Advice to ERGANZ

Flexibility options to benefit vulnerable and low-income households

June 2026

FLEXFORUM

Context

Electricity Retailers and Generators Association of New Zealand (ERGANZ) asked FlexForum for advice on flexible customer propositions which could be adopted in Aotearoa New Zealand to benefit vulnerable and low-income (financially vulnerable) households.

This advice was developed using:

- a scan undertaken for FlexForum of international markets* examining the customer experience of distributed energy resources (DER) and flexibility for vulnerable and low-income consumers. The scan identified propositions targeting financially vulnerable households available in Australia, the United Kingdom, and the United States of America.
- FlexForum Member expertise on practical options to offer flexible customer propositions targeting financially vulnerable households obtained through a structured workshop held on 4 June 2026.

Note: FlexForum will expand on this advice in a FlexForum Insights to be produced from a deep dive into pricing and physical orchestration mechanisms.

*a copy of the scan is available at the end of this document

What ERGANZ members could do

Right now, those who are least able to afford it are more likely to absorb increasing infrastructure costs through higher power bills, while affluent homeowners can realise the rewards of providing value to the energy system through assets like batteries and EVs.

Financially vulnerable customers would have more options and a greater ability to reduce their power bills and energy costs through access to:

- A greater range of flexibility propositions (ie, plans) – particularly propositions designed to autonomously realise the benefits of a wider range of flex resources and the benefits of dynamic market and network price signals
- Enhanced access to distributed flexible resources – options for households and communities need to be developed and scaled in parallel.

What ERGANZ members could do - expand the range of propositions

Successfully expanding the range of propositions requires comms infrastructure, learning and earning trust:

- Broadening the range of plans to easily reward flexing of other household loads, eg, space heating, requires comms infrastructure to enable the sort of coordination now available for hot water.
- The same comms infrastructure is needed to easily reward flexing in response to dynamic wholesale and network pricing signals (noting that dynamic network pricing signals are a work in progress).
- The practicalities of establishing this comms infrastructure includes placing comms capability in households (to connect to flex resources) and retailers will need IT system capabilities (to talk to resources).

The big unknown: Convincing customers that the flex proposition will make them better off with no impact on their day-to-day activities and lower power bills and costs. Customers don't want flex. They want outcomes such as money back in their pockets, the same benefits as their neighbour, more control over their bills and resilience when an outage or disaster hits.

What ERGANZ members could do - enhance access to flex resources

Enhancing access to flexible resources requires funding and financing options:

- The benefits of flex propositions rely on a household having flex resources – heat pumps, batteries, EVs, solar etc – which are not necessarily accessible to financially vulnerable households for reasons including, low income, credit access, or low home ownership.
- This customer cohort is material. About 130,000 households (6% of all households) are reported to experience energy hardship. About 546,000 households (27% of all households) have an income of $50k a year or less (<60% of median household income – Stats NZ data and FlexForum calculations).
- Funding sources and financing options for flex assets are increasing, but we need to understand which ownership models, benefit-sharing approaches and financing sources are best suited to a range of customer situations (eg, community groups, private or public renting, iwi)
  - A one-size-fits-all funding source is unlikely given the range of customer circumstances within the wider cohort. Which source, and the associated financing approach, suits the various customer groups needs to be explored to establish a scalable and comprehensive financing solution.
  - Potential financing partners include retailers, banks, landlords, electricity trusts, iwi, local government, and central government (for example, a Home Energy Fund).

How this could be done (1)

FlexForum Members viewed the key barrier to households benefiting from flexibility propositions is their confidence the products will make them better off, both not impacting their day-to-day activities and lowering power bills and costs.

- FlexForum Members observed that a “show, not tell” approach working with communities has been the most effective way to gain customer trust and confidence with new, flex products, with a key success factor being customers signing up because ‘my neighbour said he’d saved heaps’. This is also evidenced in the international scan.

Two complementary ways to earn confidence were suggested: working through the voices that communities already rely (rather than individuals), and by designing offers that are easy to join and pay off from day one; no matter someone’s income or asset status.

- Several communities and groups provide a ready test bed for (more) flexible propositions AND exploring options to expand access by financially vulnerable customers, with suggestions including: Ōtautahi Community Housing Trust, and other community housing providers; and iwi and hapu. The potential to partner with social retailers like Toast Electric and Nau Mae Ra was also noted.
- Competition law requirements could be managed by each retailer working with 1-2 communities to develop a scalable flex proposition. They would not collaborate on product design (and should not given competition law).
- A collaborative approach could be taken to identify and test options for funding and financial flex access working with local parties (eg, landlords, distributors, iwi) and national groups (eg, Community Energy Network, Community Housing Aotearoa).

How this could be done (2)

The approach is like the EECA scaled flexibility pilots project where 6 distributors are each running a pilot, but collaborating on common issues, and collating experience and insights.

FlexForum did not explore detailed requirements of a project scope and approach, but these considerations emerged from discussions:

- Short term option: design flex propositions to realise benefits with minimal capital expenditure, eg, smart thermostats for space heating or hot water cylinders. The international scan identified programmes targeting water and space heating resources using cheaper technology options (including a DIY solution).
- Medium term option: flex propositions designed around partnerships with third party funders (eg, large landlords) who finance flex assets (eg, solar, battery storage) in exchange for a share in ongoing savings and revenue.

Programme costs were not considered in detail. Observations on costs were:

- ERGANZ members have existing relationships with communities and groups. These could be leveraged for this initiative.
- A collaborative approach, with sharing of resources for common aspects, would reduce programme costs.
- There is a case to allocate funds currently used to manage financial stress to explore enduring options to use flex to help to address financial hardship.

Why ERGANZ-led action will deliver wide-ranging benefits…

ERGANZ-led action would…

- Demonstrate tangible commitment to exploring enduring solutions to improve affordability for the financially vulnerable customers who need the benefits available from flex the most and soonest AND build the community trust and social license required for the mass-market uptake of flexible propositions to maximise the availability of the flex resource.
- Develop market-facing capabilities and processes so these are ready when flex is called on at scale. The problem is not existing regulatory barriers, it's that existing regulatory arrangements and market settings do not enable or encourage flex to be used when it is efficient to do so, eg, there are no regulatory barriers to a retailer establishing a virtual power plant (VPP – an aggregation of distributed resources).
- Complement and encourage ENA and distributor flexibility-related efforts. The pace and direction of these efforts need to recognise the retailer interests in a contestable flex resource, and are critical to realising the network-related smart system benefits, improving the ROI of back-office and comms investments necessary to offer flexible propositions.
- Help to expand the flex resource by identifying low-cost ways to integrate a wider range of flex resources. The focus on larger, easily accessible existing flex resources (ie, hot water, and to a lesser extent EV's and stationary batteries) locks in a slower rate of growth. A stock of local flex resources (accessible via a range of flexible propositions), and a clear growth trajectory, is needed by 2030 for flex to reduce the scale (and cost) of both generation and network infrastructure investment plans
- Mitigate risks that Aotearoa New Zealand is slow getting on the smart system boat and of sudden and messy regulatory interventions. A centrally coordinated and whole-of-system approach would be ideal, with the international scan highlighting the leading role of government and regulators in developing flex propositions for financially vulnerable customers.

Flexibility options for financially vulnerable customers

Overarching insights from the international scan and FlexForum workshop are outlined to provide context for the advice. The scan of Australia, the UK, and the USA electricity markets identified 11 flexibility propositions specifically targeting financially vulnerable customers. FlexForum Members discussed and tested the findings at a 4 June 2026 workshop. Some key conclusions include:

- Flex propositions are designed around flex resources, which means benefits are more accessible to those customers able to afford solar and batteries, EV's, heat pumps etc.
- There is a strong connection between expanding ownership of flex assets by financially vulnerable customers and the involvement of a wider range of funding and financing partners.
- The international scan indicated government or regulators play an important role in providing financially vulnerable customers with access to flex propositions and enhanced access to flexible resources. However, this involvement is not a necessary condition for expanding the range of propositions.
- The untapped flex resource is material – with an expansion of the flex resource possible by increasing the number of households saying yes to a flex plan and increasing the number and capacity of resources being flexed.
- Maximising the value and benefits of the flex resource is not easy for all customers, and harder yet for financially vulnerable customers. Providing people with practical flex experience is the most effective way to normalise flex and encourage uptake.

Read the workshop notes

Read international scan

Customers need confidence in how the proposition works

Customers don't want flex in and of itself. Their appliances exist to do a job, and the compensation required to use that appliance differently, or to allow someone else to control how the appliance does its job requires benefits greater than the potential hassle.

