Demand Management Innovation Allowance Mechanism Compliance Report

Submission to the Australian Energy Regulator

2023-2024

PowerWater

Contents

Introduction

Purpose and compliance

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. This mechanism provides distribution networks with funding for research and development of demand management projects, which should:

- have the potential to deliver ongoing reductions in overall demand and/or peak demand;
- have the potential to reduce long term network costs;
- be innovative; and
- not be an efficient and prudent non-network option that a distributor should provide under its regulatory proposal.

The AER provided Power and Water with total funding of $1.57 million ($2017-18) under the DMIAM in its final determination for the 2019–24 regulatory period. During this period, Power and Water can spend the funding amount on AER approved eligible projects under the mechanism. If Power and Water does not spend the full amount on AER approved eligible projects, there may be a revenue adjustment in the next period equal to the shortfall.

Under the mechanism, Power and Water is required to submit an annual compliance report to the AER setting out the projects that have been undertaken for the past regulatory year. The 2023-24 regulatory year is the fifth year the DMIAM has applied to Power and Water. The information provided in this report will also be reflected in the relevant sections of Power and Water's Annual Regulatory Information Notice (RIN) for 2023-24.

DMIA projects summary

Power and Water identified the following research and development projects in demand management that comply with the DMIAM criteria for the 2023-34 period:

Table 1 Total DMIA project spend FY2023-24

Project	Description	Cost (ex GST)	Status
Network visibility and forecasting	Assessment of network data and systems to improve visibility, better incorporate distributed energy resources (DER) and manage increasing two-way energy flows.	$314,394.81	Ongoing
Future Network	Comprehensive strategy to cost-effectively and safely transition Power and Water's networks in line with the clean energy goals of the Northern Territory.	$482,115.08	Ongoing
Total 2023-24		**$796,509.89**	

Table 2 DMIA actual and remaining expenditure for RP2019-24

Expected spend	Cost (ex GST)
2019-20 DMIA project spend	$0.00
2020-21 DMIA project spend	$0.00
2021-22 DMIA project spend	$342,741.55
2022-23 DMIA project spend	871278.25
2023-24 DMIA project spend	$796,509.89
Remaining for RP2019-24	-$440,529.69
Total allowable DMIA spend for RP2019-24	**$1,570,000.00**

Power and Water confirms that the costs of the projects specified in this report are:

- Not recoverable under any jurisdictional incentive scheme;
- Not recoverable under any other Commonwealth or State Government scheme; and
- Not included as part of:
    - The forecast Capital Expenditure or the forecast Operating Expenditure; or
    - Any other incentive scheme applied by the 2019-24 Distribution Determination.

For the FY2023-24 regulatory period, Power and Water's DMIA expenditure exceeded the total allowable limit. As there were multiple minimum demand events during the regulatory period, Power and Water completed additional unforeseeable activities to ensure adequate management of minimum demand and progress mitigation of these events. Additionally, Power and Water initiated the major program of works for the LV Visibility and Power Partnerships programs this year, which among other activities saw EDGE devices deployed across the NT.

DMIA project development and selection process

Power and Water supports the Northern Territory Government's target of 50 per cent renewable energy consumption by 2030, as well as the aims and objectives set out in the Darwin-Katherine Electricity System Plan (DKESP), Alice Springs Future Grid Roadmap and Remote Power System Strategy[1]. In doing so, Power and Water must maintain safe, reliable and affordable electricity for customers in the Northern Territory.

Power and Water highlighted the need for demand management programs and technologies as a priority within the Future Network Readiness Plan[2], outlined in Power and Water's DMIAM Compliance Report during the 2020-21 regulatory year. Implementing such programs are an important component of readying the network for significant changes in the transition of its generation and supply composition.

