Proposed Demand Management Incentive Scheme

Aurora Energy

Regulatory control period commencing 1 July 2012

June 2010

AUSTRALIAN ENERGY REGULATOR

Amendment record

Version	Date	Pages
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Contents

Shortened forms

AER	Australian Energy Regulator
DMIA	demand management innovation allowance
DMIS	demand management incentive scheme
DNSP	distribution network service provider
NEL	National Electricity Law
NER	National Electricity Rules
NPV	net present value
RAB	regulatory asset base
WACC	weighted average cost of capital

1 Nature and authority

1.1 Introduction

This document sets out the Australian Energy Regulator's (AER) proposed demand management incentive scheme (DMIS) for the Tasmanian distribution network service provider (DNSP). This scheme has been developed to apply to Aurora Energy in its distribution determinations for the regulatory control period commencing 1 July 2012.

1.2 Authority

Clause 6.6.3 of the National Electricity Rules (NER) allows the AER to develop, in accordance with the distribution consultation procedures in rule 6.16 of the NER, a demand management incentive scheme or schemes (DMIS). This DMIS has been developed and published in accordance with these provisions.

1.3 Role of this scheme

The role of the scheme, as set out in clause 6.6.3(a) of the NER, is to provide incentives for DNSPs to implement efficient non-network alternatives, or to manage the expected demand for standard control services in some other way. The scheme is designed to complement the existing incentives within the regulatory framework for DNSPs and to implement non-network alternatives and manage demand.

1.4 Confidentiality

The AER's obligations regarding confidentiality and the use and disclosure of information provided to it by a DNSP under this scheme are governed by the *Trade Practices Act 1974*, the National Electricity Law (NEL) and the NER. Further information regarding how the AER treats information provided to it is detailed in its information policy.[1]

1.5 Version history and effective date

A version number and an effective date of issue will identify each version of this scheme.

[1] ACCC/AER, *Information Policy*, October 2008 available at http://www.aer.gov.au/content/index.phtml/itemId/722679

2 Objectives and application of this scheme

2.1 Objectives

The objective of this scheme is to provide incentives for DNSPs to implement efficient non-network alternatives or to manage the expected demand for standard control services in some other way.

The NER require that the AER, in developing and implementing a DMIS, have regard to:

- the need to ensure that benefits to consumers likely to result from the scheme are sufficient to warrant any reward or penalty under the scheme for DNSPs
- the effect of a particular control mechanism (i.e. price – as distinct from revenue – regulation) on a DNSP's incentives to adopt or implement efficient non-network alternatives
- the extent the DNSP is able to offer efficient pricing structures
- the possible interaction between a DMIS and other incentive schemes
- the willingness of the customer or end user to pay for increases in costs resulting from implementation of the scheme.[2]

2.2 Application of the scheme

This DMIS will be applied through the AER's distribution determination for Aurora Energy. This will occur in three stages:

- The AER's framework and approach will set out the AER's likely approach, in its forthcoming distribution determination, to the application of the DMIS to Aurora Energy. This position must be finalised by 30 November 2010.
- Aurora Energy's regulatory proposal for a distribution determination must include a description, including relevant explanatory material, of how it proposes the DMIS should apply in the relevant regulatory control period. If the proposed application differs from that set out in the framework and approach paper, Aurora Energy must fully detail any difference in approach. Aurora Energy must also substantiate why a different approach would be more appropriate and how it would satisfy the requirements of the NEL and NER in its regulatory proposal. Aurora Energy's regulatory proposal must be submitted to the AER by 30 May 2011.
- The AER's final decision on how the DMIS is to apply to Aurora Energy in a regulatory control period will be part of its distribution determination. The AER must make its final decision by 30 April 2012.

