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Demand Management Incentive Scheme Compliance Report – 2019

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1. Introduction

The AER published a new Demand Management Incentive Scheme (DMIS) in 2017 to encourage distribution businesses to adopt lower-cost non-network solutions, rather than investing solely in network solutions. The scheme provides incentive payments up to 50% of expected costs on efficient demand management projects. United Energy (UE) applied for early application of the scheme from 2019 and this was approved by the AER. This compliance report has been prepared in accordance with the requirements in section 2.4 of the scheme.

In 2019, UE identified and committed to one eligible project under the new DMIS. This project was for application of a Demand Management Program (known as 'Summer Saver') to defer capital expenditure on UE's Distribution System Augmentation Program (known as 'DSS'). The DSS is undertaken to augment overloaded distribution substations and low-voltage circuits to maintain reliability of supply. Summer Saver is implemented in place of the DSS to achieve the same outcomes for customers, but at a lower cost than the DSS.

UE has been deploying the Summer Saver demand management program since summer 2013/14. Originally conceived as a DMIA project, it is now fully transitioned to a business-as-usual program funded from UE operational expenditure. The sites targeted for Summer Saver are economically re-evaluated by UE each year from the list of DSS sites.

This year, as part of the new DMIS requirements, UE opened up its entire augmentation and demand management programs (including the DSS sites) to the broader market for consultation, by undertaking a request-for-proposals from third-party non-network providers to provide lower-cost alternative solutions to resolve the identified network constraints. In response to this consultation, UE received one third-party proposal for a demand response program. Although the solution was evaluated to be economic and technically viable across some of the identified DSS network-constraint sites, the Third Party solution was higher cost than the Summer Saver demand management solution, resulting in a lower net present value for each of these sites. We presented Third Party with the detail of the economic evaluation findings.

The Summer Saver demand management program was identified as the preferred least-cost solution to address the constraints and was deployed to 191 network-constraint sites in 2019 as an alternative to DSS augmentation for summer 2019/20. The total approved cost of the Summer Saver program for these 191 sites for summer 2019/20 was $333,096. Based on the DMIS, UE is eligible for the full 50% incentive of the demand management costs under the scheme of $333,096 * 50% = $166,548.

As per section 2.4 (3) of the scheme this compliance report includes two parts:

- Part A includes information on committed projects.
- Part B contains information on projects that the distributor has identified as eligible projects.

2. Part A - Committed Projects

UE identified and committed to one eligible project, the Summer Saver Program, under the new DMIS scheme in 2019. This section outlines the required compliance information for this program for calendar year (CY) 2019 as required under section 2.4(4) of the DMIS.

The Summer Saver Program was deployed to 191 network constrained sites in 2019 for the 2019/20 summer with three demand management events called within CY 2019.[1] A summary the volume of demand management delivered for each event, as required under DMIS clause 2.4(4)(a), is shown in the table below:

Table 1 2019/20 Summer Saver Event Summary (CY 19)

	Event 1	Event 2	Event 3
Date of event	18/12/2019	20/12/2019	30/12/2019
Average Demand Reduction per Hour (kW)	2.4	2.3	2.5
Total Demand Reduction (MW)	2.8	2.5	3.1
Number of Participants	1,178	1,142	1,241
Reward per Participants	$52	$48	$54

The benefits of the program for CY 2019, as required under DMIS clause 2.4(4)(b), are:

- Avoiding customer outages for 19,452 customers in the affected areas.
- An estimated expected unserved energy reduction of $646k using the value of customer reliability (VCR) across the three CY 19 events.[2]
- Deferral of $11.6M of DSS augmentation capex.

As required under DMIS clause 2.4(4)(c), the total financial incentive that the distributor has assessed that it is able to claim for this committed project in accordance with clauses 2.2, 2.3 and 2.5 of this scheme, for the 2019 regulatory year is calculated as follows:

- Expected total value of the demand management costs is $333.1k as detailed in Part B - [$PV\ DMcost$].
- Expected net economic benefit of the project is $528k for 2019/20 as detailed in Part B - [NPV].
- Since 50% * [$PV\ DMcost$] ≤ [NPV], United Energy are eligible for the full 50% incentive of the demand management costs of $333,096 * 50% = $166,548 under the scheme.

[1] United Energy also incurred 1 additional demand management event (as at 20 Feb 2020) in 2020 which will be reported under next year's DMIS compliance report.
[2] Based on a $2019 VCR of $42.7 per kWh.

