

1 March 2019

Mr John Pierce AO
Chair
Australian Energy Market Commission
PO Box A2449
Sydney South NSW 1235

Electronic Submission

Dear Mr Pierce

Please find attached a rule change proposal to apply a Demand Management Incentive Scheme (DMIS) and a Demand Management Innovation Allowance (DMIA) to Transmission Network Service Providers (TNSPs). This rule change proposal is on behalf of the TNSP members of Energy Networks Australia.

The proposed Rule seeks to amend the existing National Electricity Rules (the Rules) chapter 6A to require the Australian Energy Regulator (AER) to develop DMIS and a DMIA to apply to TNSPs and to allow the AER to determine whether to apply these arrangements to TNSPs. The proposed Rule changes mirror those that were introduced for distribution network service providers (DNSPs) in 2015 and are consistent with the Australian Competition and Consumer Commission's recommendation in its recent Retail Electricity Pricing Inquiry that the DMIS/DMIA arrangements be extended to TNSPs.¹

This rule change will promote innovation in non-network solutions and encourage TNSPs to utilise non-network resources at sufficient scale to address constraints that manifest at the transmission level. Non-network solutions have an increasingly important role to play in minimising total system costs, and so the increased innovation in and uptake of efficient non-network solutions will benefit customers through lower transmission and total system costs.

This rule change represents a proportionate and incremental change that complements the planning and regulatory frameworks which apply to TNSPs.

Should you have any queries on this response please feel free to contact Verity Watson, vwatson@energynetworks.com.au.

Yours sincerely,



Andrew Dillon
Chief Executive Officer

¹ Australian Competition and Consumer Commission, *Restoring electricity affordability and Australia's competitive advantage; Retail Electricity Pricing Inquiry – Final Report*, June 2018, recommendation 22.

Demand Management Incentive Scheme and Demand Management Innovation Allowance – Rule Change Request

Energy Networks Australia

Submission to Australian Energy Market
Commission – February 2019

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1 Summary

This Rule change proposal is submitted by Energy Networks Australia.

The proposed Rule seeks to amend the existing National Electricity Rules (the Rules) chapter 6A to require the Australian Energy Regulator (AER) to develop a Demand Management Incentive Scheme (DMIS) and a Demand Management Innovation Allowance (DMIA) to apply to transmission network service providers (TNSPs), and to allow the AER to determine whether to apply these arrangements to TNSPs. The proposed Rule changes mirror those that were introduced for distribution network service providers (DNSPs) in 2015 and are consistent with the Australian Competition and Consumer Commission's (ACCC's) recommendation in its recent Retail Electricity Pricing Inquiry that the DMIS/DMIA arrangements be extended to TNSPs.¹

As technologies evolve, there are increasing opportunities for non-network options to provide a cost-effective alternative to managing flows on the transmission network and dealing with an increasingly dynamic supply/demand balance. These opportunities include the use of demand management through contracting with end-use customers, as well as the co-ordination of the increasing number of Distributed Energy Resources (DER) and use of 'smart' technologies, alongside embedded generation and grid-scale storage. All of these activities can be considered to fall under the broad definition of 'demand management' activities.²

Further, because non-network options involve shorter time commitments than network expenditure, they also offer a valuable level of flexibility. This is particularly valuable where supply is becoming more variable and demand is becoming increasingly responsive (for example through solar photovoltaic products, energy efficiency and more dynamic forms of pricing).

This rule change will promote innovation in non-network solutions and encourage TNSPs to utilise non-network resources at sufficient scale to address constraints that manifest at the transmission level. Non-network solutions have an important role to play in minimising total system costs, and so the increased innovation in and uptake of efficient non-network solutions will benefit customers through lower transmission network and total system costs.

Customers would also have visibility over how TNSPs are using these arrangements to lower total system costs through the specific information provided to and published

¹ Australian Competition and Consumer Commission, *Restoring electricity affordability and Australia's competitive advantage; Retail Electricity Pricing Inquiry – Final Report*, June 2018, recommendation 22.

² In this Rule change proposal we predominantly use the terms 'non-network options' or 'non-network solutions' to refer to options that do not rely on investment in traditional 'poles and wires'. This is consistent with the reference in the Rules to 'relevant non-network options relating to demand management' in describing the DMIS in Chapter 6.

by the AER, eg, the AER's DMIA assessment report, along with relevant information published as part of the revenue proposals and non-network options evaluated in the RIT-T process.

The DMIS will go some way to addressing recognised shortcomings in the incentive arrangements under the current regulatory framework recognised by the Commission in its decision to implement similar arrangements in electricity distribution, namely the absence of positive financial incentives for TNSPs to adopt efficient non-network solutions to counteract the practical implementation barriers, which creates an imbalance of incentives, as compared with those relating to network solutions.

The DMIA provides funding for innovation and the exploration of new alternatives, that can be expected to lower costs to consumers in the long-term and overcomes the current disincentive on TNSPs in the regulatory regime to incur expenditure on research and development that will only provide benefits in the longer term.

The proposed Rule change represents a proportionate and incremental change that would operate alongside and complement the existing arrangements in the Rules. It builds on the existing cost pass through arrangement, which is required regardless of whether or not a DMIA and DMIS is applied to TNSPs. The cost pass through assists TNSPs in managing those risks associated with network support payments that are outside of their control, and so will remain required to support the efficient adoption of non-network options in transmission. However, it is not sufficient by itself since it does not provide a positive incentive to adopt efficient non-network solutions.

The proposed Rule change complements the broader network planning obligations on TNSPs under the Transmission Annual Planning Reports (TAPR) and the Regulatory Investment Test for Transmission (RIT-T) to provide information to and consult with potential non-network proponents and to evaluate non-network options. It also supports the AEMC's final report on the Co-ordination of generation and transmission investment, which highlights the role of TNSPs in considering whether non-network options can form part of efficient integrated system plan projects.

The proposed Rule change also complements the DMIS and DMIA that have been developed and put in place for DNSPs and enables those mechanisms to be leveraged to provide benefits across more of the supply chain. The proposed changes will further help to actively build up the market for non-network options, thereby increasing the supply of non-network alternatives and the downward competitive pressure on the prices at which network support is offered.

Importantly, the proposed Rule affords the AER discretion as to whether to apply the DMIS and the DMIA to individual TNSPs and so it's a 'no regrets' change that does not preclude future evolution of the regulatory framework.

Consistent with the arrangements for DNSPs and the 'no regrets' nature of this change, it is proposed that the Rule change allow TNSPs to apply to the AER for early application of the DMIS during the current regulatory control period. The AER would be able to apply the DMIA at the time of the next regulatory determination for each TNSP.

The remainder of this Rule change proposal is structured as follows:

- » Section 2 provides a description of the proposed Rule;
- » Section 3 discusses the issues that arise under the current regulatory framework applying to TNSPs, and how the proposed Rule addresses these issues;
- » Section 4 sets out how the proposed Rule will further the National Electricity Objective (NEO);
- » Section 5 identifies the impact on key stakeholders associated with the Rule change, and the costs and benefits of the change; and
- » Section 6 provides some comments on suggested drafting in relation to the Rule change.

In addition, Appendix A steps through how the network support pass through arrangement interacts with the EBSS, CESS and contingent project arrangements in a number of scenarios and highlights the lack of positive financial incentives on TNSPs to adopt efficient non-network solutions in the majority of those scenarios.

2 Description of proposed new Rule

The proposed Rule seeks to amend chapter 6A of the existing Rules to require the AER to develop a DMIS and a DMIA to apply to TNSPs.

