# **Demand Management Plan**

April 2025

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Part of Energy Queensland



## Acknowledgement

Energex and Ergon Energy Network acknowledges the First Peoples of this Nation and their ongoing cultural and spiritual connection to the land, waters and communities in which we live, work and play.

We pay respects to Elders past and present as they are the custodians of sacred stories, traditions and culture of First Nations peoples, we are grateful for their guidance, wisdom and leadership.

We also acknowledge the Country beneath our electricity network, and that it was, and always will be, traditional Aboriginal and Torres Strait Islander land and waters.



## **Message from our Executive**

The energy ecosystem continues to transform with accelerating electrification and significant adoption of Consumer Energy Resources (CER). This transformation drives significant challenges for distribution networks. This plan is part of our response to those challenges.

Queensland network peak demands are historically thermally sensitive and are driven by air conditioning usage during heatwaves. To defer or reduce network augmentation expenditure, we deliver a range of demand flexibility programs. This is part of a suite of measures delivered to ensure our networks remain affordable, reliable and sustainable. Our current programs to manage peak demand include the PeakSmart air conditioning program, our Audio Frequency Load Control (AFLC) program, and our Target Area Program. Moving forward, peak demand is expected to continue to remain thermally sensitive with newly electrified loads such as electric vehicle charging and the electrification of commercial heat pumps having the potential to further add to peak demand challenges.

Energex and Ergon Energy Networks continue to evolve strategies for managing network peak and minimum demands in the future. These strategies include:

- enabling solar soaking through the AFLC program,
- supporting customer response to cost reflective network tariffs that encourage solar soaking and reduced consumption during times of network peak demand,
- increasing our fleet of network connected Battery Energy Storage Systems (BESS),
- encouraging greater adoption of dynamic connections,
- enabling demand flexibility of electric vehicle charging,
- supporting the rollout of smart metering,
- enhancing customer enablement, and
- running trials, research and engagement.

We also expect to see a greater range of demand flexibility services being offered to customers by market partners associated with the growth of behind the meter customer BESS, smart electric vehicle charging programs, and virtual power plants. This year, a new program has been proposed to continue evolving our demand flexibility capabilities. The Aggregated Demand Response Program (ADRP) will enhance our ability to procure flexible demand from market providers. ADRP will operate in partnership with retailers and aggregators to optimise the total value of flexible demand for the connected customer and will work in harmony with the Distributed Energy Resource Management System (DERMS) platform and our dynamic connections framework.

It's clear that there is no one solution to meeting the challenges of the energy transition. The full capabilities of a smart distribution network must be harnessed to accommodate more decentralised and variable energy. Our distribution networks, enabled by new technology are the platform for sharing solar photo-voltaic (PV), storing energy (batteries) and enabling the electrification of transport.

By actively supporting customers to flex their demand, and in collaboration with increasing energy storage, all customers can benefit by reducing the amount of network investment required to successfully navigate this transition.

Jason Hall

Acting Chief Engineer



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## Compliance

This table demonstrates how we comply with our regulatory requirements under section 127C of the Queensland Electricity Regulation 2006 (the Regulation):

### 127C Preparing demand management plan

(1) A distribution entity must, for each financial year, prepare a demand management plan.

(2) The distribution entity must include in the plan-

Regulatory requirement 127C	How we comply in this document	
(a) the entity's long-term strategy for demand m	anagement (the Strategy), including the following	
(i) the principles intended to guide the achievement of the strategy;	Guiding principles included in page 10, Demand Flexibility Strategy Principles	
(ii) a description of existing and planned programs for demand management for the next 5 financial years	Existing and planned programs included in page 12, Demand Flexibility Strategy programs	
(iii) any identified opportunities to achieve the strategy	Opportunities to achieve the strategy included in page 12, Demand Flexibility Strategy, and page 15, the proposed Aggregated Demand Response Program	
(b) the entity's proposed initiatives to be carried out under the strategy in the financial year, including the following		
(i) a description of the initiative	Proposed initiatives included under each of our pillars in page 18, Activities for 2025-26	
(ii) a forecast of the capital and operating costs for the initiative that the entity reasonably considers will be the likely costs for the year;	Forecast expenditure included in page 19, Forecast Expenditure and Associated Targets	
(iii) the entity's performance targets for the initiative.	Entity performance targets for demand flexibility initiatives included in page 19, Forecast Expenditure and Associated Targets	

Table 1 - Compliance with the Regulation

Introduction

businesses across Queensland.

Energex and Ergon Energy Network (Ergon Energy) are part of Energy Queensland, Australia's largest, wholly

government-owned electricity company. Energex and

Providers (DNSP) that deliver electricity to homes and

Ergon Energy are the Distribution Network Service

**Our networks** 

and rural areas.

