6. DEMAND MANAGEMENT INCENTIVE ALLOWANCE

Requirement 6.1

Identify each demand management project or program for which ActewAGL seeks approval.

Response

ActewAGL Distribution will be seeking approval for one demand management project in FY2016/17.

Requirement 6.2

For each demand management project or program identified in the response to paragraph 6.1:

(a) explain:
- I. how it complies with the Demand Management Innovation Allowance criteria detailed at section 3.1.3 of the demand management incentive scheme,·
- II. its nature and scope;
- III. its aims and expected outcomes;
- IV. the process by which it was selected, including its business case and consideration of any alternatives;
- V. how it was/is to be implemented;
- VI. its implementation costs; and
- VII. any identifiable benefits that have arisen from it, including any off peak or peak demand reductions;

(b) confirm that its associated costs are not:
- I. recoverable under any other jurisdictional incentive scheme;
- II. recoverable under any other Commonwealth or State Government scheme; and
- III. 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:

(c) state the total amount of the Demand Management Innovation Allowance spent in the Relevant Regulatory Year and how this amount has been calculated.

Response

a)

I) The project complies with the DMIA criteria as follows:
1) *Criteria 1: The project assesses the impact on network load from customer and network management of battery storage distributed at a residential level. The project aims to quantify the shift in demand that can be obtained through the use of domestic batteries.*
2) *Criteria 2: This is a broad based demand management project that targets domestic consumers.*
3) *Criteria 3: This project will explore potentially efficient demand management through the use of distributed storage at a domestic scale.*
4) *Criteria 4: This project is non-tariff based.*
5) *Criteria 5: AAD expenditure for this project is not recoverable under any other jurisdictional incentive scheme, state or Australian Government scheme, nor through any other part of the distribution determination for the current regulatory control period.*
6) *Criteria 6: Expenditure on this project is capex.*

II) The trial involves the installation of 16 Panasonic storage units in general public premises totalling 128kWh of available storage. Although effects of this storage will be seen on the LV level of the network this is a relatively insignificant amount of storage when observed from a distribution scale.

III) Aims and expected outcomes of the trial are as follows:
1) *Test functions and capabilities of the Panasonic battery storage unit*
2) *Test functions and capabilities of the Panasonic DRMS software*
3) *Develop control regimes for the identified functions of battery storage unit in response to identified network conditions:*
   (i) Network voltage regulation

(ii) Real and Reactive power injection

(iii) Tariff based load management

(iv) available reticulation, feeder and zone capacity

4) Installation of appropriate smart meters to provide sufficient visibility at the customer connection level

5) Investigate how AAD's operation of the battery storage units impacts the customer's energy usage and their energy billing. Identify whether it is beneficial, both financially and practically, for a customer to allow AAD control of their battery storage and what incentive is appropriate.

6) Investigate feasibility of metering at LV distribution substation level

7) Investigate ADMS load forecasting capabilities and options to use these forecasts for battery control

8) Engage with Reposit, Panasonic and others to identify possible control solutions

9) Develop project path relevant to the ACT NextGen program

10) Fact Finding/liaison meeting with the ACT Government and other stakeholders in the project schedule.

IV) As the project is an investigative project to determine the effect of new technology on our network the alternative was to simply not do the project, but then there would have been no associated learning. There is a strong push at the local government level for higher storage penetration within our network area, and retailers are promoting storage products at subsidised prices. This will lead to increasing penetration and to be prepared for this it is necessary that AAD carry out studies to learn how the storage systems will and can affect the network.

V) The project is to be implemented through a collaborative effort with Panasonic and ActewAGL Retail.

VI) Costs of the project are $59,356 in 14/15, $37,568 in 15/16 and $55,871 in 16/17.

VII) The technical phase of the project concluded in 16/17. In addition to the learning from the project during this phase AAD had control of up to approximately 30kW of dispatchable load/supply with capacity of up to approximately 128kWh, depending on battery state of charge at the time.

b)

I) These costs are not recoverable under any other jurisdictional incentive scheme.

II) These costs are not recoverable under any other Commonwealth or State Government incentive scheme.

III) AAD detailed this project within its 2014/19 regulatory proposal, under section 6.12.3.4 "Battery Storage Trial". Within this section it states that "ActewAGL Distribution proposes to fund this new initiative out of the DMIA for the 2015-19 regulatory period."

c) The total amount of the Demand Management Innovation Allowance spent in the 14/15 financial year was $59,356, in the 15/16 financial year was $37,568 and in the 16/17 financial year was $55,871. These costs are the sum of all costs for those time periods for the Panasonic Battery Trial including equipment costs, installation costs, costs associated with the communication platform to remotely operate and manage the batteries, and incentive payments to home owners.

Requirement 6.3

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.

Note: Information provided in response to paragraph 6 of Schedule 1 to this Notice will constitute the provision of an annual report for the purposes of paragraph 3.1.4.1of the Demand Management Incentive Scheme applying to ActewAGL (as set out in the 2014-19 Distribution Determination).

Response

To date the batteries for use during the Panasonic Battery Trial have been successfully installed and the agreements with home owners have been put in place to allow network access to the batteries for monitoring and testing purposes. The communication platform is installed and fully operational allowing two way communication with individual battery systems. Network performance trials have demonstrated that the Panasonic battery storage unit was able to operate to provide benefits to householders as well as responding to network commands issued through Panasonic DRMS software. Battery operations could be programmed in advance but batteries were not responding autonomously to network conditions. It was possible to forecast approximate battery charge state by looking at historical data.

The DRMS interface allowed for control of individual batteries or groups of batteries. AAD operation of batteries had either no impact or a detrimental impact on customer energy billing depending on the particular tariffs applicable to the customer and it can be seen that incentives adjusted to individual tariffs are appropriate to compensate AAD customers for AAD control of batteries.
ADMS load forecasting capabilities have not yet been fully realised but other projects are in train to realise that capability. Development of a project path relevant to the ACT NextGen Program in collaboration with possible suppliers of control systems is underway as a stand-alone project.