[2] NER, cl. 6.6.3(b)

3 The demand management incentive scheme

The DMIS is not designed to be the sole or even primary source of funding for demand management expenditure in a regulatory control period. The primary source of a DNSP's recovery for demand management expenditure in a distribution determination is to be the approved forecasts of operating and capital expenditure in the AER's distribution determination for that DNSP. Clauses 6.5.6 and 6.5.7 of the NER require DNSPs to include expenditure required to manage the demand for standard control services in their capital and operating expenditure forecasts. Before approving forecasts of operating and capital expenditure the AER will require DNSPs to satisfactorily demonstrate that efficient non-network alternatives to capital and operating expenditure have been properly considered in the development of forecasts. Approved forecasts will take into account the DNSP's satisfaction of this requirement with regard to the established criteria that the forecasts are prudent, efficient and reflect realistic expectations of cost inputs and demand.[3]

The DMIS is designed to supplement a DNSP's approved capital and operating expenditure, and to facilitate investigation and implementation of demand management strategies. The development of reliable and viable strategies will allow DNSPs to implement non-network alternatives where efficient, and to manage the expected demand for standard control services by means other than network augmentation.

The DMIS aims to provide incentives for DNSPs to investigate and conduct broad-based and/or peak demand management projects throughout the regulatory control period. It aims to increase the current stock of knowledge and experience with network demand management, to encourage greater consideration of non-network alternatives to augmentation in the decision making processes of DNSPs. The scheme aims to provide incentives for DNSPs to conduct research and investigation into innovative techniques for managing demand so that, in the future, demand management projects may be increasingly identified as viable alternatives to network augmentation.

The demand management innovation allowance (DMIA) in part A of the DMIS is provided to the DNSP as an annual, ex-ante allowance in the form of a fixed amount of additional revenue at the commencement of each regulatory year of the regulatory control period. In the second regulatory year of the subsequent regulatory control period, when results for regulatory years one to five are known, a single adjustment will be made to return the amount of any underspend on unapproved amounts to customers. This ensures that the scheme remains neutral in terms of the expenditure profile within the period to which it has applied.

The requirement for a DNSP to submit annual reports on the outcomes and expenditure under the DMIS, which the AER will publish, will help to enhance industry knowledge of demand management, and will assist demand management

[3] See, generally, the capital expenditure criteria and the operating expenditure criteria the AER is required to assess such forecasts against in clauses 6.5.6(c) and 6.5.7(c) of the NER.

proponents (including demand-side aggregators) in identifying opportunities and developing knowledge on viable demand management projects and programs.

The application of part B of the DMIS addresses the impacts that certain forms of control may have on a DNSP’s incentives to make use of the DMIA. Part B allows a DNSP whose direct control services are subject to a form of control whereby recovery of the annual revenue requirement is at least partially dependent on energy sold, to recover any forgone revenue resulting from a reduction in the quantity of energy sold. The reduction in energy sold must be directly attributable to the implementation of a non-tariff demand management program approved under part A of the DMIS. Approved forgone revenue will be provided to a DNSP in the second regulatory year of the subsequent regulatory control period, as an addition to the innovation allowance adjustment in that regulatory year, to offset the disincentives associated with certain forms of control.

The outcomes of the DMIS will be considered by the AER through an annual review process within the regulatory control period to which it applies. The review will be used when considering the AER’s application of a DMIS in the subsequent regulatory control periods.

3.1 Part A — DMIA

This section sets out how the DMIA will operate. The calculation of the allowance, and worked examples, are provided in appendix A.

3.1.1 Amount of the DMIA

The total amount recoverable under the DMIA within a regulatory control period will be capped at an amount based on the AER's understanding of typical demand management project costs, and is scaled to the relative size of each DNSP's average annual revenue allowance in the previous regulatory control period.

3.1.2 Access to the DMIA

The DMIA will be provided as an annual, ex-ante allowance in the form of a fixed amount of additional revenue at the commencement of each regulatory year of the regulatory control period.

The total amount of the allowance will be distributed evenly across each regulatory year of the regulatory control period.

Within the regulatory control period the DNSP has the flexibility to select an expenditure profile that suits its needs. However, the total amount recoverable over the regulatory control period will not exceed the total amount of the allowance determined in accordance with section 3.1.1.

