

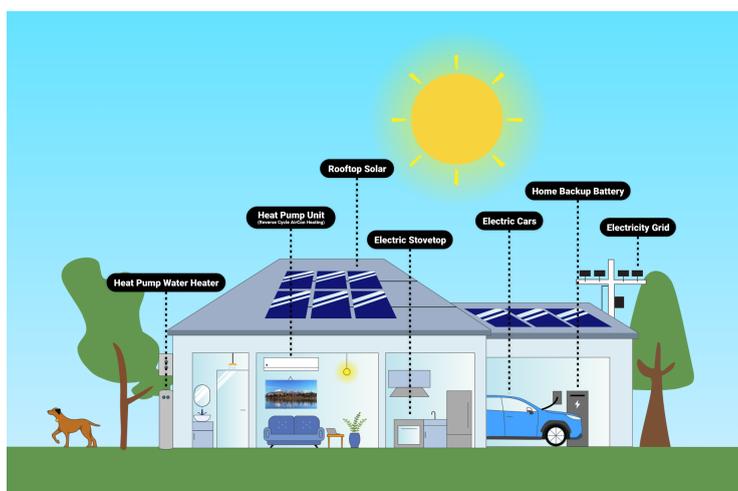
Rewiring Inequity

Thank you for considering our submission on the Fair Chance for All enquiry. This submission is made by Rewiring Aotearoa New Zealand, a new not-for-profit organisation¹ that is bringing a household perspective to the energy transition.

The Productivity Commission notes in the interim report that 'While our focus for this report is on human wellbeing, we acknowledge the significance and interconnectedness of our natural environment. This is particularly important when considering the longer term challenges Aotearoa New Zealand faces, such as climate change, which is likely to have a disproportionate impact on those experiencing persistent disadvantage.'²

We agree that climate change is significant for vulnerable peoples and is likely to disproportionately impact them. Our view is that the climate crisis is already doing so in Aotearoa, alongside and also contributing to high and rising cost of living pressures. Rising energy costs are primarily being driven by global climate change impacts³, supply chain disruptions, the Ukraine war, and the increasing imposition of Government policies such as a rising Emissions Trading Scheme (ETS) price. These impacts, as well as the localised impacts of extreme weather events are already affecting homes and communities across Aotearoa now and therefore climate change is a short term as well as a 'long term' issue. It is a current day crisis that is creating huge opportunities for investment and transformation that will have a positive impact on people's lives in the short and long term and can reduce people's energy bills for the long term, with significant implications for the economy more broadly.

The good news is that the technology exists to move away from fossil fuels now. Deploying these technologies into vulnerable households at scale will save those households money in the short and long term. What is needed to unlock this is upfront Government investment, which in turn will enable the flow of the private responsible capital at the scale needed to fund this transition.



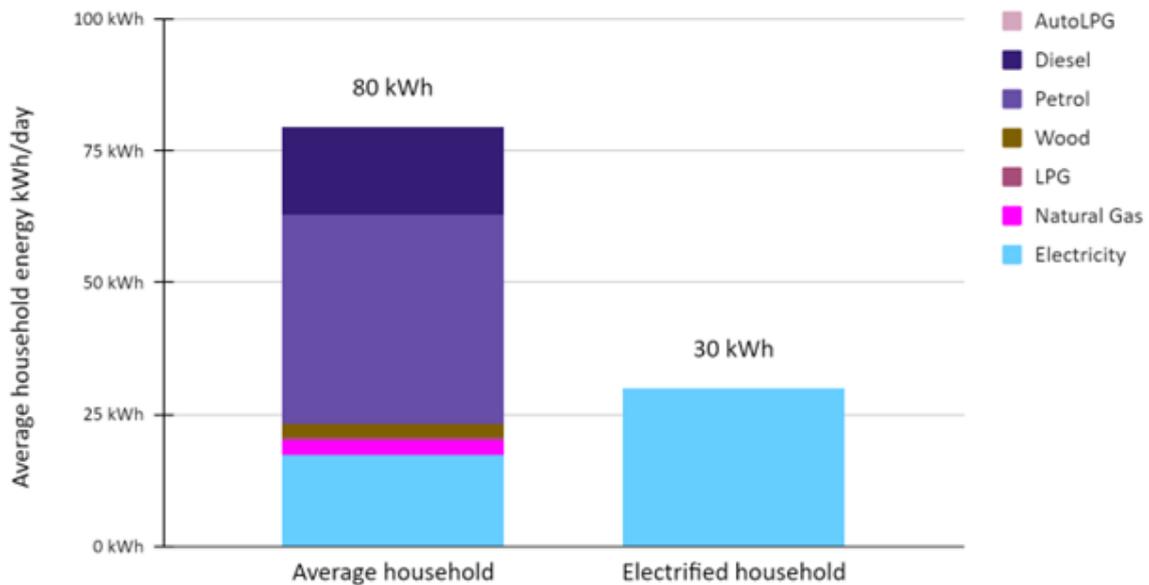
¹ Registration with Charities Services for Rewiring Aotearoa is currently underway

² [Fair Chance for All Interim Report \(productivity.govt.nz\)](https://www.productivity.govt.nz/fair-chance-for-all-interim-report) page 19.

