Issues Paper

Demand management innovation allowance mechanism

Electrcity transmission network service providers

August 2020

AUSTRALIAN ENERGY REGULATOR

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Contents

Shortened forms and terms

Shortened form	Extended form
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
Allowance Objective	The demand management innovation allowance objective for TNSPs.
ARENA	Australian Renewable Energy Agency
AR	allowed revenue
capex	capital expenditure
CESS	Capital Expenditure Sharing Scheme
demand management, in transmission network context	For the purpose of the transmission DMIAM mechanism, the act of modifying the drivers of the pattern of network usage that will deliver long term benefits to consumers
DM	Demand Management
DMIAM	Demand Management Innovation Allowance Mechanism for TNSPs.
DMIS	Demand Management Incentive Scheme for TNSPs.
EBSS	Efficiency Benefit Sharing Scheme
kVA	A kilo Volt-Ampere or 1,000 Volt-Amperes
MAR	maximum allowed revenue
MWh	Mega Watt hour
NCIPAP	Network capability incentive parameter action plan for TNSPs
NEM	National Electricity Market
NEO	National Electricity Objective
NER	National Electricity Rules
Opex	operating expenditure
TNSP	Transmission Network Service Provider

1 About this consultation

We are required to develop a demand management innovation allowance mechanism for TNSPs (DMIAM). The objective of the DMIAM is to provide TNSPs with funding for research and development in demand management projects that have the potential to reduce long term network costs.

This issues paper is the first step of our consultation process with stakeholders on the development of the DMIAM.

- Under the NER,[1] the AER, in accordance with the *transmission consultation procedures:* must develop and publish a demand management innovation allowance mechanism for TNSPs; and
- may, from time to time, amend or replace any such demand management innovation allowance mechanism.

Following this consultation, we will develop a draft DMIAM and accompanying Explanatory Statement, taking into consideration stakeholders' submissions, prior to finalising the DMIAM.

Our proposed timeline is set out at Section 0 below.

1.1 How to make a submission

Energy consumers and other interested parties are invited to make submissions on this issues paper by **2 October 2020**.

In each section, we offer questions for consideration. This may guide your submission, however we encourage you to address any matters of relevance.

We prefer that all submissions are in Microsoft Word or another text readable document format. Submissions on our issues paper should be sent to: AERInquiry@aer.gov.au.

Alternatively, submissions can be sent to:

Ms Kami Kaur
Acting General Manager
Australian Energy Regulator
GPO Box 520
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[1] NER, 6A.7.6 (e).

We prefer that all submissions be publicly available to facilitate an informed and transparent consultative process. Submissions will be treated as public documents unless otherwise requested. Parties wishing to submit confidential information should:

(1) clearly identify the information that is the subject of the confidentiality claim

(2) provide a non-confidential version of the submission in a form suitable for publication.

All non-confidential submissions will be placed on our website. For further information regarding our use and disclosure of information provided to us, see the ACCC/AER Information Policy (October 2008), which is available on our website.

We encourage submissions to provide your views, alternatives and supporting reasons on the questions we ask throughout this paper. These include:

Question 1

Do you agree that the DMIAM should adopt a cap of up to 0.1 per cent of MAR per regulatory period (this is equivalent to $1 million for small size TNSPs and to $5 million for large TNSPs over a five-year regulatory period)?

Question 2

In recognition that business studies on continuous improvements are BAU activities, what types of desk top DM studies should be allowed under the DMIAM?

Question 3

Do you agree that the DMIAM allowance should be spent on opex only and approved by the AER on an ex-post review basis?

Question 4

Do you agree that the DMIAM should provide an uplift to projects that provide non-network solutions? What should be the level of uplift (if uplifts are consider appropriate)? Do you consider an uplift on actual expenditure is justified, given that the uplift reduces the effective capped amount of the allowance?

Question 5

Do you agree that the DMIAM should allow multiple NSPs to collaborate, by pooling funding, to jointly fund DM projects?

Question 6

Do you agree that only projects not known to be otherwise efficient and prudent, that should be undertaken as a business as usual activity, should be included in the DMIAM funding? If so, how should this test be applied in practice?

Question 7

Should the allowance only apply to projects that are based on new or original concepts? How should we be satisfied that the criteria have been met for the proposed projects? How shall we consider the context in TNSPs' operational environment in this regard?

Question 8

Do you agree that the DMIAM should be extended to projects that have potential to reduce wholesale market prices, where those projects also have potential to reduce future network augmentation in the long-term?

Question 9

How might we best give effect to or enhance the information and reporting requirements discussed in section 6.1 below?

Question 10

What details of the learnings gained from eligible DM projects should be included in public reporting?

Question 11

What are your views about requiring TNSPs to seek independent expert review of proposed DMIAM projects (whether by an individual expert or by a panel)? Would a panel be preferable to an individual expert? What is the preferred composition and skill mix for such panels?

Question 12

Should the cost for independent expert review of proposed DMIAM projects (whether by an individual expert or by a panel) be a part of the DMIAM expenditure?