- » The DMIS provides TNSPs with a *financial incentive* to implement efficient non-network options which are expected to lower costs to consumers.
- » The DMIA provides TNSPs with *funding* to research and develop innovative non-network arrangements in connection with the operation of their transmission networks, with the prospect of lowering costs to consumers in the longer term.

The proposed Rule goes some way to addressing (via the DMIS) the lack of positive financial incentives under the current regulatory framework to implement non-network solutions that would provide an overall benefit to the market, as well as providing funding for innovation that can be expected to lower costs to consumers in the long-term (via the DMIA).

These arrangements would operate alongside and complement the existing arrangements in the Rules (including the network cost pass through that addresses the variability in non-network payments due to risks outside of TNSPs' control, and the broader network planning obligations on TNSPs to provide information and consider non-network alternatives), to provide a positive incentive to adopt efficient non-network options. This in turn will help to actively build up the market for non-network solutions, resulting in both an increased supply of non-network alternatives as well as downwards competitive pressure on the prices at which network support is offered.

The proposed Rules provide the AER with discretion in deciding whether to apply the DMIS/DMIA and would allow the incentives/allowance under the DMIS/DMIA to vary by TNSP and over time. This discretion allows the application of the DMIS/DMIA to evolve over time to take account of any broader developments in the regulatory framework.³ Making these changes to the Rules now will allow consumers to benefit from the adoption of lower cost alternatives, ahead of any more comprehensive future changes in the Rules. It is therefore a 'no regrets' change, that does not preclude future evolution of the regulatory framework.

The proposed Rule changes mirror those that were introduced for DNSPs in 2015.⁴ The 2015 changes were intended to address the same shortcomings in relation to positive incentives to adopt efficient non-network alternatives as currently exist for TNSPs. The City of Sydney, TransGrid, Energy Networks Australia and Grid Australia made submissions during this process supporting the Rule change and recommending that

³ Such as the introduction of incentive schemes aimed at total expenditure (totex) or the introduction of general innovation allowances.

⁴ Following Rule change proposals submitted by the COAG Energy Council and the Total Environment Centre, and reflecting recommendations made in the earlier 2012 AEMC Power of Choice review.

the scope of Rule change request be expanded to include consideration of the current regulatory framework for demand management by transmission networks.

While the AEMC stated that “transmission businesses can, and do, contribute to effective demand management, albeit in a more limited capacity compared to the demand side and distribution businesses”⁵, it concluded that the move to include transmission networks was “out of scope” and the suggestion was that “stakeholders have the ability to raise a Rule change to apply a similar framework to transmission business where they consider it would better achieve the NEO.”⁶

More recently, the ACCC in its Retail Electricity Pricing Inquiry has recommended the extension of the DMIS/DMIA arrangements to TNSPs.⁷ Extension of these arrangements to TNSPs will result in comparable incentives applying at both the transmission and distribution level and recognises that all networks have the potential to efficiently utilise non-network options.

The DMIS and DMIA mechanisms that have been developed by the AER under the Rules applying for DNSPs would be equally effective if applied to TNSPs.⁸ As a consequence, the administrative costs of extending the DMIS/DMIA arrangements to TNSPs is expected to be minimal. Relevantly, these mechanisms both include a substantial oversight role for the AER in approving payments under the two mechanisms. This ensures that customers benefit from the application of the schemes.

The Rule change proposal includes allowing TNSPs to apply to the AER to apply the DMIS to a TNSP ahead of its next determination (consistent with arrangements for DNSPs), and to allow the AER to apply the DMIA at the time of the next regulatory determination for each TNSP.

In summary, the proposed Rule represents a proportionate and effective approach to providing a positive incentive for the efficient adoption of non-network alternatives and undertaking research aimed at further enhancing the range of non-network alternatives that could be utilised by a TNSP, which is expected to result in a reduction in overall costs to consumers.

⁵ AEMC, *Draft Rule Determination – National Electricity Amendment (Demand management incentive scheme) Rule 2015*, May 2015, p.23.

⁶ AEMC ERC0177 Draft Rule determination final for publication

⁷ *Australian Competition and Consumer Commission, Restoring electricity affordability and Australia’s competitive advantage; Retail Electricity Pricing Inquiry – Final Report*, June 2018, recommendation 22, p. xx.

⁸ See: AER, *Demand management incentive scheme*, 14 December 2017; and AER, *Demand management innovation allowance mechanism*, 14 December 2017.

3 The issues addressed by the proposed Rule

The issues addressed by the proposed Rule are required to promote innovation in and uptake of efficient non-network solutions and are similar in nature to the drivers underpinning the introduction of the DMIS and DMIA for DNSPs.

3.1 The DMIS provides a positive incentive to adopt efficient capex solutions

3.1.1 TNSPs do not have a positive financial incentive to adopt efficient non-network solutions

The key driver for the proposed introduction of a DMIS for TNSPs is the current lack of positive financial incentives for the adoption of potentially lower cost non-network opex solutions.

TNSPs are an active participant in the market for non-network services and seek to contract directly for demand management support (rather than contracting through DNSPs) to manage issues on the transmission networks.

Energy Networks Australia members have consistently observed that the current transmission regulatory framework provides no positive financial incentive for TNSPs to pursue and procure non-network solutions, notwithstanding the associated reputational and compliance risks associated with putting in place a non-network solution, particularly when the market for non-network solutions is still developing (discussed further in section 3.1.2 below). This lack of positive incentive creates an imbalance of incentives as between non-network solutions and network solutions which do not face these practical hurdles.

This lack of a positive financial incentive to contract for non-network options is distinct from the regulatory approach applied to capex and opex unrelated to non-network support, via the Capital Expenditure Sharing Scheme (CESS) and the Efficiency Benefit Sharing Scheme (EBSS). The AEMC has previously noted that a focus on cost recovery only for non-network options will not provide sufficient incentives for the efficient uptake of non-network options, and that the regulatory arrangements should provide NSPs with ‘an opportunity to make profits on demand management projects’.⁹

Appendix A demonstrates the absence of positive financial incentives for non-network solutions in various circumstances, including where:

- » a non-network solution results in the efficient deferral of an unexpected capital project during a regulatory control period;

⁹ AEMC Rule determination, *Demand Management Incentive Scheme*, August 2015, p. 4.

- » a non-network solution results in the efficient deferral of a contingent project; and
- » a RIT-T undertaken prior to the regulatory period identifies a non-network solution as the least-cost option and the cost of the non-network option is included in the opex allowance.

Similar concerns underpinned the change made to the Rules in 2015 to introduce the DMIS arrangements for DNSPs. In particular, the AEMC noted at the time that DNSPs have no financial incentives to factor in the broader market benefits from non-network options.¹⁰ It also noted that there was a continuing concern amongst stakeholders in relation to a bias in favour of network over non-network investment¹¹

Other views raised during the 2015 Rule change consultation process included that the DMIS would help address the ‘cultural barriers’ within network businesses to assessing demand management (PIAC).

The AEMC commented that the incentives provided under the DMIS would ‘complement’ the existing opportunities for businesses to consider non-network options, including through their revenue allowance processes and the application of the RIT-D.¹² This point similarly applies to TNSPs. There are some key differences in both the regulatory framework applying to TNSPs compared to DNSPs and the scale and nature of transmission investments. However, these differences do not diminish the need for a DMIS for TNSPs, but, rather, amplify this need in some cases, as described below.

