

06 March 2018

Ms Audrey Zibelman,
Chief Executive Officer
AEMO
Level 22
530 Collins Street
Melbourne VIC 3000

Dear Ms Zibelman,

Integrated System Plan Consultation submission

Energy Networks Australia welcomes the opportunity to lodge this submission in response to AEMO's Integrated System Plan (ISP) consultation paper¹.

In our earlier submission on the ISP modelling issues, Energy Networks Australia explained that we regard the ISP as a potential 'game changer' in providing a genuinely strategic and integrated generation and transmission plan for the NEM that will deliver the best whole-of-system value for consumers. In accordance with the Finkel Review recommendations, Energy Networks Australia considers that the ISP can play an important role in promoting the coordination of generation and transmission investment as the industry experiences unprecedented transformational change.

The attached submission addresses the non-modelling aspects of AEMO's consultation paper. The key points in our submission are:

- » AEMO correctly notes that overseas markets are already engaged in strategic planning to address the transformational changes we are seeing in Australia. The development of the ISP is therefore both timely and consistent with international experience that seeks to drive optimal consumer outcomes.
- » The rapid growth in renewable generation connections must drive changes in our investment decision process, both in terms of the tests that should be applied and the timeframes for completing them.
- » Energy Networks Australia recognises that the typical timeframes for Rule changes are inconsistent with the present realities of the electricity sector, which is experiencing rapid change. In particular, reform is likely to be required to address the limitations of the RIT-T. It is important that the AER's review of the Regulatory Test Guidelines takes a pragmatic approach that can 1) deliver

¹ AEMO Integrated System Plan Consultation, For the National Electricity Market, December 17.

sensible reform within the current Rules to streamline its application, 2) make effective use of the ISP and 3) help facilitate investment that is in consumers' interests.

- » The RIT-T was designed to assess the efficiency of proposed transmission investments in response to demand growth. In contrast, the transmission projects contemplated by the ISP will be responding to the unprecedented changes in generation and the potential benefits of increased interconnection. In many cases, the RIT-T will not be capable of managing these new challenges in a timely manner, nor will it necessarily capture the economy-wide benefits that will be delivered by transmission projects identified in the ISP.
- » The regulatory status of the ISP and strategic projects, such as proactive augmentation of the network to facilitate the development of a nominated Renewable Energy Zone (REZ) or increase interconnection between regions, are not yet clear. To achieve the overall purpose of the ISP to deliver the transformational change at lower cost through coordination of generation and transmission investment, amendments to the RIT-T or an alternative cost benefit assessment including all relevant consumer benefits may need to be considered for these projects. This is consistent with the findings of the Finkel Review that a rigorous framework should be developed to evaluate these priority projects, including guidance for governments on the circumstances that would warrant intervention to facilitate specific transmission investments.
- » AEMO has correctly identified a wide range of factors that should influence the selection of Renewable Energy Zones (REZs). In addition to the factors identified by AEMO, information regarding the extent of generator interest in prospective REZs should also be considered in the final REZ selection and should be made transparent so as to inform inputs to investment assessments such as future marginal loss factors or future transmission constraints.
- » Energy Networks Australia welcomes AEMO assessing and communicating to customers via the ISP the potential value of REZ developments and supporting network investments. By communicating the potential value to customers, the ISP and associated strategic investments can gain broad community support.
- » While AEMO, as national transmission planner, is best placed to provide national strategic guidance, the Jurisdictional Planning Body (JPB) and TNSPs must retain responsibility and commercial accountability for shared transmission network investments, including those identified through the ISP. As previous studies have shown, the commercial discipline of investment decisions remaining with the JPB/TNSPs will deliver substantial benefits to customers and this should continue.

In addition to the opportunity to lodge this joint submission, our members welcome their on-going involvement in AEMO's expert working groups. Each network company will lodge its own submission in relation to the detailed information regarding transmission developments in section 4 of AEMO's consultation paper.

If your staff would like to discuss any points raised in this submission, please contact Stuart Johnston on (02) 6272 1555 or via email at sjohnston@energynetworks.com.au.