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**Demand Management Plan** 

Energex and Ergon Energy are required to submit an annual Demand Management Plan (the DM Plan) to meet

our regulatory requirements under section 127C of the Queensland Electricity Regulation 2006 (the Regulation). The DM Plan is critically important to minimise network

augmentation expenditure and improve customer affordability. The DM plan sets out our Demand Flexibility Strategy (the Strategy) and the policies and programs

that we operate to deliver on the Strategy.

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Energex's distribution network supplies electricity to South East Queensland, servicing high density population areas, Our 17 service areas including Brisbane Central Business District, Gold Coast and 1 Far North Sunshine Coast, as well as the South East's extensive urban 2 Tropical Coast 3 Herbert 4 Flinders 5 Pioneer Ergon Energy's distribution network supplies North, Central 6 Central West and Southern Queensland. Around 70% of Ergon Energy's network runs through rural Queensland. This is by far the largest geographical area with the second lowest customer density per network kilometre in the National Electricity Market (NEM). It has a proportionately high investment in sub-transmission assets, compared to the more urban NORTHERN networks, and one of the largest Single Wire Earth Return (SWER) networks in the world. 7 Boulia Ergon Energy also has 33 isolated power stations and 34 isolated networks that collectively form our isolated 8 systems. They supply 39 communities with approx. 8,500 6 Bedourie connections supporting 21,000 people. These isolated systems support a diverse range of communities in the 9 Birdsvill Torres Strait, Gulf of Carpentaria, Cape York, Palm Island and Western Queensland. They are not connected to the

## Badu, Is. 🗸 TORRES STRAIT Ergon Energy Distribution Network **O** Administration Centre • Depots Ergon Energy Isolated Supply Energex Distribution Network Isolated Supply 7 Capricornia 13 Brisbane North 8 Bundaberg Burnett 14 Brisbane Central 15 Brisbane South 9 Fraser Burnett 10 Darling Downs 16 Ipswich Lockyer 11 South West 17 Gold Coast 12 Sunshine Coast 12 SOUTH 13 EAST (16) (11)NEW SOUTH WALES (10)

Figure 1 - Our service area



## The demand management regulatory and strategic environment

Energex and Ergon Energy are each funded through a Regulatory Determination approved by the Australian Energy Regulator (AER).

Regulatory funding is directly linked to augmenting, maintaining and operating the distribution network. In the context of Demand Management, this funding is provided for initiatives and activities which would defer or avoid the need for network augmentation.

Our Demand Management programs support the network in responding to network minimum and maximum demand constraints. These constraints are identified through use of long-term network forecasting (also subject to AER review). Our responses to those constraints are aligned with our broader Energy Queensland Strategic Plan 2032, Future Grid Roadmap and Demand Flexibility Strategy.

Managing system demand constraints, such as Minimum System Load (MSL) or Lack of Reserve (LOR), is not considered a distribution service and therefore not funded by regulated revenue. MSL and LOR are also out of scope of the *Queensland Electricity Regulation 2006*, and therefore not included in this plan.



Figure 2 - The linkages between our Energy Queensland Strategic Plan 2032, Future Grid Roadmap, Demand Flexibility Strategy and DM Plan

#### **Energy Queensland Strategic Plan 2032**

The Energy Queensland Strategic Plan 2032 works towards empowering an Electric Life in 2032, where business and residential energy consumers are enthusiastically embracing existing and emerging energy technologies. This overarching strategy considers the portfolio of companies, our operating environment and strategic framework. This framework outlines strategic areas of focus: Powering tomorrow, Experience excellence, Sustainable future, and Anchored in strength. This strategy informs our Future Grid Roadmap and DM Plan principles.

#### Future Grid Roadmap 2.0

The Future Grid Roadmap outlines where we're heading over the short term, the medium term and the long term. While it cannot describe exactly where we'll be at those milestones, as the future is uncertain, it describes the tools we will use to navigate the optimal path towards a grid that is not only intelligent, but relevant, flexible and reliable. At the same time, it supports a commitment throughout our decisionmaking to leverage our networks to deliver affordable, reliable and sustainable energy. This roadmap informs our Demand Flexibility Strategy and DM Plan.

#### **Demand Flexibility Strategy**

The Demand Flexibility Strategy proactively seeks to identify, develop and enable programs and/or policies towards an engaged flexible future. This will avoid, defer or reduce the need for network augmentation, and increase the network's hosting capacity for CER. Programs are built upon our capabilities, focussing on such areas as integration of demand flexibility into our end-to-end operations, growing our ability to orchestrate CER, and procurement of demand flexibility.

## Influences on demand management

Reforms which have a direct impact on Demand Management initiatives but fall outside the scope of the regulatory requirements of the DM Plan are detailed below.

#### Network tariff reform

Energex and Ergon Energy have proposed a suite of changes to network tariffs as part of the Tariff Structure Statement from 1 July 2025.