3.1.2 The larger scale of transmission projects increases the potential benefits from adopting non-network solutions

The nature and scale of TNSP projects means that, while the scale of non-network solutions required to address transmission-level network constraints may be more challenging than at the distribution-level, the potential benefit of deferred network investment is commensurately larger. For example, under TransGrid’s Powering Sydney’s Future project, a \$250m project was able to be economically deferred using non-network solutions.

In addition, transmission investments are also more likely to give rise to broader market benefits, such as the deferral of generation investment. One of the AEMC’s concerns that drove the introduction of the DMIS for DNSPs was the lack of financial incentives on DNSPs to factor in such broader benefits.

3.1.3 Practical hurdles to the adoption of efficient non-network solutions still exist for TNSPs

In its 2018 review of economic regulation, the AEMC recognised that NSPs’ investment decisions can be influenced by factors other than financial incentives, such as

¹⁰ AEMC Rule determination, *Demand Management Incentive Scheme*, August 2015, p. i.

¹¹ AEMC Rule determination, *Demand Management Incentive Scheme*, August 2015, p. 25.

¹² AEMC Rule determination, *Demand Management Incentive Scheme*, August 2015, p. i.

shareholders' preferences on stable returns and risk appetite as well as reputational incentives.¹³

NSPs' investment decisions are affected by considerations such as contracting and compliance risk relating to licence and other legislative obligations (including reliability obligations), along with the reputational risk that might arise from any non-compliance.

TNSPs essentially always retain service delivery accountability. Contractual arrangements with non-network providers can never perfectly contract this risk in full, and nor are counterparties willing to accept this risk in full. For these reasons, TNSPs still retain risks relating to service delivery where non-network solutions are pursued, leading to compliance risks and reputational risks associated with adopting non-network solutions.

Relevantly, the larger scale and longer lead time generally required to implement transmission projects can exacerbate the risks associated with a non-network solution not performing as expected, ie, because an extended period may be required to implement an appropriate solution.

In addition, and as recognised by the AEMC and the AER, there are other practical hurdles in terms of less stable cashflows associated with non-network options. In proposing the introduction of a DMIS for DNSPs, both the COAG Energy Council and the Total Environment Centre noted that there were greater uncertainties and risks associated with demand management options, and that the stable returns associated with capex meant that in practice businesses are likely to favour capex over opex.¹⁴

3.1.4 Network support cost pass-through arrangement is still required

The key difference in the regulatory framework applying to TNSPs compared with DNSPs relevant to this Rule change proposal is that TNSPs have a network support pass through codified as part of the Rules.¹⁵

The AEMC has previously noted that the objective of a cost pass-through is to provide a degree of protection for the TNSP from the impact of unexpected changes in costs outside of its control. Such a mechanism lowers the risks faced by the TNSP, which would otherwise have to be compensated for in the calculation of regulated revenues.¹⁶

Consistent with this, the network support pass-through arrangement is an essential feature of the transmission regulatory framework. The pass-through arrangement recognises that actual network support payments may differ from year to year since they depend on how much network support is required, which is caused by factors

¹³ AEMC *Economic Regulatory Framework review, Promoting Efficient Investment in the Grid of the Future*, July 2018, p. vii-ix.

¹⁴ AEMC *Rule determination, Demand Management Incentive Scheme*, August 2015, p. 4.

¹⁵ NER 6A.7.2. The network support pass through is described in more detail in Appendix A.

¹⁶ See for example, AEMC, *Draft Decision*, July 2006, p. 87.

outside the control of a TNSP, eg, weather conditions, demand levels and electricity usage patterns. The network support pass-through applies to both positive and negative differences in the actual network support payment required compared with those forecast at the time of the regulatory determination.

The pass-through arrangement is effective in efficiently managing the risks in relation to uncertain network support payments which are beyond a TNSP's control, and effectively ensures cost recovery for non-network options. However, although the pass through manages the uncertainty risks associated with network support payments, the best case scenario for a TNSP is that it 'breaks-even' in relation to the cost of non-network options.¹⁷

The network support pass through arrangement applying to TNSPs therefore does not address the concerns in relation to the lack of a positive financial incentive under the current arrangements to implement non-network options. Appendix A steps through how the network support pass through arrangement interacts with the EBSS, CESS and contingent project arrangements in a number of scenarios and highlights the lack of positive financial incentives to adopt efficient non-network solutions in the majority of those scenarios. In summary:

- » Where a non-network option is identified as the most efficient option prior to the regulatory period, or during a regulatory period (as part of a contingent project, or as part of an unexpected development), the network support pass through applies, but there is no positive incentive to undertake non-network options.
- » For contingent projects, there is no positive incentive to undertake efficient non-network expenditure, in contrast to the positive incentive that still exists for network capex under the contingent project framework.
 - TNSP expenditure is typically large and lumpy, with a greater proportion of capex treated as contingent projects than for DNSPs. It is expected that the extent of contingent projects will further increase in future.
- » Where a non-network option substitutes for investment included in the capex allowance, the network support pass through does not apply. This does provide the potential for a TNSP to earn an additional reward via the EBSS/CESS trade-off where it is able to implement an efficient non-network solution (in a similar manner to DNSPs).
 - However, this situation is likely to arise less frequently going forward, as increasing uncertainty about future developments is leading to more transmission projects being treated as contingent projects, which are not included in the *ex ante* capex allowance.
 - Further, where non-network solutions are adopted that enable capex to be permanently avoided (for example, by enabling smaller capacity replacements to be used), the benefit of avoided future replacements is not

¹⁷ Since pass through applications are assessed by the AER in the year following payment, there is a potential risk that the AER will deem such payments inefficient and reduce the pass-through amount. However to date the AER has approved all pass through amounts.

reflected in the CESS payment to TNSPs, resulting in incentives being misaligned, particularly for short-lived assets.

As a consequence, in the majority of these scenarios there is either no positive financial incentive on TNSPs to undertake efficient non-network options, or a misalignment of incentives that can be expected to lead to a lower uptake of non-network options than would be optimal.

3.1.5 TNSPs have limited scope to influence end-customer behaviour through tariffs

Finally, TNSPs have limited scope to influence end-consumer behaviour through tariff signals.

The AER has previously stated that it considers that the DMIS and DMIA are ‘targeted, achievable solutions that form a bridge between the current regulatory framework and a framework more focused on efficient pricing of network services’.¹⁸

Currently, the tariffs faced by customers are primarily directed at addressing challenges faced by distribution networks. Transmission costs are an input to the tariffs set by DNSPs, but the structure and level of transmission tariffs are generally not passed through to consumers, particularly at the household and small business level.

This watering-down of locational transmission price signals highlights the importance of demand management for TNSPs.

Moreover, the unders- and overs- provisions in the Rules applying to DNSPs in passing through transmission costs, means that there is no incentive for DNSPs to reflect transmission charging structures in their final network tariff.

3.1.6 The proposed Rule introduces a positive incentive for TNSPs to adopt efficient non-network solutions

The introduction of a DMIS as proposed in this Rule change addresses the current lack of a positive financial incentive to adopt efficient non-network solutions and the presence of a number of practical hurdles, by introducing a direct incentive relating to the adoption of non-network solutions.

Energy Networks Australia is proposing that the same principles-based approach to establishing the DMIS be adopted for TNSPs as is currently reflected in the Chapter 6 Rules for DNSPs, with the incentive scheme itself being developed by the AER consistent with these principles. Energy Networks Australia considers that the DMIS scheme that has already been developed by the AER to apply to DNSPs would be equally applicable to be applied to TNSPs, and so the Rule change would not necessitate an additional scheme being developed.

