



DMIS Compliance Report

Endeavour Energy

2018 / 2019 Report



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1. Summary

This submission of the Demand Management Incentive Scheme (DMIS) Compliance Report to the Australian Energy Regulator (AER) is made in accordance with the AER's DMIS dated December 2017.

This compliance report sets out Endeavour Energy's committed and eligible demand management (DM) projects and any costs incurred in implementing those projects (year $t-2$) that are allowable under the DMIS. Once assessed and approved by the AER the allowable recovery amount will be included Endeavour Energy's total annual revenue (year t).

Endeavour Energy notes that costs submitted for recovery must not exceed 1% of total annual revenue. A summary of the total financial incentive payment is provided in Table 1.1.

Table 1.1: Total Financial Incentive Payment Summary

Summary of Calculated Total Financial Incentive Payment		
Determining Project Incentives		
Equation 1: Project incentive calculation	$PV\ incentive_i = \min \{ d_v \times E [PV\ DMcosts_i - S_i], 0 \}$ Subject to the constraint $d_v \times E [PV\ DMcosts_i] \leq E [NPV_i]$	
Equation 3: Total financial incentive paid in year t	$Total\ financial\ incentive_t = \sum_{i=1}^N [incentive_{i,t-2} - returnable\ incentive_{i,t-2}]$	
Parameter values		
E :	calculated expected value when project become committed	None reported
$DMcosts_i$	Project / demand management costs	None reported
S_i	Total subsidies provided to the DNSP in connected with providing the DM components of Project i .	None reported
$returnable\ incentive_{i,t-2}$	Returnable element of the project incentive that was paid but to be returned due to early termination	None reported
Calculated year t (21FY) Financial Incentive		
\$0		

In addition to reporting committed and eligible DMIS projects for the period 1 April – 30 June 2019, this report also identifies future prospective demand management projects. Descriptions of these projects have been included to provide greater transparency in potential cost effective non-network opportunities for upcoming projects. As our assessment of the feasibility of these non-network options progresses, it is possible they could be included in future DMIS compliance reports.

2. Submission context and structure

2.1 AER requirements for reporting on demand management

This compliance report has been prepared in accordance with the AER publication covering the DMIS dated December 2017.

The detailed information provided in this compliance report includes information on the demand management measures, the costs associated with the implementation of these measures and the relevant financial information as outlined in section 2.4 of the DMIS.

2.2 Summary of Endeavour Energy's demand management measures

Endeavour Energy has an active demand management program and considers demand management measures as part of its asset management and planning process. The DMIS requires DNSPs to identify and report on network demand management measures as either committed or eligible projects for the purpose of determining project eligibility and incentive payments.

In December 2018, Endeavour Energy applied to the AER for the early application of the DMIS prior to the start of the 2019-24 regulatory control period. This was accepted by the AER in March 2019 with the DMIS applying for the period 1 April 2019 to 30 June 2019. Our motivation to apply for the early application of the DMIS was to include the costs for a specific demand management project that we anticipated would become a committed demand management project during this period.

The South Erskine Park DM Program seeks to identify and implement demand reducing initiatives that would defer the construction of a new zone substation by at least one year. Whilst costs relating to energy audits of customer sites were incurred during 2018/19, no customers had committed to implementing an initiative to reduce demand by 30 June 2019. Therefore, the project fails to satisfy the criteria for a DMIS committed project for this compliance report but satisfies the criteria for a DMIS eligible project. A description of this project is provided below in Table 2.1.

In addition to these eligible projects, we have also listed the upcoming DM projects that will be presented to the market in 2019/20. None of these projects satisfy the requirements to be considered as either a committed or eligible project for the 2018/19 year but may become eligible and/or committed within 2019/20. Projects identified for 2020/21 have not been provided but will be included in the 2019/20 DMIS Compliance Report.

Table 2.1: Endeavour Energy Committed, Eligible and Upcoming DM Projects

Committed Projects	
Project	Description
No projects reported	
Eligible Projects	
Project	Description
South Erskine Park DM Program	The Oakdale industrial development is a mixture of light and heavy industrial and warehouse facilities with demand increasing to an estimated 33.2 MVA by 2027. The existing 11kV network and surrounding zone substations (ZS) do not have the capacity to supply this load. The network option to address this limitation is the construction of the proposed South Erskine Park ZS.