³ [How Climate Change Is Disrupting the Global Supply Chain - Yale E360](https://www.yale.edu/e360/article/how-climate-change-is-disrupting-the-global-supply-chain)

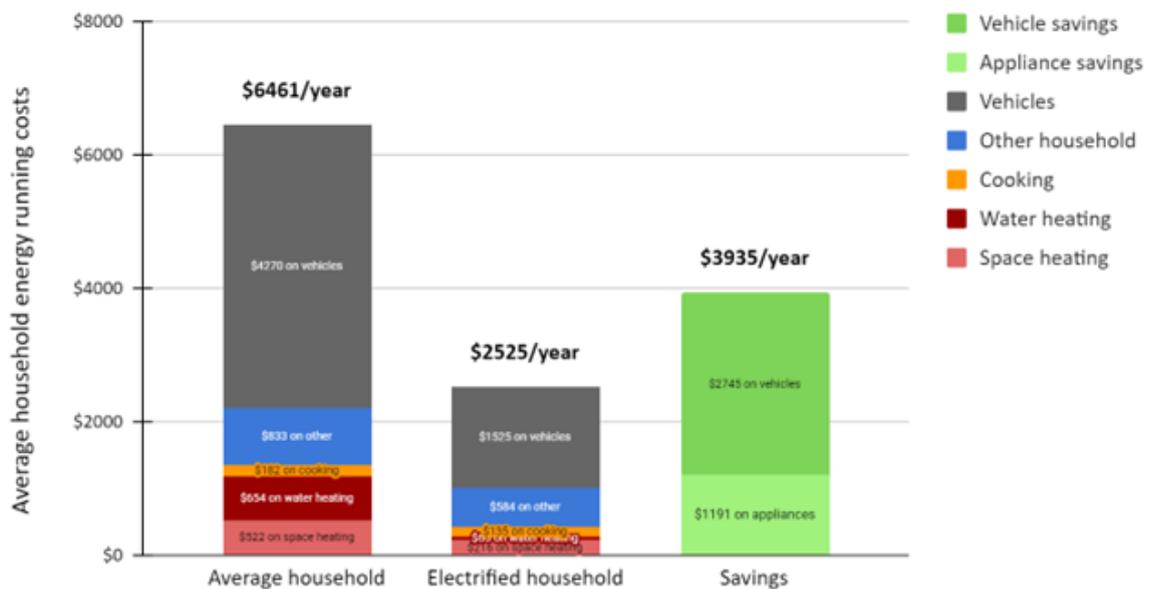
NZ average household energy use, current versus electrified.

Source: Rewiring NZ



NZ average household energy costs (running costs), average versus electrified.

Source: Rewiring NZ

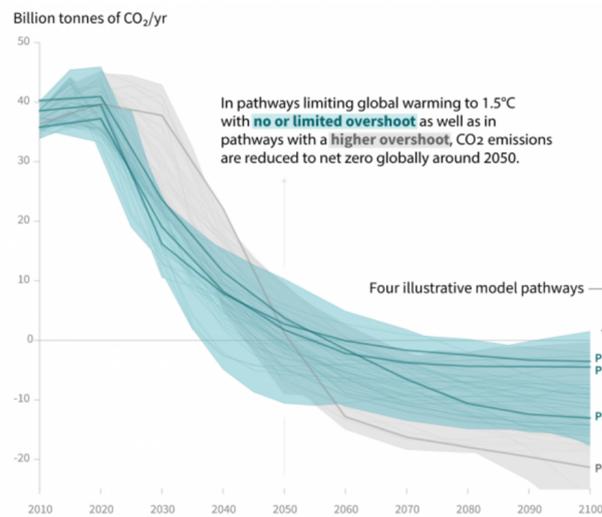


There is therefore a critical and underexplored opportunity as part of this enquiry for the Government to lead with early, up-front strategic investment which will play a significant role in providing a fair chance for all immediately. It will reduce energy use and reduce energy bills in the short term. It will also reduce emissions and help ensure that New Zealand plays its role to stop further warming the planet, help to deliver on the recommendations of the Climate Change Commission such as to eliminate fossil gas use in residential buildings⁴, and will build on existing progress through the Emissions Reduction Plan and other policies.

