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Ms Anna Collyer
Chair
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Sydney South NSW 1235

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By online submission

Dear Ms. Collyer,

Transmission Planning and Investment Review (EPR0087)

The Australian Energy Market Operator (AEMO) welcomes the opportunity to comment on the Australian Energy Market Commission's (AEMC) consultation paper on its Transmission Planning and Investment Review (TPIR). The consultation paper is broad in scope, reflecting the complexity of the regulatory framework and supporting mechanisms and incentives that facilitate the delivery of major transmission projects.

Significant transmission investment will be needed to accommodate the scale of new large-scale variable renewable energy expected by 2040 and beyond. As an industry we need to pose the question whether the existing transmission regulatory framework facilitates the efficient build of transmission to meet future net zero emission reduction targets in the long term interest of consumers. In particular, the existing framework appears sub-optimal in that it fails to value relevant consumer and government preferences for decarbonisation. In addition, the Regulatory Investment Test for Transmission (RIT-T) can cater for incremental transmission build but may be unsuitable for much more significant transmission build to connect remote renewable generation.

As a result of AEMO's experience in preparing and delivering the Integrated System Plan, AEMO is enthusiastic to work with the AEMC and other stakeholders to better identify issues with existing regulatory frameworks that might inhibit the timely and efficient delivery of major transmission projects and to help identify solutions to overcome these. AEMO has been working closely with the AEMC and other market bodies through the Market Bodies Advisory Group to support outcomes to that enable the timely and efficient delivery of transmission services required to meet the National Electricity Objective (NEO).

AEMO has a central role within this regulatory framework, both in developing the ISP and in planning and procuring augmentations to the Victorian declared shared network. This submission provides views from the perspectives of both functions.

The 2022 ISP will be the first ISP subject to the new framework from start to finish – including the ISP Rules and associated Australian Energy Regulator (AER) guidelines.

AEMO's recent experience and insights from applying this framework, both in developing the ISP and implementing the efficient procurement of ISP outputs in the context of the Victorian arrangements, can help inform key issues and potential solutions for the TPIR. There is also an opportunity to consider whether the ISP framework is working and delivering the benefits

intended. This includes the streamlining of regulatory processes for key projects identified in the ISP and avoiding duplication of ISP planning and modelling by Transmission Network Service Providers (TNSPs) in the RIT-T.

In applying the ISP framework to the 2022 ISP, AEMO has identified several challenges. Some of these challenges may be addressed through consideration of broader issues identified in the consultation paper such as the role of the RIT-T for ISP projects and the potential for contestability in transmission planning and delivery.

Whether incremental or more substantive changes to existing frameworks and incentives are required to address the material issues described in the consultation paper and additional issues raised in this submission will be a matter for stage 2 of the TPIR. In determining material issues as part of stage 1, we ask that the AEMC include a broad range of issues to ensure stage 2 can consider potential solutions in a holistic manner that allows for framework changes that are not limited to incremental change.

Net-zero planning assumption precluded

At the highest level, the existing architecture seems particularly ill-suited to the timely development of efficient inter-jurisdictional transmission projects. These nationally significant interconnections will be critical in the transformation of the electricity system to a zero-carbon system, and yet they are particularly challenging for state-based TNSPs to deliver. The inability to plan the system without a clear objective to deliver a least-cost development pathway to a net-zero network is an obvious and material limitation, which is particularly salient for projects of this scale.

In addition, AEMO considers that the four challenges identified below in applying the ISP framework to the 2022 ISP are within the scope of the TPIR, require immediate attention and should not be deferred to the AEMC's review of the ISP framework as required by the National Electricity Rules (NER) by 1 July 2025.

1. **Process difficulties and unworkability** – key regulatory measures in the ISP framework relating to feedback loops and ISP updates (both of which are critical) are not sufficiently clear at present and are difficult to work with in practice. Where feedback loops require re-running of the ISP modelling, it is unclear what the feedback loop should be testing and whether updated inputs should be used. An ISP update is proving to be a difficult instrument in practice, as the effort and complexity involved in addressing and consulting on multiple material changes is equivalent to producing a full ISP.
2. **ISP/RIT-T misalignment** – The ISP is required to assign scenarios to actionable projects, and actionable projects are subject to the RIT-T using the latest available scenarios. This can create misalignment because scenarios may be updated during the RIT-T, and the previously assigned scenarios may not exist in the update. Misalignment of the inputs, assumptions and scenarios in the ISP and RIT-T create issues for feedback loops and assigning ISP scenarios and weightings to RIT-Ts.
3. **Over-reliance on cooperative joint planning** – the cooperative approach of the joint planning framework is insufficient to ensure the provision of reliable and timely information

from TNSPs. Stronger protections for consumers are needed to ensure transparency and consistency from TNSPs on cost estimates, preparatory activities, and REZ design reports.

4. **Overly complex and excessive regulatory obligations** – the ISP Rules and multiple associated AER guidelines have sought to achieve greater transparency. However, the layering of multiple sets of requirements can have the effect of compromising transparency. AEMO considers that the priority is to provide a fully consultative ISP process that is both efficient and effective for its stakeholders.

Attachment 1 of this submission elaborates on the key challenges identified above while Attachment 2 specifically addresses the questions raised in the consultation paper.

Should you wish to discuss any of the matters raised in this submission, please contact Kevin Ly, Group Manager Regulation at kevin.ly@aemo.com.au.

Yours sincerely

Tony Chappel
Chief External Affairs Officer

ATTACHMENT 1:

CHALLENGES IDENTIFIED IN APPLYING THE ISP FRAMEWORK

This section discusses in more detail the challenges identified by AEMO in applying the ISP framework to the process to develop the 2022 ISP. For each challenge described above, two specific issues are identified below.

CHALLENGE #1: Process difficulties and unworkability

Issue #1: Feedback loops are poorly defined and unworkable

The introduction of the feedback loop[1] was a key measure in the streamlining of regulatory approvals under the ISP framework[2], effectively replacing the 'AER's preferred option assessment'.[3] However, requirements for feedback loops require amendment to allow better integration with RIT-T requirements and workability in a rapidly changing energy environment.

