

**Ara  
Ake**

Future  
Energy  
Development



WISE  
Charitable Trust

community  
**ENERGY**  
network

People powered wellbeing, together

NZ CHAMBERS OF COMMERCE

**T A R A N A K I**

*Business Vitality*

# Reducing Energy Hardship Conference

24 & 25 May 2023 | Devon Hotel, New Plymouth



MINISTRY OF BUSINESS,  
INNOVATION & EMPLOYMENT  
HĪKINA WHAKATUTUKI



MINISTRY OF SOCIAL  
DEVELOPMENT  
TE MANATŪ WHAKAHIATO ORA



# Gareth Cartwright

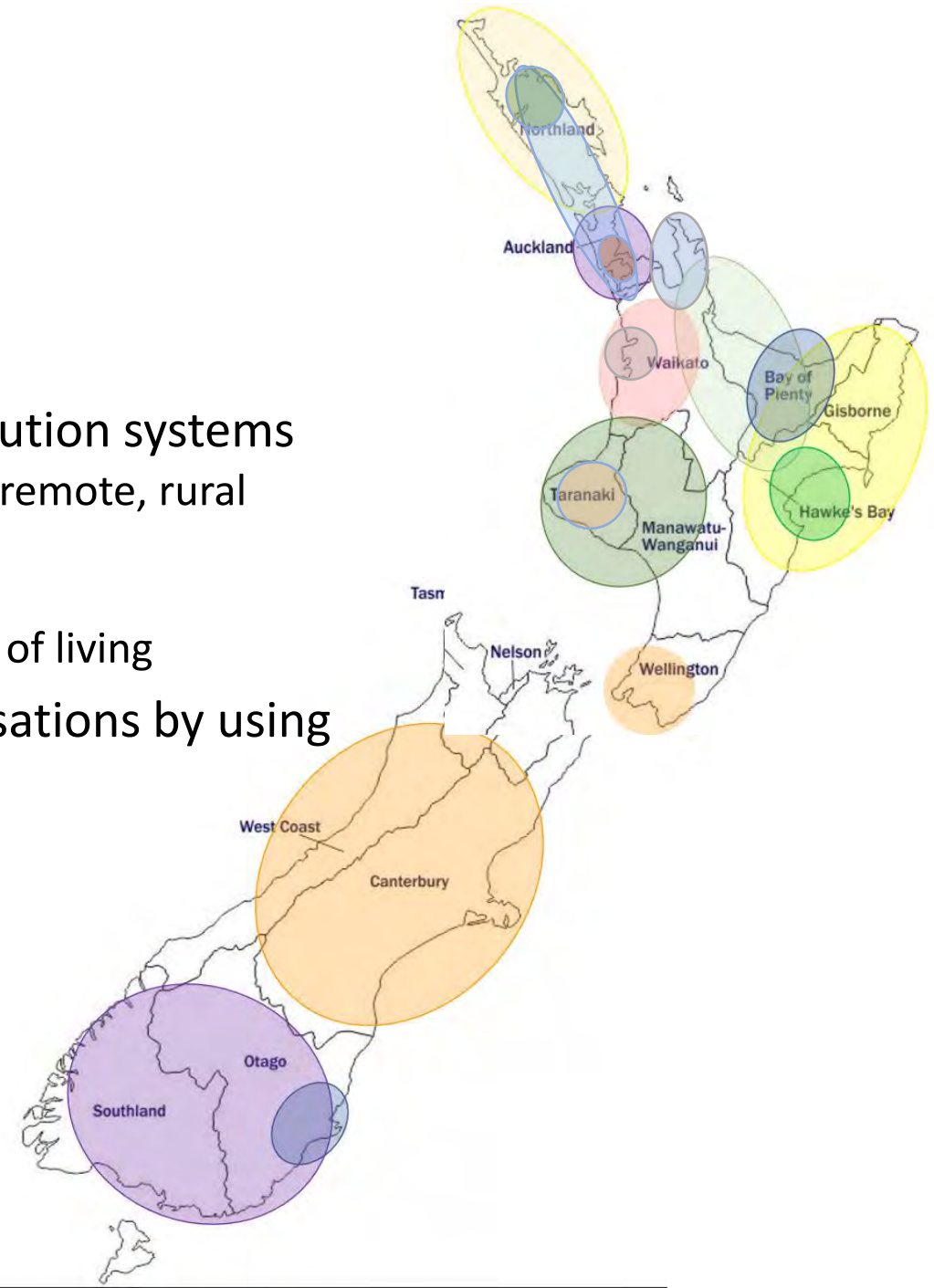
Executive Officer, Community Energy Network



Reducing Energy Hardship  
Increasing Community Energy

# Community Energy Network

- All homes are warm, dry and energy efficient
- Community owned electricity generation and distribution systems
  - Increased reliability of electricity supply – especially for remote, rural communities
  - Energy equity
  - Communities successfully transition to low carbon ways of living
- Collaboration with other community focused organisations by using whole-system perspectives
  - Circular economy
  - Biodiversity
  - Food sovereignty
  - Kaupapa Māori - decolonisation



# All homes are warm, dry and energy efficient

## Anecdotally

- 2-3% need to be rebuilt (36-54,000)
- 15-25% require full/deep retrofits (270-360,000)
- 35-45% at least 2 retrofit improvements (630,000-810,000)
- 15-20% minor improvements (270,000-360,000)
- 10-15% warm dry and healthy (180,000-270,000)

# All homes are warm, dry and energy efficient

- Around 30-40,000 hospital nights/yr
  - \$141M/yr in health costs
- 200-230 deaths/yr
  - \$1B/yr cost to society

“...to reach ‘healthy temperatures’ in the New Zealand dwelling stock under the current building code would triple total annual space heating consumption by 2050.”

“...For most regions of New Zealand there is > 70% saving in energy across at least 9 months of the year.”

# Community Energy

Energy activities that directly benefit, are owned and managed by the community. In this context, community action means collective, citizen-based initiatives.



Adapted from  
**Silk Advisory**  
*Helping business and communities  
accelerate opportunity with climate,  
technology and social change*



# Community Energy England

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- 323 Members
- In 2021
  - Installed 7.5MW new renewable
  - Saved 3.35M in reduced bills
- Total 331MW generation installed
- Communities are talking about:
  - Heat
  - Storage
  - Transport
  - Efficiency
  - Demand management
  - Local supply



# IPCC - Adaptation

**Most observed adaptation is fragmented, small in scale, incremental, sector-specific, designed to respond to current impacts or near-term risks, and focused more on planning rather than implementation**

**The largest adaptation gaps exist among lower income population groups. *At current rates of adaptation planning and implementation the adaptation gap will continue to grow.***

# Final Statement

Most communities will not successfully transition to a low carbon economy when 'stuff' is done to them. When actions are top down or poorly implemented then mana motuhake/self determination diminishes. This leads to low engagement and low resilience outcomes.

Communities will only adapt and thrive if they are an active participant. There must be a collective approach to design that includes the ability to change/flex programmes as needed. IE, they are based on high trust partnerships

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# Dr Julie MacArthur

**Associate Professor / Canada Research Chair in  
Reimagining Capitalism, Royal Roads University, Canada**



# Bill Heaps

Founding Director, Energy for Good

Energy Hardship and Community Energy Conference  
May 2023

## Transitioning to Community Energy

An outsider's perspective  
of the Australian experience



# Three four minute topics

- Essential background
  - Net Zero ambitions
  - Electogeographic overview – the NEM and WEM
- What's going on
  - GW to KW - rooftops replacing coal mines
  - Soaking up solar
  - Uncertainty and risk
- Initiatives shaping the future
  - Policy and strategy
  - Trials and prototypes
  - Growing community energy



# Emissions reduction commitments\*

- National
  - Net zero by 2050
  - 43 per cent below 2005 levels by 2030
  - Established the Clean Energy Regulator
- States
  - NSW, Vic and SA 50% by 2030
  - Qld 30% by 2030
  - WA 80% below 2020 levels by 2030
  - ACT 65-75% (of 1990 levels) by 2030 net zero by 2045
  - Tasmania achieved net zero in 2015 and is now net negative



\* Source: Australian Government Climate Change commitments, policies and programs, A guide for investors, November 2022.

# Clean Energy Regulator\*

- Roles include
  - Emissions Reduction Fund
  - Establishing, monitoring, facilitating and enforcing compliance with its schemes
- Small scale renewable energy system (SRES)
  - install an eligible small-scale renewable energy system
  - receive small-scale technology certificates
  - Sell/trade certificates to recoup some of the cost of the system
- Marking 3 million rooftop small scale solar by sharing the stories of people and communities who choose solar
  - Solar power for remote Indigenous communities
  - Hepburn Wind Community Co-operative
  - Community solar sees Old Beechworth Gaol in a new light
  - Help available for not-for-profits to switch to renewable energy
- Implications of 3 million rooftop generators

\* Source: <https://www.cleanenergyregulator.gov.au> .





# Essential background on the Lucky Country

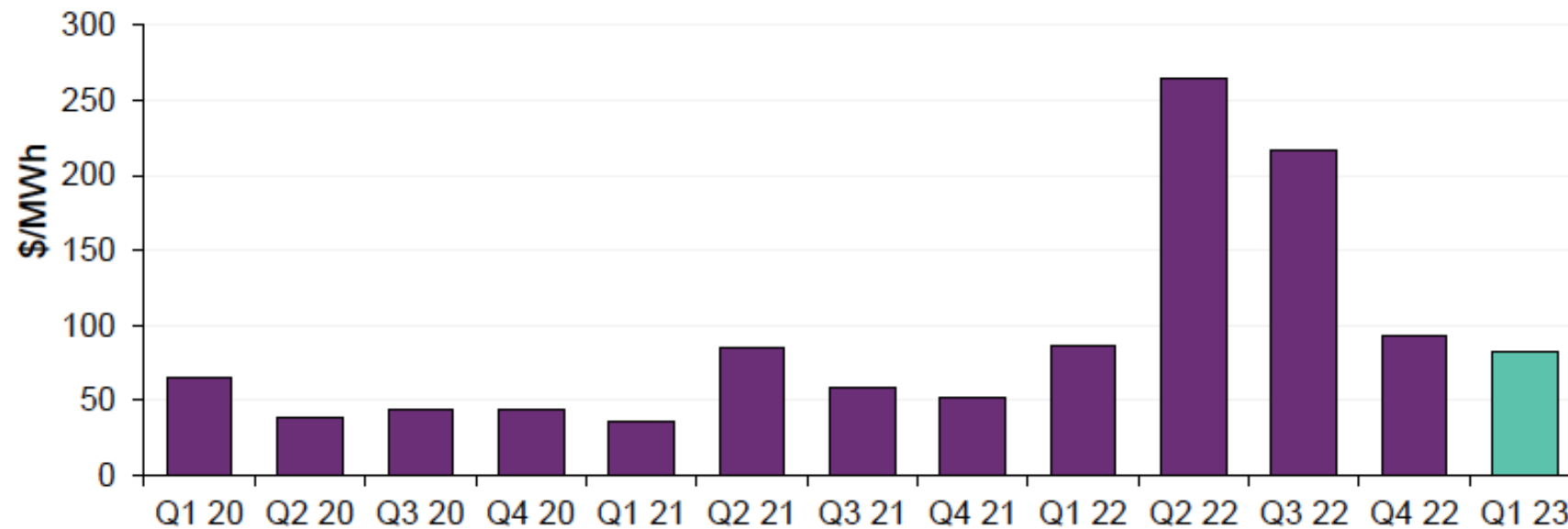
- SA, Tas, Vic, ACT, NSW and Qld form the NEM
  - transition to renewables from coal and gas
  - Issues with transition
- WA Resource rich and plenty of space
  - long line distances to serve remote townships
  - Transition to off grid
  - Shrinking network
- NT
  - Low population density, remote communities



# Not always so lucky -Market prices reflect underlying issues

- World energy price volatility
- Increased reliance on intermittent renewables = reduced security margins
- Physical constraints in supply chains – including electricity networks

NEM average wholesale electricity price – quarterly since Q1 2020



Source: AEMO Quarterly Energy Dynamics Q1 2023





- Australia's first community-owned energy provider
- Opened in Byron Bay after raising \$3.8 million from 1,090 investors.
- Established as a social enterprise, with a focus on supplying renewable energy.
- Gained 13,200 customers across NSW and South East Queensland.
- awarded a five-star rating by Greenpeace for providing clean energy and avoiding pollution and environmental harm.

## Not all plain sailing!

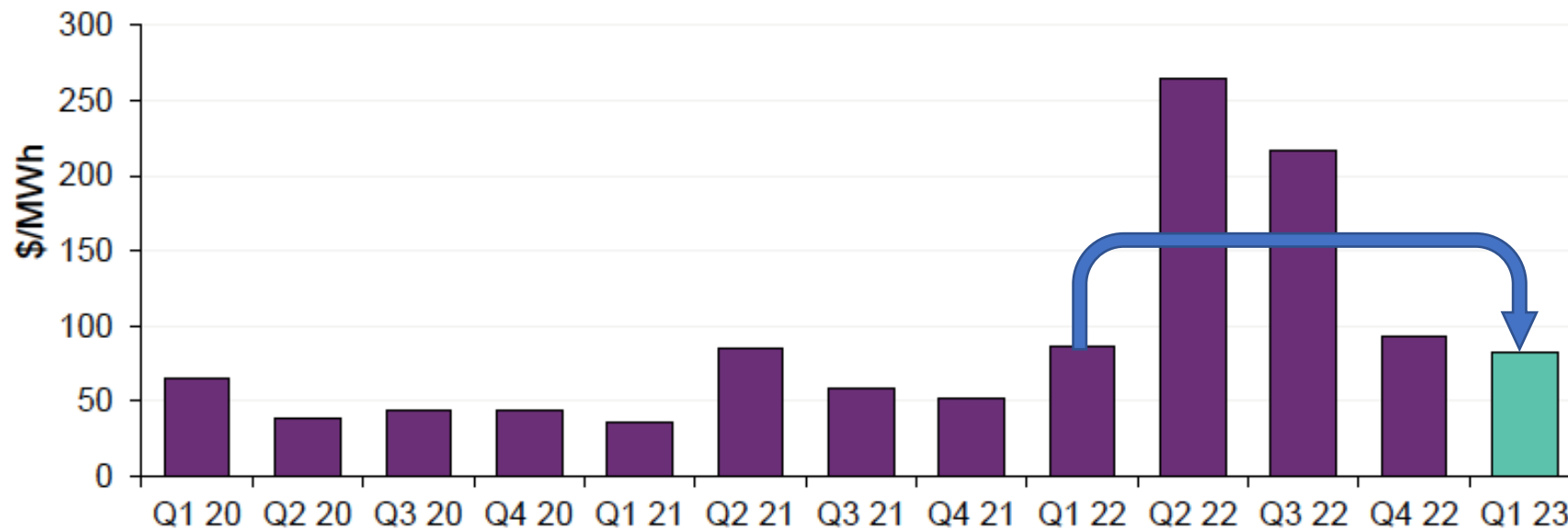
- Both Enova Community Energy and retail arm Enova Energy entered administration in July 2022
- CEO Felicity Stenning said *the state of the market, high wholesale energy prices and the cap on customer pricing had made it “impossible” to operate.*
- As it was unable to secure a fixed price contract, it had been exposed to the high wholesale prices during the mid 2022 energy crisis.



# Building capacity has become faster with renewables

- AEMO recently compared generating capacity (MW) in Q1 2022 with Q1 2023
- Both quarters look similar in terms of average wholesale market price
- But the mix of generation providing the capacity has changed

NEM average wholesale electricity price – quarterly since Q1 2020



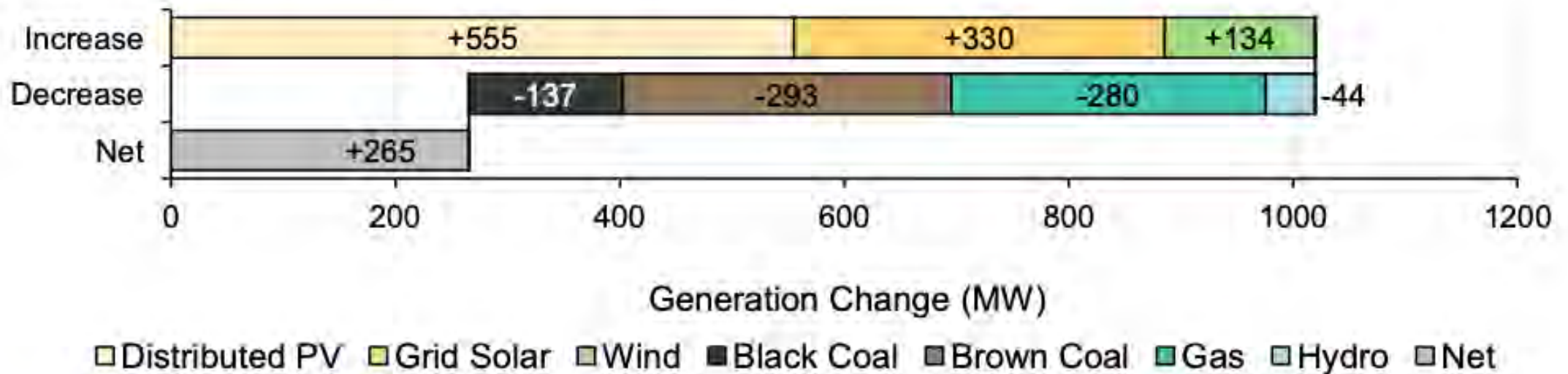
Source: AEMO Quarterly Energy Dynamics Q1 2023



# The impact of solar on NEM decarbonisation

Whilst only a single quarter data, the disruption impact of solar (distributed and grid connected) on the mix of generation supplying the NEM is clear

Change in supply by fuel source – Q1 2023 versus Q1 2022



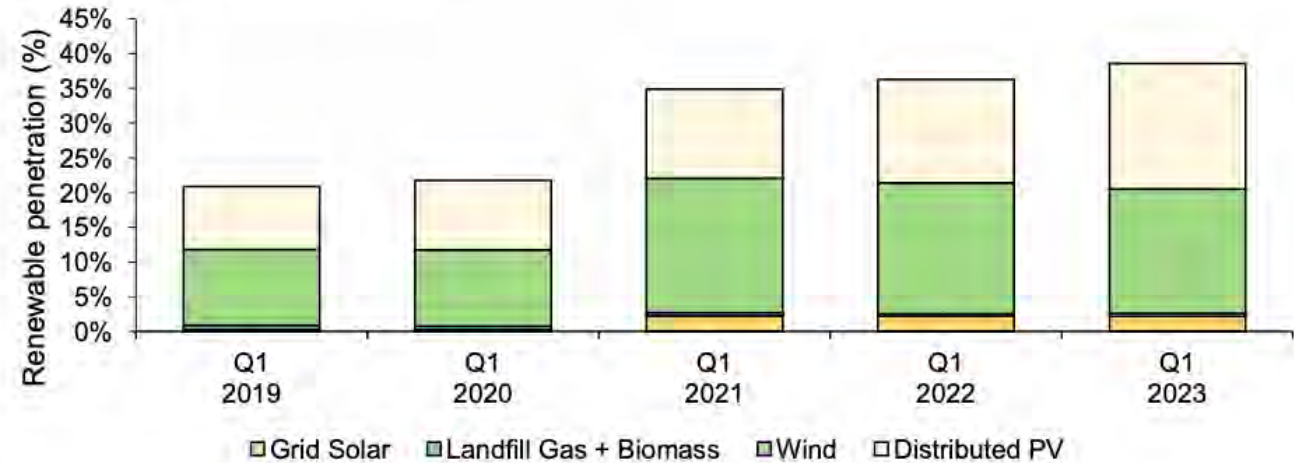
Source: AEMO Quarterly Energy Dynamics Q1 2023



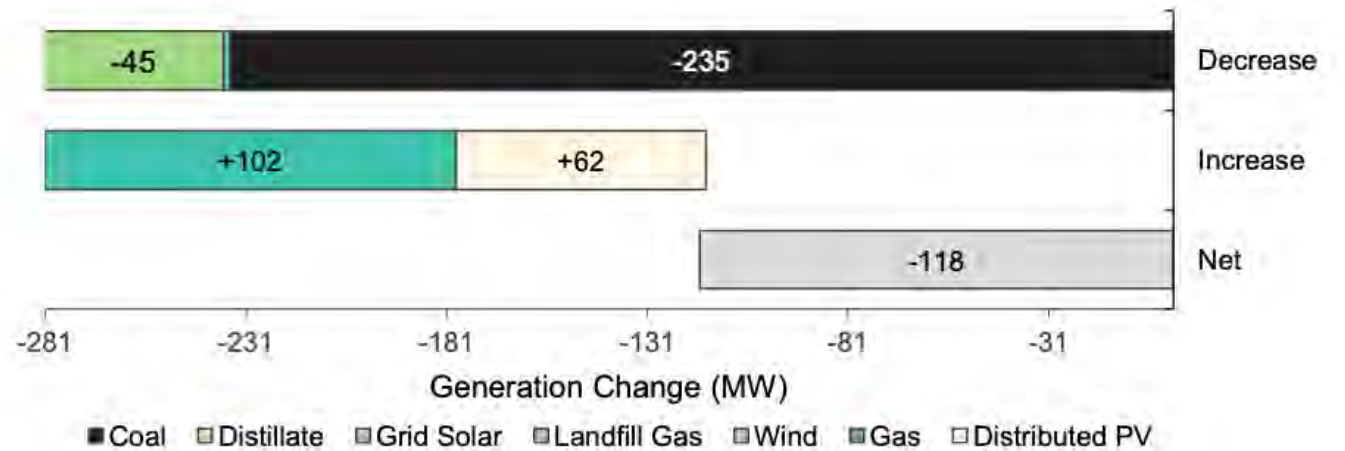
# The impact of solar in the WEM

- The increased distributed solar PV and wind is continuing
- The impact of increasing distributed PV has reduced coal generation
- Grid solar is a relatively new starter
- Wind encountered low availability and system constraints during Q1