¹⁸ AER, *Demand management incentive scheme – Explanatory Statement*, December 2017, p.17.

3.1.7 Proposed timing of introduction of DMIS

Energy Networks Australia is proposing that TNSPs be allowed to apply to the AER following the introduction of the Rule change to have the DMIS applied during the current regulatory period, rather than the DMIS only applying from the start of the next determination for each TNSP. This is consistent with the arrangements for DNSPs, where the AER submitted a Rule change proposal to allow the early application of the DMIS to DNSPs during a regulatory period.¹⁹ Specifically, the proposal would allow the application of the DMIS 24 months prior to the end of the regulatory period. This timing avoids any need to amend the regulatory determination, as the AER's DMIS has a two year lag between the accrual and payment of incentives, such that these incentives will not be payable to TNSPs until the subsequent regulatory period.

Consistent with the AEMC's conclusion in the case of the early application of the DMIS to DNSPs²⁰, Energy Networks Australia considers that as the DMIS will promote efficient investment, its earlier application is likely to promote efficient investment from an earlier timeframe. In the long run, the efficient investment is likely to reduce costs to electricity consumers.

3.2 The DMIA provides a source of funds for R&D to overcome current disincentives

3.2.1 The current regulatory framework provides a disincentive to undertake R&D activities

Demand management and other non-network alternatives to expenditure on 'poles and wires' is still in a relatively early stage of evolution in terms of technologies, knowledge and processes.

Currently the regulatory framework provides a disincentive to incur expenditure on research and development (R&D) into new and more innovative techniques for utilising non-network technologies, which would have the potential to lower costs to consumers over the longer term. This is because any expenditure on R&D results in an immediate increase in opex (and therefore has the effect of reducing EBSS amounts), which are not offset by a decrease in either opex or capex in the same regulatory period (which would provide an offsetting increase in either EBSS or CESS amounts).

This disincentive to incur costs in funding R&D into non-network alternatives was recognised by the AEMC during the 2015 Rule change that introduced the current

¹⁹ See *National Electricity Amendment (implementation of demand management incentive scheme) Rule 2018 No.3*. The AER Rule change proposal did not also request the ability to apply the DMIA early.

²⁰ AEMC, *Rule determination, Implementation of Demand Management Incentive Scheme*, 3 April 2018, p. 12.

arrangements for the DMIA.²¹ The DMIA is explicitly intended to provide a ‘special source of funding’ for ‘genuine experimentation and innovation’ in order to overcome this disincentive.

In designing the DMIA, the AER also expressed its view that regulated monopolies:²²

Face lower upside risks. Competitive businesses may be more likely to profit from R&D than monopolies, as R&D can provide them with a competitive advantage. Moreover, to the extent that R&D results in future cost reductions, distributors will pass a material portion of these gains onto electricity consumers under our regulatory regime.

Still face downside risk. If R&D costs occur significantly before the benefits, distributors risk being financially penalised from making these decisions under the regulatory regime.

3.2.2 Expenditure on R&D cannot be recovered with certainty under existing arrangements applying to TNSPs

In the absence of a similar innovation allowance for TNSPs the current regulatory framework does not provide certainty that any expenditure on R&D in order to further develop efficient long-term non-network solutions will be able to be recovered by the TNSP.

In particular:

- » although the network capability incentive parameter action plan (NCIPAP) component of the service target performance incentive scheme (STPIS) has previously been used by TNSPs to fund innovation trials, including in relation to the operation of grid-scale batteries, NCIPAP projects are expressly required to relate to improving a TNSP’s ‘network capability’.
 - this results in substantial ambiguity as to whether all trials of non-network solutions would be eligible for inclusion under the NCIPAP allowance, particularly where the non-network solution being trialled represents a potentially lower cost alternative to network capex, but where the capability of the network is not affected; and
- » it is unlikely the expenditure on innovation that is expected to result in cost reductions in future regulatory periods (rather than the current period) would be accepted by the AER as part of a TNSP’s opex allowance.
 - previously the AER has allowed for some R&D spending to be included in a TNSP’s opex allowance – for example, TransGrid was previously granted an

²¹ AEMC *Rule determination, Demand Management Incentive Scheme*, August 2015, p.4 and p. 67. The DMIA was also a feature of the earlier Demand Management and Embedded Generation Incentive Scheme (DMEGCIS) that applied to DNSPs prior to 2015.

²² AER, *Demand management innovation allowance – Explanatory Statement*, December 2017, p. 9.

allowance of \$1m per year to develop and investigate demand management responses to emerging constraints in the transmission system.²³

- However, more recently, the AER has determined that additional opex allowances for non-network trials would need to be justified as a ‘step-change’ by being supported with an assessment of the associated reduction in capex.²⁴
- The ‘innovation’ and research nature of the trials that would be supported by the DMIA mean that there may not be a clear off-set in relation to capex projections, particularly in the near term, and so these projects would not be able to be included as part of the TNSP’s opex allowance.
- In addition, the expenditure objectives require a transmission proposal to include expenditure that is required in order ‘to meet or manage’ the expected demand for prescribed transmission services over that period. In the absence of a DMIA, it is not clear that this objective would encompass research trials, which are more speculative and forward looking in nature.

Given the likelihood for the cost of R&D into innovative non-network solutions not to be recoverable under these mechanisms, there is merit in the application of a DMIA to TNSPs, on the basis of the potential for a long term reduction in costs for consumers. This is the same rationale as applied by the AEMC in approving the DMIA for DNSPs.²⁵ Energy Networks Australia also notes that the AER’s design of the DMIA expressly excludes a project from being ‘eligible’ for the DMIA if its costs are able to be recovered from some other scheme.

3.2.3 R&D by TNSPs will differ from trials being conducted by DNSPs

Energy Networks Australia recognises that the DMIA applying to DNSPs will provide benefits to the wider market through the development of expertise, knowledge sharing and market development. However, the potential non-network solutions that may be applicable to transmission networks will in many cases differ from those adopted for distribution networks, and so R&D being conducted by DNSPs can be expected to complement, but is not a substitute for, the research that TNSPs would undertake if provided access to a similar DMIA arrangement.

For example, the much larger scale of potential non-network solutions that are required to address transmission constraints gives rise to a greater need to coordinate demand management across a larger number of end-consumers. Trials in relation to the large-scale orchestration of demand management, such as through smart building management schemes and battery aggregation arrangements, may help to demonstrate feasibility and test the appropriateness of different platforms.

²³ AER, *Draft decision TransGrid transmission determination 2009-10 to 2013-14*, p. 115.

²⁴ AER *Final decision TransGrid transmission determination 2015-18, Attachment 7 Operating Expenditure*, p. 7-60-61.

²⁵ AEMC *Rule determination, Demand Management Incentive Scheme*, August 2015, p.4 and 67.

The potential for the deployment of large-scale embedded generation and batteries to address transmission network constraints is another potentially differentiating feature. Much of DNSPs' R&D has focused on demand side rather than supply side non-network solutions, eg, through the remote control of customer appliances such as air conditioners and trials of end-use tariff impacts.²⁶

TNSPs are likely to see value in focusing on supply-side solutions, such as research into 'vehicle to grid' potential for electric vehicles.

In addition, the proposed Rule will allow transmission businesses to explore new innovative sources and methodologies to address network needs associated with increased load and generation variances on the transmission network. For example, TasNetworks currently runs a number of transmission protection schemes that use innovative, real time communication and control systems to balance system supply and demand. Although originally developed to maintain system security in the face of Basslink related contingencies, these control schemes have the potential to be leveraged in future solutions to variability in transmission flows more generally.