The high-level purpose of the feedback loop was to confirm alignment of the RIT-T outcome with the optimal development path (ODP) set out in the ISP. Feedback loops can be straightforward where the estimated cost and scope of the RIT-T preferred option are consistent with those presented in the ISP (for the 'ISP candidate option'). However, where the RIT-T preferred option and ISP candidate option differ, the AER's Cost Benefit Analysis (CBA) Guidelines require AEMO to consider "re-running the CBA modelling and scenario analysis if practicable".

These arrangements are challenged by the following circumstances (which have occurred in practice):

- New government policy or changes to the inputs (and in the case from one ISP to another, possibly also scenarios) that could materially affect the ODP, however, in most cases assessment of materiality will require an update comparable to producing a new ISP.
- Where AEMO undertakes ISP market modelling to assess alignment with the ODP in the most recent ISP, it is unclear whether updated inputs, assumptions and scenarios should be used or, alternatively, the inputs, assumptions and scenarios used to determine the ODP in the most recent ISP should be used.
- RIT-Ts must adopt the most recent ISP parameters, which include the inputs from the most recent Inputs, Assumptions and Scenarios Report (IASR), unless there are demonstrable reasons to vary these parameters.[4] A feedback loop assessment based on

1 The requirements of the 'feedback loop' are captured in NER clause 5.16A.5(b).
2 The ISP framework commenced 1 July 2020. See Energy Security Board (ESB), *Actionable ISP Final Rule Recommendation*, 27 March 2020.
3 Former NER clause 5.16.6 allowed the AER to make a determination that the preferred option set out in Project Assessment Conclusions Report (PACR) satisfies RIT-T requirements (as known as a 'preferred option assessment').
4 NER clause 5.15A.3(b)(7)(iv) requires RIT-T proponents to adopt the most recent ISP parameters unless there are demonstrable reasons to vary those parameters. 'ISP parameters' is defined in clause 5.10.2 to include the inputs, assumptions and scenarios in the most recent IASR.

outdated inputs that assesses a RIT-T preferred option determined using updated inputs is unworkable.

- There is little value in passing a feedback loop based on outdated inputs if material changes are revealed or expected as part of the process to develop the next ISP. Material changes may require an update of the RIT-T analysis[5] and re-assessment via the feedback loop before a contingent project application (CPA) can be considered.
- Feedback loops occur while AEMO is busy developing the next ISP. Re-running 2020 ISP modelling in feedback loops while concurrently working to develop the 2022 ISP modelling is impractical.
- An ISP update would allow feedback loops to be assessed using an updated ODP and inputs, however, there are significant flaws in using an ISP update (see issue #2).

Issue #2: The ISP update – its role, requirements and process are unclear

An ISP update[6] can be triggered in a number of ways and there appears to be some overlap in the application of these triggers. The design of the ISP update requirements appears better suited to addressing slower, incremental change. The AER's Forecasting Best Practice Guidelines (FBPG) require a separate single-stage consultation process for ISP updates.

If the pace of change was slower, an incremental update model would allow for a more manageable process but is of limited value if it ignores other material changes. An update that addresses all material changes is in practice, the process currently being undertaken to develop the 2022 ISP and requires extensive resources, such that an ISP update that addresses all material changes duplicates the work underway to develop the next ISP and is unlikely to be published any sooner than a final ISP. The ISP update process also diverts resources and attention away from the process to develop the next ISP.

CHALLENGE #2: ISP/RIT-T misalignment

Issue #3: Inputs and assumptions are not aligned in the ISP and RIT-T

Inputs and assumptions drive modelling outcomes. Section 3.2.1 of the consultation paper recognises ISP/RIT-T alignment issues regarding the inputs and assumptions applied to each process in the context of rapid market transformation.

RIT-Ts must adopt the inputs, assumptions and scenarios from the most recent IASR, published annually, unless there are demonstrable reasons to vary these parameters. Given the time needed to complete a RIT-T[7], a Project Assessment Conclusions Report (PACR) will invariably be based on updated inputs in a new IASR.

5 NER clause 5.16A.5(n)(2)(i) requires RIT-T proponents to reapply the RIT-T, unless otherwise determined by the AER, if there has been a material change in circumstances which, in the reasonable opinion of the RIT-T proponent, means that the PACR preferred option is no longer the preferred option.

6 As defined in NER clause 5.22.15.

7 NER clause 5.22.6(a)(6)(i)(A) does not allow the ISP to set a Project Assessment Draft Report (PADR) publication date within 6 months of ISP publication. NER clause 5.16A.4(g) requires a minimum 6 week consultation on the PADR.

For example, the July 2020 ISP was based on inputs in the August 2019 IASR. However, for actionable projects for which RIT-Ts had not yet commenced upon publication of the 2020 ISP, PACRs would likely be based on inputs from either the August 2020 IASR or July 2021 IASR, if not a later iteration. This makes it more difficult for RIT-Ts to adopt the market modelling from the ISP[8], requiring updated market modelling and prolonging regulatory approval timeframes. The pace of the energy market transition may also lead a RIT-T proponent to use the latest draft IASR inputs.[9]

The alignment of inputs is also important for feedback loops as discussed above. A feedback loop that assesses a RIT-T preferred option determined using 2021 inputs for alignment with an ISP based on 2019 inputs is unworkable, particularly in a rapidly changing environment. ISP Updates are not designed to resolve this misalignment.

Issue #4: ISP/RIT-T misalignment when assigning scenarios and weightings

To help address ISP/RIT-T alignment issues and reduce computational burden for RIT-T proponents, the CBA Guidelines include a measure that requires AEMO to assign one or more ISP scenarios and scenario weightings (if more than one scenario is assigned) to RIT-Ts for actionable projects.[10] If AEMO's selection of an ODP is based on addressing particular risks, the CBA Guidelines allow AEMO to assign scenarios that contain those risks to a RIT-T, allowing that RIT-T assessment to specifically address those risks. This measure was intended to allow a RIT-T assessment to effectively mimic any decision-making approach used by AEMO in an ISP, despite a risk-neutral framework being retained for RIT-Ts while a risk-averse framework may be used by AEMO to select the ODP.[11]

The CBA Guidelines do not adequately address ISP/RIT-T misalignment when assigning ISP scenarios and weightings because:

- RIT-T assessments are required to use the inputs, assumptions and scenarios from the most recent IASR, however, scenarios assigned to a RIT-T may no longer exist in the next IASR, or the scenario settings and narrative may have materially changed such that it is no longer appropriate to assign those scenarios, or the originally assigned weightings, to that RIT-T.
- AEMO must only use scenarios identified in the IASR when assigning scenarios to RIT-Ts.[12] ISP sensitivities cannot be assigned to RIT-Ts. This makes it more difficult for RIT-Ts to assess event-driven circumstances in a comparable manner to the ISP to assess option value.

