; AER, *Regulatory investment test for transmission*, June 2010; AER, *RIT–T application guidelines*, December 2018.

2.7 Related work

This work in making the ISP actionable is closely related to the AEMC's proposed reforms on the coordination of generation and transmission investment (CoGaTI).[12] These intend to:

- Improve the efficiency of generation (and storage) investment by making changes to wholesale electricity pricing. This provides better locational signals based on the marginal cost of supplying electricity at different locations across the transmission network. This is paired with hedging instruments to allow generation (and storage) to manage congestion risk.
- Improve the efficiency of generation (and storage) dispatch by removing incentives for disorderly bidding.
- Improve the efficiency of transmission planning by providing better information for transmission planning and the ISP process, and facilitating the development of REZs.

We will closely monitor the AEMC's progress with these reforms as we develop and update the guidelines required to make the ISP actionable.

12 See AEMC CoGaTI review webpage at https://www.aemc.gov.au/market-reviews-advice/coordination-generation-and-transmission-investment-implementation-access-and

3 Objective and scope of the guidelines to make the ISP actionable

This section sets out the objective and high level scope of the guidelines. The issues described in sections 4 to 7 should be considered with regard to this information.

For clarity, we refer to the forecasting best practice and CBA guideline (which also contains RIT–T guidance for actionable ISP projects) as 'ISP guidelines'. We refer separately to the RIT application guidelines for non-ISP projects and the RIT instruments themselves.

3.1 Objective of ISP guidelines

The ISP is to provide a biennial whole of system plan for the efficient development of the power system that achieves power system needs for a planning horizon of at least 20 years, for the long term interests of consumers.[13] This is consistent with the National Electricity Objective (NEO) in promoting efficient investment in electricity network assets for the long term interests of consumers.

Given this, the objective of the ISP guidelines is to provide certainty, transparency and accountability for AEMO, RIT–T proponents and stakeholders to promote:

- ISPs that identify the optimal development path that optimises the net economic benefit to all those who produce, consume and transport electricity in the relevant market
- RIT–Ts that identify the credible option that maximises the net economic benefit to all those who produce, consume and transport electricity in the relevant market
- effective stakeholder consultation and engagement in the ISP and RIT–T processes.

Question 1: Do stakeholders agree with our proposed objective for the ISP guidelines?

3.1.1 The importance of cost benefit analysis and consultation

We consider rigorous cost benefit analysis (CBA) and effective consultation are essential to the transmission planning process. The objective of CBA is to promote investment efficiency by considering the relative costs and benefits for different investment options, before selecting the option that optimises the net economic benefit across the market.

This promotes the NEO by reducing the risk that consumers will pay for inefficient transmission investment. This risk is always present in transmission planning, due to uncertainty in forecasting future market developments. Uncertainty (and therefore risk) is higher in the current context where the energy market is transitioning towards different forms of generation and consumption based on technological developments (e.g. storage, DER, electric vehicles, etc.), and other factors (e.g. government policies).

Inefficient transmission investment can be in the form of under- or over-investment:

13 ESB, *Draft: Integrated system plan rule changes—Consultation version*, November 2019, clause 5.22.2.

- While under-investment can reduce the quality of network services, it can also increase the cost of supply from generation. This could be due to inefficient generation investment (where transmission is a more efficient substitute) or the operation of higher fuel cost generation. This is particularly relevant in the current context, as avoided generation costs were a focus in the 2018 ISP. To understand the potential magnitude of generation supply costs, the annual spot market turnover in 2018–19 was $19 billion.[14] While this market is competitive, part or all of the turnover flows through to customer bills.
- Over-investment can result in sustained price increases for consumers connected to the network. It can also distort incentives for future non-network development and efficient use and operation of the network. This is because transmission investment is high fixed cost and long lived, and the full cost of these investments are passed through to consumers under the regulatory framework. To understand the potential magnitude of network costs, the value of transmission network assets in 2018 was approximately $21 billion.[15] Further, the completed or in-progress RIT–Ts associated with Group 1 and 2 projects in AEMO's 2018 ISP have combined estimated capital costs ranging from approximately $4.4–6.9 billion.[16]

A CBA can mitigate the risk of under- and over-investment by identifying all viable options for a particular action, and assessing their costs and benefits under different future scenarios, taking into account the likelihood of those scenarios occurring. This includes carefully analysing the forecast investments in (and operation of) generation that may arise with and without the network investment option. Considering the likelihood of future scenarios, even in a qualitative sense, is important because there can be significant benefits to avoiding the outcomes arising from a particular scenario, but if the likelihood of that scenario occurring is very low, it may not be worth the capital costs which are certain to be incurred.

Similarly, effective consultation is essential to the transmission planning process because it provides the foundation for transparency, and improves the forecasting and decision making process. Given the high fixed costs of transmission investment and uncertainty of the planning environment, promoting transparency and sharing accountability through effective consultation is valuable. For example, market participants may have information the central planner does not have, which can improve the accuracy of forecasts.

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14 AER analysis based on wholesale market statistics on AER website as at 10 October 2019 - https://www.aer.gov.au/wholesale-markets/wholesale-statistics/annual-volume-weighted-average-spot-prices and https://www.aer.gov.au/wholesale-markets/wholesale-statistics/electricity-supply-to-regions-of-the-national-electricity-market.

15 AER, *State of the energy market 2018*, pp. 74, 157 (excel file).

16 This considers the latest RIT-T consultation reports for SA energy transformation (RiverLink), minor Queensland to NSW interconnector upgrade (QNI), HumeLink (SnowyLink North), MarinusLink, minor Victoria to NSW interconnector upgrade (VNI) and Western Victoria renewable integration projects. It also includes ElectraNet's estimated cost for installing four synchronous condensers. These are published on their respective websites. This estimate does not include the medium-large Queensland to NSW Interconnector upgrade and KerangLink (SnowyLink South). Please note this is an estimate from publicly available documents, and contains some inconsistencies, such as a mix of nominal and real values, and one estimate that is the present value of costs, rather than the capital costs. For the list of group 1 and 2 projects, see AEMO, *Integrated system plan for the national electricity market*, July 2018, pp. 83, 87.

3.2 Scope of guidelines

The scope of the guidelines we are required to develop and update is provided for in the ESB's draft rules, and apply to the NEM.

3.2.1 Cost benefit analysis (CBA) guideline

The CBA guideline will be a binding guideline for AEMO to apply when preparing its ISP, and for TNSPs to use when applying the RIT–T to actionable ISP projects.[17] The CBA guideline will draw on the current RIT–T application guideline, and is required to describe, among other things:[18]

- the objective that AEMO should seek to achieve in the ISP when:
    - developing the counterfactual development path
    - selecting a set of development paths for assessment
    - describing the identified need relating to an actionable ISP project.
- the framework used to select the optimal development path, including the assessment of the costs and benefits of various development paths across different scenarios
- the operation and application of the RIT–T to actionable ISP projects, including how TNSPs should apply the ISP parameters.

3.2.2 Forecasting best practice guideline

The forecasting best practice guideline will be a binding guideline AEMO must apply in its development of the ISP, including in its development, consultation and publication of the:

- inputs, assumptions and scenarios report
- ISP methodology.

