

Waikato Affordable Energy Webinar Series

June-November 2026



**Wellbeing
Waikato**
TOIORA O WAIKATO

Research.
Knowledge.
Storytelling.

To View This Webinar On Line, Click on the Image Below



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Knowledge.
Storytelling.

Wellbeing Waikato

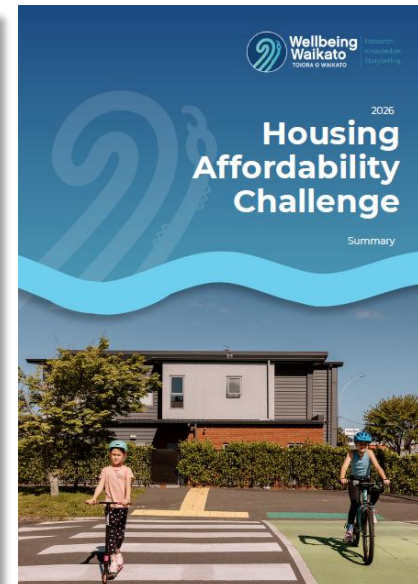
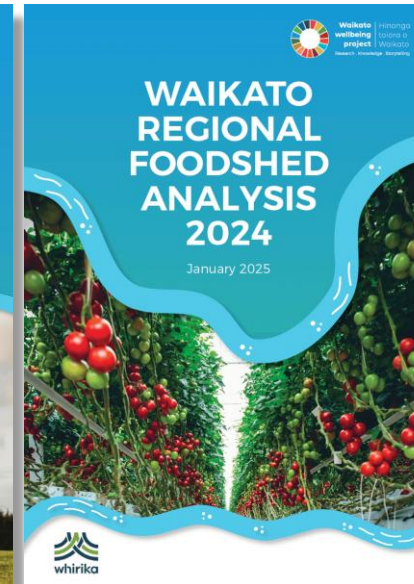
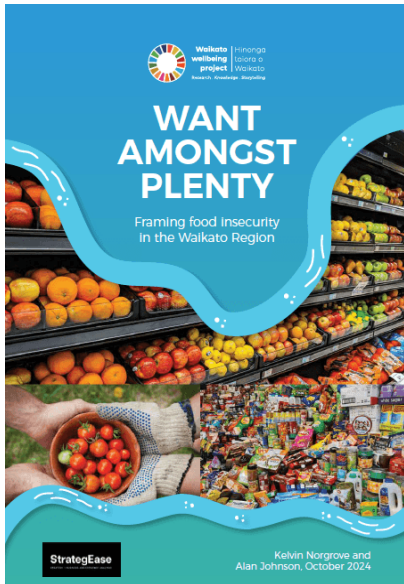


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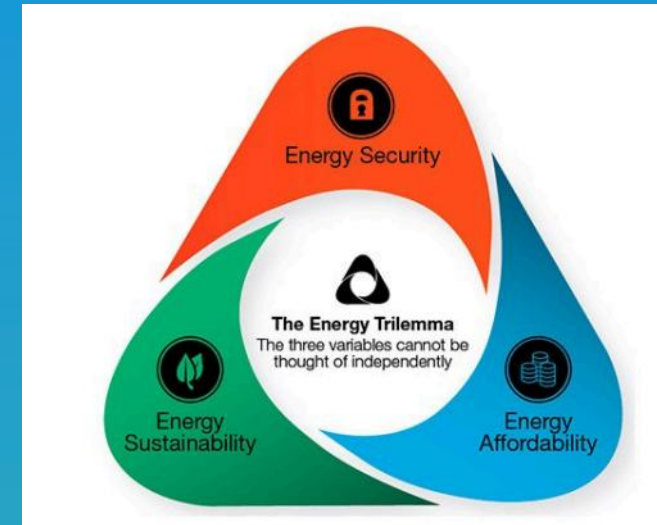
Independent Charitable Trust focused on:

- Regional intelligence about what's most important to households and whanau
- Identifying emerging risks early
- Surfacing underlying drivers, not just symptoms
- Convening government, iwi, councils, community organisations and the private sector around decision-useful insights.



Energy systems need to be:

- Affordable
- Reliable
- Sustainable



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4 Big Questions

1. How does the electricity system actually work—and why is it designed this way?
2. What drives power prices, and how could they be made more affordable?
3. How does energy affordability affect household and community wellbeing?
4. What would a better system look like—and how do we get there?