Several projects were identified as priorities for demand management in the Future Network Readiness Plan:

- **Small-Scale Network Visibility and Dynamic Operating Envelopes (DOE) pilot** to trial improved visibility and optimisation of the network.
- **Community Battery Feasibility Study** to understand the role of community batteries and their relevant network benefits and an application is underway for joint funding with ARENA.
- **EVSE Specifications:** Publish the technical requirements for Electric Vehicle Supply Equipment.
- **Power Partnerships:** Continuing to grow baseline for power partnerships.
- **LV visibility projects:** Develop and deliver a proof-of-concept project to improve network visibility.
- **BESS specifications:** Publish the technical requirements for Battery Energy storage systems.

Commented [RA1]: Add community batteries,

Commented [RA2R1]: EV Specs, if agreed, PP, LV visibility

Power and Water consulted on the above topics, and in analysing outcomes of the stakeholder engagement, identified further work programs of benefit to Northern Territory network customers. These programs are outlined in greater detail below.

Power and Water also engaged several subject matter experts to advise on demand management programs and assist in developing implementation plans.

Power and Water is committed to expanding and sharing Power and Water's knowledge and outcomes from its demand management innovation projects.

[1] Territory Renewable Energy, Electricity System Plans, https://territoryrenewableenergy.nt.gov.au/strategies-and-plans/electricity-system-plans

[2] Power and Water, Future Networks Readiness Plan, https://www.powerwater.com.au/__data/assets/pdf_file/0022/94261/Future-Networks-Readiness-Plan.pdf

DMIA project updates

Network visibility and forecasting

Nature and scope

This project seeks to improve the accuracy and validity of Power and Water's network visibility capability, especially for planning, operating and forecasting purposes. Initial work to establish a proof of concept has since been expanded into a whole of network congestion and capacity dataset which will identify network constraints and demand management opportunities. This project will support Power and Water to improve their network visibility and forecasting capability by identifying network data black spots, future focus of data acquisition, and data quality issues, and developing tools to calculate network congestion and constraints.

Power and Water will continue to maintain the Network Visibility tool, which has been beneficial for network model development, and intends to work with a range of stakeholders and business partners to test the interoperability of real time visibility with future market interfaces. To date, Power and Water have successfully installed Edge devices and built the capability for visualising live Transformer data on the Grafana user interface. Furthermore, Power and Water are undertaking numerous updates and processes to ensure the state estimation engine developed is robust.

Aims and expectations

Power and Water has engaged GridQube on a program of works to enable visibility of the operating state of the network in near real time. GridQube's expertise and work will help to inform future network expenditure needs, identify investment required for accommodating greater renewables and DER, and develop robust business cases for undertaking identified investments.

Power and Water will gain greater visibility over customer generation and demand through improved real-time access to metering data. This work is essential for managing greater penetration of DER, improving the management of customer connections, and safely managing network system constraints.

Compliance with DMIA criteria (as outlined in section 2.2.1 Project Criteria of the Demand Management Innovation Allowance Mechanism guideline)[3]

DMIA Criteria	How the project aligns
(a) be a project or program for researching, developing or implementing demand management capability or capacity;	Historically, Power and Water's network operations have been without the visibility or ability to respond to two-way energy flows in its networks. Through better management of growing DER and facilitating more effective demand

[3] Australian Energy Regulatory, Demand management incentive scheme and innovation allowance mechanism, https://www.aer.gov.au/networks-pipelines/guidelines-schemes-models-reviews/demand-management-incentive-scheme-and-innovation-allowance-mechanism

	management, this project seeks to address these network constraints.
(b) be innovative, in that the project or program: i) is based on new or original concepts; or ii) involves technology or techniques that differ from those previously implemented or used in the relevant market; or iii) is focused on customers in a market segment that significantly differs, from those previously targeted by implementations of the relevant technology, in relevant geographic or demographic characteristics that are likely to affect demand.	This work is utilising innovative software developed as part of the Solar Enablement Initiative (SEI), partly funded by ARENA and led by the University of Queensland[4].
(c) have the potential, if proved viable, to reduce long term network costs.	This program is expected to significantly improve the visibility and operability of Power and Water's networks in managing various demand management requirements, improving safe operation of the network, and reducing the need for more costly network replacements.