8 NER clause 5.15A.3(b)(7)(vi) requires RIT-T proponents to, in so far as practicable, adopt market modelling from the ISP.

9 For example, the Marinus Link PACR adopts most of the inputs and assumptions in AEMO's Draft 2021 IASR but retains the 2020 ISP scenarios (see TasNetworks, *Marinus Link RIT-T Project Assessment Conclusions Report*, June 2021, p.8). The HumeLink PACR applies the 2020 IASR assumptions and scenarios, updated demand assumptions from the 2020 ESOO and includes sensitivity testing using the draft 2021 IASR assumptions (see TransGrid, *Reinforcing the NSW Southern Shared Network to increase transfer capacity to demand centres (HumeLink): Project Assessment Conclusions Report*, 29 July 2021, p.12).

10 AER, Cost Benefit Analysis Guidelines, August 2020, p.47.

11 See AER, *Final Decision, Guidelines to make the Integrated System Plan actionable*, August 2020, p.14.

12 AER, Cost Benefit Analysis Guidelines, August 2020, p.47.

CHALLENGE #3: Over-reliance on cooperative joint planning

Issue #5: Joint planning does not ensure reliable and timely information from TNSPs

The quality of the ISP may be at risk if TNSPs do not provide essential information in a timely manner when requested by AEMO, or if there are excessive claims of confidentiality over information that is essential to ISP decision making.

AEMO relies on mutual joint planning requirements in the Rules which operate on the basis of taking "reasonable steps to cooperate and consult".[13] For preparatory activities, AEMO relies on TNSPs to provide cost estimates for actionable ISP projects.[14] The ISP framework does not include an ability for AEMO to compel TNSPs to provide reliable and accurate information to AEMO, nor does it prevent TNSPs from making wide ranging confidentiality claims such that AEMO is unable to use that information when (as required) it publishes inputs as part of the IASR or when preparing the draft/final ISP.

Issue #6: Appropriate level of cost estimates

Transmission cost estimation provides an example of the need for reliable and accurate information. Assuming AEMO receives the cost estimate information requested from all TNSPs, differences in the accuracy of those estimates requires AEMO to undertake a validation process to ensure consistency. The ISP framework does not require a specific class or accuracy level of cost estimates for ISP, RIT-T and CPA processes. Feedback received during the 2021 IASR consultation revealed that there was a range of conflicting expectations on the appropriate level of cost estimate accuracy within these processes.

Consideration should be given to the value in having clear regulatory requirements for cost estimation accuracy in the ISP, preparatory activities, REZ design reports, RIT-Ts, feedback loops and CPAs. Cost estimate accuracy is also addressed within section 5.4.2 of the consultation paper, which relates to the rule change proposal on 'Material changes in network infrastructure project costs'. We have provided our views on specific questions relating to this issue in Attachment 2.

CHALLENGE #4: Overly complex and excessive regulatory obligations

Issue #7: Expected streamlining benefits have not been realised

The ISP framework was intended to streamline regulatory approval processes for major transmission projects. NER changes made to achieve this included removal of both the AER's preferred option assessment and the Project Specification Consultation Report (PSCR) for RIT-Ts, measures to allow RIT-Ts to use ISP market modelling and narrowing of the grounds for RIT-T disputes.

However, in practice, these streamlining benefits are less effective than intended because:

- Too many layers of requirements can frustrate high quality decision making in ISP development (see issue #8 below).

[13] NER clause 5.14.4(a).
[14] NER clause 5.22.6(d).

- Feedback loops, which were intended to replace AER preferred option assessments, are proving to be complex, time-consuming and difficult to accommodate while simultaneously developing the next ISP and may involve assessment delays or reassessment if there are material changes.
- Work to develop the PSCR has effectively been transferred to AEMO and incorporated into the ISP process, representing a change in the responsible party, not a streamlining benefit.
- Recent RIT-Ts have considered updated inputs and assumptions which has resulted in RIT-T proponents conducting their own market modelling and duplicative cost benefit analyses for the ISP and RIT-T.

Issue #8: Excessive obligations and expectations frustrate ISP development

As recognised in section 3.2.2 of the consultation paper, the ISP framework must balance streamlining with rigour and transparency with resource-intensiveness. AEMO recognises the critical importance of transparency and stakeholder engagement in the ISP development process. When considering potential improvements to current ISP consultation processes, AEMO is conscious of the need to engage more effectively and flexibly and considers that consultation could be undertaken in a more streamlined, dynamic and responsive manner.

AEMO experience is that some regulatory obligations relating to ISP development, including elements of transparency mechanisms and reporting requirements, could be improved to provide a more balanced framework. Some obligations and expectations are resource heavy, increase complexity and can have the effect of shifting focus away from the development of a workable national plan. They could be rationalised to deliver and enhance transparency without the current heavy drain on resources.

These regulatory obligations and expectations include:

- Extensive and often duplicative requirements and mandatory considerations for the development of the ISP set out in the CBA Guidelines, particularly in relation to CBA methodology, in addition to the NER.
- Requirements and mandatory considerations for ISP consultation processes set out in the FBPG.
- Compliance reports on the IASR, ISP Methodology and Final ISP addressing obligations in the CBA Guidelines and FBPG and issues in the AER's ISP compliance issues register.
- Consultation with the AER to address issues relevant to its Transparency Review Reports for the IASR and Draft ISP and AEMO's stakeholder consultation processes in accordance with the FBPG, including obligations to provide further explanatory information in an addendum to the IASR or Draft ISP if the AER identifies an issue.

ATTACHMENT 2:

AEMO'S RESPONSE TO QUESTIONS IN THE CONSULTATION PAPER (EPR0087)

This submission outlines AEMO's views on the specific questions asked within the paper.

