

May 2024

EECA Market Update



EECA presenters



Dr Marcos Pelenur
Chief Executive



Nicki Sutherland
Group Manager - Business



Karen Orr
Advisor - Sector
Decarbonisation Programme



Russ Duncan
Senior Marketing Lead



Oliver Howitt
Programme Lead – Regional ETA



Glenn Wellington
Manager – Market Partnerships



Today's agenda

1. Mihi (Nicki Sutherland)
2. EECA Strategy Refresh (CE, Dr Marcos Pelenur)
3. Regional ETA South Island Report and GIS tools (Oliver Howitt)
4. Sector Decarbonisation Programme Manufacturing Pathway (Karen Orr)
5. Residential Electrification (Russ Duncan)
6. July Market Update: What's coming up?
7. Pātai



Update on EECA's strategy refresh



Dr Marcos Pelenur

EECA (Energy Efficiency and Conservation Authority)
Chief Executive



EECA's role

Our purpose

Mobilise New Zealanders to be world leaders in clean and clever energy use.

Our desired outcome

A sustainable energy system that supports the prosperity and wellbeing of current and future generations.

Momentum in New Zealand

- Emissions data shows an improving situation
- Committed renewable generation doubled in 18 months
- Large strides in industrial decarbonisation
- RMA National Direction on GHG – embeds a measured retreat from fossil fuels



EECA's Strategy Summary

Strategic Focus Areas



Energy efficiency first

Efficient energy use is the first option users adopt.

Outcomes

- + Users accept and adopt energy efficient products and practices.
- + Proven energy efficient technologies are identified and widely available.



Empower energy users

Users are empowered to control their energy.

- + Users understand, manage, and conserve their energy use.
- + Users get value from responsive and flexible energy systems.



Accelerate renewable energy

Users transition to low-emissions energy.

- + Users plan for and adopt low-emission energy and technologies.
- + Fuel options for energy transition are identified and widely available.

Energy users save energy, money and reduce emissions.
Energy productivity and resilience improves.



EECA provides

Levers

Regulation

of products, processes, and systems

Information & Motivation

to promote clean and clever energy choices

Targeted Investment & Support

to demonstrate and scale up energy efficient technologies and renewable energy use

Behaviours



Open to the new



Stand in others' shoes



Believe in 'we' not 'me'



Deliver the goods



Strategic areas of interest

- 1) **Electrification of the energy system** offers increased security, affordability and a significantly reduced emissions profile
- 2) Accelerating electrification requires a focus on **making the most efficient use of the system** as a whole
- 3) Providing system-level market analysis to help **coordinate investment and match energy supply to demand**
- 4) **Transitional low-carbon fuels**, such as biomass and hydrogen, will play an important role in complementing electrification to improve security of supply
- 5) Quality **EV charging infrastructure** is central to increasing public confidence in electric vehicles
- 6) Demonstration of **new technologies and applications** is vital to market uptake



Regional ETA: South Island report and GIS mapping tools



Stakeholder engagement

A key part of RETA process

1

Regional stakeholder kick off meeting

- Process heat users
- Transpower & EDBs
- Forest owners & wood processors
- EDAs and councils
- Iwi

2

Demand assessment workstream

- Site thermal requirements and decarbonisation projects

Electricity availability workstream

- Spare electrical capacity; work and cost to electrify sites

Biomass availability workstream

- Regional availability and cost of potential biomass sources

3

Regional stakeholder workshop

- Present back findings from the workstreams and gather feedback

4

Final integrated report

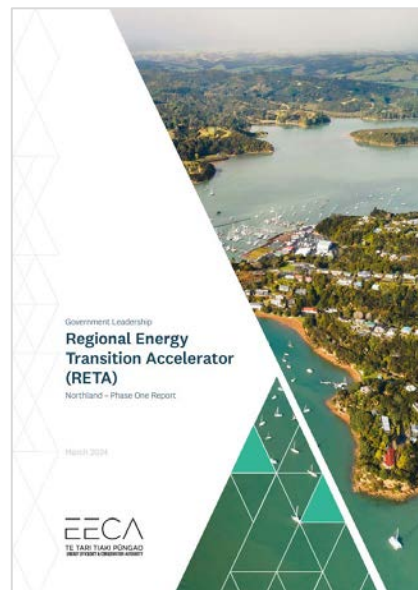
- Combine workstream analysis and construct regional pathways
- Write, design, and publish report