Yours sincerely



Andrew Dillon
Chief Executive Officer

Energy Networks Australia's ISP submission

1 Introduction

This submission addresses the non-modelling issues raised by AEMO in its ISP consultation paper. It follows the structure of the consultation paper, as follows:

- » Section 2 comments on the drivers of energy infrastructure.
- » Section 3 discusses the identification and selection of Renewable Energy Zones (REZs).
- » Section 4 discusses transmission developments and the implications of the ISP for the current regulatory framework.

Each section begins with Energy Networks Australia's high-level comments, followed by responses to the specific questions raised by AEMO.

2 Drivers of energy infrastructure development

2.1 Energy Networks Australia's high level comments

The Regulatory framework has been developed around the historical trend for network development to be principally in response to increasing demand. However, generation development is increasingly the driver for transmission augmentation. Given this change, it is important to ensure that regulatory settings covering transmission investment are appropriate and incentivise efficient and coordinated development that is ultimately in the interest of consumers.

Energy Networks Australia agrees with AEMO's observation that the relative costs of wind and PV generation will drive new renewable generation capacity as aging plants are decommissioned. Network investment will be required to connect this new generation capacity to the NEM, and it will be necessary to re-engineer the transmission grid over time to manage new flows of electricity.

Given the extent of transformational change, it is critically important to provide information to generation proponents. Enhanced provision of information should help generator proponents to make better-informed locational decisions. For example, better visibility of future marginal loss factors may allow developers to consider future losses incurred in transmitting their output to market.

In addition to better information, there is a need for enhanced signalling to generation proponents. Efficient locational decisions depend on generators taking into consideration the full costs of the alternative options, including network costs. Sharing network cost between generation and load would allow generation proponents to test the economic merit of locating close to load, compared to locating remotely to pursue higher yield. While these are complex matters that must be carefully considered in the AEMC's review of transmission and generation coordination, they provide important background and context for the ISP.

Energy Networks Australia supports AEMO's analysis in section 2 of its consultation paper, which describes the rationale for the ISP, in addition to the challenges and uncertainties in developing an integrated generation and transmission plan for the NEM. Energy Networks Australia agrees with AEMO that there is now improved certainty regarding the longer-term development of renewable generation as a result of the commitments made by the Federal and State Governments. This development, together with longer notification periods for withdrawal of coal generation, will assist AEMO in selecting the REZs and prioritising the supporting network projects.

Energy Networks Australia also welcomes AEMO drawing on evidence from overseas markets, where strategic integrated planning is addressing the same transformational issues as those being faced in Australia. Energy Networks Australia's earlier submission noted that in the context of the transformation taking place, the central purpose of the ISP is to ensure that appropriately sized transmission projects, supported by distribution investment, are provided ahead of new generation capacity. In addition, the ISP should assist in identifying the potential value to customers from improved interconnection.

The current incremental approach to network investment, on which the regulatory test is predicated, is unlikely to deliver the best solutions for customers. This view is consistent with those set out in the Finkel Review report².

Energy Networks Australia considers that the ISP will provide substantial value to customers by optimising the inter-linkages between generation and network capacity, taking account of the quality of renewable resources and the geographical diversity in weather. With the active support of the network businesses, AEMO is best placed to take a NEM-wide perspective on these issues and to consider how best to meet the technical requirements of the power system.

As noted in Energy Networks Australia's earlier submission, our members are focused on delivering the most efficient solution for consumers. With this objective in mind, Energy Networks Australia strongly supports the ISP recognising the potential contribution from distribution networks and consumers in delivering efficient solutions, including the contribution from DER. Our members promote downstream solutions wherever they provide a more efficient alternative to network investment.

Energy Networks Australia notes that the AEMC is conducting a parallel review of the regulatory arrangements to promote the efficient coordination of generation and transmission investment. It is evident from AEMO's consultation paper and the Finkel Review recommendations that the ISP will only deliver genuine change if its objectives are supported by the regulatory framework. Equally, however, the transformational challenges we face require immediate action. Therefore, it is strongly preferred that regulatory solutions should be progressed as far as possible without Rule changes. We will return to this issue in later sections of this submission.