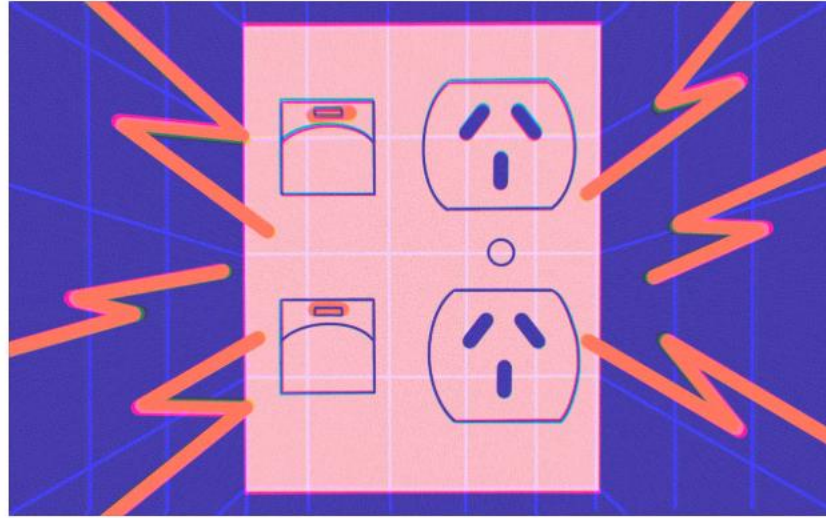
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Transpower issues power warning



Susan Edmunds
Money Correspondent



Transpower says an hour-long national energy shortfall has been identified for Friday morning. RNZ



No Stupid Questions with Susan Edmunds 5 August 2026
Do I have to buy that extended warranty?

+ Queue



Transpower has issued a warning that there might be an energy shortfall on Friday morning.

It has put out a customer advice notice, which says a national energy shortfall or low residual generation had been identified on Friday from 7.30am until 8.30am.

Customer advice notices are aimed at power companies, rather than the general public.

It had earlier issued warnings about Wednesday morning between 7.30 and 8.30, Wednesday evening between 6pm and 7pm and Thursday morning between 7.30 and 8.30.

It is requesting that power companies ensure energy, wind generation, reserve offers and load bids are accurate, increase their energy and reserve offers and increase transmission offers where generation could be constrained.

This is the first stage in the process of Transpower highlighting an issue. It can also issue warning notices from 36 hours out to one hour before a shortfall is



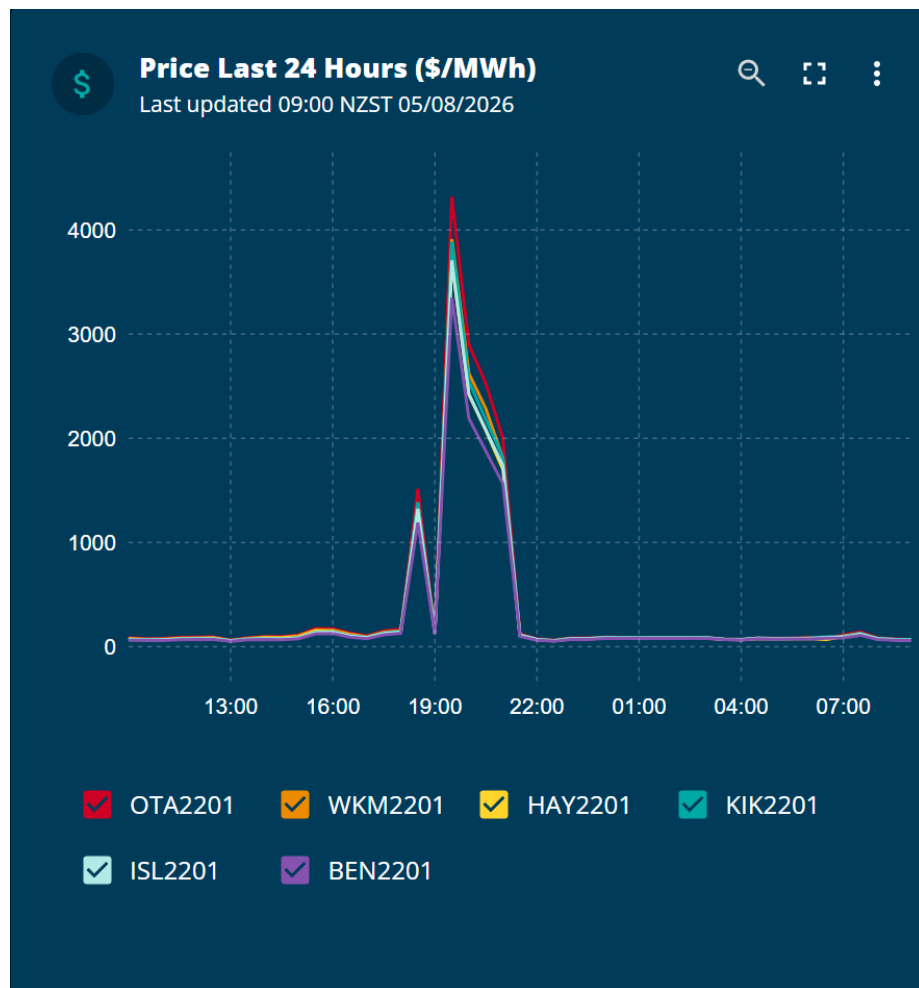
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Summary: power system risks and mitigations