We're working through the country

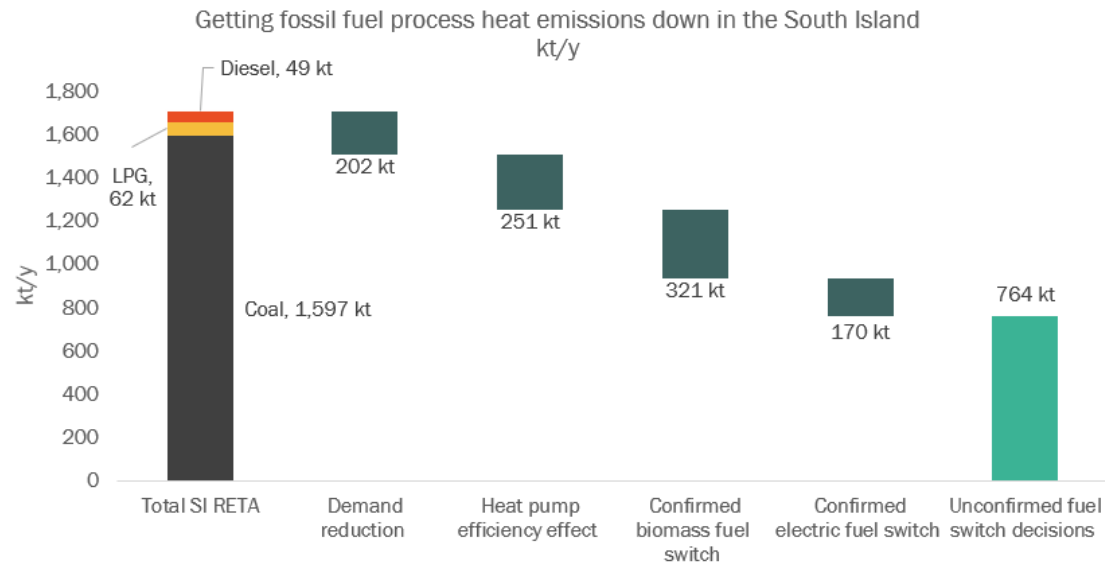
7 RETA 'planning stage' reports have been published already

- ✓ Southland – Oct-22
- ✓ Mid-South Canterbury – Jun-23
- ✓ West Coast – Aug-23
- ✓ Otago – Sep-23
- ✓ North Canterbury – Nov-23
- ✓ Nelson, Marlborough, and Tasman – Dec-23
- ✓ Northland – Mar-24
- Bay of Plenty – May-24
- Tairāwhiti – Jun-24 (estimate)
- Taranaki – Jul-24 (estimate)
- Hawke's Bay – Aug-24 (estimate)
- Waikato – Sep-24 (estimate)
- Manawatu-Whanganui - Oct-24 (estimate)
- Auckland – early '25
- Wellington – early '25



South Island overall insights (draft)