Network tariffs support Demand Management strategies in two main ways. Firstly, many of our tariffs include time variant windows which have higher charging rates at peak times and lower rates outside these times. This provides incentives for customers to reduce or shift energy from times most likely to result in future network costs

Secondly, many tariffs target lower rates for customers that choose to adopt load flexibility arrangements. For example, load control tariffs provide customers lower charges for appliances subject to active device management.

### Metering

Smart meters are a key enabler of flexibility while fostering greater levels of market orchestration.

On 28 November 2024, the Australian Energy Market Commission published their final rules for accelerating smart meter deployment. These rules deliver efficient rollout of smart meters to all customers by 2030.

#### Implementation of dynamic connections

Dynamic connections will apply automatically varying import and export limits based on the available capacity of the network. This enables customers to use their CER to meet their objectives, participate in energy markets, provide equitable access for all network users, and enable Energex and Ergon Energy to operate a safe, reliable, and affordable distribution system.

#### **Remote and Isolated Communities**

Our work in remote and isolated communities enables residents and businesses to access energy efficiency opportunities through meaningful community-based involvement, education, training and provides tools and incentives to reduce energy use and support energy security.

It explores further demand flexibility opportunities such as energy efficiency demonstration homes, rebates for energy conservation measures, flexible loads and upskilling of community organisations to provide energy services for communities.

While this program falls outside of the scope of the regulatory requirements of the DM Plan, it is in strong alignment with the Demand Flexibility Strategy, and supports our Isolated Networks Strategy 2030 and the Fringe of Grid Transformation Plan.



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## **Demand Flexibility Strategy**

This section explores our Demand Flexibility Strategy (the Strategy), the principles underpinning the Strategy, and the opportunities identified to achieve the Strategy.

## What is demand flexibility

Demand flexibility is the capability to vary customer load or generation in response to network signals (explicit signals such as event payments or implicit signals via variable tariffs). Demand flexibility programs are incorporated into long-term investment decisions and are important tools to improve the utilisation of networks.

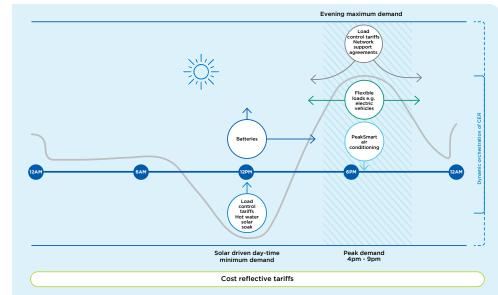
Flexible demand is the portion of load or generation that can be reduced, increased or shifted at a specific time and duration. Customers generally have flexible resources (such as solar PV, batteries, hot water systems, electric vehicles (EVs), pool pumps and water pumping/irrigation equipment) and inflexible resources (such as lighting). The energy demand or operating times of flexible resources can be varied while still meeting the customer needs.

## How demand flexibility helps to manage network peak and minimum demand

Building flexibility is one of our strategic responses to the challenges and opportunities facing the network, including growing penetration of renewables, increasing electrification, and changing weather patterns.

The energy industry is in a period of transition. The increasing penetration of CER and ongoing electrification of energy has had a significant impact on the shape of the load profile. Without mitigation, this will drive increased network peak demand, falling network minimum demand, and reduced network utilisation. Demand flexibility assists in managing the rapidly accelerating daily ramp rate between the daytime minimum demand and early evening peak demand, as per the figure below.

Climate change is increasing the frequency and intensity of extreme weather events. The 2024-25 summer saw heatwave conditions across Queensland. Multiple hot humid days and nights caused a significant increase in customers' air conditioning usage. This underlying demand was observed on those days of intermittent cloud cover when less energy was generated by rooftop solar PV. Under these extreme conditions, some customers are less likely to respond to tariff signals as they place comfort over cost. Implementing our demand flexibility programs helps to reduce demand during the peak periods.



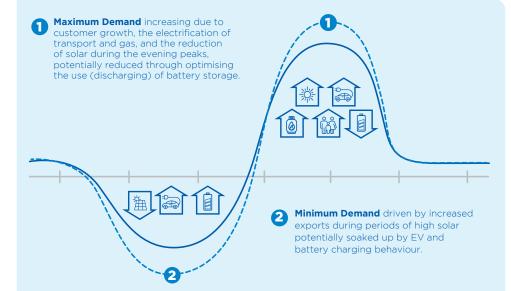


Figure 4 - Maximum and minimum demand

Figure 3 - Demand flexibility

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## **Demand Flexibility Strategy**



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## The value of demand flexibility

While demand flexibility is a key tool of networks, the energy transition has introduced a need for energy generators, retailers, customers and manufacturers to take an active interest in the timing of loads and/or generation in response to changing market conditions.