Rotor Angle stability	Voltage stability	Frequency stability	Thermal Loading Limit	Converter-driven stability	Resonance stability
Risks					
Loss of synchronism for generators, with potential tripping, damage and cascade failure	Uncontrollable voltage conditions and unable to transfer electricity leading to cascade failure	Frequency deviates outside statutory limits, with potential tripping and cascade failure	Transmission circuits overload, safety to public with potential tripping and cascade failure	Lack of Fault-ride through, potential tripping of IBR leading to voltage and frequency instability	Poorly-tuned IBRs result in control interaction, oscillatory stability leading to poor power quality. in extreme case, cascade failure
Tools					
SCADA - real-time monitoring of voltage, frequency, circuit loading, and other essential system parameters, enabling informed decisions to ensure secure operation of the power system. Network and asset models - power system data for real-time and offline security assessment. Offline tools like PowerFactory, DSATools, and PSCAD - help engineers evaluate system security for future planning.					
				High-speed monitoring (PMUs) monitor oscillatory stability and fast response phenomena, offering data to engineers for analysis and operational decision-making. <i>Currently not available in control-rooms</i>	

Imagine a tightrope walker who is trying to stay upright while keeping a steady pace, holding a pole level, adjusting to gusts of wind, on a rope that heats and stretches, wearing slippery shoes and avoiding a rhythm that makes the rope start swinging wildly. That's the unenviable world of an electricity systems operator.



Source: Electricity Market Overview Website em6

 **TRANSPOWER**



Excursion Notice

To: SO Notice North Island Participants
From: The System Operator
Sent: 04-aug-2026 20:07
Ref: 800000278
Telephone: 0800 488 500
Email: NMData@transpower.co.nz

Revision of:

Excursion:	Frequency/Voltage
Time:	04-aug-2026 19:45
Location:	North Island
Affected Plant:	
SI Hz Level:	NI Hz Level: 49.24
Comments:	Huntly generation tripped

Frequency Excursion notices are only issued if the deviation is outside 49.5 and 50.5 Hz.

Source: Transpower Excursion Notices

The Solar Sense Journey



Manutahi Barrett
Founder
Solar Sense Ltd



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Storytelling.



WELLBEING WAIKATO 2026





Manutahi Barrett

Founder and Director

DipAvSc, NZDipEng (Civil), NZCert (Transport),
CertAeroEng, NZCPL (Aeroplane)

Tainui, Ngāti Maniapoto, Kāi Tahu



Nikki M. Barrett (Haereroa)

Research Partner

BSpLS, PGCertSpLS, MSPLS, PhD

Ngāti Hauā, Ngāti Porou



John O'Donoghue

Commercial Manager / Director

NZDipBus, MinstD



Aubrey Te Kanawa

Co-Founder

BLS, BMS

Ngāti Maniapoto, Tainui, Ngāti Koata



Jonny Manning

Director

BScPsych

Director



Richard Jones
President

Rangitāne o Tamaki nui ā Rua, Ngāti Maniapoto, Ngāti Whakaue, Ngāti Pikiao, Tuhourangi



Matiu Taurau
CEO

Rangitāne, Ngāi Tahu, Ngāpuhi, Ngāti Kahungunu



Anthony Pearse
General Manager

Rangitāne, Ngāi Tahu, Ngāpuhi, Ngāti Kahungunu



Lance Rolleston
Electrician / Installer

Ngāti Ranginui, Ngāi Te Rangi



Matehaere Paul
Electrician / Installer

Ngāti Awa



Chea Tauava
Project and Operations Coordinator

Ngāti Tūwharetoa



Helen Korewha
Accounts

Te Whānau a Apanui, Ngā Puhi



Glenn Ward
Electrician / Installer

Tauīwi

Journey to the electricity sector



KŌKIRI

Accelerating Māori Entrepreneurs



2020 Cohort



Manu Barrett
Co-founder & Director



Nikki Barrett (Haereroa)
Co-founder & Senior Manager



Pape Barrett
Technical Operations



Origins and Original Concept - Ground Mount Solar Tracker

(Raglan, Waikato)