	<p>A non-network option report was issued on 27 June 2018 and one response was received. The proposal is based on conducting energy audits with major customers to identify demand reducing initiatives and provide customers a financial incentive to assist implement the approved initiatives.</p> <p>It was initially envisaged that this project would become a committed project during the 2018/19 year. We therefore applied for the early application of the DMIS. The AER approved this application in March 2019.</p> <p>By 30 June 2019, five energy audits were completed with 0.93 MVA of cost-effective demand reduction identified. By this date customers had not reviewed the audit findings and approved their implementation. Post 30 June customer agreement has been received to either implement or further investigate initiatives. For this reason, the South Erskine Park DM Program is still considered an Eligible Project for the 2018/19 year.</p> <p>By 30 June 2019 \$9,750 (excl GST) had been paid the DM Service Provider for the energy audits.</p>
Upcoming DM Projects	
Project	Description
Albion Park ZS Load Control Replacement Program	<p>The Albion Park ZS load control equipment has reached the end of its life and requires replacement. Peak demand will increase substantially on failure of load control equipment exceeding the network capacity by 6 MVA. The existing 11kV network and surrounding ZS do not have the capacity to offload Albion Park ZS by the required quantity. Network options to address this limitation include replacing the load control equipment or alternatively replacing every load control relay on customers switchboard with a time clock.</p> <p>A non-network option report was issued on 29 July 2019 and three submissions were received. The preferred proposal is based on replacing the load control relay and basic meters with a smart meter with load control functionality.</p> <p>An agreement is being negotiated with equipment replacement planned to commence in December 2019.</p>
Stand Alone Power Supply (SAPS) – Kandos Capertee National Park	<p>Within the Capertee National Park Kandos, there is 6km of steel mains that have reached the end of its serviceable life and which also pose a bush fire risk. The network option is to replace the steel mains with aluminium steel reinforcement conductor.</p> <p>The alternative option of installing a SAPS was considered in a business case to identify more cost effective alternative options. The analysis has identified that a SAPS is a feasible and cost-effective solution.</p> <p>We expect to issue a Request for DM Services in December 2019 to identify a suitable service provider to design, install, operate and maintain the SAPS. This project will be used as a test case in developing suitable processes and methods of ensuring all regulatory and network requirements are met in servicing customers via a DNSP-led SAPS.</p>
Box Hill Development Area	<p>The Box Hill Development Area, located within the North West Priority Growth Area comprised of Box Hill, Box Hill Industrial and Box Hill North precincts, will deliver 14,000 new homes, a town centre, three village centres and 133 hectares of employment land. The demand in the development area is expected to grow by 45.5 MVA by 2027. The existing 11kV network and surrounding ZSs do not have the capacity to supply this load. The network option to address this limitation is the construction of the proposed Box Hill ZS.</p> <p>A screening test has identified that a non-network option may be feasible. We plan on issuing a non-network option report for this project in early 2020.</p>
Southern Macarthur Subtransmission Network	<p>The subtransmission network supplying the Southern Macarthur area is limited in its capacity. The network supplies four Endeavour Energy ZSs and eight</p>

	<p>major customer substations. There exists embedded generation connected to the network with output that varies according to production. This poses a risk to network security and quality of supply. Growth in demand is from the residential development area and major customer activity. There is no transfer capacity available to help manage peak demand. The network option to address this limitation is the construction of a third 66kV subtransmission feeder into the area.</p> <p>A screening test has identified that a non-network option may be feasible. We plan on issuing a non-network option report for this project in early 2020.</p>
Penrith Supply Area	<p>The Penrith area is supplied by the Penrith 11kV and Kingswood ZS as well as other surrounding ZSs. The Penrith area is a brownfield site but contains new developments within the commercial, industrial and residential sectors.</p> <p>There is limited transfer capacity available to manage peak demand. This will be enhanced by installing network automation scheme. The demand of the area is increasing and is forecast to exceed the capacity of the two ZSs and the 11kV network by summer 2022. The network automation scheme will defer the network limitation by one to two years.</p> <p>A screening test has identified that a non-network option may be feasible. We plan on issuing a non-network option report for this project in the first half of 2020.</p>

3. PART A - Committed projects

3.1 Evidence of the committed project

The South Erskine Park DM Program has been initiated by signing an agreement with an energy management consultant to conduct energy audits for customers within the Oakdale industrial development funded by Endeavour Energy. Audits are to identify demand reducing initiative being either permanent or temporary. An audit report will be presented to the customer with the offer of a financial incentives to implement initiatives.