Question 13

We encourage TNSPs to share with others what they have learned as a result of undertaking the trials. Do you agree that the AER should publish the names of those DNSPs who do not share what has been learnt as a result of projects funded by the DMIAM?

Question 14

Should the AER approve DMIAM funding for only those DM projects where learning information has been shared with other TNSPs? What would be the appropriate time period for that information to remain available, under the DMIAM, to other TNSPs? Should funding approval be withheld if information is not shared?

Question 15

Where exceptional circumstances occur that a particular TNSP would not share its learnings, do you agree that the AER should obtain detailed results from the TNSP for publication so that the learnings can be accessed by stakeholders?

1.2 Indicative timelines

Figure 1 Key dates for establishing the DMIAM

Task	Date
AER publishes issues paper	14 August 2020
Submissions on issues paper due	2 October 2020
Draft decision on new DMIAM (with Explanatory Statement)	January 2021
Submissions on draft decision due	March 2021
Final DMIAM published (with Explanatory Statement)	June 2021

Note: Given the current circumstances that may impact on the ability of stakeholders to respond, timelines are indicative and subject to change. Due to the COVID-19 interruption, we are unlikely to publish the DMIAM by 31 March 2021. We have flagged our intension to delay and have the scheme finalised in the first half of 2021, as indicated in Joint market body prioritisation framework - COVID-19, released by AER, AEMC and AEMO on 19 May 2020.

2 Background to the DMIAM

Energy Networks Australia (ENA) submitted a rule change request to the AEMC, proposing amendments to the NER that would require the AER to implement a demand management incentive scheme (DMIS) and demand management innovation allowance mechanism (DMIAM) to apply to transmission network service providers (TNSPs).

The AEMC released its final rule determination on 5 December 2019. The AEMC decided to only introduce the DMIAM element, but not the DMIS element, of ENA's proposal. The purpose of the DMIAM is to provide funding for transmission businesses to expand and share their knowledge of innovative demand management projects that have the potential to reduce long term network costs – which would ultimately flow through to consumers in the form of lower electricity bills.[2]

The AEMC stated that it was not satisfied that the benefits of applying a DMIS to transmission networks would outweigh the additional costs to consumers. This decision was supported by all stakeholder submissions to the draft determination, except for Energy Networks Australia. If a DMIS is implemented, transmission businesses would receive more revenue for undertaking non-network options that they would already have been required to adopt under the regulatory investment test for transmission (RIT-T). Although it is accepted that networks may face upfront, transitional costs to develop their ability to utilise non-network options, the AEMC considers that these mostly one-off costs can already be recognised and funded under the current regulatory framework.

We are aiming at completing the design of the DMIAM, including the process and criteria for applying the innovation allowance, for implementation in the next round of revenue determinations. A Rule requirement is that transmission businesses will need to publish reports on the results of their demand management projects – encouraging knowledge sharing of innovative non-network solutions.[3]

2.1 AEMC's final determination to enable the DMIA for transmission

Under the NER:[4]

- The AER must develop a demand management innovation allowance mechanism for transmission network service providers consistent with the demand management innovation allowance objective.

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[2] AEMC, Rule Determination, National Electricity Amendment (Demand management incentive scheme and innovation allowance for TNSPs) Rule 2019, 5 December 2019.

[3] NER, 6A.7.6 (d).

[4] NER, 6A.7.6 and 11.118.2.

- The objective of the demand management innovation allowance mechanism is to provide Transmission Network Service Providers with funding for research and development in demand management projects that have the potential to reduce long term network costs.
- In developing and applying the mechanism, the AER must take into account the following:
    - the mechanism must be applied in a manner that contributes to the achievement of the demand management innovation allowance objective
    - demand management projects should have the potential to manage ongoing changes in demand and be innovative and not be otherwise efficient and prudent non-network options that a transmission network service provider should have provided for in its revenue proposal
    - the level of the allowance should be reasonable considering the long term benefit to retail customers, should only provide funding that is not available from any other source, and may vary by transmission network service provider and over time
    - the demand management innovation allowance may fund demand management projects which occur over a longer period than a regulatory control period.
    - Any demand management innovation allowance mechanism developed and applied by the AER must require transmission network service providers to publish reports on the nature and results of demand management projects that are the subject of the allowance.
- The AER must develop and publish the first DMIAM by 31 March 2021.

The AEMC also made a number of amendments to existing clauses in chapter 6A of the NER to accommodate the DMIAM throughout the revenue determination process.

2.2 Summary of issues for consultation

This issues paper seeks stakeholders' feedback on issues relevant to the design of the DMIAM.

This issues paper is structured according to the following key themes:

- Chapter 3: Initial consultation with transmission businesses
- Chapter 4: Options on the size of the allowance
- Chapter 5: Project criteria
- Chapter 6: Compliance reporting
- Chapter 7: Interaction with other incentive schemes.

3 Initial consultation with transmission networks

In preparation for this issues paper, we sought preliminary ideas/suggestions from TNSPs about the potential scope of a DMIAM.[5]

Each of the TNSPs provided submissions on the initial consultation which are published on the AER website. The submissions presented examples of projects that they would propose under the scheme and their indicative costs, as a guide to the amount of potential DMIAM costs.