Renewable penetration components – Q1s



Change in quarterly average generation output – Q1 2023 vs Q1 2022



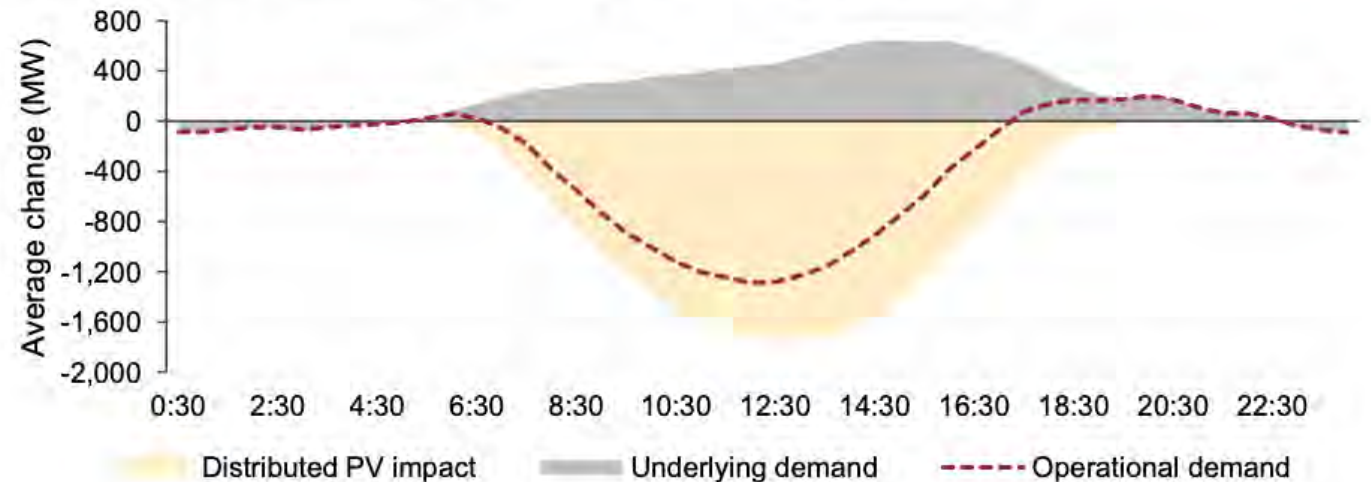
Source: AEMO Quarterly Energy Dynamics Q1 2023



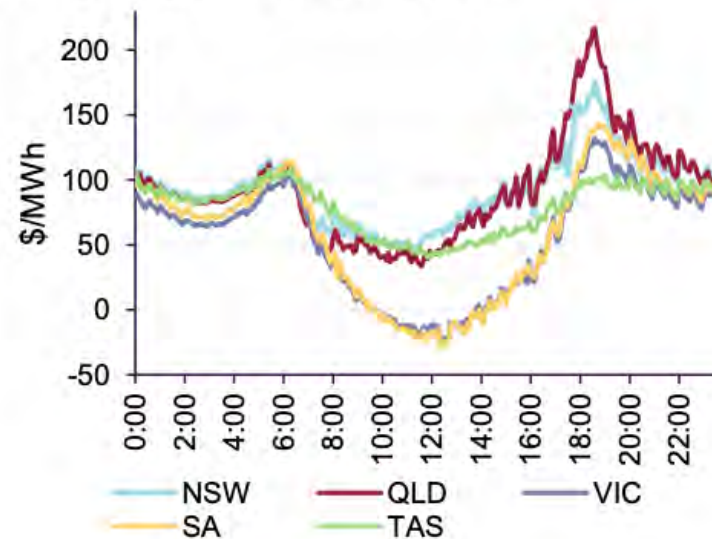
# The impact of solar in the NEM

- Daytime input from solar is more than offsetting the underlying increases average daytime demand
- Solar is bringing down average daytime wholesale electricity prices
  - Note the negative price points in Vic and SA
  - data is a single quarter year
  - Negative prices incentivise energy storage
  - How disruptive will EV charging be?

Changes in average NEM demand components by time of day – Q1 2023 vs Q1 2022



Average energy prices by region – Q1 2023



Source: AEMO Quarterly Energy Dynamics Q1 2023

# Network hosting constraints, solar soakers and dynamic operating envelopes

- **Fixed operating envelopes** are set at conservative levels regardless of the real time capacity of the network - current network limitations applied to solar output = 5kW in several regions, a few are much lower + compliance is an issue
- Local energy storage seen as a solution – **solar soaker pricing** seen as the enabler to encourage investment in storage at constrained locations
- **Dynamic operating envelopes (DOE)** enable import and export limits to be variable over time and location
- DOEs being promoted as:
  - *a low-cost/high-value, simple to implement mechanism to help accommodate the huge influx of renewable energy from DER*
  - *think of how neatly an envelope contains a letter, an operating envelope elegantly bounds the system behaviour within its safe operating capacity\**

\* Source: Australian National University





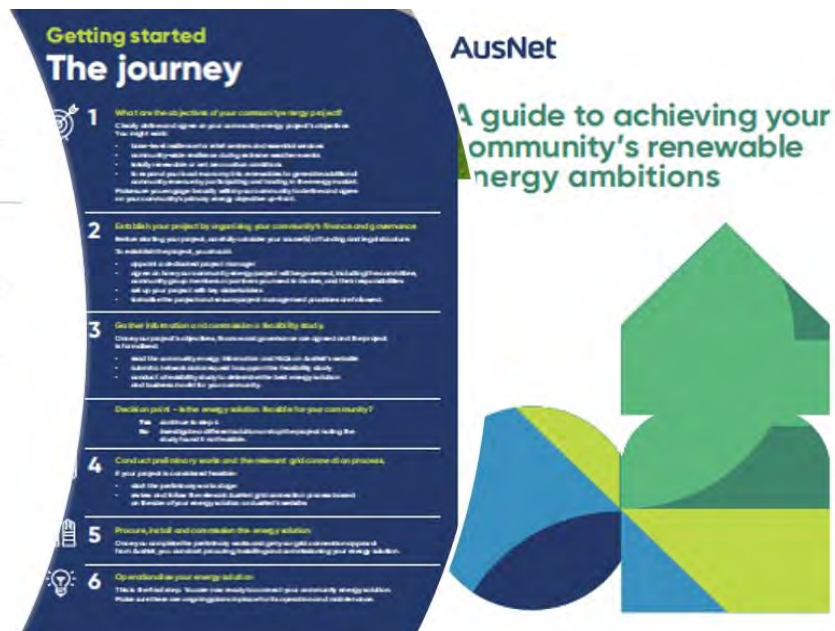
# Increasing awareness of the role and benefits of CE in the energy industry

AusNet guide to help communities achieve renewable energy ambitions.

Example of a network supporting communities

**AusNet** own and operate more than \$11 billion of electricity and gas network assets in Victoria.

Created the guide to help your communities achieve their renewable energy ambitions.



## Western Power Stand alone systems

- 150 SPS installed, 4000 by 2032
- community access to renewable energy
- more reliable power supply
- reduced bushfire risk
- lower costs through decommissioning many thousands of kms of overhead powerlines
- network maintenance costs are reduced.

Source: <https://www.westernpower.com.au/our-energy-evolution/grid-technology/stand-alone-power-system/>





# The East Coast is the CE hotspot



## Community Energy Map



Support community projects through workshops, training, mentoring, research and resource development



Source: <https://cpagency.org.au>



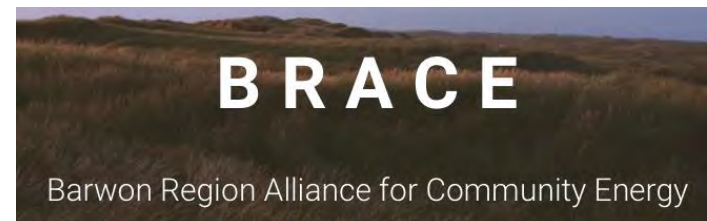
# Victoria Community Power Hubs



- Initial 3 year Community Power Hubs Pilot Program - 3 hubs in Ballarat, Bendigo and the Latrobe Valley
- By September 2022, completed 42 community clean energy projects, amounting to 1.5MW of new solar capacity
- progressed an additional 145 proposed projects and delivered feasibility studies for more than 10 significant community-driven initiatives



Yarra Energy Foundation



etc.etc.etc

# In a nutshell – it's going to get tougher but better

- Ambitious commitments, policies and strategies
- Harvesting low hanging fruit, it will get harder for electricity networks
  - Aligning EV charging with sunshine
  - Transition from gas to electricity in all sectors
  - Accommodating growth and development
- Transition challenges present and emerging (including, but definitely not limited to)
  - System/network hosting capabilities
  - Intermittency issues
  - Systems needed for community scale energy markets
  - Uncertainty and risk
- Good progress on establishing community energy viability
- Awareness, understanding of and engagement on community energy must become mainstream.



Te mutunga  
Mauruuru mo te whakarongo  
Thank you very much for listening

Presentation was produced and presented to stimulate discussion at the Energy Hardship and Community Energy Conference.  
Energy for Good does not accept responsibility for any other use of this presentation.





# Tiffany Huynh

Director of External Affairs, Elemental Excelerator



# Jamie Silk

**Managing Director, Silk Advisory and Innovation**



# THE BARRIERS TO DISRUPTIVE COMMUNITY ENERGY

A DECADE OF COMMUNITY ENERGY PRACTITIONER INSIGHTS IN AOTEAROA



**Silk Advisory**

*Helping business and  
communities accelerate  
opportunity with climate,  
technology & social change.*

COMMERCIAL PV MICROGRID

RESILIENCE RESPONSE

OFFGRID INTEGRATION

RESI PV PICOGRID ENERGYCO-OP

SMART HOMES

SEEC/BEH CHANGE

BLUESKIN ENERGY

INNOVATIVE RETAIL

P2P BLUESKIN WIND CONSUMER APP

PAPAKAINGA PV/ESS/ENGAGEMENT

SEEC/ BEH CHANGE+UPGRADE

SOLARSHARE

# 63%

Worry about paying power bill



**OUR SYSTEM  
OR VALUES ARE  
BROKEN**



# WE ARE ON THE CUSP OF THE FASTEST DEEPEST TRANSFORMATION OF ENERGY IN HISTORY

\$10s of  
bns

**-50%**  
CO2e by 2035  
More for energy, transport, industry  
(heat), building. Net zero 2050



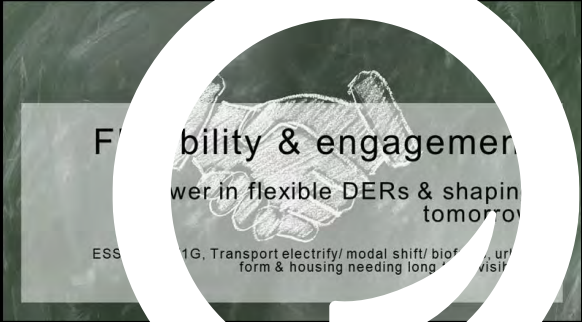
**Huge shift**  
Reduce & substitute  
Efficiency, new build standards, retrofit, share, electrify, biomass,  
H2, urban form, new generation - but uncertain



**Changing**  
The temporal/ spatial value of energy  
Retiring thermal plant; +60% generation build with high intermittent  
wind & solar; shifting network and trader values

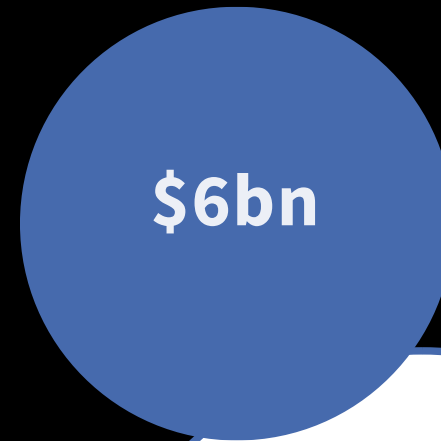


**Flexibility & engagement**  
Power in flexible DERs & shaping tomorrow  
ESS, storage, EV, Transport electrify/ modal shift/ bio, urban  
form & housing needing long-term vision

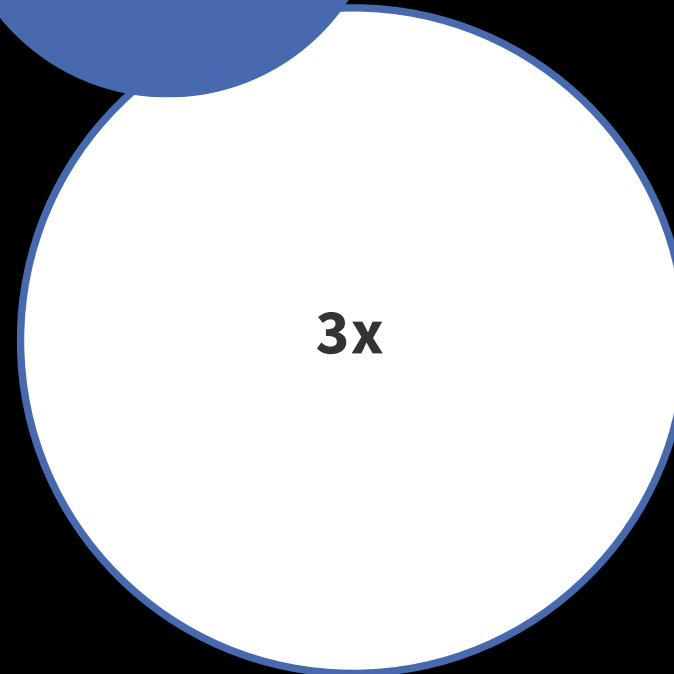


Energy equity & Resilience

# COMMUNITY ENGAGED ENERGY HAS HUGE VALUE



Deferral NPV to 2050  
(BCG)



incremental energy savings & social benefits  
from **place based** transition  
( Innovate UK)



# THE SPAN OF COMMUNITY ENGAGED ENERGY

**EQUITY/  
EFFICIENCY**

**ENERGY  
TRANSITION**

1 Energy  
education

2 Material  
upgrades

3 Renewables &  
transport incl  
finance/ P2P

4 Co-housing,  
behind the  
meter shared  
assets and  
microgrids

5 Virtual  
power  
plants,  
and flex

CO-HOUSING  
ENERGYSHARE  
EV TARIFFS  
WVKH  
RAGLAN ENERGY  
MĀORI SOLAR  
EECA/AUKAHA  
DYNAMIC PRICING  
SEEC  
SOCIAL RETAILER  
HOUR OF POWER  
SOLARXERO  
CO-HAUS  
ENERGISE OTAKI  
POWERUP PAPAINGA  
EDB TRUST SOLAR  
EDB PILOTS E.G. EV  
P2POWER  
POWERPAL  
OUR ENERGY  
FLEXFORUM  
LAKESIDE  
PETERBOROUGH

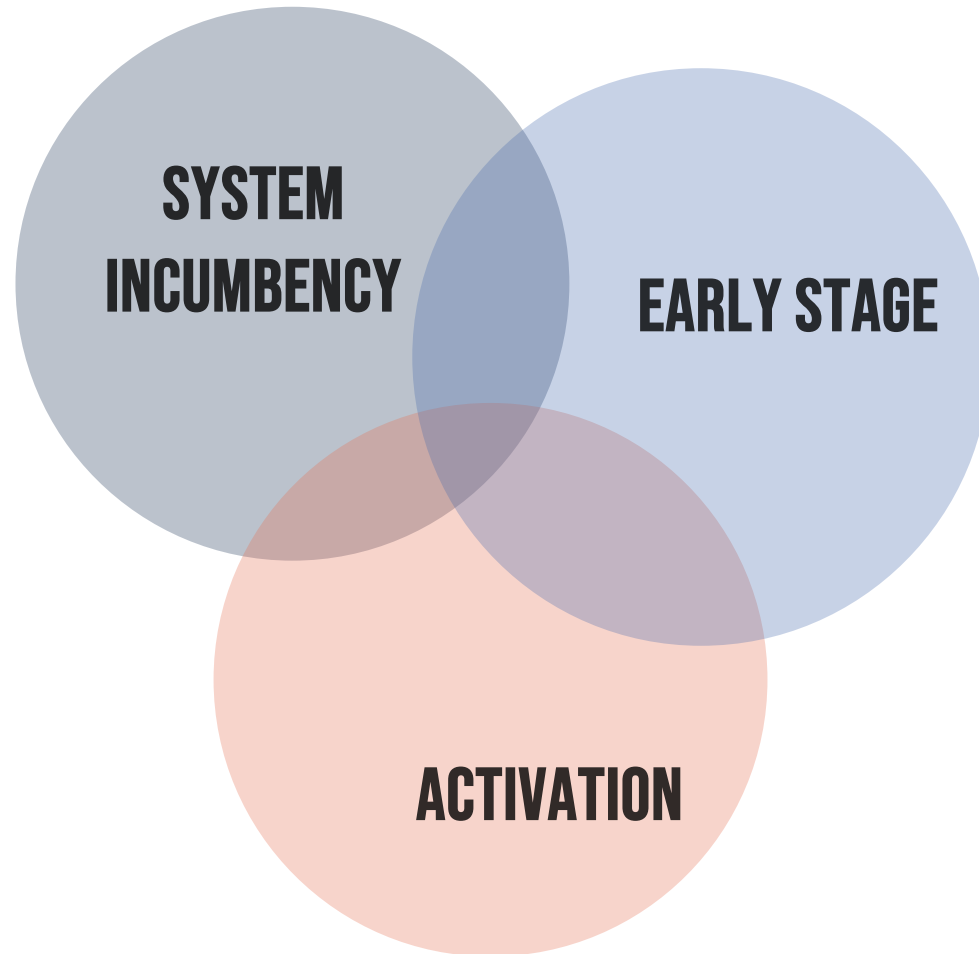
**AOTEAROA HAS  
NOT LACKED  
VISION**

**BUT HAS NOT  
SCALED DEEP  
COMMUNITY  
ENGAGED OR PLACE  
BASED ACTION**





# CRITICAL CONSTRAINTS





**A system perfected for  
yesterdays market**

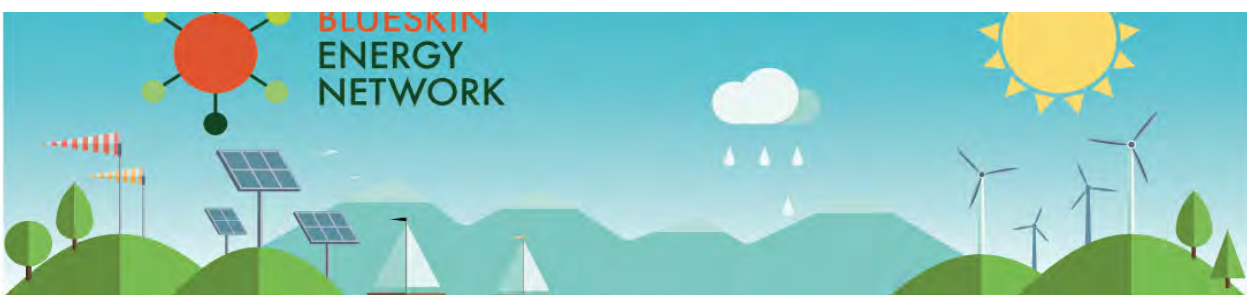
Network pricing, connections

Industry rules, practices, norms

Across the supply chain  
(electricians, suppliers,  
architects, powerswitch)

Drives resizing, downsizing,  
behind the meter, cost, delay

**Death by a 1,000 cuts**



**DEMOCRATISING ELECTRICITY**  
ben.p2power.co.nz

Email: [info@p2power.co.nz](mailto:info@p2power.co.nz)  
Freecall: 0800 364 872

**CLEANER**



BEN helps locals  
use renewable  
electricity  
through an  
interactive local

**CHEAPER**

BEN keeps prices low  
and stable and looks  
for ways to reduce  
costs further.