The value stack of demand flexibility across multiple market participants offers opportunities for networks to avoid investment in expensive infrastructure. By actively supporting customers to flex their demand, and in collaboration with increasing energy storage, we can all benefit by minimising the amount of network investment required to successfully navigate this transition. Alternatively, flexibility can provide immediate capability for short term and extreme events.

It's clear that there is no one solution to meeting the challenges of the energy transition. The full capabilities of a smart distribution network must be harnessed to accommodate more decentralised and variable energy. Our distribution networks, enabled by new technology are the platform for sharing solar PV, storing energy (batteries) and enabling the electrification of transport.

## **Our ambition**

The Strategy has been developed to meet our demand flexibility ambition - that we maximise network utilisation and enable customer adoption of customer energy resources to support the transition to an affordable, reliable and sustainable network.



Figure 5 - Value provided by demand flexibility



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Demand Flexibility Strategy

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MEETS REGULATION 127C (a) i

## Demand Flexibility Strategy principles

We have five key principles which underpin the Strategy and our demand flexibility programs. These principles are:

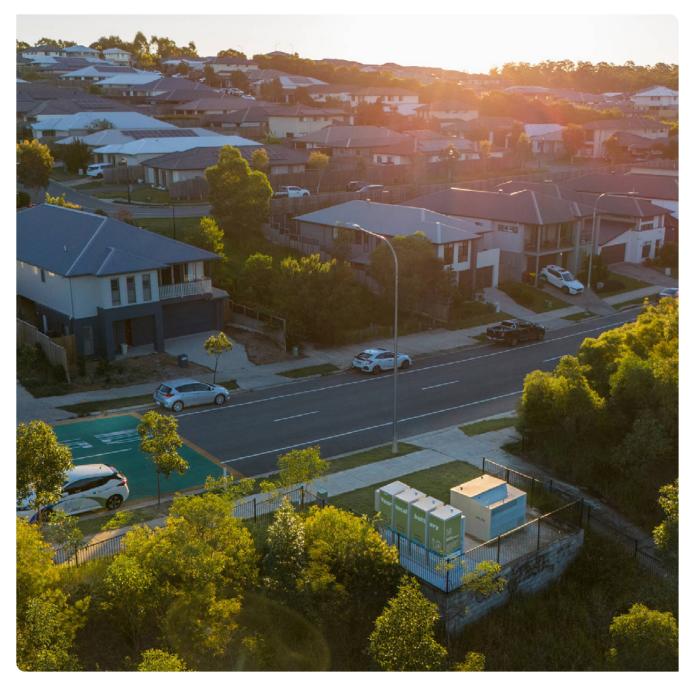
> **Reliable** – our programs increase reliability by mitigating challenges associated with network peak and minimum demand.

Affordable and sustainable – our programs are cost effective and deliver value to customers and to the network.

**Customer centric** – our programs retain customer social licence and strategic relationships with market participants through customer research, stakeholder engagement, transparent processes and sharing of information wherever possible.

**Compliant** - our programs meet any obligations associated with regulation and legislation.

Aligned - our programs align with the Future Grid Roadmap 2.0, the Energy Queensland Strategic Plan 2032, and Queensland Government's energy policy.



#### **MEETS REGULATION 127C (a)**

### **Demand Flexibility Strategy**

## **Our Strategy**

The Strategy will enable proactive development of demand flexibility programs and/or policies that avoid, defer or reduce the need for network augmentation, and increase the network's hosting capacity for CER. These programs are built upon our capabilities, which include: providing efficient financial signals and incentives to customers, integration of demand flexibility into our end-to-end operations, growing our ability to orchestrate CER, influencing industry standards and technology, providing tools and resources to engage and inform customers, Regulatory Investment Tests for procurement of demand flexibility, and our ability to influence relevant policy and regulation.

We've identified three strategic pillars for demand flexibility: **Customer Enablement, Market Orchestration** and **Network Management**. These strategic pillars provide the structure of our Strategy and guide how we are going to achieve our ambition and align our activities. These pillars are differentiated by which agent is responsible for the demand flexibility. For example, under Customer Enablement, the customer manages their own demand in a manner that is mutually beneficial. In the Market Orchestration pillar, we engage with market partners who provide demand flexibility in partnership with customers. Network Management is distribution-led flexible control. All three pillars are essential in a robust and reliable energy system of the future.

Each of these pillars have programs associated with them, which are how we will outwork the Strategy. Those programs are detailed in <u>page 12</u>.

In 2025-26, to reflect our commitment to supporting a least cost transition to our energy future, we propose to add a new program to Market Orchestration - the Aggregated Demand Response Program (the ADRP). See <u>page 15</u> and <u>16</u> for further detail.