⁴ [Ināia tonu nei: a low emissions future for Aotearoa \(amazonaws.com\)](https://www.amazonaws.com), Recommendation 20.

It will also further accelerate the intent of the Productivity Commission's own previous Low Emissions Economy Enquiry report.⁵

NZ must rapidly reduce its emissions in line with global emissions pathways consistent with a 1.5 degree future



https://www.ipcc.ch/sr15/graphics/#cid_6333

Strategic anti-inflationary investment targeted at households to improve the lives of the most vulnerable in society can help us accelerate the transition to a sustainable, low-emissions economy, helping to create a fair chance for all.⁶ It can create jobs while directly growing the industries, skills, and broad social understanding we need for the future. It could save money in the longer term through better health outcomes and stronger acceptance and hence effectiveness for climate policies that impose costs today, the ETS most of all.

Rapidly reducing emissions in households will mean electrifying essentially everything. Heat pumps instead of gas heating. Electric water storage heaters or ground-source electric heat pump systems replacing gas hot water. Electric vehicles, public and active transport over petrol and diesel cars. Replacing older light bulbs with highly efficient LEDs. Electric rather than gas cookers. Critically, this should be complemented by high quality insulation and other retrofits to keep homes warmer and drier, saving energy and money. Together, these change the system structure affecting our homes in at least three ways:

- It simply removes common emission sources by shifting to electricity, while we continue transitioning to 100% renewable energy to decarbonise the power system.
- The more things we electrify the easier it becomes. Electrification does away with the waste and cost of parallel infrastructure like gas connections; everything works basically the same way. The new devices and appliances increase total electricity use, but because they're controllable through sophisticated modern electronics they

⁵ [Productivity Commission | Low-emissions economy](#)

⁶ We are not suggesting that this is all that is necessary to break the cycle of persistent disadvantage and create a fair chance for all, but our comments are limited to the opportunity relating to household electrification.

also make the power system more flexible, helping get to 100% renewables and likely reducing costs.

- Stopping gas burning in the home — even gas made from renewable sources — removes pollution that is increasingly shown to cause serious health impacts, especially to children.⁷

All of these technologies exist right now. They are widely available internationally, and many if not all are available in New Zealand. But electrification requires investment up front. We know the most vulnerable in society (lower income groups, and many iwi/Māori and Pasifika) need support to make that investment given they cannot afford it and also do not yet understand how or why to invest in this way. They are also more likely to live in poorly insulated, damp, draughty homes that make people sick, with old and inefficient appliances that can be costly to run. They are more likely to use older less efficient vehicles that are costly to drive — and rising oil prices are a major source of inflation and cost of living pressure. On top of all this, the NZ ETS makes petrol and electricity more expensive, exacerbating and perpetuating this systemic disadvantage and inequity.

Government can invest strategically to improve New Zealanders lives now by funding targeted systematic household electrification - upgrading appliances, building public and active transport, switching to electric vehicles, and ramping up efforts to refit homes to be warm and dry. This investment in households actively reduces domestic gross emissions faster than they would be otherwise. It will mean better health for many, easing the burden on an overstretched health system. It visibly and directly tackles the distributional impacts of climate policies by improving peoples' lives, building social licence and making climate action tangible.

Critically, this strategic investment reduces the energy costs of the most vulnerable and provides them with more disposable income to enjoy a higher quality of life. It also accelerates the transition to a low-emissions economy by driving uptake of the technology and behaviour changes we need. It helps build the industries and skills required for a sustainable future by deliberately growing the demand for their products and services.

Experience internationally shows the combination of funding support and 'market pull' policies to increase demand is vital to lower costs.⁸ The needed technologies become cheaper with greater scale and cumulative production; costs for suppliers, installers, and the like fall through positive feedback effects such as learning-by-doing and learning-by-using and building more effective logistic and support networks. Indeed, globally, costs continue to fall much faster than forecast or predicted which creates a significant case for optimism about global energy system transformation with implications for New Zealand.⁹ Projecting

⁷ [Cooking With Gas, Household Air Pollution, and - ProQuest](#)

⁸ See the various case studies developed by the research consortium, the Economics of Energy Innovation and Systems Transition (EEIST) covering Solar PV in China and Germany, Wind Energy in the UK and Brazil and lighting efficiency in India. The programme brings together world-leading expertise in complex systems modelling, economics and climate and environmental policy to better understand, and contribute to informing with rigorous science climate policy initiatives.