3.2.4 The proposed Rule provides a direct source of funding for innovative research into non-network options

The proposed Rule change addresses the shortcomings in the current framework by providing funds for TNSPs to direct towards R&D activities associated with innovative non-network solutions. This recognises that approaches to demand management and other non-network activities as an alternative to network investment are still maturing, as they are often in an early phase of their development cycle or are not yet commercially viable.

Energy Networks Australia is proposing that the same principles-based approach to establishing the DMIA be adopted for TNSPs as is currently reflected in the Chapter 6 Rules for DNSPs, with the DMIA mechanism itself being developed by the AER consistent with these principles. Energy Networks Australia considers that the DMIA mechanism that has already been developed by the AER to apply to DNSPs would be equally applicable to be applied to TNSPs, and so the Rule change would not necessitate an additional mechanism being developed.

The use of innovation allowances by regulators to facilitate change has been used in a number of international frameworks. Ofgem, the regulatory body in the UK, has established a similar innovation allowance scheme that encourages the cost effective use of demand management which recognises the benefit for customers and includes both distribution and transmission networks.²⁷

²⁶ For example, the DMIA was used to fund: United Energy's 2017 Summer Saver demand response trial; Jemena's 2017 'power changers' demand response trial and Ausgrid's ongoing 'cool saver' demand response trials.

²⁷ Further information on the RIIO framework may be found at www.ofgem.gov.uk/network-regulation-%E2%80%93-riio-model.

3.2.5 Proposed timing for the introduction of the DMIA

Energy Networks Australia proposes that the AER be allowed to apply the DMIA from the start of the next regulatory period for each TNSP.

This is consistent with the approach adopted for DNSPs.

4 How the proposed Rule contributes to the National Electricity Objective (NEO)

The relevant aspects of the NEO for the purposes of this Rule change request are the promotion of the efficient investment in electricity transmission networks for the long term interests of consumers with respect to price, quality, safety and reliability and security of supply of electricity.

Entering into efficient non-network arrangements will reduce the overall long term costs of supplying electricity to customers. With the emergence of new technologies and a more stable peak demand outlook at a transmission level, the importance of non-network options as enduring solutions will continue to grow. Efficient development and delivery of non-network initiatives, supported by more balanced incentives on transmission businesses, will ensure that the market for non-network support deepens and will enable transmission services to be provided at the lowest efficient cost to consumers.

This is consistent with the AEMC's conclusion in its final determination on the 2015 Rule change that introduced the DMIS and DMIA for DNSPs that the objective of the changes was to encourage DNSPs to make efficient decisions with respect to network investment such that consumers' demand for electricity services is met at lowest total system costs.²⁸

Introducing appropriate demand management incentives for TNSPs would also serve to achieve greater alignment of incentives across both transmission and distribution networks and help maximise total system benefit, to the long-term benefit of all consumers. In developing the DMIS for DNSPs the AER commented that any bias towards network capex may:²⁹

...create a negative feedback loop that makes demand management options riskier and/or less efficient. This negative feedback loop means that:

- The demand management services market has limited opportunity to mature, particularly when it comes to providing network support.*
- Distributors find themselves relatively inexperienced in relying on demand side solutions to support their delivery of network services, including managing risks specific to these solutions.*

²⁸ AEMC Rule determination, Demand Management Incentive Scheme, August 2015, p. i.

²⁹ AER, Demand management incentive scheme – Explanatory Statement, December 2017, p.18.

Addressing this negative feedback loop for TNSPs as well as DNSPs will further assist in broadening and deepening the market in relation to non-network alternatives and providing greater confidence in deploying these solutions where efficient to do so, lowering costs to consumers.

The proposed Rule would contribute in particular to improving productive, allocative and dynamic efficiency.

- Productive efficiency is improved by providing a positive financial incentive for TNSPs to implement non-network arrangements where they lead to a net economic benefit to the NEM as a whole.
- Allocative efficiency is improved since transmission network services are provided to those consumers that derive the greatest benefit from them, whereas some other consumers may receive a payment in return for reducing their use at a particular time.
- Dynamic efficiency is improved by increasing the clarity and certainty with regard to how non-network expenditure will be treated as well as funding research to support future investment in innovative non-network processes and arrangements.

With respect to the NEO, the AEMC concluded that the introduction of the DMIS and DMIA for DNSPs would promote efficient investment which is in the long term interests of customers with respect to price.³⁰ This will similarly apply to a DMIS and DMIA for TNSPs.

³⁰ AEMC *Rule determination, Demand Management Incentive Scheme*, August 2015, pp. i, 4 and 67.

5 Expected costs, benefits and impacts of the proposed change

Overall, this Rule change is expected to result in lower overall system costs, which in the long-run will be reflected in lower prices for consumers. This is because it will incentivise TNSPs to adopt non-network solutions where they provide an overall benefit to the market.

Consistent with the requirements of the NER, this section outlines the expected costs and benefits to those parties likely to be affected by the proposed Rule change.

5.1 End use consumers

Under the Rule change proposal, consumers will ultimately fund the allowances under the DMIS and DMIA. However, these costs are expected to be modest relative to the long term cost savings brought about by increased use of efficient non-network options arising as a consequence of both the scheme and innovation allowance.

In addition, under the DMIS and DMIA mechanisms developed by the AER there is a cap on:

- » the total incentive payment that can be received in relation to the DMIS (1 per cent of the NSP's revenue requirement in total, with any incentive for an individual project capped at 50% of the project's expected cost, or the expected net market benefit); and
- » payments under the DMIA (\$200,000 plus 0.75 per cent of the annual revenue requirement).

Gains may also be immediately available to individual consumers where they offer or become involved in demand management projects (such as direct load control).

Demand management and other non-network alternatives represent an alternative to building traditional network infrastructure to meet peak demand. It can also address risks associated with equipment failure and so delay the retirement or replacement of aging assets, as well as potentially enabling lower capacity replacements.

The benefits of this Rule change will be lower costs to consumers through increased innovation and the increased uptake of efficient non-network alternatives.

5.2 Impact on other users of non-network response

The expansion of the DMIS and DMIA arrangements to TNSPs will assist in growing the market for available, dependable, and commercial non-network options.

The DMIS and DMIA proposed in this Rule change focuses on transmission network needs. However, an increase in the take-up of non-network alternatives by TNSPs and in research in relation to establishing the viability and commercialisation of innovative new non-network solutions, will assist the development of the non-network industry more broadly and increase confidence in non-network solutions.

This in turn can be expected to result in a broadening and deepening of the market for non-network services, which currently remains in its relative infancy. This will bring benefits to other potential users of non-network services, including AEMO in its capacity as market operator in managing system stability and ensuring reliability through the Reliability and Emergency Reserve Trader (RERT) mechanism.

5.3 TNSPs

There are expected to be minimal costs to TNSPs, mainly arising from the administrative requirements in providing compliance information to the AER.

These administrative costs are expected to be exceeded by the potential financial gains available to network businesses from implementing efficient non-network options. These gains include an opportunity for TNSPs to earn an appropriate incentive on economically efficient non network arrangements while in some cases using those arrangements to lower their overall costs below forecast (providing scope for an additional incentive under the CESS or EBSS).