**SMARTER**



BEN lets us share  
power, peer to peer so  
you don't need to own  
solar to use it

**LOCAL**



BEN serves locals  
from Owaka in the  
south to Shag Point  
in the north, and  
inland to Omapere



A PERFECTED MARKET

CORRALLING CUSTOMERS, ASSETS, SERVICES AND OFFERS

# SMALL PLATFORMS

TRANSACTION COSTS

LEADER LEGAL COSTS

LEADTIME & CASH BURN

REGULATORY INCENTIVES

NO BY-PASS

PIONEER DESIGN BURDEN

CONTROL BEFORE SHARE  
PROJECT SCALE  
REGIME LOCK-IN  
REGULATORY RISK (NOVEL)  
ACCESSING VALUE STACK  
REGULATORY SECURITY (INCUMBENT)

EDB FUNDING MODEL

MANAGING MARKET RISK IN RAMP UP

EARLY STAGE SERVICE COSTS

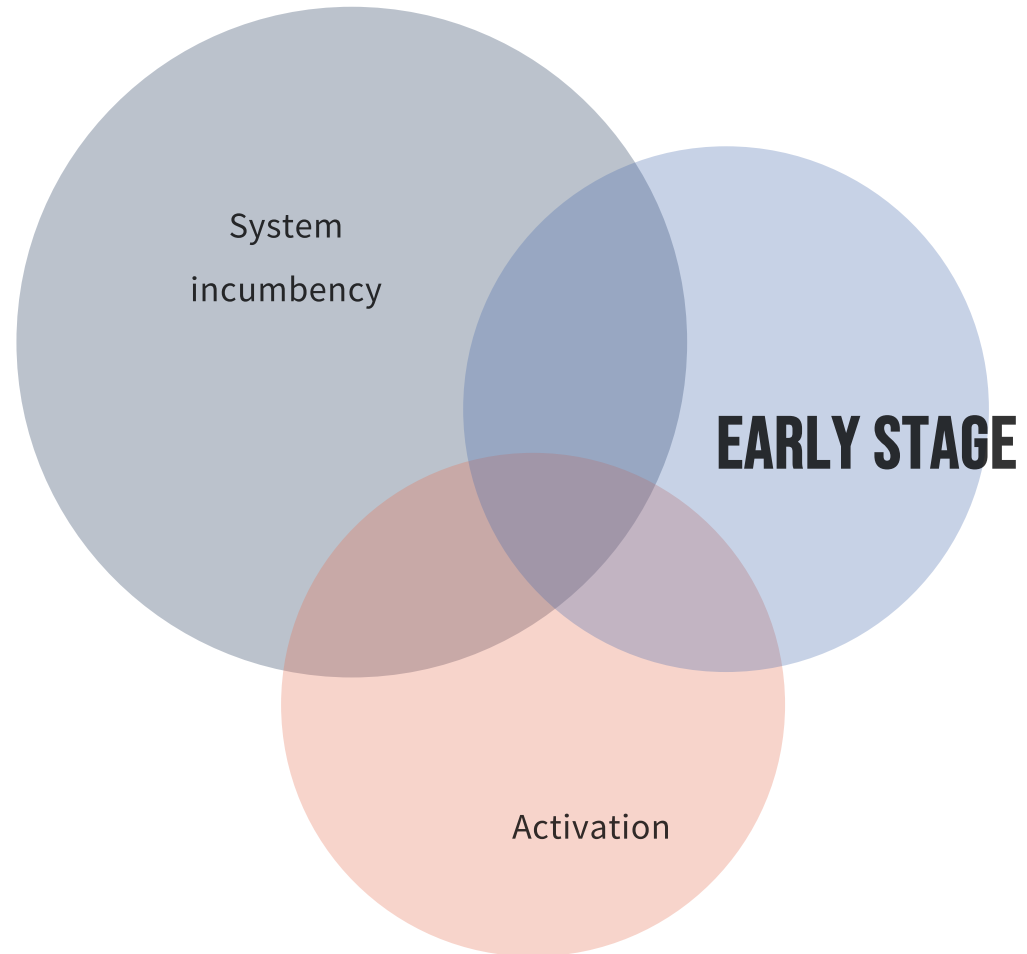
TRADITIONAL PRICING

# INDUSTRY SCALE

LEASE PERIODS V ASSET LIFE

BAU bias presents dynamically connected constraints to community innovation

# CRITICAL CONSTRAINTS



# COMMUNITY ENGAGEMENT NEEDS SERVICES

PLATFORMS  
ASSETS  
INTEGRATORS  
INNOVATORS

SAME PLACE, SAME TIME



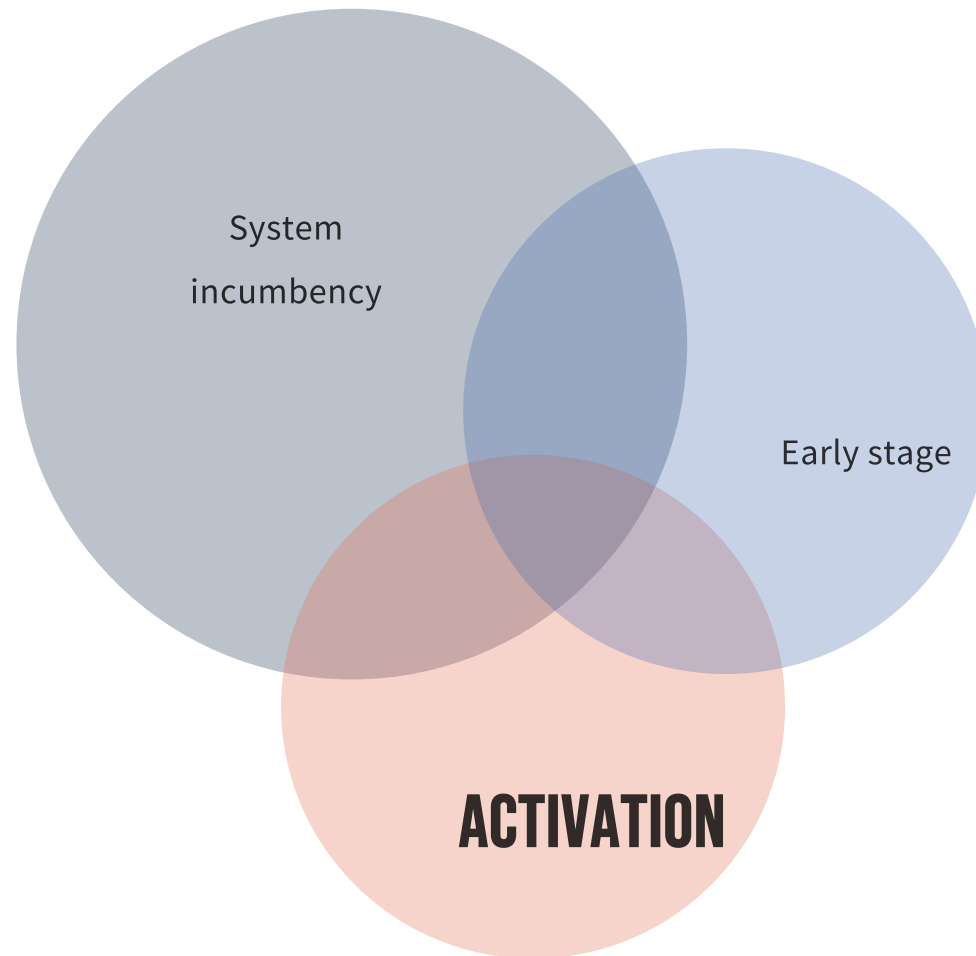
## Success needs

*To scale SaaS, assets and access to capital*

The value stack on the table  
In a way that can be used  
With confidence it is there for the future  
(not just pilots for the junkie)

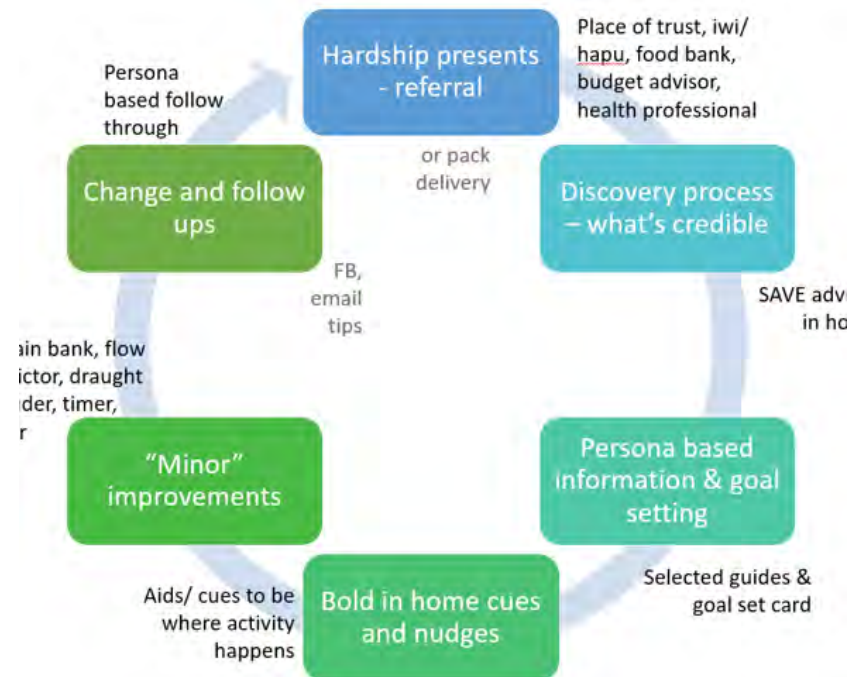


# CRITICAL CONSTRAINTS



95%

OF OUR ENERGY BEHAVIOURS  
ARE HABITUAL



CHANGE IS HARD, NEEDS TO BE  
TRIGGERED & SUPPORTED

Technolgy & pricing are not enough

CONNECT

RIGHT TIME

PERSONALLY RELEVANT

BUILD CAPABILITY

CUES & REWARDS

TRUSTED PARTIES



Penapena pūtea

Save money



Mana motuhake

Independent



Tikanga

What's right to do



Papatūānuku

Planet

SALVATION\_ARMY  
 WAIMANAKU\_SUPPORT\_CENTRE  
**WORKSHOPS**  
**FOODBANK**  
 MIGRANT\_COMMUNITY  
 LIBRARIES\_MARKETS  
 NEEDLE\_EXCHANGE  
 WELLBEING\_FESTIVAL  
 AGE\_CONCERN  
 CLINICS  
 DROP\_INS  
 WAREHOUSE  
 MITRE\_10  
 LOW\_CARBON |  
 MAMAKU\_WRAP\_AROUND



Add an extra layer (even old sheet) to curtains



Stick the ends of curtains to the wall  
Cover the top of curtains

One off power bills a lot behind the scenes



**COMMUNITY FOOD BANK**

EVERY 1<sup>ST</sup> & 3<sup>RD</sup> WEDNESDAYS OF THE MONTH UNTIL THE COVID-19 LOCKDOWN IS LIFTED

**MY ACTIONS**  
w/m - Cold wash hotwash monthly.  
I am committing to:

- Back to back showers, use shower closet to gas tanks. Check temp on water >60°C
- Bubble wrap. Film/window. Wear easy dry clothes
- Clean filters air con. / timer 4min showers.
- Check ceiling insulation. D/W Eco function pre-wash.
- Change to LED high use areas.

**My Reward**

overcome these by:

My weekly progress - tick 1, 2 or 3 stars

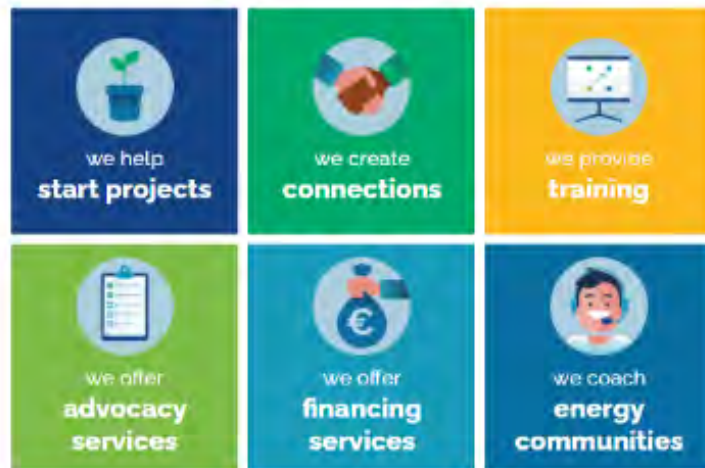
Motivators	Barriers	Wk 1	☆☆☆☆
		Wk 2	☆☆☆☆
		Wk 3	☆☆☆☆
		Wk 4	☆☆☆☆



## The REScoop.eu services

REScoop.eu provides a range of services to support citizens, businesses and local authorities that want to work on community energy. Depending on your needs, we can offer tailored services.

[Learn more about our services >](#)

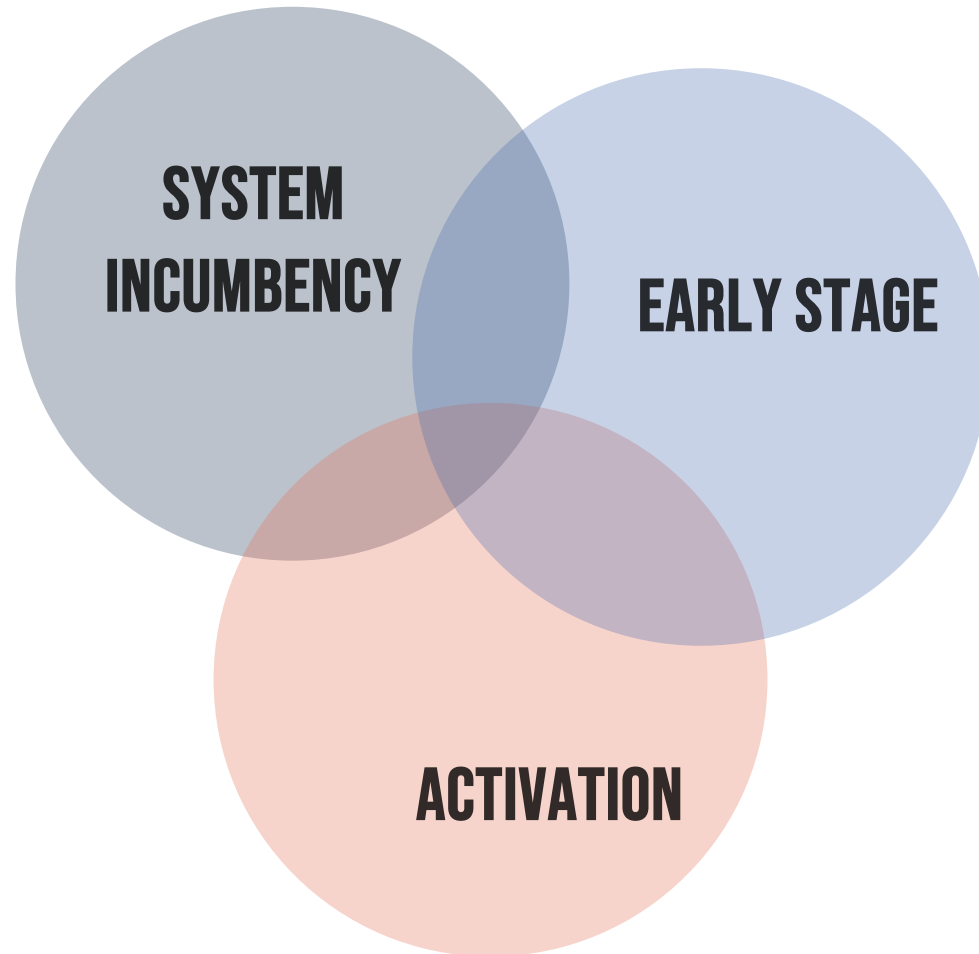


# COMMUNITIES NEED SUPPORT TO BUILD CAPACITY

The energy system is complex

Communities are often innovating in more than just Energy

# CRITICAL CONSTRAINTS



**SHIFT  
PERSPECTIVE.  
THE LENS OF  
OTHERS &  
FUTURE SYSTEM  
THINKING**

**BUILD THE VALUE  
STACK, CAPACITY &  
RESOURCES**

**COLLABORATE  
FOR HUMAN  
CENTRIC  
SERVICES**



# Powerco Energy Hardship Working Group

- Daniel Gnoth - Energy Futures Manager
- Ellie Hills - Market Development & Customer Accounts Lead
- Jon Postlethwaite - Sustainability Analyst

# Enabling community energy

Our network empowering our communities



# Powerco's role in connecting communities

Powerco is New Zealand's largest electricity and gas distribution utility by the area we serve.

With over **344,000 electricity** connections and **112,000 gas** connections, we serve over **900,000** customers across the North Island with a huge range of **diverse** energy needs



That requires over **28,441km** of lines and cables and **6,100km** of pipes



# Our energy hardship working group

Three cool people met with a common purpose to:



Work to understand the size and scope of hardship on our footprint

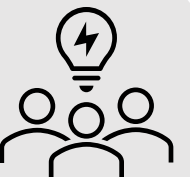


To understand what work is being done, and opportunities there might be to address hardship



To investigate and champion Powerco's role in addressing hardship and wellbeing

A key area of addressing hardship currently has come through community energy initiatives



# Our communities are doing some awesome things!

## Projects on our footprints:

- **Kia Whitingia** – community solar, storage and P2P energy sharing
- **Tū Mai Rā** – community solar, islanded off-gridding battery
- **Parihaka Papakāinga** – community solar and energy storage
- **Putāraru Marae** – community solar

## Greenfields projects:

- **West Minden Road** – community generation and storage
- **The Sands** – community generation and storage

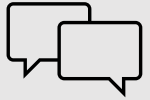
## Common areas of focus:

- Reducing hardship and cost of energy
- Improving resilience in communities
- Creating a greater sense of community
- Shared sustainability goals





# What we're learning



We need to be accessible and available for conversations, early on

We don't have a template for community energy projects - yet



We need to be visible

Where and what the network is



What **constraints** and **opportunities** there are to:



- Connect energy generation and storage
- Provide energy flexibility services



There is some technical stuff we need to work out together

**Connection standards** are there to keep us safe, and need to evolve as technology and use cases change



# Join our journey

We see **community energy projects** as one of the **key ways** energy distributors like **Powerco** can support communities to **decarbonise** and achieve long term **energy resilience**.

We are learning about what the **future role might be** for distribution utilities by **working with communities**.

We have an **open invitation** to trial and explore what's possible and what works for different communities.

Get in touch with Ellie to join us!