3. Part B - Eligible Projects

The Summer Saver program was determined as an 'efficient non-network' option relating to demand management for the DSS augmentation program as required under the scheme. UE has met all the minimum project evaluation and eligibility criteria[3] for an efficient project under the scheme, including a request for quotes via its Demand Side Engagement Register and undertaking a net present value (NPV) economic benefit assessment (or a consumer benefit assessment). The request for proposal has been attached in Appendix 1.

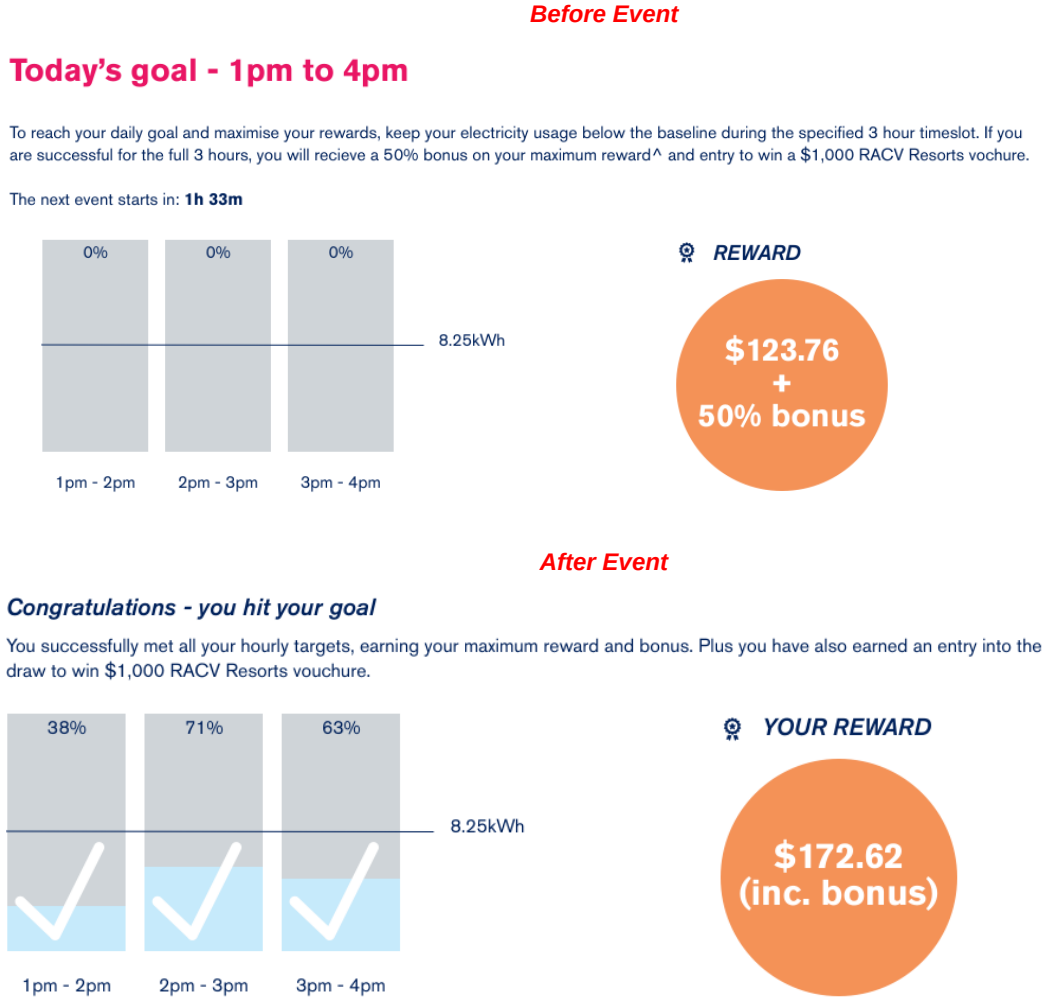
3.1 Proposals Overview

UE received one third-party proposal for a demand response program for addressing the distribution substations and low-voltage circuits constraints in the DSS. A summary of the Summer Saver and third- party program proposals are listed below.

Summer Saver Program

UE has been undertaking Summer Saver since summer 2013/14. Summer Saver targets the constrained DSS areas with highly utilised distribution transformers and low-voltage circuits that are at an elevated risk of overload outages during summer to economically defer network augmentation.

Figure 1 Summer Saver Program App screenshots



[3] As per section 2.2 and 2.2.1 of the DMIS.

