Jemena Electricity Networks (Vic) Ltd

Response to the Annual Regulatory Information Notice issued 3 February 2016 for the 2020 Regulatory Year

Public

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6. DEMAND MANAGEMENT INNOVATION ALLOWANCE

In this section, JEN responds to section 6 of Schedule 1 to the RIN, which relates to the Demand Management Innovation Allowance (**DMIA**).

Paragraph 6.1 of Schedule 1 to the RIN requires JEN to identify each demand management project or program for which JEN seeks approval.

JEN seeks approval for three projects for the Relevant Regulatory Year, which are outlined below.

6.1 BEHAVIOURAL DEMAND RESPONSE TRIAL (RESIDENTIAL) IN COLLABORATION WITH ENERGY RETAILER (ENERGY AUSTRALIA)

6.1.1 COMPLIANCE

Paragraph 6.2(a)(i) of Schedule 1 to the RIN requires JEN to explain how JEN's initiative complies with the DMIA criteria set out in section 3.1.3 of the Demand Management Incentive Scheme (**DMIS**).

This project is an Australian-first trial to explore how retailers and a distributors can work together to deliver a demand response (**DR**) program, with the partnership expected to result in a reduction in the program costs and duplication of DR programs for customers.

The project also has the potential to explore whether future network augmentation capex could be deferred or avoided to mitigate supply risks on capacity constrained feeders.

JEN considers that works undertaken in the 2020 Regulatory Year comply with the DMIA criteria, set out in section 3.1.3 of the DMIS, in the following ways:

1. This trial will help shape the design of future demand management trials for peak demand management projects which aim to address specific network constraints by reducing demand on the network at the location and time of the constraint.
2. The trial is a non-tariff based projects and the claimed costs are not recovered under any other incentive scheme.
3. Costs recovered under the DMIS are not recoverable under any other jurisdictional incentive scheme.
4. The expenditure for this study is operating expenditure.

6.1.2 NATURE AND SCOPE

Paragraph 6.2(a)(ii) of Schedule 1 to the RIN requires JEN to explain the nature and scope of the initiative.

The nature and scope of the initiative is a trial to explore how retailers and distributors can work together to deliver a DR program, and to demonstrate value in partnerships through:

- Leveraging complementary capabilities
- Reducing program costs
- Reducing duplication of DR programs for customers

Trial Scope:

- Energy Australia and Jemena combined efforts
- 96 customers participated
- North and west Melbourne
- Four DR events called
- 2 customer surveys completed.

6.1.3 AIMS AND EXPECTATIONS

Paragraph 6.2(a)(iii) of Schedule 1 to the RIN requires JEN to explain the aims and expectations of the initiative.

The key objectives of this study were:

- Demonstrate value stacking of network and market incentives to reward customers who reduce energy consumption in demand response events
- Improve the energy literacy of demand response customers
- Generate insights to inform future demand response programs and non-network solutions
- Contribute to industry wide knowledge sharing.

6.1.4 SELECTION PROCESS

Paragraph 6.2(a)(iv) of Schedule 1 to the RIN requires JEN to explain the process by which the project was selected, including its business case and consideration of any alternatives.

JEN has undertaken a number of trials in the demand management area, including:

- Residential demand response (behavioural) program ('Power Changers')
- Commercial & Industrial customer demand response
- Airconditioning load control
- Voltage reduction.

Having undertaken these trials, JEN identified a need to understand the impact on cost and efficacy if demand response programs if undertaken jointly with energy retailers, aggregators or DR service providers. This trial was selected as it provided an opportunity to work collaboratively with an energy retailer (Energy Australia).