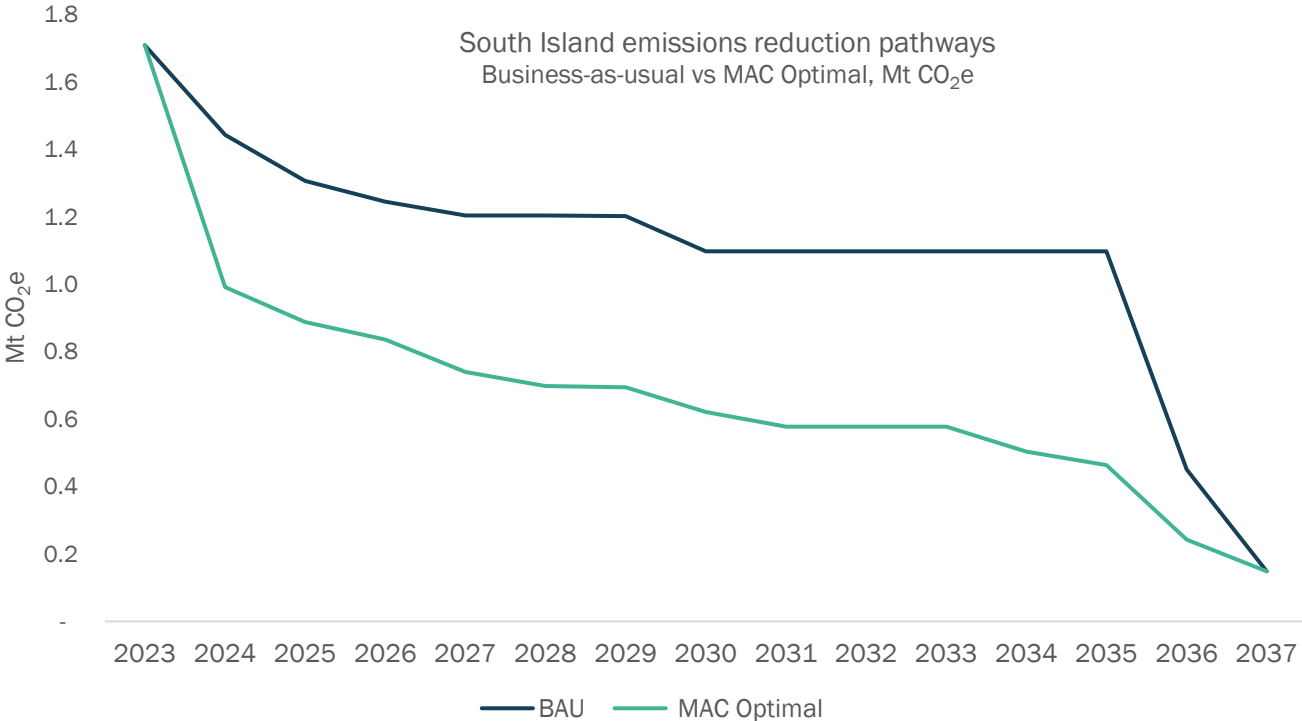
- All South Island regions have **been completed**
- South Island overall summary coming soon!
- **273 sites** included, with **nearly 600** different decarbonisation projects (demand reduction, heat pumps, electrode boilers, biomass boilers).
- Baseline (2022): 18 PJ p.a. total fossil fuel use (predominantly coal), producing 1.7 Mt p.a. scope 1 CO₂-e
- 1.5 GW total installed fossil fuelled thermal capacity



South Island MAC optimal pathway results in ~6Mt CO₂e less than BAU

MAC optimal fuel switching choices results in ~60% electrification and ~40% biomass.

Estimated new biomass demand is almost all available and unutilised resources identified in the regional analyses (wood processor, roadside, and cutover residues).



RETA information available on map

MVP launched in February and will be populated with regional information when each RETA report is published.

[www.eeca.govt.nz/insights/
data-tools/regional-energy-
transition-accelerator-map/](http://www.eeca.govt.nz/insights/data-tools/regional-energy-transition-accelerator-map/)



Information is downloadable

- RETA load sites, with MAC optimal biomass and electrical demands
- GXPs and zone substations, with existing spare N and N-1 capacities
- Locations of forestry plantations and wood processors

Regional Energy Transition Accelerator

Map Layers

- Load Site
- Forest/Sawmill
- Electrical Infrastructure
- Region/Lines Company Boundary

Legend

Zone Substation

- Zone Substation

Grid Exit Point (GXP)

- Grid Exit Point (GXP)

Mosgiel Substation

| | |
|---------------------------|-------------------------------|
| Name | Mosgiel Substation |
| (N-1) Spare Capacity (MW) | 5 |
| (N) Spare Capacity (MW) | 13 |
| General Comments | |
| References Source Data | Aurora Energy 2022-2032 Asset |