5.4 DNSPs

The Rule change will also contribute to growing the market for available, dependable, and commercial non-network options, which will have corresponding benefits in relation to the depth and breadth of non-network options that may be available to DNSPs. Other effects of the Rule change on DNSPs are expected to be minimal and limited to the times at which non network solutions are called upon, eg, minor operational implications due to an unforecast reduction in demand arising from a TNSP calling on a non-network arrangement.

5.5 Retailers

There will be no new administrative requirements or costs for retailers under the new schemes. Retailers are likely to benefit over time from being able to offer energy products with a lower cost to supply and co-ordinate demand management with TNSPs, where there are benefits to both parties.

There may be some minor, difficult-to-quantify effects on retailer hedging contracts at those particular times when non-network solutions are called upon. However, any such impacts are expected to be minimal.

5.6 Generators

There will be no new administrative requirements or costs for generators under the new schemes. Some generators may be able to benefit directly from the new arrangements through offering network support.

There may be some minor effects on generator output at those particular times when non-network solutions are called upon. However, any such impacts are expected to be minimal.

5.7 The AER

The AER will face only moderate additional administrative costs associated with implementing the new arrangements.

It is expected that the AER would be able to largely apply the current DMIS and DMIA arrangements (guidelines and methodologies) in place for DNSPs, and so there would be limited additional administrative costs associated with the development of these schemes for TNSPs. Energy Networks Australia considers that any additional issues relating to the application of these arrangements to TNSPs is likely to be limited.

For example, any potential overlap with the NCIPAP component of the STPIS scheme is already addressed through the AER's design of the DMIA to expressly excludes a project from being 'eligible' for the DMIA if its costs are able to be recovered from some other scheme.

The additional costs will arise from the compliance role the AER has under the DMIS and DMIA schemes in auditing and approving DMIS/DMIA payments for TNSPs. However this is an extension of current activities for the AER, rather than the imposition of a new role.

6 Proposed Rule drafting

The proposed Rule would amend existing clauses and include new clauses under Chapter 6A of the Rules, as well as amending clauses under Part ZZZH Chapter 11 (Savings and transition).

In particular:

- » Chapter 6A (economic regulation of transmission services) would be amended to add in the relevant objectives and principles for the DMIS and DMIA, consistent with the objective and principles set out in 6.6.3 and 6.6.3A of Chapter 6 (economic regulation of distribution services).
 - Consequent amendments would also be required to 6A.5.4(a)(5) and 6A.5.4(b)(5), which relate to a description of the building blocks.
- » Either Part ZZZH of Chapter 11 (Savings and transition) would be amended, or a new Part added to Chapter 11 to allow TNSPs to apply to the AER for early application of the DMIS, ahead of their next regulatory determination, consistent with the Rules contained in the *National Electricity Amendment (implementation of demand management incentive scheme) Rule 2018 No.3*

Given that the proposed Rule change reflects Rule changes previously made by the AEMC we have not provided suggested Rule drafting as part of this Rule change proposal.

Appendix A – Assessment of incentives for adoption of efficient non-network solutions under current regulatory arrangements applying to TNSPs

The key elements of the regulatory framework relevant to the incentives on TNSPs to undertake non-network options are:

- » the network support pass through arrangements
- » EBSS, CESS and contingent projects

This appendix describes how these existing arrangements interact, and then presents a number of scenarios that demonstrate why they do not currently provide a positive incentive to adopt efficient non-network options in the majority of cases which are expected to become more prevalent in future.

Network support pass through

NER 6A.7.2 sets out the network support pass through arrangements applying for TNSPs.

The Rules define a network support payment to be:³¹

A payment by a Transmission Network Service Provider to:

(a) any Generator providing network support services in accordance with clause 5.6.2; or

(b) any other person providing a network support service that is an alternative to network augmentation.³²

Network support costs typically reflect an initial establishment fee, a recurring annual availability charge and a dispatch fee whenever the network support contract needs to be called upon.

The network support pass-through enables a TNSP to pass through to consumers any difference between its actual efficient network support payments and the forecast level included in its *ex ante* allowance. If actual network support costs are greater (less) than forecast, then the network support pass through will be positive (negative). There is no materiality threshold applied to the pass-through.³³

The pass through provisions are used to manage the uncertainty faced by TNSPs and ensure cost recovery in relation to:

³¹ Chapter 10 of the Rules, definition of 'network support payment'.

³² We note that this definition is potentially in need of updating, given its reference to 'network augmentation', as non-network options may also be alternatives to network replacement.

³³ Chapter 10 of the Rules, definition of 'materially'.

- » the cost of entering new network support arrangements during the regulatory period (which would include the associated establishment and availability payments); and
- » the variable component of both new and existing arrangements (ie, the ‘dispatch fees’),

Dispatch costs are typically beyond the control of the TNSP, since they depend on factors such as weather conditions and demand levels. These costs can form a substantial proportion of a TNSP’s overall opex, and so without the ability to pass through these costs, the TNSP would be exposed to a considerable risk, outside of its control and for which it could not insure. Treating these non-network costs as a pass-through is therefore consistent with the ‘nominated pass through considerations’ established in the Rules for nominated pass-through events for both TNSPs and DNSPs.³⁴ If the network cost pass through were not prescribed in the Rules it would still be open for TNSPs to propose this type of pass-through category as a nominated pass-through event.

A TNSP must lodge a network support pass through application with the AER, and have it approved, before those costs can be passed through to customers.³⁵

Table 1 shows that pass through amounts since 2013 have been as high as \$7,900,000. However it is important to recognise that there are currently a limited number of network support contracts in place (for example, all of ElectraNet’s network support pass through amounts in Table 1 relate to a single contract for network support at Port Lincoln), with the consequence that the total variance in network support payments could be even greater. Table 1 also indicates that to date pass throughs have typically been negative (representing a rebate to consumers associated with over-forecasting in the regulatory allowance), which largely reflects recent reductions in overall energy demand compared with that forecast at the time of the determinations.

Under the Rules, the AER is required to include the expected cost of existing network support arrangements as part of a TNSP’s regulatory opex allowance.³⁶ The AER has previously clarified that in the case of a new network support contract that the TNSP enters into during the regulatory period, that the pass through provisions would still apply to enable the recovery of efficient costs associated with that contract.³⁷

However, importantly, a TNSP is not able to apply for a pass through for network support payments that are a substitute for a network augmentation reflected in the

³⁴ NER Ch6A.6.9, Ch, 6.5.10. Ch 10 (definition).

³⁵ The application to and approval by the AER are undertaken in the regulatory year subsequent to that in which the cost was incurred. For positive network support events, clause 6A.7.2(i)(3) of the Rules require the AER to conduct an efficiency assessment of the network support pass through application

³⁶ NER 6A.6.6(c1).

³⁷ See AER *Powerlink 2012-17 final decision*, p. 174-175. The AER confirms that where a \$0 estimate has been included in the regulatory allowance for a network support contract, the TNSP can still apply for a cost pass through.

TNSP's regulatory capex allowance.³⁸ This is relevant in considering how the presence of the network support pass through affects TNSPs' incentives to undertake efficient non-network options.

The network support pass through permits a TNSP to recover its efficient opex costs only. Notwithstanding the associated reputational and compliance risks associated with putting in place a non-network solution, a TNSP therefore receives no reward for implementing efficient non-network options.

³⁸ NER Chapter 10 Glossary, definition of 'Network support event'.