² Dr Alan Finkel AO, Independent Review into the Future Security of the National Electricity Market - Blueprint for the Future, June 2017, page 112.

2.2 Response to AEMO's questions

What key factors can enable generation and transmission development to be more coordinated in future?

Energy Networks Australia supports better integration of generation and network development, including both transmission and distribution, in accordance with the Finkel Review recommendations. In broad terms, there are two elements that are required to enable improved integration:

1. An ISP developed by AEMO as an independent planner with a national perspective; and
2. A regulatory framework that gives effect to the intended purpose of the ISP.

Energy Networks Australia notes that the first step is already well underway. AEMO's consultative approach in developing the ISP should provide confidence to all parties that the identified REZs and the priority transmission investments provide a sound starting point for an effective and efficient integrated national plan.

In relation to the second step, it must be recognised that the RIT-T was developed for a different set of circumstances, in which incremental transmission investments to meet load growth were subject to a highly-prescriptive test and consultation process. In contrast, the transmission projects that are contemplated by the ISP are driven by changes in generation, which are unprecedented in their scale and pace. For many projects, the RIT-T will not be well-equipped to respond to these new challenges in a timely manner, nor will it necessarily capture the economy-wide benefits that may be driving the proposed project.

These observations highlight the potential need to consider development of an alternative cost benefit test to the RIT-T. In cases where the RIT-T can be applied, because the benefit to customers is clear, it should be streamlined and integrated with the AEMO's findings in the ISP. However, it must be recognised that a different approach may be warranted for some transmission projects. This aligns with the findings of the Finkel Review that a rigorous framework should be developed to evaluate priority projects, including guidance on whether governments should intervene to facilitate specific transmission investments.

A key objective of the ISP should be to accelerate the process for delivering transmission investments which deliver the transformation at lower cost to customers. Energy Networks Australia is not seeking to truncate the consultation process or shortcut the investment evaluation. However, it is essential that the ISP makes a meaningful contribution to delivering the types of transmission projects that are now required.

3 Renewable Energy Zones

3.1 Energy Networks Australia's high level comments

Energy Networks Australia supports AEMO's proposed approach to REZ selection as outlined in its consultation paper. As AEMO explains in section 3.4 of its paper, there are a wide range of factors that may influence the assessment and prioritisation of potential REZ developments. Energy Networks Australia concurs with the lists of factors identified by AEMO, and we suggest that the list could be expanded to include:

- » Suitability of existing land uses;
- » Local community support for renewable energy development;
- » Existing connection interest from generators; and
- » Strategic alignment / optionality and robustness to cater for different future outcomes.

Energy Networks Australia notes that section 2.1.3 of the consultation paper explains that meeting the technical requirements of the power system is non-negotiable in all planning scenarios and will be a key driver of future generation and transmission developments. Evidently, AEMO intends to consider the operational and technical requirements of the power system in selecting the REZs, although we note that this requirement has not been listed explicitly as a factor.

Energy Networks Australia also notes that the final selection of the REZs will require AEMO to exercise its judgment, having regard to the wide range of factors identified, sensitivity analysis and stakeholder feedback. While Energy Networks Australia would caution against an overly mechanistic approach to assessing the prospective REZs, it will be essential for AEMO's process and criteria for identifying and assessing REZs is transparent and repeatable. In practice, this means that the ISP must clearly set out the analysis and reasoning underpinning AEMO's identification of REZs, and AEMO must consult widely throughout the development of the ISP.

In addition, it is essential that the task of identifying and assessing the REZs is broader than a 'desk top' assessment of the preferred locations. In particular, the REZ selection:

- » should be consistent with the development preferences of the generator sector, in terms of commercial viability of particular resources and localities; and
- » should be informed through extensive consultation with the generation sector on these matters.
- » AEMO should also consider evidence that may be available through other sources, such as connection enquiries and actual exploratory and developmental activity at the REZ locations.