Implementation approach

In FY2021-22, Power and Water began work on the network visibility and forecasting project which is being undertaken by software specialists, GridQube. This project will continue into the next regulatory period with work complete to date involving:

- Assessment of capability requirements to ensure effective integration with future network system needs;
- Assessment of power flow system visibility and commentary of effect of customer connections;
- Assessment of the current state of network asset data and network metering data, conducting a gap analysis, identifying potential errors, and facilitating data quality improvements;
- Options analysis for the best approach in implementing network visibility including identifying means of alleviating minimum demand issues and integrating DOE solutions;
- Assessment and data transfer of GIS shapefiles into a compatible and uniform ESRI functionality;
- Development of information systems underpinning the Power Partnerships Program (see Power Partnerships Program section below), including integrating the constraint engine into Power and Water's Alice Springs Future Grid team. This is an ongoing component of this project; and

[4] Australian Renewable Energy Agency, Increasing Visibility of Distribution Networks, https://arena.gov.au/projects/increasing-visibility-of-distribution-networks/

- Digitising and automating data collation from metering and PV and GIS databases through application of SQL software, thereby allowing Power and Water to readily collect and analyse export service data for a range of further data applications.

In FY2023-24, the focus of the workstream was:

- Continuing the development of the visualisation tool, Grafana, which incorporates Power and Water's GIS data, SCADA data, and metering data (providing voltage, current, power factor, real & imaginary export, temperature, and hosting capacity datapoints); and
- Conducting the Network Visibility Options Assessment and developing the Business Case.

Outcomes and evaluation approach

Whilst many of the above activities have been progressed since FY2022-23, key activities completed in this regulatory period are:

- Progressing the program of works comprised in the Network Visibility Options Assessment and Business Case Development project, including:
    - Providing data and insights to support Business Case development.
    - Developing an active API link from Edge Zero to Grafana which enables live visibility of transformers.
    - Developing a network hierarchy model which provides necessary data and evidence to make network decisions.
    - Developing capability to generate Sincal Models using Grafana which will support Power and Water to complete accurate Fault level studies on the network.
- Providing data and insights to support Power and Water's Full Application to the ARENA Community Battery Fund; and
- Providing data and insights to support the AER Export Services RIN.

In FY2023-24, GridQube was supported by Cell Engineering who provided secondee support for development of the visualisation tool, Grafana.

Costs/Benefits

Table 3 DMIA project spend FY2023-24

SME	Workstream	Cost (ex GST)
GridQube Pty Ltd	Network Visibility and forecasting	$312,727.31
Cell Engineering	Network Visibility and forecasting	$1,667.50
Total		**$314,394.81**

This project is providing invaluable expertise and network insights to Power and Water to enable effective automation and real-time operation of various DER. The project has already enabled Power and Water to grasp an improved understanding of their network constraints and context. The development of Grafana is a critical enabler for the next phase of Power and Water's Dynamic Operating Envelope project. For the

remainder of the project, Power and Water expects the capabilities of Grafana to be progressed to effectively integrate and operate two-way energy flow systems.

Power and Water intends to quantify the benefits and consider preferred options to share learnings of this work following the completion of the program.

Table 4 Total expected project spend

Expected spend	Cost (ex GST)
2021-22 Project spend	$75,454.55
2022-23 Project spend	$263,636.40
2023-24 Project spend	$314,394.81
Expected total project spend	$660,000.00
Remaining	**$6,514.24**

Next steps

This project remains ongoing, and over the next couple of financial years, Power and Water intends to obtain automated near real-time data, collected especially for constrained networks. Currently, minimal data is available to draw conclusions from or ascertain potential benefits.