This will provide guidance for AEMO's forecasting practices and processes as they relate to an ISP, and the process to be used for an ISP update.[19]

The guideline will be prepared by adapting the Retailer Reliability Obligation (RRO) forecasting best practice guideline, which performs a similar function in the context of the modelling that underpins AEMO's reliability forecasts.[20] Specifically, the guideline will focus on matters of:

- consultation: the mechanisms AEMO will use to consult with stakeholders, including industry, expert reference groups and consumer groups

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17 ESB, *Draft: Integrated system plan rule changes—Consultation version*, November 2019, clause 5.22.5(b) and 5.16A.2. Also, we use TNSP and RIT-T proponent interchangeably in this document for ease of reference. However, we note a RIT-T proponent does not have to be a TNSP.

18 ESB, *Draft: Integrated system plan rule changes—Consultation version*, November 2019, clause 5.22.5 and 5.16A.2.

19 ESB, *Draft: Integrated system plan rule changes—Consultation version*, November 2019, clause 5.22.5.

20 AER, Retailer Reliability Obligation, *Best Practice Forecasting Interim Guidelines*, 2019.

- confidential data: how confidential data should be treated
- methodology and key parameters: how the methodology, scenarios, sensitivities and key parameters (e.g. input variables) should be developed to facilitate stakeholder scrutiny.

This guideline should be designed to provide for stakeholders to have the best opportunity to engage in forecast development.

3.2.3 RITs and RIT application guidelines for non-ISP projects

The draft rules show there are likely to be areas in the current RIT–T regulatory instrument and RIT–T application guideline (for non-ISP projects) that need to be updated to be consistent with the new transmission planning framework. These updates may also need to be reflected in the RIT–D regulatory instrument and RIT–D application guideline.

4 Issues to consider: Elements of cost benefit analysis for the ISP

This section sets out our initial views and targeted questions on key elements of cost benefit analysis for the ISP process, as well as the flexibility to be provided in the CBA guideline for AEMO in developing the ISP.

Although the CBA guideline will also cover RIT–Ts for actionable ISP projects, we do not discuss RIT–T issues in this section. We focus on RIT–T issues in section 6.

4.1 Prescription versus flexibility

This section sets out our initial views on issues associated with the flexibility to be provided in the CBA guideline for the ISP. At a high level, our initial view is to:

- prescribe the high level steps involved in conducting a sound CBA as requirements that AEMO must follow
- allow AEMO flexibility to choose an optimal development path based on its consideration of net economic benefits of development paths across reasonable scenarios.

For key CBA elements within this, we propose to use the framework set out in this section to signal what is required of AEMO in respect of each element.

4.1.1 Background

A key threshold question that will inform our approach to the CBA guideline relates to the level of prescription that should be included in the guideline. The level of prescription applied sits on a spectrum ranging from highly prescriptive at one end to highly flexible at the other end. This choice will be driven by what is considered to be the best approach to enable the ISP to identify the optimal development path that optimises the net economic benefit to all those who produce, consume and transport electricity in the relevant market.

If the CBA guideline takes a highly prescriptive approach, it will contain more detail about how the CBA is to be undertaken and therefore limit the extent to which AEMO can exercise its own judgment and discretion. This would create more certainty and transparency for stakeholders on AEMO's approach to conducting the ISP CBA, but may limit AEMO's ability to apply its expert judgment. It would also make the guideline less adaptable over time.

Conversely, if the CBA guideline takes a more flexible approach, it would allow AEMO to apply its judgment to the analysis and provide for a more adaptable guideline. However, it may reduce certainty and transparency for stakeholders regarding AEMO's approach to conducting the ISP CBA in accordance with the guideline objective.

On the whole, we consider the CBA guideline will not take a uniform approach to prescription and flexibility. While AEMO will generally have flexibility to choose the optimal development path, there will be some elements of the CBA where more prescription is appropriate. As the

CBA guideline is binding on AEMO, it is important that it is clear where AEMO has discretion and where AEMO must apply what is in the guideline.

We set out a framework in section 4.1.2, which we plan to use when we prepare the CBA guideline to signal what is required of AEMO in respect of each element of the guideline.

The CBA guideline, being binding, will also form the basis of AER compliance and enforcement activities. The AER's approach to compliance and enforcement for each element of the guideline will depend on where the element sits within the framework. Therefore, the next section gives an indication of what we would expect from AEMO to demonstrate compliance in respect of each component of the framework. We will provide more detail on this in the draft CBA guideline.

4.1.2 Framework for classifying elements of the CBA

When we draft the CBA guideline, we propose to classify the CBA elements identified in the guideline in one of three ways:

- **Requirements**
    - For some elements of the CBA, AEMO *must* apply requirements of the guidelines. Unless it applies them, it will be in breach of the guidelines and NER.
    - For example, if the guideline states that AEMO is required to determine the net economic benefit for each development path in each scenario, we would expect (for compliance purposes) for AEMO to demonstrate how it has complied with these requirements, in writing.
- **Considerations**
    - For some elements of the CBA, AEMO will need to 'have regard to' what is in the guideline. For AEMO to comply with the guideline, it needs to show that it has taken into account the element(s) of the guideline.
    - For example, if the guideline states that AEMO must have regard to the likelihood of scenarios occurring, we would expect (for compliance purposes) for AEMO to demonstrate how it has had regard to this consideration, in writing. This would include explaining its reasoning if it does not apply the consideration.
- **AEMO Discretion**
    - There will be elements of the CBA where the guideline does not direct how AEMO must approach that element. In this respect, the guideline does not bind AEMO. There may also be narrative information and/or worked examples.
    - For example, the guideline may state that AEMO has discretion as to how it determines the inputs and assumptions for the ISP. AEMO should give a full explanation as to how and why it has exercised its discretion, and apply a robust process to seek stakeholder input.

In this issues paper, we explore key elements of the CBA for the ISP process. We will then consider stakeholder feedback and decide on how each of these elements should be classified within the above framework.

Question 2: Do stakeholders agree with our proposed approach to flexibility and prescription for AEMO in the CBA guideline? Will this provide sufficient certainty and transparency to stakeholders?

4.2 ISP inputs, assumptions and scenarios

Under the draft rules, AEMO is required to publish an inputs, assumptions and scenarios report for consultation, prior to the draft ISP.[21] Given AEMO's planning and forecasting expertise, our initial view is that it should have significant discretion in this area, but it needs to explain clearly how and why it has exercised that discretion.

The forecasting best practice guideline will set out the process AEMO must follow in developing and testing inputs, assumptions and scenarios with stakeholders, and this is discussed in section 6.2.

4.2.1 Inputs and assumptions

AEMO's ISP modelling will rely on a large number of inputs and assumptions, which are necessary in any ex-ante modelling process. We support AEMO's discretion in developing the inputs and assumptions. However, we consider inputs and assumptions are a critical element of the CBA as they drive the outputs and outcomes of the modelling. As such, it is important that the inputs and assumptions are reasonable. Our initial view is that the reasonableness of inputs and assumptions is promoted by:[22]

- Transparency in the development and decision making process—inputs and assumptions should be clearly identified and tested with stakeholders. As part of this, AEMO should identify critical inputs and assumptions (i.e. those that have a large influence on the outputs and outcomes), and explain and justify their reasonableness.
- Internal consistency—inputs and assumptions, taken together, should be internally consistent, relevant and plausible.
- Reputable and independent sources—inputs and assumptions should be clearly sourced, and any methods used in developing inputs and assumptions should be evidence-based. Inputs and assumptions should also be up to date.
- Sensitivity analysis—AEMO should test the sensitivity of its ISP results and outcomes (i.e. net economic benefits for different development paths across scenarios) to changes in critical inputs and assumptions (see section 4.3.4).

We may also provide more specific guidance on economic inputs and assumptions, or those we have jurisdiction over. For example, discount rates, or values of customer reliability (VCRs). Under clause 8.12 of the NER, we are responsible for reviewing VCRs.