The DMIS allows for DMIA underspends in any year to be retained for the length of the regulatory control period, but does not allow accumulated underspends at the end of the relevant regulatory control period to be carried into the next regulatory control period.

3.1.3 The DMIA criteria

Projects and programs eligible for approval under this scheme must meet the following criteria (the DMIA criteria):

1. Demand management projects or programs are measures undertaken by a DNSP to meet customer demand by shifting or reducing demand for standard control services through non-network alternatives, or the management of demand in some other way, rather than increasing supply through network augmentation.
2. Demand management projects or programs may be:
    a. broad-based demand management projects or programs — which aim to reduce demand for standard control services across a DNSP's network, rather than at a specific point on the network. These may be projects targeted at particular network users, such as residential or commercial customers, and may include energy efficiency programs, and/or
    b. peak demand management projects or programs — which aim to address specific network constraints by reducing demand on the network at the location and time of the constraint.
3. Demand management projects or programs may be innovative, and designed to build demand management capability and capacity and explore potentially

efficient demand management mechanisms, including but not limited to new or original concepts.

4. Recoverable projects and programs may be tariff or non-tariff based.

5. Costs recovered under this scheme:

   a. must not be recoverable under any other jurisdictional incentive scheme

   b. must not be recoverable under any other State or Commonwealth Government scheme, and

   c. must not be included in forecast capital or operating expenditure approved in the distribution determination for the regulatory control period under which the scheme applies, or under any other incentive scheme in that determination.

6. Expenditure under the DMIA can be in the nature of capital or operating expenditure. The AER considers that capital expenditure payments made under the DMIA could be treated as capital contributions under cl. 6.21.1 of the NER and therefore not rolled into the regulatory asset base (RAB) at the start of the next regulatory control period. However, the AER's decision in that regard will only be made as part of the next distribution determination.

3.1.4 Approval of expenditure under the DMIA

At the end of each regulatory year of the regulatory control period, the AER will conduct a review of expenditure incurred by the DNSP in the preceding regulatory year to ensure compliance with the DMIA criteria.[4]

3.1.4.1 Annual reporting requirements

A DNSP to which this scheme applies must submit to the AER a report on its expenditure under the DMIA for each regulatory year of the regulatory control period. A DNSP will be required to submit its annual report under this scheme as part of the AER's annual regulatory reporting requirements for DNSPs.

The information provided in a DNSP's annual report will form the basis of the AER's assessment of the DNSP's compliance with the DMIA criteria, and its entitlement to recover expenditure under the DMIA.

The AER will publish the annual reports from DNSPs to which this scheme applies to provide information to stakeholders on the results of projects and programs investigated and/or implemented under this scheme. This information will assist the AER in assessing proposals for demand management expenditure in operating and capital expenditure forecasts submitted in a DNSP's regulatory proposals. Further, it will assist the AER in the development and implementation of demand management incentive schemes, in future regulatory control periods.

Reports must be submitted in a form suitable for publication. If a report contains confidential information, the DNSP must:

1. clearly identify the information that is the subject of the confidentiality claim

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[4] The AER's ex-post review will take place once audited data becomes available for the previous regulatory year.

2. provide reasons to substantiate any confidentiality claim, and
3. provide a non-confidential version of the report for publication.

A DNSP's annual report must include:

1. the total amount of the DMIA spent in the previous regulatory year, and how this amount has been calculated
2. an explanation of each demand management project or program for which approval is sought, demonstrating compliance with the DMIA criteria in section 3.1.3 with reference to:
    a. the nature and scope of each demand management project or program
    b. the aims and expectations of each demand management project or program
    c. the process by which each project or program was selected, including the business case for the project and consideration of any alternatives
    d. how each project or program was/is to be implemented
    e. the implementation costs of the project or program, and
    f. any identifiable benefits that have arisen from the project or program, including any off peak or peak demand reductions.
3. a statement signed by a director of the DNSP certifying that the costs of the demand management program:
    a. are not recoverable under any other jurisdictional incentive scheme
    b. are not recoverable under any other State or Commonwealth Government scheme, and
    c. are not included in the forecast capital or operating expenditure approved in the AER's distribution determination for the regulatory control period under which the scheme applies, or under any other incentive scheme in that determination, and
4. an overview of developments in relation to projects or programs completed in previous years of the regulatory control period, and of any results to date.

