

## 7. DEMAND MANAGEMENT INNOVATION ALLOWANCE (DMIA)

113. In this section, JEN responds to section 4 of Schedule 1 to the RIN for the 2014 Relevant Regulatory Year.

### 7.1 IDENTIFICATION OF DEMAND MANAGEMENT PROJECTS OR PROGRAMS

114. Section 7.1 of Schedule 1 to the RIN requires JEN to identify each demand management project or program which JEN seeks approval of.
115. JEN seeks approval for two projects for the 2014 Regulatory Year;

#### 1. Demand Response Field Trial – Phase 1

JEN has initiated a Demand Response Field Trial (**DRFT**) project to develop our understanding of the benefits, costs, pricing / commercial arrangements and operational structures of customer controlled demand response (**DR**) programs. Phase 1 of the trial includes model development and desktop analysis and was completed in January 2015.

#### 2. Impact of the Energy Portal<sup>9</sup> on Customers' Consumption Habits

Following on from the release of the Energy Portal to Jemena customers in June 2012, Jemena undertook an initiative in 2013 and 2014 to understand the impact of the Energy Portal on customers' electricity consumption. JEN seeks approval for costs associated with the continued engagement of a contract analyst in the 2014 Regulatory Year to assess the capabilities of the Energy Portal as a demand management tool and to promote the portal to JEN's customers.

### 7.2 DETAILED INFORMATION – DEMAND RESPONSE FIELD TRIAL, PHASE 1

116. Section 7.2 of Schedule 1 to the RIN requires JEN to provide detailed information for each demand management project or program identified in response to section 7.1 of Schedule 1 to the RIN.

#### 7.2.1 COMPLIANCE

117. Section 7.2(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**).
118. Customer controlled demand response is a demand management solution that may be used for substituting or deferring network augmentation works required for mitigating capacity constraints. Such demand response programs require aggregation of suitable customers and contracting; technology deployment; performance testing; dispatch and operations; and financial settlements. The DNSP would have control over operations and dispatch and have the ability to call a demand response event when the network conditions require a reduction in load – either during times of high network load or during outage conditions.
119. Jemena has initiated a DRFT project in 2014 to develop our understanding of the benefits, costs, pricing / commercial arrangements and operational structures of targeted demand response programmes. Phase 1 of the trial which includes model development and desktop analysis was finalised in January 2015.

<sup>9</sup> or 'JEN Electricity Outlook' as it is branded

120. JEN considers that the activities associated with the Demand Response Field Trial – Phase 1 in the 2014 Regulatory Year complies with DMIA criteria, set out in section 3.1.3 of the DMIS, in the following ways:
- Section 3.1.3-1 – The project is aimed at developing Jemena’s capabilities to reduce peak demand through customer controlled demand response projects, rather than increasing supply capacity through network augmentation.
  - Section 3.1.3-2 – The project is a peak demand management initiative which aims to address specific network constraints by reducing demand on the network at the location and time of the constraint.
  - Section 3.1.3-3 – The project deliverables are to prepare Jemena for various elements of customer controlled demand response programs as an effective and efficient demand management solution.
  - Section 3.1.3-4 – The project is a non-tariff based project and the costs are not recovered under any other incentive scheme.
  - Section 3.1.3-5 – The project cost has not been recovered under other schemes. See 7.2.8 of JEN’s response for more details.
  - Section 3.1.3-6 – The nature of expenditure is operating expenditure.

## 7.2.2 NATURE AND SCOPE

121. Section 7.2(a)(ii) of Schedule 1 to the RIN requires JEN to explain the nature and scope of JEN’s initiative.
122. The scope of work for the Demand Response Field Trial – Phase 1 includes the following key deliverables:

- **DR Benefits Model**

The model has the necessary parameters and structures to evaluate the benefits of applying a DR solution to better manage risk across the network; specifically the ability of DR to mitigate and transfer risk (unserved energy) in two key scenarios of Network asset deferrals and Outage risk transfer. The pricing model described below estimates the costs of building up and operating a DR program for these two scenarios and together with the benefits the model will determine the economic viability of the solution.

- **DR Pricing Model**

The pricing model for a demand response solution includes the relevant pricing points for different classes of customers. The pricing model is developed in a form that Jemena can iterate and use to determine pricing for different customer classifications in future pricing assessment of demand response solutions. The pricing model will be built around each MVA of the load mitigated on a sub transmission line, associated zone substations and / or HV feeder circuits.