Regional Energy Transition Accelerator

Map Layers

- Load Site
- Forest/Sawmill
- Electrical Infrastructure
- Region/Lines Company Boundary

Legend

Load Site

- Unconfirmed
- Confirmed

Context Menu:

- Hide labels
- Details
- Set filter
- Statistics
- Export
 - Export to JSON
 - Export to CSV
 - Export to GeoJSON

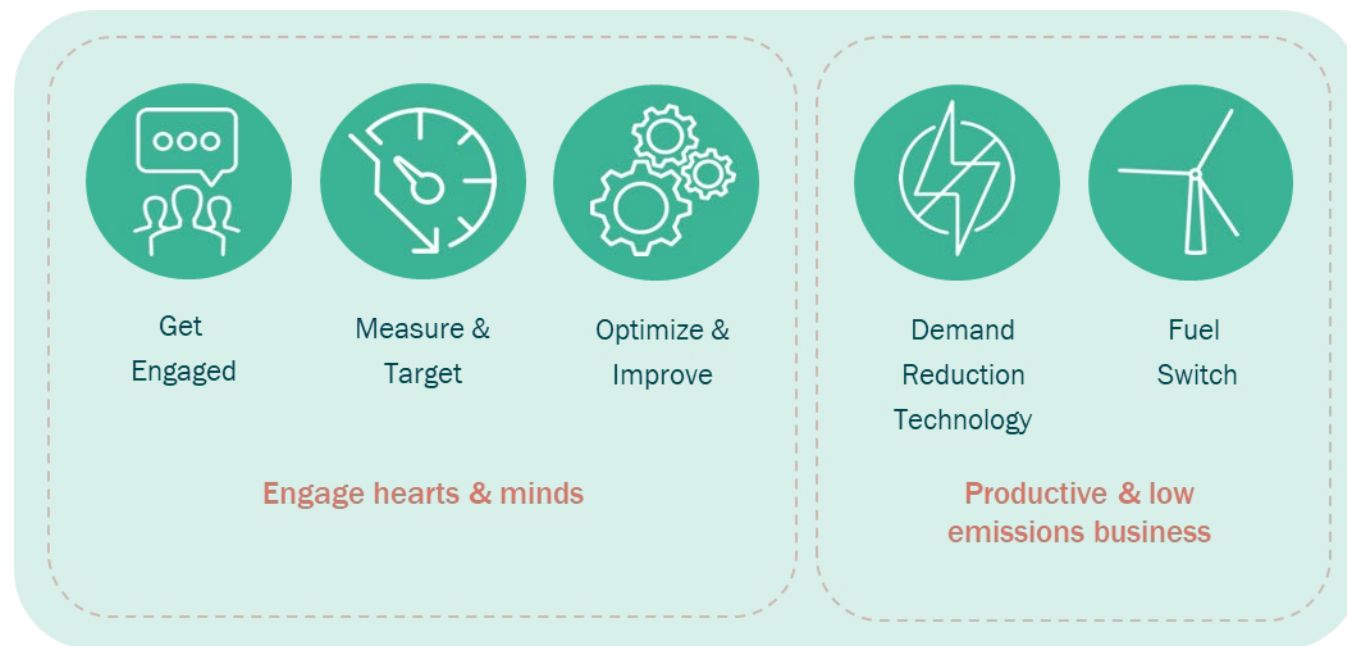


Sector Decarbonisation Programme: Manufacturing Pathway



Sector decarbonisation in 5 steps

- Sector Decarbonisation Programme collaborates with sector associations and technical experts to connect businesses with world-class innovation and industry best practice.
- Guided pathway simplifies the process of reducing individual business emissions.
- This framework provides businesses with “**how to start**” & “**where to start**”.



What type of information do we provide?