Question 1: Assessment framework

Do you agree with the Commission's proposed assessment framework for this Review? Are there any additional criteria the Commission should consider as a part of its assessment framework?

AEMO supports the use of the AEMC's assessment framework and criteria. When applying both the assessment and prioritisation frameworks to determine particular issues that will be the focus of stage 2 of the review, we ask that the AEMC include a broad range of issues to ensure stage 2 can consider potential solutions in a holistic manner that allows for framework changes at a high level and is not limited to incremental change.

We consider that the four challenges in applying the ISP framework to the 2022 ISP identified within Attachment 1 are within the scope of the TPIR, require immediate attention and should not be deferred to the AEMC's review of the ISP framework as required by the NER by 1 July 2025.

AEMO acknowledges the NEO as the appropriate national energy objective in a review considering potential NER changes. The reliability, safety and security of the national electricity system will be an important consideration in promoting the timely and efficient investment and delivery of transmission projects in the long term interests of consumers.

Question 2: Implications of increased uncertainty for the ex-ante incentive-based regulatory framework

1. **Do you agree that the identified factors contribute to an increase to the uncertainty surrounding major transmission projects, relative to BAU projects? Are there other factors that should be taken into account?**

   AEMO agrees that uncertainty regarding project costs and benefits is greater for ISP projects compared to BAU projects. The pace and scale of the current energy market transformation brings a high level of uncertainty to long term transmission planning and delivery. The consultation paper identifies several important factors that contribute to uncertainty in project costs and benefits as projects progress through the regulatory framework.

   The ISP acknowledges the uncertainty of key inputs and assumptions through scenario planning, which aims to manage investment and business risks when planning in highly uncertain environments, and through sensitivity analysis, which is designed to test the materiality of uncertainty associated with individual input parameters or assumptions.

Many of these inputs and assumptions feed through to project costs and benefits. Some examples of these are:

- Transmission cost uncertainty arises from areas such as route design, land owner negotiations, environmental approvals and various land planning processes that cover a range of societal considerations (including Traditional Owners of the land).
- Future demand for generation, storage costs, government policy and thermal generation retirement all affect project benefits.

Regarding transmission cost uncertainty, AEMO's transmission cost database has introduced a more robust methodology to account for risks in cost estimation and will improve the accuracy of estimates for future ISP projects. It is intended to be updated at least every two years and as more projects are constructed the accuracy will continue to improve.

As recognised in the consultation paper, AEMO acknowledges the contribution made by the AER's guidance note on the regulation of actionable ISP projects to reducing uncertainty and improving the predictability and transparency of the regulatory process for large transmission projects and promoting prudent and efficient expenditure forecasts for actionable ISP projects. This guidance is directed towards addressing uncertainty within specific regulatory processes – the contingent project application (CPA) assessment process, the staging of CPAs and AER ex-post reviews.

There remains, however, several elements within pre-CPA regulatory processes in the ISP framework that add uncertainty and delay, despite best endeavours to address uncertainty and streamline regulatory approval processes. These elements include:

- the need to update inputs and assumptions used in cost benefit analyses, not only for ISP and RIT-T processes, but also for feedback loops, ISP updates and assessing material changes in circumstances
- ISP/RIT-T alignment and the workability of key regulatory steps such as the feedback loop and ISP updates (Challenges #1 and #2 in Attachment 1)
- transmission cost estimation consistency and accuracy (Challenge #3), and
- extensive and duplicative NER and AER guideline obligations (Challenge #4).

2. **Do you consider that the current ex-ante incentive-based approach to regulation is appropriate for major transmission projects? Why? Are there opportunities to drive more efficient expenditure and operational outcomes?**

Appropriate incentives and funding mechanisms for major projects are important for the whole-of-system plan set out in the ISP to be realised. AEMO is open to exploring opportunities to increase funding certainty for ISP projects where that expenditure is deemed prudent and efficient to promote the timely and efficient delivery of transmission services.

3. **Do you agree that the Review should take forward this issue as a priority issue? If not, why?**

   AEMO agrees this issue should be taken forward as a priority issue.

Question 3: Economic assessment of major transmission projects

1. **Streamlining the economic assessment of ISP and non-ISP projects has implications for the rigour of the analysis. What level of compromise between streamlining and rigour is acceptable? Are there opportunities to streamline the economic assessments of ISP and non-ISP projects consistent with this acceptable level of compromise? If so, how could the framework be streamlined?**

   AEMO acknowledges the compromise required between ensuring rigorous analysis being undertaken, alongside appropriate stakeholder engagement, against ensuring a timely and efficient regulatory planning process. However, it is evident that many of the attempts to streamline the regulatory process to date have not led to success. Examples of this include the feedback loop, ISP update, misalignment of the ISP and RIT-T in terms of inputs, assumptions and scenarios used for analysis undertaken, amongst other issues. This is discussed in more detail in Attachment 1, Challenge 4 (see page 7).

   AEMO believes these issues must be resolved to ensure transmission planning can be undertaken in a timely and efficient manner and can be resolved without compromising the level of overall rigour undertaken in the ISP and RIT-T analysis.

   AEMO also believes that the current level of obligations relating to ISP development, including transparency mechanisms and reporting requirements, do not strike an appropriate balance. These obligations and expectations increase complexity and shift focus away from the development of a workable national plan. They could be rationalised to achieve the required transparency and accountability without being resource intensive. Examples of these are detailed in Attachment 1, Challenge 4, but include compliance reports and transparency reviews. Co-design models that allow engagement to be more collaborative could also be considered.

2. **Do you agree that any changes to the assessment process needs to consider the role of the RIT-T in the context of ISP and non-ISP projects? If not, why?**

   AEMO agrees that changes to the assessment process must consider the role of the RIT-T, particularly for ISP projects, including whether the RIT-T is suited to the timely delivery of efficient inter-jurisdictional transmission investments (further discussed in response to question 4 below).

   The introduction of the ISP framework resulted in a change to the regulatory oversight of a key regulatory approval process and the body providing regulatory approval. The AER's preferred option assessment, previously included as part of a contingent project trigger in transmission revenue determinations, was effectively replaced with the AEMO feedback loop.