- **DR Operating Structures**

The end-to-end operating structures for a typical DR solution includes options for pre- and post-contingency response, notice period, sales, contracting of load, site monitoring installations, dispatch operations, verification and settlements and implementation timeline.

123. JEN has engaged a Demand Response technology provider as a consultant to provide the deliverables in the Phase 1 project scope.

## 7.2.3 AIMS AND EXPECTATIONS

124. Section 7.2(a)(iii) of Schedule 1 to the RIN requires JEN to explain the aims and expectations of JEN’s initiative.

125. The aims and expectations of the Demand Response Field Trial - Phase 1 project are to:
- Understand the benefits, costs and operating structures of DR as a viable demand management solution;
  - Investigate DR for possible future implementation within the Jemena electricity network with the objective of deferring network augmentation works or mitigating network outage risk;
  - Develop Jemena's capabilities in the area so as to facilitate the evaluation and implementation of DR solutions from various market providers, especially in response to Jemena's regulatory investment test (RIT-D) process for large capital projects; and
  - Lay the foundation for the Demand Response Field Trial - Phase 2 project, which is aimed at field trialling the learnings and validating the models developed in Phase 1.

#### 7.2.4 SELECTION PROCESS

126. Section 7.2(a)(iv) of Schedule 1 to the RIN requires JEN to explain the process by which JEN's project was selected, including its business case and consideration of any alternatives.
127. Advances in demand management technologies and approaches represent an opportunity for Jemena to manage and transfer risk in ways that have not previously been possible. By undertaking this project, Jemena intends to develop and refine its approach and strategy on demand management to provide safe, reliable and cost effective solutions to its customers.
128. DR allows Jemena to better manage risk across its network. The economics of doing so and specifically the ability of DR to mitigate and transfer risk (unserved energy) in two key scenarios are investigated; namely network asset deferrals and improving network reliability.
129. Jemena can leverage DR to transfer network risk to customers both before and during outages reducing the overall costs of network operation. Regardless of the asset used to undertake DR (customer side generation, curtailment or storage) effective risk transfer can be achieved through DR. The cost effectiveness of risk transfer is driven by the ability of the available customer base, DR technologies, and business processes with a fast enough reaction time to mitigate the impact of network outages.
130. Any operating and contractual model implemented by Jemena must be structured in such a way as to allow effective management of DR programs that support asset deferral and network reliability. The effective use of DR as a tool to support network reliability is clearly aligned to business as usual activities for network controllers as it requires a high degree of visibility and control. Likewise, utilizing DR for asset deferral can help Jemena achieve the best possible economic outcome for its customers, while maintaining the same level of network reliability. Both scenarios that were investigated conform to the AER's DMIS criteria and are in line with the recommendations from the AEMC's Power of Choice review.

#### 7.2.5 IMPLEMENTATION

131. Section 7.2(a)(v) of Schedule 1 to the RIN requires JEN to explain how JEN's initiative was implemented.
132. The works associated with the Demand Response Field Trial - Phase 1 project that were completed in 2014 have been delivered as follows:
1. **Project Planning:** Identify the aspects of customer controlled demand response that are most relevant for Jemena; seek potential project partners with industry expertise; and develop detailed scope of work, deliverables and timeline with consultant.

2. DR Benefits Model development with identification of key parameters and structures. Case studies undertaken to validate the models.
3. DR Pricing Model development, including a formulation of pricing strategies generally employed by DR aggregators and related sensitivity studies.
4. DR Operational Structures and a documentations of all sub-processes including customer survey, contracting of load, technology deployment, site monitoring installations, dispatch operations, verification and settlements.
5. Reporting and Recommendations: Prepare a technical report documenting the models developed and key parameters / structures relevant for successful implementation of a DR program. Also, develop recommendations for Phase 2 of the project.  
This activity is ongoing and scheduled for completion in January 2015.

#### 7.2.6 IMPLEMENTATION COSTS

133. Section 7.2(a)(vi) of Schedule 1 to the RIN requires JEN to explain the implementation costs of JEN's project.
134. The actual expenditure for the Demand Response Field Trial - Phase 1 project incurred in the 2014 Regulatory Year was \$26,325, as set out in Appendix B - Template 23 (DMIS – DMIA) (Attachment 1-1 of JEN's response). This represents part payment (50%) of the contract engagement, with the remaining payment expected to be made in early 2015.

