



DEMAND MANAGEMENT INNOVATION ALLOWANCE REPORT 2015-2016

Submission to AER

Prepared by Asset Standards and Design

CONTENTS

| | | |
|------------|--|----------|
| 1.0 | EXECUTIVE SUMMARY | 2 |
| 2.0 | BACKGROUND..... | 3 |
| 3.0 | NEW PROJECTS FOR APPROVAL | 4 |
| 3.1 | DM EDUCATION AND RECRUITMENT WEBPAGES | 4 |
| 3.1.1 | NATURE AND SCOPE..... | 4 |
| 3.1.2 | AIMS AND EXPECTATIONS | 4 |
| 3.1.3 | PROJECT JUSTIFICATION | 4 |
| 3.1.4 | IMPLEMENTATION PLAN | 5 |
| 3.1.5 | IMPLEMENTATION COSTS | 5 |
| 3.1.6 | RESULTS..... | 5 |
| 3.2 | RIPPLE CONTROL DEVELOPMENT..... | 6 |
| 3.2.1 | NATURE AND SCOPE..... | 6 |
| 3.2.2 | AIMS AND EXPECTATIONS | 6 |
| 3.2.3 | PROJECT JUSTIFICATION | 6 |
| 3.2.4 | IMPLEMENTATION PLAN | 6 |
| 3.2.5 | IMPLEMENTATION COSTS | 7 |
| 3.2.6 | RESULTS..... | 7 |
| 4.0 | STATEMENT | 8 |

1.0 EXECUTIVE SUMMARY

Endeavour Energy has completed two Demand Management Innovation Allowance (DMIA) projects, the Demand Management (DM) Education and Recruitment Webpages and the Ripple Control Development Trial which commenced in FY 2015/16. The total DMIA claim for 2015/16 is \$30,635.

| Project | Operating expenditure (\$ nominal) | Capital expenditure (\$ nominal) | Total expenditure (\$ nominal) | New or Continuing |
|---------------------------------------|------------------------------------|----------------------------------|--------------------------------|-------------------|
| DM Education and Recruitment Webpages | \$5,654 | \$6,282 | \$11,936 | New |
| Ripple Control Development | \$0 | \$18,699 | \$18,699 | New |
| Total | \$5,654 | \$24,981 | \$30,635 | |

2.0 BACKGROUND

This report has been prepared in accordance with the AER's Regulatory Information Notice in response to paragraph 6 of Schedule 1. The information provided will constitute the provision of an annual report for the purposes of paragraph 3.1.4.1 of the Demand Management Incentive Scheme (DMIS) applying to Endeavour Energy (as set out in the 2014-2019 Distribution Determination).

As per paragraph 6 of AER's Regulatory Information Notice Schedule 1, Endeavour Energy is requested to provide responses describing its expenditure and the nature of its demand management activities for review by the AER. The annual reporting requirements are outlined below.

Endeavour Energy's response on the Demand Management Incentive Allowance must include:

1. *Identify each demand management project or program for which Endeavour Energy seeks approval.*
2. *For each demand management project or program identified in the response to paragraph 1:*
 - *explain:*
 - *how it complies with the Demand Management Innovation Allowance criteria detailed at section 3.1.3 of the demand management incentive scheme;*
 - *its nature and scope;*
 - *its aims and expected outcomes;*
 - *the process by which it was selected, including its business case and consideration of any alternatives;*
 - *how it was/is to be implemented;*
 - *its implementation costs; and*
 - *any identifiable benefits that have arisen from it, including any off peak or peak demand reductions;*
 - *confirm that its associated costs are not:*
 - *recoverable under any other jurisdictional incentive scheme;*
 - *recoverable under any other Commonwealth or State Government scheme; and*
 - *included in the forecast capital or operating expenditure approved in the 2014-19 Distribution Determination or recoverable under any other incentive scheme in that determination; and:*
 - *state the total amount of the Demand Management Innovation Allowance spent in the Relevant Regulatory Year and how this amount has been calculated.*
3. *Provide 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.*

3.0 NEW PROJECTS FOR APPROVAL

This section outlines the projects for approval by the AER.

3.1 DM EDUCATION AND RECRUITMENT WEBPAGES

The original concept of the DM Education and Recruitment Webpages (Portal) was to be a stand-alone mini website (microsite) with its own look and feel targeted at residential customers located in the Endeavour Energy network area. However, as the new direction of Endeavour Energy's corporate website does not allow for the development of new microsites, the Portal took the form of additional content within the 'Saving energy' section of the new corporate website. The Portal was to be a 'one-stop-shop' for our customers to easily find information on peak demand, energy saving tips, DM, energy usage calculators and an online mechanism to enrol customers onto our DM programs.