- The extent of the set-up and ongoing hassle customers may face is not widely understood, particularly for retailer activated propositions (ie, autonomous hot water flex-type products), eg, a lack of wifi coverage at the battery location means a customer may not be able to participate in a battery aggregation programme.
- There is little (or no) familiarity with the pros and cons of flexing, and engaging customers to participate in flex programmes is challenging without customers understanding the, what their appliances are capable of, what the electricity sector values and is prepared to pay for, and the impact on their energy use and lifestyles.
- People trust their friends, neighbours, and community groups. Programmes delivered by, with, or through non-electricity organisations are more likely to result in people having access to the real-life everyday experiences of friends and neighbours, which increases confidence and participation.
- Financially vulnerable customers have less ability to fund the upfront costs of flex capable equipment, and less ability to deal with repair and maintenance costs, whether expected or not.

A classic chicken and egg scenario... people want to know a proposition works before signing up, but retailers need to be confident there will be sufficient demand for a proposition before offering it.

Access to flex assets is the key to financially vulnerable customers realising the most benefits from flex

Hot water flex by itself will not deliver the expected smart system benefits. These require harnessing a wider range of flexible resources including solar, stationary and mobile batteries, and flexible household loads such as space heating.

The flexibility propositions targeting financially vulnerable households identified through the international scan:

- provide customers with bill savings and benefits through either automated or human actioned responses to price signals designed to motivate flexible responses to system and market conditions.
- enable customers access to subsidised or third-party owned flex resources, including both higher cost solar or stationary batteries, and lower control devices for space heating.
- involve third parties, eg, landlords or flex coordinators, financing the flex resources.

A checklist for a flex proposition targeting financially vulnerable customers:

- ❑ Is there value – real savings, not money shuffling – for both customers and the electricity system as a whole?
- ❑ Are there clear and tangible customer benefits? (e.g. bill reductions, direct payments, or bill credits)
- ❑ Is the flex coordination mechanism fit-for-purpose with minimum necessary upfront and ongoing hassle?
- ❑ Does it remove or significantly reduce the upfront capital costs for the target customers?
- ❑ Is there a clear business case for third-party investors in any flex assets?

The barriers to flex propositions are mostly structural

The range of flexible propositions currently available in Aotearoa New Zealand is constrained less by regulatory barriers than by existing market and system settings not being designed with flex in mind. A list of inter-related concerns emerged from the workshop (most have been raised in previous FlexForum discussions):

- There are holes in the value stack due to inadequate price signals which do not put an efficient price on the value of a flexible response at a particular time and place. These inadequate signals reduce commercial incentives to develop flexible propositions, and direct investments toward grid-scale batteries, wind and solar farms.
- Uncertainty about the size of the potential flex resource, and little ability for retailers (or other investors) to gauge whether the investment is worth it.
  - Hot water flex is used through existing comms infrastructure (and accessed via customer propositions), but even so only about 1.2 million households (of about 1.8 million) may be benefiting from hot water flex plans (the data is not public). And of these, only about 100,000 are enabled (via metering infrastructure) to use that flex for the more valuable dynamic responses.
  - Two-thirds of households have a heat pump, up from just under 50% in 2018. International experience shows space heating and cooling can be a meaningful source of flex.
  - Distributed generation uptake remains low, with residential solar installed in 3.7% of households. About 10% of these systems are understood to be paired with a stationary battery. By contrast, over 30% of Australian households have solar and at least 10% of those also have batteries, meaning flexibility propositions can rely on the presence of these existing assets.
- Investors are hesitant about incurring the upfront set-up costs, particularly to establish comms infrastructure for dependable dynamic (more valuable) flex responses. Noting however that technology is not a barrier. If incentives (price signals) are well designed, the comms infrastructure business case will be clear.

Testing flex propositions is a way forward (1)

The international scan and workshop identified several flex propositions worth testing to identify the potential to provide enduring in-market options for financially vulnerable customers to reduce their power bills and see the benefits in the short term.

- Most existing schemes manage affordability and bill stress, eg, power credits, subsidies, instead of providing customers the tools to (at least in part) address the problem by reducing their bills.
- The other pathway to an enduring reduction to system costs and bills is to increase overall usage to spread costs more widely. This approach still requires flexibility (obtained via flexibility propositions) to ensure a lower peak demand growth rate and lower infrastructure costs.

Appendix B lists the 11 flexible propositions identified through the international scan in order of their applicability here.

- Propositions designed around water and space heating can enable participation using these (more likely) existing resources using technology options which are cheaper to buy and install. The Voltalis and EasyCool programmes are examples of this approach.
- The low level of household ownership means propositions targeting financially vulnerable customers may not initially be designed around solar and battery systems. However, funding and financing options can be explored to enhance access to these resources and the associated flex benefits. The Tenant Power, Community battery for social housing and Neighbourhood Power Plan programmes are examples of this approach.

Testing flex propositions is a way forward (2)

FlexForum Members observed that using solar installed on community housing to benefit individual households and the wider community is an effective local approach to using flex resources. Examples include:

- The Kāinga Ora Share the sunshine initiative involving 180 households in Wellington with power from solar installed on suitable properties used by the tenants in those locations, and revenue from surplus power used to benefit the wider group of tenants (including those without solar).
- The Franklin Energy Sharing initiative involving the revenue from solar and a battery installed on Counties Energy offices (and an Auckland Council building) being used to support households identified by local community organisations.

Appendix A: International scan: common design elements (1)

The international scan identified common elements in seven areas.

Element	Description
Target customer groups	Programmes focus on low income households. Some schemes target a subset of households, for example social housing tenants or prepayment customers. One programme suggests that low-income households have a greater flex response due to greater price sensitivity.
Flexibility resources	Programmes include mechanisms for low-income households to install or access flexible equipment, for example space and water heating, rooftop solar, or battery storage.
Asset ownership	Some schemes rely on third-party ownership (e.g. landlords, retailers, aggregators, flexibility coordinators, retailers, regulators or government) or subsidies, and preferential financing to remove upfront cost barriers to participation.
Customer benefits	Customers receive tangible, quantified value through bill savings (tariff discounts or avoided peak costs), direct payments or credits, and improved resilience (e.g. backup power from solar and batteries). In some models, benefits also accrue to third party flexibility resource owners, who receive solar export revenues or a contribution from the tenant for energy provided from the asset.

Elements	Description
Retailer benefits	Benefits to retailers and flexibility coordinators reflect their commercial interests: revenue from selling aggregated customer flexibility (if possible), peak demand reduction (reducing high price energy purchases), network support (voltage or congestion management), improved system operation (reduced curtailment), reduced emissions, and better customer retention.
Coordination and control mechanisms	Programmes use different coordination and control mechanisms: • Direct automated control of flexibility devices, including via supplied control devices with DIY installation • Advisory notices (voluntary participation, with response compared against a baseline after each event) • Price signals (e.g. time-of-use tariffs, leaving it up to the customer to realise benefits by avoiding charges or responding to a set import/export schedule)
Delivery model and partners	The types of partners involved in a programme depend on the resources involved, the target customers, and the coordination mechanism. • Design and operation: retailers or flexibility coordinators • Devices/platforms: technology providers • End use: households • Price signals: system operators, network operators, or wholesale market mechanisms • Asset ownership: Landlords, social housing groups, community energy groups, householders • Funding (subsidies, preferential loans): government, charitable organisations • Oversight: regulators, governments

Appendix B: Applicability of international programmes (1)

Lead	Programme	Suitability	Application to New Zealand
Voltalis, UK	Demand response in social housing	High	Does not require existing generation or storage, instead using direct control of electric heating (relevant for New Zealand as heat pumps and electric heating are common). It requires an aggregator that supplies and operates the DER technology, while a social housing provider gives access to participating social housing tenants.
Entergy, USA	EasyCool smart thermostat	High	Low-cost, easy to deploy, and does not require customers to own internet-connected thermostat. Would require minimal funding to cover asset costs. Can leverage wide heat pump penetration. Works via direct control, thus not requiring price signals directly to the end user.
Octopus, UK	Tenant Power	Medium-high	Relies on landlord-led deployment of solar in social housing. Requires a clear communication model between landlords, retailers, and tenants, as well as an upfront capital investment from the landlord.
Utilita, UK	Power Payback	Medium	Simple, low-cost model using advisory notices encouraging customers to reduce usage. Easy to implement within NZ's retailer-led system. However, behavioural response alone may deliver limited and inconsistent flexibility compared to automated control.

Applicability of international programmes (2)

Lead	Programme	Suitability	Application to New Zealand
AGL, South Australia	Community Batteries for social housing	Medium	Community batteries remove the need for individual household investment, improving access for low-income households. However, it requires a clear VPP framework where community batteries can be integrated, high upfront funding, clear ownership model, and cost recovery as the revenue from the batteries is to be used to lower bills
AGL, South Australia	Virtual Power Plant for social housing	Medium-low	Requires large-scale deployment of household batteries and rooftop solar with significant upfront public capital. New Zealand has low battery penetration and limited funding mechanisms for social housing DER. For this proposition to work, there needs to be a funding scheme for DER for low-income households, as well as a formal VPP participation framework.
Various utilities, New England, USA	ConnectedSolutions	Medium-low	Uses direct control and performance payments, helping overcome weak price signals and building the value stack. However, customers need to own or lease a battery system (high barrier for low-income households).