AusNet Services has also offered a suggestion on the cost allocation approach for each DM category, as set out in table 2.

For simplicity, and to improve readability, we have summarised and presented the project examples from the submissions under five broad categories as below.

A Demand reduction – projects involving contracting DM to large customers or groups of customers to reduce energy usage or to use own internal generation

B DM platform technology development and integration into operations

C Demand matching when cheaper intermittent generation capacity is abundant – Specific technology to encourage higher consumption when cheaper generation capacity is abundant, such as large scale hydrogen production, aggregated Electric Vehicle (EV) consumption, and other forms of discretionary intermittent load (such as wind and solar farms following)

D Improved coordination between TNSPs, DNSPs and retailers for the implementation of DM projects

E Other

[5] AER, Email to transmission businesses - seeking input to establish a Demand management innovation allowance mechanism (DMIAM) for TNSPs, 17 February 2020.

Table 1 Summary of project types identified by TNSPs in their initial submissions

Category	AusNet	Transgrid	Powerlink	ElectraNet	TasNetworks
A	Small scale DM and connection point DM	Distributed Energy Resources Management System (DERMS) Behavioural Demand Response		Locational peak lopping EV to grid integration Locational trough filling – encourage DER at local points	
B	DM system technology exploration				Automated load control
C	Hydrogen Electrolyser load control Smart EV charging	Electric Vehicle Fleet trials Commercial HVAC DR trials/ Chilled water storage Increasing load flexibility study – Going with the Wind & Sun – Generation following		Intermittent generation following	Battery storage close to constraints
D	Aggregation platform for DNSP DM, retailer DM and virtual power plants (VPPs)	Distributed Energy Resources Management System (DERMS) Fast runback Demand	Extending an existing System Integrity Protection Scheme (SIPS) to trigger a	Participation in Emergency System Management Regional demand	Tasmanian Integrated System Protection Scheme Expansion of the Adaptive Under Frequency Load

Category	AusNet	Transgrid	Powerlink	ElectraNet	TasNetworks
	Optimising Special Protection Schemes (SPSs) Management of the interface between transmission and distribution	Response Trial – fast acting load Integration with VPPs	response such as a mode change on a Battery Energy Storage System(BESS) Testing the co-ordination of a fast response from a BESS with a slower (though still rapid) response from within a consumer facility, such as starting up backup generation	smoothing	Shedding Scheme as more wind generation is connected System to trip the load associated with pumped hydro developments, in order to reduce the need for Frequency Control Ancillary Services and reduce network constraints Location of generation close to constraints
E		DMIA Stakeholder engagement for RCP 2023-28 Partnerships with external academics and international experts	DMIAM being structured so that multiple NSPs can collaborate and pool funding to progress projects that cross network ownership boundaries including TNSP-TNSP and TNSP – DNSP		Develop systems that enable increased thermal loading of conductors Better control frequency and voltage support provision without the need for network augmentation

Source: AER analysis; AusNet Services email to the AER, March 2020.

Table 2 AusNet's suggested allocation to each category

Category	Allocation minimum $m	Allocation maximum $m
A	0.50	4.80
B		
C	2.55	12.55
D	1.40	8.70
E	0.35	0.35
Total	**4.8**	**26.4**

Source: AER analysis; based on AusNet Services email to the AER, March 2020.

Note: Figures compiled by AER based on suggested project costing information from AusNet Services.

4 Level of the allowance for the DMIAM

Clause 6A.7.6 (c) (3) of the NER provides that the level of the allowance:

(a) should be reasonable, considering the long term benefit to retail customers;

(b) should only provide funding that is not available from any other source, including under a relevant revenue determination; and

(c) may vary by Transmission Network Service Provider and over time.

We have identified two broad options that we consider may have the potential to meet the Allowance Mechanism's objective. These are:

- a higher level allowance with ex-ante approval
- a lower level allowance with ex-post approval.

4.1 Option 1 - Higher level allowance

Table 3 sets out average annual actual revenue and capital expenditure over the period 2006-2018.

Table 3 TNSPs' average actual revenue and capex per annum for 2006-2018 ($m, 2018)

	Powerlink	Transgrid	AusNet (T)	ElectraNet	TasNetworks (T)
Actual revenue	858	791	582	305	198
Actual capex	424	378	147	167	89

Source: AER analysis; TNSP 2018 data report.

A potential option is for the allowance to be a proportion of the TNSP's capex program. This could be set at a level which would reasonably represent the cost that demand management could potentially alleviate, and therefore better reflect its potential benefit. As an example, if we cap this at 10 per cent of the capex program, this would allow TasNetworks to spend up to about $9 million on demand management innovation annually and Powerlink to spend up to about $42 million annually. This equates to $45 million to $200 million within a regulatory period, which is almost 5 per cent of the MAR. We consider that the impact of this on consumer's electricity bills would be too high.