Application in New Zealand Future Solar Farms

(Photo courtesy of Northpower, Ruawai)



Market Validation



**CUSTOMER
VALIDATION**



**MARKET
STUDY**



**SOLUTION
VALIDATION**

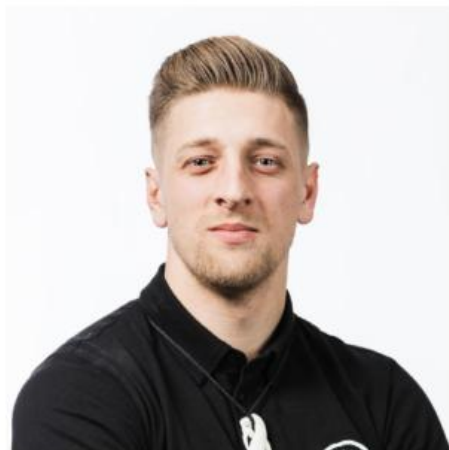




New Zealand's
First Māori
Power Company



Ezra Hirawani
Founder - CEO



Benjamin Armstrong
Co-founder - Director of Sales

KŌKIRI

Accelerating Māori Entrepreneurs

Powered by

Te Wānanga o Aotearoa



CallaghanInnovation



SOLUTION



MARKET



CUSTOMER



Energy Hardship

(How does electricity affordability affect household and community wellbeing)



Energy Hardship

Key Factors

- New Zealand has a relatively poor quality of housing stock (partial/uninsulated) especially for pre 1990 builds.
- Rising Cost of Electricity.
- New Zealand predominantly sits in temperate or subtropical climate zones.



Energy Hardship

Observations

- No longer an issue found in low income households.
- Observed is the significant rise in middle income households



Energy Hardship

Further Observations

- Observed rise in small to medium business engagement.
- Majority of these small to medium businesses are seeking various solutions.





SOLUTION



MARKET



CUSTOMER



Virtual Power Plant Concept (VPP)