Applicability of international programmes (3)

Lead	Programme	Suitability	Application to New Zealand
Australian Energy Regulator	Solar Sharer Offer	Medium-low	Simple time-of-use pricing approach that encourages households to load shift and lower bills without requiring DER ownership. However, it relies on persistent low wholesale market prices in the middle of the day. In Australia, this occurs because of the high penetration of grid scale and distributed solar generation. New Zealand's lower penetration levels and high proportion of flexible hydro generation means that we are unlikely to have a surplus energy in the middle of the day for the foreseeable future.
Hawaiian Electric, USA	BYOD+	Low	Requires clear export pricing and tariff structures, which are underdeveloped in NZ, as well as formal VPP participation frameworks. Requires households to own a battery system so they can integrate it to the VPP.
Entergy, USA	Neighbourhood Power Plan	Low	Relies on very high public funding (regulatory settlement funds were used in New Orleans) to install solar-plus-battery storage systems at households and community institutions. Needs a citywide virtual power plant (VPP).
California Public Utilities Commission	Self-generation Incentive Program	Low	Very high subsidy levels for storage and solar+storage rebates as upfront capacity-based incentives in exchange for demand response participation. Not feasible in NZ, as there is no capacity mechanism to provide up-front value, and no government interest in providing subsidies.

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Flexibility options for vulnerable and low-income households

An international scan

27 May 2026

Flexibility options for vulnerable and low-income households: insights from an international scan

FlexForum is an incorporated society with Members from across the electricity ecosystem committed to sharing knowledge and collaborating to enable households, businesses and communities to easily and routinely maximise the value of their flexible electricity resources.[1]

FlexForum was asked by the Electricity Retailers' and Generators' Association of New Zealand (ERGANZ) in March 2026 to provide advice on flexible customer propositions in other jurisdictions that may be suitable for adoption in New Zealand to support vulnerable and low-income households.

ERGANZ requested that the advice be developed using:

- a scan of international electricity markets to identify retail flexibility propositions to examine the customer experience of distributed energy resources (DER) and flexibility for vulnerable and low-income consumers.
- FlexForum Member experience and insights regarding practical options for applying the scan results in the Aotearoa New Zealand context, including taking account of regulatory settings relevant to DER and flexibility options.

FlexForum contracted Robinson Bowmaker Paul (RBP) to undertake the international scan. Their report follows this introduction and summary of themes.

ERGANZ provided funding support for FlexForum to undertake the international scan and develop its advice. FlexForum has complete editorial and intellectual independence over the task.

Insights from the international scan

The international scan reviewed retail propositions in the United Kingdom, Australia and United States of America which are:

- designed to explicitly realise the value of a flexible response, eg, by motivating the household to shift usage either on a schedule or dynamically
- offered specifically to vulnerable and low-income customers.

[1] FlexForum is an incorporated society with 49 Members from across the electricity ecosystem. Members include: gentailers, retailers, metering services suppliers, electric vehicle charger manufacturers, energy management software firms, Transpower, distributors, solutions providers, universities, and some real people.

The 11 flexibility propositions identified through the scan have the seven common design elements described in Table 1.

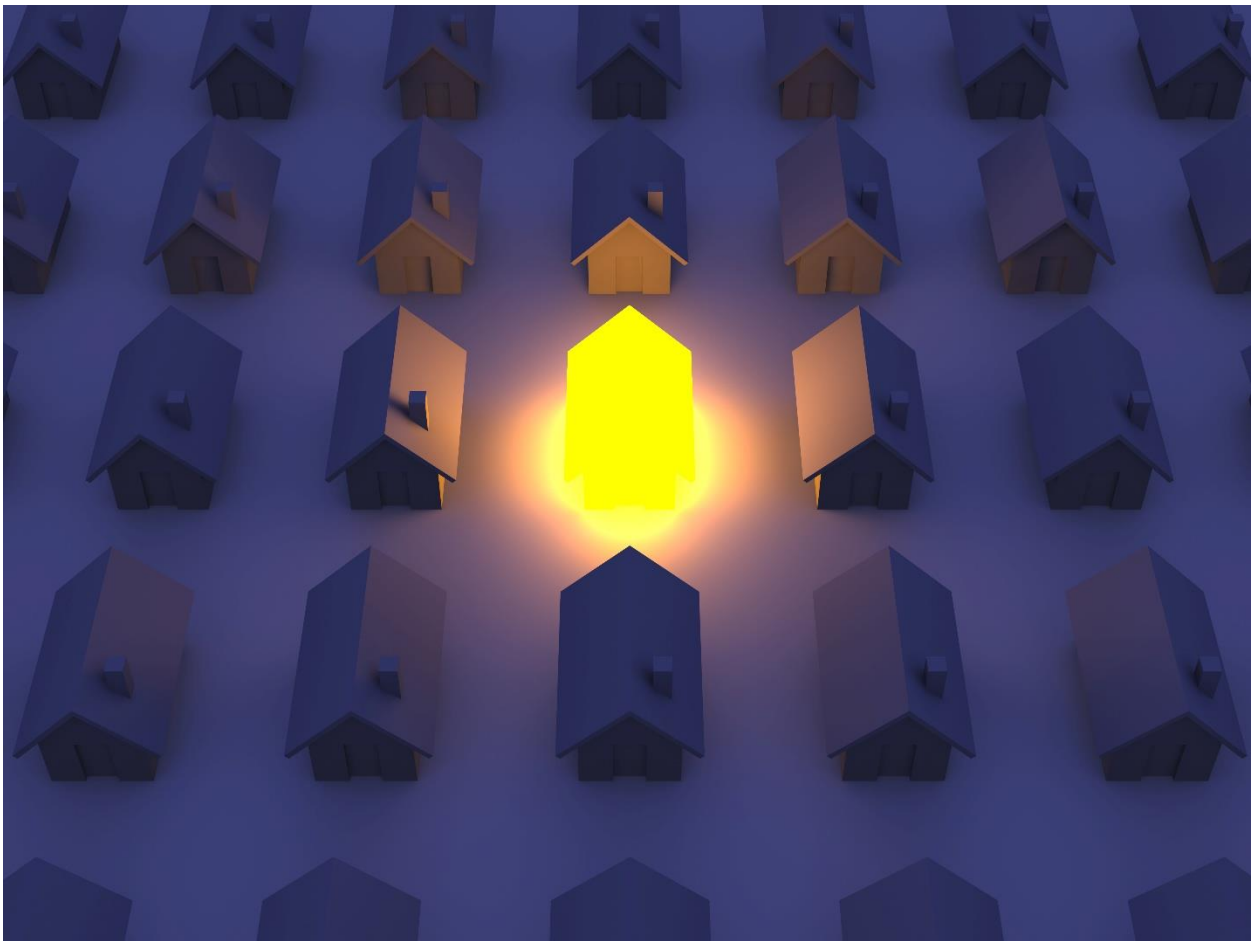
Table 1: Common design factors of flexibility propositions

Factors	Description
Target specific customer cohorts	Programmes focus on low-income households. Some schemes target a subset of households, for example social housing tenants or prepayment customers. One programme suggests that low-income households have a greater flex response due to greater price sensitivity.
Flexibility resources	Programmes involve the households using flexible resources, for example space and water heating, rooftop solar, or battery storage, to benefit by responding to signals.
Asset ownership and financing	Programmes make it possible for low-income households to obtain flexible resources via alternative asset ownership and financing mechanisms to remove upfront cost barriers: • third-party ownership (eg, landlords, retailers, flexibility coordinators) • or subsidies (ie, regulators or government) • preferential financing.
Customer benefits	Customer propositions provide tangible, quantified value through bill savings (tariff discounts or avoided peak costs), direct payments or credits, and improved resilience (e.g. backup power from solar and batteries). In some models, benefits also accrue to third party flexibility resource owners, who receive solar export revenues or a contribution from the tenant for energy provided from the asset.
Retailer benefits	The retailers and flexibility coordinators offering the flexibility proposition accrue a range of benefits reflecting their commercial interests and incentives: • revenue from selling aggregated customer flexibility (if possible) • peak demand reduction (reducing high price energy purchases) • network support (voltage or congestion management) • improved system operation (reduced curtailment) • reduced emissions • better customer retention.
Coordination and control mechanisms	Programmes use coordination and control mechanisms based on connectivity, installation hassle (eg, DIY or truck roll), pricing signals and flex use cases: • direct automated control of flexibility devices, including via supplied control devices with DIY installation • advisory notices (voluntary participation, with response compared against a baseline after each event) • price signals (eg, time-of-use tariffs, leaving it up to the customer to realise benefits by avoiding charges or responding to a set import/export schedule)

Factors	Description
Delivery model and partners	The types of partners involved in a programme depend on the resources involved, the target customers, and the coordination mechanism. • Design and operation: retailers or flexibility coordinators • Devices/platforms: technology providers • End use: households • Price signals: system operators, network operators, or wholesale market mechanisms • Asset ownership: Landlords, social housing groups, community energy groups, householders • Funding (subsidies, preferential loans): government, charitable organisations • Oversight: regulators, governments

FlexForum will provide a view on the prospects for adopting the flexibility propositions identified through the scan after obtaining Member insights and expertise regarding barriers and practicalities.