Another option is to have an allowance mechanism up to 1 per cent of the maximum allowed revenue (MAR). For example, if we cap this at one per cent of MAR, this would provide total funding up to $10 million (for the smallest TNSP - TasNetworks) to $43 million (for the largest TNSP – Powerlink) for demand management innovation respectively within a regulatory period. This equates to annual funding up to $2 million and $8.6 million for the smallest and largest TNSPs respectively.

4.2 Option 2 - Lower level allowance

During the rule making process, the AEMC expressed concern with having a large demand management incentive payment. Specifically, the AEMC was not satisfied that the incremental benefits of introducing a DMIS were likely to outweigh the upfront costs to consumers. For example, if a DMIS is implemented, transmission businesses will receive incentive payments, which could be large, for undertaking non-network options that they would already have been required to undertake by the regulatory investment test for transmission (RIT-T).[6]

Consistent with the AEMC and the majority of stakeholders, we consider that an alternative option is to have a lower level allowance mechanism, similar to the allowance under the distribution DMIAM. For instance, we might consider capping this at a small proportion of the MAR.

For example, if we cap this at 0.1 per cent of MAR, this would allow TNSP to spend from up to $1 million (for the smallest TNSP, TasNetworks) to $4.25 million (for the largest TNSP, Powerlink) on demand management innovation per regulatory control period. This equates to annual funding of $200K to $850K respectively. Furthermore, the cap could apply to the total allowance for the regulatory period to provide the flexibility for TNSPs to deliver the DM projects, given that the actual expenditure can vary year by year.

4.3 Our preliminary assessment

4.3.1 The size of the DMIAM allowance

We consider that a lower level allowance, 0.1 per cent of the MAR for the regulatory period, is likely to be consistent with the DMIAM Objective on the following reasons:

- Our current thinking is that DM trials are likely to be desk top studies or through inter-actions with network users via the distributors. Given, transmission connections are usually 50MW and above, and typically in the range of 150-500MW, any works involving physical asset construction that will have measurable impact on network demand will require significant investment.
- This DMIAM allowance is similar to the allowance provided in the distribution DMIAM. We consider this reasonable in that the allowance is proportional to the size of the network.
- There is potential for innovative transmission projects which may be larger and will take longer time to deliver than the distribution projects. TNSPs can bring forward later year allocations within the regulatory period and are encouraged to pool allocations on an equitable basis.

[6] AEMC, Rule Determination, National Electricity Amendment (Demand management incentive scheme and innovation allowance for TNSPs) Rule 2019, 5 December 2019, p. 20.

We note that, under the distribution DMIAM, the smallest distributor in the NEM (Power and Water) spends $300K annually and the largest distributor (Ausgrid) spends $1.4 million annually, or $1.5 million to $7 million for regulatory period.

Table 4 Indicative distribution DMIAM allowance comparison in 2019

Distributor	Mechanism allowance ($'000, nom)	Previous DMIA allowance ($'000, nom)*	CPI-adjusted change on previous DMIA (%)
Ausgrid	1,422.4	1,089.5	31%
AusNet Services	693.3	639.8	8%
CitiPower	440.0	213.3	106%
Endeavour Energy	799.2	653.7	22%
Energex	1,272.4	1,073.4	19%
Ergon Energy	1,211.3	1,073.4	13%
Essential Energy	964.2	653.7	48%
Evoenergy	321.0	108.9	195%
Jemena	411.7	213.3	93%
Powercor	693.2	639.8	8%
Power and Water	307.1	N/A	N/A
SA Power Networks	810.0	644.0	26%
TasNetworks	389.8	417.2	-7%
United Energy	545.5	426.6	28%
Average increase	10 281.2	7,846.7	31%

Source: AER analysis.

- The allowance should not be larger than this amount because:

- During the AEMC consultation process, the AEMC noted that ENA did not provide evidence that consumers are willing to accept higher upfront charges to fund the proposed incentive payments to networks under a DMIS – even with the prospect of lower future network charges as non-network options become more readily available and implementable.
- In its submission to the draft determination, Energy Consumers Australia (ECA) supported the position in the Draft determination to not extend the DMIS to TNSPs, stating that the incentive offered by DMIS is inconsistent with the requirement to consider non-network solutions in the RIT-T process.[7]
- Research and development (R&D) works typically have high risk of failure. While there may be long-term benefits to consumers, customers should not be exposed to a high level of risk—hence a lower cap.
- Low risk methods of demand management that are already well tried, such as using battery storage to change the pattern of demand, should not need further testing. Such projects should be treated as business as usual (BAU) works.

- Setting the allowance at this level is also consistent with the examples suggested by TNSPs below, as it would allow (for example) trials with a total cost of up to $5 million, per regulatory period:
  - A Distributed Energy Resources (DER) trial system project setup costs range from $200,000 to $4.5 million, and annual license costs (depending on the number of DERs connected) range from $400-500,000 per annum, with one to three years implementation. - TransGrid
  - A fast runback Demand Response trial costs $1-4 million depending on the complexity of the scheme (number of inputs and loads) with 12-24 month implementation. – Transgrid
  - A DM trial to encourage reduced connection point demand during peak periods, and help determine the reliability of DM at the transmission level, costs $2.0M with 3 years implementation. – AusNet
  - Integration of DM into control room operations trial costs $2.0M with 2 years implementation. – AusNet
  - A trial using aggregation platform for DNSP DM, retailer DM and virtual power plants (VPPs) - costs $3.0M with 3 years implementation. – AusNet

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[7] Energy Consumers Australia, Response to DMIS and DMIA for TNSPs Rule Change Draft Determination Rule Determination, 28 October 2019, p. 4.