Solar power remotely located to supply
targeted users

**ELECTRICITY
AUTHORITY**
TE MANA HIKO



Navigating the Retail Sector



John Campbell
FOUNDER



Peter Thompson
TECHNOLOGY DIRECTOR



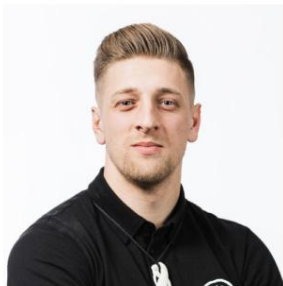
Sally Robinson
CHIEF FINANCIAL OFFICER



Future
Energy
Development



Ezra Hirawani
Founder - CEO



Benjamin Armstrong
Co-founder - Director of Sales



Daniel Brown



Brian Vass



Cristiano Marantes



Dr Will Edwards

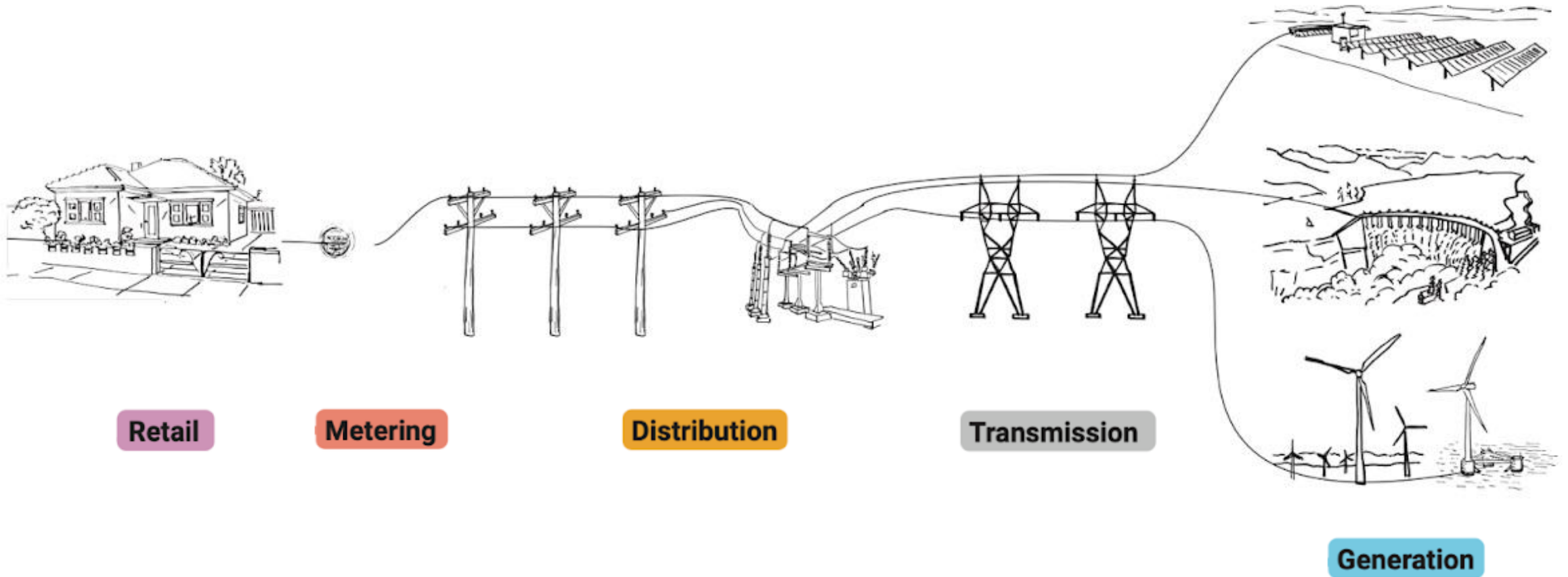


Jonathan Young



Briony Bennett

How Does The Electricity System Actually Work



Images courtesy of Rewiring Aotearoa

Generation

Generator Retailer (Gen-tailer)