ROBINSON BOWMAKER PAUL



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FLEXIBILITY OPTIONS FOR VULNERABLE AND LOW-INCOME HOUSEHOLDS

25 May 2026

Prepared by: Catlianna Evans, James Seidelin, Tim Robinson

Robinson Bowmaker Paul
Level 17, Grand Plimmer Tower
2-6 Gilmer Terrace
Wellington 6011
New Zealand
rbp.consulting

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CONTENTS

1 INTRODUCTION

Hundreds of thousands of New Zealand households experience energy hardship, meaning they struggle to afford electricity and utility bills[2, 3]. These households are at risk of power disconnections and restricted access to heating or electricity.

Lower-income households also face a higher "energy burden", which refers to the share of household income spent on energy costs. Low-income households are spending over 7.5% of their income on electricity, which means their energy burden is roughly five times higher than high-income households[4]. As a result, families face difficult choices between paying energy bills and covering essential needs such as food, medicine, and other basic expenses.

At the same time, technology advances are enabling customers to use flexibility services to adjust their electricity consumption bringing benefits to the power system. By shifting or reducing usage during periods of system stress, households can help ease system constraints, lower overall generation costs, and support the integration of renewable energy. These developments create new opportunities for low-income and vulnerable customers to actively participate in flexibility programmes, allowing them to reduce their electricity bills in return for reducing or shifting when they use energy. Thus, flexibility programmes targeted at low-income and vulnerable customers help make the energy transition more inclusive by enabling participation without requiring personal investment in technologies like solar or home battery storage, while still delivering lower energy costs and system benefits.

This report provides an overview of retailer- and aggregator-led flexibility propositions that ease energy burden for low-income consumers through direct compensation, improved control over energy use, or access to distributed energy resources (DER). The report focuses on the United

[2] Reporting on energy hardship measures | Ministry of Business, Innovation & Employment and Report on energy hardship measures – Year ended June 2024

[3] O'Sullivan, Chen, Fyfe, & Pierse, November 2024, Energy poverty: The lowest-income households pay more in Aotearoa. *Public Health Expert Briefing.* https://www.phcc.org.nz/briefing/energy-poverty-lowest-income-households-pay-more-aotearoa. "The most commonly agreed method for estimating energy poverty across the population is to calculate how many households are spending twice the median proportion income on energy-related expenditure, known as '2M'. Using this measure and the 2018/2019 data from the Household Economic Survey, we find that before housing costs 16.37% of households were spending twice the median proportion on household energy. Extrapolating to the number of households in NZ, this is around 360,000 households. When we take housing costs into account, this jumps to 30.54%, or 595,000 households."

[4] O'Sullivan et al, Energy poverty: The lowest-income households pay more in Aotearoa.

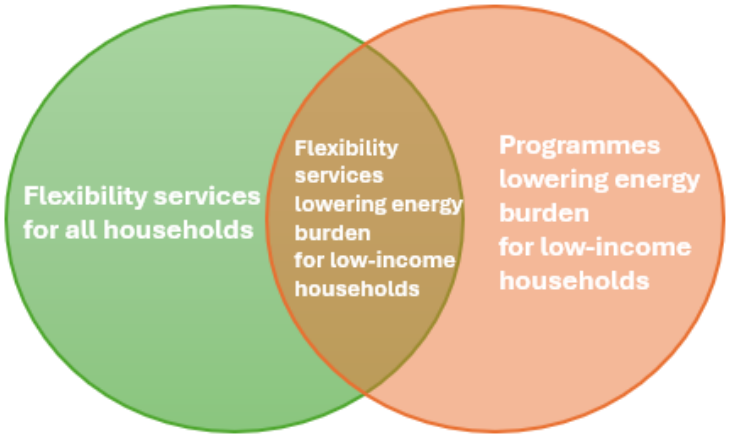
Kingdom and Australia – which have electricity markets comparable to New Zealand's – as well as programmes in the USA, which are mostly run by vertically integrated monopoly utilities. Focusing on markets with similar structures makes it easier to identify flexibility programmes that could realistically be adapted for New Zealand.

A graphical representation of the research scope is shown in Figure 1.

For all programmes identified, we explore a consistent set of information categories to understand how they operate and what we can learn from them:

- Who is the programme targeted to?
- What flexibility characteristics does it seek to access (time shifting or actual load reduction, BTM load reduction vs net injection, notice period, activation frequency)?
- Who is involved (retailer, aggregator, distributor)?
- How is it implemented (direct control, advisory notices, pricing signals)?
- What benefits does it provide to the programme owner?
- How is the customer compensated for participation?
- How big is the programme (number of connections, volume of energy)?
- What effect has it had on customer bills?

Figure 1: Scope of International Scan



2 UNITED KINGDOM

This chapter describes three relevant programmes in the UK:

- Octopus 'Tenant Power' using a solar and battery system to reduce energy costs;
- Voltalis automating heating loads to reduce peak demand; and
- Utilita 'Power Playback' rewarding prepayment customers for lowering demand.

A summary of these programmes is shown in Table 2, and they are discussed further below.

Table 2: Active flexibility programmes in the UK

UK	Octopus 'Tenant Power'[5]	Voltalis Demand-Response in Social Housing[6]	Utilita Power Payback[7]
Status	Already operating	In trial, programme announced November 2025	Already operating (part of UK Demand Flexibility Service)
Who is the programme targeted to?	Tenants and landlords of social housing	Tenants of social housing	Pre-payment customers (many low-income households)
What flexibility characteristics does it seek to access (e.g. time shifting vs real-time load reduction, BTM[8] load reduction vs net injection, notice period, activation frequency)?	Net export to the grid of solar generation and battery storage during peak demand periods	Automated BTM load reduction of electric heating during peak demand periods	Load reduction during peak periods
Who is involved (retailer, aggregator, distributor)?	Octopus Energy (retailer) provides the tariff, social landlords install and own the	Voltalis (aggregator) supplies the technology and operates the virtual power	Utilita Energy (retailer) with National Grid ESO (system operator)

[5] Introducing Tenant Power | Octopus Energy

[6] Voltalis partners with Look Ahead to deliver innovative energy flexibility for social housing residents - Voltalis UK

[7] Smart prepayment customers' experience of the Demand Flexibility Service | Nesta

[8] Behind-the-meter

UK	Octopus 'Tenant Power'[5]	Voltalis Demand-Response in Social Housing[6]	Utilita Power Payback[7]
	solar-battery systems, and tenants receive the discounted energy	plant, while Look Ahead Care and Support (social housing providers) provide access to participating social housing tenants	
How is it implemented (direct control, advisory notices, pricing signals)?	Automated device control of solar and batteries	Direct control via installed smart devices to electric heating	Advisory notices via SMS/app encouraging customers to reduce usage
What benefits does it provide to the programme owner?	It enables Octopus and landlords to support decarbonisation while generating export revenue	Voltalis earns revenue from providing demand-response services to the electricity system	Demand reduction services and improve customer engagement
How is the customer compensated for participation?	Tenants receive a fixed unit-rate discount on their electricity bills	Lower electricity bills through reduced consumption	Cash rewards or bill credits
How big is the programme (number of connections, volume of energy)?	Not publicly disclosed	Around 87 social housings	Not publicly disclosed
What effect has it had on customer bills?	Reduced by around £200 yearly on average	Reduced	Reduced

There are also some flexibility programmes that operate passively, where households contribute to peak-demand reduction simply through energy-efficiency upgrades rather than active behavioural change. Government-funded retrofits in low-income and social housing — such as insulation, rooftop solar, heat pumps, and modern storage heating — lower overall and peak electricity use, creating a form of flexibility without direct appliance control. The Smarter Network Upgrades (SNUG)[9] project in the UK is one example, where social landlords aggregate these retrofit-driven savings to provide flexibility services to the grid, with trials beginning in April 2026[10].

[9] SNUG links social housing with flexibility - Centre for Sustainable Energy and Access to Flexibility - Centre for Sustainable Energy and Investigating lived experiences of energy flexibility - Centre for Sustainable Energy

[10] SNUG: energy efficiency meets grid flexibility - Centre for Sustainable Energy and SNUG (Smarter Network Upgrades) - UKPN Innovation

2.1 OCTOPUS 'TENANT POWER'

Octopus Energy, a UK-based energy supplier known for innovative tariffs and a technology-driven approach to decarbonising homes, has developed the Octopus 'Tenant Power' programme[11] specifically designed for social housing.