- An allowance of $1 million would provide costs for 2 senior consultants, with $500k per annum.

- In this regard, Powerlink stated that it can also see advantages in the DMIAM being structured so that multiple NSPs can collaborate and pool funding to jointly fund the DM projects. Ideally this would include both TNSP / TNSP collaboration and TNSP /DNSP collaboration.

4.3.2 Nature of DMIAM expenditure and control

Since the allowance size should be small, we consider that an ex post assessment may be more appropriate, rather than ex ante, which is resource intensive.

From our observations, it appears that TNSPs have been reluctant to adopt non-network solutions. Similar to our DMIS scheme for distributors, some level of incentives may be necessary to encourage TNSPs to apply non-network solutions. Hence, our current thinking is that a 50% incentive payment as uplift to the actual expenditure may be necessary.

The 50% incentive factor is intended to offset internal biases and norms that often favour network options. Hence, we will review the uplift after five years of the operation of this scheme to determine whether it is still required, or can be discontinued to allow the DMIAM to fund more projects.

However, this uplift should be limited to non-network solutions provided by third parties only. To avoid doubt, we do not consider engaging a technical consultant to undertake studies is a type of non-network solution. Such kind of activities are a BAU expenditure.

Nonetheless, the uplift would reduce the “usable” amount of the allowance. For example, if a TNSP has available to it an allowance of $5 million and faces an uplift payment of 50% of the original cost, it has no incentive to spend more than $3.33 million. Hence, we seek your opinion on whether the uplift payment for engaging non-network solutions should be additional to the $5 million cap.

If the allowance is not spent by the end of regulatory period, the underspend of the DMIAM amounts should be returned to the customer, with specified formulae to be set out in the DMIAM. However, the TNSP should bear the cost of any overspend of the DMIAM allowance for the regulatory period because the actual expenditure is within the control of the TNSP.

We consider that the DMIAM allowance should be spent on opex only. This would avoid the risk of customers incurring the ongoing costs of any physical assets purchased under the scheme. Any physical assets that may be required for DM trial projects should be acquired through leasing arrangements with suppliers. This avoids the assets being rolled into the RAB.

4.4 Our preliminary positions

Table 5 below set outs the allowance for each TNSP and impact on the energy cost to consumers.

Table 5 TNSPs' average actual revenue for 2006-2018 and proposed DMIAM allowance per annum ($m, 2018)

	Powerlink	Transgrid	AusNet (T)	ElectraNet	TasNetworks (T)
Actual revenue	$858m	$791m	$582m	$305m	$198m
DMIAM allowance	$0.86m	$0.79m	$0.58m	$0.31m	$0.20m
Approximate impact on energy cost to consumers (cents per MWh delivered)	1.6	1.1	1.4	2.2	1.5

Source: AER analysis.

Note: Actual revenues differ from maximum allowed revenue, due to the impact of under and over recoveries. These occur due to demand and consumption being different to the forecast. These under and over recoveries are to be reflected in the revenue collected by TNSPs in subsequent regulatory years, to ensure the TNSP does not recover more or less revenue than allowed in net present value terms.

Our preliminary positions on the mechanism allowance are that:

- A lower level allowance, with 0.1 per cent of MAR for each TNSP per regulatory period is appropriate. This is equivalent to $1 million for small size TNSPs and to $5 million for large TNSPs over a five-year regulatory period. We consider that, under this provision, the impact on consumer's energy cost is small, ranging between 1.1 to 2.2 cents per MWh delivered.
- Ex post assessment is more appropriate given the size of the allowance.
- Pooling funding to jointly fund DM projects should be allowed.
- The DMIAM allowance should be spent on opex only.

4.5 Questions for Stakeholders

The AER welcomes stakeholder feedback in relation to the matters set out below:

Question 1

Do you agree that the DMIAM should adopt a cap of up to 0.1 per cent of MAR per regulatory period (this is equivalent to $1 million for small size TNSPs and to $5 million for large TNSPs over a five-year regulatory period)?

Question 2

In recognition that business studies on continuous improvements are BAU activities, what types of desk top DM studies should be allowed under the DMIAM?

Question 3

Do you agree that the DMIAM allowance should be spent on opex only and approved by the AER on an ex-post review basis?

Question 4

Do you agree that the DMIAM should provide an uplift to projects that provide non-network solutions? What should be the level of uplift (if uplifts are consider appropriate)? Do you consider an uplift on actual expenditure is justified, given that the uplift reduces the effective capped amount of the allowance?

Question 5

Do you agree that the DMIAM should allow multiple NSPs to collaborate, by pooling funding, to jointly fund DM projects?