- [Process overview](#)
- [Energy intensity calculator](#)
- [Optimisation & process improvement checklist](#)
- [Technology & innovation options](#)
- [Pathway to fuel-switching](#)

| ACTION | SAVINGS | DETAIL | COMPLETE? |
|--------------------------------------|---------------------------------------|---|--------------------------|
| HVAC | | | |
| Clean evaporator and condenser coils | Up to 15% of existing HVAC energy use | Dirty coils in a split unit raise the condensing temperature and can lower the efficiency by up to 15%. Cooling capacity can also drop by up to 7%. Cleaning the coils only takes about an hour and improves the system's efficiency. | <input type="checkbox"/> |
| Turn off the HVAC when not needed | 10% - 70% of existing HVAC energy use | Heating and cooling unoccupied buildings wastes energy. Most split units have timers that can turn the HVAC on before staff arrive in the morning and off after business hours. Check that the timers are set to do this. | <input type="checkbox"/> |
| Adjust temperature setpoints | 2% - 10% of existing HVAC energy use | As well as being uncomfortable for the occupants, over-cooling a building during the summer or over-heating it during the winter results in excessive energy use. | <input type="checkbox"/> |





Aged Care & Retirement Living →



Brewing →



Coffee →



Commercial Baking →



Commercial Buildings →



Covered Cropping →



EPS Plastics →



Hotels →



Manufacturing →



Meat Processing →



Wine →



Introducing the newest pathway

A graphic for the 'Manufacturing Decarbonisation Pathway'. It features a dark teal background with a blurred image of a factory floor. On the right side, there is a rectangular inset showing a close-up of a robotic arm in a factory setting, with a yellow cardboard box on a conveyor belt. The text 'Manufacturing Decarbonisation Pathway' is written in large white font. Below the title, there are four small, rounded rectangular buttons with white text: 'Equipment', 'Industrial processes', 'Buildings', and 'Manufacturing'. The 'Manufacturing' button is highlighted with a white border. In the top left corner, there is a small logo consisting of a green square with a white 'S' and the word 'PATHWAY' next to it.

S PATHWAY

Manufacturing Decarbonisation Pathway

Equipment Industrial processes Buildings Manufacturing

What will you take away?

You'll find a step-by-step guide to reducing energy consumption through efficiency opportunity and understanding what low-emissions options are available and may be suitable for your operations.



Let's talk

Insa Errey & Karen Orr

Sector Decarbonisation Team
sectordecarb@eeca.govt.nz

Sign up: <https://www.eeca.govt.nz/co-funding-and-support/products/sector-decarbonisation-programme/sign-up>