Power and Water intends to use the visibility functionality inbuilt into Grafana to calculate constraints and feed this information into managing and therefore, more effective implementing Dynamic Operating Envelopes. This project will enable Power and Water to collect automated real-time data and achieve comprehensive visibility of the network, thus enabling network performance to be optimised.

Power and Water's focus will be on addressing the minimum demand problem, maximising hosting capacity and ensuring standardisation of technical specifications.

Future Networks

In 2023-24, the Future Networks program comprised of two main components:

1. Completing the Future Network Strategy, including the submission of Power and Water's Full Application to ARENA for the Community Battery Funding Program, which was successful.
2. Continuing the Power Partnerships Program, including the LV Visibility project.

Future Network Strategy

Nature and scope

Power and Water developed the Future Network Strategy to support the decarbonisation of the NT economy in response to feedback from community, government, and industry stakeholders. This strategy outlines the planned initiatives underway over the next 5-10 years, and focuses on managing the increasing penetration of DER through initiatives such as:

- DOEs;
- Distribution Battery Storage (including the deployment of Community Batteries);
- Export tariff trials;
- Smart meter installation;
- EV charging and smart appliance optimisation; and
- Energy efficiency.

The Future Network Strategy both communicated Power and Water's forward-looking strategy to the public and informed Power and Water's overall strategy and expenditure plans in the 2024-2029 regulatory proposal.

Aims and expectations

The Future Network Strategy is a 10-year strategy to promote the long-term interests of customers. The Strategy will articulate Power and Water's vision of the future network, identify the future capabilities that will be needed, and outline how Power and Water can achieve this to maximise the value delivered to customers. The Strategy will be updated periodically to account for changes in technology, customer preferences and the economic, regulatory and policy landscape.

Compliance with DMIA criteria (as outlined in section 2.2.1 Project Criteria of the Demand Management Innovation Allowance Mechanism guideline)[5]

DMIA Criteria	How the project aligns
(a) be a project or program for researching, developing or implementing demand management capability or capacity;	A key focus of the Future Network Strategy is to highlight opportunities for demand management programs and technologies that can maintain security and reliability of NT networks while managing costs for customers. Initiatives include investigating the case for:

[5] Australian Energy Regulator, Demand management incentive scheme and innovation allowance mechanism, https://www.aer.gov.au/networks-pipelines/guidelines-schemes-models-reviews/demand-management-incentive-scheme-and-innovation-allowance-mechanism

	• DOEs; • Distribution battery storage (including Community Batteries); • Export tariff trials; and • EV charging and smart appliance optimisation. Development of the Future Network Strategy encompassed a number of workstreams which researched the network and customer needs, outlined potential solution options, put forward preferred options, and in some cases developed business cases and implementation plans.
(b) be innovative, in that the project or program: i) is based on new or original concepts; or ii) involves technology or techniques that differ from those previously implemented or used in the relevant market; or iii) is focused on customers in a market segment that significantly differs, from those previously targeted by implementations of the relevant technology, in relevant geographic or demographic characteristics that are likely to affect demand.	The Future Network Strategy reviewed and identified the demand management opportunities best suited to the unique needs of the NT network; a system which is required to support a relatively small number of customers over a relatively widely dispersed area. This required Power and Water to adapt solutions applied in other jurisdictions to ensure the right network application and deliver the best customer outcomes.
(c) have the potential, if proved viable, to reduce long term network costs.	Recommendations provided in the Future Network Strategy prioritised options that would reduce long term network costs if implemented.

Implementation approach

This project was supported by expert advice and content delivery from consulting group Engevity Advisory Pty Ltd (acquired by Mott MacDonald Pty Ltd in March 2023) and built on work completed by energy, engineering and economic firms CutlerMerz Pty Ltd, Synergies Economic Consulting Pty Ltd, Ernst & Young, Ekistica Pty Ltd and Energeia Pty Ltd.