✉ [ellie.hills@powerco.co.nz](mailto:ellie.hills@powerco.co.nz)







# Sam Elder

General Manager, Energy Futures, Orion



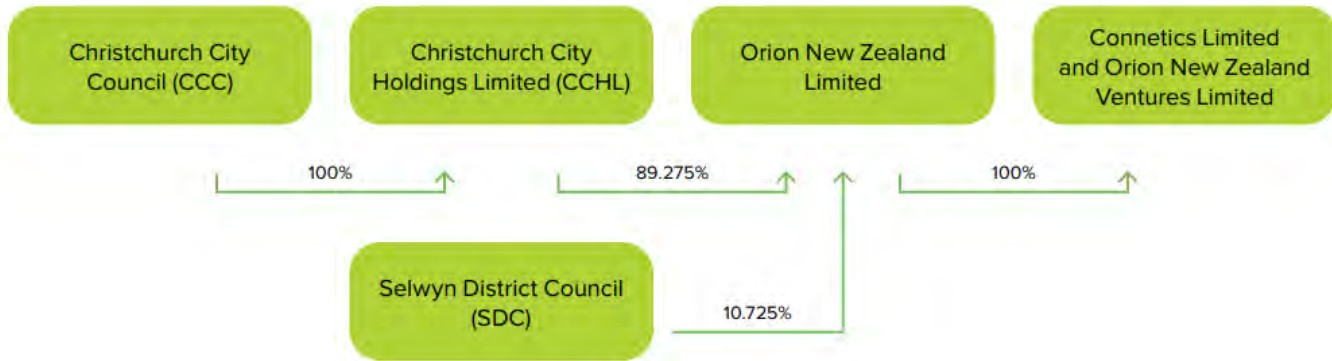
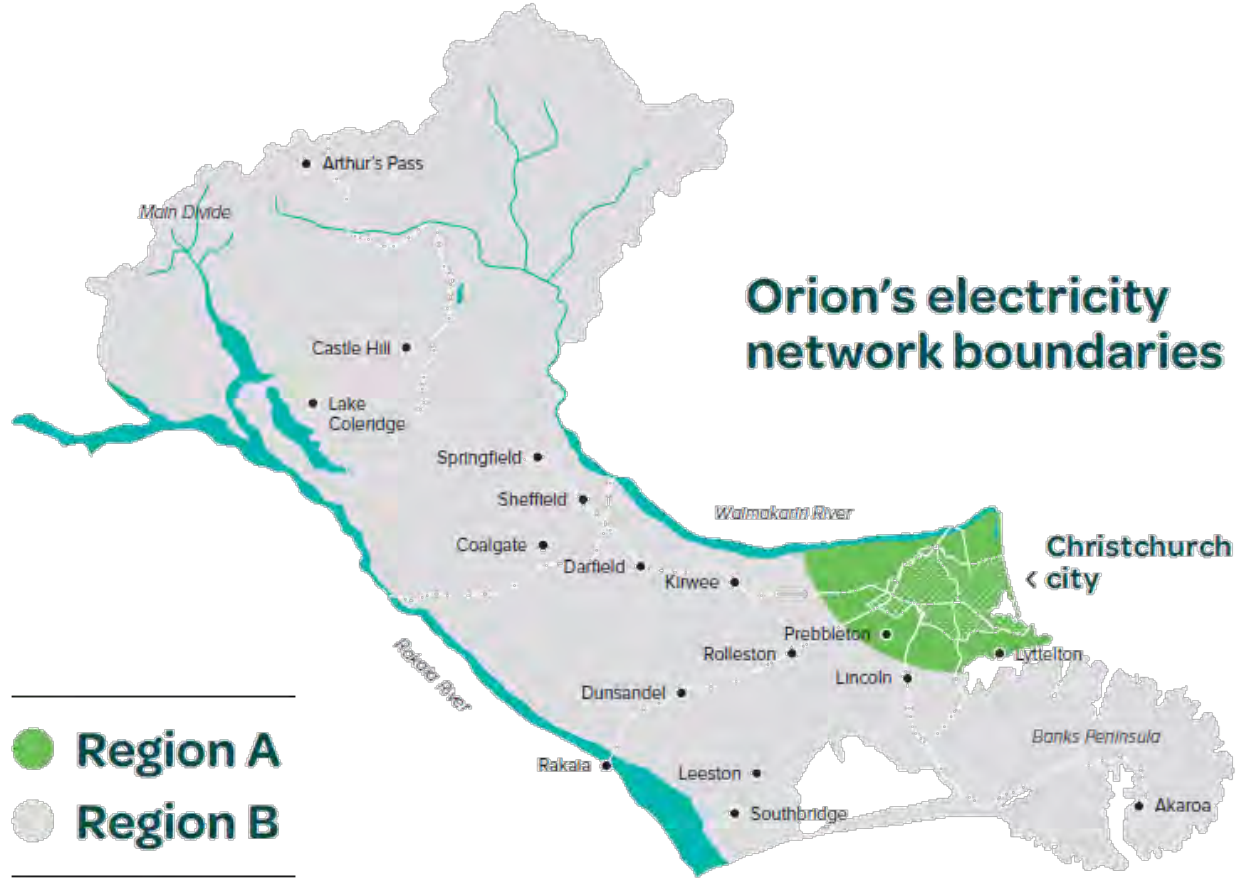
# Co-creating a community & place-based transition

Sam Elder, Orion Group

*May 2023*

# Orion Group

Powering a cleaner and brighter future with our community

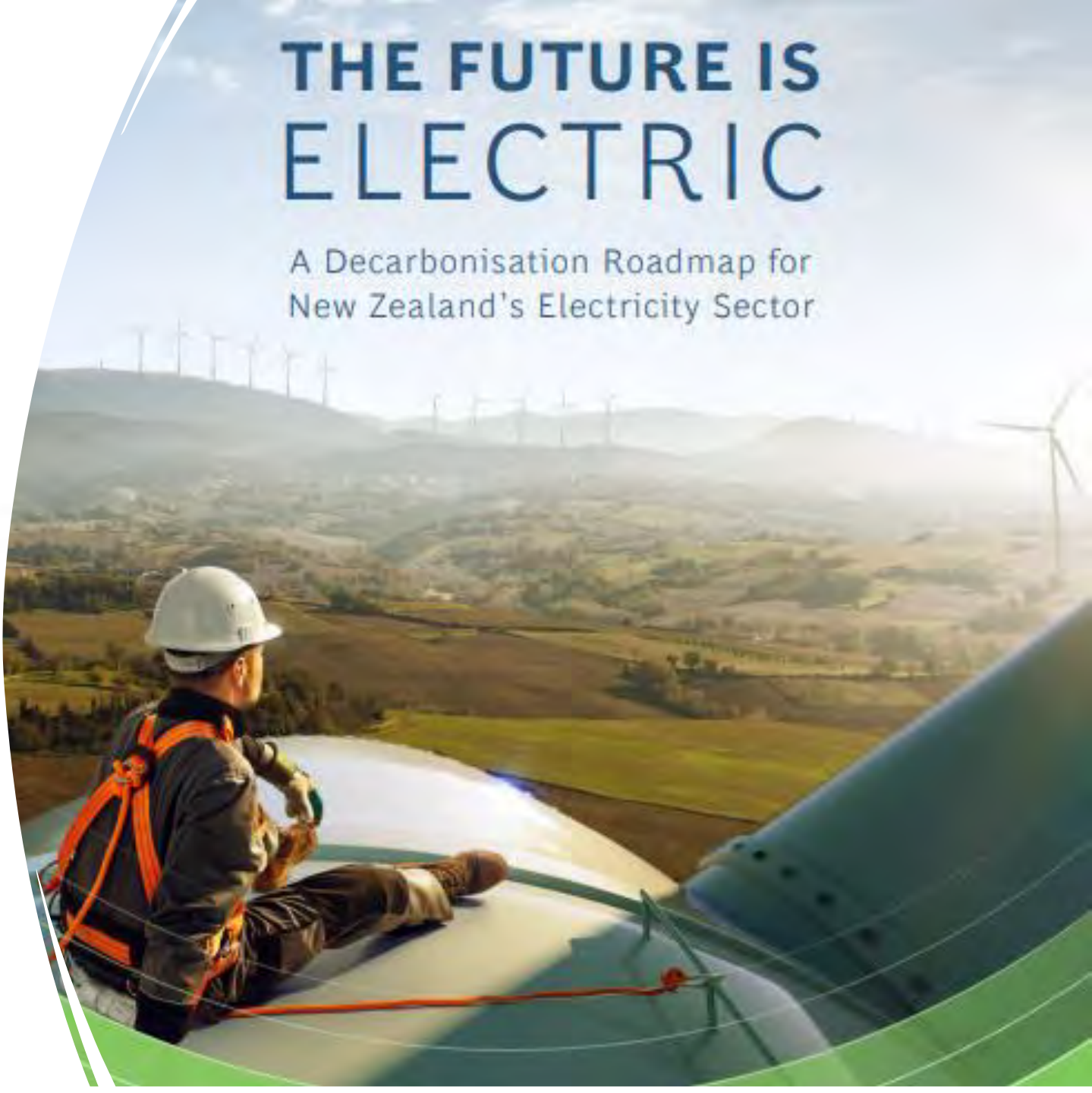


# THE FUTURE IS ELECTRIC

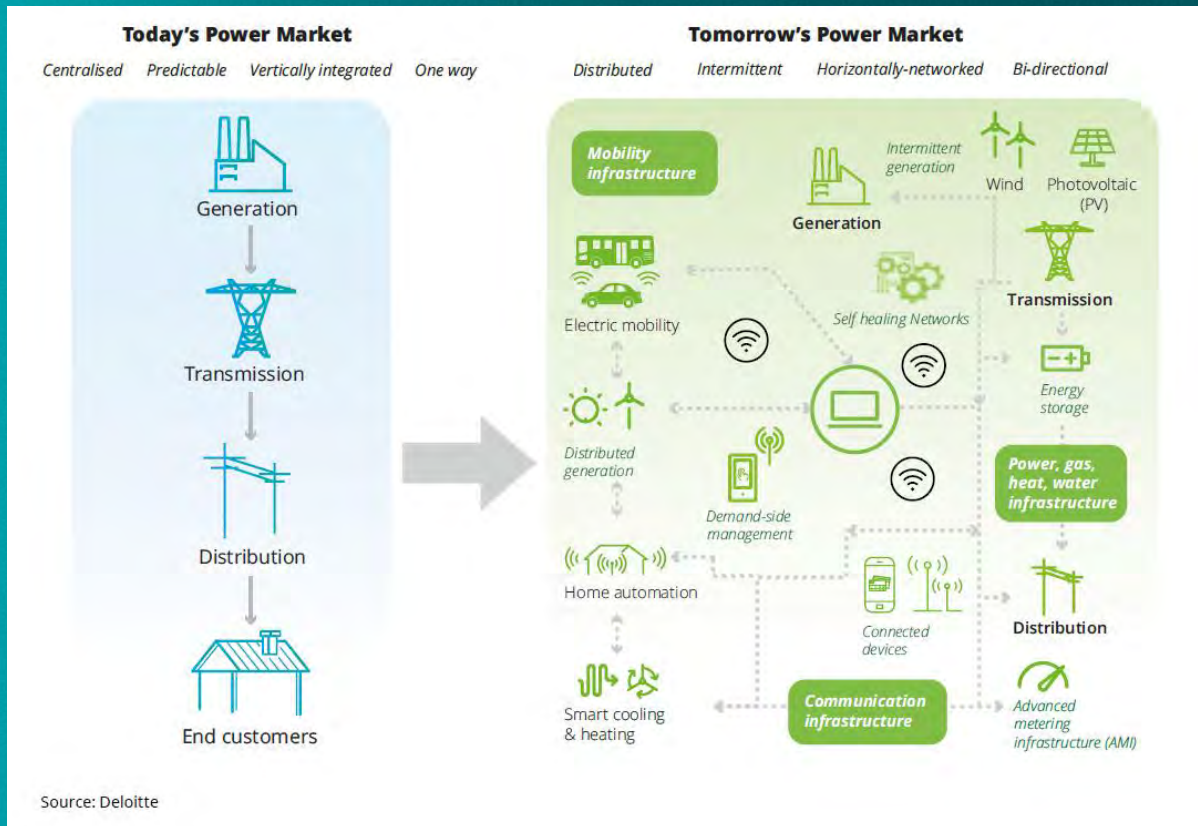
A Decarbonisation Roadmap for  
New Zealand's Electricity Sector

## **Pathway 2: Smart system evolution (preferred pathway)**

Broad alignment and a whole-of-system view (including consumers) encourages a smart transition, including use of batteries, distributed energy, and demand response, to deliver 98% renewables by 2030, with a high degree of electrification



# Decarbonised, Distributed, Democratised, Digitised & Flexible Energy Future



[https://www.nweurope.eu/media/14580/def\\_kampc\\_cvpp\\_startersgids\\_ia-uk04.pdf](https://www.nweurope.eu/media/14580/def_kampc_cvpp_startersgids_ia-uk04.pdf)



# The Energy Transition Challenge

Sustainability



Energy Equity

Energy Security

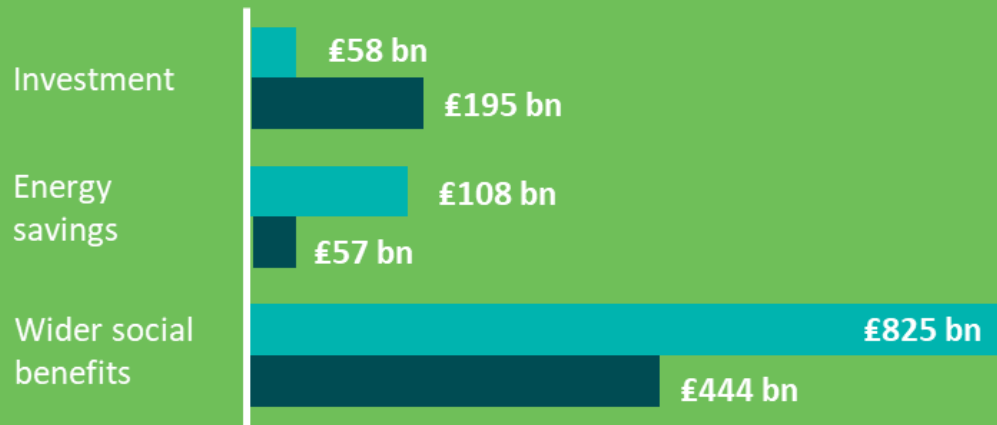
# 'Unlocking the ambition of places and communities'

UK insight | Conclusion: **unlocking the ambition of places and communities** will deliver the most successful version of net zero

**Place-specific** assumes city regions select the most socially cost-effective combination of low carbon measures

**Place-agnostic** assumes proportionality uniform adoption of low carbon measures across city regions

Adopting a place-specific approach (rather than a place-agnostic one) could generate greater benefits and lower costs



It would save **£137 bn** in investment cost ...

... and generate an additional **£431 bn** in energy savings and wider social benefits



# National - Regional - Local - Whānau

## EDBs investment driver heatmap

National Electricity Demand and Investment

OVERVIEW

COMPARE BY TIME



CHOOSE TOPIC

Drivers of increased electricity demand

SELECT VARIABLE

Electric vehicles

BY DECADE

2023-2030

2031-2040

2041-2050

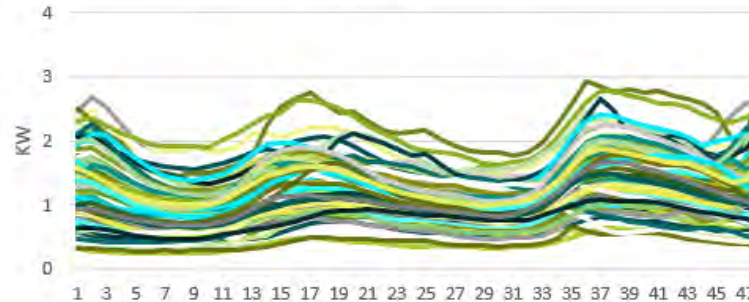


ELECTRICITY DISTRIBUTION BUSINESSES



0% to 10% 10% to 20% 20% to 40% Over 40%

### Orion SA2 Daily Profiles (winter)



- Addington East
- Aldanfield
- Aranui
- Avonhead North
- Avonside
- Banks Peninsula South
- Belfast East
- Bishopdale North
- Birken Run
- Brookhaven Ferryhead
- Bryndar North
- Burnside
- Bush Inn
- Cashmere West
- Christchurch Airport
- Christchurch Central North
- Addington North
- Akaroa
- Avondale (Christchurch City)
- Avonhead South
- Awatea North
- Bankside
- Belfast West
- Bishopdale South
- Bimbley North
- Bromokland Spencerville
- Bryndar South
- Burnside Park
- Casbrook
- Charing Cross
- Christchurch Central
- Christchurch Central-South
- Addington West
- Akaroa Harbour
- Avonhead East
- Avonhead West
- Awatea South
- Baskinham
- Besley
- Bishopdale West
- Bromley South
- Broomfield
- Burnham Camp
- Burwood
- Cashmere East
- Charleston (Christchurch City)
- Christchurch Central-East
- Christchurch Central-West



### CHRISTCHURCH IN-HOME ENERGY ASSESSMENT



# Orion Group Strategy

## Purpose

Powering a cleaner and brighter future with our community

## Impact

Driving prosperity for our region through balancing energy affordability, energy security and sustainability

## Focus Areas

Facilitating decarbonisation and hosting capacity at lowest cost

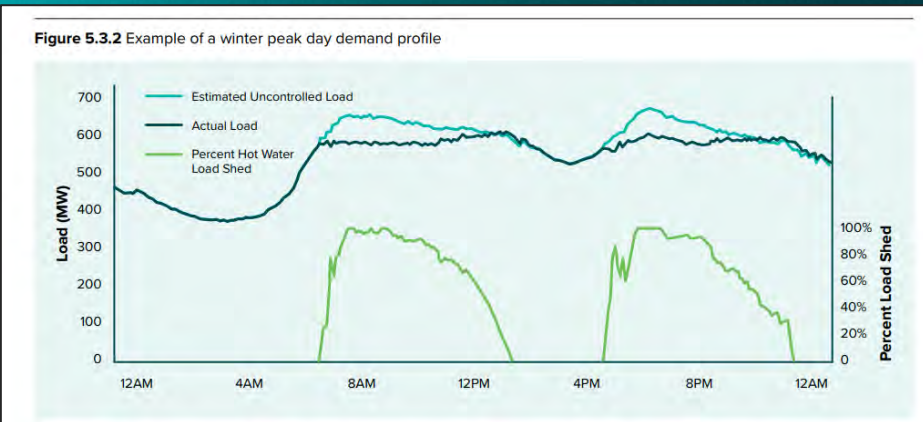
Investing to maintain a safe, reliable, resilient network at lowest total lifecycle cost

Being a force for good in the community we serve, enabling the net zero transition

Creating the preferred workplace

Fit for purpose capital structure

# Maximising the scope for customer & community participation



Resi-Flex Consumer Persona research

Wellspring | We<sup>o</sup> Orion | electricity

MAY 2023

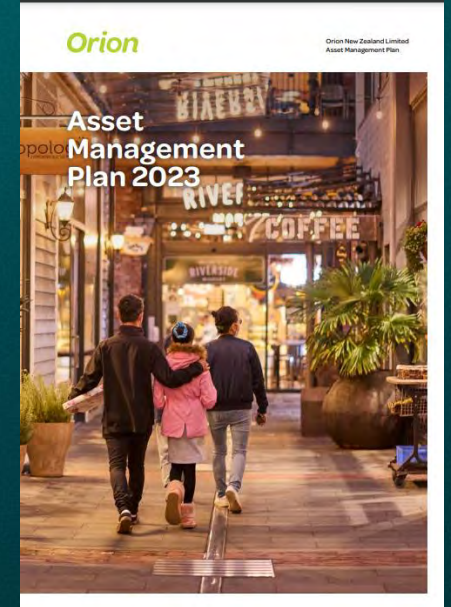
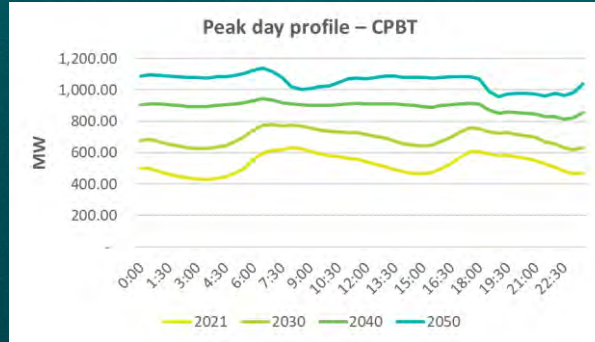
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# Collaborative Local Energy Planning

## Greater Christchurch Spatial Plan

The Greater Christchurch Spatial Plan will provide a blueprint for how we will accommodate future population and business growth in our city region.

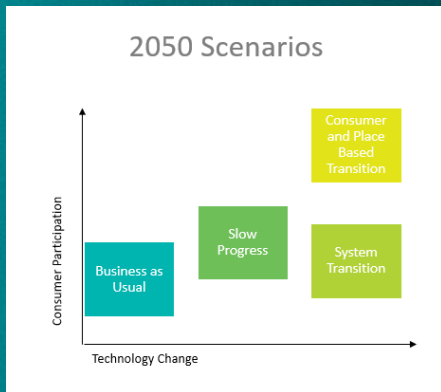
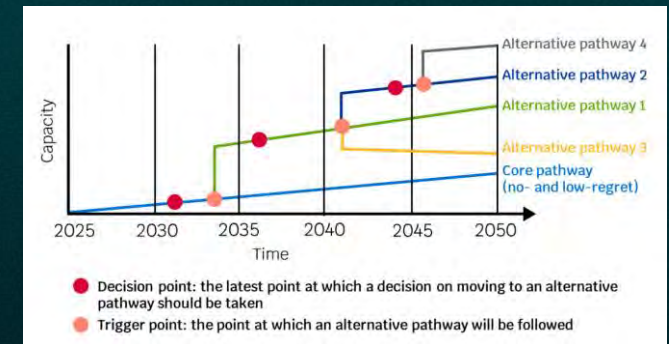
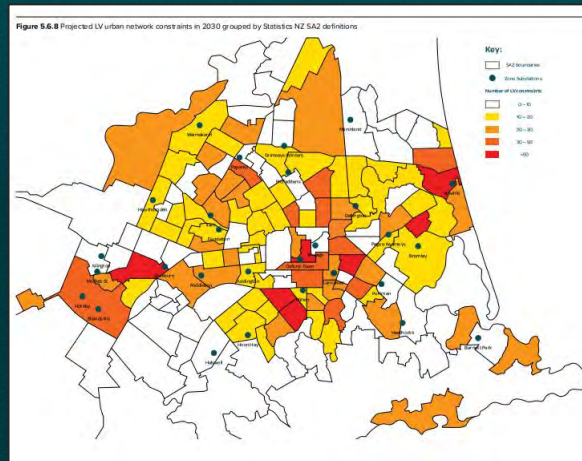


EECA Environmental and Energy Efficiency Commission

Focus areas Co-funding and support Regulations Insights About

## Regional Energy Transition Accelerator

Partnering with regions across New Zealand to accelerate decarbonisation.