Table 1: TNSP network support pass through amounts since 2013

Full Year	TNSP	Approved by AER?	Amount	Adjusted by AER?	Description
2017	ElectraNet	Yes	-	No	Unplanned outages: Plant failure, storm, black system event. Unavailability of network support arrangement.
2016	ElectraNet	Yes	1,780,000	No	Generator support at Port Lincoln: Two planned outages related to refurbishment and one unplanned outage caused by lightning strike
2015	TransGrid	Yes	-630,000	No	Network support to improve reactive power capability: a Rule change changed the requirement of reactive power capability so TransGrid postponed its request for proposal for the reactive power capability project. Snowy: No network support related payments were made for Snowy owing to it being market-driven.
2015	ElectraNet	Yes	-650,000	No	Variation in expenditure reflects actual level of utilisation. No planned or unplanned outages.
2014	TransGrid	Yes	310,000	No	Network support to improve reactive power capability: A Rule change changed the requirement of reactive power capability so TransGrid postponed its request for proposal for the reactive power capability project. Snowy: No network support related payments were made for Snowy owing to it being market-driven.
2014	ElectraNet	Yes	-	No	Generator support at Port Lincoln: one planned outage and two unplanned outages because of storm activities and an insulator failure.
2013	TransGrid	Yes	7,900,000	No	AEMO's 2011 National Transmission Network Development Plan indicated a significantly lower reactive power need than previously identified. There was no further need for reactive power support from the reactive power capability project and no request for proposal had been advertised and no network support agreements have been signed.
2013	ElectraNet	Yes	7,900,000	No	Contracted services were deployed on seven occasions during 2012-13,

including two planned outages and five unplanned outages because of storm activities and suspected lightning strikes.

Shaded rows represent positive pass through amounts, where the opex allowance was insufficient to cover actual network support payments. All other cases are negative pass through events, where amounts were refunded to consumers. ElectraNet pass through amounts relate to a single network support contract.

Interaction with the EBSS, CESS and contingent project arrangements

The CESS and EBSS act to share between customers and a TNSP incremental improvements in capital and operating expenditure, respectively, as compared with its regulatory allowance. There is a symmetric sharing of benefits and costs under both schemes, which is intended to provide an incentive for TNSPs to efficiently substitute between capex and opex.

Approved pass-through payments (which would include the network support pass-through) are added or subtracted (as appropriate) from forecast opex when calculating the applicable penalties and rewards under the EBSS.³⁹ Any opex associated with contingent projects (which could include expenditure on non-network options) is also excluded. This means that fluctuations in network support payments which are deemed efficient by the AER will not result in any EBSS reward or penalty.⁴⁰

The CESS shares with TNSPs the benefit arising from a deferral of a capital project. However, where a capital project is treated as a contingent project, a CESS benefit will not arise where a non-network solution defers the timing of the capex component of that project,⁴¹ as the adjustment to the TNSP's capex allowance against which the CESS benefit is assessed will already reflect the deferred timing of the capex component.

Further, where a non-network option enables the permanent avoidance of future capex, the benefit received by the TNSP under the CESS will only reflect the benefits associated with the initial avoidance of the capex project, and not also the avoidance of future replacement of that capex project.

These characteristics of the CESS have important implications for the incentives for TNSPs to implement efficient non-network options in relation to (i) the deferral of the capital components of contingent projects; and (ii) to enable the complete avoidance of capex.

³⁹ AER, *Efficiency Benefit Sharing Scheme*, November 2013, p. 8.

⁴⁰ If the AER does not approve a positive pass-through amount in full for network support payments, this would be shared with customers through the EBSS.

⁴¹ In this case the contingent project encompasses both opex and capex components.

Deferral of capex component of contingent projects⁴²

The efficient deployment of a non-network solution to defer capex associated with a contingent project *within the regulatory period* – will result in a TNSP recovering the costs of that non-network option but would not result in the TNSP sharing the benefit from the deferral of the capex component of that project, since the capex allowance will be modified under the contingent project arrangements to reflect the deferred timing at which the capex is required.⁴³

If the capex component of the contingent project is deferred to another year within the regulatory period, then the costs of the non-network options may be recovered either as part of the contingent project,⁴⁴ or via a network support pass-through.

On the other hand, if the contingent project is deferred to a subsequent regulatory period then the cost of the non-network solution may not be recoverable as a contingent project in that period, since the Rules discuss contingent projects in the context of capex, and in this circumstance there would be no capex on a contingent project in that regulatory period. In this circumstance, a TNSP would apply for a network support pass through to recover the cost of the efficient non-network solution.

This highlights the importance of the network support pass through mechanism for TNSPs, as absent a network support pass through mechanism a TNSP would bear 30% of the cost under the EBSS for the efficient deployment of a non-network solution to defer a contingent project until the next regulatory control period.

In summary, under the current arrangements a TNSP is afforded no share of the benefits where the adoption of a non-network options allows for the efficient deferral of a contingent project, with the current arrangements allowing for cost recovery, at best. This is in contrast to capex associated with a contingent project, where the Rules preserve the potential for TNSPs to benefit by outperforming the capex allowance associated with a contingent project.⁴⁵

Complete avoidance of capital projects

A similar outcome arises from the efficient deployment of a non-network solution to completely avoid a capital project. This could occur where a non-network solution permanently reduces peak demand below the level that would require network augmentation, or where a non-network option enables replacement capex to be sized at a lower capacity.

In these circumstances, a TNSP:

⁴² This section discusses the arrangements for a contingent project that has been triggered and includes both non-network and capex components.

⁴³ Rather than the time at which the capex would have been required in the absence of the non-network option. Scenario 5 later in this appendix steps through the operation of the various regulatory mechanisms in this case.

⁴⁴ If the AER considers it represents 'incremental operating expenditure' which is reasonably required for the purpose of undertaking the contingent project, consistent with 6A.8.2 (e)(1)(i))

⁴⁵ Clause 6A.6.7(j).

- » is afforded a share of the benefit of the avoided capex during the regulatory period, under the CESS; but
- » does not receive any benefit associated with the avoidance of future capex associated with the replacement of that project at the end of its life; and
- » is not able to apply for a network support pass through in relation to the costs of the non-network option, since it is substituting for capex that was included in the regulatory capex allowance, and so bears a share of the costs of the non-network option under the EBSS.

In this situation there is a potential mismatch in incentives under the EBSS and the CESS, as the TNSP does not receive a 30% share of all of the benefits associated with the avoidance of the capex project under the CESS. This mismatch becomes more pronounced the shorter the asset life, and therefore the greater the number of replacement capex projects that the non-network option enables the TNSP to avoid. This has the potential to result in TNSPs not having a sufficient incentive to undertake efficient non-network investment. This finding is consistent with the potential for capex bias for short lived assets identified by the AEMC in its 2018 review of economic regulation.⁴⁶

⁴⁶ AEMC *Economic Regulatory Framework review, Promoting Efficient Investment in the Grid of the Future*, July 2018, p. vii-ix. The AEMC also referred to stakeholders' perceptions about cultural issues that may contribute to a bias towards capital expenditure in certain circumstances.

Scenario analysis: operation of incentive framework with respect to efficient non-network options

Below we set out a range of circumstances in which it would be efficient to implement a non-network solution, and evaluate the incentives faced by a TNSP to implement that option in each of those circumstances under the existing regulatory framework. Table 2 summarises the analysis.