Once registered, participants are requested to voluntarily reduce their power usage on a small number of hot weather 'event days' which typically were on weekdays over the summer period. Customers are notified at least two days in advance of an 'event day' so they could plan how to reduce their energy consumption. Customers who lowered their energy consumption were rewarded if they successfully lowered their energy consumption for the event period. The Summer Saver Program is utilising the capabilities of advanced metering infrastructure to encourage customer participation and engagement, whilst lowering implementation costs.

Third Party Proposal

A third party technology company offered a non-network residential behavioral demand management cloud platform and application as an alternative to the Summer Saver program.

The solution included the following features:

- Web and mobile utility customer portals,
- Digital customer web and mobile enrollment,
- Demand response management system,
- Digital points and rewards engine,
- Year round household energy challenges,
- Pre-event tips and alerts,
- Digital email engagement,
- Customer relationship management portal and customer reporting.

3.2 Expected Demand Management Proposal Costs

A summary of the costing estimate and customer participation assumptions underpinning the 2019/20 Summer Saver program proposal are summarised in the table below. The customer payouts have been estimated based on the previous several years' experience including the estimated programs costs and customer participation rates. The costing is also based on incurring customer payments for 4 summer saver demand management events (the historical average).

Table 2 Summer Saver costing and customer participation assumptions

Item	Value
Expected Take Up Rate	15.0%
Payment per kVA	$7.50
Hours per event	3
Event success rate	75%
Reduction per customer (kW)	1.3
Events per Summer	4
Cost Per Mail Out	$1.46
Number of Mail Outs	3

The total customer base to be targeted over the 191 economic SSP sites is 19,452 customers. The summary of the estimated costs for the entire program are as follows.

Table 3 2019/20 Summer Saver Cost Estimate for 191 sites

Item	Total Cost
Total Cost per year	$ 333,096

Being an internal UE-led demand management proposal, to meet the committed project requirements, a declaration was required to approve the proposal and to demonstrate that its cost estimation was reasonable.[4] This declaration was provided by United Energy, as per Appendix 2.A comparison of the costs of the Summer Saver and Third Party programs across the 191 sites are as per the table below. Note that the third party proposal involved an initial setup fee that was only required in year 1.

Table 4 2019/20 Expected cost of proposals for 191 sites

Item	Summer Saver	Third Party (year 1)	Third Party (year 2+)
Total Cost per year	$ 333,096	$593,336	$467,936
Cost per customer	$118	$210	$164
Demand Reduction delivered (kVA)	2,754	1,732	1,732
Cost per kVA delivered	$121	$343	$270

3.3 Net Market Benefit Assessment

Four options were assessed to address the identified need for the DSS sites as below:

- Do Nothing – Status quo (reference case)
- Option 1 – Distribution Substation or LV circuit Augmentation (DSS)
- Option 2 – Summer Saver Demand Management Program
- Option 3 – Third Party Demand Management Program.

The NPV assessment of the net economic benefits is presented relative to the 'do-nothing' scenario over a 20 year assessment period (to enable a comparison with the capital solution) using a real discount rate of 3.96%. The benefits are based on the reduced expected unserved energy, valued at the value of customer reliability[5], from avoiding outages in the peak loading periods. A summary of the net economic benefits of each option for the 191 sites are summarised in the table below.

[4] Australian Energy Regulator, Demand Management Incentive Scheme – Electricity network service providers, December 17, cl. 2.2.2(1)(b).
[5] Based on a $2019 VCR of $42.7 per kWh.

Table 5 Summary of net economic benefits ($k, 2019)

Option	Description	Present value costs	Present value benefits	Net economic benefits	Rank
Do-nothing	Maintain the status-quo	-	-	$0	4
1	Distribution Substation and LV circuit Augmentation (DSS)	$11,630	$18,335	$6,705	2
2	Summer Saver Demand Management	$4,543	$11,742	$7,199	1
3	Third Party Demand Management	$6,503	$9,056	$2,554	3

As shown above, the preferred option (which maximises the net economic benefits) was option 2 – undertaking the Summer Saver program. Due to its higher costs per customer, the NPV and present value ratio of the third party solution was less than the Summer Saver program across all sites.

The first year's (summer 2019/20) Summer Saver costs and benefits, for the sites is also shown below. This demonstrates that UE will be eligible for the maximum incentive under the scheme since the net customer benefit exceeds greater than 50% of the expected demand management cost for the committed 2019/20 summer.

Table 6 Summary of Summer Saver 2019/20 summer costs benefits ($k, 2019)

Option	Description	Costs	Benefits	Net benefit
2	Summer Saver Program	-$333	$861	$528

4. Attachments

4.1 Appendix 1 – Request for Proposals

4.2 Appendix 2 – Summer Saver Cost Declaration