A report must be submitted for each regulatory year of the regulatory control period. Where a demand management project or program extends across more than one year of the regulatory control period, a report on actual expenditure on that project or program in each regulatory year of the regulatory control period will be required. If part B of the DMIS applies to a DNSP, it must also submit the information required under section 3.2.4 of the DMIS.

3.1.4.2 Compliance assessment and publication of annual report

The AER will assess a DNSP's compliance with the DMIA criteria on the basis of the information provided in its annual report.

At the completion of the annual assessment, the AER will publish:

1. all annual reports submitted by DNSPs to which this scheme applies, and

2. a report stating:

   a. the amount of expenditure approved by the AER, and its reasons for that decision, and

   b. the amount of allowance remaining (in nominal terms) for the regulatory control period.

3.1.5 Final year adjustment

Once data becomes available for the final regulatory year of the regulatory control period, the AER will calculate a total carryover amount on the basis of the annual assessments in section 3.1.4 of this scheme to account for:

- any amount of allowance unspent or not approved over the regulatory control period, and

- the time value of money accrued or lost as a result of the expenditure profile selected by the DNSP.

Information on the final regulatory year of the regulatory control period will not be available in time to be incorporated into the AER's distribution determination for the subsequent regulatory control period. As a result, the final carryover amount will be deducted from or added to allowed revenues in the second regulatory year of that regulatory control period.

The final year adjustment will be calculated to ensure the DNSP will be indifferent (in net present value (NPV) terms) to its expenditure profile over the regulatory control period. This removes any incentive for the DNSP to defer or advance expenditure. For the purposes of the NPV calculation, the AER will use the nominal vanilla weighted average cost of capital (WACC) approved in the distribution determination for the regulatory control period under which this scheme applied.

The calculation of this final year adjustment is set out in appendix A.

3.2 Part B — Recovery of forgone revenue

Aurora Energy is subject to a revenue cap form of control. As revenue is not dependent on throughput, the AER considers that a forgone revenue component is not necessary.

4 Relevant determinations

This DMIS has been developed to apply to Aurora Energy in the regulatory control period commencing 1 July 2012.

This scheme will not be applied to other DNSPs or in other distribution determinations without further consultation.

5 Assessment of the scheme

The operation of the scheme will be monitored by the AER throughout the regulatory control periods for Aurora Energy from 1 July 2012.

An assessment of the scheme's operation will be made when considering the application of demand management incentive schemes to Aurora Energy in subsequent regulatory control periods.

Appendix A

This appendix provides a number of worked examples of the operation of the DMIS.

Step 1 Amount of the DMIA

[Section 3.1.1]

Assume, for the purposes of the examples below, that a DNSP is granted a total DMIA of $5 million ($nominal) over a five year regulatory control period.

Step 2 Access to the DMIA

[Section 3.1.2]

This $5 million allowance will be provided in five, equal instalments of $1 million — one in each regulatory year of the regulatory control period. The amount spent under the DMIA in any one regulatory year is at the discretion of the DNSP. That is, the DMIS allows for underspends within a regulatory year to be retained for the length of the regulatory period. However the total amount recoverable over the five regulatory years cannot exceed $5 million and any overall underspend cannot be carried into the next regulatory control period. That is, the DNSP has the flexibility to select an expenditure profile that suits its circumstances, subject to remaining within the approved cap.

Step 3 Approval of expenditure under the DMIA

[Section 3.1.4]

At the end of each regulatory year of the regulatory control period the AER will conduct an assessment of expenditure incurred by the DNSP in the preceding regulatory year, in accordance with section 3.1.4.2 of this scheme. Expenditure will be either approved or rejected based on an assessment against the DMIA criteria in section 3.1.3 of this scheme. The total amount of expenditure approved by the AER over the five year regulatory control period will not exceed $5 million.