6.1.5 IMPLEMENTATION

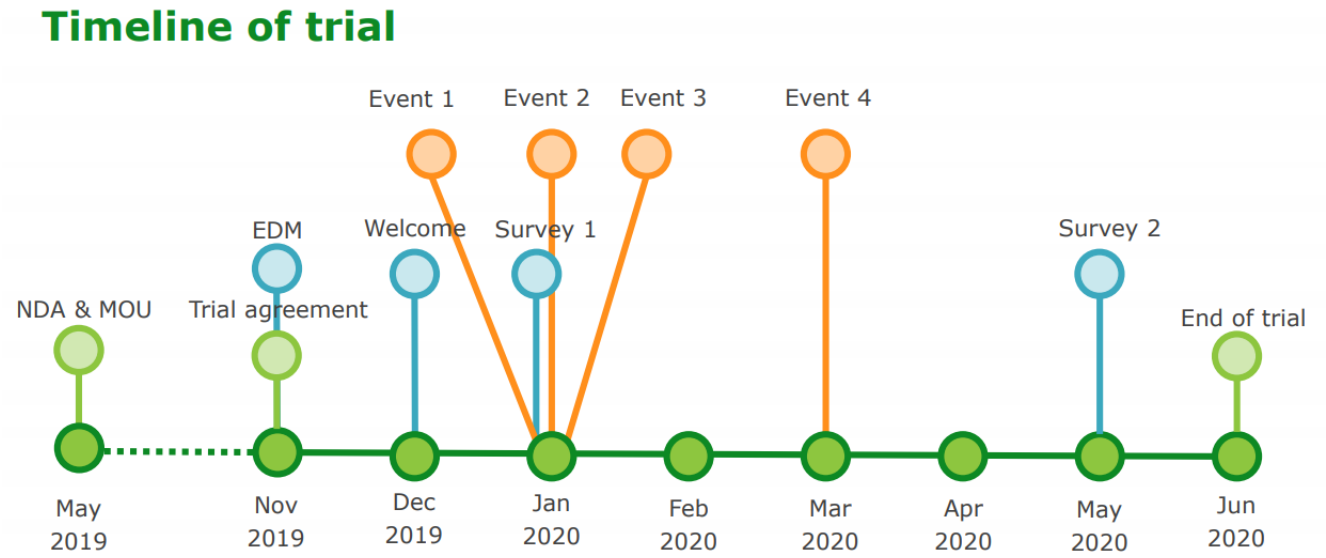
Paragraph 6.2(a)(v) of Schedule 1 to the RIN requires JEN to explain how JEN's initiative was implemented.

Energy Australia customers were the target audience for this trial:

- in identified Jemena feeder zones (inner north/west feeders)
- with a smart meter

- must not have life support at the property
- with a mobile phone number.

Total four DR events were called as below:



Results:

- Customer engagement (participants opt in per event/overall signed up) : 89% (very high participation)
- Study on collaboratively calling events (post-program): completed
- Cost efficiency of program ($/kWh): $5.61 per kWh
- Average load reduction (DR) achieved : 0.49 kW per customer

6.1.6 IMPLEMENTATION COSTS

Paragraph 6.2(a)(vi) of Schedule 1 to the RIN requires JEN to explain the implementation costs of JEN's project.

The actual expenditure for this project is $25,834.

6.1.7 BENEFITS

Paragraph 6.2(a)(vii) of Schedule 1 to the RIN requires JEN to explain any identifiable benefits that have arisen from JEN's project, including any off peak or peak demand reduction.

This trial is another positive step in JEN's journey to develop demand management capabilities which enable deployment of non-network solutions in response to network constraints. Any benefits such as cost efficient and effective demand reduction may be realised in future years.

6.1.8 ASSOCIATED COSTS

Paragraph 6.2(b) of Schedule 1 to the RIN requires JEN to state whether the costs associated with JEN's initiative have been recovered under other schemes.

The associated costs claimed under DMIA for the project have not been:

- Recovered under any other jurisdictional incentive scheme,
- recovered under any other Commonwealth or State Government scheme
- included in the forecast capital or operating expenditure approved in the 2016-20 Distribution Determination or recovered under any other incentive scheme in that determination.

6.1.9 TOTAL AMOUNT OF DMIA SPENT AND HOW THIS AMOUNT WAS CALCULATED

Paragraph 6.2(c) of Schedule 1 to the RIN requires JEN to state the total amount of the DMIA spent in the Relevant Regulatory Year and how it was calculated.

The actual expenditure for this project is $25,834.

6.2 C&I CUSTOMER DEMAND RESPONSE TRIAL (TESTING DEMAND RESPONSE SERVICE PROVIDER MARKET RESPONSE)

6.2.1 COMPLIANCE

Paragraph 6.2(a)(i) of Schedule 1 to the RIN requires JEN to explain how JEN's initiative complies with the DMIA criteria set out in section 3.1.3 of the Demand Management Incentive Scheme (**DMIS**).

Jemena has had limited opportunities to test the capability of commercial customers to provide support (in the form of demand reduction) during periods of network stress. Since Jemena's Flemington DR Trial over summer 2017-18 there has been an increased demand management activity in the market with some retailers offering DR products to commercial (and some residential) customers. The management of direct contracts with residential customers for the provision of DR is relatively costly and resource intensive, and may also be less likely to achieve significant demand reductions due to a low value proposition for customers.

Jemena therefore undertook a feasibility exercise to develop internal capability/build experience in managing a commercial demand response in partnership with aggregators, prior to the introduction of wholesale DR market rule changes.