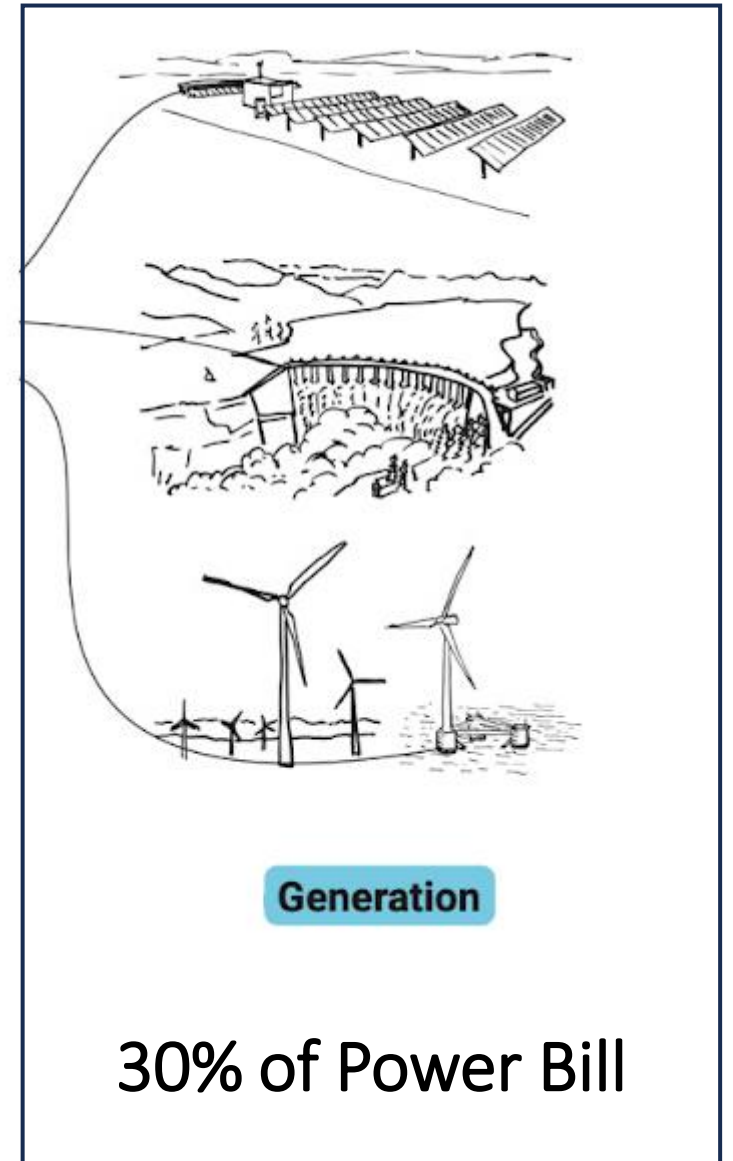
Generator



TAUHARA NORTH
No.2 TRUST



Eastland
Generation



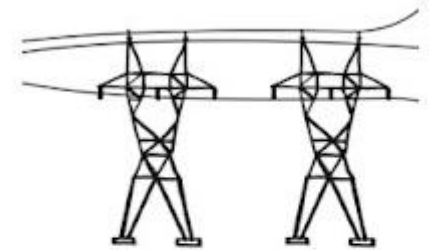
Transmission



TRANSPOWER



NEW ZEALAND'S EXCHANGE

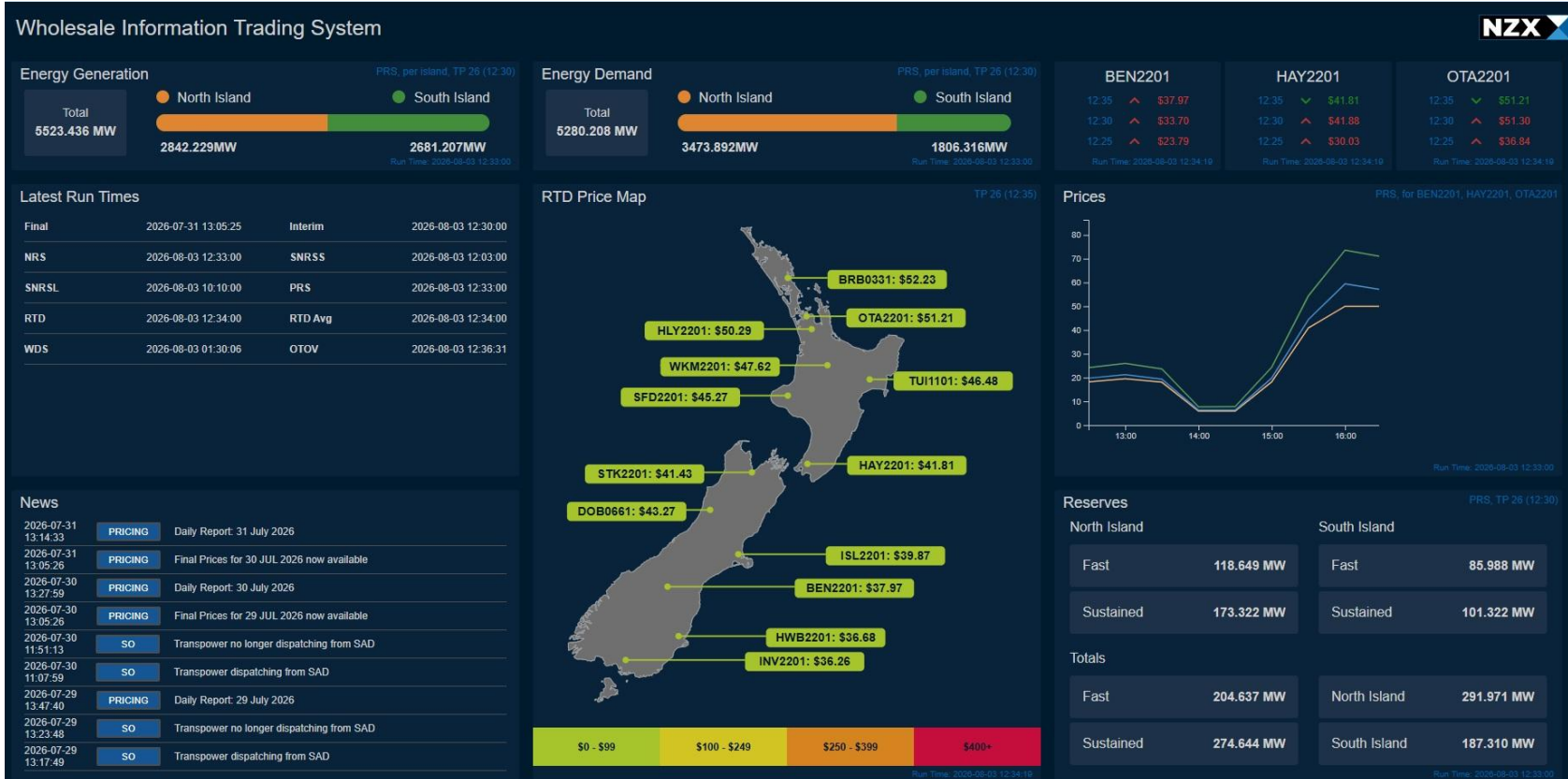


Transmission

10% of Power Bill

Infographic courtesy of Rewiring Aotearoa

Transmission



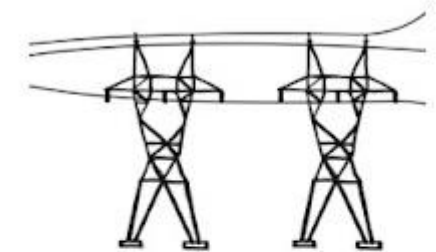
WITS.co.nz



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NEW ZEALAND'S EXCHANGE

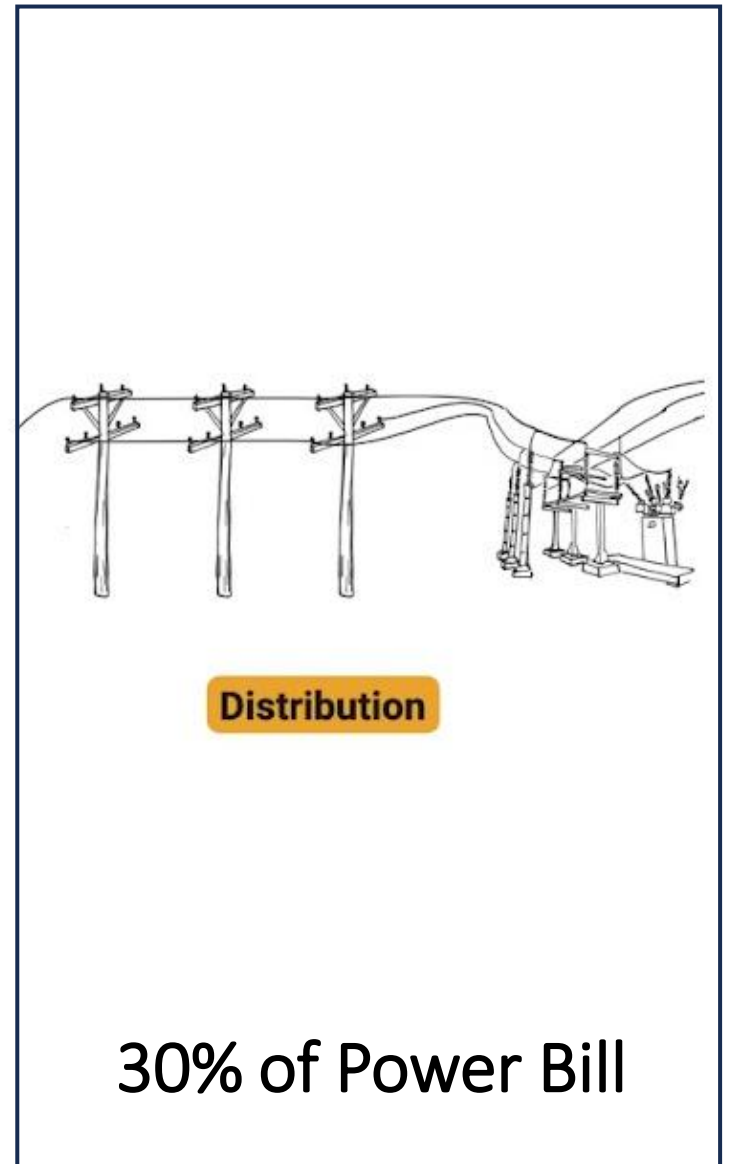


Transmission

10% of Power Bill

Infographic courtesy of Rewiring Aotearoa

Distribution



30% of Power Bill