⁹ [Empirically grounded technology forecasts and the energy transition: Joule \(cell.com\)](#) 'Most energy-economy models have produced energy transition scenarios that overestimate costs due to underestimating renewable energy cost improvements and deployment rates. This paper generates probabilistic cost forecasts of energy technologies using a method that has been statistically validated

actual experience forward says global clean energy is cheaper, and the faster the better. Alternative macroeconomic modelling which makes different assumptions about the role of investment in the modelling framework — used by the European Commission — demonstrates that in the short term these investments can be positive, rather than negative, for GDP.¹⁰

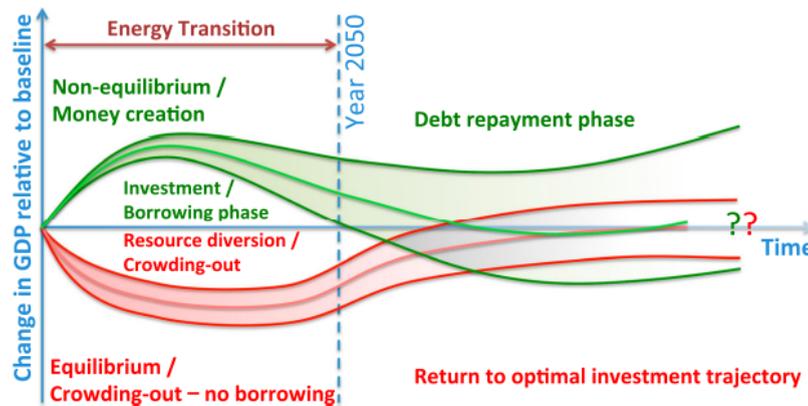


Figure 2. Illustration of GDP changes, relative to a baseline, of a policy-driven sustainability transition for the two groups of modelling schools of thought, equilibrium and non-equilibrium, in the current state-of-the-art. In this hypothetical example, a sustainability transition is financed (self-financed or via borrowing) from time zero until the vertical dashed line, after which low-carbon finance stops (figure co-designed by the authors). It is to be noted that for equilibrium models, recovery post-transition is strongly related to innovation processes such as productivity change, which mitigate the negative effects. However, even without representations of learning-by-doing and innovation, equilibrium models may still display a recovery post-transition due to processes such as reductions in fossil-fuel imports. Meanwhile, without representations of debt burdens, non-equilibrium models would not likely display a convergence post-transition.

[\(PDF\) Modelling innovation and the macroeconomics of low-carbon transitions: theory, perspectives and practical use \(researchgate.net\)](#)

Ultimately, targeted strategic investment in a positive vision for the future brings forward the point where subsidies and other support is no longer needed and low-emission technologies are the cheaper, easy default for everyone.

It would also come at a critical time, following in the footsteps of the United States' recent landmark Inflation Reduction Act 2022 (IRA) and further accelerating the progress of the global energy transition. New Zealand's long term wellbeing intimately relies on the success of that transition. Rather than being called out¹¹ whenever New Zealand tries to influence globally, we will be in a position to more credibly influence and to create lessons for others. There are 121 million households in the US and the average household will receive NZD\$17,900 in IRA benefits to fully electrify, and save on average \$3,000 each year going forward on energy costs by phasing out fossil fuels. Renters are also targeted with electric vehicles, and appliances and tools that can be transported to their next home, like countertop induction cooktops, portable mini split heat pumps, heat pump dryers and battery-powered yard equipment. If used to its full potential, Rewiring America analysis¹²

on data for more than 50 technologies. Using this approach to estimate future energy system costs under three scenarios, we find that compared to continuing with a fossil fuel-based system, a rapid green energy transition is likely to result in trillions of net savings. Hence, even without accounting for climate damages or climate policy co-benefits, transitioning to a net-zero energy system by 2050 is likely to be economically beneficial. Updating models and expectations about transition costs could dramatically accelerate the decarbonization of global energy systems.'

¹⁰ See [technical_report_representing_finance_constraints_in_a_macro_model_0.pdf \(europa.eu\)](#)

¹¹ [PressReader.com - Digital Newspaper & Magazine Subscriptions](#)

¹² <https://map.rewiringamerica.org/>

shows that the IRA could pay out NZD\$1.45 trillion into the U.S. economy through residential electrification alone, creating 1.4 million direct new jobs and 5 million total new jobs.

