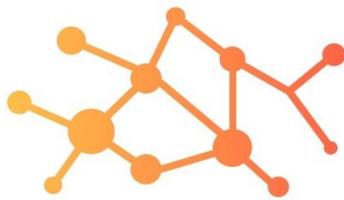
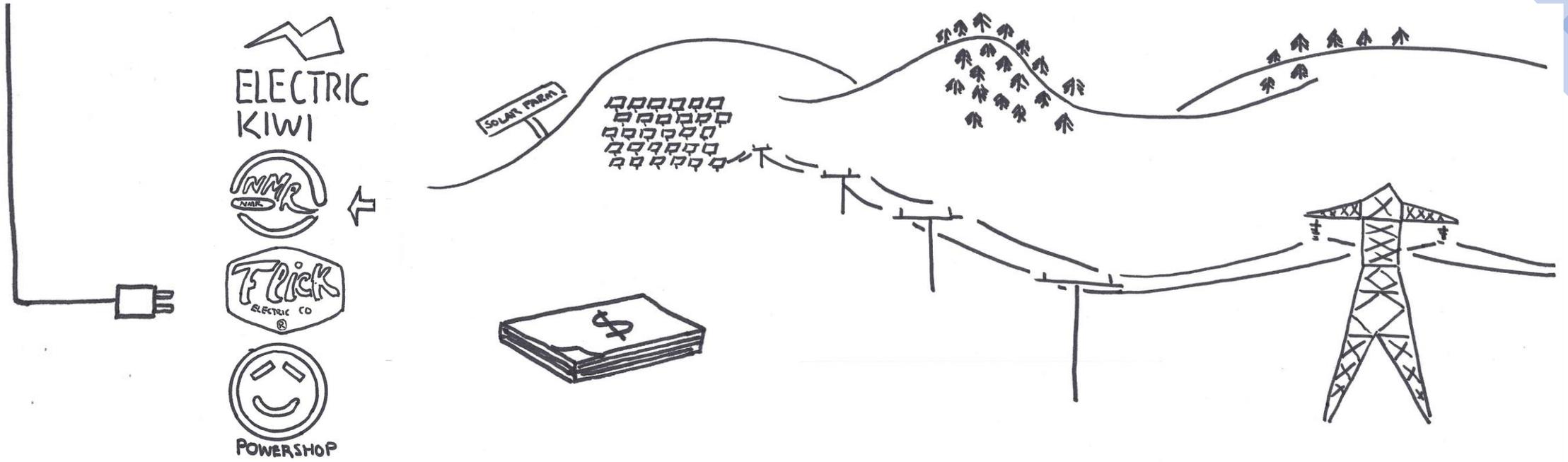