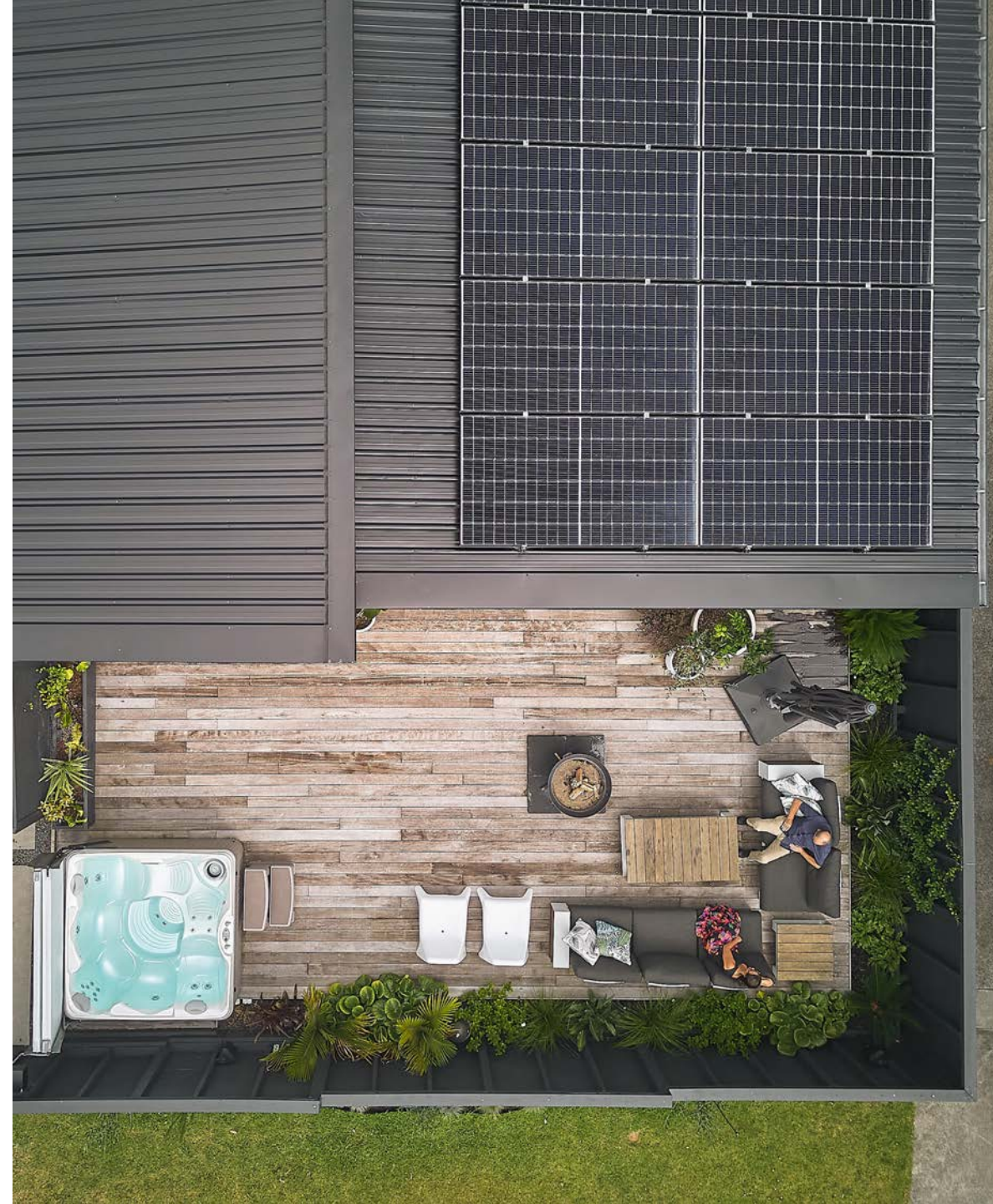


Residential electrification

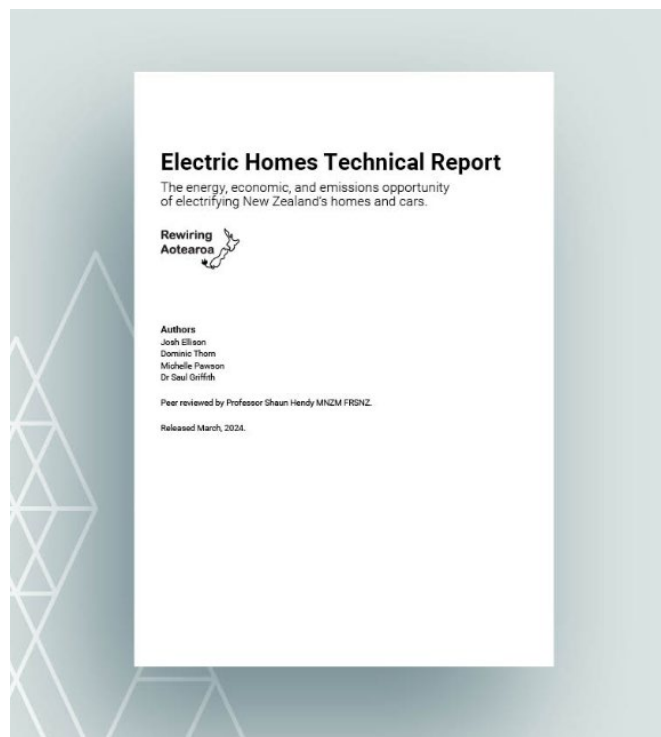


An opportunity for households and our system

- Support New Zealanders to make their homes greener and cheaper to run through energy efficiency and electrification improvements.
- Good information here will help reduce consumer energy costs, support emissions targets and further enable New Zealand's energy system.
- The opportunity has scale. In the next 12 months over **half a million** appliance and vehicle decisions are being made, decisions that will lock consumers in for the next **10-15 years**