# Force for Good – Empowered Communities

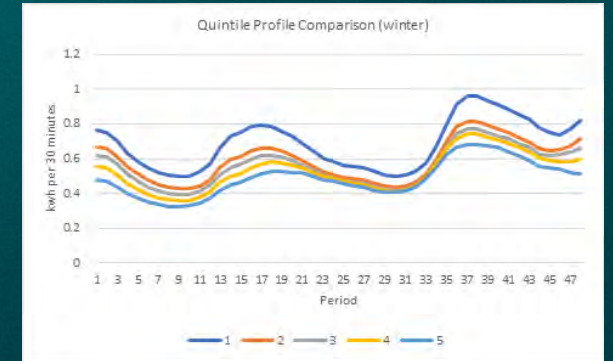
## Education



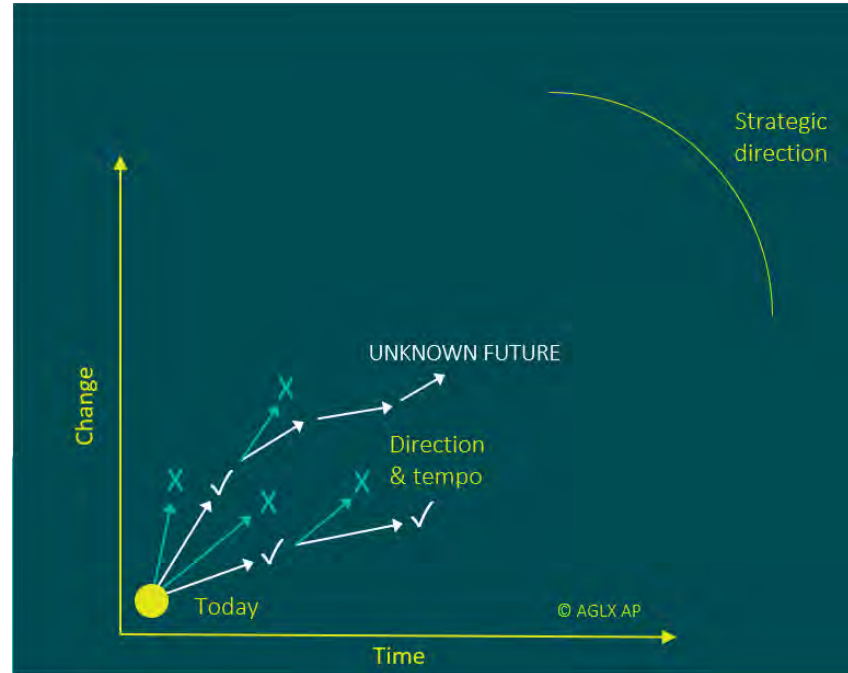
## Energy Efficiency



## Equity



# Collaborative Innovation



## Energy Hub

*Facilitating collaboration for a cleaner, brighter future*





# Equitable Transition: Facilitating Local Connection & Collaboration

*Education/Research*



*Government*



*Orion*

*ENERGY ACADEMY*



*Community*

*Industry*

# Stakeholder Expectations

Lead by example

Connecting people

Demonstrate what a good network looks like from a community point of view and contribute expertise in community conversations

Share your work, learning & interest. Not need the full solution ... people will see & come

Co-create beneficial solutions and go together to “pitch”

Enable innovation by providing access to data, using the network for trials, and funding innovation projects.

Enable tech platforms on network for smarter use of energy

Facilitate energy flows to keep energy/ value local

Discount local energy transfer

# Summary

- ‘The future is electric’
- ‘Decarbonised, distributed, democratised, digitised’ – and flexible
- ‘Unlocking the ambition of places and communities’ will be key to achieving an equitable & affordable transition to a low carbon, resilient future. ‘Community Energy’?
- AoNZ’s (very) local electricity distribution businesses connect their communities & facilitate efficient operation of the local system
- CE & EDB models need each other – from synergies to a symbiotic relationship...
  - Community participation, cross-sector collaboration, systems innovation and timely investment are critical



# David Riley

Community & Partnerships Manager, Todd Energy

**Ara  
Ake**

Future  
Energy  
Development



WISE  
Charitable Trust

community  
**ENERGY**  
network

People powered wellbeing, together

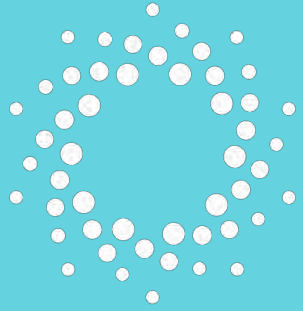
NZ CHAMBERS OF COMMERCE

T A R A N A K I

*Business Vitality*

# John Campbell

Chief Executive, Our Energy



our energy

presents

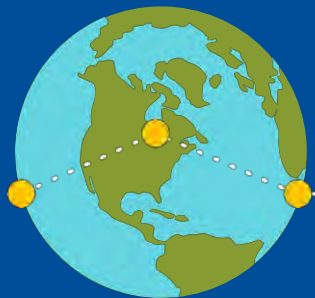
**an easy way for people and  
communities to buy, sell &  
gift clean, local energy**

**Reducing Energy Hardship  
Conference – May 2023**



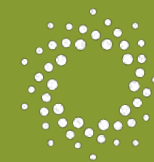
# Purpose

1. Our Energy – an overview
2. Retailing for energy communities – Kia Whitingia
3. How we can (and should) do more.



# Our vision

**A world where  
community-led energy is  
affordable, reliable and  
sustainable for all.**



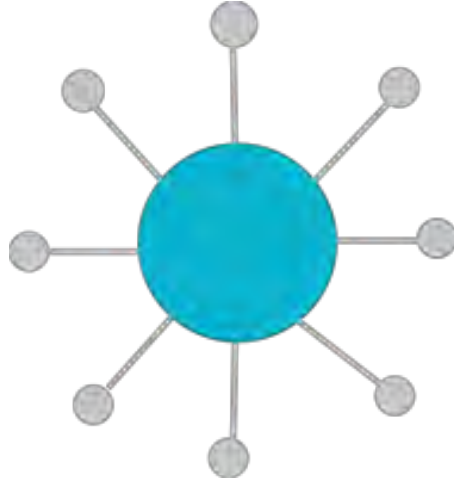
our energy



**We stand for a better, fairer, cleaner  
and more local energy future**

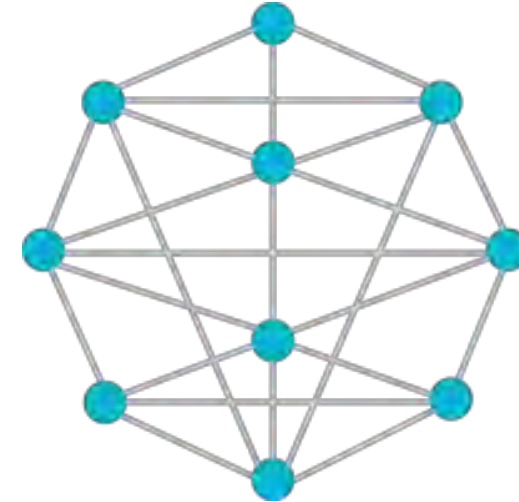


Electricity markets have been traditionally designed as one-way, supply-chain driven systems...



### **THE PAST**

All about big power stations and delivery of their energy



### **THE FUTURE**

Thousands, millions of small power stations and sharing of our energy

...yet how we buy & sell electricity will be increasingly distributed, customer-led and flexible.

# Trading and sharing of clean, local energy and flexibility is not...

1. Easy
2. Open
3. Consistent
4. Transparent

We're fixing that.

# Our solution

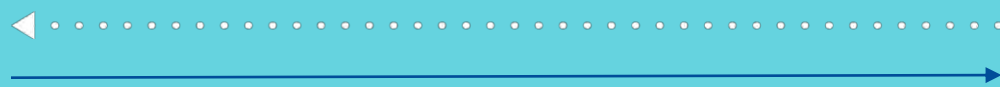


Electricity consumers' import and export smart meter data plus local flexibility requirements.

**Matching data & Online platform access**



**Payments**



Customer relationship and service, billing, grid 'top up', wholesale market reconciliation, local distribution network agreements.



Customer UI/UX platform enabling local community members to:

- 'buy' energy produced by their community;
- receive energy gifts from their community; and
- respond to local flexibility offerings.

Engaging and personalised energy relationships and community-focused energy analytics.

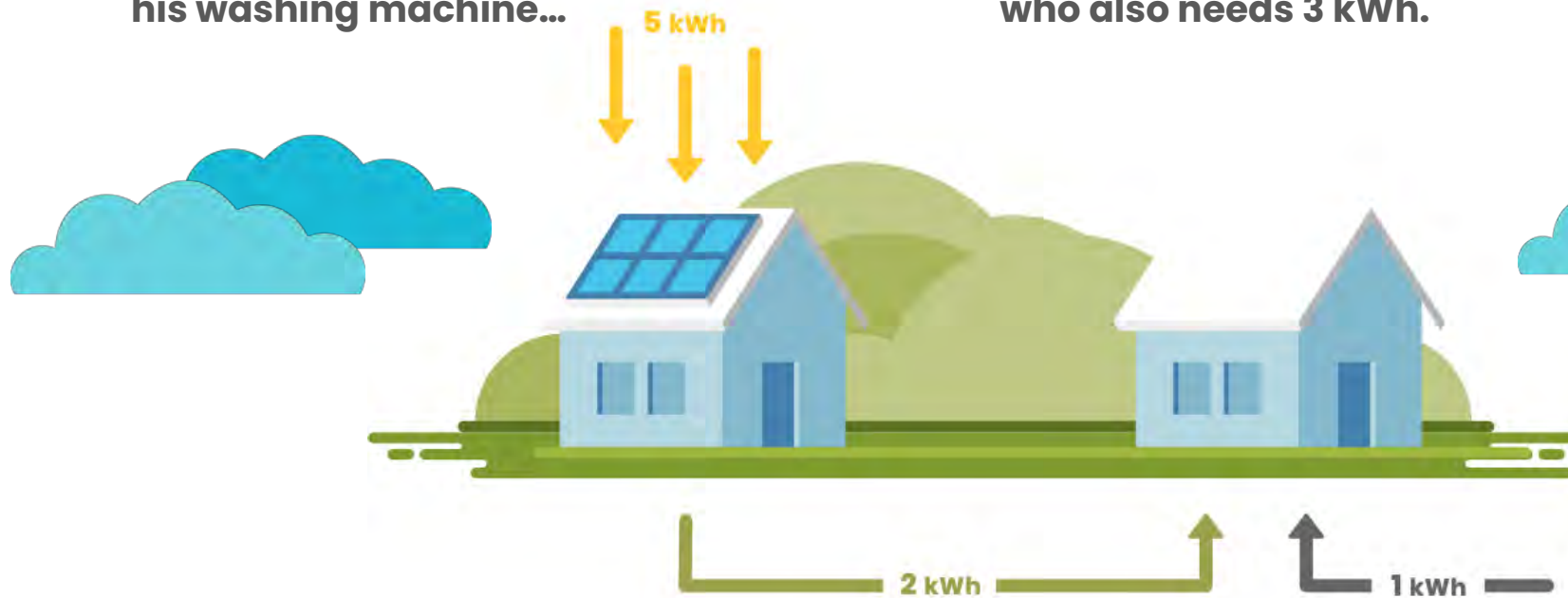


# How matching works

At 2pm in the afternoon, Joanna is producing more electricity than she needs. Meanwhile, on the other side of town, Max flicks on his washing machine...

Joanna only needs 3 kWh of electricity to power her home, so her left over electricity can be matched with Max, who also needs 3 kWh.

Max buys Joanna's 2 kWh, and gets the rest from the grid.



our energy

# Retailing for energy communities – Kia Whitingia

- Kia Whitingia – energy collective based in Manawatū
- 5 marae + 3 whānau with solar, 10 other whānau, all with whakapapa links to local marae / hapū.
- Focus on whānau participants who are most likely to experience energy hardship.
- Community value captured:
  - Local trades at \$0.06 / kWh (~60% cheaper than market) – our technology enables this.
  - Excess over and above local trades is sold to wholesale market with revenues channelled into a community fund for later redistribution amongst community members, ie, spot price risk circulated back into community as a benefit.
- Next steps:
  - Another 5-7 whānau participants in next few months;
  - Community battery;
  - Management of electric water heating.

OVERVIEW

USAGE

ACCOUNT

Spend so far this week

\$ **55.97**

[What does this include?](#)

May 8th - May 14th



Energy bought

\$ **56.94**

165.37 units

Energy sold

¢ **0.84** Credit

13.68 units



### Energy breakdown


- 18% Community
- 82% Grid
- 0% Gifts

[This amount is indicative and may not reflect your final bill.](#)

### Energy buy price

Community energy Grid energy

Buying 

Show breakdown 

# Kia Whitingia

 Overview

 Reports

Edit 


Export report 




## Cumulative totals

 Local energy generated

135.19 MWh


 Generation consumed locally

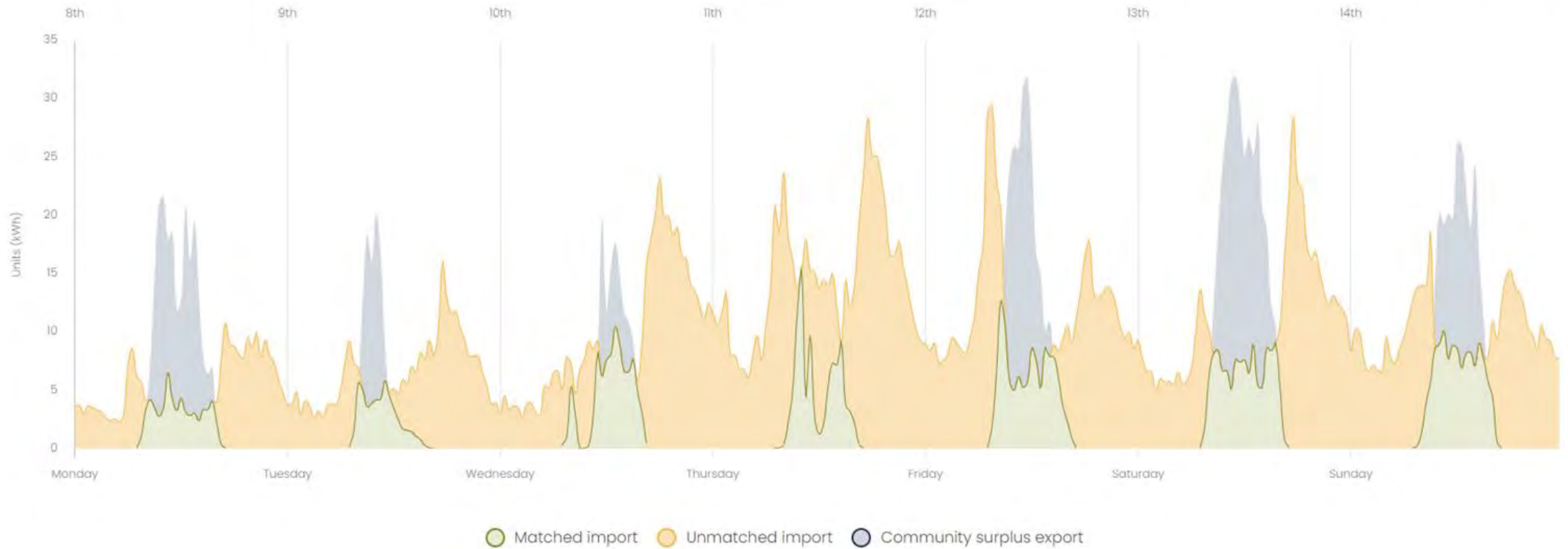
27.9%

 CO<sub>2</sub>e saved

13.21 t

## Imported energy

May 8th, 2023 - May 14th, 2023 



# How we can and should do more

MBIE's Māori and Public Housing Renewable Energy Fund has shown what can be done.

Hardware is known technology, and commercially financeable.

Switching is not participating.

Create space for community energy - learning by doing.

Adequate support for business model development, analysis, impact assessment and findings.

Lean on existing market-based approaches and methods - granular tracking, ecolabels, energy communities, power purchase agreements.



“We know that smart, local energy systems can and will be an integral part of Aotearoa New Zealand’s decarbonisation journey – many local producers are doing it now, with our help.”

John Campbell, Founder & CEO, Our Energy.



**You're interested?  
Please contact us**

**[team@ourenergy.co.nz](mailto:team@ourenergy.co.nz)**

**04 390 0967**

**[ourenergy.co.nz](http://ourenergy.co.nz)**



**our energy**





# Jenny Van der Merwe

Renewable Energy Lead, Kāinga Ora

25 May 2023

# Reducing Energy Hardship Conference

Jenny van der Merwe  
Renewable Energy Lead, Kāinga Ora

Briony Bennett  
Energy Innovation Manager, Ara Ake



# 200,000+

People live in Kāinga Ora homes

We own or manage over

# 70,000

properties

Our construction programme accounts for

# 7%

of NZ new residential builds



**Kāinga Ora**  
Homes and Communities



## Energy Wellbeing Projects

- Healthy Homes Delivery Programme
- Retrofit Programme
- Right at Home Initiative

- Innovative Build Programme
- Winter energy study
- HOPE (Health Outcomes Project Evaluation)



**Kāinga Ora**  
Homes and Communities





## Solar Energy Programme

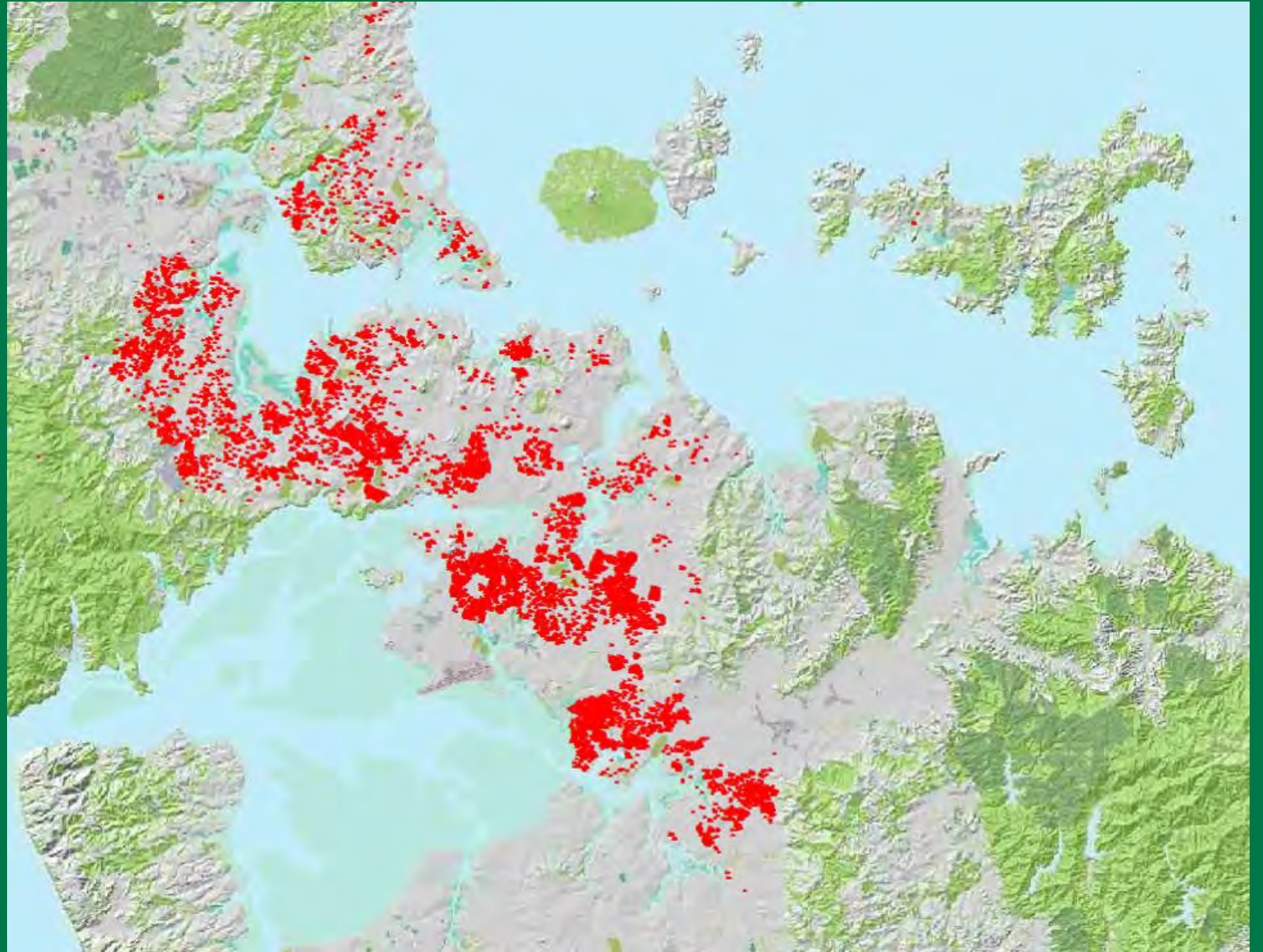
- 49 projects providing solar to over 780 homes
- 50% existing homes and 50% new builds
- Locations include Whangarei, Auckland, Hamilton, Gisborne, Hastings, Napier, Porirua, Wellington, Christchurch and Nelson
- Shared Solshare systems coming soon on 3 apartment buildings