#### 7.2.7 BENEFITS

135. Section 7.2(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.
136. As the Demand Response Field Trial – Phase 1 project is limited to desktop analysis and modelling, there have been no quantifiable benefits in terms of reduction in peak demand. However, the learnings from Phase 1 will be directly applicable to Phase 2 of the project where a field trial will be conducted with large commercial / industrial customers in the Jemena network. It is expected that there will be identifiable benefits in terms of peak demand reduction during the operation of Phase 2.

#### 7.2.8 ASSOCIATED COSTS

137. Section 7.2(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.
138. The associated costs for the development of the Demand Response Field Trial – Phase 1 have not been:
  - recovered under any other jurisdictional incentive scheme,
  - recovered under any other Commonwealth or State Government scheme, and
  - included in the forecast capital or operating expenditure approved in the 2011-15 Distribution Determination or recovered under any other incentive scheme in that determination.

#### 7.2.9 FORGONE REVENUE ASSUMPTIONS AND / OR ESTIMATES

139. Section 7.2(c) of Schedule 1 to the RIN requires JEN to explain any assumptions and/or estimates used in the calculation of forgone revenue, demonstrating the reasonableness of those assumptions and/or estimates in calculating forgone revenue, including the reasons for JEN's decision to adjust or not to adjust for other factors and the basis for any such adjustments.

140. Phase 1 of the Demand Response Field Trial project is limited to a desktop analysis of DR as a viable DM solution and the development of appropriate models. JEN will field trial DR in Phase 2 of this project and therefore, JEN does not seek to recover forgone revenue resulting from the Demand Response Field Trial - Phase 1 project for the 2014 Regulatory Year.
141. As such, section 7.2(c) of Schedule 1 to the RIN is not applicable.

### 7.3 DETAILED INFORMATION - IMPACT OF THE ENERGY PORTAL ON CUSTOMERS' CONSUMPTION HABITS

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142. Section 7.2 of Schedule 1 to the RIN requires JEN to provide detailed information for each demand management project or program identified in response to section 7.1 of Schedule 1 to the RIN.

#### 7.3.1 OBLIGATIONS OR REQUIREMENTS

143. Section 7.2(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).
144. Expenditure associated with JEN's Energy Portal over three Regulatory Years 2011, 2012 and 2013, was approved by the AER on the basis that the Energy Portal meets the DMIA criteria as set out in section 3.1.3 of the DMIS. An assessment of the capabilities of the Portal as a Demand Management initiative was initiated in 2013 and this effort was concluded in 2014.
145. JEN considers that the continued engagement of a contract analyst in the 2014 Regulatory Year complies with DMIA criteria, set out in section 3.1.3 of the DMIS, in the following ways:
- Section 3.1.3-1 – The project has the potential to provide Demand Management capabilities through promoting portal use among JEN's customers and giving them the tools to manage their demand.
  - Section 3.1.3-2 – The project is a broad based Demand Management initiative targeted at consumers with smart meters, and is not aimed at a specific location on the network.
  - Section 3.1.3-3 – The project is an initiative designed to explore customers' response to smart metering information and price signals.
  - Section 3.1.3-4 – The project is a non-tariff based project and the costs are not recovered under any other incentive scheme.
  - Section 3.1.3-5 – The project cost has not been recovered under other schemes. See 7.3.8 of JEN's response for more details.
  - Section 3.1.3-6 – The nature of expenditure is operating expenditure.

#### 7.3.2 NATURE AND SCOPE

146. Section 7.2(a)(ii) of Schedule 1 to the RIN requires JEN to explain the nature and scope of JEN's initiative.
147. The nature of the project is to develop a Demand Management initiative based on the already approved Energy Portal and AMI projects.
148. The scope of the project includes the development of questionnaires and strategies as the basis for carrying out surveys in order to understand what impact the Energy Portal has had on our customers. The project deliverables also included collating and providing detailed AMI customer usage data (of customers who had a

smart meter for at least 12 months) and conducting community information sessions regarding electricity usage options such as flexible pricing and load shifting.

### 7.3.3 AIMS AND EXPECTATIONS

149. Section 7.2(a)(iii) of Schedule 1 to the RIN requires JEN to explain the aims and expectations of JEN's initiative.

150. The aims and expectations of the project are to:

- better understand the behaviour of customers when presented with near real time information about their electricity usage via the Energy Portal
- demonstrate real benefits of the Energy Portal and the AMI technology to consumers, government, regulators and retailers, and
- develop a demand management initiative based on the Energy Portal and the AMI technology.