Research to build an evidence base



March 2024

<http://www.eeca.govt.nz/insights>

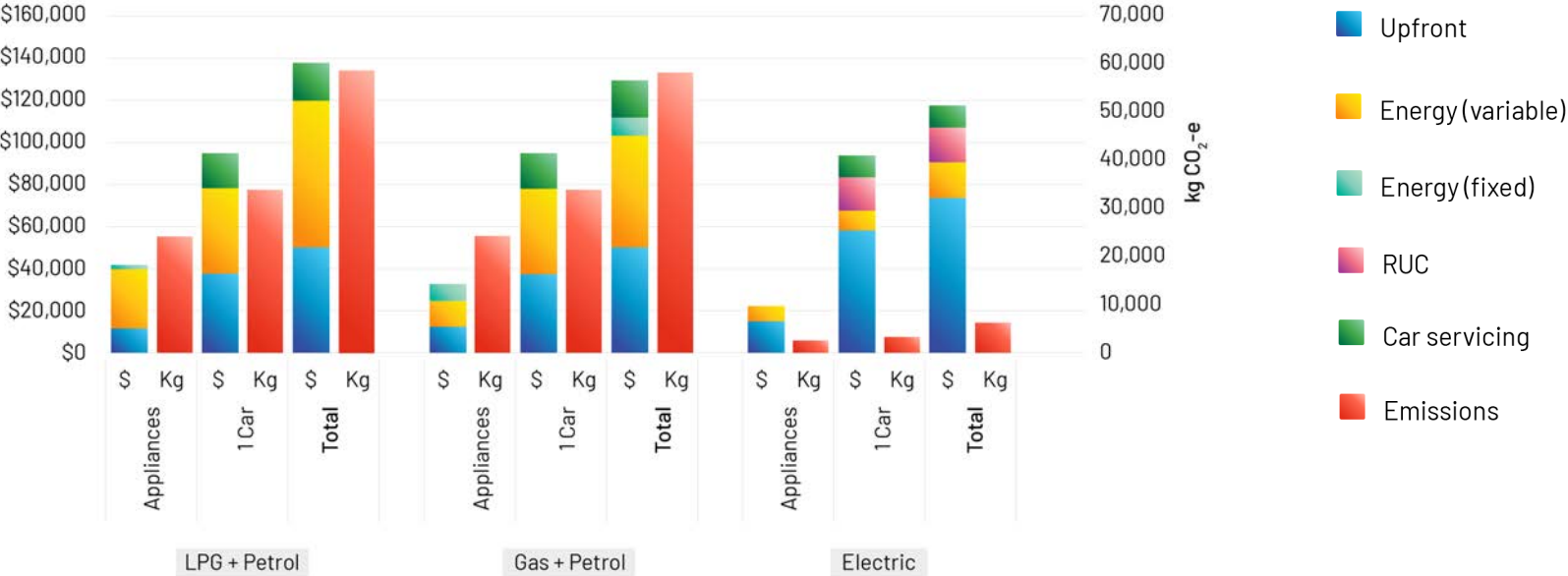


April 2024



Over average Kiwi home – the numbers stack up

Total cost of ownership and total emissions over 15 years - appliances, 1 car and total



Benefits across energy, emissions and bills

- Through energy efficiency an electrified home and garage could use **70% less total energy**
- An electrified home can save an average household **over \$1,000** in energy costs per year
- Including upfront costs and install consumers can **save \$10,000 to \$20,000** over a 15-year appliance lifetime
- An all-electrified home and garage can produce **85% less emissions** than a mixed-fuel household
- Consumer behaviours around time of use and solar and battery uptake can support peak load challenges
- With over one million owner occupied homes in NZ and over **500,000** appliance or cars decisions happening in the next 12 months there is considerable scale that can drive meaningful shifts.