This example of strategic Government-led investment is what New Zealand now needs to emulate if it wishes to reduce the cost of living pressures, provide a fair chance for all and make New Zealanders' homes warmer, drier, more efficient and healthier, whilst contributing towards our emissions reduction targets. The Government's terms of reference for the Energy strategy fail to mention 'household' or 'whānau', indicating an unreasonably high supply side policy focus and modelling of the energy system with potentially little focus on households.¹³ This risks overlooking significant opportunities for those New Zealanders who need support the most and a direct means to make climate action real for every household.

This investment also provides households and communities with the immediate opportunity to contribute to the climate crisis with hopeful, realistic action. Too often, how we can individually act to respond to the climate crisis seems overwhelming, complicated and scary. Providing a tangible action plan that not only improves the health of our planet and ourselves, but also enables us to financially succeed is positive, empowering and hopeful.

Recommendations

The Government should commit to:

- Immediate up-front strategic anti-inflationary investment in household electrification, i.e. 'rewiring' Aotearoa New Zealand. We recommend targeting the landlords who the most vulnerable in our society rely on by:
 - direct grants, transfer payments, and installation schemes (with bulk Government purchasing); rebates, tax credits and zero or low-interest loans over long time periods, including in collaboration with Māori and private sector financial institutions and local credit unions and building societies who are also looking to invest in the transition and reduce their own climate and credit risks.
- Longer term, focus the energy strategy on household electrification for all kiwi households. This can reduce emissions and energy bills, improving lives in the short term, on timelines relevant for our 2025 and 2030 emissions reductions targets rather than relying on supply side electrification which is inherently a longer term approach out of line with our climate change targets.
- Use the Ten Principles for Policymaking in the Energy Transition as an integral part of the energy strategy being led by the Ministry of Business, Innovation and Employment, particularly principle 7 to put distributional issues at the centre. These principles have been developed by EEIST based on robust, world-leading research on the experience of energy systems change that has already occurred.¹⁴
 - This is consistent with the Productivity Commission's findings that 'Systems thinking is a best practice approach to understanding the complexity of the "real world" systems we live in. It helps to explain how things interact with

¹³ [Terms of reference: New Zealand Energy Strategy \(mbie.govt.nz\)](https://mbie.govt.nz/terms-of-reference)

¹⁴ <https://eeist.co.uk/download/932/>.

each other, and how these interactions affect the system as a whole. Ideas, objects, people, communities and our environment are interconnected through relationships of action and reaction, cause and effect. This “non-linear” way of seeing the world is consistent with indigenous worldviews and perspectives, such as mātauranga Māori. This makes systems thinking useful for building shared understandings of the world in the context of Te Tiriti.’

- See for example the EEIST’s view that “Many of the economic principles, models, and decision-making tools used by governments are designed for use within contexts of ‘marginal’ or incremental change, where technologies, markets and other economic structures are relatively stable. Different tools are needed when, as in the energy transition, the aims and context of policy include widespread innovation and structural change.”¹⁵
- Longer term, develop a corresponding strategy for longer term coordinated investment in high quality home insulation and related retrofits.

Response to questions

- **Q6.17 Do you think that our fiscal rules and approach to accounting for future government liabilities constrain our ability to address persistent disadvantage? What would you like to see change with these?**
 - Yes, we agree with the submission cited by the Productivity Commission which notes that ‘Our approach to borrowing was introduced to deal with poor accounting during the late 1970s and 1980s and the PFA has done a good job in improving trust among investors. New Zealand now has an excellent rating. But times have changed, and New Zealand is no longer at risk of default on its borrowing as it was then’.
 - We also agree with finding F6.20 that ‘It is time to re-examine the “low debt” orthodoxy and our fiscal rules, and with it our approach to accounting for future government liabilities.’
- Rather than relying on long-held assumptions about how to deliver ‘fiscal discipline’, , the Government needs to adopt a strategic-investment led approach to policymaking, particularly in the context of the climate transition. This fundamentally needs to move from an incremental to a transformational approach. The existing budget process is inherently incremental, with the Treasury and Ministers reviewing budget bids and choosing among them based on static, marginal cost-benefit or similar analysis. The Government needs to implement a strategic investment approach that is Government-led and based on risk-opportunity analysis that, in particular, focuses on the most vulnerable first, appropriately partners with Māori and targets transformational investment in a way that reduces inflationary and cost-of-living pressures. We suggest reviewing the way in which the Inflation Reduction Act in the US was designed and delivered to inform such an approach. We also suggest considering emerging investment approaches being used in various contexts globally such as ‘Transformation capital’ which embed a systems thinking approach.¹⁶

¹⁵ Ibid.

¹⁶ [Transformation Capital \(climate-kic.org\)](https://climate-kic.org/)