**Kāinga Ora**  
Homes and Communities

## The Opportunity

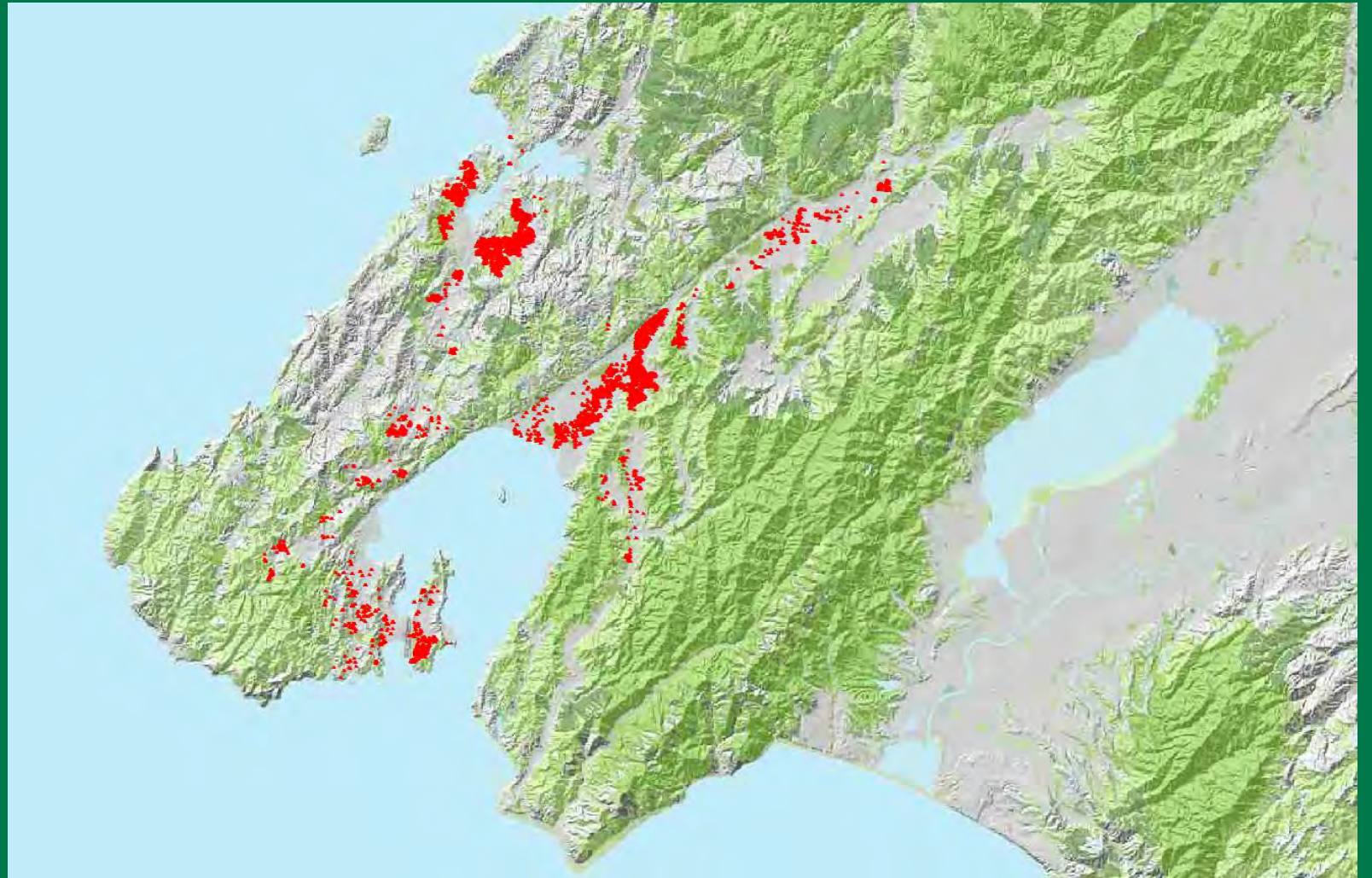
30,000+ properties in  
Auckland



## The Opportunity

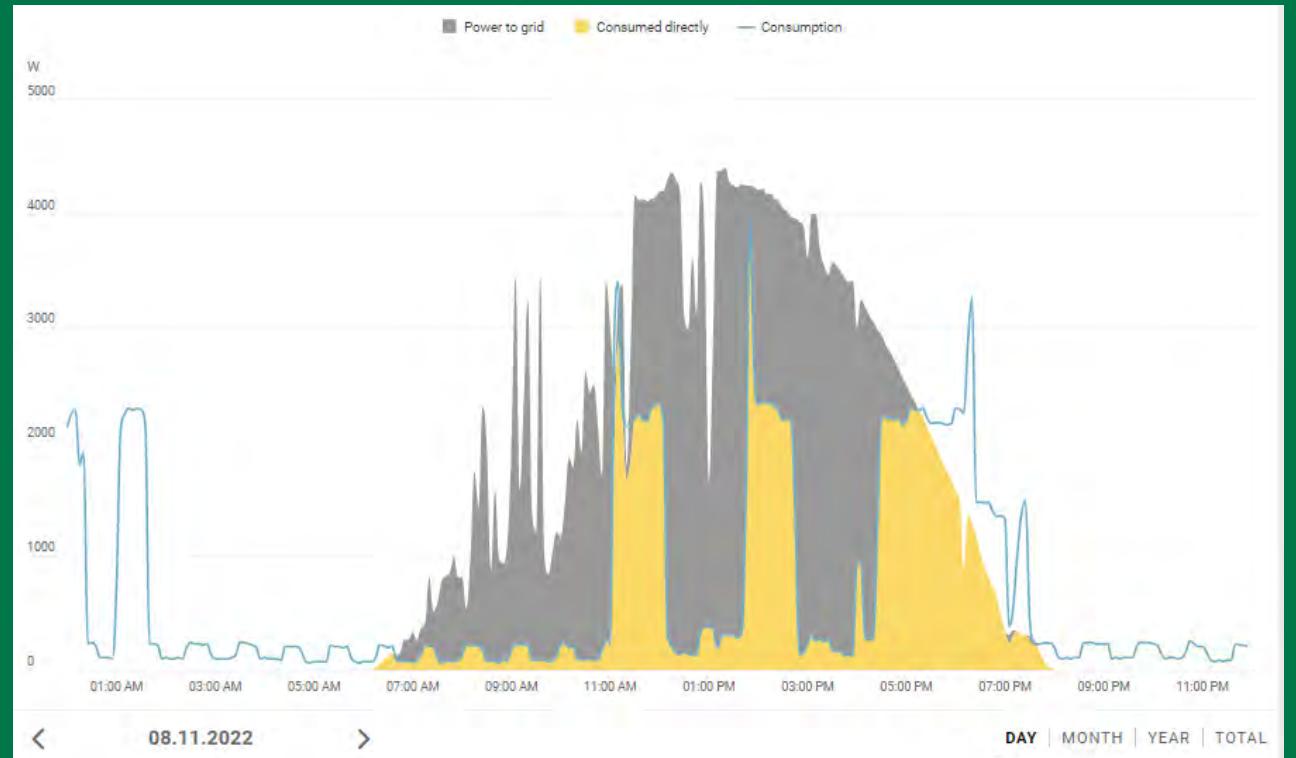
7,000+ properties in  
Wellington

Wellington is where  
the Energy Sharing  
Pilot will be  
conducted

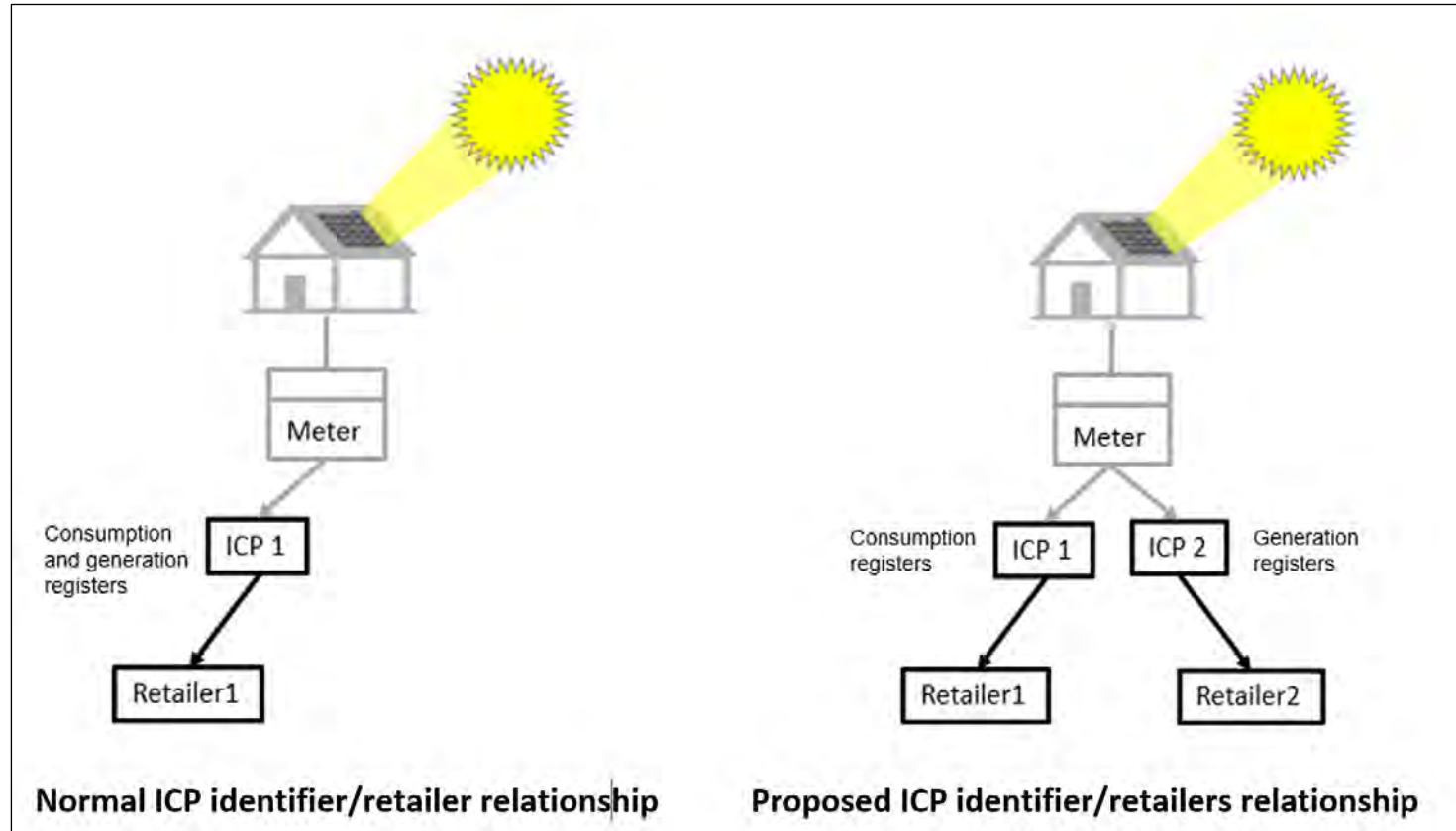


# Kāinga Ora is unable to effectively share the benefit of the excess electricity from its rooftop solar PV systems between customers

- Some properties are not suitable for solar systems
- Some properties can generate far more solar energy than can be used by the customer
- Solar PV systems maximised for the roof space produce excess electricity that is sent back to the grid at a low buy back rate that varies depending on customer's chosen retailer



# Proposed technical solution

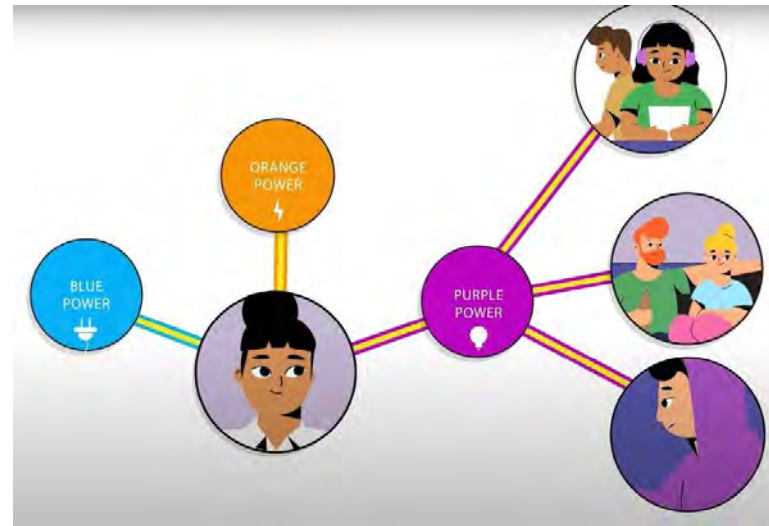


## Who is involved:

- Intellihub metering equipment provider
- Wellington Electricity local distributor
- Jade software for the national electricity registry
- Electricity retailer/s
- Electricity Authority

# Seeking regulatory exemption from Electricity Authority to enable solar sharing

- Ara Ake and Kāinga Ora have partnered to address the barriers to sharing excess solar generation.
- The Electricity Code has embedded a one-to-one relationship between households and electricity retailers.
- But the electricity industry has changed since the Code was written. Technologies such as solar panels, batteries, electric vehicles and smart controls for appliances mean households and businesses are more capable of choosing when and how they use electricity.
- The Wellington solar sharing trial with Kāinga Ora is the first of many innovation trials at Ara Ake aimed at showing the benefits of addressing this regulatory barrier.



# Next Steps

- The Electricity Authority makes a decision on the regulatory exemption request in June 2023
- Kāinga Ora and Ara Ake run procurement process to find retailer partner to offtake and monetise excess solar generation
- Run trial, collect data, demonstrate benefits to eventually request a permanent regulatory change
- Share information on regulatory exemptions and technical energy sharing solution with those facing similar barriers
- Support further, more complex trials (i.e. batteries!)





# Brian Stephens

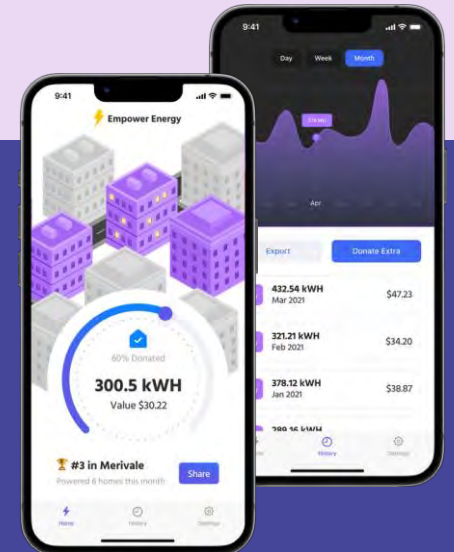
Co-Founder & Chief Platform Energiser,  
Empower Energy Charitable Trust



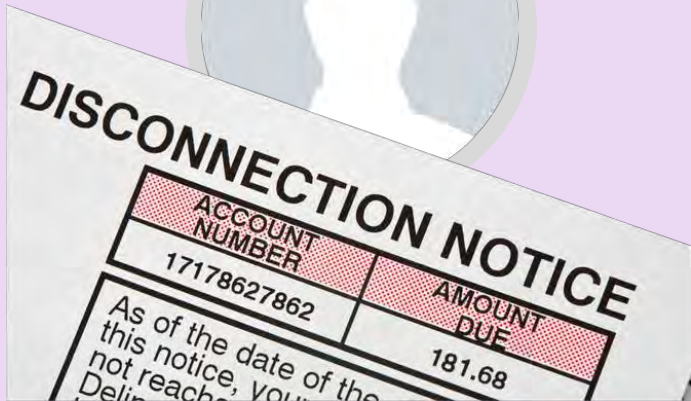
# Empower Energy



The Universal Peer-to-Peer Donation Platform  
Empowering Kiwis to End Energy Hardship

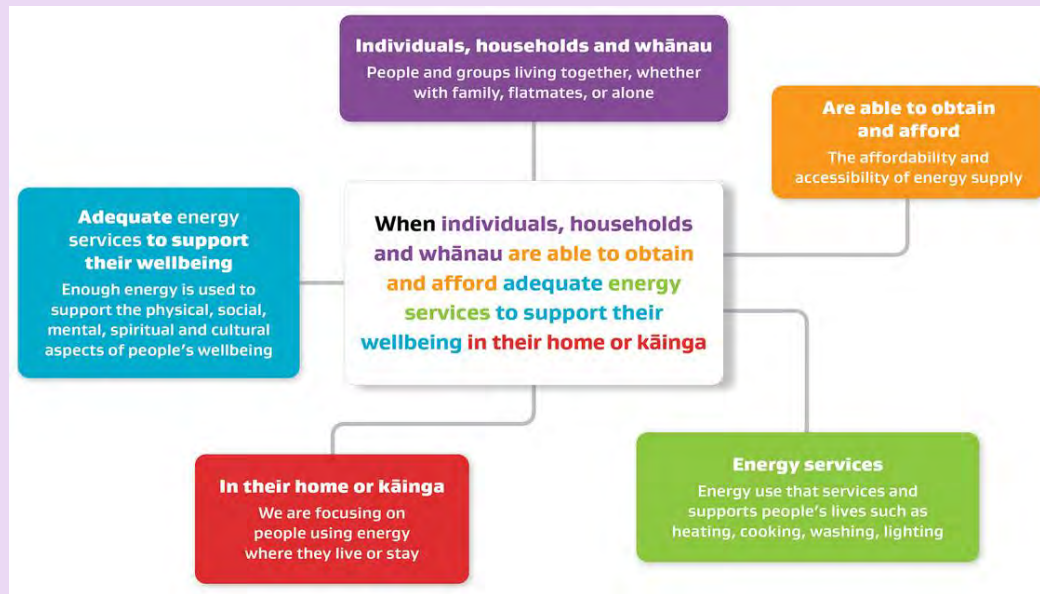


# THE PROBLEM: Energy Hardship



More than 25,000 disconnections in 2018

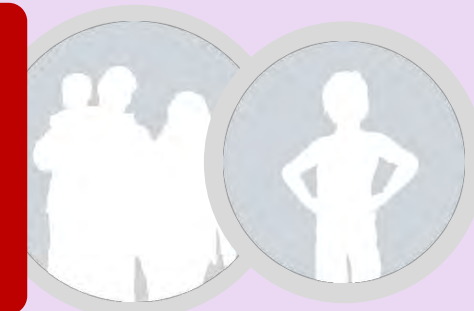
EMI ea.govt.nz



Around 18% of Kiwi households report difficult paying their bill

Consumer NZ

Energy hardship has immense health, social, economic and educational impacts for hundreds of thousands of New Zealanders

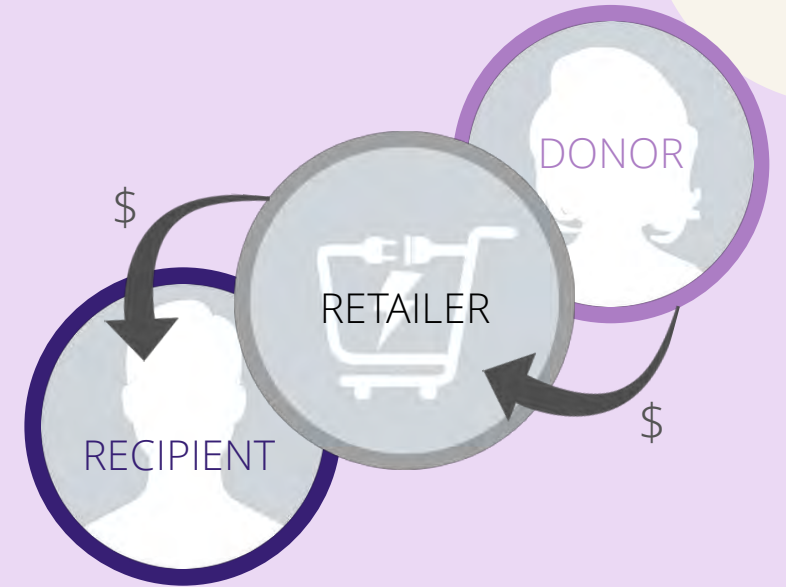


TACKLING ENERGY HARDSHIP:

# Donation Networks

Several NZ electricity retailers have established their own, **in-house peer-to-peer donation networks**.

These networks are a fantastic first step towards allowing Kiwi households and businesses to donate to those experiencing energy hardship.



Empower Energy have developed a larger, more impactful, **universal platform** that will scale peer-to-peer donations and deliver better experiences & outcomes for all stakeholders.