Barriers to adoption have been surfaced

- Consumers have old appliances, **30% are over a decade old** and the default setting is to replace “like for like”
- **75% of Kiwis** see upfront cost as a key driver when it comes to replacement decisions – however lifetime cost interest is high and an opportunity
- We have a passive relationship with energy so there are knowledge and awareness gaps
- Supporting those that influence consumer decisions and understanding their context – particularly trades
- We are cognisant that electrification benefits are tilted towards Kiwis in more comfortable situations
- The technology is proven, here and available at scale but current penetration and awareness differs dramatically
- Every home and situation is different, but one consistent is replacement won't be considered until appliance end of life and at that point it can be a pressured decision



We are converting the insights into content

Electrifying Aotearoa: The consumer perspective
New consumer research explores the status of household electrification among owner-occupiers in New Zealand.
Publication date: April 2024
[DISCOVER](#)

ELECTRIFY YOUR HOME AND GARAGE
Powering your household with efficient, electric appliances can save you in energy costs – and reduce environmental impact.

Home > Insights > EECA Insights > Electrifying Aotearoa: The consumer perspective

Electrifying Aotearoa: The consumer perspective
The most efficient electric technologies

Overview

Energy is a vital part of our lives – everything from our appliances to more sustainable options. This is where electric alternatives shine.

When your appliances break down, or you're amid renovations, it's the perfect time to consider upgrading to better, more sustainable options. This is where electric alternatives shine.

New Zealand is at a point where opportunity to reduce energy use and our energy system.

We've done the math on key household energy uses such as heating, water heating, cooking and driving. The numbers show that on average the most efficient electric options make sense financially – both in terms of yearly running costs and overall lifetime costs.

EECA set out to understand what current motivators and barriers it's well worth exploring how your household might stand to benefit from going electric.

The report, delivered by TRA, is the most efficient electric technologies

[DOWNLOAD FULL REPORT](#)

Research objectives

The objective of this consumer survey was to:

- Determine the current stock of appliances/systems in New Zealand households that have the potential to be electrified in a smart way.
- Assess awareness and consideration of smart electrification options.
- Assess triggers and timeframes for change.
- Assess high level motivations and barriers to change.
- Understand general awareness levels of smart/renewable energy.

Energy uses and technologies explored

- Cooking/induction cooktops
- Heating/heat pumps
- Hot water/hot water heat pumps
- Solar and solar batteries
- EVs and smart chargers

While we all use electricity, many New Zealanders still rely partially on fossil fuels such as piped gas and LPG to power our homes, and petrol or diesel in our cars. But homeowners now have more choice than ever when it comes to household appliances, and every new purchase is an opportunity to make a positive change to cleaner energy.

By choosing all electric home appliances, New Zealanders could save around \$1,000+ per year in energy costs. When upfront costs are included, you could save \$10,000-\$20,000 over a 25-year appliance lifetime.

An all electric household produces 83% less greenhouse gas emissions than a mixed fuel household, with the largest impact coming from electric vehicles.

Roof-top solar maximises both cost and emissions savings, and can pay itself off in around 7-8 years.

[Jump to the details](#)

Hot water heat pump
Heat pump (HP)
Electric cooking
Roof-top solar and battery
Electric vehicle and smart charger



Where to from here?

- Publishing and sharing our research and insights
- Sector and stakeholder engagement
- Consumer supporting information, content and advice
- Shaping up a public engagement approach – how we can engage with New Zealanders around their next purchase decision
- Key partnerships



Questions / Pātai





ACCELERATING BUSINESS TOWARDS A LOW-EMISSIONS FUTURE



Find everything on the GIDI Fund here (www.eeca.govt.nz)

Stay in the loop of latest developments ([@EECA_nz](#), [LinkedIn](#))

Contact us with any questions (business@eeca.govt.nz)

Sign up to the EECA Newsletter [here](#)



What's next?

Join our next EECA Market Update webinar in July 2024

- Energy End Use Database deep dive
- EECA FY25 programme of work
- New business insights products
- Overview of tools