#### **Customer Enablement**

Customer enablement ensures that networks understand customers, and that customers understand their consumption, technology and options, and enables them to manage their usage in a manner that is mutually beneficial for the customer and for the network.

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#### **Market Orchestration**

Market Orchestration describes how networks partner with market providers to procure flexible load and generation to address localised network demand events.



#### **Network Management**

Network Management provides secure and reliable network load management through AFLCbased load control capabilities and dynamic connections.



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## **Demand Flexibility Strategy programs**

The programs (opportunities) designed to meet the Strategy are mapped to each pillar of the Strategy.

## Customer

#### **Customer Enablement Program**

Customer Enablement empowers customers to manage their usage and realise the value of their CER, through a program of:

- customer and industry engagement,
- customer research,
- providing tools and easily accessible information for all audiences through regular use of communication channels that suit them best,
- continuing to advocate for policy to enable flexible choice.

#### **DMIAM Program**

The Demand Management Innovation Allowance Mechanism (DMIAM) program is funded by regulated revenues but lies outside the scope of the Regulation.

This program trials innovative demand flexibility capabilities and technologies that demonstrate reduced long-term network costs.

This program provides incentives to customers who can deliver demand flexibility in specific areas of the network identified as having future network constraints, outworked via our Network Support Agreements (NSA).

Orchestration

This demand-side initiative helps us to defer and/ or reduce network costs and to prevent network constraints from arising.

#### **Network Connected BESS Program**

This program involves the installation of network connected, large-scale, neighbourhood and community batteries. The batteries will help manage minimum demand issues on our network by storing excess energy generated by rooftop solar systems during the day and assist with peak demand issues by discharging during peak times.

We will manage the market engagement and commercial arrangements with the sourcing and operation of our fleet of batteries for network support.

#### PROPOSED PROGRAM

#### **Aggregated Demand Response Program**

The ADRP is a market facing program for obtaining flexible demand response.

In 2025-26 we will investigate, develop, refine and trial the ADRP.



### **AFLC Program**

The AFLC program uses load control tariffs to reward customers participation in the program. These optional tariffs offer discounted network tariffs in exchange for reduced hours of supply. Predominantly for hot water systems, these tariffs are also connected to pool pumps and air conditioning units.

#### **PeakSmart Program**

This program is available across both Energex and Ergon Energy's networks. It provides us with flexibility of compatible air conditioners.

We provide an incentive to customers who enrol their PeakSmart air conditioners.

We also provide an incentive to industry partners who install PeakSmart air conditioners.

#### **Enabling Technology**

Our network management initiative includes ongoing support for the enablement of the DERMS platform that underpins future flexibility.

Previous DM plans labelled our initiatives as Broad Based, Targeted and DM Development. We have re-aligned these with our pillars, migrating Targeted to Market Orchestration to foster greater market participation, while differentiating Broad Based as Network Management programs. DM Development (now Customer Enablement) continues to be a key focus area.

**Targeted Area Program** 

Market

MEETS REGULATION 127C (a) ii, iii

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## **Our long-term Demand Flexibility Strategy**

Maturing our demand flexibility capabilities will require the outworking of several long-term strategic initiatives, which are listed below:

### **Customer Enablement**

- Maintenance and improvement of customer trust.
- Stronger policies to support energy performance of buildings, appliance energy efficiency, and the flexibility of large appliances and CER.
- Ensuring customers face an appropriate combination of pricing and incentives that create reliable demand flexibility during network demand events.

### **Market Orchestration**

- Strong uptake of the ADRP, with matured processes for sharing information about forecast opportunities for demand flexibility, including the time, location and value of the opportunity.
- Market offerings and customer adoption of flex-enabled smart technologies.
- Transparency of data and forecasts to support market confidence and participation in CER orchestration.
- Implementation of the DERMS platform to support a cohesive solution for the orchestration of large volumes of flexible loads.

### Network Management

- Transition of network management programs into lastresort but no-regrets programs that work in harmony with market orchestration of flexible loads.
- Greater uptake of dynamic connections.
- Regulation and policy to support CER integration.

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## **Our Customer Enablement Program**

## **Customer Enablement Program**

Our Customer Enablement Program will ensure that customers remain at the heart of the energy transition and our future plans. Our commitment to focusing on Customer Enablement will help enhance customer trust and confidence in our approach to demand flexibility, maximise customer behind the meter investments, and realise mutual value through more cost-effective Network Management investments.

The Customer Enablement Program will be guided by our approach to delivering for our customers as outlined in our Customer Strategy and its related principles where we strive to Know our customers, Empower our customers, Make it easy for our customers, and importantly, Collaborate with our customers to deliver value. Through these principles, we will work in partnership with our customers directly and customer representative groups, and the wider energy industry, including other distributors, industry professionals, retailers and regulators.