- More options to donate & make impact
- More incentives to generate/donate more to the scheme



- Less investment in in-house resource
- Less admin in finding and vetting recipients



- More support available
- Less stress/shame from having to ask for help - including from retailers

ONE BIGGER, BETTER & MORE EFFICIENT PLATFORM:

# Power of Partnerships



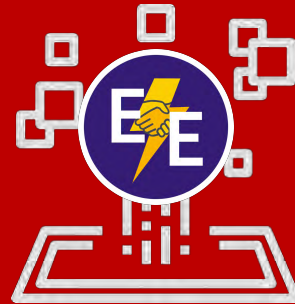
## DONORS

Empower Energy delivers a credible, cross-retailer, care agency-partnered platform with multiple donation options.



## CARE AGENCIES

Partnering with care agencies is the most effective, credible way to help recipients.



Our universal platform **leverages what each partner does best**, opens up a **larger pool of donors and recipients**, and ensures each user type receives a **highly valued digital experience**.

The platform integrates with all partners' systems, and has custom views and functionality for each user type.



## RETAILERS

An automated, third-party, donation platform requires low investment, doesn't require vetting, and allows for efficient cross-retailer transactions



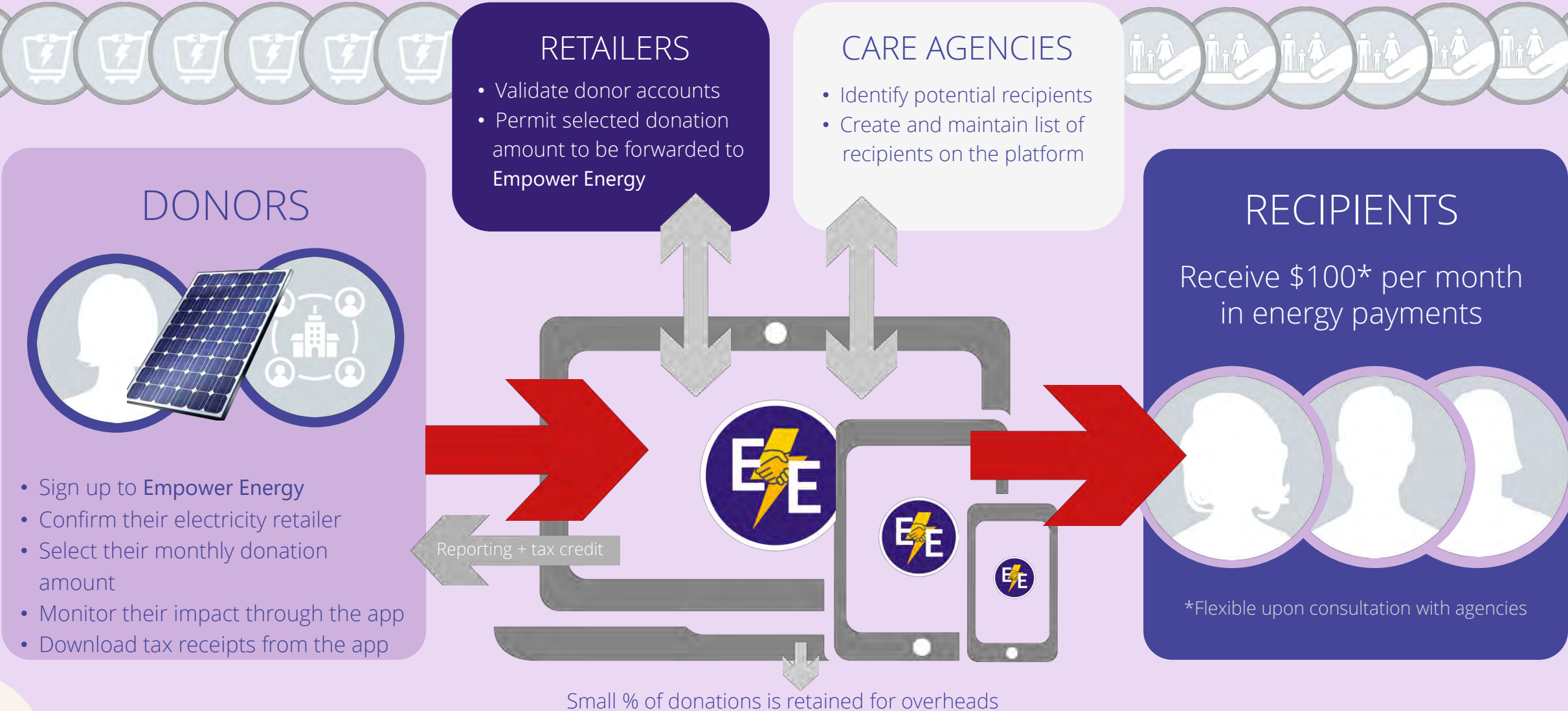
## RECIPIENTS

It is vital that vulnerable people can easily access the support they need, without being forced to ask for help from retailers - or having to change retailers.

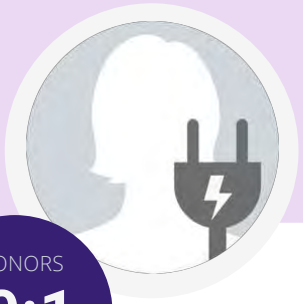
# The Empower Model

Every electricity retailer can join EE

National, regional, and local care agencies



# Donor Segments



~ DONORS  
**10:1**  
RECIPIENTS

## Residential Donors

Typical consumers with grid-sourced electricity

- EE enables **everyone** to nominate a donation to be made every month on top of their power bill
- Target donations ~\$10 per month

## Solar Donors

Consumers with rooftop solar panels

- Paying lower power bills due to solar install
- Often receive a 'buy-back credit' on bills
- More likely to be community-focused & financially secure couples/families
- Target donations ~\$20 per month



~ DONORS  
**5:1**  
RECIPIENTS



DONORS  
**1:X**  
RECIPIENTS

## Super Donors

Organisations, businesses, and collectives - including those in the energy sector - looking to make a real impact on energy hardship


- Some companies will install **dedicated PV panels**, with the generated power earning 'buy-back credits' that can be partially/entirely donated
- The target is to onboard multiple super donors, contributing \$100,000s each per year, including large initial cash donations that will ensure we can make significant impact in winter 2023/24



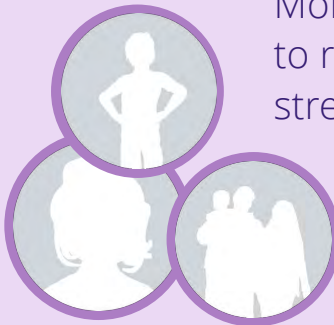
# Empower Energy Impact

Empower Energy will deliver a donation platform with universal integration across the energy sector.

New Zealand will have a singular, credible, sustainable donation stream dedicated to addressing energy hardship.



We'll see a huge increase in donors - both individuals **and** organisations - as they will finally be able to easily, and flexibly make the specific, targeted impact they are looking for.



More vulnerable recipients than ever before will be able to receive support. And they won't have to endure the stress and shame of seeking help from multiple sources.

YEAR	TARGET # OF RECIPIENTS
<b>2023</b>	<b>15,000</b>
<b>2024</b>	<b>40,000</b>
<b>2025</b>	<b>100,000</b>
<b>BEYOND</b>	<b>Helping every Kiwi in energy hardship</b>

**Our foundational partners have the opportunity to play a critical role in driving a real, sustained impact on energy hardship**

# Traction To Date



## Live MVP1 DONATION PLATFORM

The dashboard shows a total energy balance of 3029kWh, valued at \$30,304. It lists energy usage for various customers and a list of donors.

Customer	Energy Usage
Cheyenne Culhane	+300kWh
Jaylon Curtis	+124kWh
Jakob Septimus	+389kWh
Tiana Franci	-50kWh
Alena Westervelt	-123kWh



Empower Energy is a registered NZ charity

**WORKING PILOT:**

- Commercial PV donors
- Residential PV donors
- Residential grid-based donors

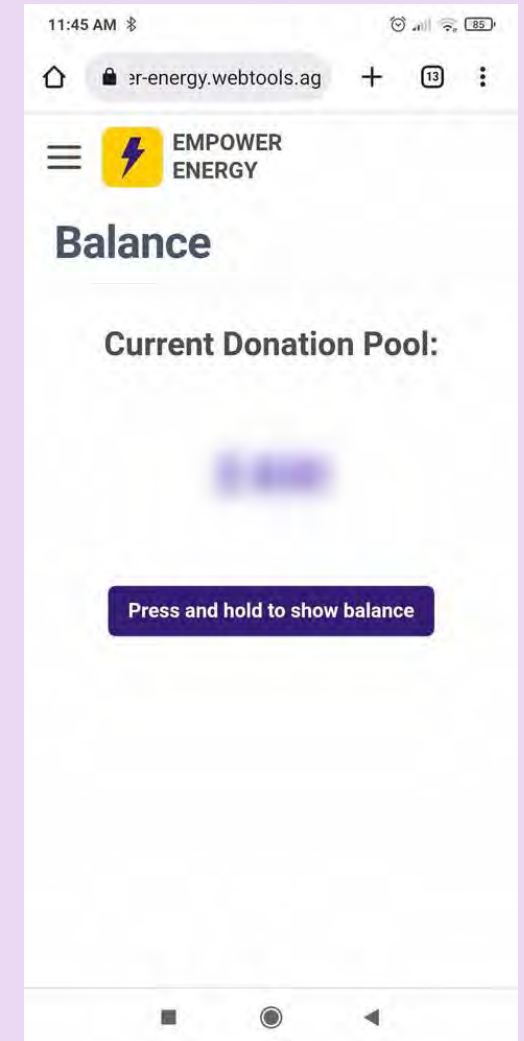
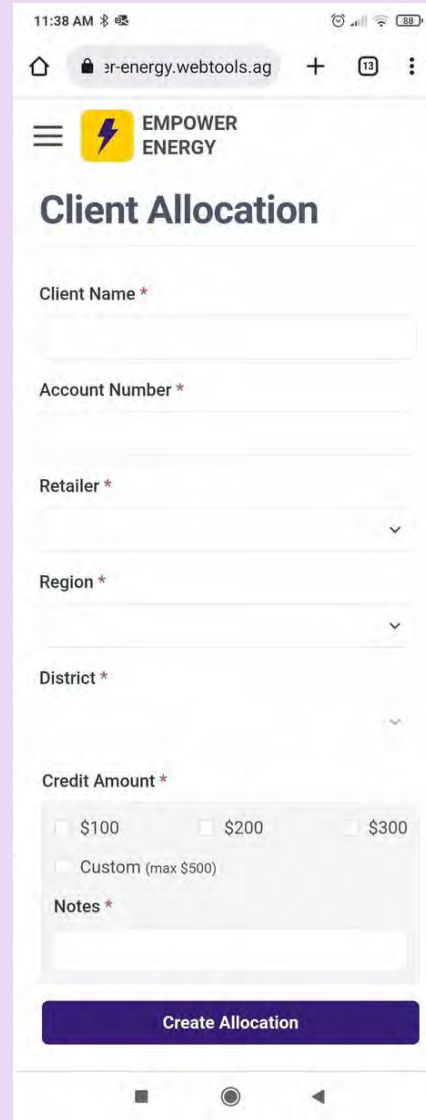
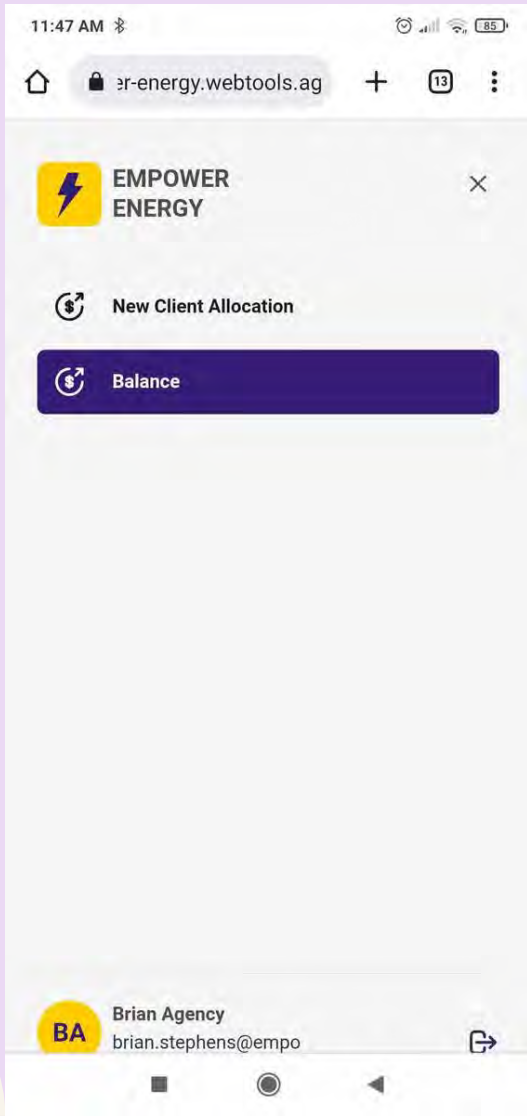




# The Distribution WebApp - MVP2

## Empower Energy is ready to distribute funds!

If you have a community energy project looking for a way to distribute funds to your community - this is it!



# The Empower Energy Team



Michael Fitzgerald  
Co-founder / Chief Empowerment Officer  
BA, PGCertAppSc



Brian Stephens  
Co-founder / Chief Platform Energiser  
BE Hons, BSc



Greg Stubbings  
Head of Marketing & Growth



Paul Deavoll  
Orion Trustee



## ADVISORY BOARD

Ian Fitzgerald  
CMIInstD



Pam Walklin  
Ara Ake



Sheralee MacDonald  
Orion



# Funding Targets

## Platform Partner

We require \$1.9M in platform funding over three years

Beyond year three, the platform is self-sustaining

## SuperDonor Target

To ensure we make a significant impact on energy hardship in the 2023 winter, we are targeting:

**\$1.5M**

super donations in 2023

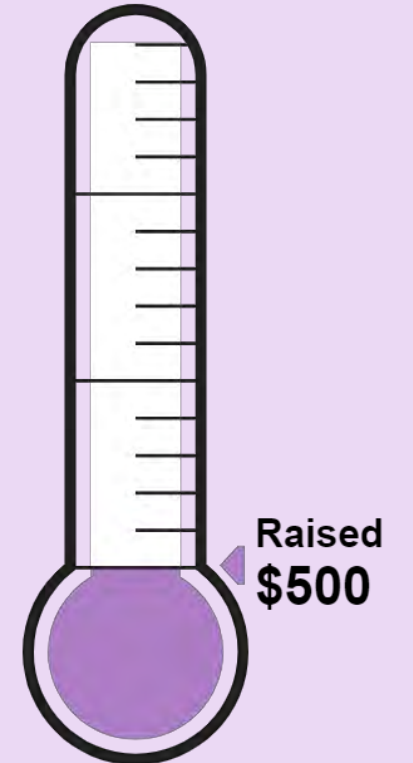
## Platform Partner Goal

\$750,000



## SuperDonor Goal

\$1,500,000



\*Community Energy Enabling Platform



# Community Perspective

Phil Squire - Fair Energy Manager, Toast Electric

# **Toast** Electric

POWER TO DO GOOD

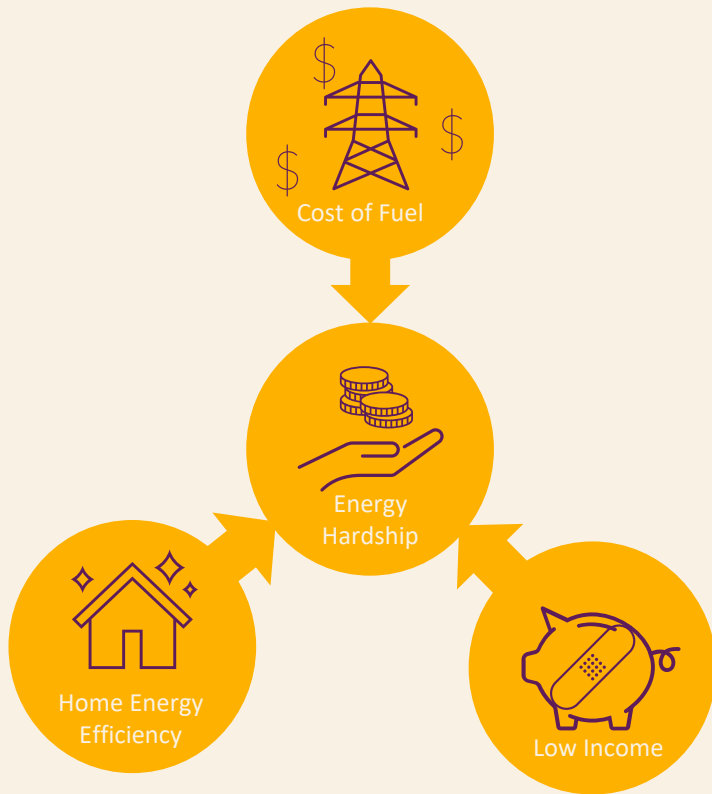
# Our Vision

Every home in Aotearoa is warm and dry and can afford the power they need to live healthy dignified lives.

**Toast** Electric



# The Problem : Commercial organisations are being charged with fixing a huge social issue.

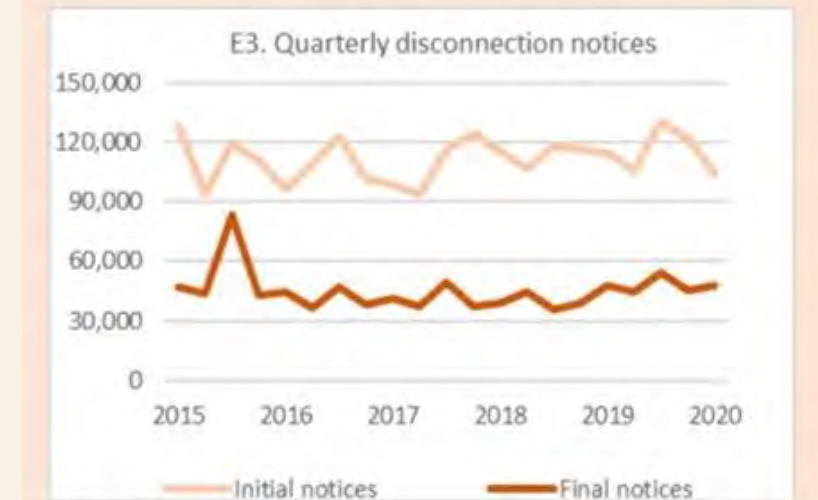


10-25% of households in Aotearoa struggle to afford sufficient household energy.

High power costs, low-incomes, and cold, damp homes lead to sick kids and elderly, deep anxiety, and a cycle of debt.

Retailers issue 100,000 power disconnection notices in New Zealand every quarter.

Retailers cut off power to 1500 – 2000 households every quarter for nonpayment of bills.



# Solution: A mission-focused not-for-profit electricity retailer



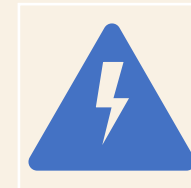
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An electricity retailer owned and run by an experienced not-for-profit - directing profits to alleviating energy hardship.



Low-income customers are identified and referred by partner social, health, iwi, budget and community organisations.



Vulnerable households receive lower electricity prices, home energy assessments, upgrades, winter heating plans, and disconnection protections



“Regular” households join Toast and use their energy spend to do good - creating the scale and income to support low-income households



# Why Now? Why Toast?

Food scarcity has foodbanks

Housing scarcity has social housing providers

Healthy housing has healthy homes NFP's

Income scarcity has budget advisors and a social welfare system

Solutions to energy poverty and accessibility should not be left in the hands of commercial organisations.

Energy is an essential resource

Power prices and cost of living is increasing

New Zealand's housing stock is generally rubbish!

Sustainability Trust and our partners have experience, passion and commercial smarts to deliver a comprehensive solution

Commercial retailers are never going to be structured or incentivised to deliver social benefit

April 2023: Government and Energy Hardship Expert Panel consultation highlighted social retailing as a key part of the solution

# The Team at Toast

Experience and networks to solve the problem



**Phil Squire** - Project Lead



**Caroline Drury** - Finances and Regulatory



**Joanne Bulmer** – Accounts and CS



**Alistair van Hattum**– Healthy Homes



**Paul Ripley** - IT and CRM

20 years of advocating and delivering solutions to support low-income households achieve healthy-homes

Social enterprise model – developing surpluses from commercial activity and feeding this into social/environmental programmes

Not-for-profit DNA – i.e. our culture means social benefit is our bottom line. No green- or social-washing here!

Long-term and constructive partnerships with government, commercial, research, health, social and community organisations.