Noting difficulties with feedback loops and ISP updates (as discussed in Attachment 1), the TPIR provides the opportunity to reconsider the appropriate parties for key steps and responsibilities in the planning and investment framework, including:

- determining investment needs
- undertaking market modelling and cost benefit analysis
- developing credible options
- determining the preferred option
- regulatory approval of the preferred option
- funding approval of the preferred option, and
- implementation of the preferred option.

Settling the appropriate parties for these key steps should help inform decisions on the role of the RIT-T and its relationship to the ISP. Market modelling and cost benefit analysis is currently conducted by both AEMO and RIT-T proponents, with various rules as to the inputs and options that must be considered in each analysis and considerable duplication.

In Victoria, the process for justifying a transmission investment under the Victorian transmission planning arrangements is different to the rest of the NEM. There is a requirement, under section 50F(2) of the National Electricity Law (NEL), that any new transmission augmentation must undergo a cost benefit assessment that applies a probabilistic approach. In the context of projects that have already been justified by the ISP, we consider that applying the full RIT-T process to Victorian ISP projects would duplicate some of the processes already in place and increase administrative burden unnecessarily.

The transmission investment process undertaken in Victoria features a contestability model which allows flexibility, encourages innovation and permits a broader collection of interested parties (including non-network providers) to competitively bid for the project. The removal of the RIT-T would, in the case of contestable projects, allow AEMO some flexibility to consider a broader array of options and seek input from the market to meet the high level need identified by the ISP while also being constrained by the cost benefit requirement under Section 50F(2) of the NEL. It would also potentially save some time and costs without detrimentally inhibiting non-network alternatives access to participate in the solution. Furthermore, it retains the benefits of flexibility and innovation that the current contestability arrangements promote.

3. **Do you agree that the Review should take forward this issue as a priority issue? If not, why?**

AEMO strongly agrees this issue should be taken forward as a priority issue. In particular, AEMO considers:

- The role and responsibilities of parties regarding key steps in the planning and investment framework should be revisited.
- There is potential to streamline economic assessment processes further, particularly in regard to regulatory obligations and reporting requirements.
- There is a need to amend the requirements for feedback loops and ISP updates.
- The TPIR should consider the need for a full RIT-T process in Victoria.

The current RIT-T can cater for incremental transmission build but may be unsuitable for much more significant transmission build to connect remote renewable generation. The role of RIT-T needs to consider:

- Network resilience benefits and the avoidance of high impact low probability (HILP) events. These are commonly recognised as either being difficult to monetise or immaterial to most assessments based on the method for monetisation. However, with the potential for tail risks associated with HILP events, further consideration should be given to this issue.
- Difficult to monetise benefits can be assessed on a qualitative basis to ensure material costs and benefits are not ignored merely due to quantification difficulties. Multi-criteria decision making that allows for consideration of both qualitative and quantitative benefits may be appropriate to capture the full range of benefits and consumer risk preferences.
- Any broader societal value associated with carbon emissions reduction is not captured through current approaches. If there was a desire to capture such value, this would likely require changes to the NEO.

These issues are further discussed in response to questions 4 and 5 below.

Question 4: Benefits included in planning process

1. **Are the benefits included in current planning processes sufficiently broad to capture the drivers of major transmission investment? Does the scale and pace of the NEM's energy transition necessitate inclusion of other classes of market benefits or wider economic benefits? If so, what kind of other classes of market benefits or wider economic benefits should be included?**

   The inclusion of wider economic benefits and additional classes of market benefit should be considered within the TPIR.

   At the highest level, the existing architecture seems particularly ill-suited to the timely development of efficient inter-jurisdictional transmission projects. The RIT-T, which commenced in 2010, and the regulatory test preceding it, were designed to address incremental network augmentations. The market benefit classes provided in the NER available to RIT-T assessments remain unchanged, and these same benefit classes apply to the ISP.

However, the energy landscape has changed and significant transmission investment will be needed to accommodate the scale of new large-scale variable renewable energy expected by 2040 and beyond. Failure to accommodate this change and public policy considerations may jeopardise the relevance of the ISP framework and the development of a fully integrated, whole-of-system plan for the NEM.

AEMO notes the challenges identified in the consultation paper and earlier reviews regarding the inclusion of wider economic benefits, including the additional modelling complexity to accurately measure wider benefits across other sectors of the economy. These challenges should not preclude the consideration of solutions to deliver a least-cost development pathway to a net-zero network.

Classes of benefit relating to carbon emissions reductions and the ability of the system to integrate renewables are captured within international regulatory frameworks, however, particularly in the case of carbon emissions reductions, inconsistencies with the NEO would appear to prevent inclusion of these benefits.

The evaluation of option value associated with discrete events in the ISP and the re-assessment of those events in a subsequent RIT-T should also be considered. Currently, AEMO uses event-driven scenarios to explore clearly observable and reasonably probable independent events or investment decisions that may materially change the market benefits of development paths or favour paths with greater option value. These event-driven scenarios complement the primary scenario collection so that they can be allocated to RIT-T assessments for actionable projects if mitigation of any risk associated with the event is expected to be material to the RIT-T cost benefit assessment. However, such scenarios are not explicitly contemplated in the CBA Guidelines.

Where the ISP identifies option value in progressing an investment that makes the system more resilient to a discrete, plausible event, consideration should be given to how the RIT-T can best assess that event. The CBA Guidelines require that only ISP scenarios identified in the IASR be assigned to RIT-Ts for an actionable projects and provide further requirements for determining scenario weightings.[15] Improvements could be made to allow discrete events to be appropriately tested within a RIT-T without requiring the ISP to assign a scenario focused on addressing risks associated with that event.

2. Are major transmission projects failing to satisfy economic assessments because certain benefits (market or non-market) are not permitted to be quantified?

AEMO prefers to focus on whether regulatory approval processes for major investments can be improved, including through the consideration of additional material market benefit classes. This will help ensure cost benefit analyses are as robust as possible.

[15] AER, Cost Benefit Analysis Guidelines, August 2020, p.47.

3. **Are changes warranted to the manner in which carbon emissions inform transmission planning and regulatory processes?**

   AEMO considers the inclusion of diverse carbon futures as scenario parameters enables effective coverage of this future uncertainty within the planning and regulatory process.