Metering

AccuCal



Metering

5% of Power Bill

Retail

“BIG 4” Gen-tailer’s



Independent Retailer's



Retail

10% of Power Bill

Virtual Power Plant (VPP)

Virtual Power Plant built for Ngāti Maniapoto Marae Pact Trust (2021)

Te Anga



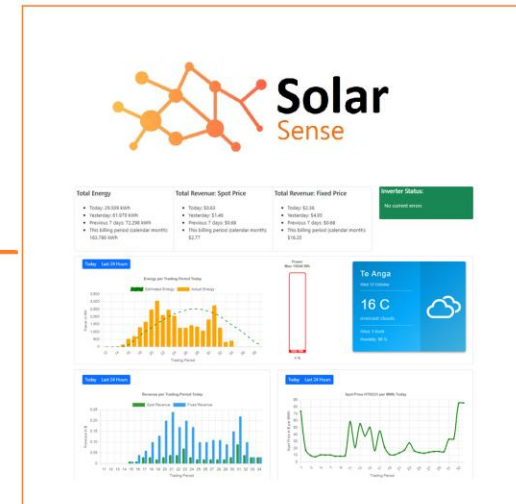
Otewa One



Otewa Two



14 Participant households throughout New Zealand
of Ngati Maniapoto descent



MINISTRY OF BUSINESS,
INNOVATION & EMPLOYMENT
HĪKINA WHAKATUTUKI



Ngāti
Maniapoto
Marae PACT
Trust

Navigating the Technical Sector



Medium Scale Ground Mounted Solar Array



Build one of three (Te Anga, Waitomo Caves)