**Toast Electric**

# Our Partners - identifying and referring households in energy hardship

- Wellington City Mission
- Manaaki Kāpiti
- Wesley Community Action
- Citizens' Advice Bureau
- Levin Budget Service
- Newtown Budget and Advocacy Service
- Victoria University Student's Association
- Supergrans
- Salvation Army
- Muaūpoko Tribal Authority

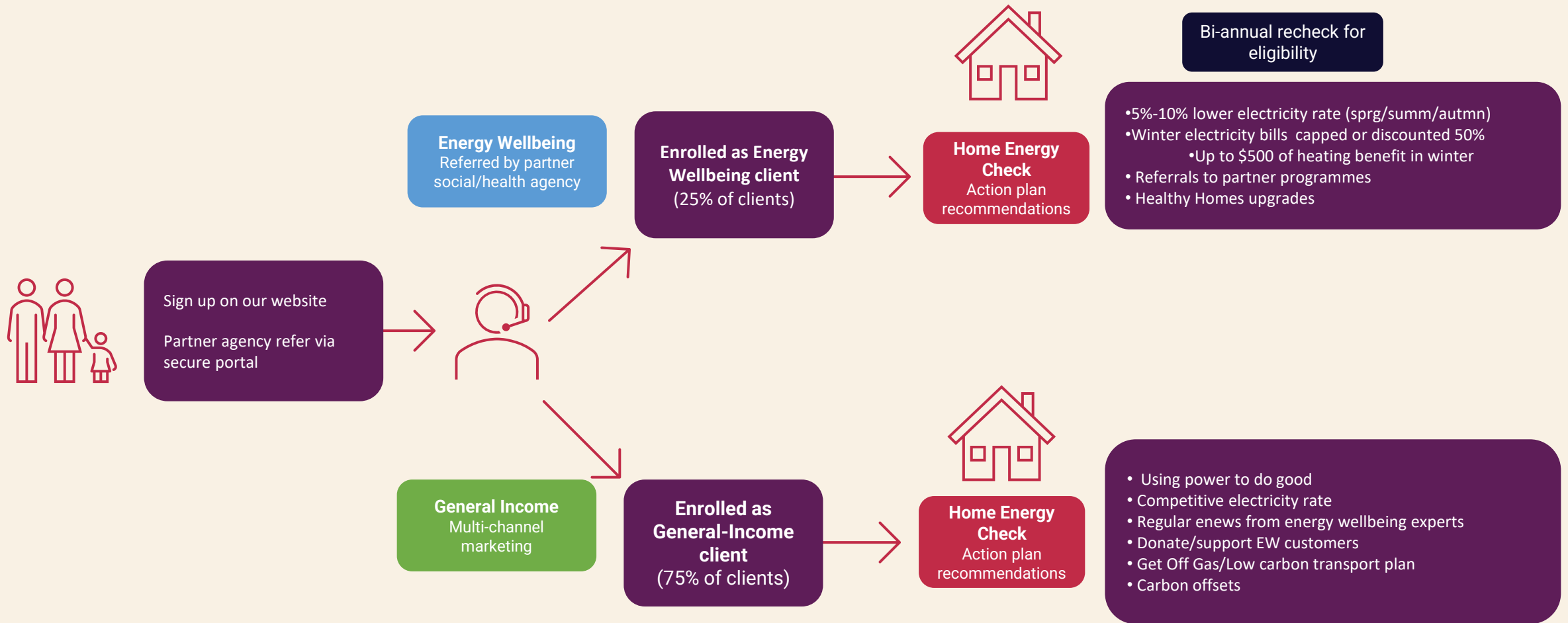
**Toast** Electric



# Where are we now? What's in store?

- May 2023: 450 customers incl. 30 Energy Wellbeing whanau
- FY2026:
  - Target 6000+ customers
  - Target 1500 Energy Wellbeing customers
- Service in Wellington and Horowhenua regions
- Expanding through CEN member orgs across Aotearoa 2024-2026
- Refining energy-wellbeing programme offering, including monitoring, app development, healthy housing upgrades
- Evaluation, research and ongoing improvement with Otago University: He Kainga Oranga/Housing and Health Research Programme (*funded by Lottery Health*)

# How Toast Works



# Energy Wellbeing Benefits

## Complete Home Energy Check

- Determine energy needs
- Advice on using energy and healthy housing
- Interventions and upgrades
- Referrals to partner services
- HHS compliance
- Advocacy to landlords

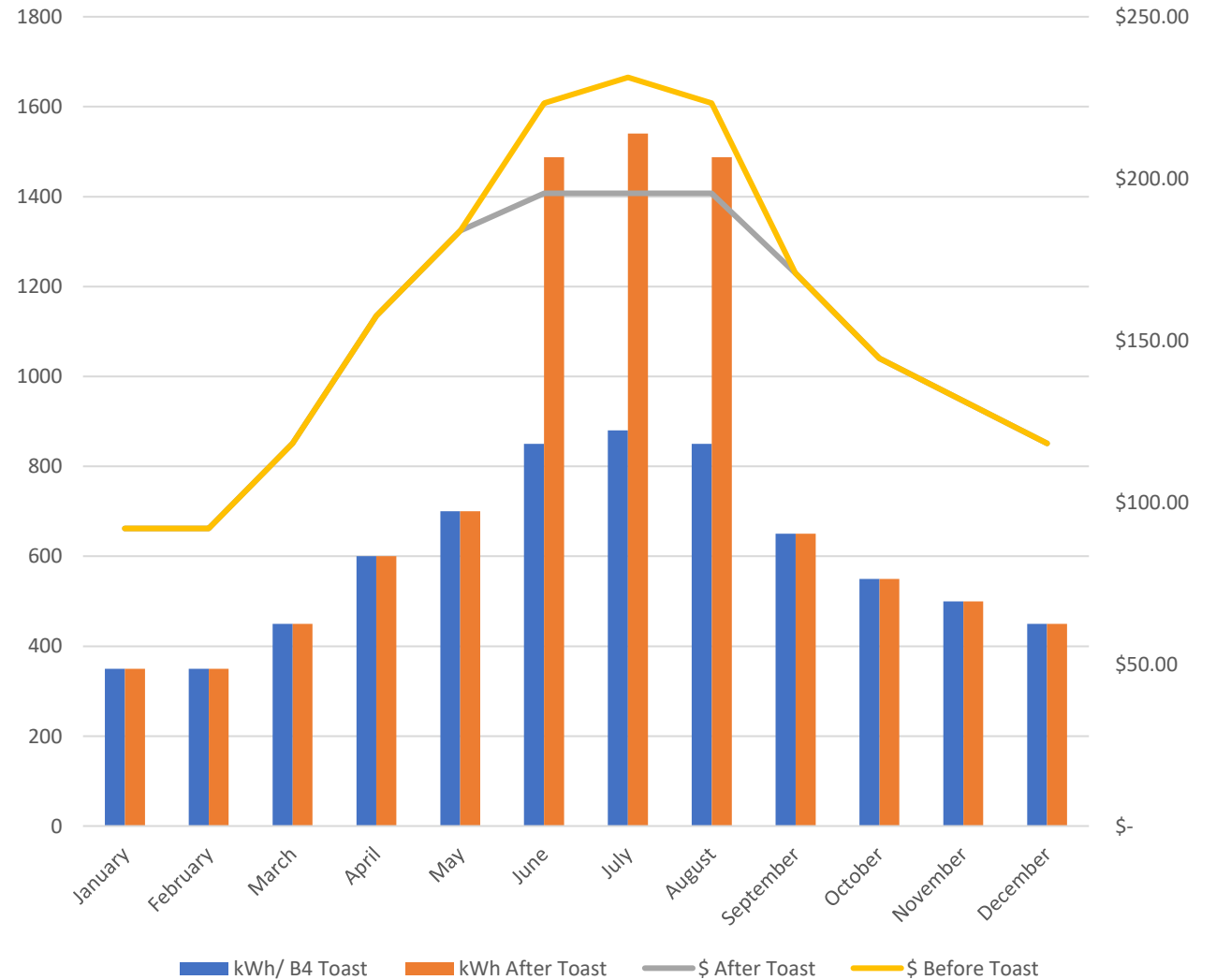
Guaranteed lower everyday electricity rate than current provider during spring-summer-autumn

## Half-price power in winter

- Cost/kWh hour reduced by 50%
- Heating plan to encourage increased heating and use of subsidy – target at least 75% increase
- Provides bill surety

**Toast Electric**

### 50% Discount: 75% More Heating Use



# Competitors – Who else is in the electricity retail business?

## Commercial retailers:

- NZX/ASX listed/51% NZ govt-holding: Genesis, Meridian/Powershop, Mercury
- NZX/ASX listed and privately-owned: Contact Energy
- Privately NZ-owned: Ecotricity, Nova, Pulse, 2 degrees
- Privately off-shore owned: Flick, Electric Kiwi, Octopus Energy

## “Social” retailers (mission-focused):

- Lines company owned: Our Power- WEL Networks (Waikato)
- Social enterprise/LLC: Nau Mai Ra (kaupapa Māori – national)
- Not-for-profit: Toast Electric (Sustainability Trust – lower North Island)



**Toast Electric**




# Marketing and Sales Strategy

- Energy Wellbeing clients:
  - Relationships and promotions through social service agencies, community housing providers, government agencies
  - SUST healthy homes advice/support programmes serving over 1000 households/year
- “Regular” customers
  - Sustainability Trust social/digital marketing to existing SUST supporter base (20,000 in service area)
  - Broadcast media advertising (radio/print/digital/events etc)
  - SUST energy efficiency assessors in over 8000 homes per year
  - Toast Electric enews/social marketing to existing Toast customer base
  - Advocacy and talking slots on radio, TV, print/online media
  - Promotion through extensive SUST healthy homes networks across Wellington and Aotearoa
  - Promotion of evaluation and research outcomes (Otago University)



# Ngā mihi

**Toast** Electric

  
toastelectric.nz



# Community Perspective

Gareth Cartwright - Executive Officer, Community Energy Network



**Community Energy  
Whāingaroa**

**Te Hīringa O Te Rā**

# Mission

**To eliminate energy hardship, reduce our carbon emissions and increase our resilience to the impacts of climate change.**

**We're going to achieve this by focusing on four areas**

1. Renewable generation
2. Storage
3. Demand and load management
4. Healthy homes, healthy people



# Roots

- Name
- Wider and deeper Community discussions
- Xtreme Zero Waste



# What's worked

- Community ownership of the programme
- Established a 'home', and a core team
- Local funding
- Innovation
- Learnt... a lot!



# What Hasn't Worked

- Large rooftop PV installs on the West Coast may not be a good idea
- Complexity of larger installs
- Complexity of battery innovation
- Chicken and egg re community engagement and building pipeline of projects



# Next Steps

- Healthy homes work stream (separate funding required)
- Having a closer look at larger groundmount installs
- Peer to peer trading
- Still very keen to innovate – AgriPV, large batteries, demand management
- Ongoing community engagement – partner with leading orgs, general workshops, school, at XZW.







Ara  
Ake

Future  
Energy  
Development



community  
ENERGY  
network

People powered wellbeing, together



NZ CHAMBERS OF COMMERCE  
T A R A N A K I  
*B u s i n e s s V i t a l i t y*

# Daniel Brown

Manager, Energy Use, MBIE



**MINISTRY OF BUSINESS,  
INNOVATION & EMPLOYMENT**  
HIKINA WHAKATUTUKI

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## **MBIE's Community Renewable Energy Fund**

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**Daniel Brown, MBIE Manager – Energy Use**

**25 May 2023 Reducing Energy Hardship conference, New  
Plymouth**

A decorative graphic at the bottom of the slide consisting of three overlapping triangles. The leftmost triangle is light blue, the middle one is green, and the rightmost one is dark teal. They are arranged in a row, overlapping from left to right.

# Purpose

- **Introduce MBIE funds to trial renewable energy technology**
  - **Part 1: Māori and Public Housing Renewable Energy Fund (MPHREF) – Overview, Lessons learned**
  - **Part 2: Overview of the Community Renewable Energy Fund**
- **Start collaboration on design of the Community Renewable Energy Fund**



## MBIE renewable energy technology funds

- MPHREF: \$28M (million) to trial renewable energy technology on Māori (~\$14M) and public housing (Kāinga Ora ~\$14M). Runs over four years to June 2024.
- Pilot to evaluate how renewable energy technologies can improve the wellbeing of people in energy hardship.
- Community Renewable Energy Fund: approx. \$46M for community energy projects over 2022-2027, to extend and expand on the MPHREF.
- Also, Budget 2023: \$20M over 2023-2027 for innovation funding to help manage peak electricity demand and improve network resilience.

## Renewable Energy Funding for Māori Housing – 3 funding rounds

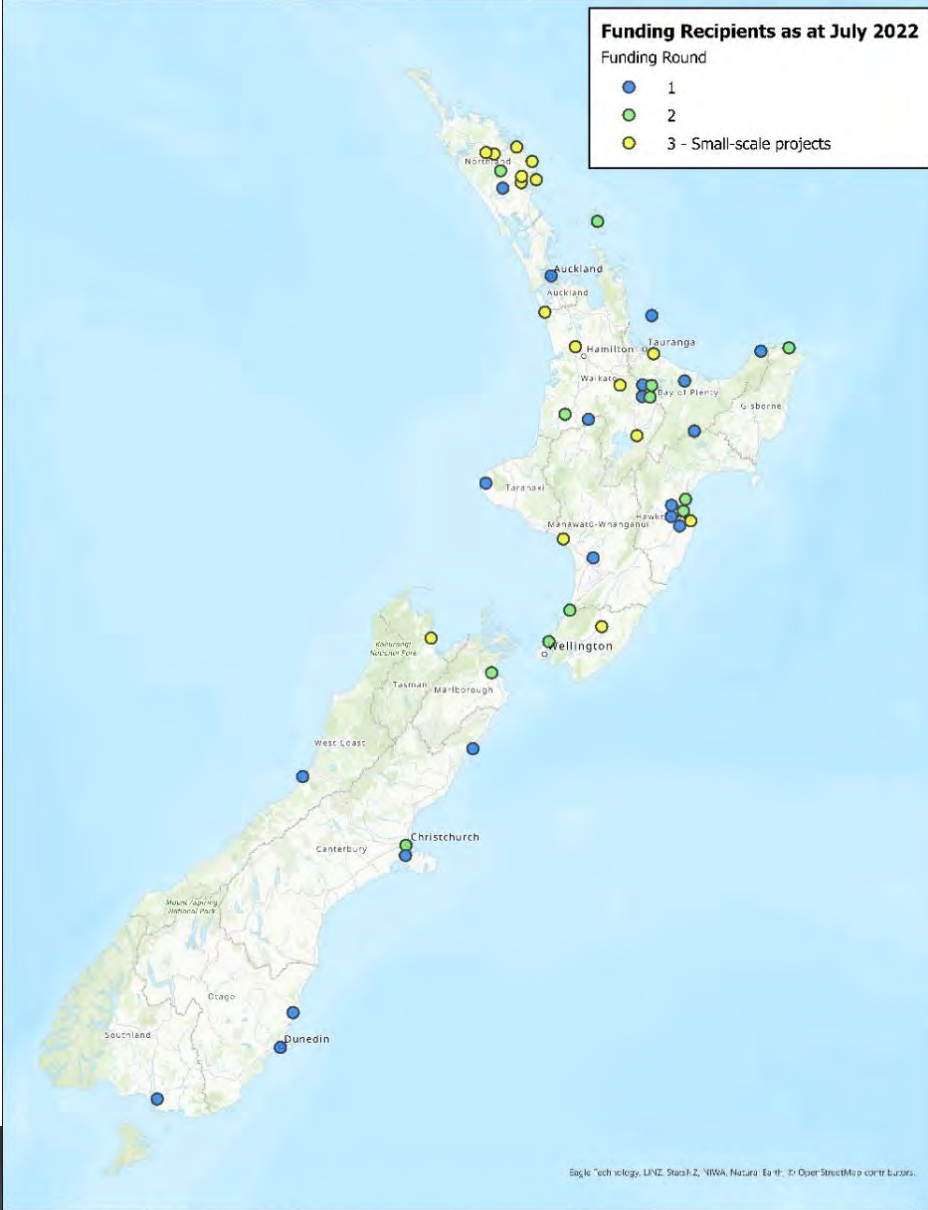
- Over 3 rounds, MBIE sought expressions of interest (EOIs) for possible renewable energy projects on Māori housing - 350 EOIs received.
- per project: \$50,000 to \$400,000, 4 homes minimum
- Funding 42 projects worth \$8M total, support around 500 households directly plus more through energy sharing

Technology	Round 1 14 projects	Round 2 12 projects	Round 3 small scale 16 projects
Solar PV	13	9	16
Geothermal	-	1	-
Feasibility study	1	2	-

- Plus Round 3 large-scale projects (up to \$2M each) –
  - approximately \$5M available
  - 50 RFIs received, 12 projects shortlisted for RFP – **final selection in progress**; projects include Solar, run of the river Hydro, geothermal, wind
  - Proposals – prescriptive form, detailed technical and financial information, outlook for 10 years system operation/management



**Māori Housing  
Rounds 1 - 3 small scale  
42 projects**



## Ka mua, ka muri: project delivery / lessons learned

### Highlights:

- 30/42 projects complete
- Kaitiaki for each project have mana to select eligible households/homes
- Kaitiaki have developed capability – project management, funds administration, energy/technology knowledge
- Whānau develop energy, energy efficiency knowledge
- Immediate warm homes & energy savings
- Māori solar supplier businesses grow

### Challenges:

- Time: Delays caused by supply chain, COVID, 2023 severe weather
- Cost: project cost increases – supply chain (systems and labour), scaffolding
- Project scope and complexity = kaitiaki ‘bandwidth’ and capability challenges –
  - project management
  - technical/technology and electricity network services for optimising the systems eg energy sharing practicalities, suitable smart meters
  - educating whānau - energy efficiency and system use
  - post-installation follow-up





The contractors felt the aroha of the entire Nga Hau e Wha whanau throughout the project. The level of engagement has been amazing for all. *Te Ranga Mangopare Charitable Trust*

We can afford to heat more than one room at a time. *Te Arawa Whānau Ora Charitable Trust*

Monthly costs of electricity have reduced by an average of \$100 which ranges from 30%-50%+ for some households. *Te Arawa Whānau Ora Charitable Trust*

During Cyclone Gabrielle our systems were able to keep the lights on in our homes while our area was without mains power for 5 days following the storm. *Te Uri o Rehutai whānau*

We selected a supplier with a Maori owner whose whakapapa includes Ngati Kahungungu and we were able to place a Māori apprentice electrician with our selected supplier. *Manaaki Energy Inc.*



Opo Bay at dusk – all aglow – matching the smiles and relief of our Kaitiaki, installers and Trustees. *Tuhua Trust*





## Lessons for design of the Community Renewable Energy Fund

- **Time and resources** required for project scoping (for EOI, RFP) to project delivery/ system commissioning
- **Build /network expertise and capacity** across project and asset life – project kaitiaki, mentors, navigators, technical experts, suppliers, project management, energy education, renewable energy system operation/management, opportunity for training/qualifications,.....
- **Portfolio of projects/solutions** – cost/W, innovation, renewable energy types, project scale, geographic distribution, selecting communities (offgrid to ‘insecure access’ ongrid, recovery from recent events, resilience for future events...)
- **Technology/energy ecosystem challenges** eg energy sharing, smart meters, apps & inverter data downloads
- **Data and evaluation** – pre and post installation, qualitative/quantitative



## Overview of the Community Renewable Energy Fund

- Appox \$46M funding for community energy projects over 2022-2027:
  - provides funding (grants/co-funding) for **community-based renewable energy** and **energy resilience** projects, and **capacity building** in the target communities to design and manage projects
  - will help **lower energy costs** and **build greater resilience** to natural hazards for target communities
- Projects will:
  - enable access to **secure, renewable and more affordable energy**
  - focus on **low income communities and/or insecure access to energy**
  - be tailored to **local energy needs, capacity and resources**
  - cover **renewable energy generation options** (e.g. solar, geothermal), and means of **optimising energy use** (e.g. energy storage and demand management).
- Projects can support **sustainable innovation** by enabling application of commercial and pre-commercial clean technology innovations, ensuring social and environmental values are integrated in the innovation process.



## Community Renewable Energy Fund – Fund design discussion

### Two potential tracks of funding we want to discuss today

**Faster track – focused on community energy resilience around natural hazards/climate change/areas of insecure supply?**

- Why? Important to get some runs on the board and \$ out the door – few regrets given risk of floods, extreme weather etc

Design questions/prompts

- What should we be funding ?
- Where and how is \$\$ allocated – incl scope for collaboration around things like community resilience planning etc.
- What partnerships are possible for community resilience?

**Slower track – (potentially) more complex, large scale projects that could need lots of upfront engagement and design**

Design questions/prompts

- Capacity building / up front technical support to get projects scoped
- Community collaboration work
- Where?
- How to select what projects proceed?



## Community Renewable Energy Fund – Fund design discussion

- Discussion questions at your tables



## Community Renewable Energy Fund – Fund design Next Steps

- Please register your interest at [communityenergy@mbie.govt.nz](mailto:communityenergy@mbie.govt.nz)
- Fund design work for another couple months, then get Ministers' agreement to launch next steps – likely around July/August 2023





# Reducing Energy Hardship Conference

24 & 25 May 2023 | Devon Hotel, New Plymouth