   Under the ISP framework, the CBA Guidelines require AEMO to develop scenarios that consider different future external market environments to assess and manage uncertainty about how the future will develop.[16] This uncertainty includes energy policy uncertainty regarding carbon emissions reductions.

   That said, it is noted that any broader societal value associated with carbon emissions reduction is not captured through this current approach. If there was a desire to capture such value, this would likely require changes to the NEO.

Question 5: Guidance on hard to monetise benefits

1. **What classes of market benefits are hard to monetise? Is there a way that these benefits could be made easier to quantify?**

   Network resilience benefits and the avoidance of high impact low probability (HILP) events are commonly recognised as either being difficult to monetise or immaterial to most assessments based on the method for monetisation.

   HILP events may be included in cost benefit analyses on a probability weighted basis, however, in addition to being time-consuming and costly, these assessments often result in immaterial benefits once the low probability of a major outage is considered. The use of regret analysis, as opposed to the probability weighted methodology described in the AER's RIT-T Application Guidelines[17], may more appropriately capture these benefits if there was an agreed target risk tolerance threshold to benchmark against. Similarly, the monetisation of network resilience benefits provided by an interconnector could be calculated using an insurance method.

   In other jurisdictions, AEMO is aware that difficult to monetise benefits can be assessed on a qualitative basis to ensure material costs and benefits are not ignored merely due to quantification difficulties. Multi-criteria decision making that allows for consideration of both qualitative and quantitative benefits may be appropriate to capture the full range of benefits and consumer risk preferences.

2. **Would guidance on hard to monetise benefits improve the timeliness at which projects proceed through the regulatory process?**

   Guidance on hard to monetise benefits and risk tolerances would reduce uncertainty regarding the evaluation of these benefits, which may allow for projects to be more efficiently assessed via cost benefit analyses using a consistent approach.

[16] AER, Cost Benefit Analysis Guidelines, August 2020, p.11-13.
[17] AER, RIT-T Application Guidelines, August 2020, p.48-9.

3. **Do you agree that the Review should take forward this issue as a priority issue? If not, why?**

   AEMO agrees this issue should be taken forward as a priority issue.

Question 6: Market versus consumer benefits test

1. **Do you consider that there are changes that have occurred in the energy sector that warrant reconsidering the merits of a market versus consumer benefits test? If yes, what are these changes and why do they require revisiting this issue?**

   The net market benefits test is currently entrenched within the NER. Rule changes to shift to a customer benefits test would introduce considerable complexity by requiring the forecasting of generator bidding behaviour to assess price impacts and different customer groups faring better or worse.

2. **Should the Review take forward this issue as a priority issue? Why?**

   AEMO can see the merits in exploring this issue further but has concerns regarding the additional complexity and reduction in transparency that may result from a shift to a customer benefits test.

Question 7: Treatment of non-network options

1. **Do you agree that there are barriers for non-network options in economic assessments? If so, do you agree with the barriers identified? Are there any further barriers? How should these barriers be addressed?**

   Potential barriers for non-network options in economic assessments has previously been considered in several reviews, including the AEMC's 2018 and 2019 Electricity Network Economic Regulatory Framework Review, as noted in section 3.4 of the consultation paper. It is unclear to what extent the TPIR will cover new ground in this area as opposed to revisiting the same issues.

   As provided in the CBA Guidelines, while there is a formal process for AEMO to call for non-network option proposals at the draft ISP stage, the NER does not preclude non-network proponents from providing information to AEMO on non-network options at any time during the transmission planning process.[18] Indeed, AEMO welcomes proposals from non-network proponents as part of the IASR consultation process.

   AEMO considers the formal process under the NER to seek non-network option proposals at the draft ISP stage is working.[19] This includes AEMO's assessment process as to whether non-network option proposals meet, or are reasonably likely to meet, the relevant identified need set out in the ISP, either as a standalone non-network option or in conjunction with a network option as a hybrid solution.

[18] AER, Cost Benefit Analysis Guidelines, August 2020, p.43.
[19] NER 5.22.12

Further guidance for RIT-T proponents on how non-network options can be considered where costs and submissions are confidential would help to remove barriers that currently exist.

In relation to AEMO's role in Victoria, it would assist in the carrying out of the RIT-T if the preferred option could be defined as a "functional" or "output" specification rather than an actual network project. Defining it as a preferred option is perceived as rather limiting when tenders are sought as it is difficult to reconcile the "specifications" set out in the RIT-T and the broader "functional" or "output" based specifications communicated to the market in the tender.

Further information is provided on the transmission investment process undertaken in Victoria in our answer to Question 8, part 2.

2. **Do you agree that the Review should take forward this issue as a priority issue? If not, why?**

   AEMO does not consider the fundamental issue being discussed about perceived barriers for non-network options, needs to be taken forward as a priority for review.

   However, there would be value in considering additional RIT-T guidance for cases where costs and submissions are confidential. These cases disproportionally relate to non-network solutions, so additional guidance would likely facilitate consideration of these solutions.

Question 8: Balancing TNSPs' exclusive right to build and own transmission projects

1. **Are there features of financing infrastructure projects used in other sectors that should be considered in the context of the efficient and timely delivery of major transmission projects?**

   As well as the national planner, AEMO has a unique role in Victoria, where it is responsible for planning and directing augmentation of the Victorian electricity transmission Declared Shared Network (DSN). Victoria is also unique in the NEM in that contestability applies to the delivery of transmission projects. Experience from this model in Victoria shows little evidence that there are issues around financeability that are discouraging entities engaging in procurement processes.

2. **Should the delivery of major transmission projects be made contestable? If not, why?**

   AEMO supports measures that facilitate the timely and efficient delivery of ISP projects in a manner that does not increase costs to consumers. In this regard, AEMO believes further exploration of projects being made contestable should be undertaken, building on existing work undertaken to date in various reviews in recent years, for example, the work undertaken by HoustonKemp through the AER's Regulation of large transmission projects review.[20]

[20] HoustonKemp, *Regulatory treatment of large, discrete electricity transmission investments*, August 2020.

AEMO believes the current system of contestability works well in Victoria. AEMO notes that each jurisdiction has its own unique governance structures and regulations, and thus the model of contestability that applies in Victoria would need to be amended to reflect this if it were to be introduced in other jurisdictions. This would require detailed thinking about how best to apply contestability across NEM regions and might result in very different models designed and applied across the NEM.