Question 3: What are stakeholders' views on our proposed approach to AEMO's development of inputs and assumptions? Are there additional principles we should consider?

21 ESB, *Draft: Integrated system plan rule changes—Consultation version*, November 2019, clause 5.22.4 and 5.22.7.
22 AER, *RIT T Application Guidelines*, December 2018, section 3.4.

4.2.2 Developing reasonable scenarios

Scenarios are different future market environments that are used in a CBA to manage uncertainty, and are based on macroeconomic variables/parameters (e.g. economic growth). In general, the costs and benefits of an investment will vary under each scenario, and the decision maker will take this into account when deciding which investment to choose because the future is uncertain and each scenario has a different chance of occurring.

We support AEMO's discretion in developing the number and nature of reasonable scenarios. However, given reasonable scenarios are a key element of the CBA (i.e. costs and benefits of each development path are assessed under each scenario), we also consider it is important they reflect the following:[23]

- comprise a set of input variables or parameters that are not expected to change across each development path considered, but are relevant to investment decision making (e.g. energy fuel and technology costs, demand growth, etc.)
- comprise internally consistent input variables and parameters, such that each scenario represents a plausible market environment
- encompass a reasonable range of plausible future market environments, such that the analysis is not skewed by unrealistic events.

As required by the draft rules, the optimal development path must have a positive net economic benefit in the most likely scenario (which we have termed in this document the 'planning scenario').[24]

Our initial view is that, while AEMO is not required to assign probabilities to scenarios, when it is choosing the optimal development pathway, it should consider, in a qualitative sense, the likelihood of each scenario occurring.

Question 4: What are stakeholders' views on our proposed approach to AEMO's development of reasonable scenarios? Are there additional principles we should consider?

4.3 ISP cost benefit analysis methodology

Under the draft rules, AEMO is required to publish an ISP methodology for consultation, prior to the draft ISP.[25] It must develop its methodology in accordance with our CBA guideline.

Our initial view is to prescribe the key steps for conducting a sound CBA (that is, the process to calculate the expected net economic benefit for each development path under each reasonable scenario) as a requirement. This is because these are well known in the economic and public policy literature. Our RIT–T application guideline describes these in detail, so we propose to adapt them to the ISP process, which will undertake CBA at the

23 AER, *RIT T Application Guidelines*, December 2018, pp. 34, 43-44.
24 ESB, *Draft: Integrated system plan rule changes—Consultation version*, November 2019, clause 5.22.5(e)(3).
25 ESB, *Draft: Integrated system plan rule changes—Consultation version*, November 2019, clause 5.22.4 and 5.22.7(c).

development path level rather than the individual project level. The key steps we propose AEMO undertake are:[26]

- Identify a set of development paths for assessment that contain individual ISP projects (both actionable ISP projects and ISP development opportunities).
- Characterise the base case, or counterfactual, development path.
- Identify the categories of costs and benefits using the classes of costs and market benefits set out in the draft rules.
- Quantify the expected long term costs and market benefits of each development path against the base case / counterfactual, under each reasonable scenario. Then calculate the expected net economic benefit. For each development path, this will require an assessment of the resulting development of all other generation and load assets.
- Conduct sensitivity analysis to test alternate hypotheses or drivers of costs and market benefits, and explore option value.[27]

We further consider specific issues in the sub sections below. For clarity, we use the terminology 'costs', 'market benefits' and 'net economic benefit', consistent with the RIT–T regulatory instrument. We have included the definitions for these terms in Table 3.

Question 5: What are stakeholders' views on our proposed CBA steps for the ISP? Are the amended steps from the RIT–T application guideline applicable to the ISP analysis? Are there particular areas where a worked example would be helpful in providing this guidance?

4.3.1 Identifying a set of development paths

The draft rules require the CBA guideline to describe the objective AEMO should seek to achieve when selecting a set of development paths for assessment.[28] Development paths include a sequence of ISP projects, and should set out each project's proposed location and timing, as well as any relevant triggers, pre-conditions or contingencies.

Our initial view is that AEMO should select development paths that:[29]

- are commercially and technically feasible (including in terms of meeting timing requirements) without bias to technology or ownership
- contain, where relevant, non-network substitutes to network investment, such as demand response, generation, storage, distributed energy resources (DER), etc.
- are a representative sample of the full range of possible transmission development paths—as transmission investments can differ in terms of location, timing, size and form

26 AER, *RIT T Application Guidelines*, December 2018, section 3.

27 In the RIT-T application guidelines, this step is part of using scenario analysis to value market benefits. See AER, *RIT T Application Guidelines*, December 2018, section 3.8.

28 ESB, *Draft: Integrated system plan rule changes—Consultation version*, November 2019, clause 5.22.5(d)(4)(ii).

29 AER, *RIT T Application Guidelines*, December 2018, section 3.2.

- contain, where relevant, staging considerations, such that option value can be assessed (see section 5.1).

This approach is focussed on considering different development paths that capture the full range of options available for ISP projects to meet power system needs. Doing this explores different ways to reduce costs for consumers, promotes competitive neutrality, and mitigates against the risk of inefficient network investment.

Question 6: What are stakeholders' views on our proposed approach to AEMO's selection of development paths for assessment? Are there additional principles we should consider?

4.3.2 Defining the counterfactual development path

The draft rules require the CBA guideline to describe the objective AEMO should seek to achieve when developing the ISP counterfactual development path.[30] This is the status quo or reference development path against which the costs and market benefits of alternative development paths will be assessed.

Our initial view is that the ISP counterfactual development path should reflect the status quo, that is, it should contain no ISP projects that are not already committed.

It could contain replacement and small intra-regional augmentation investments that are not part of the ISP analysis. However, there is a possibility for larger transmission investments to overlap with such replacement and small augmentation expenditure, for example, to render them unnecessary. We seek stakeholder views on this.

Question 7: What are stakeholders' views of characterising the ISP counterfactual development path? Should replacement and small augmentation expenditure be included or excluded?

4.3.3 Quantifying costs and benefits

We consider all development paths can be assessed according to their costs and market benefits, and all costs and market benefits can be valued within the CBA framework. As such, we consider AEMO should quantify (in present value terms) all relevant and material expected costs and market benefits associated with each development path. The categories of costs and market benefits will be limited to those currently applied in the RIT–T, set out at clause 5.22.8 of the draft rules.[31]

The separate consideration of costs and market benefits is an important part of cost benefit analysis. This distinguishes CBA from a least cost optimisation approach. CBA values costs and market benefits to maximise net economic benefit. Least cost optimisation, on the other hand, identifies the lowest cost development path that meets certain conditions or constraints. Under least cost optimisation, comparing the costs of a particular development path with the costs of an appropriate base case or counterfactual can allow for the

30 ESB, *Draft: Integrated system plan rule changes—Consultation version*, November 2019, clause 5.22.5(d)(4)(i).
31 ESB, *Draft: Integrated system plan rule changes—Consultation version*, November 2019, clause 5.22.8(c)-(d).

identification of a number of avoided costs, which become monetised (or valued) as market benefits. However, this may not capture all relevant and material market benefits. As such, we consider the least cost optimisation modelling in the ISP can be used to assist with the CBA, but it is not sufficient on its own. AEMO must take further steps to ensure it identifies and values all relevant and material expected market benefits of development paths under consideration.

Further, while AEMO is not required to assign quantitative probabilities to each reasonable scenario, we consider it should use probabilities in estimating some market benefits. This would require assigning probabilities to specific events, which is different to assigning probabilities to market-wide scenarios. For example, high impact low probability (HILP) events have, by definition, a low probability of occurrence. If market benefits associated with avoiding costs from HILP events were not weighted by their probability of occurrence, this would skew the results.

