



Switched on!

Achieving a green, affordable and reliable energy future

Matt Burgess

The New Zealand's electricity system works. Electricity here is reliable and more affordable than in most OECD countries. What sets New Zealand apart is that 83% of its electricity is produced from renewable sources, mainly hydro, geothermal and wind, the third-highest share of renewables in the OECD. Just 3% of our electricity comes from emissions-intensive coal. Over the next 20 years, renewables will increase their share to between 90% and 97%. Renewables work in New Zealand.

Electricity's impressive record in New Zealand has largely been achieved without subsidies or direction from policymakers. For 30 years, government's relationship with electricity has been mostly conducted through overarching environmental and competition legislation, rather than ministerial direction.

Until now, that is. The 2017 Labour-Green coalition agreement set a target: By 2035, 100% of New Zealand's electricity will be generated from renewable energy, excluding dry years. This could add more than \$800 million to the annual cost of electricity. It is also a needlessly expensive way to reduce carbon dioxide emissions: the cost of more than \$1,000 per tonne is 40 times the current price of emissions units on New Zealand's Emissions Trading Scheme (ETS). Worse, the 100% renewables policy could raise emissions if the higher cost of electricity delays the anticipated transition of transport and industry off fossil fuels on to electricity.

The first 95% of the government's renewables target is expected to happen without any help from policy. But there is no feasible combination of hydro, wind, solar or geothermal that can supply the last 5%.

Unlike New Zealand, the electricity sectors in Australia, Germany and the UK operate more or less under the direct control of elected governments funnelling billions of dollars into solar and wind generation – leading to substantial increases in the cost of electricity for only limited cuts in emissions.

The problem is not renewable technologies but policies that force renewables into roles within electricity systems for which they are a poor fit. It is no coincidence that affordable, clean electricity has emerged in one of the few countries, perhaps the only country in the OECD, where investment in electricity generation is determined not by policy and subsidies but by competition between technologies on a level playing field beyond the reach of politics.

The government does not need to be in the business of picking winners to reduce emissions. Policies like 100% renewables choose one part of one sector for emissions reduction without weighing the alternatives across the rest of the economy – an impossible task for policymakers when those alternatives number in the millions. The problem is not that the government picked the wrong winner with its 100% renewables policy, but that it tried picking any winner at all.

The government can reliably reduce emissions at less cost by pricing carbon. The decentralised nature of emissions gives price the advantage over policy as a mechanism for reducing emissions. New Zealand prices carbon through the ETS, established in 2008. The government sees the ETS as its "main tool" for achieving its emissions targets and is taking steps to tighten it up.

It is right to do so. Research suggests a huge performance gap between government policy and carbon pricing as mechanisms. Results vary widely, but on the whole governments spend \$5 to avoid emissions costs of \$1. In a properly calibrated ETS, emitters spend up to \$1 to avoid emissions costs of \$1.

New Zealand's ETS has not been effective to date, but this reflects a watering down rather than any inherent problem with the mechanism. A stronger ETS will increase investment in renewables as well as in R&D, but getting there will require dealing with difficult problems, including leakage and whether and how to include agriculture.

Policy's goal, apart from building an effective ETS, should be to maximise the emissions scheme's share of abatement efforts. But politics puts limits on how much can be done with an ETS.

Political support for the ETS can be lifted by a commitment to revenue neutrality, or using the revenues from the sale of emissions rights to lower taxes elsewhere.

The government is right to seek cross-party policy consensus on climate policy. This consensus should be extended to rule out direct policy interventions in electricity. Even limited government interventions in electricity markets tend to cascade, as seen here in New Zealand in the 1970s and currently abroad. The importance of policy credibility strongly favours consistent, institutionalised solutions like the ETS over *ad hoc* approaches such as the 100% renewables policy.

Distributional effects of carbon pricing should be resolved using the welfare system, not by watering down environmental policies. A sound general policy principle is to protect households and individuals via incomes, not prices.

The next 20 years will likely see growth in electricity and waves of new technologies. New Zealand's current electricity model – independence from political influence, prices on electricity and carbon that reflect costs, competition between generation, storage and other technologies on a level and credible playing field – puts us in an ideal position to extend our lead over most other countries for affordable, green electricity.

ABOUT THE AUTHOR

Matt Burgess is a Research Fellow. He was Senior Economic Advisor to a former Minister of Finance, a Chief Executive of iPredict, and a Senior Associate at consultants Charles River Associates.

He has a Master of Commerce in economics with first class honours from the University of Canterbury and a Bachelor of Commerce in economics and mathematics.