Policy is a significant focus of Customer Enablement, as enabling policy reduces costs associated with incentivebased opt-in programs, which typically have low adoption rates. Together we will work with governments on policy and regulatory reform where required.



Figure 7 - Our customers and stakeholders

## How we will deliver our Customer Enablement Program



### Know our customers

We take the time and effort to listen to our customers and understand their differing needs.

- Customer, industry and retailer engagement, including the Energy Queensland Customer Council and associated working groups.
- Customer research, including the QHES.



### **Empower our customers**

We provide our customers with information and guidance to make informed choices around their electricity usage to maximise value.

- Support customer access to data and insights regarding their energy consumption.
- Provision of tools and calculators to understand their options, where appropriate.
- Sharing of fact sheets and customer stories.
- Suitable connection options, which are easy to apply for, are available to customers.



### Make it easy for our customers

We strive to streamline and simplify our end-to-end processes resulting in effortless customer experiences.

 Support the development and review of policies and regulations that improves building energy efficiency, appliance energy efficiency, appliance and DER flexibility, and electrification.



### **Collaborate with our customers**

- We collaborate with our customers, including our stakeholders and others in the energy industry, to deliver shared value.
- Appropriate financial signals are available to customers who choose to flex their demand.
- Where possible, deliver demand flexibility programs through partnership with market providers to enable value stacking.

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## **Aggregated Demand Response Program**

## What is the Aggregated Demand Response Program?

The proposed ADRP is an initial framework to procure demand flexibility from market service providers that enables Energex and Ergon Energy to trial and prepare for participation in a future broader market. ADRP is technology agnostic, scalable and builds on existing program capability. It is accessible to low voltage mass market customers via retailers and aggregators, unlocking the value of CER for customers. Through ADRP, demand flexibility can be called on in targeted areas, or across the whole network for system wide events.

## What can ADRP deliver?

The ADRP will enable Queensland networks to procure flexible demand in both peak and minimum demand scenarios.

The ADRP can be delivered via multiple market participants, through mixed types of CER devices (regardless of ownership) and therefore unlock greater behind the meter flexibility opportunities for customers to access flexibility rewards and incentives via their aggregator. It supports existing loads, offsets lost load from existing programs and manages new load growth on the network.

## **Opportunities for aggregators**

Participants in the ADRP can design their own programs: establishing their product offering/customer incentives, fielding customer enquiries, switching/control of devices, and responding to network requests for flexible loads.

Participants could access fixed retainer fees for firm load control. Variable rate fees would apply for demand flexibility response on an event basis.

The onus for providing verification of the load under control would sit with the participant, and measurement and verification requirements to be spelled out in an ADRP agreement.

## What can be connected?

A minimum aggregated load (per participant) would be required to be eligible for the program.

While ADRP is technology agnostic, it may be more appealing to aggregators with battery systems, aggregated domestic load, building and home energy management systems, generation sources, solar PV, vehicle-to-grid, and/ or behavioural responses (if scaled via an aggregator).

## **Next steps**

Development of ADRP is still underway, with economic analysis to develop the appropriate level of payment for ADRP participation, potential annual events and associated contract development. Development of ADRP will include consideration of the information/tools potential participants will require to participate in the program (for example, level of forecasting, high value areas of the network, etc).

Over 2025-26, it is intended to progress development of ADRP through engagement with market participants, and with a goal to inform an expanded future program.

## How will the Aggregated Demand Response Program operate?

## **Example scenario 1**

A home automation service provider who supplies home automation services, offer their existing customer base discounts for subscribing to their bespoke home energy management program. Through this program their customers access free online services in exchange for giving control of selected appliances such as storage, smart lighting and EVs. The provider understands that their customers do not want their devices turned off, however a few watts reduction from each light, and a slight decrease in EV charging may be acceptable to the customer. The software provider is also an aggregator participating in the ADRP.

On a very hot summer day where fire and weather events cause a smoke and cloud haze over the city, solar PV output is noticeably reduced but humidity continues to climb. The peak demand forecast is approaching asset capacity for a number of network assets. The network calls upon the ADRP market participants to reduce the network demand.

The software provider has 250k households in the greater city area, each with an average of 10 devices connected. They reduce just two watts from each of those 2.5M devices resulting in 5MW of reduction from the peak demand.

The software provider is eligible to be paid for the demand reduction of 5MW whilst their customers are largely unaffected. Any customer complaints are directed to the software provider as they are enacting the flexibility, in line with their program terms and conditions. As the software provider controls the program design, they may choose to reward customer participation.

The network is able to reduce costs by deferring or avoiding network augmentation.

## **Example scenario 2**

A series of large batteries operate on the network, used for various purposes such as accessing value from the trading market, managing tariff exposure, and ensuring availability of supply. A market-based aggregator who has signed on to the ADRP via an ADRP agreement, in turn contracts these BESS systems to participate in the ADRP.