This forward-looking strategy provided a guiding framework to prepare the network for Power and Water's long-term vision. Developed in consultation with customers and key stakeholders, each workstream is informed by five core principles that underpin the strategy and incorporated the latest market and industry thinking and best practices to provide effective and timely recommendations.

During the FY2021-22 regulatory period, Power and Water consulted with customers and stakeholders to understand and evaluate their needs, views and preferences for the future network strategy. The consultation forums included: Peoples Panel, Future Network Forum, Reset Advisory Committee, and Small-Medium Business Survey. Further information on each forum is available in the 'Engagement ' section

of the 2024-29 Regulatory Proposal.[6] The consultation forums provided invaluable insight for Power and Water and its advisors, particularly engagement with customers who face barriers to participating in and benefiting from new technologies like solar PV.

Outcomes and evaluation approach

The Future Network Strategy was designed to recommend a set of pilot and trial programs for testing demand management solutions. Initial project recommendations were to include research into:

- Enhancing network planning, forecasting and optimisation systems;
- DER management, including review and update of DER connection and registrations and updating DER interaction systems;
- Customer interaction, including information sessions and interactive portals, tariff reform, and management of two-way energy flows;
- Explore alternative DER flexible connection options and approaches to implement DOEs; and
- Pilot EV charging and integration programs and expand to other CER technologies.

Delivery of the Future Network Strategy project was completed in FY2022-23, with minor concluding project tasks which flowed into the FY2023-24 regulatory period. This included the delivery of Power and Water's ARENA Full Application for the Community Batteries Funding Program. A summary of key activities completed for FY2023-24 is provided in Table 5.

In FY2023-24, following the completion of the Future Networks Strategy, Power and Water conducted a review of the program to determine the benefits and value in expansion. As part of this review, the Future Networks Roadmap (Figure 1) was updated, and the following key areas were identified as priorities:

- Implementation of the 2030.5 API;
- Enabling system control features to shut down all solar (similar to a 'big red button');
- Planning and implementing a strategy for residential and commercial customer control;
- Engineering constraint specifics;
- Continuing to manage network stability whilst shifting Power and Water's dependence away from Power Partnerships to Dynamic Operating Envelopes; and
- Conduct analysis on hosting capacity.

[6] Power and Water, Regulatory Proposal for the 2024-29 regulatory period, Attachment 1.01: Engagement, https://www.powerwater.com.au/__data/assets/pdf_file/0028/156943/Attachment-1.01-Engagement-31-Jan-23.pdf