### 7.3.4 SELECTION PROCESS

151. Section 7.2(a)(iv) of Schedule 1 to the RIN requires JEN to explain the process by which JEN's project was selected, including its business case and consideration of any alternatives.

152. In 2007, the Victorian Government mandated that AMI meters be rolled out for consumers who have an annual consumption of 160MWh or less. These AMI meters have the potential to support in-home displays (IHDs). However, funding was not provided as part of the Victorian Government's program to develop the support for IHDs, which would allow consumers to obtain information about their consumption.

153. In the absence of funding for binding home area networks (HANs) and IHDs, the Energy Portal project was scoped and developed to provide as much consumption information to consumers as possible. The Energy Portal was delivered in the 2012 Regulatory Year; however, its capability as a demand management initiative was not explored. This was commenced in the Regulatory Year 2013 and the work was continued and finalized in the Regulatory Year 2014.

154. JEN continued to engage a contract analyst (Community Online Communications Advisor) in the 2014 Regulatory Year for the following functions:

- Increase community connectivity by managing and enhancing JEN's digital reach, developing and managing marketing materials and promoting the benefits of the Energy Portal and the AMI technology, and
- Support Demand Management objectives of the business by developing questionnaires, carrying out surveys and analysing customers' behaviour subsequent to portal uptake.

### 7.3.5 IMPLEMENTATION

155. Section 7.2(a)(v) of Schedule 1 to the RIN requires JEN to explain how JEN's initiative was implemented.

156. The project is being delivered through four phases as follows:

- Develop relevant questionnaires and strategies and carry out surveys to gauge customers' behaviour change after the uptake of the Energy Portal
- Select a control customer group among the Energy Portal customers
- Extract energy consumption usage of customers before their sign-up and after their sign-up to the Energy Portal, and

- Assess the impact of the Energy Portal on customers' consumption pattern and usage.

157. The project was commenced in January 2013. Extraction of data and analysis of impact was continued in 2014.

### 7.3.6 IMPLEMENTATION COSTS

158. Section 7.2(a)(vi) of Schedule 1 to the RIN requires JEN to explain the implementation costs of JEN's project.
159. The actual expenditure for the Energy Portal project incurred in the 2014 Regulatory Year was \$37,539, as set out in Appendix B - Template 23 (DMIS – DMIA) (Attachment 1-1 of JEN's response).

### 7.3.7 BENEFITS

160. Section 7.2(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.
161. An assessment of the surveys carried out so far indicates that the project is beneficial, as consumers have already taken steps in reducing their electricity bill. An assessment of energy consumption change as a result of the Energy Portal take-up has been progressed as well.

### 7.3.8 ASSOCIATED COSTS

162. Section 7.2(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.
163. The associated costs for the development of JEN's Energy Portal have not been:
- recovered under any other jurisdictional incentive scheme,
  - recovered under any other Commonwealth or State Government scheme, and
  - included in the forecast capital or operating expenditure approved in the 2011-15 Distribution Determination or recovered under any other incentive scheme in that determination.

### 7.3.9 FORGONE REVENUE ASSUMPTIONS AND / OR ESTIMATES

164. Section 7.2(c) of Schedule 1 to the RIN requires JEN to explain any assumptions and/or estimates used in the calculation of forgone revenue, demonstrating the reasonableness of those assumptions and/or estimates in calculating forgone revenue, including the reasons for JEN's decision to adjust or not to adjust for other factors and the basis for any such adjustments.
165. Due to the limited availability of the Energy Portal project to JEN consumers in the 2014 Regulatory Year, JEN does not consider that its revenue has been impacted. Therefore, JEN does not seek to recover forgone revenue resulting from the Energy Portal project for the 2014 Regulatory Year.
166. As such, section 7.2(c) of Schedule 1 to the RIN is not applicable.

## 7.4 DEMAND MANAGEMENT INNOVATION ALLOWANCE

167. Section 7.3 of Schedule 1 to the RIN requires JEN to state the total amount of the DMIA spent in the Relevant Regulatory Year and explain how it was calculated.

168. The actual costs incurred in the 2014 Regulatory Year for both projects were \$63,864 as set out in Excel template 23 (DMIS – DMIA) Appendix B (Attachment 1-1 of JEN's response to the RIN).
169. The project cost (materials, internal labour and external labour) is tracked in JEN's accounting systems.