The regulatory status of REZ development is not clear and risks need to be appropriately managed. It is essential that all parties have the appropriate information on which to make their respective investment decisions. Generators should have

information on future MLFs, which is effectively a cost to generators in getting their product to market, as this may be an important influence in location decisions. As already noted, these are complex matters for the AEMC's forthcoming review on transmission and generation coordination. Nevertheless, they provide a backdrop to AEMO's selection of the REZs.

Energy Networks Australia supports AEMO's consideration of potential 'barriers' to the development of REZs. More accurately, Energy Networks Australia notes that the focus should be on identifying and removing impediments to achieving the ISP objectives, rather than removing 'barriers to REZ development' per se. Energy Networks Australia comments on the barriers identified by AEMO in the answers to the questions set out below.

3.2 Response to AEMO's questions

Q. Does this analysis capture the full range of potential REZs in eastern Australia?

Energy Networks Australia's members will provide specific feedback on this question in their individual company submissions.

Q. What other factors should be considered in determining how to narrow down the range of potential REZs to those which should be prioritised for development?

As noted above, Energy Networks Australia supports AEMO exercising its judgment in its assessment of REZs, having regard to the factors it has identified and the feedback it receives from stakeholders. Energy Networks Australia expects AEMO to have regard to the operational and technical requirements of the power system in narrowing the number of potential REZs. In addition, as already noted, Energy Networks Australia suggests that the list could be expanded to include:

- » Suitability of existing land uses;
- » Local community support for renewable energy development;
- » Existing connection interest from generators; and
- » Strategic alignment / optionality and robustness to cater for different future outcomes.

As transmission investment may lead generation, it is essential that AEMO has confidence that the REZs will be well supported by generators. Locational signals and incentives may have an important role to play in this regard.

Q. What are the potential barriers to developing REZs, and how should these be addressed?

Energy Networks Australia's primary concern is that the ISP should facilitate timely and efficient network investment. The regulatory status of the ISP and strategic projects, such as REZs, is not yet clear. However, TNSPs should be able to rely on the analysis and assumptions in the ISP, rather than duplicating work or stakeholder consultation already undertaken by AEMO.

The table below comments on each of the barriers to REZ development identified by AEMO.

Table 1: Energy Networks Australia’s comments on ‘barriers’ to REZ development

Potential Barrier	Energy Networks Australia’s comments
Climate and energy policy uncertainty	<p>Energy Networks Australia agrees that continued uncertainty over the long-term emissions reduction trajectory may impede renewable generation development. Nevertheless, AEMO’s identification of REZs and the better coordination of generation and network investment is likely to deliver significant benefits to customers, even if some uncertainty regarding climate and energy policy remains. The ISP should have flexibility to meet a range of future scenarios, including changes to emission reduction and renewable energy targets.</p>
Obtaining project approvals in the face of uncertainty	<p>Energy Networks Australia agrees that in the absence of an integrated strategic plan for the coordinated development of transmission and generation resources, investment uncertainty tends to restrict new developments to incremental augmentations rather than capturing economies of scale benefits. As already noted, this observation highlights the importance of the ISP in providing guidance - thereby reducing uncertainty - to generation proponents and TNSPs, to promote the efficient development of the integrated power system.</p>
Social license and community acceptance	<p>Energy Networks Australia agrees that local community support will be essential for the successful development of REZs, and that in some cases it may be difficult to obtain community acceptance and procure easements for large-scale renewable developments in concentrated areas, particularly close to existing infrastructure. However, this constraint does not undermine the rationale for selecting REZs or identifying national network investments to provide access and achieve system reliability / security standards most efficiently. Close community consultation will be required in the development and implementation of the ISP.</p>
Lead times to plan and build	<p>Energy Networks Australia agrees that the long lead times associated with large-scale transmission developments may be misaligned with the shorter lead time for generation projects. In some respects, these timing differences are unavoidable because they reflect the planning requirements. The key challenge is to ensure that there are no unnecessary regulatory impediments adversely affecting the timeframes for delivering network investment.</p>