Lastly, we consider AEMO should consult on its methodology for valuing expected costs and market benefits. In addition, AEMO should present the total costs, market benefits and net economic benefit for each development path under each reasonable scenario. This should include noting development paths where the market benefits accrue in later years of the planning horizon (as these benefits are more uncertain). Together, this provides transparency for stakeholders to engage with and test the analysis.

Question 8: What are stakeholders' views on quantifying costs and market benefits? What market benefits do stakeholders consider need to be estimated using probabilities?

4.3.4 Conducting sensitivity analysis

Transmission planning is necessarily uncertain because it requires ex-ante decision making based on forecasts of unknown future market developments. This gives rise to considerations on how to assess and manage risk, which relates to the degree of uncertainty about an event—such as the expectation of the efficiency of (or return on) an investment.[32]

In the planning process, transmission investment risk can be assessed through the CBA by undertaking scenario analysis and sensitivity analysis on a range of viable development paths. While scenario analysis considers the net economic benefit of each development path under a range of reasonable future scenarios, sensitivity analysis tests particular inputs, assumptions or hypotheses that affect the net economic benefit of development paths for a given future scenario.

The draft rules require the ISP to describe how each development path performs under any sensitivities AEMO considers reasonable.[33] They also require AEMO to test the robustness of alternative development paths to future uncertainties through the use of scenarios and sensitivities.[34] We consider AEMO should conduct sensitivity analysis on the selected development paths, to identify and test key ISP parameters or alternate hypotheses that

32 Bishop, S., Faff, R., Oliver, B., Twite, G., *'Corporate Finance'*, Ed. 5 Pearson Prentice Hall, 2004, p. 577.

33 ESB, *Draft: Integrated system plan rule changes—Consultation version*, November 2019, clause 5.22.6(a)(3).

34 ESB, *Draft: Integrated system plan rule changes—Consultation version*, November 2019, clause 5.22.5(d)(2).

drive the expected costs and market benefits in different scenarios. Varying more than one parameter can be necessary to maintain internal consistency and plausibility if they are closely related. We consider AEMO should present and consult on its sensitivity analysis.

We also consider AEMO could use sensitivity analysis to explore option value (see section 5.1). In particular, it can test how the expected net economic benefit changes under different staging options. These can be tested against different probabilities of receiving new information at a future decision point.

Question 9: What are stakeholders' views on whether and how AEMO should conduct sensitivity analysis in its ISP process?

4.4 Choosing the optimal development path

Following the quantification of costs and market benefits, AEMO will select the optimal development path that it considers optimises the net economic benefit to all those who produce, consume and transport electricity in the relevant market. We propose to provide more flexibility for AEMO in this part of the CBA guideline, as this is a decision making point which requires the use of judgement in an uncertain environment. As such, we do not propose to prescribe a particular decision making approach, provided the net economic benefit of the optimal development path is positive in the planning scenario, and AEMO transparently sets out the basis for its decision making with stakeholders.

The draft rules require the CBA guideline to describe the framework for AEMO to select the optimal development path.[35] It also requires us, in the development of the guideline, to 'recognise the risks to consumers arising from uncertainty, including over-investment, under-investment, premature or overdue investment'.[36]

As mentioned in previous sections, investment decisions are subject to uncertainty and risk. The development path that optimises the present value of the net economic benefit across the NEM is not known ex-ante. As such, in considering the net economic benefit of different development paths under different scenarios (and sensitivities), there are a number of different decision making approaches AEMO could use to choose the optimal development path it considers will optimise the net economic benefit across the NEM. AEMO's choice will depend, in part, on its level of risk aversion in managing transmission investment risk.

One approach could be to take a probability weighted average of market benefits and costs associated with each development path across the reasonable scenarios. This is the approach used in the RIT–T application guideline and is the standard approach used in most policy contexts.[37] Another approach could be to choose the development path with the least worst 'regret', where 'regret' is the difference between the net economic benefit of a development path in a particular scenario, and the highest net economic benefit in that scenario. In fact, AEMO may apply multiple approaches to test its choices. We recognise the

35 ESB, *Draft: Integrated system plan rule changes—Consultation version*, November 2019, clause 5.22.5(d)(5).
36 ESB, *Draft: Integrated system plan rule changes—Consultation version*, November 2019, clause 5.22.5(e)(1).
37 Brattle Group, *High-impact, low-probability events and the framework for reliability in the NEM*, February 2019, p. iv.

value of AEMO using its judgement to choose the optimal development path, given its significant expertise in planning and forecasting.

As such, while we support the probability weighted approach set out in the RIT–T application guideline, we propose AEMO choose its decision making approach(es) to select the optimal development path, subject to:

- AEMO setting out the different decision making approaches it could use in its ISP methodology, and explaining in detail the basis for its preferred decision making approach(es). In choosing its preferred decision making approach(es), AEMO should consider more than one approach. In justifying its preferred approach(es), AEMO should consider both sides of transmission investment risk (i.e. under-investment, over-investment, premature or overdue investment—see section 3.1.1).
- The optimal development path having a positive expected net economic benefit in the planning scenario (set out in the draft rules)[38] and being robust across most scenarios.
- AEMO considering the qualitative likelihood of scenarios. If AEMO chooses an optimal development path based on its net economic benefit in a more extreme or less likely scenario, it should provide reasons and explicitly test this with stakeholders. This would not require AEMO to assign probabilities to scenarios.
- AEMO considering the results of its sensitivity analysis (see section 4.3.4), as this can show where there are benefits in staging investments to retain flexibility, or conversely, in building assets that provide insurance against particular events occurring in the future.

Table 4 provides a simple illustrative example how net economic benefits can be presented and interpreted across development paths and reasonable scenarios. This sets out an illustrative net economic benefit (quantified market benefits less costs) for three hypothetical development paths (DP 1, DP 2, DP 3) under five hypothetical future scenarios (neutral, slow change, fast change, high DER, step change).

Table 4: Illustrative example of net economic benefits across scenarios

Scenario	DP 1 ($, mil)	DP 2 ($, mil)	DP 3 ($, mil)
Neutral (planning)	180	220	195
Slow Change	-10	20	220
Fast Change	125	-20	-50
High DER	-30	50	100
Step Change	175	-10	-30

Source: AER analysis (illustrative, hypothetical example only).

Table 4 shows all development paths have a positive net economic benefit in the neutral (planning) scenario. If we investigate DP 1, it appears to perform well in the fast change and step change scenarios, but performs poorly in the slow and high DER scenarios. However,

38 ESB, *Draft: Integrated system plan rule changes—Consultation version*, November 2019, clause 5.22.5(e)(3).

DP 2 and 3 are the reverse. This indicates DP 1 may result in greater risk of underutilisation or asset stranding (i.e. over-investment) if the future looks more like the slow change or high DER scenario, but DP 2 and DP 3 may result in greater risk of network constraints (i.e. under-investment) if the future looks more like the fast or step change scenario. This illustrates the importance of AEMO qualitatively considering the relative likelihood of different scenarios occurring.

Question 10: What are stakeholders' views on our proposal to provide AEMO with the flexibility to choose its decision making approach(es) to determine the optimal development path, subject to consultation and justification? Does this satisfy the draft rules requirements and sufficiently mitigate the risks of over-investment, under-investment, premature or overdue investment?