The types of permanent demand reduction initiatives may include:

- Power factor correction
- Lighting upgrades
- Efficient motors
- Air conditioning upgrade
- Solar panel installation

Temporary demand reductions generally are those that require customer action to modify their behaviour or initiating back-up generation. They include:

- Voluntary load reduction
- Demand response
- Load shifting.

The AER definition of a committed projects, as detailed in clauses 2.2.2(1)(a) and 2.2.2(2), includes the enactment of a demand management contract with another legal entity to procure the demand management required for which the other legal entity ensures that network demand can be managed. As stated in Table 2.1, while 0.93 MVA of cost-effective demand reduction was identified by 30 June 2019, customers had not had the opportunity to review the audit findings and approve their implementation. Post 30 June customer

agreement has been received to either implement or further investigate initiatives. For this reason, the South Erskine Park DM Program is not considered a committed project as at 30 June 2019.

Consequently, there are no committed projects to report for the 2018/19 DMIS Compliance Report.

3.2 Committed project information

No information to report.

3.3 Determining project incentives

Whilst the South Erskine Park DM Program is not included as a committed project, an explanation of how the project incentives were determined is provided. An NPV financial evaluation was conducted to determine the avoided distribution cost (ADC) of deferring the construction of the South Erskine Park zone substation forecast to cost \$26.6 million for one year. This equates to \$1.84 million in real terms. This is shown in Table 3.1 together with the required demand reduction of 8.1 MVA to achieve the one-year deferral. The calculated maximum customer payment in dollars per kVA is also provided.

The calculated ADC formed the basis of the non-network option program cost and used in performing the NPV calculation in order to compare with other options, including the do nothing base case.

Table 3.1: Avoided Distribution Cost and Maximum Customer Incentives

Item	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	Comments
Load At Risk (MVA)				3.4	8.1	12.8	17.4	-
Network Expenditure (\$m)	\$1.0	\$11.9	\$9.70	\$4.0				Total = \$26.6m
One-year deferral (\$m)		\$1.0	\$11.9	\$9.70	\$4.0			ADC = \$1.84m

The NPV calculation ultimately identified the cost-effective demand management program expenditure which is \$1.3 million for the South Erskine Park DM Program. This was presented to the market in the Non-Network Options Report. Table 3.2 shows the forecast DM Program expenditure profile.

Table 3.2: Demand Management Program Forecast Expenditure

Item	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Demand Management Program Expenditure (\$'000)	10	200	340	350	400		

4. PART B - Identifying and committing eligible projects

4.1 Efficient non-network option

The DMIS compliance report requires the DNSP to demonstrate that each committed and eligible project is efficient. This is achieved by detailing the costs and benefits of the non-network options and comparing the NPV against the preferred network option. The results of this analysis are shown in Table 4.1.

Table 4.1: Efficiency Analysis of all Projects

Project	Option	NPV (\$m)	PV Costs (\$m)	PV Benefits (\$m)	DM Program Cost (\$m)	Comments
South Erskine Park DM Program (Oakdale Industrial Development area)	Non-network and deferred network option	103.9	-22.07	125.9	1.3	DM expenditure over 4 years to defer the network option by at least 1 year.
	Network option	102.3	-23.50	125.8	-	Network option is to establish a new zone substation

4.2 Request for demand management solutions

The DMIS compliance report requires DNSPs to provide details of the project evaluation (clauses 2.2.1(2) to (4)). This includes providing evidence of issuing a request for demand management solutions or a similar tender document for DM services. The tender document needs to include:

- A description of the identified need;
- Technical information about the identified need;
- The location of the identified need and a description of the affected classes of customers;
- If the distributor has already identified an initial preferred option to meet the identified need and provide a description;
- Other information that is sufficient to enable the parties receiving the request for demand management solutions to provide an informed response.

A request for demand management solutions was issued for the South Erskine Park DM Program via the Oakdale Industrial Development Area non-network options report. This was issued to Endeavour Energy's register of interested parties and other interested parties in June 2018 and is provided in Appendix 1. A summary of the information is provided in Table 4.2.

Table 4.2: Request for Demand Management Services Information

Item	South Erskine Park DM Program
Description	The Oakdale industrial development is a mixture of light and heavy industrial and warehouse facilities with demand increasing to an estimated 33.2 MVA by 2027. The existing 11kV network and surrounding ZS do not have the capacity to supply this load.
Technical information	Technical information provided in Appendix 1.
Location and Customer Class	South Erskine Park within the Oakdale industrial development area.
Other Preferred Options	Construction of the proposed South Erskine Park ZS.
Other Information	All other information provided in Appendix 1.