Potential Barrier	Energy Networks Australia's comments
Communicating the value of REZs	<p>Energy Networks Australia agrees that quantifying and communicating the value of REZs in simple language is important in gaining consumer acceptance for large-scale developments. This is an important consideration now, in the lead up to the first ISP, and during and following its release.</p>
Impact of Distributed Energy Resources (DER) uptake	<p>Energy Networks Australia agrees that DER may reduce the need for large-scale generation and transmission developments. However, we do not regard this as a 'barrier' to REZ development. Energy Networks Australia supports the identification of REZs and network investments as part of an integrated plan that includes DER and supporting investments by distributors. AEMO should consider a range of possible DER uptake scenarios in the development of the ISP.</p>
Asset stranding risk	<p>Energy Networks Australia supports AEMO's independent identification of ISP network projects. It is essential that the regulatory framework does not include any unnecessary impediments to undertaking the required investment in a timely fashion, relying on analysis and guidance from the ISP as appropriate.</p>
Risk sharing in a forward looking framework	<p>Given the inherent uncertainty in forecasting energy system development over the long-term, to reduce the risk of future asset stranding the ISP should consider optionality and robustness to a range of possible futures when prioritising potential REZ and network developments. The TNSPs should be able to rely on information set out in the ISP in conducting any investment evaluation.</p>
Cost allocation between regions	<p>The regulatory status of REZ development is not yet clear. However, Energy Networks Australia does not accept that REZ transmission developments introduce new issues regarding the allocation of costs between regions. The Rules already provide arrangements for the allocation of transmission costs between regions. Energy Networks Australia recognises, however, that the significant costs associated with new interconnectors may raise cost sharing issues in the future.</p>
State versus national priorities	<p>Energy Networks Australia notes that the purpose of the ISP is to provide a strategic national plan that integrates generation and transmission developments. As such, Energy Networks Australia recognises that any differences between state and national priorities may need to be reconciled in the identification of REZs.</p>

4 Transmission Development

4.1 Energy Networks Australia's high level comments

This submission focuses on the issues relating to the broader policy questions raised in AEMO's consultation paper, including the appropriateness of the current regulatory framework given the objectives of the ISP. Energy Networks Australia's members will comment on AEMO's indicative transmission projects and REZs in their individual submissions.

It is clear to Energy Networks Australia that the Finkel Review's recommendations 5.1 and 5.2 seek fundamental change to the current national planning arrangements. In particular, the Finkel Review recognises the shortcomings of incremental transmission upgrades to meet the whole of system shift in the sourcing of generation that has already commenced, both in terms of their scale (too small) and timing (lagging generation investment). Energy Networks Australia therefore regards the ISP as a potential 'game changer' in terms of delivering a genuinely strategic, integrated system plan for the NEM.

It follows from the stated purpose of the ISP that it must be supported by an appropriate cost benefit test, which will continue to be applied by TNSPs. Energy Networks Australia considers that it is critically important to demonstrate that any network investment is in the best interest of consumers, and that there is a transparent process to facilitate consideration of non-network solutions. In the context of the ISP-identified transmission investments, the key challenges are:

- » adopting input values for scenarios, such as future generation capacity at REZs and generation closures;
- » applying appropriate scenario weightings to identify 'least regret' transmission investments; and
- » recognising economy wide benefits.

As already noted, the RIT-T was developed in a set of circumstances that are quite different to those that have led to the Finkel review and the development of the ISP. It follows that a different cost benefit test may be warranted to ensure that projects that deliver significant system wide benefits can proceed in a timely manner.

Energy Networks Australia recognises that ISP-identified projects may deliver clear customer benefits, and therefore can proceed through the RIT-T, with appropriate guidance from the ISP. For these projects, the AER's current review of the Regulatory Test Guidelines provides an ideal opportunity to integrate and streamline the ISP and RIT-T processes. In particular, the AER's guideline should explain how TNSPs should apply the RIT-T for ISP-identified transmission investments.

