

Demand Management Innovation Allowance  
Mechanism  
Compliance Report for 2019-20



Submission to the Australian Energy  
Regulator

October 2020

**PowerWater**

# Introduction

The Australian Energy Regulator (AER) applied a Demand Management Innovation Allowance Mechanism (DMIAM) to Power and Water Corporation (Power and Water) for the 2019-24 regulatory period. The DMIAM provides distribution networks with funding for research and development in demand management projects that have the potential to reduce long term network costs.

In its final determination for the 2019-24 regulatory period, the AER provided Power and Water with a total funding of \$1.57 million (\$2017-18) under the DMIAM. Under the mechanism, Power and Water can spend the funding amount on AER approved eligible projects during the 2019-24 period. However, if Power and Water does not spend the full amount on AER approved eligible projects, we receive a deduction in revenue in the next period equal to the shortfall.

Under section 2.3 of the DMIAM, we are required to submit an annual compliance report to the AER setting out the projects we have undertaken under the mechanism for the past regulatory year. The 2019-20 regulatory year was the first time the DMIAM applied to Power and Water, and consequently this is our first compliance report.

This report aligns with information we are also required to submit in our annual Regulatory Information Notice (RIN) for 2019-20.<sup>1</sup> While the AER does not require this report to be externally reviewed for assurance, we note the information provided in the annual RIN is subject to assurance requirements.

## 2019-20 regulatory year

Power and Water has not committed any expenditure to eligible projects in 2019-20 that meet the criteria under the DMIAM. For this reason, both our annual RIN and this report identify that no amount of DMIAM funding was spent in 2019-20.<sup>2</sup> Accordingly, we have not identified any eligible projects in this report which require further information.<sup>3</sup> We have consequently not provided a statutory declaration in respect of expenditure on eligible projects, nor have we identified any confidential information in this report.<sup>4</sup>

## Future DM exploration

Despite reporting no projects for the 2019-20 year, we remain genuinely committed to innovative demand management projects that have the potential to reduce long term costs.

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<sup>1</sup> This includes data relating to the DMIAM in Table 7.11.2 of Workbook 1 of Appendix A of Schedule 1 of the 2019-20 Annual Regulatory Information Notice issued to Power and Water by the AER. It also includes our written response to questions 7.1 to 7.4 of the RIN in relation to DMIAM.

<sup>2</sup> Under section 2.3(3)(a) we must identify the amount of the allowance spent.

<sup>3</sup> Under section 2.3(3)(b)(c)(d) and (e), our annual compliance report must identify any eligible projects for the previous regulatory year, and if so, provide accompanying information and detail on the projects.

<sup>4</sup> Under section 2.3(3)(f) we must provide a statutory declaration if we have identified any eligible projects. Under section 2.3(4) we must identify if the report contains any information that contains confidential information.

Over the last decade, the traditional energy market has undergone a monumental shift with increasing penetration of small-scale renewable energy. Our customers have been leading the change by installing solar systems to meet their energy needs and export into the grid. The NT Government's Roadmap to Renewables will accelerate change in the energy market. The Government's recent report identifies strategies to achieve a 50 per cent renewable target for all electricity consumed from our network by 2030.

We are embracing a renewable future where more customers actively participate in the market. Power and Water will need to be active leaders in the Territory's transition to a renewable future. Our network planning is pivoting to meet the challenges and opportunities of a future market, including innovative ways to manage emerging demand and voltage issues. Our upcoming 2020 Transmission and Distribution Annual Planning Report (TDAPR) will provide accessible information to our stakeholders on our plans to adapt to a changing energy market. We hope that stakeholder engagement on the TDAPR will help untap new ideas and research pathways to tackle emerging issues.

Below we set potential research and pilots for demand management that may be eligible for funding under the DMIAM. Our intention is to reach out to our stakeholders and the AER on whether the DMIAM is the appropriate mechanism to fund these projects.

### **Low costs ways to improve visibility of our network**

We are currently investigating the viability of an innovative research project that would provide us with improved visibility of our low voltage distribution network.

Most networks are realising the increased need for greater visibility at lower voltages. The low voltage network was originally built for one-way flow of energy, with little need to monitor and control the network. However, over the last decade we have seen significant penetration of rooftop solar and embedded generation that export into the low voltage network, creating reverse flows. A key issue is that we have limited visibility of potential constraints on our network that may cause customers quality of supply or system security issues. In the absence of visibility on the network, we may need to make conservative decisions to constrain exports of our customers.

The continued roll out of smart meters provides some of the required infrastructure to get visibility of our low voltage network. However, only a small proportion of our customers have a smart meter installed and we do not have the supporting communications or information systems to leverage data that smart meters may be able to provide in support of improved network visibility. For this reason, we are looking for low cost methods to scale up the visibility of our network by using the available smart meter data and simulating the real time operation of the low voltage network by applying estimation algorithms. Similar pilots have been trialled successfully in other networks. We consider the DMIAM would be an appropriate scheme to fund this type of project, subject to stakeholder and AER feedback.

### **Improved optimisation of the low voltage network**

We recognise that the key to a successful transition to a renewable energy market involves optimising and orchestrating small scale technology such as solar and batteries. We are considering mechanisms that allow us to access small-scale technology while providing our customers with choice and incentives to participate. This could involve a small-scale pilot

to incentivise demand management aggregation in critical locations on our network.

### **Small scale projects involving new technology to manage demand**

Power and Water is currently involved in small scale projects that test the viability of new technology solutions and incentives to meet the future energy needs of customers on our network.

This includes participation in the Northern Territory Microgrid Futures project. Microgrids are stand-alone networks that operate independently from the grid. Given the remoteness of many communities in the Northern Territory, microgrids can provide a more economical means of providing energy.

The project examines the feasibility of microgrids in remote communities and fringe-of-grid regulated locations. Methodologies, results and lessons will be published and shared through targeted knowledge sharing activities, including published reports, workshops, demonstrations, site visits and conference presentations. We expect that our learnings from these projects will lead to innovative demand management research and pilots in isolated areas of our regulated network, and that the DMIAM may provide the incentive to invest in this type of research.

Another exciting project in the Northern Territory is the Alice Springs Future Grid project. The project is focused on removing barriers to further renewable energy penetration in the Alice Springs power system. We consider there will be opportunities for Power and Water's regulated electricity network to contribute to the success of this project. This could include innovative methods to identify the optimal network location to aggregate batteries to meet peak demand and control voltage on the network. The DMIAM may be a useful funding source for Power and Water to contribute to the project.