The Tenant Power programme is built around a partnership between Octopus Energy and social housing landlords. Participating landlords install Octopus-approved solar panels and battery systems at social housing sites. The solar panels generate renewable electricity on-site, which is stored in the battery and used to reduce tenants' reliance on grid electricity. Landlords can also install smart heat pumps to have even greater reductions in tenants' savings.

A key feature of this programme is the fixed unit-rate discount applied to tenants' electricity bills. This discount acts as a financial buffer against rising energy prices and remains consistent throughout the year, ensuring savings even during winter months when heating costs are higher. On average, tenants can save around GBP 200 per year[12], equivalent to approximately a 25% reduction compared with Octopus Standard Variable Tariff. The exact level of discount is determined by factors such as the number of solar panels installed, the size of the battery system, and the landlord's agreed share of the savings.

The Tenant Power programme tackles a long-standing issue in social housing where tenants often saw little benefit from solar panels and batteries because no tariff existed to pass on the savings, while landlords received no financial return to justify further investment. Tenant Power resolves this by enabling landlords to earn revenue from exporting surplus solar energy while giving participating tenants a discounted electricity rate. This export income helps offset installation costs and strengthens the financial case for wider adoption of renewable technologies across social housing.

2.2 VOLTALIS DEMAND-RESPONSE IN SOCIAL HOUSING

Voltalis, a European aggregator in energy flexibility services, has recently partnered with social housing providers Look Ahead Care and Support to introduce a demand-response programme for social

[11] Introducing Tenant Power | Octopus Energy

[12] Around NZD $454

housing in the UK[13]. The programme focuses on reducing peak-time electricity consumption by installing smart control devices on electric heating appliances, which manage loads automatically without requiring behavioural changes from tenants[14]. The programme, announced in November 2025, is currently in its trial phase and its performance is still monitored.

Voltalis is covering the cost of installing and maintaining both its smart thermostats and new Trust Electric Heating hybrid radiators across 87 Look Ahead Care and Support properties. In addition, the Glen Dimplex high-retention heaters already installed by Look Ahead Care and Support will be integrated into Voltalis' Virtual Power Plant, allowing them to participate in automated flexibility services.

These smart devices connect each site to Voltalis' virtual power plant (VPP), enabling real-time adjustments to electricity demand. A virtual power plant (VPP) is a network of DER - such as solar panels, batteries, smart electric heaters, or EV chargers – that are virtually connected and controlled so they can operate together like a single power plant. During periods of high peak demand, Voltalis' VPP reduces electricity consumption by temporarily switching or modulating heating loads. These interventions are short and designed to not impact tenants' comfort.

Voltalis, as the flexibility provider, receives market payments for delivering demand-side response services. Social housing tenants share in flexibility revenues through reduced energy bills rather than direct cash payments.

2.3 UTILITA "POWER PAYBACK"

UK retailer Utilita is participating in the system operator National Grid ESO Demand Flexibility Service (DFS), using its "Power Payback"[15] programme that rewards smart prepayment meter households for cutting electricity use during high-demand periods to help stabilise the grid when renewable generation is low. Prepayment households are more likely to be on lower incomes, renters, elderly or disabled, and therefore more sensitive to changes in day-to-day energy spending.

DFS customers receive advance notice via SMS of "Power Payback events", during which they can choose to participate by reducing their usage below a set baseline. The SMS is sent up to 24 hours

[13] Voltalis partners with Look Ahead to deliver innovative energy flexibility for social housing residents - Voltalis UK

[14] Solution (Voltalis) - Partnership (Look Ahead)

[15] Understanding smart prepayment meter customers' experience of flexibility | Nesta

before the event along with a recommendation from Utilita on ways that the customer could reduce their usage. Another SMS is sent once the event is over.

When a customer takes part in a "Power Payback event", Utilita analyses half-hourly data collected from the customer's smart meter. Eligible customers earn energy credits, known as "Rewards", which are paid by the National Grid as a result of reduced demand during peak periods, helping avoid the need to bring additional generators online. These "Rewards" are passed directly to the customers' electricity meter within 72 hours following the event, with higher reductions in usage resulting in greater "Rewards". The amount of credits is calculated by comparing the household's actual usage during the "Power Back event" with their historical meter data and multiplying the difference (in kWh) by the unit rate (£/kWh).

Although rewards are typically modest, households value the opportunity to lower bills, understand their energy use better, and support the wider electricity system. Responses vary from switching off appliances to shifting cooking or laundry, with flexibility often limited by family routines, especially in homes with children[16].

Smart prepayment meter customers feel the effects of the Demand Flexibility Service more directly because they pay for energy in advance. Any reduction or increase in use immediately changes how much credit they have left, making energy management more visible and financially important. Smart meters support this by giving real-time information on usage and remaining credit, helping people adjust during DFS events. They also allow suppliers to confirm reductions quickly, ensuring prepayment customers receive rewards promptly and can take part fully in flexibility schemes.

[16] Smart prepayment customers' experience of the Demand Flexibility Service | Nesta

3 AUSTRALIA

This chapter describes two programmes explicitly designed for low-income or social housing customers in Australia, as well as one retailer-led flexibility programme designed for all customers, from which low-income customers can also benefit:

- South Australia Virtual Power Plant (SA VPP);
- AGL's emPowering SA programme;
- The Solar Sharer Offer (SSO)

These are summarised in Table 3.

Table 3: Australia's Active Flexibility Programmes

Australia	South Australia Virtual Power Plant (SA VPP) for social housing	AGL's South Australia Community Batteries for social housing	Solar Sharer Offer (SSO)
Status	Operating	In progress, announced in July 2025	Starts July 2026
Who is the programme targeted to?	Social and community housing tenants	Social housing tenants and low-income/hardship households	Residential and small business customers with smart meters, not limited to rooftop solar owners
What flexibility characteristics does it seek to access (time shifting vs real-time load reduction, BTM[17] load reduction vs net injection, notice period, activation frequency)?	Battery time-shifting and net export to grid	Community battery time-shifting and grid support via Virtual Power Plant	Time shifting (as Time of Use tariff)
Who is involved (retailer, aggregator, distributor)?	AGL (aggregator, owner and operator), South Australia state government, Tesla (tech/install), Energy Locals (retailer)	AGL (retailer and aggregator), South Australian Government, Australian Renewable Energy Agency (ARENA)	Electricity retailers with more than 1,000 customers across Default Market Offer (DMO) regions

[17] Behind-the-meter

Australia	South Australia Virtual Power Plant (SA VPP) for social housing	AGL's South Australia Community Batteries for social housing	Solar Sharer Offer (SSO)
How is it implemented (direct control, advisory notices, pricing signals)?	Direct control of home battery systems via VPP platform	Direct control of community batteries integrated into AGL Virtual Power Plant	Tariff price signal
What benefits does it provide to the programme owner?	Grid stability services, dispatchable DER, wholesale market participation	Dispatchable storage, Virtual Power Plant expansion, wholesale and grid services	Reduce midday generation curtailment, ease evening peak demand growth, and place downward pressure on wholesale and network costs
How is the customer compensated for participation?	Lower pricing: electricity rates 25% below the Default Market Offer	Lower pricing: access to AGL plan priced 25% below the Default Market Offer	No cost for usage during 3 hours in the middle of each day
How big is the programme (number of connections, volume of energy)?	6,500 Housing Trust homes	18 community batteries, 11.5 MW total capacity	Tariff applies to all residential and small-business customers with smart meters on standing offers (DMO) in New South Wales, South-East Queensland and South Australia
What effect has it had on customer bills?	Reduced, annual savings up to AUD 575 per household	Typical household will see AUD 551 off of their annual electricity bill.	Reduced, if load shifted to midday hours

3.1 South Australia Virtual Power Plant (SA VPP)

Established in 2018, the South Australia Virtual Power Plant (SA VPP)[18] is Australia's first and largest virtual power plant. The programme was developed through a collaboration between the South Australian Government, Tesla, and Energy Locals, which acts as the retailer and electricity provider for all participating households. The equipment is owned and operated by aggregator AGL, combining rooftop solar and battery systems installed across participating households. Initial funding included

[18] South Australia's Virtual Power Plant | Energy & Mining

AUD 10 million from the state government's Grid Scale Storage Fund, AUD 30 million from the Clean Energy Finance Corporation, and AUD 18 million from Tesla.[19]

In 2024, the programme expanded its scope to include social and community housing tenants on low incomes, demonstrating how DER aggregation can be utilised to support vulnerable customers. As part of this expansion, the SA VPP partnered with Adelaide's community housing provider Unity Housing[20] to provide lower energy bills to currently 6,500 Housing Trust homes.