5 Identifying eligible projects

Clause 6A.7.6 (c) (2) of the NER sets out the type of projects to which the DMIAM is to apply ('eligible projects'). Specifically, the projects should:

(a) have the potential to manage ongoing changes in demand; and

(b) be innovative and not be otherwise efficient and prudent non-network options that a Transmission Network Service Provider should have provided for in its Revenue Proposal.

This section summarises our proposed project criteria that a project must meet to be eligible. It also explains how each element will give effect to the NER. These requirements aim to fulfil our obligations under s6A.7.6 (c) (2) of the NER and reflect our consideration of the factors set out in those provisions.

We have adopted similar project criteria, from the current distribution DMIAM, which was published in 2017, with some variations which are specific for transmission networks. The updated distribution DMIAM was only commenced in July 2019 and we will not be receiving a compliance report until late in the year.[8] Given this, we do not have visibility on eligible projects put forward by DNSPs, nor the associated expenditures. We shall incorporate the learnings, if any, in the draft and final DMIAM.

5.1 What could be an eligible demand management project or program?

The Allowance Objective requires that projects funded under the DMIAM relate to demand management. In the transmission network context, we have interpreted demand management as referring to modifying the drivers of network peak demand usage patterns in a way that will deliver long term benefits to consumers.

5.2 Sub-criteria for eligible DM projects

We consider that the following sub-criteria are appropriate for determining whether a DM project is eligible for the DMIAM:

- the project is based on new or original concepts, or
- the project must involve technology or techniques that significantly differ from those previously implemented or used in the NEM, or
- the project must focus on network users in a market segment that significantly differs, from those previously targeted by implementation of the relevant technology, in relevant geographic or demographic characteristics that are likely to affect demand.

[8] Compliance reports are required within four months of the end of a regulatory year in which the DMIAM is applied.

- the project must have the potential, if proved viable, to reduce long term network costs
- the project must not be an otherwise efficient and prudent non-network option that a transmission network service provider should have provided for in its revenue proposal

5.2.1 New or original concepts

Similar to the distribution DMIAM, we consider that the Allowance Objective requires that projects which receive funding under the DMIAM should be based on new or original concepts. However, we recognise that this condition could narrow the field of eligible projects excessively. Given that TNSPs are not research and development organisations, we expect them to mainly apply new technologies developed by research and development organisations, and other network businesses of the world. Hence, there is a need to conceptualise what can be considered “new or original concepts” in this context.

Possible approaches could be to characterise this concept as referring to:

- new or original ways of building or developing capability and capacity to undertake, facilitate or utilise demand management. Moreover, we understand that there can be multiple stages of an innovative R&D project, and this is consistent with iterative technology innovations, or
- technologies and applications not adopted in Australia other than for small scale trials.

In addition, criteria under 5.2.3 below, allows for consideration of the geographic and demographic characteristics of new or original concepts.

5.2.2 Technology or techniques that significantly differ from those previously implemented or used in the NEM

The goal of this criterion is that the projects should materially add to industry understanding of demand management and its potential for technical and/or commercial viability in supporting the transmission network.

5.2.3 A focus on network users in a market segment that significantly differs, from those previously targeted by implementations of the relevant technology, in relevant geographic or demographic characteristics that are likely to affect demand

This criterion is intended to ensure that the DMIAM only funds projects that are materially different from previous DM projects funded under other DMIA schemes. We consider that consumers should not be funding projects which have previously been subject to trials. Repeating other people's work is not an efficient allocation of consumers' money.

5.2.4 The potential, if proved viable, to reduce long term network costs

The DMIAM Objective requires that projects funded under the DMIAM have the potential to reduce long-term network costs for consumers.

In the context of innovation, we propose to consider cost reductions by reference to the project's overall ability to contribute to developing the demand management and industry knowledge, rather than in a way that is limited to the direct benefits of a project.

This will allow TNSPs to spend the allowance on projects that are experimental in nature, while still directing them to implement potentially efficient solutions. Exploring this potential is vital to building market/industry understanding and commercialising solutions.

5.2.5 Not being otherwise efficient and prudent non-network options that a transmission network service provider should have provided for in its revenue proposal

Clause 6A.7.6(c)(2)(ii) of the NER specifies that DM projects funded under the DMIAM should be innovative and not be otherwise efficient and prudent non-network options that a TNSP should have provided for in its Revenue Proposal.

We, however, note that past reviews of demand management activities have suggested that even technologies that appear efficient and prudent are not taken up because of a higher level of uncertainty and risk attributed to those projects. We believe that, in part, this reflects perceptions of uncertainty and risk rather than necessarily the reality—but the perceptions are the barrier. Given this concern, we propose that the test in this regard could be “the projects must not be known to be an efficient and prudent non-network option”.

5.2.6 Must not also be funded by other means

The DMIAM is intended to provide funding for innovative solutions that would not otherwise be available. This aims to fund innovation, rather than allowing TNSPs to recover extra for simply undertaking actions that are otherwise prudent and should be included in their revenue allowances. This aims to prevent 'double-dipping' of R&D revenue, thereby increasing the DMIAM's value to electricity consumers. Hence, we consider that the DMIAM funding should exclude costs that are:

- recoverable under any other jurisdictional incentive scheme,
- recoverable under any state or Australian Government scheme, or
- that form parts of the forecast capital expenditure or operating expenditure approved in the transmission determination.