4.3 Description of responses received

The DMIS compliance report requires DNSPs to provide details of the responses received that have been put forward as a credible option or part of a credible option, clause 2.2.1(5). This includes providing information on the following:

- A short description of the proposed project;
- Reasonable estimates of the technical requirements;
- Expected payments for DM services;
- Any other relevant information regarding the net benefit of other proposals.

This information is provided in Table 4.3. There was one submission received for the South Erskine Park DM program from [REDACTED]

Table 4.3: Description of Responses Received

Item	South Erskine Park DM Program
Description	Energy management consultant, [REDACTED] was engaged to conduct energy audits at customer premises to identify cost-effective peak demand reducing initiatives.
Technical requirements	Previous similar programs have identified sufficient demand reduction to achieve the desired deferral period. Technical estimates confirmed that the demand reduction potential justified the DM program.
Expected Payments	[REDACTED] The overall DM program cost, including customer incentive payment is within the \$1.3 million budget.
Other Information	This option also provides environmental benefits in reducing energy consumption and assisting industrial customers becoming more efficient.

5. Other compliance report information

The DMIS compliance report requires DNSPs to provide additional information as detailed in clause 2.4(5)(f-h), (6) and (7). This is provided in section 5.1 and 5.2.

5.1 Contract Information

Endeavour Energy has decided to proceed with the non-network options for the South Erskine Park DM Program as outlined in Table 4.3. An agreement has been signed with [REDACTED] (the preferred proponent) for the South Erskine Park DM Program (post 30 June 2018/19). Although not a DMIS eligible project for this report, we expect to also sign an agreement with a preferred proponent for the Albion Park Load Control Equipment Replacement Program in November 2019. This follows responses received from our request for demand management solutions which was issued in July 2019.

For transparency, we have included the expected annual expenditure and demand reduction for the South Erskine Park DM program in Table 5.1. The demand reduction may be in the form of permanent or temporary demand reduction. A description of the two types is provided in section 3.1.

Table 5.1: Avoided Distribution Cost and Expected Costs

Item	Item	2018/19	2019/20	2020/21	2021/22	2022/23	Comments
South Erskine Park DM Program	DM Program Costs (\$'000)	10	200	340	350	400	2018/19 is actual, other costs are expected.
	kVA reduction ¹		850	1,190	2,500	3,560	Demand reduction may be of a permanent or temporary in nature

Note 1: Annual additional demand reduction to be acquired.

6. Accrual of project incentives

The DMIS compliance report requires DNSPs to list the total financial incentive that a DNSP spent in year t-2 and that can be included in the total annual revenue in the regulatory year t for AER determination as detailed in clause 2.5. This is provided in Table 6.1.

As there are no projects that meet the DMIS guideline criteria for a committed project during the 2018-2019 regulatory year, there is no financial incentive payment to be claimed. For information purposes, the expected costs for the eligible project is shown in Table 6.1. It is important to note that the costs shown for the eligible project has not been reduced using the cost multiplier, they represent the full cost of the DM program.

Table 6.1: Accrued Project Incentives for Committed and Eligible Projects

Committed Projects								
	t-2	t-1	t	t+1	t+2	t+3	t+4	Comments
Item	2018/19 (\$'000)	2019/20 (\$'000)	2020/21 (\$'000)	2021/22 (\$'000)	2022/23 (\$'000)	2023/24 (\$'000)	2024/25 (\$'000)	Comments
No projects reported	0		0					
Eligible Projects								
Item	2018/19 (\$'000)	2019/20 (\$'000)	2020/21 (\$'000)	2021/22 (\$'000)	2022/23 (\$'000)	2023/24 (\$'000)	2024/25 (\$'000)	Comments
South Erskine Park DM Program (Oakdale Industrial Development area)	10	200	340	350	400			2018/19 is actual, other costs are expected.
Total Annual Revenue Threshold								
	2018/19 (\$m)	2019/20 (\$m)	2020/21 (\$m)	2021/22 (\$m)	2022/23 (\$m)	2023/24 (\$m)	2024/25 (\$m)	
1% of Total Annual Revenue	8.44	8.36	8.30	8.29	8.45	8.61		

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