The DNSP identifies a localised minimum demand event resulting in reverse power flow across feeders at unsustainable levels due to solar PV based on usage profiles and weather forecasts. High levels of reverse power flow can lead to network interruptions. To alleviate the reverse flow issues and to ensure continued supply, the DNSP calls upon market participants, including the market-based aggregator to bring on load between 10am and 2pm.

The market-based aggregator proactively depletes their eligible batteries within the supply area in the evening before the event day, providing the maximum possible benefits to them, and to ensure that they are able to bring on loads by charging during the minimum demand event. This enables them to bring on a sum of 4MW across multiple sites during the minimum demand event, resulting in them being paid for providing this response in line with the ADRP agreement.

The network benefits through accessing this flexible demand at a rate cheaper than augmenting the network.

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## Case study - Fringe of Grid

## Stand Alone Power System (SAPS)

Network support SAPS are being trialled for some of our remote and fringe of grid customers. SAPS usually include renewable power generation (mainly solar PV) and battery storage with back-up diesel generation.

Recent advances in battery management systems and reductions in the cost of batteries means that SAPS are becoming more economically viable compared to network supply.

SAPS can improve customer experiences, particularly for remote customers supplied with electricity over long distances, while also providing an opportunity to lower the cost of supply in future.

We are currently trialling network supported SAPS as an alternative for individual customers supplied by long SWER. One of our trials is to supply the Bustard Heads lighthouse and historic building located in a hard to access section of our network near Gladstone in Central Queensland. The existing line is 24km long and runs through national park with thick vegetation and difficult terrain that is often impassable in wet weather or high tides.

Following a long period of consultation, during which we worked with our customers and a number of relevant stakeholders, we have installed a SAPS that meets the customers' needs and our business objectives.

We're also trialling network support SAPS to supply two cattle stations in Western Queensland. These customers are located near Mount Isa in a unique arrangement where they're supplied by a SWER line that is in turn connected to networks run by two separate third parties.

These trials continue to provide important data to help develop future energy solutions for customers in high cost-to-serve network areas and whether SAPS can deliver the supply required to meet the complex energy needs of remote customers in the long-term.

### **Solar Pumps**

We're helping farmers and station owners make savings while managing their current and future water-pumping needs with a renewable energy solution.

The Solar Pump program is already helping eligible farmers and station owners across Queensland to meet the costs of purchasing a solar powered water pump as an alternative to their existing electricity grid supplied pump when they abolish (remove) their connection to our electricity network.

The program realises benefits for both customers and Ergon Energy by providing oneoff financial subsidies for high cost-to-serve customers. Where the customer elects to participate, their load on the network can be supplied by a customer-owned solar pump at a lower cost to both the network and the customer.

This will enable all associated network infrastructure to be removed and cease accruing network costs associated with inspection, maintenance, and asset replacement.

The program is voluntary however participation will only occur when ongoing customer and network benefits can be demonstrated.

A solar pump is a practical solution for many customers that makes sense technically, environmentally, and financially for them and for the network.

## Activities for 2025-26

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Our Demand Flexibility Strategy guides our initiatives and activities to ensure they respond to network and customer needs both now and in the future. Activities for the current and proposed programs for the next financial year, within each pillar of the Strategy, are shown below.

Demand Flexibility Strateov

> **Customer** Enablement

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Compliance

## Customer Enablement

### **Customer Enablement Program**

1. Continue to deliver the Customer Enablement Program.

### **Solar Pump Program**

2. Continued support for the Solar Pump Program supporting farmers in Fringe of Grid areas to meet the costs of purchasing solar pumps as an alternative to the existing grid.

### **DMIAM Program**

3. Continue to administer DMIAM.

## Market Orchestration

### **Targeted Area Program**

4. Continue to deliver Network Support Agreements.

### **Network Connected BESS Program**

5. Continue to deliver the network BESS program through market engagement and development of commercial contracts for network connected batteries.

### Aggregated Demand Response Program

6. Initial deployment of the ADRP, including engagement with potential market partners.



### **Network Management Initiatives**

- 7. Support customer education and support of SAPS and micro-grids in fringe of grid locations.
- 8. Continue to support the deployment of DERMS and dynamic connections.

### **AFLC Program**

9. Continue to deliver the AFLC program

### **PeakSmart Program**

- 10. Continue to deliver the PeakSmart program.
- 11. Conduct a review of the PeakSmart program.



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## **Forecast expenditure and associated targets**

This section summarises our budget and targets for the 2025-26 financial year for our regulated programs.

The forecast expenditure in 2025–26 is \$6.2M and \$5.3M for Energex and Ergon Energy respectively.

