

From Consumer to Prosumer

Sharing the Benefits of Rooftop Solar Energy

Serving our community through new models of collaboration and innovation





Connect

Collaborate

Nau mai ki Climate Connect Aotearoa Welcome to Climate Connect Aotearoa

We connect people, build partnerships and deliver practical solutions to accelerate the transition to a climate resilient and low carbon Tāmaki Makaurau Auckland – and beyond. Join us.











Te Tāruke-ā-Tāwhiri : Auckland's Climate Plan

Tāmaki Makaurau Auckland's Climate Goals:

Reducing our emissions (Mitigation)

• 50% by 2030 and reach net zero by 2050

Building a climate-resilient Auckland (Adaptation)

- Understanding the impacts of climate change
- Adapting to climate change

The overarching Tāmaki Makaurau response:

- The uniqueness of Tāmaki Makaurau
- The need to embed equity, te ao Māori, and a strong rangatahi voice.

Economy priority goal:

'A resilient, low carbon economy, guided by our kaitiaki values, that supports Aucklanders to thrive'

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How we'll get there



Priorities





What is problem we're trying to solve?





What is the problem we're trying to solve?

- and it's low emissions.
- many years.
- make it difficult to share.

 Tāmaki Makaurau has limited local electricity generation and its needs are set to grow. Solar can meet some of that need

Community groups across the region are also keen to invest in solar panels to decarbonise their own energy use and reduce their energy bills. But solar panels and batteries can be expensive – a high upfront cost that does not pay off for

Communities are also eager to share excess generation with those in need in their community though current regulations



Our community partners





Waiuku Family Support Network



Whanau Resource Centre O Pukekohe Charitable Trust

Counties Energy's aligned to a common purpose

New Zealand's energy system is undergoing a rapid period of change as it embraces **a fundamental mindshift** to accelerate towards a low carbon future.

A key part to this future lies within the efforts of decarbonising electricity and transport and embracing new energy technologies at an unprecedented rate.

Electricity distribution networks like Counties Energy sit **at the heart of this change** as they facilitate the integration of decentralised low carbon technologies such as electric vehicles, energy storage, distributed generation and digital technologies that transform our customers to 'prosumers'.

This **requires us to fundamentally reimage our role** that we play and how we serve our customers, communities and New Zealand at large.





Proposed Initiative – Community Energy Sharing

A new way to energy

Counties Energy is combining the use of new energy technologies and approaches to change the way the electricity system works, so that it is cheaper, cleaner and more secure, to the benefit of consumers

The 'Community Energy Sharing' will explore the role we play in a world where consumers share energy with each other and how the electricity networks can unlock this opportunity

This community-based initiative will see the community playing an active part in innovation in energy. It will explore how changes to a community's use of the electricity network can achieve social, economic and environmental benefits for all stakeholders involved



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Proposed Initiative – Community Energy Sharing









An energy sharing platform and innovative MTR method will allow the energy stored in the local Community Battery system to be utilised by community members residential homes.

Learnings from this first-of-its-kind community energy solution can be used to setup similar and larger installations within other parts of Counties Energy network and assist with energy hardship and renewable energy uptake.

A key ingredient – Community Energy Storage Scheme

How does a Community Battery work?

- It's a win-win for customers and the grid. One of the benefits is that it provides opportunities for residents to trial innovative storage solutions, such as the Berm Battery a virtual solar storage option.
- Participating households feed their excess solar energy into the battery, then draw the energy back to power their homes during peak times. Community batteries benefit the entire community, whether they have solar panels or not
- This is because they can be placed in areas where the network needs upgrading or adjusting to maintain power quality or reliability. Community batteries solve this problem. They soak up any excess solar power and smooth the flow, improving power reliability and quality to customers





A key ingredient – Community Energy Storage Scheme

Benefits for participating solar customers

- 'Share your solar with others on the network'
- 'You choose who you'd like to share it with'
- 'Store more solar than what you'd be able to do at home'
- Ideally it shouldn't require any lock-in contract
- Ideally it shouldn't need to change your electricity retailer
- Contribute to greener electricity grid
- Community batteries can offer a simpler and more cost-effective \bullet alternative to installing many home batteries:
 - No battery purchase or installation costs lacksquare
 - No maintenance costs or risk of battery failure, and
 - Doesn't take up space on your property lacksquare







Regulatory challenges that we need to work with





Reprint as at 29 October 2019



Consumer Guarantees Act 1993

Public Act	1993 No 91
Date of assent	20 August 1993
Commencement	see section 1(2)

Reprint as at 21 January 2019



Electricity (Safety) Regulations 2010 (SR 2010/36)

Anand Satyanand, Governor-General

Order in Council

At Wellington this 1st day of March 2010

Present:

His Excellency the Governor-General in Council Pursuant to sections 169, 169A, and 169B of the Electricity Act 1992, His Excellency the Governor-General, acting on the advice and with the consent of the Executive Council, makes the following regulations.

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Electricity Industry Participation Code 2010

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Regulatory challenges that we need to overcome





The Solution – The key actors







Import & Export Energy Retailers



Customer-appointed Agent

The Solution

Customer wants to buys electricity from one retailer and sell their export to another retailer



Home Smart Meter (unique ICP)

Customer appoints an 'Agent' – who works on behalf of the customer









Retailer A

Primary <u>import</u> only retailer

Primary **import/export** only retailer

Customer has a relationship with a retailer for their <u>imports</u>





Customer has a separate relationship with a retailer/ aggregator for their <u>exports</u>

The Solution – Continued



Customer





Generation owner

Other use cases that can be achieved using this approach

- Gifters or customers can easily be added or removed at any time 1.
- Customer with solar can export energy, storing it in a community battery and 2. sharing it with another customer (on the same network)
- 3. Customer with solar can export and store energy in a community battery and retrieve it later
- Solar on community or business buildings can export energy and store 4. energy in a community battery and share it with an energy hardship customer (on the same network) when they need it
- Community battery used by the network in case of network emergencies 5. customers with their energy stored in the battery would get compensated for it by sharing the benefit of provision of service
- Agent buying energy at cheap prices during the nights and storing it in the 6. battery, then sharing it with energy hardship customer during the day





The importance of partnerships

















Climate Connect Aotearoa



Future Energy Development

intellihub







Lessons we have learned along the way



Ngā mihi and pātai

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