Step 4 Final year adjustment

[Section 3.1.5, 3.2.5]

Once data becomes available for the final regulatory year of the regulatory control period, the AER will calculate a carryover amount to account for:

- any amount of allowance unspent or not approved over the period
- the time value of money accrued / lost as a result of the expenditure profile selected by the DNSP
- any approved forgone revenue adjustment (if part B applies to the DNSP)

The final carryover amount will be deducted from (added to) allowed revenues in the second regulatory year of the subsequent regulatory control period.[5] The adjustment will be calculated to ensure the DNSP is indifferent (in NPV terms) to the expenditure profile approved by the AER over the regulatory control period. This removes any incentive for the DNSP to defer or advance expenditure.

Calculating the carryover amount

[Section 3.1.5]

The cumulative carryover balance for each year of the five-year regulatory control period (C_t) is calculated as follows:

$$C_t = C_{t-1} - \left[\frac{(R_t - A_t)}{(1+i)^t} \times (1+i)^5 (1+i^*)^2 \right] +++$$

Where:

R_t = ex-ante revenue allowance under the scheme for regulatory year 't' (t = 1,2,…,5)

A_t = expenditure approved ex-post under the scheme for regulatory year 't' (t = 1,2,…,5)

i = nominal vanilla WACC as set in the distribution determination for the forthcoming regulatory control period

i^* = nominal vanilla WACC as set in the distribution determination for the subsequent regulatory control period

At the end of the regulatory control period, the AER will calculate a carryover amount to be deducted from (added to) allowed revenues in regulatory year 2 of the subsequent regulatory control period.

The regulatory year 5 carryover amount (C_5) to be deducted from (added to) allowed revenues in regulatory year 2 of the subsequent regulatory control period is calculated as follows:

$$C_5 = C_4 - \left[\frac{(R_5 - A_5)}{(1+i)^5} \times (1+i)^5 (1+i^*)^2 \right]; \text{ or}$$

$$C_5 = C_4 - \left[(R_5 - A_5) \times (1+i^*)^2 \right]$$

The amount of the final carryover (C_5) is calculated so as to ensure that the DNSP is revenue neutral (ie. *NPV* = 0) to the profile of expenditure approved by the AER over

5 The final carryover will not affect allowed revenues until year two of the subsequent regulatory control period due to pricing considerations. The carryover amount therefore includes an adjustment to account for the time value of money in the first year of the subsequent regulatory control period (at the nominal vanilla WACC set in the distribution determination for that period).

the five-year regulatory control period.[6] In other words, the amount of the final carryover is such that:

$$NPV = \frac{(R_1 - A_1)}{(1+i)} + \frac{(R_2 - A_2)}{(1+i)^2} + \frac{(R_3 - A_3)}{(1+i)^3} + \frac{(R_4 - A_4)}{(1+i)^4} + \frac{(R_5 - A_5)}{(1+i)^5} + \frac{C_5}{(1+i)^5(1+i^*)^2} = 0$$

Worked examples

Figures A.1 – A.3 below illustrate the operation of the DMIA under various expenditure profiles, in accordance with steps 1 – 4 above. The examples assume:

- ex-post reviews undertaken by the AER at the end of each year of the regulatory control period
- a nominal vanilla WACC of 10% for the first regulatory control period (i = 0.10), and
- a nominal vanilla WACC of 9% for the second regulatory control period (i* = 0.09).

Figure A.1: Spend full allowance each year

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 1	Year 2	**Totals**
Ex ante allowance	1.0	1.0	1.0	1.0	1.0			**5.0**
Actual expenditure	1.0	1.0	1.0	1.0	1.0			**5.0**
Ex post expenditure approved	1.0	1.0	1.0	1.0	1.0			**5.0**
Ex post expenditure disallowed	0.0	0.0	0.0	0.0	0.0			**0.0**
Cumulative carryover balance	0.00	0.00	0.00	0.00	0.00			
Adjustment to revenues							0.00	
NPV to DNSP	0.00	0.00	0.00	0.00	0.00		0.00	**0.00**

In figure A.1, the DNSP spends $1 million on demand management initiatives in each regulatory year of the regulatory control period, all of which is approved by the AER. As the approved expenditure profile matches the ex-ante revenue allowance, there is no net benefit / detriment to the DNSP at the end of the regulatory control period (i.e.