Participating social tenants have 5kW/13.5KWh Tesla Powerwall battery and if suitable a solar PV system of 5kW installed at no cost. The equipment remains owned by AGL, but enables estimated annual bill savings of up to AUD 575 per household[21]. Participants also benefit from blackout protection through their battery system, along with access to clean, sustainable electricity.

The virtual plant is operated using Wi-Fi and software that charges and discharges the home batteries to trade electricity in the National Energy Market (NEM). The SA VPP also provides grid stability services. It responded to a power station trip in Queensland in October 2019, supplied power to Port Lincoln during bushfire conditions in November 2019, addressed high- and low-frequency events in the grid in December 2019, and supported the SA power system during interconnector outages between South Australia and Victoria in November 2019, January 2020, and November 2022[22].

3.2 AGL's South Australia Community Batteries

AGL Energy, acting as both retailer and aggregator, has partnered with the South Australian State government to develop the 'emPowering SA' programme, where sixteen 700kW/182kWh community batteries will be built and used across South Australia to reduce electricity costs for social housing tenants and households facing financial hardship.

The programme also incorporates two community batteries recently commissioned by the South Australian government at Magill and Edwardstown. Together, these eighteen assets provide 11.5 MW of flexible storage capacity, which will be integrated into AGL's Virtual Power Plant (VPP), described in section 3.1. The revenue from the batteries will be used to assist in reducing electricity bills for up to

[19] Around NZD $70 million

[20] Virtual power plant connects to community housing – pv magazine Australia

[21] Based on the annual saving estimate for a residential customer with an annual energy consumption of 4,000 kWh/year on an anytime tariff with rates at a price 25% below the Default Market Offer (DMO)

[22] South Australia's Virtual Power Plant | Energy & Mining

10,500 lower-income households nominated by the South Australian government. A typical eligible household would save around AUD 551 off of their annual electricity bill[23].

Through emPowering SA, more than 10,000 low-income and energy hardship households will have access to AGL retail electricity plan prices at 25% below the current South Australian Default Market Offer (DMO).

The project is funded by the Australian Renewable Energy Agency (ARENA) under Community Battery Program Round 1, with approximately AUD 11 million, complemented by AUD 4 million invested by AGL[24].

3.3 The Solar Sharer Offer (SSO)

The SSO is a regulated, price-based flexibility programme, requiring retailers to offer a tariff option incentivising customers to shift energy use into periods with high solar generation[25]. The SSO was developed through a coordinated reform process involving the Australian Government, the Australian Department of Climate Change, Energy, the Environment and Water's (DCCEEW) and the AER, following a review of the Default Market Offer (DMO) framework. The programme was announced in January 2026[26] and is scheduled to commence on 1 July 2026 for residential and small business customers in New South Wales, South-East Queensland and South Australia, with other jurisdictions under consideration from 2027. All electricity retailers with more than 1,000 customers in DMO regions are required to offer the SSO, ensuring it is widely available across the market rather than a voluntary retailer initiative[27].

Australia has around four million rooftop solar systems, making solar the largest source of electricity on the grid. However, this midday surge can strain the system and lead to wasted energy. The SSO addresses these challenges while helping households reduce electricity bills by encouraging electricity use when solar generation is most abundant.

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[23] https://arena.gov.au/projects/empowering-sa/

[24] Around NZD $18.1 million in total

[25] SSO Outcomes paper from Have your say on a Solar Sharer Offer (SSO) - Department of Climate Change, Energy, Environment and Water

[26] AER releases Draft Default Market Offer 2026-27 | Australian Energy Regulator (AER)

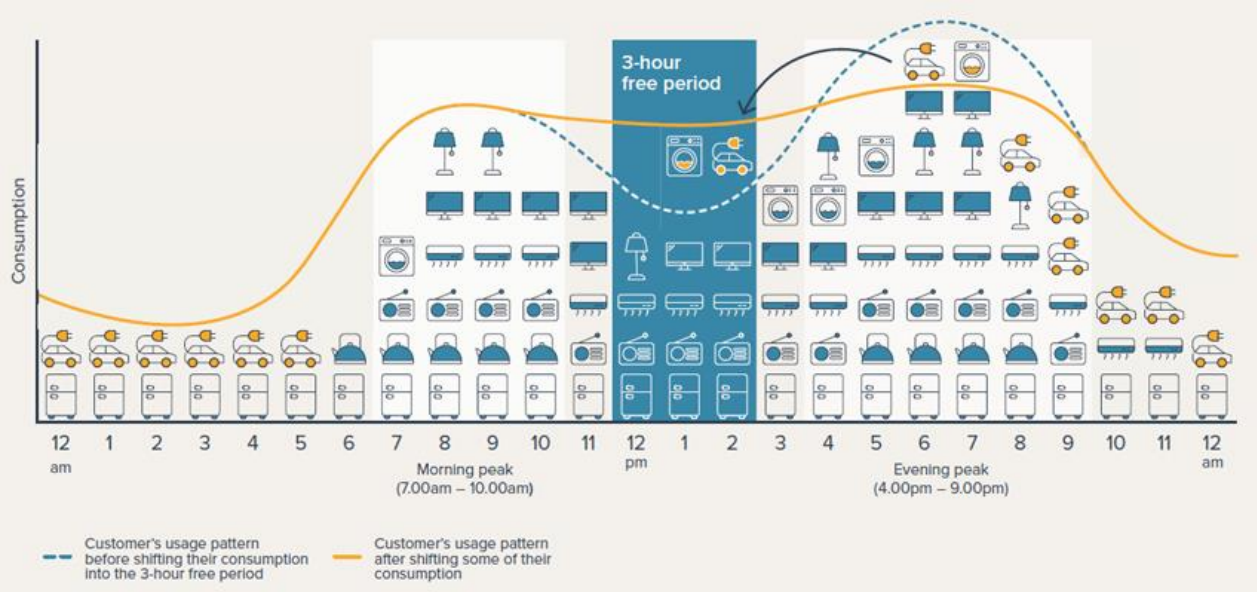
[27] Retailer fact sheet on Solar Sharer Offer | Australian Energy Regulator (AER)

The Solar Sharer Offer (SSO) is a non-mandatory time-of-use standing tariff available to residential customers who opt in, have a smart meter, and are located in New South Wales, South-East Queensland or South Australia. It provides a daily three-hour window of zero-cost electricity, scheduled in the middle of the day when solar generation is highest and wholesale and network costs are lowest.

The draft determination will set these free usage periods as a fixed year-round in local time at 11am-2pm for New South Wales and South-East Queensland and 12pm-3pm for South Australia. Compared to the Standard DMO Time of Use Tariff, which has no free periods but has electricity prices that vary depending on the time (peak/shoulder/off-peak), the SSO has the same annual costs however slightly higher prices (1 to 4 cents/kWh) in the non-free period[28]. The SSO also includes a reasonable-use cap, which sets the per-household daily limit of 24 kWh on the amount of electricity that can be used free of charge during the SSO free-usage period. If a household uses more than 24 kWh during this period, any additional electricity is charged at the standard off-peak rate.

Figure 2 below provides a visual example of load shifting under the SSO between 12pm and 3pm, illustrating how moving electricity use from peak periods into the free-usage window smooths the consumption profile.

Figure 2: Load Shifting Example under the Solar Sharer Offer[29]



[28] Draft determination | Australian Energy Regulator (AER)

[29] Image taken from Australian government and AER's '2026-2027 Default Market Offer Draft Determination' paper from Draft determination | Australian Energy Regulator (AER)

By pricing electricity at $0/kWh during the midday solar peak, the SSO encourages households to shift flexible electricity use to times of abundant rooftop solar generation, improving system utilisation and reducing bills for participating customers. Rather than relying on aggregation, direct load control or market participation, the SSO delivers passive demand-side flexibility through retail price regulation, making it one of Australia's first large-scale, price-based flexibility mechanisms embedded in a standard standing offer.

This SSO tariff targets residential and small business customers, including renters and households without rooftop solar or batteries, enabling bill savings for those who can shift flexible loads such as appliance use, EV charging or air-conditioning. At scale, the programme is expected to reduce midday curtailment risks, ease evening peak demand growth, and place downward pressure on wholesale and network costs.

While the SSO is not specifically targeted at low-income households, it can still deliver bill savings to them by encouraging electricity use during the midday free-power window. Residents of households more likely to be home during the day—such as unemployed people, retirees, carers, and families with young children—are often better positioned to shift usage during midday and benefit. Although access currently requires a smart meter, planned reforms from 2027 could broaden eligibility.