5.3 DM projects that also improve wholesale market outcomes should be considered

Transmission networks have considerable interactions with the wholesale market. Therefore, DM projects have broader benefits than just addressing network constraints. A DM project that would improve wholesale market outcomes could be eligible for the allowance if the applicant can demonstrate that the project would lead to a reduction in long term network costs.

We note that clause 6A.7.6(b) of the NER specifies that the objective of the DMIAM is to provide TNSPs with funding for research and development in demand management projects that have the potential to reduce long term network costs. We consider that the need to reduce wholesale market costs can often be a driver for network augmentation.

Some DM initiatives may benefit wholesale markets and reduce the need for further network augmentation as well as reducing energy cost to consumers. For example, DM that reduced peak demand for the wholesale market and the transmission system may reduce wholesale energy prices and transmission augmentation costs. On the other hand, connection of new generation may require lower wholesale costs but require increased, rather than reduced, transmission costs.

5.4 Questions for Stakeholders

The AER welcomes stakeholder feedback in relation to the matters set out below:

Question 6

Do you agree that only projects not known to be otherwise efficient and prudent, that should be undertaken as a business as usual activity, should be included in the DMIAM funding? If so, how should this test be applied in practice?

Question 7

Should the allowance only apply to projects that are based on new or original concepts? How should we be satisfied that the criteria have been met for the proposed projects? How shall we consider the context in TNSPs' operational environment in this regard?

Question 8

Do you agree that the DMIAM should be extended to projects that have potential to reduce wholesale market prices, where those projects also have potential to reduce future network augmentation in the long-term?

6 Reporting

Under the NER, any distribution DMIAM developed and applied by the AER must require DNSPs to publish reports on the nature and results of demand management projects that are the subject of the allowance.[9] The same requirement applies for the transmission DMIAM.[10]

To give effect to this for the distribution DMIAM, the AER requires the distribution businesses to submit compliance reports to it in a form that is capable of being published by the AER – with the intention of then publishing the reports on its website to 'increase the usefulness and accessibility of each project report'.[11] The AEMC expects that the AER would adopt a similar approach for transmission networks.[12]

We concur with AEMC's view. Accordingly, our proposed reporting framework for transmission DMIAM has been adopted from the distribution DMIAM because we consider these DMIAM have a similar scope and framework.

6.1 Proposed information and data requirements

We consider the reporting requirements under the DMIAM should:

- Be prescriptive regarding what information and rationales are required to both explain and justify a project.
- Streamline both the project reporting and approval processes.
- Reflect the project criteria set out above.

Based on the project criteria, we could develop a matrix of project explanation elements and the criteria which the element meets, such as set out in the table below. We could use this to guide TNSPs in their reporting on their projects under the DMIAM.

Table 6 Proposed matrix of project elements and criteria for reporting

Explanation Element	Criteria
(a) the nature and scope of each project or program	#1 Demand management project or program #2 Innovative project or program
(b) the aims and expectations of each project or program	

[9] 6.6.3A, NER.

[10] 6A.7.6(d) NER

[11] AER, Demand management innovation allowance mechanism: Explanatory statement, December 2017, p. 26.

[12] AEMC, Rule Determination, National Electricity Amendment (Demand management incentive scheme and innovation allowance for TNSPs) Rule 2019, 5 December 2019, Footnote 119, p. 30.

(d) how each project or program was/is to be implemented	#2 Innovative project or program (if innovative in execution rather than nature or scope)
a), b) and d) collectively	#4 a) Pre-project implementation plans
(c) the process by which each project or program was selected, including the business case for the project and consideration of any alternatives	#3 Appropriate funding
(e) the implementation costs of the project or program and	#5 Projects or programs costs recovered under the DMIAM
(f) any identifiable benefits that have arisen from the project or program, including any off peak or peak demand reductions.	#4 b) Post-project implementation report

6.2 Independent expert endorsement

We consider that TNSPs should be required to seek independent expert review, critique and endorsement of their proposed DM projects before implementation. This is because:

- DM projects will be highly technical, which requires expertise to undertake project assessment
- Eligible DM projects are to be innovative, which implies these projects will have high risk. Therefore, more scrutiny is required to assess the scope and cost in order to reduce the risk to consumers, as well as delivering more effective utilisation of funds.

These independent experts should have relevant knowledge and experience in electricity markets, networks and demand management.

We understand that most, if not all, TNSPs have standing customer councils. We expect that TNSPs would report proposed projects and outcomes to their customer councils. The question also becomes whether the independent expert panel should include customer/community representatives.

There might also be value in TNSPs setting up evaluation panels for this purpose. We considering the funding for such panels can be a part of the DMIAM allowance.

Further, subject to the Competition and Consumer Act 2010, TNSPs might potentially set up joint expert panels to share the cost, though we consider that this should not be mandatory.