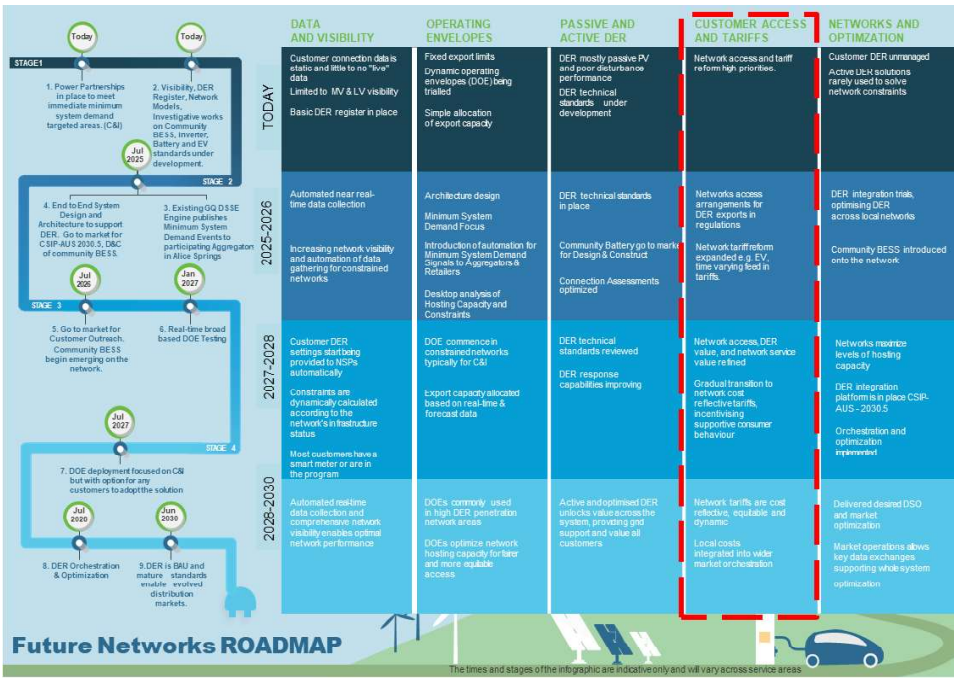

Figure 1 Future Networks Roadmap

Table 5 Key activities completed under each workstream for FY2023-24

Engevity Advisory Pty Ltd - Future Network Strategy Project Coordination
Power and Water Corporation engaged Engevity to coordinate the Future Network Strategy workstreams and draft their 10-year Future Network Strategy. Engevity program managed the Future Network Strategy workstreams, in particular around the development of options analysis, implementation roadmaps, expenditure plans and business cases. To develop the Future Network Strategy, Engevity reviewed the external drivers and changing environment in which Power and Water operates including changing policy goals, technology trends and physical network challenges. Engevity compared this to the environments and future network strategies of other network businesses. Following this, Engevity collaborated with Power and Water's subject matter experts and executive team to develop a suite of programs and initiatives to evolve the network to meet its objectives over a 5–10-year period.
Mott MacDonald Australia Pty Ltd – ARENA Community Batteries Application
Following a successful EOI Application, Power and Water Corporation engaged Mott MacDonald to support their Full Application to ARENA for the Community Battery Funding Program. Mott MacDonald drove the

development of this application including drafting the application, reviewing the financial model, and assessing the feasibility of the community battery locations.

Power and Water will continue to progress their Community Battery Project into the following Financial Year, including developing a project plan and finalising the technical specifications for each battery connection. In parallel, Power and Water will continue working towards business case approval, intended by March 2025.

HK Solutions – Future Network Strategy Support

Contractor HK Solutions provided support and engineering expertise to develop and design a sustainable, achievable approach to the Future Networks Strategies.

Power Partnerships Program

Nature and scope

Every year, the Northern Territory experiences minimum demand days when, due to increased penetration of DER such as uncontrollable solar PV, the system load goes below the safe operating limits of the network (also called 'minimum operational demand'). In certain conditions the output of uncontrolled solar PV reaches more than 70% of our underlying demand and this is expected to increase over time as DER uptake increases. Under these conditions, there is a greater risk of inducing generator outages that have the potential to result in blackouts.

To ensure Power and Water can deliver the Northern's Territory Government's target of 50% renewable generation by 2030, investment is required to ensure the NT's power system is capable of integrating large-scale batteries, agile thermal generation technology and additional solar.

The Power Partnership Program is a demand response collaboration initiative between Power and Water and interested customers to alleviate this challenge and safeguard the power system as the Northern Territory transitions to a renewable energy future. When a high-risk minimum demand day is observed, the program enables Power and Water to remotely control customer PV systems to reduce generation (such as solar) and/or activate controllable loads in line with the negotiated agreement with each customer.

Aims and expectations

The Power Partnerships Program is proposed for a 2-year period to maintain grid stability while Power and Water investigate and develop longer term solutions. This project will see Power and Water collaborate with commercial customers to bring more load onto the grid during minimum demand days and prevent power system wide blackouts. As the NT transitions to a renewable future and initiatives like those outlined in Future Network Strategy are implemented, it is expected that this initiative will be superseded.

