	expenditure incurred, in comparison to the previous Relevant Regulatory Year.	
7. DEMAND MANAGEMENT INCENTIVE ALLOWANCE		
7.1	Identify each demand management project or program for which Powercor seeks approval.	Two demand management programs have been identified for which we are seeking approval: • Demand management storage project (**DMSP**); and • Storage investment framework design and analysis (**SIFDA**)
7.2	For each demand management project or program identified in the response to paragraph 7.1: (a) explain: (i) how it complies with the Demand Management Incentive Allowance criteria set out at section 3.1.3 of the *demand management incentive scheme*; (ii) its nature and scope; (iii) its aims and expectations; (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 2011–15 Distribution Determination or recoverable under any other incentive scheme in that determination; and (c) explain any assumptions and/or estimates used in the	**A. Demand management storage project (DMSP)** (a) i. Grid scale energy storage systems have been identified as one of the key technologies that enable peak demand reduction in the network for the future - a key strategic focus area for our business. Consequently, we are trialling a 2MW battery storage in the Ballarat region to supply electricity during periods of high demand. The intent is battery storage will reduce stress on the local network and may deliver benefits including capital deferment, two way power flow management (improving renewable integration capability), improve reliability and provide reactive power and voltage stability support. ii. The scope of the project includes the procurement of a 2MW battery which will provide targeted demand management relief for Ballarat South (BAS) and defer augmentation for the 22kV BAS feeder. In addition to the battery itself, the procurement, installation and commission of the following assets is required for the battery to be successfully integrated into the network: • a step up transformer; • cables; • 22kV switchgear; • isolation devices; • earth switches; and • 22kV overhead works (to facilitate connection of the battery to the BAS feeder). Finally, for the battery to operate safely, the design, installation

	calculation of forgone revenue, demonstrating the reasonableness of those assumptions and/or estimates in calculating forgone revenue, including the reasons for Powercor's decision to adjust or not to adjust for other factors and the basis for any such adjustments.	and commission of a number of grid battery protection schemes are also required. iii. We believe the battery storage project satisfies the Demand Management Incentive Allowance (**DMIA**) criteria as: • it may allow us to more efficiently manage customer demand in a way other than increasing supply through network augmentation (by supplying stored electricity during periods of high demand); • is aimed at managing peak demand at a specific network constraint (as outlined below, in Ballarat South); and • will build capability and capacity to explore other locations where battery storage could potentially deliver efficient demand management mechanisms. We will also be able to remotely monitor the battery from the control room, which will enable the battery to be further utilised for targeted network support services. iv. In 2014 we assessed the most relevant technologies that would assist us in building a 'network of the future'. Grid scale energy storage was identified as one of the key technologies of the future, and an evaluation of potential grid services, costs, technology and suppliers was undertaken. We assessed a number of network locations for the potential benefits that a 2MW energy storage system could provide. These locations were evaluated based on the peak demand overload, capital deferral, islanding potential and minimising project risks and costs. Ballarat South (BAS022) was selected as a preferred location because it enabled the implementation of all the above factors. v. A Request for Proposal (**RFP**) was issued to the market to supply an energy storage solution that met the services and technical requirements identified from the future network technology evaluation. A number of proposals were received with different battery chemistry and integration configurations. Supplier selection targeted the most technically established and experienced suppliers that could provide local Australian support for the project. A contract was awarded to S&C Electric Pty Ltd, with

		lithium ion batteries supplied by Kokam, Sth Korea, for the procurement, integration and commissioning of the battery in Ballarat South. The supplier will continue to support us with ongoing service and maintenance of the battery. vi. The forecast total procurement and installation costs for the battery are $6.4M. The balance of our DMIS will be used to fund part of these costs. In 2015, the balance of our DMIS funding was $2.987M (real $2015). Utilising these funds will allow us to bring forward implementing the battery and testing development options for networks, generators and customers. vii. There are a number of expected benefits from the battery storage project in Ballarat South that will improve value to our customers. These include the deferment of capital expenditure, and important learnings that will allow us to better manage and optimise our network. The potential learnings include: • improving voltage regulation control and reducing customer outages downstream of the battery; • expanding our capability to identify other potential locations where battery storage could relieve network constraints and defer capital augmentation; • expanding our capability to manage higher levels of battery integration; • validating both the cost and value of storage services at current market prices; • recording and communicating project learnings to optimise future storage project scoping and delivery; and • demonstrating appropriate safe and environmentally compliant battery applications. (b) the 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 2011–15 Distribution Determination or recoverable under