4.5 Preparing actionable ISP projects for RIT–Ts (describing the identified need)

Under the draft rules, the ISP will trigger RIT–Ts and replace the PSCR currently developed as part of the RIT–T process. As such, the ISP will need to describe an identified need for each actionable ISP project in its optimal development path, and a TNSP must use that identified need in applying the RIT–T. The ISP may also consider a range of options for each actionable ISP project, which a TNSP can use as credible options in applying the RIT–T.

The draft rules require the CBA guideline to describe how AEMO must set out the identified need relating to actionable ISP projects.[39] Given AEMO's modelling is at the development path level, the identified need is likely to be driven by the optimal development path identified by AEMO and the actionable ISP projects within it. We consider the identified need AEMO determines for an actionable ISP project should maintain the integrity of the optimal development path, while allowing TNSPs to explore different credible options in applying the RIT–T based on more detailed / granular information at the individual project level.

In terms of describing the identified need, our initial view is consistent with the RIT–T application guideline. That is, an identified need is the objective to be achieved by investing in the network. It is not the means to achieve the objective.[40] That is, a description of an identified need should not mention or explain a particular method, mechanism or approach to achieving a desired outcome. This should prevent biasing the development of credible options in a RIT–T towards a particular solution.

Question 11: What are stakeholders' views on our proposed approach to describing the identified need to be used by TNSPs in applying the RIT–T for an actionable ISP project?

39 ESB, *Draft: Integrated system plan rule changes—Consultation version*, November 2019, clause 5.22.5(d)(6).

40 AER, *RIT T Application Guidelines*, December 2018, section 3.1.

5 Issues to consider: Other issues related to CBA guideline

This section sets out our initial views and targeted questions on other issues related to the CBA guideline, including consideration of option value and non-network options. At a high level, our initial view is:

- for the CBA guideline to remain consistent with the RIT–T application guideline on option value to the extent possible, and apply to the ISP and RIT–Ts for ISP projects
- to provide high level guidance in the CBA guideline on the informational requirements of AEMO notices calling for non-network options.

5.1 Option value and staging

5.1.1 Meaning of option value

Option value refers to a market benefit that results from retaining flexibility where certain actions are irreversible (sunk), and new information may arise in the future on the payoff from taking a certain action. Option value is likely to arise where there is uncertainty regarding future outcomes, the information that is available in the future is likely to change, and the option considered is sufficiently flexible to respond to that change.[41]

Option value can be captured by analysing options that involve staging projects to be able to account for new information that arises at a later stage. Appropriate consideration of option value minimises the likelihood building assets that are ultimately underutilised or stranded, which results in consumers bearing inefficient costs. That is, it mitigates the downside risk while maintaining the upside risk (or benefit) of the investment.

It is important for AEMO to consider option value because almost all network investment decisions are partially or fully irreversible. Further, AEMO might expect that information will later become available that affects the net economic benefit of partially- or fully-irreversible network investment decisions. In such circumstances, there may be value in retaining some flexibility to respond to that new information when it emerges.

Examples of option value include:

- If demand for a transmission line is uncertain but might increase, the economically efficient option may be to retain the flexibility to expand the capacity of the transmission line at a relatively low cost in the future. This staging may result in a higher total cost (and lower net economic benefit) than a full build in a scenario where the full build is ultimately required. However, it would have a higher net economic benefit when considered in conjunction with other scenarios which include where the full build is not ultimately required. An example of this may be procuring easements that provides the flexibility of more quickly building a project if it is needed in future.

41 AER, *RIT T Application Guidelines*, December 2018, section 3.2.3, section 3.9.3, and appendix A.9.

- If there is a concern that demand for a transmission line may fall, smaller scalable investments, such as non-network investments that are able to be redeployed, may be of greater net economic benefit when considered across multiple demand scenarios.

In some cases, it may be that the option value in retaining flexibility is outweighed by the market benefits of building an asset in full, especially where it is considered the asset may be needed on a time critical basis in the future. This would be determined through assessing different options in the CBA. This is because the options that involve staging would be assessed alongside a full build option. The full build option would be chosen when it has a higher net economic benefit that the options that involve staging—when considered across scenarios and after sensitivity analysis.

We note that assessing option value depends on the qualitative likelihood of scenarios occurring, as well as the specific quantitative probability of particular events (or new information) that are critical to the particular investment. For example, there may be new information that arises in the future on the likelihood of generation locating in a particular area, or the likelihood of an existing generator closing, that is critical to the investment decision. Assessing option value requires testing the costs and market benefits of the different options under different probabilities of those events occurring.

At the development path level, option value could also be created in some circumstances if building one project creates options in respect of another project within a development path.

5.1.2 Applying option value in the ISP

In the RIT–T application guideline, we require RIT–T proponents to consider option value as a class of potential market benefit as per NER clause 5.16.1(c)(4)(ix).[42] The guideline shows option value can be captured through performing probability-weighted scenario analysis using credible options that involve staging decisions. This provides an understanding of how the net economic benefit differs across full build options and those that involve staging, across different scenarios where the full investment is needed and not needed.

In the CBA guideline, we propose to remain consistent with the RIT–T application guideline to the extent possible. We consider AEMO should, where practicable, consider option value by considering the costs and market benefits of development paths that contain staging decisions. However, AEMO is not required to assign probabilities to scenarios in the ISP, and assessing option value requires the assignment of probabilities to specific events at decision points. As such, we consider AEMO could instead undertake separate sensitivity analysis of the costs and market benefits where key information to a decision point is varied (e.g. a generator retires at different times).

However, where AEMO is unable to consider option value at the ISP project level, we consider AEMO should explain this to stakeholders. We also consider TNSPs should then consider option value in more detail in their RIT–Ts, in accordance with the RIT–T application guideline. This may result in new credible options being considered.

42 AER, *RIT T Application Guidelines*, December 2018, section 3.2.3, section 3.9.3, and appendix A.9.

Question 12: What are stakeholders' views on how AEMO should take option value into account in the ISP, and TNSPs in RIT–Ts for actionable ISP projects?

5.2 Non-network options

We consider it is important to consider network and non-network options in forming the development path at the ISP level, and for individual projects at the RIT–T level. Generally, consideration of both network and non-network options in a RIT–T (through effective consultation):

- helps identify the preferred option by allowing a broad spectrum of credible options to be considered and by providing additional scrutiny to the analysis to ensure it is robust
- adds credibility to a RIT–T, reducing the scope for misunderstandings and disputes, and increasing our ability to fast-track further regulatory assessments on expenditure related to that project
- promotes competitive neutrality by considering options that can be provided from contestable markets.

The draft rules require AEMO to publish a notice requesting submissions for non-network options at the same time as it publishes the draft ISP. Where AEMO indicates, in the final ISP, that a non-network option meets or potentially meets the identified need, the TNSP must assess the non-network option as one of the credible options in applying the RIT–T (specifically, in its PADR).[43]

Our initial view is that there could be value in providing high level guidance in the CBA guideline on the informational requirements of AEMO notices calling for non-network options. This includes a requirement to set out the technical characteristics of the identified need that a non-network option would be required to deliver, such as the size of load reduction or additional supply, location and operating profile. This aims to guide AEMO in publishing the information that would assist non-network proponents in preparing proposals that address the identified needs.

For RIT–Ts for actionable ISP projects, our initial view is to replicate the section in the RIT–T application guideline in the CBA guideline that encourages TNSPs to consider non-network options through consumer and non-network business engagement.[44] This is because there may be non-network options identified or put forward at the RIT–T stage, and it is important for these options to be considered.

Question 13: What are stakeholders' views on our proposed guidance on non-network options in the CBA guideline?