AEMO also notes that the introduction of contestability might lead to issues around transparency of cost information for major projects, that could create difficulties relating to information provision within the ISP. The ISP framework does not compel TNSPs to provide reliable and accurate information to AEMO, nor does it prevent TNSPs from claiming confidentiality such that AEMO is unable to use that information when it publishes inputs as part of the IASR or when preparing the Draft/Final ISP.

Given this, any move towards further contestability within the NEM must be accompanied by appropriate changes to the existing joint planning arrangements that currently exist. This issue is discussed further in Attachment 1.

3. **What options, other than changes to the exclusive right of TNSPs to provide regulated transmission assets, could be considered to ensure timely investment and delivery of major transmission projects?**

   AEMO considers that, in addition to learning from the existing model of contestability in Victoria, options in other jurisdictions outside of Australia should be considered to seek guidance on successes and failures of models employed.

   AEMO agrees with the assertion in the consultation paper that there might be some unique aspects of financeability in the context of competitive provision of transmission projects and agrees that this is a different discussion to that of financeability of a benchmark efficient TNSP.

   There are other options to amend the existing regulatory frameworks to ensure timely investment and delivery of major transmission projects, and these are discussed elsewhere within this submission.

4. **Do you agree that the Review should take forward this issue as a priority issue? If not, why?**

   AEMO agrees that the solution of introducing contestability across NEM regions should be considered as a priority issue within the TPIR as a means to ensuring the timely and efficient delivery of major transmission projects.

Question 9: Treatment of 'early works'

1. **Do stakeholders seek further clarity on the meaning of preparatory activities and early works?**

   AEMO believes the definition of preparatory activities is made clear in the NER while noting that the activities listed are not exhaustive given the use of word "including",

which may serve to blur the boundary between preparatory activities and early works.[21] Preparatory activities are defined with a focus on "design and investigate" activities which are viewed as generally incurring relatively lower costs. The ISP itself sets out the obligation for a TNSP (who is the RIT-T proponent for an actionable ISP project) to carry out preparatory activities and the timeframes in which they must be undertaken.

Early works are not defined or referred to in the ISP Rules. This term is used in the AER's CBA Guidelines and the AER guidance note for regulation of actionable ISP projects. The CBA Guidelines distinguish preparatory activities from and early works, stating that early works are higher cost activities outside preparatory activities that can include critical path investments which are needed to commence construction, such as easement acquisition or acquiring a slot in a manufacturer's queue for long lead time equipment.[22]

AEMO believes that, given the central importance of the concept of early works to the decision making for ISP planning, RIT-T investment and CPA funding, further clarification is necessary.

2. **Should the Commission consider how the costs of early works can be recovered?**

AEMO agrees that the AEMC should consider how the cost of early works can be recovered.

As the consultation paper highlights, the fact that TNSPs currently do not have certainty on whether costs for early works can be recovered until completion of the RIT-T has led to ad-hoc underwriting agreements being reached. Costs for early works can be considerable, and therefore this uncertainty can have a material impact on the timely delivery of ISP projects.

In addition to considering how the costs of early works can be recovered, the cost benefit analysis required to justify early works funding should also be considered. A RIT-T that focuses on early works costs would only serve to duplicate the option value assessment for those same costs already undertaken as part of the ISP. The ISP is the most appropriate step in the regulatory process to assess the option value of early works for actionable projects and repeating that assessment in the RIT-T will only lead to delays in the delivery of efficient investments.

Whilst the AER's Guidance Note on the Regulation of actionable ISP projects caters for the lodgement of multiple CPAs to attempt to reduce the uncertainty associated with recouping early works costs, AEMO believes this issue requires further consideration through this review.

3. **Do you agree that the Review should take forward this issue as a priority issue? If not, why?**

AEMO agrees that consideration of how early works costs can been recovered, including the cost benefit analysis required to justify early works costs, and further clarity on the

[21] As defined in NER clause 5.10.2.
[22] AER, Cost Benefit Analysis Guidelines, August 2020, p.40.

definition of early works would help to ensure the timely and efficient delivery of major transmission projects.

Question 10: Processes for jurisdictional environmental and planning approval

1. **Would additional clarity on cost recovery arrangements for early works improve a TNSP's ability to meet jurisdictional requirements in a timely manner?**

   AEMO agrees that additional clarity on cost recovery arrangements for early works might improve a TNSP's ability to meet jurisdictional requirements in a timely manner.

2. **Do jurisdictional planning and environmental requirements intersect with the national transmission planning and investment frameworks in ways that are not discussed above and may require further consideration?**

   AEMO believes there could be benefit in aligning jurisdictional planning and environmental arrangements, to meet the objective of timely transmission investment.

3. **Do you agree that the Review should take forward this issue as a priority issue? If not, why?**

   This issue is of lesser importance to AEMO, however, AEMO does not disagree with it being taken forward as a priority issue.

Question 11: Who should decide whether the RIT-T must be reapplied?

1. **Should this decision remain the responsibility of the proponent or should it be a matter for the AER? Why?**

   AEMO notes that there are broader questions regarding the role of the RIT-T, which are discussed in questions above.

   The AER is responsible for monitoring and enforcing compliance with NER obligations. RIT proponents are required to use judgement in the first instance when undertaking RITs to meet Chapter 5 obligations and the obligation to reapply the RIT is no different. The RIT reapplication obligation[23] relies on the RIT proponent to assess in the first instance whether there has been a material change in circumstances whereby the RIT preferred option is no longer preferred. However, via its compliance and enforcement functions, the AER has regulatory oversight as to whether the RIT reapplication obligation has been met.

   When a material change occurs, RIT proponents often test the impact of that change and publish those results to demonstrate that the RIT preferred option has not changed.[24] Where the RIT preferred option remains unchanged, RIT proponents are under no obligation to publish these results but typically recognise the benefits of addressing these matters directly with stakeholders and the AER to demonstrate the economic viability of projects and continued stakeholder support. Where the RIT

[23] Clauses 5.16.4(z3), 5.16A.4(n) and 5.17.4(t) of the NER.
[24] For example, see ElectraNet, Project EnergyConnect; Updated Cost Benefit Analysis, 30 September 2020.

preferred option does change, the RIT proponent will be required to reapply the RIT to the extent required by the AER.