Alternatively, an option for a standing panel could be a possibility. Such kind of panel could be appointed jointly by ENA, ECA and the AER.

6.3 Transferrable learning outcomes

We consider that TNSPs should share their knowledge and understanding of innovative demand management projects that have the potential to reduce long term network costs, and therefore prices for consumers. Given the R&D works are funded by consumers, rather than the shareholders of the business, the learning should be shared with other TNSPs.

While we consider that general information should be available to the public, the reporting requirements should be kept at a higher level as suggested in Table 5. However, we expect that, if requested by another TNSP, more detailed information about the learnings and insights gained from the project should be provided.

We encourage TNSPs to share what they have learned as a result of undertaking the trials. Therefore, we will acknowledge those TNSPs who share their learning under the DMIAM. We also propose to identify those TNSPS that do not share their learnings when requested to do so.

One option to encourage information sharing may be for us to not give our final approval for the funding for a project where information about that project has not been shared with other TNSPs. If we were to adopt this approach, we would need to consider the appropriate length of time for which that information should remain available, under the DMIAM, to other TNSPs.

6.4 Questions for Stakeholders

The AER welcomes stakeholder feedback in relation to the matters set out below:

Question 9

How might we best give effect to or enhance the information and reporting requirements discussed in section 6.1 above?

Question 10

What details of the learnings gained from eligible DM projects should be included in public reporting?

Question 11

What are your views about requiring TNSPs to seek independent expert review of proposed DMIAM projects (whether by an individual expert or by a panel)? Would a panel be preferable to an individual expert? What is the preferred composition and skill mix for such panels?

Question 12

Should the cost for independent expert review of proposed DMIAM projects (whether by an individual expert or by a panel) be a part of the DMIAM expenditure?

Question 13

We encourage TNSPs to share with others what they have learned as a result of undertaking the trials. Do you agree that the AER should publish the names of those DNSPs who do not share what has been learnt as a result of projects funded by the DMIAM?

Question 14

Should the AER approve DMIAM funding for only those DM projects where learning information has been shared with other TNSPs? What would be the appropriate time period for that information to remain available, under the DMIAM, to other TNSPs? Should funding approval be withheld if information is not shared?

Question 15

Where exceptional circumstances occur that a particular TNSP would not share its learnings, do you agree that the AER should obtain detailed results from the TNSP for publication so that the learnings can be accessed by stakeholders.

7 Interaction with other incentive schemes

The purpose of DMIAM is to provide funding for TNSPs to undertake trials and studies that have the potential to effectively manage demand should such a need arise in future. We do not consider this financial allowance will have direct relationship with the current incentive schemes, such as the Service Target Performance Incentive Scheme, Efficiency Benefit Sharing Scheme (EBSS) and Capital Expenditure Sharing Scheme (CESS).

Where a TNSP has identified a feasible demand management tool, it may implement the tool in a number of ways, including:

- Where there is net benefit to consumers, it may implement the tool as a part of its capex or opex programs in the subsequent regulatory proposals.
- Where the cost/benefit balance satisfies the Network Capability Component of the STPIS, it may seek approval as a priority project under its network capability incentive parameter action plan (NCIPAP).

Appendix A. Rules relevant to Demand management innovation allowance mechanism

6A.7.6 Demand management innovation allowance mechanism

(a) The AER must develop a demand management innovation allowance mechanism for Transmission Network Service Providers consistent with the demand management innovation allowance objective.

(b) The objective of the demand management innovation allowance mechanism is to provide Transmission Network Service Providers with funding for research and development in demand management projects that have the potential to reduce long term network costs (the demand management innovation allowance objective).

(c) In developing and applying any demand management innovation allowance mechanism, the AER must take into account the following:

1) the mechanism should be applied in a manner that contributes to the achievement of the *demand management innovation allowance objective*;

2) demand management projects, the subject of the allowance, should:

   i. have the potential to manage ongoing changes in demand; and

   ii. be innovative and not be otherwise efficient and prudent *non-network options* that a *Transmission Network Service Provider* should have provided for in its *Revenue Proposal*;

3) the level of the allowance:

   i. should be reasonable, considering the long term benefit to *retail customers*;

   ii. should only provide funding that is not available from any other source, including under a relevant *revenue determination*; and

   iii. may vary by *Transmission Network Service Provider* and over time;

4) the allowance may fund demand management projects which occur over a period longer than a regulatory control period.

(d) Any *demand management innovation allowance mechanism* developed and applied by the *AER* must require *Transmission Network Service Providers* to publish reports on the nature and results of demand management projects that are the subject of the allowance.

(e) The *AER*:

1) must develop and publish the demand management innovation allowance mechanism; and

2) may, from time to time, amend or replace any *demand management innovation allowance mechanism* developed and *published* under this clause,

in accordance with the *transmission consultation procedures.*

11.118.2 AER to develop and publish the demand management innovation allowance mechanism

(a) By 31 March 2021, the *AER* must develop and *publish* the first *demand management innovation allowance mechanism* required under new clause 6A.7.6.