43 ESB, *Draft: Integrated system plan rule changes—Consultation version*, November 2019, clause 5.22.10.

44 AER, *RIT T Application Guidelines*, December 2018, section 4.1 and 4.2.

6 Issues to consider: RIT–T documents and forecasting best practice guideline

This section sets out our initial views and targeted questions on issues related to the RIT–T documents and forecasting best practice guideline. At a high level, our initial view is to:

- make changes to the RIT–T application guidance for actionable ISP projects in the CBA guideline to facilitate integration of the ISP, while making only minor changes to the current RIT–T application guideline for non-ISP projects
- make changes to the RIT–T regulatory instrument to the extent required by the draft rules
- adapt the RRO forecasting best practice guideline to the ISP process.

6.1 RIT–T application guideline and RIT–T instrument

6.1.1 Status of RIT–T application guideline

For actionable ISP projects

As discussed in section 2, making the ISP actionable will affect the role of the RIT–T in the transmission planning process. The actionable ISP seeks to streamline the RIT–T process, recognising the work already done by the ISP and avoiding duplication of planning and modelling by TNSPs (or RIT–T proponents). For example, TNSPs will not be required to publish a PSCR, as inputs, assumptions and scenarios would already be pre-determined by the ISP, and the ISP will describe the identified need and identify the ISP candidate option (which is subsequently considered as a credible option in the RIT–T). TNSPs will still be required to follow the remaining stages of the current RIT–T process, that is, the PADR and PACR, followed by a dispute resolution process.

These process changes raise questions on how the RIT–T analysis may need to change for actionable ISP projects, and as such, our RIT–T application guidance in the CBA guideline. Our initial view is that the RIT–T for actionable ISP projects must continue to require a cost benefit analysis. The analysis will be streamlined through use of ISP inputs, assumptions, scenarios, and to the extent possible, modelling.[45]

This is because the ISP CBA is to be performed at the system / development path level, not individual project level. The RIT–T CBA is required for individual project assessments that:

- considers the costs and market benefits with (and without) a particular project
- incorporates more detailed local knowledge, technical information and updated inputs (and may identify new information that can feed back to the ISP)
- considers a wider range of credible options that meet the identified need, including options that include staging decisions to incorporate option value.

45 See ESB, *Draft: Integrated system plan rule changes—Consultation version*, November 2019, clause 5.15A.3(b)(7)(iv).

As such, we consider the majority of RIT–T application guidance for actionable ISP projects in the CBA guideline will be similar to the current RIT–T application guideline. However, we will need to provide additional guidance which, among other things:

- acknowledges the PSCR would no longer be required for actionable ISP projects, and explains where some information currently required in the PSCR would need to be set out in the PADR (if unable to be undertaken at the ISP level)
- explains how TNSPs can use the ISP inputs, assumptions and scenarios in undertaking the RIT–T analysis (two particular issues are discussed below)
- explains how new information discovered through the RIT–T process can feed back through to the ISP process.

For non-ISP projects

Our initial position is that the current RIT–T application guideline would continue to apply for non-ISP projects (e.g. those arising from efficient asset retirements or de-ratings, or other intra-regional investments), with some minor amendments to acknowledge the difference between ISP and non-ISP projects.[46]

Question 14: What are stakeholders' views on our proposed approach to RIT–T application guidance for actionable ISP projects and non-ISP projects?

6.1.2 Applying ISP network/generation developments in a RIT–T

In undertaking a RIT–T, a TNSP must determine the net economic benefit of a particular credible option by comparing the market benefits in the base case (i.e. status quo), to the market benefits with the credible option present. This is done through modelling the 'states of the world' with and without the credible option, under each reasonable scenario.[47]

What is assumed in terms of underlying network augmentation and generator build in the NEM will have a significant impact on the total market benefits of a credible option. For example, the market benefits of a line to a remote REZ are likely to be higher the more generation is assumed to locate in that zone.

The output of the ISP will include an optimal development path for the NEM that contains a sequence of transmission network 'actionable ISP' projects and modelled generation developments or 'ISP development opportunities' (which should also take into account known/committed generation build). In the ISP, AEMO will develop the combination of network and generation (and other energy resources) investment that will, based on its forecasts, optimise the net economic benefit across the market. This leads to two issues:

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46 AER, *RIT T Application Guidelines*, December 2018.

47 A 'state of the world' is a detailed description of all of the relevant market supply and demand characteristics and conditions likely to prevail if a credible option proceeds. This includes the generation and other energy resources forecast to develop if the credible option proceeds. This differs from a 'reasonable scenario', which considers more macroeconomic variables or parameters that are not expected to change across credible options (e.g. population growth). See AER, *RIT-T application guidelines*, December 2018, p. 34 and section 3.7.

- What network development should be assumed in the RIT–T states of the world with and without a credible option?
- What generation (and other energy resources) development should be assumed in the RIT–T states of the world with and without a credible option?

For actionable ISP projects

In terms of transmission **network development**, our initial view is that when credible options for a particular actionable ISP project are being assessed in the RIT–T, the rest of the actionable ISP projects in the optimal development path should be included in the with (credible option) and without (base case) states of the world. We form this view even though many of the actionable ISP projects in the optimal development path may not yet have passed a RIT–T. This is because the ISP is an integrated system plan that aims to coordinate investments across the NEM, and unless the optimal development path forms the base case of each RIT–T undertaken, this coordination will not occur.

However, we recognise this means investments that have not yet passed a RIT–T may influence RIT–Ts for other investments. As such, we seek stakeholders' views.

In terms of **generation (and other) development**, our initial view is that the RIT–T:

- base case (state of the world without the credible option) should contain the modelled generation that occurs without the ISP project
- credible option (state of the world with the credible option) should contain modelled generation associated with that project through the ISP development opportunities.

However, we again recognise this carries the risk that the modelled generation will be different from what is actually built in the locations AEMO identifies, and that the market benefits of credible network options may therefore change. The process of determining the methodology for this decision should be covered in the forecasting best practice guideline or rules. However, the issue remains important because a mismatch between levels of forecast and actual generation development (or non-network capacity) may lead to network augmentations being under-utilised (if less generations turns up) or insufficient (if more generation turns up). Again, given the pros and cons of this approach, we are interested in stakeholder views.

We note AEMC is reviewing REZ development options in its CoGaTI market review. This considers similar issues of firming generation development forecasts (or interest) prior to building transmission assets to REZs, to mitigate the risk of consumers funding 'roads to nowhere'.[48] We intend to reflect the outcomes in our guidelines where relevant.[49]

48 AEMC, *Renewable energy zones discussion paper*, October 2019, p. 34.

49 AEMC, *Coordination of generation and transmission investment implementation – access and charging review*, 2019 - see https://www.aemc.gov.au/market-reviews-advice/coordination-generation-and-transmission-investment-implementation-access-and

For non-ISP projects

Similar issues arise for non-ISP projects. On the one hand, if we take the above approach, then there is consistency between actionable ISP projects and non-ISP projects. This consistency may also help identify any interrelationships or overlaps between actionable ISP projects and non-ISP projects.

On the other hand however, non-ISP projects are not preceded by the ISP. Therefore, using the above approach may distort the results compared to TNSPs using their own local information and choosing whether to adopt ISP forecasts. We are interested in stakeholder views on this.

Question 15: What are stakeholders' views on what network development should be included in the base case of the RIT–T for actionable ISP and non-ISP projects? What are stakeholders' views on what generation (and other) development should be included in the base case of the RIT–T for actionable ISP and non-ISP projects?