[6] This includes an adjustment to account for the time value of money in the first 2 years of the subsequent regulatory control period, given the assumption the cash flows occur at the end of each year.

NPV = 0), and therefore there is zero carryover to the subsequent regulatory control period.

Figure A.2: Spend in excess of full allowance with variable profile

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 1	Year 2	**Totals**
Ex ante allowance	1.0	1.0	1.0	1.0	1.0			**5.0**
Actual expenditure	2.0	1.0	0.0	2.0	1.0			**6.0**
Ex post expenditure approved	1.5	1.0	0.0	2.0	0.5			**5.0**
Ex post expenditure disallowed	0.5	0.0	0.0	0.0	0.5			**1.0**
Cumulative carryover balance	0.87	0.87	-0.57	0.74	0.14			
Adjustment to revenues							0.14	
NPV to DNSP	-0.45	0.00	0.75	-0.68	0.31		0.07	**0.00**

In figure A.2, the DNSP spends different amounts on demand management initiatives in each regulatory year of the regulatory control period. For example in regulatory year 1:

- the DNSP receives $1 million in its ex-ante revenue allowance
- the DNSP spends $2 million on demand management initiatives, and
- as a result of the ex-post review at the end of year 1, the AER approves $1.5 million, but disallows $0.5 million of expenditure.

The net present value of expenditure approved against the ex-ante allowance (ie. 'NPV to DNSP') for regulatory year 1 is calculated as follows:

$$NPV_1 = \frac{(R_1 - A_1)}{(1+i)}\text{; or}$$

$$NPV_1 = \frac{(1.0 - 1.5)}{(1+0.10)} = -0.45$$

The cumulative carryover balance for year 1 (C_1) is calculated as follows:

$$C_1 = C_0 - \left[\frac{(R_1 - A_1)}{(1+i)} \times (1+i)^5 (1+i^*)^2\right]\text{; or}$$

$C_1 = 0 + 0.47 \times (1 + 0.10)^5 \times (1 + 0.09)^2 = 0.87$

In regulatory year 5 of the regulatory control period, the DNSP spends $1 million, however the AER disallows $0.5 million as it exceeds the $5 million cap.

The final carryover amount (C_5) to be added to allowed revenues in regulatory year 2 of the subsequent regulatory control period is calculated as follows:

$$C_5 = C_4 - \left[(R_5 - A_5) \times (1 + i^*)^2\right]; \text{ or}$$

$$C_5 = 0.74 - \left[(1.0 - 0.5) \times (1 + 0.09)^2\right] = \$0.14 million$$

Figure A.3: Spend full allowance in final regulatory year

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 1	Year 2	**Totals**
Ex ante allowance	1.0	1.0	1.0	1.0	1.0			**5.0**
Actual expenditure	0.0	0.0	0.0	0.0	5.0			**5.0**
Ex post expenditure approved	0.0	0.0	0.0	0.0	5.0			**5.0**
Ex post expenditure disallowed	0.0	0.0	0.0	0.0	0.0			**0.0**
Cumulative carryover balance	-1.74	-3.32	-4.76	-6.07	-1.31			
Adjustment to revenues							-1.31	
NPV to DNSP	0.91	0.83	0.75	0.68	-2.48		-0.69	**0.00**

In figure A.3, the DNSP defers its expenditure until the final regulatory year of the regulatory control period. As a result of the ex-post review at the end of regulatory year 5, the AER approves $5 million of expenditure by the DNSP on demand management initiatives. In this example the AER will deduct an amount of $1.31 million from allowed revenues in regulatory year 2 of the subsequent regulatory control period to remove the time value of money accrued as a result of the expenditure profile selected by the DNSP.