		any other incentive scheme in that determination. (c) Not applicable --- **B. Storage investment framework design and analysis (SIFDA)** (a) i. SIFDA involved three main development areas for application of energy storage for demand management: • end-user 'off gridding'; • cold thermal energy storage; and • grid level energy storage on the grid. SIFDA is: • non-network in nature as it investigates alternative supply options for customers, load shifting and peak curtailment providing alternative means of meeting demand; • addresses peak and more broad based demand management through identifying best cases for the application of thermal storage, off-gridding and network based storage; • it builds knowledge and capability to efficiently deploy demand management solutions relevant to our network; • non-tariff based; • cannot be funded under other schemes and there is no provision in the 2011-2015 Distribution Determination for this activity; and • costs associated with SIFDA were treated as operating expenditure. ii. The scope of SIFDA was to develop new ideas, challenge existing technical solutions and business models through global benchmarking and the study of best in (storage) class countries. For each storage development area above, the scope was to identify: • suitable technologies (pure storage or hybrid with

		generation); • design, sizing and initial cost estimate; • improvement through complementary solutions (energy efficiency, demand side management etc.); • role of involved stakeholders, regulatory status, revenue sources; and • construction of a full business case for a standard example of each case. Integration of cases and associated value ranges, solutions and decision rules into a decision-helper tool for the network to make decisions in the future for similar cases. iii. Identify the best technical and economical solutions for energy storage demand management cases, assess each solution's profitability and potential market, provide the network with appropriate tools to assess and forecast energy storage projects. iv. Current forecasts are for storage technologies to reduce in cost over the next 5-10 years, with increased storage penetration into the grid to help manage peak load and intermittent/renewable generation. The SIFDA project was picked due to its future network importance and ability to prepare the network for more energy storage demand management opportunities. v. The project was implemented over the period August 2014 to January 2015 and involved engagement of external parties with specific expertise in energy storage. Extensive data was collected from global benchmarks and utilised to determine the most relevant and economical storage cases. vi. Costs for SIFDA were calculated based on hourly rates for internal resources and invoices for external service providers. vii. SIFDA equips us with the knowledge and network case studies for the economical deployment of energy storage for peak shifting and demand management. (b) its associated costs were not: i. recoverable under any other jurisdictional incentive scheme; ii. recoverable under any other Commonwealth or State Government

		scheme; and iii. included in our forecast capital or operating expenditure allowances in the 2011–15 Distribution Determination or recoverable under any other incentive scheme in that determination. (c) Not applicable
7.3	State the total amount of the Demand Management Incentive Allowance spent in the Relevant Regulatory Year and explain how it was calculated Note: Information provided in response to paragraph 7 of schedule 1 to this Notice will constitute the provision of an annual report for the purpose of paragraph 3.1.4.1 of the AER, Demand Management Incentive Scheme- CitiPower, Powercor, Jemena, SP AusNet and United Energy 2011-15: Part A- Demand Management Innovation Allowance, April 2009.	A. Demand management storage project (**DMSP**) - $6.041M • hourly rates for employees and service providers; • capital cost payments for grid energy storage system providers; and • capital construction costs of grid energy storage system site construction. B. Storage investment framework design and analysis (**SIFDA**) - $0.130M • cost derived from invoices from external service provider.
8. ADVANCED METERING INFRASTRUCTURE		
8.1	Describe each efficiency improvement made to Powercor's operations directly or indirectly arising from or associated with the roll out of the Advanced Metering Infrastructure. For example: operational cost savings for Powercor arising from remote meter reading and connection and disconnection of customers' supplies; more efficient outage detection and rectification; improved accuracy of customer billing.	The benefits associated with advanced metering infrastructure include: i. avoided non AMI meter supply cost for new connections and meter replacements -$1,675,691 ii. avoided non AMI meter supply and installation cost for fault meter replacements - $353,705; iii. avoided cost of time switch replacement - $1,605,025; iv. avoided non AMI meter replacements resulting from solar installations - $5,394,515; v. avoided cost of routine meter testing costs - $736,287; vi. avoided cost of routine non AMI meter reading - $3,695,990; and vii. avoided cost of non AMI special reads - $1,033,147.
8.2	For each efficiency improvement identified in the response to paragraph 8.1: (a) explain how it arises from or is associated with the roll out of the Advanced Metering Infrastructure; and (b) if quantifiable, state its amount.	The benefits arise in each case for the following reasons: i. meter supply for new connections and meter replacements – accumulation meter supply - the meter supply cost for accumulation meters that would have been supplied if AMI meters hadn't been used; ii. meter supply and installation cost for fault meter replacements –