6.1.3 Scenarios to be considered in RIT–Ts

Under the current framework for RIT–Ts, TNSPs must consider a range of scenarios when applying the RIT–T.[50] These scenarios are weighted probabilistically, so a single overall net economic benefit for a credible option can be determined. Many recent RIT–Ts have drawn on the scenarios in the ISP.

For actionable ISP projects

When RIT–Ts are triggered by an ISP, there is question as to whether these RIT–Ts need to take into account a range of scenarios (potentially those identified in the ISP), or whether it would be sufficient for the RIT–T just to consider the planning scenario.

On one hand, using probabilistically weighted scenario analysis to value market benefits is an important part of the RIT–T CBA because it tests the market benefits of credible options in meeting an identified need under a range of possible futures based on their probability of occurrence. It is also important for considering option value, which may not be able to be appropriately considered at the NEM-wide ISP level (see section 5.1.2). Further, it may have additional value if TNSPs consider new credible options and/or more granular local information. This can occur because the ISP cannot consider all information at the granularity required for individual project assessments, which is one of the reasons for retaining the RIT–T and its associated CBA. These reasons suggest valuing market benefits of credible options using multiple scenarios would be beneficial.

On the other hand, the more scenarios that are taken into account, the longer the modelling component of the RIT–T will take. Indeed, additional modelling runs can add months to a RIT–T process. A RIT–T process would be streamlined if only one scenario had to be taken into account. Where the ISP has already undertaken a CBA of credible options under multiple scenarios, it may be argued there is less value in the RIT–T also undertaking its

50 AER, *RIT T Application Guidelines*, December 2018, section 3.8.

CBA under multiple scenarios, particularly where the ISP is thorough and well consulted on. In this case, the RIT–T would still be undertaking a CBA, but it would be focussed on the most likely scenario (i.e. the ISP's planning scenario).

Lastly, if the RIT–T was required to use the planning scenario only, this may result in a preferred RIT–T option that is not aligned with the ISP. This could occur if AEMO chooses an optimal development path in the ISP with materially more weight given to a scenario that is not the planning scenario. However, the 'feedback loop' in the rules referred to in section 2.4.2 would help to overcome any misalignment. This is because AEMO must check that the RIT–T preferred option is consistent with the ISP, and any such option it determines is inconsistent with the ISP will not proceed. We seek stakeholders' views on this issue.

Question 16: What are stakeholders' views on the scenarios to be considered in RIT–Ts for actionable ISP projects? Would the 'feedback loop' help to overcome any misalignment between the ISP and RIT–T?

For non-ISP projects

Our initial view is that the RIT–Ts for non-ISP projects should consider scenario analysis in accordance with the current RIT–T application guideline.

6.1.4 RIT–T regulatory instrument

The RIT–T is the binding regulatory instrument that requires TNSPs to conduct a CBA on transmission investment projects above a certain threshold, consistent with the requirements in the NER.[51] The draft rules require us to make minor amendments to this instrument, but we do not propose to undertake any further amendments. As such, we do not focus on these in this issues paper.

6.2 Forecasting best practice guideline

As discussed in section 3.2.2, the forecasting best practice guideline will provide guidance for AEMO's forecasting practices / processes as they relate to an ISP, and the process to be used for an ISP update.[52] It will include how AEMO should develop, consult and publish its:

- inputs, assumptions and scenarios report
- ISP methodology.

We consider this guideline would be very similar to the RRO best practice forecasting guideline,[53] particularly in providing:

- AEMO with guidance and direction on the process to follow in preparing the ISP and how engagement with stakeholders should occur

51 AER, *Regulatory investment test for transmission*, June 2010.
52 ESB, *Draft: Integrated system plan rule changes—Consultation version*, November 2019, clause 5.22.5(i).
53 AER, Retailer Reliability Obligation, *Best Practice Forecasting Interim Guidelines*, 2019

- confidence to market participants concerning the quality and transparency of the outcomes of the ISP and the supporting processes conducted by AEMO.

The forecasts relevant to the ISP relate to those used in developing reasonable future scenarios, and costs and market benefits of different development paths over a 20 year time horizon. The forecasting best practice guideline will require the details of AEMO's methodology for these forecasts be presented and tested through consultation.

Our initial view is that only minor changes need to be made to the RRO best practice forecasting guideline because the ISP forecasts consist of inputs, methodologies, assumptions, scenarios and sensitivities, confidential data and results, similar to the reliability forecasts used in the RRO. These changes will be based on ensuring the following principles are met in the ISP process:

- stakeholders should be given sufficient time and information to engage in the process, and the information provided needs to be accessible to non-experts
- stakeholders need to be consulted throughout the development stages, not just at the end or on the decision made
- AEMO needs to report stakeholder views and explain how it has taken them into account and why (including where it disagrees)
- AEMO needs to ensure diversity of stakeholder representation, and use different engagement methods to engage stakeholders across the sector if necessary.

We are interested in stakeholder views on particular areas of the ISP where further transparency and/or consultation is required to give confidence to market participants. For example, in choosing the optimal development path, AEMO will need to consider the net economic benefit of each development path under each reasonable scenario. It will then use its judgement in choosing the optimal development path. We are interested in understanding what stakeholders need to engage effectively in this kind of decision making process.

Question 17: What areas of the ISP do stakeholders require further transparency and/or consultation to engage effectively in the process?

7 Issues to consider: Dispute resolution, compliance and enforcement

This section sets out our initial views and targeted questions on issues related to dispute resolution, compliance and enforcement of the NER and binding ISP guidelines. At a high level, our initial view is to:

- provide similar guidance on dispute resolution on the ISP and RIT–Ts for actionable ISP projects as in the current RIT–T application guideline
- apply our usual approach to compliance and enforcement of the rules and binding guidelines.

7.1 Dispute resolution process

Under the draft rules, there are different layers to dispute resolution. Certain parties (as set out in the draft rules)[54] may:[55]

- raise disputes on the ISP, but only on matters of process
- raise disputes on RIT–Ts for actionable ISP projects, but only on matters specific to the RIT–T (i.e. parties cannot dispute ISP parameters used in the RIT–T process)
- raise disputes on RIT–Ts for non-ISP projects, as set out in the current NER.

This means the scope for ISP disputes is more restricted than for RIT–T disputes. Specifically, disputing parties can raise disputes on the following prescribed ISP processes:[56]

- the processes for the ISP methodology and inputs, assumptions and scenarios report specified under the forecasting best practice guidelines
- the consultation for a draft ISP and final ISP specified under the draft rules.

Further, the timeframe for resolving ISP disputes is shorter than for RIT–T disputes. ISP disputes are to be resolved within 40 business days, with stop the clock provisions where we are waiting for information.[57]

While the key elements of dispute resolution are set out in the draft rules, we consider there is value in providing additional guidance in the CBA or forecasting best practice guidelines. For example, the current RIT–T application guideline does this by explaining:[58]

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54 These describe 'disputing parties' for ISP disputes (ESB, *Draft: Integrated system plan rule changes—Consultation version*, November 2019, clause 5.23.1(a)). For RIT-T disputes, the parties that can raise a dispute are defined in ESB, *Draft: Integrated system plan rule changes—Consultation version*, November 2019, clause 5.16B(a).

55 ESB, *Draft: Integrated system plan rule changes—Consultation version*, November 2019, clause 5.16B(b)(3), clause 5.23.1, clause 5.16B.