RIT assessments typically include cost sensitivities and additional analysis that explores boundary assumptions, such as the cost above which the preferred option no longer satisfies the RIT. AER guidelines encourage the inclusion of this additional analysis and provide discretion as to the extent and form of sensitivity testing. If PACR sensitivity testing demonstrates that the preferred option is robust to cost increases up to 30%, then absent other material changes, automatically triggering the reapplication of the RIT-T in response to a published 10% or 15% cost increase would serve no purpose.

2. **If the decision remains with the proponent, should the AER have the right to test that opinion?**

   AEMO considers the AER currently has the right to test whether the RIT proponent has satisfactorily met the RIT reapplication obligation by way of the AER's compliance and enforcement role. Similarly, a stakeholder can raise concerns with the AER that a material change in circumstances may result in the preferred option no longer being preferred for a particular RIT assessment. If the AER considers there is merit, the AER can require the RIT proponent to demonstrate compliance with the RIT reapplication obligation.

Question 12: Cost thresholds

1. **Should the NER include a requirement to reapply the RIT, or update analysis, when costs increase above specified percentage thresholds? If so, do you have a view as to what those percentage thresholds should be?**

   As discussed in Attachment 1, consideration should be given to the value in having clear regulatory requirements for cost estimation accuracy in the ISP, preparatory activities, REZ design reports, RIT-Ts, feedback loops and CPAs. AEMO considers regulatory certainty in cost estimation accuracy at various stages in the planning and funding approval framework is more important than introducing cost thresholds for the RIT reapplication obligation.

   Further, introducing requirements for cost estimation accuracy should help to address issues with changes in transmission cost estimates at various regulatory stages by increasing certainty as to how estimates are derived and the treatment of risk.

2. **Do you consider this requirement should apply to all RIT projects or only those above a particular cost threshold/thresholds? If so, do you have a view as to what the cost threshold/s should be?**

   AEMO does not believe a cost threshold is required.

3. **Do you have any views regarding the suggested alternative "decision rule" approach?**

   The decision rule approach would simply formalise discretionary advice from the AER, such as that provided in the CBA Guidelines, that RIT proponents may provide 'boundary values' that test the robustness of the preferred option to transmission cost increases.[25] AEMO notes that many RIT assessments to date have included boundary value analysis, and in case, decision rules are not necessary,

4. **Should updated project cost data be provided to AEMO to help improve the accuracy of the ISP?**

   AEMO believes existing joint planning arrangements require strengthening to ensure TNSPs are compelled to provide the appropriate information to provide a consistent and appropriate level of cost estimation for ISP projects (see Attachment 1 for more information).

5. **Do you have any other suggestions regarding alternative ways to manage cost increases?**

   AEMO has no further suggestions at this stage.

Question 13: Requirements when reapplying the RIT

1. **Should the requirement to reapply the RIT be more targeted?**

   As noted in the consultation paper, AEMO considers that a TNSP should only be required to repeat those elements of the RIT-T process which are materially affected by the change in circumstances. AEMO agrees that it would be more efficient to require RIT proponents to update its cost benefit analysis and engage stakeholders on that updated analysis, rather than routinely require the AER to determine the extent to which a RIT should be reapplied.

2. **Should any additional analysis and modelling that is required to be undertaken be published and subject to public consultation?**

   AEMO agrees that any additional analysis and modelling undertaken should be published and subject to public consultation. This is important in ensuring transparency for consumers and wider stakeholders.

Question 14: Trigger to reapply the RIT

1. **Do you have any views as to how the requirement to reapply the RIT should be given effect, including for contingent and non-contingent projects?**

   AEMO considers the existing RIT reapplication obligation is appropriate for contingent projects. AEMO notes the issues raised regarding the application of this obligation to

[25] AER, Cost Benefit Analysis Guidelines, August 2020, p.67.

non-contingent projects but does not consider these warrant amendments to RIT reapplication obligation.

2. **Should there be a cut-off point (e.g. once the AER approves the CPA, or once construction commences) beyond which any requirement to update analysis cannot be triggered? If so, what would be an appropriate cut-off point?**

   AEMO believes an appropriate cut-off point after which updated analysis would not be required would be once the CPA is approved. The CPA determines the amount the proponent can recover for the project through the revenue determination process. Any reapplication of the RIT-T, or elements of the RIT-T, after this point could result in considerable delays to the implementation of critical investments.

3. **Should there be a limit on how many times RIT analysis must be updated?**

   AEMO considers a limit on how many times RIT-T analysis must be updated is not necessary. The RIT reapplication obligation focuses on material changes in circumstances that may result in a change in the preferred option. This helps to limit the scope of the changes that can trigger this obligation.

Question 15: Should RIT cost estimates be more rigorous?

1. **Do you consider that the current level of rigour used for RIT cost estimates is suitable? If not, what level of rigour is appropriate? In particular, would it be appropriate to require an AACE 2 estimate (i.e. a detailed feasibility study) for each credible option?**

   As discussed in Attachment 1, consideration should be given to the value in having clear regulatory requirements for cost estimation accuracy in the ISP, preparatory activities, REZ design reports, RIT-Ts, feedback loops and CPAs.

   AEMO would also like to clarify the assertion made in section 5.4.5 (also mentioned in 5.4.2) in the consultation paper relating to the approach adopted by AEMO in the 2021 Transmission Cost Report. AEMO noted that TNSPs don't all use the AACE framework and that accuracy ranges vary across TNSPs and projects. The classes that AEMO stated for each stage of the RIT-T and CPA process were provided as an indication of what is currently done rather than an endorsement of current practices.

   For the avoidance of doubt, AEMO has not made recommendations on the appropriate class estimate for the RIT-T or CPA.

2. **If more detailed cost estimates are required at the RIT stage, should this apply to all RIT projects, or only to larger projects? If so, which projects should be subject to this requirement?**

   Regulatory requirements for cost estimation accuracy for RIT-Ts under the ISP framework should be considered in the first instance. Extension to all RIT-T projects can then be considered.

3. **Do you have any other suggestions to address the issues raised in the rule change request?**

   AEMO does not have any other suggestions at this stage.