While the details need to be worked through, Energy Networks Australia considers that the following principles could shape the development of the AER's Regulatory Test Guidelines:

- » In applying the RIT-T, TNSPs should be able to rely on information relating to investment needs, including analysis and forecasts contained in the ISP. TNSPs should also retain the flexibility to vary the ISP's findings if better information becomes available.
- » The information contained within the ISP should bring greater clarity and focus to the identified need for ISP transmission projects, for the purpose of applying the RIT-T.
- » TNSPs should retain the flexibility to adopt alternative projects to those identified in the ISP where that is in consumers' interests, including different combinations of transmission and distribution projects, and/or non-network projects.
- » The RIT-T consultation process for ISP-identified projects should continue to test the investment proposal with stakeholders and non-network proponents.

It is noted that TNSPs and DNSPs are best placed to find opportunities to deliver improved customer outcomes, by optimising network augmentation and asset management activities, and by integrating network investments and non-network solutions. It is therefore important that the networks retain the investment decision-making role through the application of the RIT-T, including flexibility in relation to the selection of the preferred solution that is in the long-term interests of consumers.

It should also be recognised that the nature of ISP-identified investments is that transmission projects may lead, rather than lag, generation. As a consequence, network utilisation (in the immediate term at least) may be substantially lower for these projects than other network investments. Importantly, however, the purpose of the ISP is to provide guidance on whether the additional cost of lower network asset utilisation is outweighed by other benefits, such as the maintenance of system reliability and security, through the improved integration of transmission and generation. Energy Networks Australia considers it important that AEMO communicates these issues to customers and other stakeholders through the ISP consultation process.

4.2 Response to AEMO's questions

Q. Have the right transmission options been identified for consideration in the ISP?

Energy Networks Australia's members will lodge their own submissions on the transmission options that are identified in the ISP consultation paper.

Q. How can the coordination of regional transmission planning be improved to implement a strategic long-term outcome?

Energy Networks Australia agrees with AEMO that coordinated planning across regions is essential to deliver the most efficient long-term infrastructure development for consumers. The Rules already provide for joint planning between networks and Energy Networks Australia considers that these arrangements are working well.

An important role for the ISP is to look across regions to identify opportunities to link proposed network investments to deliver additional benefits to customers. If these

projects are identified in the ISP, the relevant TNSPs will undertake joint planning in accordance with the Rules to deliver these projects efficiently.

Joint planning provides an opportunity for the networks to identify combinations of network and non-network solutions that maximise net economic benefits. As such, Energy Networks Australia considers it important that these arrangements are retained.

Q. What are the biggest challenges to justifying augmentations which align to an over-arching long-term plan? How can these challenges be met?

As explained in our earlier comments, the regulatory framework must recognise and support the purpose of the ISP. The AER's review of the Regulatory Test Guidelines provides an ideal opportunity to address this issue to some extent. However, Energy Networks Australia considers that an alternative cost benefit test may be required given the particular focus of the RIT-T, which is not well suited to the issues associated with major transformational change.

As explained above, the ISP has the potential to promote efficient investment and accelerate the investment process without compromising efficiency considerations.

For particular transmission upgrades, the ISP may specify investment needs, input values or assumptions regarding future generation capacity in REZs and generation closures. AEMO's analysis and conclusions should be tested fully during its ISP consultation process. TNSPs should be entitled to adopt AEMO's findings without further analysis or stakeholder consultation. Equally, it is important that TNSPs retain the flexibility to consider other options in applying a cost benefit test such as the RIT-T.

Energy Networks Australia emphasises that it is seeking to integrate and streamline the ISP and RIT-T processes, rather than cutting short stakeholder consultation or investment analysis. Energy Networks Australia's members remain focused on ensuring that network investment is efficient so that lowest cost outcomes for consumers are delivered.

Q. Is the existing regulatory framework suitable for implementing the ISP?

No. As explained in our earlier comments, if the ISP is to deliver genuine change it must be supported by the regulatory framework so that its purpose is effectively promoted. Energy Networks Australia considers that the proposed approach to the development and outworking of the ISP in this submission helps achieve the objectives of the Finkel recommendations for an integrated national plan.

Energy Networks Australia's strong preference is to progress the necessary changes to the regulatory framework as quickly as possible, so that the timely delivery of transmission investment needed to deliver the energy transformation at lowest cost to consumers is not compromised. Longer term changes, including consideration of locational signals to generators, will be considered in the AEMC's review on transmission and generation coordination.