Table 2 provides a breakdown of expenditure for Energex programs and an estimate of the associated demand reduction to be provided by the programs. Likewise, Table 3 contains a breakdown of expenditure for Ergon Energy programs and an estimate of the associated demand reduction to be provided by the programs.

Future year mega volt ampere (MVA) demand flexibility targets may vary based on our developing program focus and customer uptake of new technologies. The 2025-26 targets associated with our PeakSmart program represent a continuation of status quo. PeakSmart procured in 2025-26 provides ongoing benefit for a ten-year period. These targets will require a review in September 2025 following the finalisation of the PeakSmart review.

The network connected battery program is not funded by regulated revenue and therefore has no forecast expenditure. In Energex the program is contracted to provide 38.2MW and the Ergon Energy program is contracted to provide 84.1MW (subject to battery installation completion).

In administering the DMIAM, allowances for innovation projects that meet the AER defined eligibility criteria are determined over the 2025-30 period with \$1.5M allocated for each DNSP for 2025-26.

## Energex direct costs for DM programs (excludes overheads)

Program	Operating Expenditure (\$,000)	Demand Management (MVA)
Customer Enablement	2,415	n/a
Market Orchestration (Targeted Area)	1,122	19.60
Network Management (PeakSmart*)	2,650	7.46
Total	6,187	27.06

Table 2 - Energex direct costs for DM initiatives (excludes overheads)

## Ergon Energy direct costs for DM programs (excludes overheads)

Program	Operating Expenditure (\$,000)	Demand Management (MVA)
Customer Enablement	2,263	n/a
Market Orchestration (Targeted Area)	2,773	28.40
Network Management (PeakSmart*)	265	0.62
Total	5,301	29.02

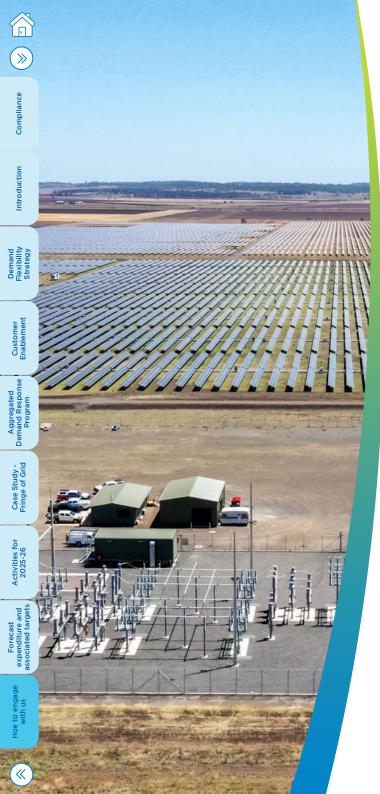
 Table 3 - Ergon Energy direct costs for DM initiatives (excludes overheads)

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## How to engage with us

- We use the Talking Energy website (<u>talkingenergy.com.</u> <u>au</u>) to engage with customers and industry, to conduct surveys, and to share insights we've learned.
- Each year we conduct the **Queensland Household Energy Survey** (QHES) as a joint venture with Powerlink. The QHES is Queensland's most comprehensive survey capturing household insights and trends in energy behaviours and attitudes. Our most recent survey results are on the QHES website (https://qhes.com.au)
- Our Industry Engagement Register is a list of stakeholders interested in staying up to date about distribution network planning and expansion projects. It's our way of keeping stakeholders informed about how to be involved in future non-network initiatives. Search "Industry engagement register" on the Energex or Ergon Energy websites to register for industry notifications.
- Each year we seek demand response or non-network solutions to help us manage network constraints and/or limitations in target areas. Current feeder limitations for <u>Energex</u> and <u>Ergon Energy</u> are listed on the respective websites.
- We can partner with external parties to utilise **Demand Management Innovation Allowance Mechanism**

(DMIAM) funding. If you have an idea for an innovative project with a focus on Demand Management and would like to explore partnering with us and accessing DMIAM funding, email <u>demandmanagement@energex.com.au</u> or <u>demandmanagement@ergon.com.au</u>

- Each year we release a new **Distribution Annual Planning Report** (DAPR). The current DAPR covers a five-year period and outlines our strategies and plans for Queensland. The latest DAPR for <u>Energex</u> and <u>Ergon</u> <u>Energy</u> are listed on the respective websites.
- We regularly email our **Solar and Electrical Contractor newsletters** to all electricians registered with us. Search *"Electrical contractor updates"* on the <u>Energex</u> or <u>Ergon</u> <u>Energy</u> website to register for electrical contractor updates.
- We conduct webinars called "**Energy Academy**" for electrical contractors across Queensland. Peak industry bodies are asked to suggest topics for each session, and we can answer questions either during or after each the session. Search "*Energy Academy*" on the <u>Energex</u> or <u>Ergon Energy</u> website.





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