Scenario 1 – Non-network solution identified prior to regulatory period

- RIT-T is undertaken prior to the regulatory period and identifies demand management as the preferred option.
- Efficient cost of demand management is included in the opex allowance approved by the AER for the regulatory period, with the capital allowance reflecting the deferred timing (or avoidance) of capex associated with the adoption of the non-network option.
- TNSP applies for a network support pass through for any difference between actual and forecast demand management costs during the regulatory period and so faces:
 - > risks in relation to differences between outturn and actual non-network payments (limited in practice); and
 - > no incentive to outperform forecast demand management costs.
- In the subsequent regulatory period, network support costs are included in the regulatory opex allowance and cost-pass through continues to apply to differences between actual and forecast network support costs.
 - > efficiently reduces risks outside of TNSP's control associated with recovery of future network support payments

No positive incentives to implement efficient non-network options, cost recovery only.

Scenario 2 – Non-network solution identified during regulatory period, as an efficient alternative to defer capex project

- Capital project included in regulatory allowance.
- RIT-T conducted during regulatory period and identifies non-network solution as part of the preferred option, that defers capex later into the regulatory period, or into a subsequent regulatory period.
- TNSP implements non-network solution, with the consequence that it overspends on opex and shares the cost of this overspend with customers through the EBSS (because it is not eligible for cost pass through in that regulatory period).
- TNSP underspends on capex during the regulatory periods and receives a reward under the CESS associated with the capex deferral.
- TNSP is afforded a share of the total efficiency gain through a combination of CESS/EBSS incentives.

- In the subsequent regulatory period, network support costs included in regulatory opex allowance and cost-pass through applies to differences between actual and forecast network support costs:
 - > efficiently reduces risks outside of TNSP's control associated with recovery of future network support payments.

Positive incentives to implement efficient non-network options

Table 2 Summary of incentives to implement efficient non-network options across scenarios

Scenario	<u>Circumstances</u>			<u>Implications</u>			Incentives to implement efficient non-network option
	DM costs reflected in regulatory allowance	Capex reflected in regulatory allowance	Capex incurred in subsequent year	Network support pass-through*	EBSS penalty	CESS reward	
1 Non-network options identified prior to regulatory period	Yes	No	No	✓ (if actual/forecast variance)	✗	✗	No positive incentive, cost recovery only
2 Non-network options identified during regulatory period	No	Yes	Yes	✗	✓	✓	Positive incentive (CESS/EBSS trade-off)
3 Non-network option enables avoidance of capex project	No	Yes	No	✗	✓	✓ (Reflects initial capex project only)	Incentives misaligned (Particularly for short-lived assets)
4 Unexpected non-network option identified as efficient option during a regulatory period	No	No	No	✓	✗	✗	No positive incentive, cost recovery only
5 Deferral of contingent project	No	No	Yes	✓ (if opex not included as part of contingent project)	✗	✗	No positive incentive, cost recovery only

* Subject to risk of AER not approving pass-through, which does not appear substantial in practice.

Scenario 3 – Non-network solution identified during regulatory period, as an efficient alternative that avoids capex project completely

- Capital cost included in regulatory allowance.
- RIT-T undertaken during regulatory period identifies that non-network solution can efficiently avoid capex (eg, by allowing lower capacity replacement expenditure).
- TNSP implements non-network solution, with the consequence that it overspends on opex and shares this overspend with customers under the EBSS (because it is not eligible for cost pass through in that regulatory period⁴⁷).
- TNSP afforded a share of the benefit of avoiding capex in the current regulatory period under the CESS, but does not receive a share of the benefit of also avoiding future replacements of that capex project.
- In the next regulatory period, network support costs are included in the regulatory opex allowance and cost-pass through applies to differences between actual and forecast network support costs.
 - efficiently reduces risks outside of TNSP's control associated with recovery of future network support payments.
- **Misalignment of incentives to implement efficient non-network solution as CESS does not capture full benefits, particularly for short-lived assets**

Scenario 4 – Unexpected project during the regulatory period

- Change in circumstances requires unexpected project during the regulatory period that was not reflected in the regulatory allowance.
- RIT-T⁴⁸ undertaken during regulatory control period identifies that a non-network solution can efficiently defer (or avoid) capex.
- TNSP enters into a network support agreement and incurs additional network support payments.
 - > TNSP applies for a network support pass through in following year to recover non-network support costs;
- Best case scenario for TNSP is the recovery of its non-network costs.
- In the next regulatory period, network support costs included in regulatory opex allowance and cost-pass through applies to differences between actual and forecast costs.
 - efficiently reduces risks outside of TNSP's control associated with recovery of future network support payments.

⁴⁷ Although the Rules refer to the network support pass through not being allowed where capex for 'augmentation' has been included in the regulatory allowance, it appears likely that the inclusion of 'replacement' capex in the allowance would be treated in a similar fashion.

⁴⁸ Or an alternative NPV evaluation, if the project does not require a RIT-T.

- The outcome in this scenario is the same as in scenario 1, ie in both cases where a non-network option is identified as the efficient solution (whether forecast or not), the TNSP recovers the cost of that solution, but gains no additional incentive.⁴⁹
- **No positive incentives to implement efficient non-network solution, cost recovery only.**

Scenario 5 – Deferral of contingent project

- Capital cost not included in regulatory allowance, but a contingent project identified for the regulatory period.
- Trigger for the contingent project occurs during the regulatory period:
 - > This could include (for example) a projection that in the absence of the contingent project (including any demand management), maximum demand is forecast to reach a predetermined level.
 - > a RIT-T is undertaken during the regulatory control period and identifies that a non-network solution forms part of the least cost solution and can efficiently defer capex on contingent project.⁵⁰
- If the capex associated for the contingent project is deferred to another year in the regulatory control period, then:
 - > the cost of non-network solution in the current regulatory period may be recovered:
 - » as part of the contingent project;⁵¹ or
 - » via a network support pass-through, consistent with scenario 4 (unexpected non-network options); and
 - > the TNSP's capex allowance will be adjusted to reflect the deferred timing of the capex associated with the contingent project;
- If the capex associated with the contingent project is deferred to a future regulatory control period, then:
 - > there would be no adjustment to the TNSP's regulatory allowance; and
 - > there may be no 'contingent project' in this regulatory control period⁵² and so the TNSP would instead need to apply for a network support pass through to recover non-network support costs;

⁴⁹ Energy Networks Australia notes that in this scenario the TNSP would recover the cost of the non-network option (through the network pass-through arrangements), whereas if the RIT-T identified a capital project as the efficient project then the TNSP would bear 30% of the cost of the project under the CESS. However, the point remains that the best outcome for the TNSP in this scenario is limited to cost recovery.

⁵⁰ Successful completion of a RIT-T often forms part of the trigger event for TNSP contingent projects.

⁵¹ If the AER considers it represents 'incremental operating expenditure' which is reasonably required for the purpose of undertaking the contingent project, consistent with 6A.8.2 (e)(1)(i)).

⁵² The Rules discuss 'contingent projects' in the context of contingent capital expenditure, and it is unclear whether opex associated with non-network options would be approved by the AER for a regulatory period as a contingent project, if there was not capex also associated with that contingent project in the regulatory period.

- In the next regulatory period, network support costs included in regulatory opex allowance and cost-pass through applies to differences between actual and forecast costs.
 - > efficiently reduces risks outside of TNSP's control associated with recovery of future network support payments.
- TNSP afforded no share of the benefit from deferral or avoidance of the capex associated with contingent project and has no opportunity to outperform the contingent project non-network options allowance.⁵³
- **No positive incentives to implement efficient non-network solution, cost recovery only.**

⁵³ This is in contrast to the capex component of contingent projects, where the Rules (clause 6A.6.7(j)) continue to provide an opportunity for the TNSP to earn additional revenue from outperformance.