4 UNITED STATES OF AMERICA

This chapter describes five retailer or utility-led flexibility programmes in the United States that are explicitly designed for or include provisions for low-income customers:

- EasyCool Smart Thermometer Demand Response
- New Orleans Neighbourhood Power Plan
- California's Self-Generation Incentive Program (SGIP)
- ConnectedSolutions
- Hawaii BYOD+ Virtual Power Plant

All programmes involve free or subsidised provision of equipment to low-income households, and all but one involve only customers supplied by vertically integrated utilities.

These are summarised in Table 33 below.

Table 3: Selected active flexibility programmes in the USA

USA	ConnectedSolutions	EasyCool Smart Thermometer	New Orleans Neighbourhood Power Plan	California SGIP	Hawaii BYOD+ VPP
Status	Active since 2019 with 2024-2026 cycle pending regulatory approval	Launched late 2025	Approved December 2025, installations expected in 2026	Active, budget opened June 2025. Waitlist for further builds from late 2025	Adopted in March 2025
Who is the programme targeted to?	Residential/commercial customers with BTM batteries. 0% loan offered in RI for low income customers.	Entergy NO customers, free thermostats to low-income households	Broad application to New Orleans residents, 40% of funds reserved for Low-income households/community	Low-income residential customers and residents of wildfire/PSPS zones	Hawaii Electric customers w BTM storage and installation for low-income customers
What flexibility characteristics does it seek to access (time shifting or real-time load reduction, BTM[30] load reduction vs net injection, notice period, activation frequency)?	BTM load reduction via battery dispatch during peak demand events, net export to grid during peak events up to 3 hrs, possible up to 60 times a summer.	Direct load control during peak events up to a 4°F raise for up to 4 hrs; max 15 events across all of summer	Battery time shifting and net export to grid during grid stress and outages, VPP dispatch of distributed storage	BTM load reduction and resilience, battery time shifting and self consumption. Demand response required for all resident participants	Net export from BTM batteries to grid, customer selects a fixed window to export power daily over a 5 year commitment
Who is involved (retailer,	MA: National Grid, Eversource, Unitil, Cape	Entergy New Orleans (utility/administrator);	New Orleans City Council (funder/approver); Entergy	CPUC (regulator/funder); PG&E, SCE, SDG&E, SoCalGas,	Hawaii PUC (regulator); Hawaiian Electric

[30] Behind-the-meter

USA	ConnectedSolutions	EasyCool Smart Thermometer	New Orleans Neighbourhood Power Plan	California SGIP	Hawaii BYOD+ VPP
aggregator, distributor)?	Light Compact (utilities/PAs); MassCEC support. RI: Rhode Island Energy. NH: Eversource. Clean Energy Group (policy)	New Orleans City Council (overseer); Energy Smart NOLA (delivery vehicle); Google/Honeywell (device partners)	New Orleans (utility); Together New Orleans & Alliance for Affordable Energy (community advocates)	LADWP (programme administrators); GRID Alternatives & CSE (implementers); approved installers	(utility/administrator); Hawaii Green Infrastructure Authority (GEMS) (outreach); solar/battery installers
How is it implemented (direct control, advisory notices, pricing signals)?	Direct control of BTM batteries via connected inverter platform; utility sends automated dispatch signal night-before; performance-based annual incentive	Direct control of smart thermostat via Wi-Fi; utility sends automated signal; customers can opt out of individual events	Upfront rebates for solar + storage installation; ongoing grid performance credits	Rebate/incentive payments (upfront capacity-based rebates); mandatory enrolment in a demand response programme for residential participants	Customer-directed: customer selects 2-hr daily export window; battery auto-dispatches; upfront incentive + monthly export bill credits at retail rate
What benefits does it provide to the programme owner?	Regional peak demand reduction (avoids peaker plant use); Clean Peak Energy Standard compliance; lower system costs for all ratepayers	Peak demand reduction in summer; grid stability; deferred infrastructure investment; improved customer satisfaction	Grid reliability improvement; reduced outage recovery time; dispatchable distributed storage	GHG emission reduction; distribution/transmission relief; demand reduction; wildfire resilience; DER market development	Dispatchable behind-the-meter storage; grid frequency response; renewable energy integration; progress toward 100% clean energy by 2045
How is the customer compensated for participation?	Annual performance incentive (USD): $275/kW average (MA); $225/kW average (RI). Average $1,200/year in MA. 0% HEAT loan financing	USD 75 on enrolment + USD 25/year. Free thermostat for income-qualified customers	Upfront rebate for solar + battery installation; ongoing grid performance credits; no rate increase	Equity: ~USD 850/kWh rebate (~85% of battery cost). Equity Resiliency: ~USD 1,000/kWh rebate (up to 100% of cost). RSSE: paired solar + battery at low/no cost. General: USD 150–200/kWh	Upfront: USD 400/kW (standard); USD 800/kW for low-income customers. Monthly export bill credits at retail rate (~USD 52/month average). 5-year agreement

USA	ConnectedSolutions	EasyCool Smart Thermometer	New Orleans Neighbourhood Power Plan	California SGIP	Hawaii BYOD+ VPP
	available. RI low-income customers: 0% financing				
How big is the programme (number of connections, volume of energy)?	~34,000 participants with ~310 MW enrolled by end of 2020 (all tracks). Exact LMI participant count not published	~209,000 total Entergy NOLA customers eligible; low-income thermostat offer limited to income-qualified subset. Event cap: 15/summer	~1,500 homes + 150–250 community institutions targeted over 3 years; USD 30M total (USD 28M upfront incentives)	USD 1B authorised through 2024; USD 280M RSSE budget (2025). Tens of thousands of installs statewide across all tracks. Equity tracks specifically: no disaggregated count published	Statewide cap: 50 MW total (25 MW low-income / 25 MW non-low-income) under BYOD+ tariff
What effect has it had on customer bills?	Average USD 1,200/year incentive income (MA); can offset battery system costs over time. Bill savings indirect (peaker avoidance lowers system costs)	USD 75 in direct incentives. Free thermostat worth ~USD 130–145/year in estimated energy savings for low-income households	Expected bill reduction for participants via self-generation and grid credits; 40% of funding reserved for low-income households. Exact savings not yet published (programme not yet live)	Significant reduction; Equity Resiliency customers may cover 100% of battery cost; RSSE customers get near-free solar + storage. General: 15–20% of battery cost offset	Reduced bills via self-generation + monthly export credits (~USD52/month). Low-income customers receive double the upfront incentive, improving payback

4.1 CONNECTEDSOLUTIONS (NEW ENGLAND)

ConnectedSolutions is a battery demand response programme that originated in Massachusetts in 2019 and has since expanded to Rhode Island, Connecticut and New Hampshire[31]. It was the first programme in the United States to formally incorporate behind the meter battery storage into a state energy efficiency plan. ConnectedSolutions is administered by major New England utilities (National Grid, Eversource, Unitil, and Rhode Island Energy) and Cape Light Compact (a regional energy services organisation).

Customers who own or lease a compatible behind the meter battery system enrol in ConnectedSolutions and agree to allow their utility to automatically discharge their battery during peak demand events when electricity demand on the New England grid (managed by ISO New England) is at its highest. Events typically occur on the hottest summer afternoons and can last up to three hours. Customers are compensated on a performance basis where they earn an annual incentive of USD 275/kW delivered during events in Massachusetts and USD 225/kW in Rhode Island[32]. On average, Massachusetts participants have earned around USD 1,200 per year[33]. There is also a winter dispatch component in some territories. Critically, the utility provides the night-before notice for events and events are not called ahead of forecast severe weather, meaning customers retain their backup power when they are most likely to need it.

By the end of 2020 the programme had enrolled approximately 34,000 participants across all categories with around 310 MW of capacity[34]. This is more than triple the Massachusetts Clean Peak Energy Standard target for that year and growth has continued since. The programme is financed through state energy efficiency funds, which means it does not appear as a separate line item on customer bills.

The high upfront cost of battery systems creates a barrier for lower-income households meaning LMI customers have been substantially underrepresented in enrolment. Rhode Island Energy provides 0% financing for the cost of a battery system with no down payment. A pilot project in Massachusetts also

[31] https://www.cleanegroup.org/wp-content/uploads/ConnectedSolutions-An-Assessment-for-Massachusetts.pdf

[32] https://enphase.com/installers/grid-services/connectedsolutions

[33] https://www.nationalgridus.com/MA-Home/Connected-Solutions/BatteryProgram

[34] https://www.cleanegroup.org/wp-content/uploads/ConnectedSolutions-An-Assessment-for-Massachusetts.pdf

explored providing free batteries to low-income customers with critical home health devices, supported by a CEG grant, though this remains limited in scale.

4.2 EasyCool Smart Thermostat Demand Response (New Orleans)

Entergy New Orleans operates a smart thermostat demand response programme called EasyCool which is delivered through its broader Energy Smart programme[35]. This is a comprehensive energy efficiency and demand-side management initiative developed by the New Orleans City Council and administered by Entergy. EasyCool allows residential and small business customers who own eligible internet-connected thermostats to enrol and earn incentives in exchange for brief, automated adjustments to their cooling systems during periods of high electricity demand.