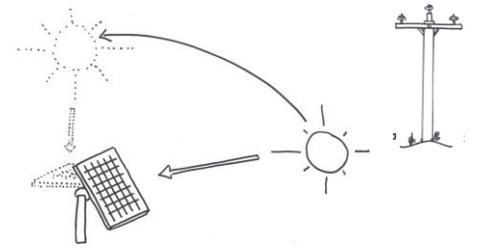
Solar
Sense



Energy Hardship and Solar Power



Solar
Sense





Indoor Vertical Farming



Indoor Vertical Farming

- Energy Consumption



Indoor Vertical Farming

- Alternative Energy Sources



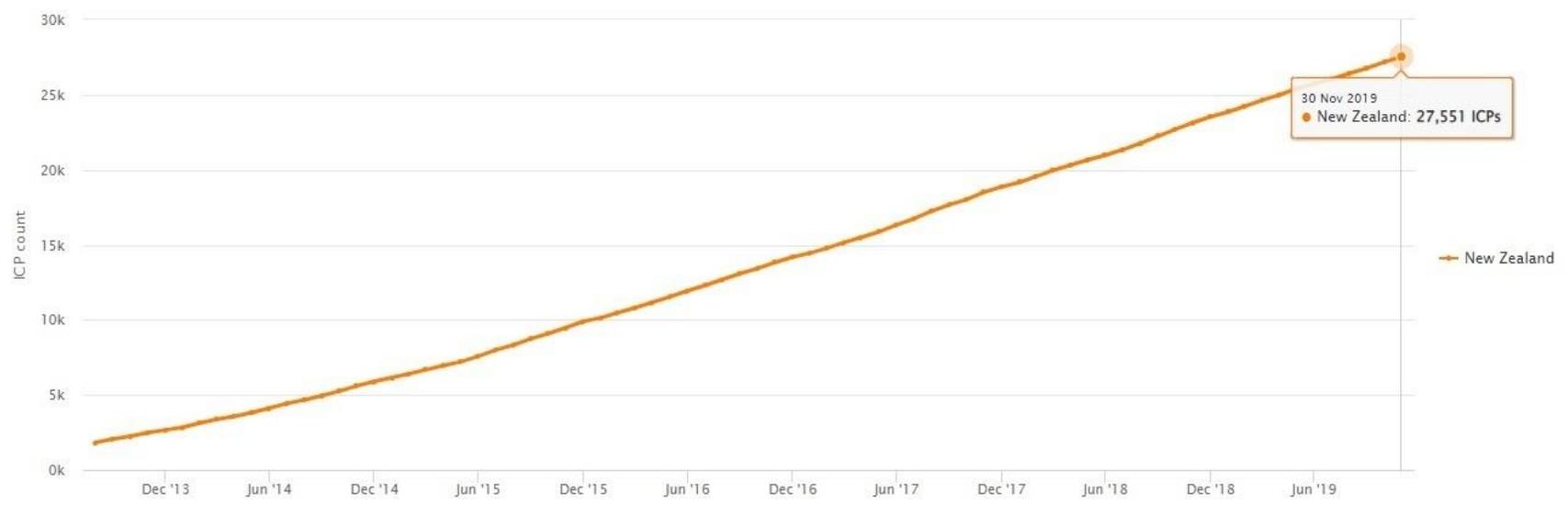
Solar Energy

- Pivot into Solar power
- Focused research into photovoltaics

Line chart **Data** More information  Installed distributed generation trends

Date range: 01 Sep 2013 - 30 Nov 2019
Region type: New Zealand
Market segment: All ICPs
Capacity: All combined
Fuel type: All combined

Show: ICP count
Series filter: New Zealand



Solar Energy

- Low uptake in New Zealand
- Less than 1% of residential housing had solar in 2019
 - No utility scale solar in 2019



Concept/Idea

- Developed and built solar tracking hardware
- Increase yield per panel



Manu Barrett

Co-founder & Director



Nikki Barrett (Haereroa)

Co-founder & Senior Manager



Pape Barrett

Technical Operations

KŌKIRI

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Technical Operations



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Validation Results

- Developers had chosen their hardware
- No track record
- Technology advances on photovoltaic panels

Energy Hardship



Definition: Energy hardship is the opposite of energy wellbeing. That is, it is the situation when individuals, households and whānau are not able to obtain and afford adequate energy services to support their wellbeing in their home or kāinga

(You cannot afford to pay for the minimum amount of energy to survive)



New Zealand's
First Māori
Power Company



Ezra Hirawani
Founder - CEO



Benjamin Armstrong
Co-founder - Director of Sales

KŌKIRI
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The graphic features the word 'KŌKIRI' in large, white, stylized letters on a black background. Below it is the text 'Accelerating Māori Entrepreneurs'. At the bottom, it says 'Powered by' followed by the logos for 'Te Wānanga o Aotearoa' and 'CallaghanInnovation'.