56 ESB, *Draft: Integrated system plan rule changes—Consultation version*, November 2019, clause 5.23.1(a).

57 ESB, *Draft: Integrated system plan rule changes—Consultation version*, November 2019, clause 5.23.4(a).

58 AER, *RIT T Application Guidelines*, December 2018, section 5.

- who can make a dispute, including guidance on who is an 'interested party'
- what can and cannot be disputed, and where the AER can reject disputes
- the specific process for raising and resolving disputes (including timeframes), and the range of potential outcomes
- AER determinations, their scope, and what information the AER can consider / request.

Our initial view is to provide similar guidance in the CBA guideline on dispute resolution for the ISP and RIT–Ts for actionable ISP projects. Stakeholders would then have similar levels of guidance and clarity on dispute resolution for the ISP, RIT–Ts for actionable ISP projects, and RIT–Ts for non-ISP projects.

Question 18: What are stakeholders' views on our proposed guidance on dispute resolution in the RIT–T and ISP processes? What specific guidance on dispute resolution would stakeholders value?

7.2 AER's compliance and enforcement role

The AER is responsible for monitoring, investigating and enforcing compliance with obligations under the NEL, National Gas Law, National Energy Retail Law and the respective Rules and Regulations.[59] Once the new ISP framework is implemented, we will have an important role in ensuring that AEMO and TNSPs undertake their respective processes in accordance with the rules and binding guidelines.

Our compliance and enforcement policy is published on our website.[60] This sets out the tools we use to monitor and enforce compliance. These include:[61]

- **monitoring compliance**—stakeholder intelligence, information requests and compulsory notices, market surveillance, business reporting, audits and targeted compliance reviews and projects
- **enforcing compliance**—administrative resolutions, infringement notices, court enforceable undertakings, and civil proceedings.

Our approach seeks to foster a culture of compliance to prevent the need for enforcement action. However, we look at a range of factors to decide whether we should take enforcement action, and if so what it should be, when it appears a breach has occurred. This includes assessing the harm caused or benefit derived, the nature and extent of the conduct and how deliberate the conduct was.[62]

We propose to apply our usual approach to compliance and enforcement of the rules and binding guidelines. This is likely to focus on proactive monitoring throughout the ISP and

59 AER, *Compliance and enforcement policy*, July 2019, p. 2.
60 AER, *Compliance and enforcement policy*, July 2019.
61 AER, *Compliance and enforcement policy*, July 2019, pp. 6–10.
62 AER, *Compliance and enforcement policy*, July 2019, pp. 4, 8.

RIT–T processes using one or more of the tools outlined above. In considering enforcement action, we will use the factors set out in our compliance and enforcement policy.

We will also set out in our guidelines how we would expect AEMO to demonstrate that it has complied with the guideline. This is likely to involve AEMO setting out an explanation of how relevant requirements in the guideline have been complied with, and how AEMO had regard to considerations it was required to take into account, including setting out the weight given to the considerations.

Question 19: Do stakeholders agree with our proposed approach to compliance and enforcement of the rules and binding guidelines?

Appendix A: List of questions

For convenience, this appendix lists the questions we raise for stakeholders throughout this issues paper, and provides a link to the associated section of the paper.

Table 5: List of questions in issues paper

#	Question	Section of issues paper
1	Do stakeholders agree with our proposed objective for the ISP guidelines?	Section 3.1
2	Do stakeholders agree with our proposed approach to flexibility and prescription for AEMO in the CBA guideline? Will this provide sufficient certainty and transparency to stakeholders?	Section 4.1.2
3	What are stakeholders' views on our proposed approach to AEMO's development of inputs and assumptions? Are there additional principles we should consider?	Section 4.2.1
4	What are stakeholders' views on our proposed approach to AEMO's development of reasonable scenarios? Are there additional principles we should consider?	Section 4.2.2
5	What are stakeholders' views on our proposed CBA steps for the ISP? Are the amended steps from the RIT–T application guideline applicable to the ISP analysis? Are there particular areas where a worked example would be helpful in providing this guidance?	Section 4.3
6	What are stakeholders' views on our proposed approach to AEMO's selection of development paths for assessment? Are there additional principles we should consider?	Section 4.3.1
7	What are stakeholders' views of characterising the ISP counterfactual development path? Should replacement and small augmentation expenditure be included or excluded?	Section 4.3.2
8	What are stakeholders' views on quantifying costs and market benefits? What market benefits do stakeholders consider need to be estimated using probabilities?	Section 4.3.3
9	What are stakeholders' views on whether and how AEMO should conduct sensitivity analysis in its ISP process?	Section 4.3.4
10	What are stakeholders' views on our proposal to provide AEMO with the flexibility to choose its decision making approach(es) to determine the optimal development path, subject to consultation and justification? Does this satisfy the draft rules requirements and sufficiently mitigate the risks of over-investment, under-investment, premature or overdue investment?	Section 4.4
11	What are stakeholders' views on our proposed approach to describing the identified need to be used by TNSPs in applying the RIT–T for an actionable ISP project?	Section 4.5

12	What are stakeholders' views on how AEMO should take option value into account in the ISP, and TNSPs in RIT–Ts for actionable ISP projects?	Section 5.1.2
13	What are stakeholders' views on our proposed guidance on non-network options in the CBA guideline?	Section 5.2
14	What are stakeholders' views on our proposed approach to RIT–T application guidance for actionable ISP projects and non-ISP projects?	Section 6.1.1
15	What are stakeholders' views on what network development should be included in the base case of the RIT–T for actionable ISP and non-ISP projects? What are stakeholders' views on what generation (and other) development should be included in the base case of the RIT–T for actionable ISP and non-ISP projects?	Section 6.1.2
16	What are stakeholders' views on the scenarios to be considered in RIT–Ts for actionable ISP projects? Would the 'feedback loop' help to overcome any misalignment between the ISP and RIT–T?	Section 6.1.3
17	What areas of the ISP do stakeholders require further transparency and/or consultation to engage effectively in the process?	Section 6.2
18	What are stakeholders' views on our proposed guidance on dispute resolution in the RIT–T and ISP processes? What specific guidance on dispute resolution would stakeholders value?	Section 7.1
19	Do stakeholders agree with our proposed approach to compliance and enforcement of the rules and binding guidelines?	Section 7.2

Appendix B: Abbreviations

This appendix provides the extended form of key abbreviations used in this issues paper.

Table 6: Abbreviations

Shortened Form	Extended Form
ACCC	Australian Competition and Consumer Commission
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
APR	annual planning report
CBA	cost benefit analysis
CBA guideline	cost benefit analysis guideline
CCP	Consumer Challenge Panel
COAG EC	Council of Australian Governments Energy Council
CoGaTI	Coordination of generation and transmission investment (AEMC biennial review)
DAPR	distribution annual planning report
DER	distributed energy resources
DNSP	distribution network service provider
ESB	Energy Security Board
Finkel Review	The Commonwealth of Australia's independent review into the future security of the National Electricity Market
HILP	high impact low probability
ISP	integrated system plan
NEL	National Electricity Law
NEM	National Electricity Market
NEO	National Electricity Objective

NER	National Electricity Rules
NTNDP	national transmission network development plan
PSCR	project specification consultation report
PADR	project assessment draft report
PACR	project assessment conclusions report
repex	replacement expenditure
repex rule change	the replacement expenditure planning arrangements rule change
reset	regulatory / revenue determination process (for electricity DNSPs and TNSPs respectively)
REZ	renewable energy zones
RIT–D	regulatory investment test for distribution
RIT–T	regulatory investment test for transmission
RRO	retailer reliability obligation
TAPR	transmission annual planning report
TNSP	transmission network service provider
VCR	value of customer reliability