The project also had the potential to explore whether future network augmentation capex could be deferred or avoided to mitigate supply risks on capacity constrained feeders.

JEN considers that works undertaken in the 2020 Regulatory Year comply with the DMIA criteria, set out in section 3.1.3 of the DMIS, in the following ways:

- This trial will help design future demand management trials for peak demand management projects such as known internally as 'Power Changers 2.0'—which aim to address specific network constraints by reducing demand on the network at the location and time of the constraint.
- The trial is a non-tariff based projects and the claimed costs are not recovered under any other incentive scheme.
- Costs recovered under the DMIS are not recoverable under any other jurisdictional incentive scheme.
- The expenditure for this study is operating expenditure.

6.2.2 NATURE AND SCOPE

Paragraph 6.2(a)(ii) of Schedule 1 to the RIN requires JEN to explain the nature and scope of the initiative.

Three potential DR aggregators were contacted to establish the trial.

Jemena provided a list of areas with network limitations and asked the DR aggregators to offer DR services to customers in the identified locations.

6.2.3 AIMS AND EXPECTATIONS

Paragraph 6.2(a)(iii) of Schedule 1 to the RIN requires JEN to explain the aims and expectations of the initiative.

The key objectives of this study were to further explore:

- Whether non-network options can be delivered efficiently and cost-effectively
- The effectiveness of energy retailers/aggregators “value stacking” demand response benefits to attract DR participants
- The reliability of DR to ease constraints when dispatched

6.2.4 SELECTION PROCESS

Paragraph 6.2(a)(iv) of Schedule 1 to the RIN requires JEN to explain the process by which the project was selected, including its business case and consideration of any alternatives.

JEN has undertaken a number of trials in the demand management area, including:

- Residential demand response (behavioural) program (‘Power Changers’)
- Commercial & Industrial customer demand response
- Airconditioning load control
- Voltage reduction.

Having undertaken these trials, JEN identified a need to understand the impact on cost and efficacy of demand response programs if undertaken jointly with energy retailers, aggregators or DR service providers.

6.2.5 IMPLEMENTATION

Paragraph 6.2(a)(v) of Schedule 1 to the RIN requires JEN to explain how JEN’s initiative was implemented.

Term sheets were developed following negotiations with some energy retailers/aggregators, however the service providers were not able to identify customers with DR capabilities in the target locations due to very limited and specific reach. This tested the current market and provided useful insight.

6.2.6 IMPLEMENTATION COSTS

Paragraph 6.2(a)(vi) of Schedule 1 to the RIN requires JEN to explain the implementation costs of JEN’s project.

The actual expenditure for this project is $12,606.

6.2.7 BENEFITS

Paragraph 6.2(a)(vii) of Schedule 1 to the RIN requires JEN to explain any identifiable benefits that have arisen from JEN's project, including any off peak or peak demand reduction.

This study is another positive step in JEN's journey to develop demand management capabilities which enable deployment of non-network solutions in response to network constraints. Any benefits such as cost efficient and effective DR may be realised in future years.

6.2.8 ASSOCIATED COSTS

Paragraph 6.2(b) of Schedule 1 to the RIN requires JEN to state whether the costs associated with JEN's initiative have been recovered under other schemes.

The associated costs claimed under DMIA for the project have not been:

- recovered under any other jurisdictional incentive scheme,
- recovered under any other Commonwealth or State Government scheme
- included in the forecast capital or operating expenditure approved in the 2016-20 Distribution Determination or recovered under any other incentive scheme in that determination.

6.2.9 TOTAL AMOUNT OF DMIA SPENT AND HOW THIS AMOUNT WAS CALCULATED

Paragraph 6.2(c) of Schedule 1 to the RIN requires JEN to state the total amount of the DMIA spent in the Relevant Regulatory Year and how it was calculated.

The actual expenditure for this project is $12,606.

6.3 DYNAMIC ELECTRIC VEHICLE CHARGING TRIAL (PROJECT ESTABLISHMENT)

6.3.1 COMPLIANCE

Paragraph 6.2(a)(i) of Schedule 1 to the RIN requires JEN to explain how JEN's initiative complies with the DMIA criteria set out in section 3.1.3 of the Demand Management Incentive Scheme (**DMIS**).

The purpose of the Project is to undertake a residential EV managed charging trial to understand the impacts of EVs on the electricity system, understand consumer willingness for third party control and to demonstrate the role that Distribution Network Service Providers (**DNSPs**) have in managing residential EV charging.

The Project is a collaboration between five DNSPs (comprising JEN, AusNet Services, United Energy, TasNetworks and EvoEnergy) and JET Charge, an EV charging installer. JEN leading the consortium.