When a peak demand event is triggered, usually on hot summer weekdays, Entergy remotely adjusts enrolled thermostats by up to four degrees Fahrenheit for up to four hours. Customers receive advance notice and can opt out of individual events from their phone, web browser, or thermostat itself. The programme caps events at 15 per summer and does not call events on weekends or holidays unless grid emergency conditions require it. This relatively light touch is to reduce peak load at a grid level without significantly disrupting customer comfort.

As of late 2025, Energy Smart began offering income-eligible households (those earning at or below 80% of area median income) a free Google Nest Thermostat at no cost, with simple do-it-yourself installation. The offer is designed to reduce the barrier to entry for lower-income households who might benefit most from the energy savings a smart thermostat provides but cannot afford the upfront purchase. This builds on an earlier pilot from 2016 in which Entergy partnered with Google Nest to install learning thermostats in low-income rental homes in the Algiers neighbourhood at no charge, which demonstrated estimated annual savings of USD 131–145 per household[36].

Customers who enrol in EasyCool receive a one-time USD 75 cash incentive on acceptance into the programme, and an additional USD 25 per year for each subsequent season they remain enrolled[37]. Customers who purchase an eligible thermostat through the Energy Smart marketplace can also receive a USD 50 discount off the purchase price when they select the combined thermostat-plus-EasyCool-enrolment option.

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[35] https://energysmartnola.info/easycool-smart-thermostats/

[36] https://www.entergy.com/news/smart-thermostats-help-low-income-renters-save-energy-money

[37] https://energysmartnola.info/demand-response/

4.3 New Orleans Neighbourhood Power Plan

The New Orleans Neighbourhood Power Plan commits USD 30 million over three years to build a citywide virtual power plant (VPP) around residential and community-scale solar-plus-battery storage systems[38].

In 2021 Hurricane Ida knocked out the transmission lines supplying New Orleans and contributed to 19 heat-related deaths. Over several years, community groups collaborated to initiate regulatory reform to establish a VPP, funded by the local vertically integrated monopoly utility.

Under the plan, solar and battery systems will be installed at approximately 1,500 homes and 150–250 community institutions (churches, schools, community centres) across New Orleans over a three-year implementation period beginning in 2026[39]. The USD 28 million upfront incentive pool[40] (from regulatory settlement funds) covers the cost of installations. Ongoing grid performance credits will compensate participants for the grid services their systems provide such as peak demand reduction, stored solar energy for overnight use, and backup power during outages. Forty percent of the funding is reserved for low-income households, directly targeting the communities that have historically been most exposed to dangerous heat events during grid outages.

The VPP mechanism will allow Entergy New Orleans to draw on the aggregated capacity of these distributed batteries during grid stress events, improving overall system reliability. During normal operation, the batteries time-shift solar energy to reduce evening peak demand. During outages, which in New Orleans can follow hurricanes and last for extended periods, the systems provide localised backup power for the homes and community institutions hosting them. Together New Orleans has also been developing a parallel 'Community Lighthouse' network of larger solar-and-battery resilience hubs designed to serve as neighbourhood shelters during disasters, aiming for one within a 15-minute walk of every city resident.

[38] https://www.togethernola.org/news/70kf1mdwm9bnhhti5d2do6ohzu2hqo

[39] https://veritenews.org/2025/12/16/council-power-grid-together-new-orleans/

[40] https://www.clarkhill.com/news-events/news/virtual-power-plants-a-cost-effective-solution-for-high-grid-demand-in-new-orleans/

4.4 Self Generation Incentive Program (SGIP) (California)

California's Self-Generation Incentive Program (SGIP)[41] is one of the longest-running energy incentive programmes in the United States. First established in 2001, SGIP has evolved significantly over the years and today it functions primarily as a battery storage rebate scheme that is structured to prioritise access for low-income Californians. The programme is administered by the California Public Utilities Commission (CPUC) and is delivered through the state's main vertically integrated monopoly utilities (Pacific Gas & Electric, Southern California Edison, SoCalGas, San Diego Gas & Electric, the LA Department of Water and Power and other locally owned utilities). SGIP has had over USD 1 billion authorised in funding through 2024, with about 80% directed toward energy storage[42]. GRID Alternatives and the Center for Sustainable Energy administer equity-specific tracks and have installed systems across tens of thousands of homes statewide.

There are two main low-income tracks which are the equity budget and the equity resiliency budget. Equity customers are defined as those with household incomes at or below 80% of the area median income, or those living in a designated disadvantaged community (DAC). These customers can receive rebates of around USD 850 per kilowatt-hour of battery storage[43] installed which covers around 85% of the typical battery costs. For equity resiliency customers who must meet additional criteria related to wildfire risk, public safety power shutoffs, or medical vulnerability, the rebate rises to USD 1000/kWh with possible increase based on location which effectively covers the full cost of installation. These rebates are issued as upfront capacity-based incentives with approved SGIP installers handling the application on the customer's behalf. Bill impacts for qualifying customers are substantial with those receiving Equity Resiliency rebates having virtually their entire battery installation cost covered.

A newer layer of the programme is the Residential Solar and Storage Equity (RSSE) budget established in 2024 which is funded at USD 280 million. This track pairs rooftop solar with battery storage at low or no cost to eligible low-income customers anywhere in California. Applications opened in June 2025 and were extremely popular and oversubscribed to, with available funds reserved and new applicants placed on a waitlist within months of launch. RSSE customers can receive both solar and storage at no cost, eliminating their daytime electricity purchases.

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[41] https://www.cpuc.ca.gov/industries-and-topics/electrical-energy/demand-side-management/self-generation-incentive-program

[42] https://www.solarreviews.com/blog/california-sgip-battery-rebate

[43] https://www.cpuc.ca.gov/-/media/cpuc-website/about-cpuc/documents/transparency-and-reporting/fact_sheets/sgip_factsheet_124020.pdf

All residential SGIP participants are required to enrol in a demand response programme as a condition of receiving the rebate, which is the mechanism through which the grid flexibility benefits are delivered. This is a lighter-touch demand response obligation compared to some other programmes — it does not require active load shedding on specific events, but ensures the battery is configured to participate in grid services when called upon.

High upfront cost of battery systems creates a barrier for lower-income households meaning low-income customers have been substantially underrepresented in enrolment.

4.5 BYOD+ Virtual Power Plant (Hawaii)

Hawaii's Bring Your Own Device Plus (BYOD+) programme is a customer-directed virtual power plant tariff offered by Hawaiian Electric, the state's main vertically integrated utility, under regulatory oversight from the Hawaii Public Utilities Commission (PUC)[44]. Customers supply their own battery systems and receive compensation for exporting power to the grid.

The programme works by having customers select a fixed two-hour daily window during which their battery will automatically export excess energy to the Hawaiian Electric grid. The battery prioritises the household's own electricity needs first, and any remaining capacity is made available for export during the nominated window. Customers must commit to the programme for five years and must use a smart meter. The daily, scheduled nature of the dispatch rather than a utility-called event model gives customers more certainty and predictability over when their battery is drawn on.

Compensation comes in two forms. There is an upfront incentive based on the kilowatts of capacity committed to the programme: standard customers receive USD 400/kW while qualifying low-inome customers receive USD 800/kW. The low-income threshold is set at below 140% of area median income which is a deliberately broad definition intended to make the programme accessible to a wider band of households than programmes that use the more common 80% area median income cutoff. Participants also receive ongoing monthly bill credits for the energy exported to the grid at the retail electricity rate, which in Hawaii averages around USD 0.42/kWh on Oahu. The average monthly export credit for participating customers is estimated at around USD 52, though this varies with the customer's billing rate and island location[45].

[44] https://www.hawaiianelectric.com/products-and-services/customer-incentive-programs/bring-your-own-device-plus

[45] https://gems.hawaii.gov/save-on-your-energy-bill-programs-for-hawaii-households/

The low-income set-aside was formalised under the BYOD+ tariff revision adopted by the Hawaii PUC in March 2025. The overall programme cap was changed from island-specific limits to a single statewide cap of 50 MW, split equally between low-income and non-low-income customers, meaning 25 MW is specifically reserved for low-income households[46].

The grid benefit for Hawaiian Electric is significant given Hawaii's isolated island grids and extremely high renewable energy penetration. The aggregated export from BYOD+ participants provide dispatchable storage that helps balance the grid when solar generation spikes or demand suddenly rises and contributes to frequency regulation and capacity adequacy on grids that cannot call on mainland interconnection. Hawaii has committed to 100% clean energy by 2045, and programmes like BYOD+ are central to managing the variability that comes with high renewable penetration at the grid edge.

[46] https://puc.hawaii.gov/energy/implementation-of-executive-order-no-25-01/