<https://www.naumaira.nz/>

Energy Hardship

- Large proportion of housing that is poorly or uninsulated
- New Zealand's high cost of living
- High energy costs compared to other OECD countries
- Temperate/humid climatology



Energy Hardship

- Poor housing and living conditions
- Excessive cost to keep houses warm (WHO recommends 18 - 20 degrees Celsius)
- Optimum condition for fungal growth
- High risk of respiratory illnesses





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First Māori
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Ezra Hirawani
Founder - CEO



Benjamin Armstrong
Co-founder - Director of Sales

Māori power company plans to take its 'power to the people' approach to a global grid



NZ-wide emergency: Power failure affects thousands; public left puzzled



What If ?



Could it be done?



Founder, John Campbell

CREATIVE
HQ Your place
of innovation

<https://www.ourenergy.co.nz/>



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[ADMINISTRATION](#) ▼

[SHOP](#)



Nau mai haere mai ki

NGĀTI MANIAPOTO MARAE PACT TRUST

[PĀNUI](#)

[KO WAI MĀTOU](#)

Real World Proof of Concept

Renewable Energy Fund for Public and Māori Housing (Round Two)



<https://www.mbie.govt.nz/building-and-energy/energy-and-natural-resources/low-emissions-economy/energy-efficiency-in-new-zealand/maori-and-public-housing-renewable-energy-fund/>

Real World Proof of Concept



Build one of three (Te Anga, Waitomo Caves)

Real World Proof of Concept

Te Anga



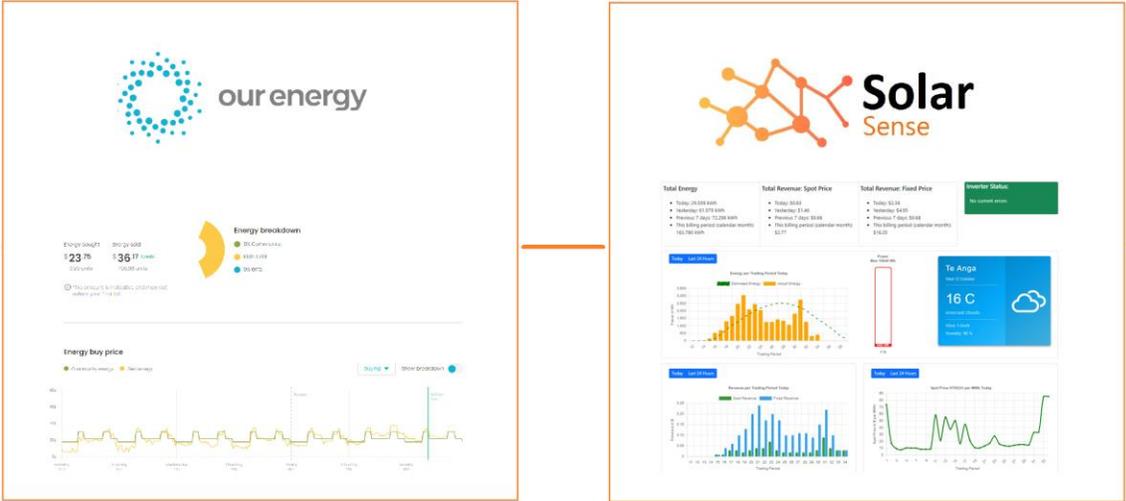
Otewa One



Otewa Two



14 Participant households throughout New Zealand of Ngati Maniapoto descent



Each of the households received \$433.00 energy credit 6 months after project became live, followed by \$650.00 credit

Real World Proof of Concept



Dr Nikki Barrett



Dr Jordan Waiti



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<https://www.solarsense.co.nz/case-studies>



Solar Sense whānau as of 2024



Manu Barrett
Founder
Managing Director



Nikki Barrett
Co-Founder
Project Manager



Aubrey Te Kanawa
Co-Founder
Operations Manager



Xander Redwood
Co-Founder
Software Development



Jonny Manning
Director
Lead Investor



John O'Donoghue
Director (Chair)
Commercial Manager



Peter Ensor
Consultant
Electrical Engineering



Ngā mihi nui