Findings Report

Snapshot evaluation of the Maniapoto Solar Energy Sovereignty Project

April 2023

Prepared for Solar Sense Limited by Nikki Barrett and Dr Jordan Walli



Constraints - Barriers

- Access to favorable capital/lending
- Heavy regulatory environment – limits Innovative approaches



Infographic courtesy of Electricity Authority

Opportunity

(What does a better system look like)

- Alternative approaches to current electricity retailing and business models
- Subscription or Virtual Services to address unserved markets
 - Home Renter
 - SME with leased premise
 - Low Income
- Using residential located solutions to empower distributed consumers
 - Using residential storage to smooth peaks





Ngā mihi nui

Q&A



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The Affordable Energy Webinar Series

June-November 2026



Qiulae Wong
Leader, The Opportunity Party
19 August, 11am

Use same link as this webinar to join back in.



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Upcoming Speakers:



Paul Fuge, Jess Wilson: Consumer NZ

Simon Bridges, CEO: Auckland Chamber of Commerce

Rob Johnson, Ezra Hirawani, Founders: Nau Mai Ra

John Campbell, Our Energy

Kelli Pike, Activator for Community Led Zero Waste: GoEco

Gareth Cartwright, Executive Officer: Community Energy Network



Stew Hamilton, CEO of Mercury NZ

David Wilson, Member of Parliament: New Zealand First

Blair Dickie, Principal Strategic Advisor: Waikato Regional Council

26 August

2 September

16 September

23 September

30 September

14 October

21 October

28 October

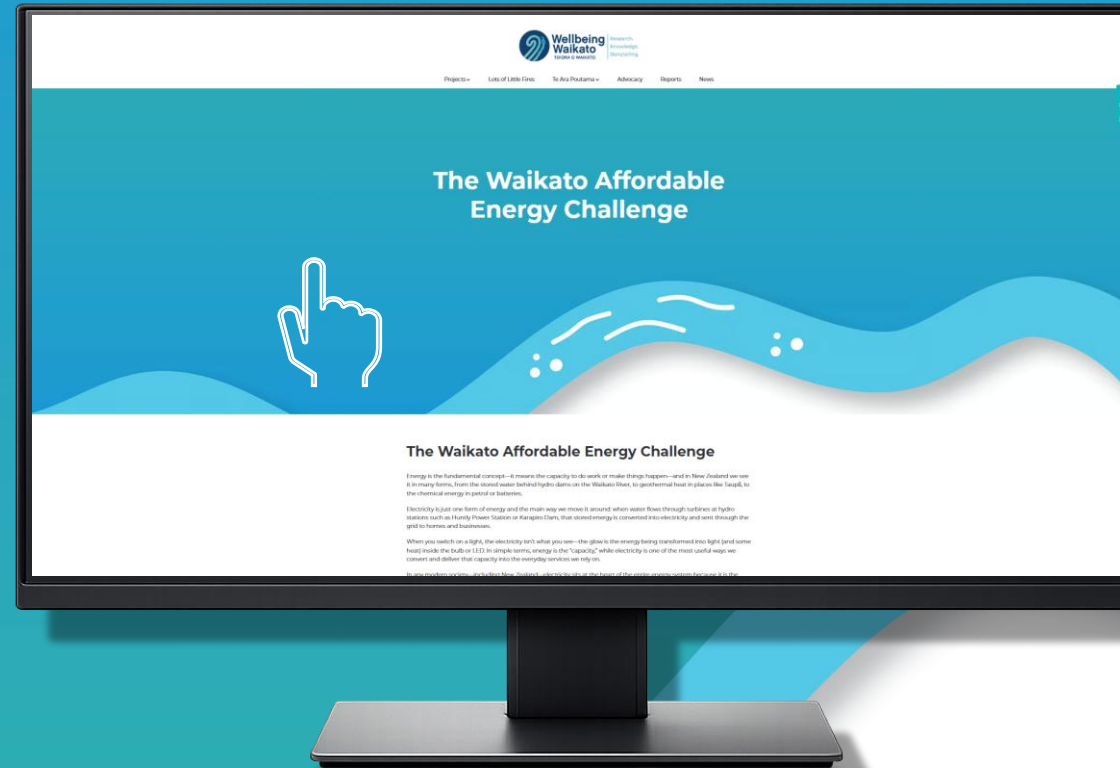
4 November



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Go to our Website to See all Presentations and Slides from the Series:



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Thank you!

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