3.1.1 NATURE AND SCOPE

The scope of this project was to:

- Develop new webpages with information regarding the effects of peak demand on our network, how to minimise peak demand and results from past DM programs, as well as energy saving tips, under the section 'Saving energy' of the new corporate website.
- Develop energy usage calculators for hot water and pool pump consumption, adapted from Ausgrid's calculators, and a new cooking calculator.
- Automate the back end processes to increase the efficiency of enrolling and managing customers by modifying the Demand Response Management System (DRMS) to be compatible with online registration forms for DM programs.

3.1.2 AIMS AND EXPECTATIONS

The objectives of the Portal were as follows:

1. Increase the take up rate of our DM programs. The Portal would provide educational information and calculators showing potential savings that is likely to entice customers to participate in the various programs on offer.
2. Provide a cost effective and efficient channel to enrol customers onto our programs via online registration as compared with telemarketing and direct mail.
3. Educate customers by means of easy to understand information about DM and energy efficiency.

3.1.3 PROJECT JUSTIFICATION

As the corporate website is a key customer touch point, delivery of the Portal will contribute towards Endeavour Energy's priority to improve customer service and engagement, and enhance customers' experiences.

This corporate website delivers value to our customers by fulfilling their need for information about energy saving programs and how to reduce energy during peak times. According to findings from research conducted as part of Endeavour Energy's customer engagement program, implementing energy efficient programs is a key priority for customers. Survey findings from our past residential DM programs such as *PeakSaver* have shown that customers want more information on how to reduce energy during the peak event days.

Utilising marketing channels such as telemarketing and direct mail to recruit customers for our DM programs can be expensive on a per customer acquired basis due to the typical low conversion rate with these channels.

The Portal would entice customers and provide an easy channel for customers to sign up for our DM programs such as *PoolSaver*, *CoolSaver* and *PeakSaver* which is also cost effective for Endeavour Energy.

Benefits of this project include:

- Customers will have a better understanding of peak demand and how to reduce their electricity
-

usage during peak times.

- Satisfy a customer need for information on how to save energy and join DM programs.
- An increase in the take up rate of our DM programs.
- Save on costs with an automated system compared to the current manual processes. After modifications are made to the DRMS, the time and staff costs to enrol and manage each customer through the life cycle of future programs could be halved. This is a secondary benefit that will be delivered by this Portal project.

3.1.4 IMPLEMENTATION PLAN

The content for the new webpages was drafted by internal stakeholders and reviewed by a professional copywriter before circulating for internal approval, prior to inclusion on the new corporate website and the usual UAT process before going live.

The calculator code and calculations for the hot water and pool pump calculators was obtained from Ausgrid and given to an external IT supplier who was engaged to develop these energy usage calculators, as well as a new cooking calculator.

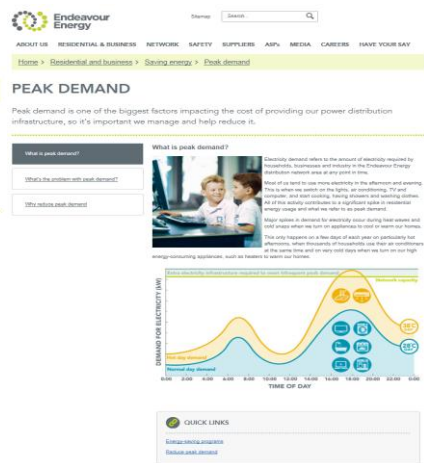
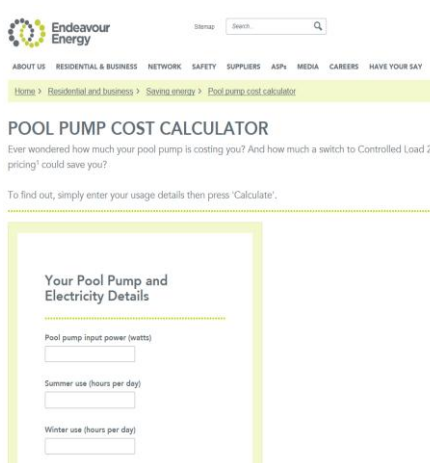
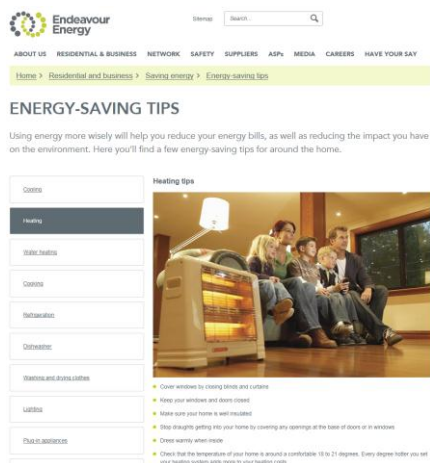
3.1.5 IMPLEMENTATION COSTS

Expenditure claim in 2015/16 financial year is a total of \$11,936; \$5,654 OPEX and \$6,282 CAPEX covering the following costs:

- Development of the hot water, pool pump and cooking calculators by an external IT supplier, and
- Copywriter to perform a rewrite of the additional webpages' content and rebrand the three energy usage calculators.