Power and Water's current portfolio includes approximately 8MW of capacity, which we are aiming to increase to a portfolio of 10MW of load and 10MW of DER customers across the Northern Territory regulated power systems. Whilst Power and Water will look to trial a number of VPP service providers, we will seek to integrate different control systems and control multiple VPP providers concurrently to deliver a single signal to customers.

Compliance with DMIA criteria (as outlined in section 2.2.1 Project Criteria of the Demand Management Innovation Allowance Mechanism guideline)[7]

DMIA Criteria	How the project aligns
(a) be a project or program for researching, developing or implementing demand management capability or capacity;	The Power Partnerships Program is a demand response initiative designed to stabilise the grid when the minimum stable load is at risk of being breached due to the output of uncontrolled solar PV. Pilot programs with a number of potential VPP solution providers will be delivered with remote-control equipment implemented to activate any applicable controllable loads. Preferred options will be deployed to commercial customers as part of an opt-in partnership. This program will develop capability to prevent inducing generator outages, and subsequent blackouts to maintain reliability of the Northern Territory's power system.
(b) be innovative, in that the project or program: i) is based on new or original concepts; or ii) involves technology or techniques that differ from those previously implemented or used in the relevant market; or iii) is focused on customers in a market segment that significantly differs, from those previously targeted by implementations of the relevant technology, in relevant geographic or demographic characteristics that are likely to affect demand.	The Power Partnerships Program is an innovative solution that has not been delivered in the NT to date. The program relies on innovative communications technologies provided by the OEMs and will help to build Power and Water's understanding and experience of the role of demand response and VPPs going forward, which will inform the delivery of future innovation programs as outlined in the Future Network Strategy. The Power Partnerships Program targets the large scale commercial and industrial scale market segment as these offer the largest impact for targeted demand response instructions.
(c) have the potential, if proved viable, to reduce long term network costs.	The program will deliver a solution that safeguards the power system while Power and Water continue to update assets, infrastructure, and technology to support a smooth transition to a high renewable and high DER future.

[7] Australian Energy Regulator, Demand management incentive scheme and innovation allowance mechanism, https://www.aer.gov.au/networks-pipelines/guidelines-schemes-models-reviews/demand-management-incentive-scheme-and-innovation-allowance-mechanism

	Delivery of the Power Partnerships Program will reduce network costs and provide significant benefits to the power system.

Implementation approach

Power and Water have sought to collaborate with key large-scale business customers with significant controllable solar generation and/or suitable loads such as large commercial & industrial customers, infrastructure operators and government departments.

As part of this project, Power and Water are installing remote-control equipment at each customer site and on minimum demand days, are proactively ask our Power Partnership customers to reduce solar generation and/or activate controllable loads in line with negotiated agreements.

Jacana, an NT retailer, has been engaged by Power and Water to ensure that customers are remunerated at a per kWh rate for any instances where solar systems and/or loads are adjusted. Remuneration is based on their rated system size and the duration of the event, in line with their Partnership Agreement.

At the commencement of this project in FY2022-23, Power and Water trialled four technology providers and OEMs to test the viability of each technology. These included ComAp Pty Ltd, SwitchDin Pty Ltd, AZZO Pty Ltd and Greensync Pty Ltd. In FY2023-24, Power and Water continued to deploy a pilot program with AZZO Automation to develop a strategy for inverter control, including trialling their EnergyX solution for DER. The trial enabled Power and Water to understand AZZO's capabilities and limitations, and enlightened Power and Water to the opportunity for their remote control technology to support the Power Partnerships Program. Next steps following this trial are currently under discussion and review.

The trial with Greensync was paused at early stages as there were requirements included in the Alice Springs Future Grid project and Future Networks strategy which didn't align with GreenSync's direction and intended deliverables.

Outcomes and evaluation approach

The Power Partnerships Program has supported Power and Water to improve its understanding of VPPs and smart grid energy management. Following trials with the four technology providers and OEMs, Power and Water selected SwitchDin's as the preferred technology provider as they have 2030.5 utility server, and the equipment is the most economical and technically simple to install.