A project proposal with a funding application to the Australian Renewable Energy Agency (**ARENA**) was prepared to develop internal capability/build experience in managing electric vehicle uptake in the coming years.

The project also has the potential to improve the efficiency of Jemena's future network investments through the deferral or avoidance of network augmentation capex and to mitigate supply risks on capacity constrained feeders.

JEN considers that works undertaken in the 2020 Regulatory Year comply with the DMIA criteria, set out in section 3.1.3 of the DMIS, in the following ways:

- This trial will help design future demand management trials for peak demand management projects such as known internally as 'Power Changers 2.0'—which aim to address specific network constraints by reducing demand on the network at the location and time of the constraint.
- The trial is a non-tariff based projects and the claimed costs are not recovered under any other incentive scheme.
- Costs recovered under the DMIS are not recoverable under any other jurisdictional incentive scheme.
- The expenditure claimed for this project is operating expenditure.

6.3.2 NATURE AND SCOPE

Paragraph 6.2(a)(ii) of Schedule 1 to the RIN requires JEN to explain the nature and scope of the initiative.

Project plan with required justifications and documents were submitted to ARENA for Expression of Interest and final funding application processes. Jemena also established a consortium with five external partners to lead the project.

6.3.3 AIMS AND EXPECTATIONS

Paragraph 6.2(a)(iii) of Schedule 1 to the RIN requires JEN to explain the aims and expectations of the initiative.

The key objectives of this study are to prove the concept of managing EV charging load dynamically with a real-time assessment of available network capacity in order to accommodate more EVs without network augmentation.

The Project will deliver the following:

- estimate the impact of EV charging on future network infrastructure investment i.e. calculating the value of the network support
- obtain customer insights and preferences on multiple charge management initiatives and incentives
- obtain charging data for 176 privately owned EVs with and without intervention
- demonstration of control boxes being used successfully to manage EV charging of Tesla cars, and smart chargers to manage other makes of EV
- demonstration of an aggregator as an intermediary between DNSPs and the charge points to orchestrate EV charging.

6.3.4 SELECTION PROCESS

Paragraph 6.2(a)(iv) of Schedule 1 to the RIN requires JEN to explain the process by which the project was selected, including its business case and consideration of any alternatives.

JEN has undertaken a number of trials in the demand management area, including:

- Residential demand response (behavioural) program ('Power Changers')
- Commercial & Industrial customer demand response
- Airconditioning load control
- Voltage reduction.

Having undertaken these trials, JEN identified a need to understand the future impact of electric vehicle charging especially when network is under stress and how managed charging can avoid inefficient network augmentation.

6.3.5 IMPLEMENTATION

Paragraph 6.2(a)(v) of Schedule 1 to the RIN requires JEN to explain how JEN's initiative was implemented.

Details project plans were developed and submitted to ARENA for funding.

Results:

ARENA approved $1.6m funding for this trial in January 2021.

6.3.6 IMPLEMENTATION COSTS

Paragraph 6.2(a)(vi) of Schedule 1 to the RIN requires JEN to explain the implementation costs of JEN's project.

The actual expenditure for this project is $29,415 and reflects the amount paid to an external contractor to support establishing the project in 2020. Note this upfront project establishment and funding application effort was not included in the funding support from ARENA.

6.3.7 BENEFITS

Paragraph 6.2(a)(vii) of Schedule 1 to the RIN requires JEN to explain any identifiable benefits that have arisen from JEN's project, including any off peak or peak demand reduction.

This project is another positive step in JEN's journey to develop demand management capabilities which enable deployment of non-network solutions in response to network constraints. Any benefits such as cost efficient and effective demand reduction may be realised in future years.

6.3.8 ASSOCIATED COSTS

Paragraph 6.2(b) of Schedule 1 to the RIN requires JEN to state whether the costs associated with JEN's initiative have been recovered under other schemes.

The associated costs claimed under DMIA for the project have not been:

- recovered under any other jurisdictional incentive scheme,
- recovered under any other Commonwealth or State Government scheme or ARENA funding
- included in the forecast capital or operating expenditure approved in the 2016-20 Distribution Determination or recovered under any other incentive scheme in that determination.

6.3.9 TOTAL AMOUNT OF DMIA SPENT AND HOW THIS AMOUNT WAS CALCULATED

Paragraph 6.2(c) of Schedule 1 to the RIN requires JEN to state the total amount of the DMIA spent in the Relevant Regulatory Year and how it was calculated.

The actual expenditure for this project is $29,415 and reflects the amount paid to an external contractor to support establish the project in 2020.