3.1.6 RESULTS

The webpages including the energy usage calculators for hot water and pool pump consumption was developed and launched on the Endeavour Energy corporate website. The new cooking calculator allows customers to compare the costs of cooking with different types of cooktops and fuels.



The DRMS was not modified, as had originally been planned for this project, due to no active demand management projects and no planned customer recruitment required for demand management projects in 2015/16. As there was no DM programs being offered to customers, this has been deferred until a new DM program is operational that utilises the DRMS, as the webpage form requirements may change later depending on the type of DM program offered. The savings by not implementing this component can be included in a future DM program that will seek to deliver this functionality as part of the requirements of that project.

3.2 RIPPLE CONTROL DEVELOPMENT

Endeavour Energy has been using the Audio Frequency Injection Control (AFIC) load control system injecting a high frequency signal through the power lines to manage primarily hot water load. The existing DECABIT and K22 protocols used in the current systems are limited to on/off signals, and a small number of channels (~120). These systems are unable to reassign or remotely reprogram receivers. This will become more important in managing future demand management programs with new customer appliances such as energy storage and electric vehicle charging. The other key issue that needs to be addressed with AFIC is the ability for a customer to opt out of an event day or opt out of the demand management program.

This project aims to test a new ripple protocol Swistra that has the ability to send on/off commands, AS4755 commands, reprogram, and has a theoretical maximum number of 16 million addresses.

3.2.1 NATURE AND SCOPE

Project scope includes:

- Address the recommendation out of the Rooty Hill CoolSaver program for individually addressable DRED devices. The existing ripple protocols do not allow for individual addressable devices.
- Validate the functionality available with the Swistra ripple protocol for Demand Management (DM), and control of additional loads (i.e. Electric Vehicles).
- Develop the Swistra mapping which could be applied for the wider Endeavour Energy network for DM, and cater for the future control of electric storage and vehicles.

3.2.2 AIMS AND EXPECTATIONS

Ripple control is a relatively simple solution as the signalling and the medium are controlled by the DNSP, however to cater for all current and future load groups, a large number of channels are required.

Swistra has a layered addressing structure, allowing relay addresses to include specific geographical network information, such as feeder, distribution substation, tariff group etc. This allows for sections of the network to be targeted specifically for demand reduction as opposed to the entire Zone being reduced.

Swistra allows controlled load relays to be reprogrammed remotely over the ripple to respond to different signals. Customers requesting to move from the controlled load 1 tariff to controlled load 2 would not require a site visit from a metering technician to replace the relay, but would be moved from the controlled load 1 group to a controlled load 2 group in the backend through a remote terminal. This would save the cost of deploying a metering technician, and the cost of a new relay.

3.2.3 PROJECT JUSTIFICATION

Swistra provides a viable solution for the operation of all AS4755 compliant devices including EVs, as the existing ripple protocols limits the extent at which AS4755 devices can be controlled. Swistra will allow more targeted demand management from a feeder level, where the practice for reducing load on AS4755 compliant air conditioners can be implemented on specific feeders with capacity limitation issues rather than the zone substation as a whole.

3.2.4 IMPLEMENTATION PLAN

Development and testing works of the controller was to be conducted over 2015/16. A number of Swistra ready relays and AS4755 DREDs will be received from the supplier to test both in the lab, and on the field.

The deployment strategy of Swistra relays may include providing to ASPs who will perform the installation and metering work on new residences in Edmondson Park with the Swistra relay in the place of the existing relays which we will operate on a Swistra channel. Deployment of AS4755 DREDs will be

more targeted; however this strategy will be looked at more closely upon successful testing of the DREDs in the lab, and successfully logging the switching out in the field.

3.2.5 IMPLEMENTATION COSTS

Swistra Development and testing has an estimated cost of \$45,500 funded under DMIA.

Expenditure claim in 2015/16 financial year is a total of \$18,699 CAPEX.

3.2.6 RESULTS

Results will be reported after the conclusion of the trial in 2016/17.

4.0 STATEMENT

Endeavour Energy confirms the funding of the projects contained in this report are not:

- a. recoverable under any other jurisdictional incentive scheme,
- b. recoverable under any other state or Commonwealth government scheme, and
- c. included in the forecast CAPEX or OPEX approved in the AER's distribution determination for the next regulatory control period, or under any other incentive scheme in that determination (such as the D-factor scheme for NSW).