In FY2023-24, SwitchDin partnered with a number of installers including AMBESO Investments Pty Ltd, TDC Refrigeration, SUNOXI Pty Ltd, ECO TECH Electrical Pty Ltd, NC Electrical & Air Conditioning, HK Solutions, Cell Engineering and EDGEZERO Pty Ltd. Collectively, these organisations supported Power and Water to deploy the remote-control equipment at 20 locations and commence curtailing solar and/or activating controlled loads to prevent system wide black outs.

Costs/Benefits

Table 6 DMIA project spend FY2023-24

Future Network Strategy		
SME	Workstream	Cost (ex GST)
Engevity Advisory Pty Ltd	Future Network Strategy Project Coordination	$28,687.50
Mott MacDonald Australia Pty Ltd	ARENA Community Battery Funding Scheme Application	$45,360.00

HK Solutions	Future Network Strategy Support	$4,420.00
Cell Engineering	Future Network Strategy Support	$ 27,440.00
	Total Future Network Strategy:	**$105,907.50**
Power Partnerships Program		
SME	**Workstream**	**Cost (ex GST)**
SwitchDin	Power Partnerships Program Technology Provider	$ 55,695.90
Eco Tech Electrical Pty Ltd	Equipment supply, installation and commissioning (Data management card, modem and circuit protection)	$1,120.00
AMBESO Investments Pty Ltd	Installation of SwitchDin Droplet hardware and manual solar curtailment	$21,217.29
Supply Partners [TDC Refrigeration, SUNOXI Pty Ltd, NC Electrical and Air Conditioning]	Delivery, supply and installation of SwitchDin Droplet hardware, Power Partnership program support	$11,275.74
HK Solutions	Project Management of LV Voltage Visibility, Provision of engineering advice on Power Partnerships program, Progress development for LV Visibility & Power Partnerships Program	$146,497.50
Cell Engineering	Engagement of customers for Power Partnerships program, LV Visibility program support including load curtailment	$ 93,057.50
EDGEZERO Pty Ltd	Low Voltage Visibility and Power Partnership program support Provision of 'Edge' Devices, which are LV Overhead meters with live data provisioning capability. These devices are robust to withstand the NT's harsh climate conditions.	$22,153.60
Ras Systems Pty Ltd	Provision of field installation support and design for Power Partnerships customers	$15,840
Load Trial Customers	Registered as Power Partnerships customer and provided load curtailment services	$9,350.05
	Total Power Partnerships Program:	$376,207.58
	Total Future Networks	**$482,115.08**

Delivery of the Future Network Strategy has provided a range of demand management programs for Power and Water to implement that will realise savings for network customers while maintaining secure and reliable networks. The absence of the strategy and its associated recommendations would have meant higher costs, lengthier program delays, and safety and security risks to network users as customer energy resources increased without the right tools, programs, and technologies in place to support their increased penetration.

The Power Partnership Program has empowered Power and Water with the technology and knowledge to maintain minimum stable load and reduce the occurrence of blackouts in the short-term. This short-term

solution will safeguard the power system, delivering lower cost reliable electricity to customers in the transition to a renewable future.

Table 7 Expected total project spend

Expected spend	Cost (ex GST)
2021-22 Project spend	$219,187.00
2022-23 Project spend	$648,932.35
2023-24 Project spend	$482,115.08
Expected total project spend	$981,152.00
Remaining	**-$369,082.43**

Next steps

Following the AER's confirmation of the Power and Water 2024-2029 Revised Regulatory Proposal and the associated DOE Regulatory Business Case, the Power Partnerships program is likely to continue into the next regulatory period, until DOEs or community batteries have been implemented sufficiently to deliver the necessary support. Within the Power Partnerships Program, the LV visibility program is likely to be deployed as a territory wide project.