

Effective and affordable – Why the ETS is sufficient to deal with the climate emergency

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Parliament has declared a climate change emergency. Having committed to cutting its emissions to net zero by 2050, New Zealand now must get on with it.

But there is an additional emergency. We, as a country, are about to embark on a policy path which is both horrendously expensive and ineffective.

To spell it out more clearly: **New Zealand is at risk of spending tens of billions of dollars on policies that will not cut carbon emissions by a single gram. And as for those emissions reductions we do achieve, we will do so at ludicrously inflated costs.**

Over the past weeks and months, our team has been talking about this with politicians, bureaucrats, journalists and business leaders. We are alarmed by the general lack of awareness, which is why today I want to alert you to what is going on.

What I am about to tell you is not a fringe view.

On the contrary, these are the same logical arguments made by the UN's Intergovernmental Panel on Climate Change, the UK's energy regulator Ofgem, the German Government's Monopolies Commission, and the Academic Advisory Council to the German Federal Economics Ministry.

All these institutions have over the past two decades warned of an insidious climate policy trap. And it is that very trap that New Zealand is about to fall into.

To understand the nature of the trap takes no sophisticated economics but five minutes of logical reasoning. Let's do it.

Like many other countries, New Zealand has committed itself to reducing its carbon emissions. To do so, New Zealand has established an Emissions Trading Scheme, short: ETS.

The ETS is New Zealand's fundamental tool to drive down emissions. It covers 96% of the economy and 50% of emissions. The missing percentage points are because agriculture is not included in the ETS. But, crucially, everything else is.

For example, each time we take a domestic flight, switch on the heater, or fill our cars these actions fall under the ETS. For each tonne of emissions we produce, our suppliers must obtain an emissions permit under the ETS. We fund the purchases of these permits automatically with our energy consumption, whether it is electricity, petrol, gas or kerosene.

New Zealand's ETS was established in 2008 under the Clark Government. Its architect was the then climate change minister David Parker. He correctly explained that "emissions trading is an effective

approach to reducing New Zealand's greenhouse gas emissions in the long term." (Beehive media release [‘Emissions trading is effective and affordable’](#), 1 May 2008)

The case for the ETS as an effective and efficient way of cutting emissions had been established for many years. It was what later helped William Nordhaus win the economics Nobel Prize.

Another politician who deserves credit for the ETS is our current climate change minister, James Shaw. In the last Parliament, Shaw completed the work of his predecessors by giving the ETS the one element it was still missing: a hard cap limiting the total emissions. That was in June.

Ever since, New Zealand probably has the world's best ETS: comprehensive, with a hard cap, and a sophisticated built-in potential link to the world's largest ETS in Europe. Parker and Shaw can be proud of this fine policy achievement.

The New Zealand ETS is so well-designed, it will drive down our country's emissions in the most efficient way. It is a work of economic beauty and can cut several times more emissions per dollar than politicians.

Unfortunately, political interference is now sabotaging this path to lower emissions. To understand how, we just need to remember what the ETS does.

The ETS is a "cap-and-trade" system. It is based on the rule that one emissions permit must be obtained for each tonne of emissions. There are penalties for non-compliance. Since the Government is responsible for issuing permits, it can reduce emissions by reducing the number of permits it issues.

The permits "trade" for a price that reflects their scarcity. Over time, as the number of issued permits falls, their price will increase. Polluters must choose between reducing their emissions or paying higher prices for a permit.

Most importantly, the total amount of emissions is fixed in advance. This is the "cap." That means businesses and households can plan how they will reduce their emissions.

So far, so good.

Now imagine what would happen if the Government started a new climate change policy in addition to the ETS. Perhaps the Government paid subsidies to replace old coal boilers. Or it shifted its car fleet to electric vehicles. Or it told its bureaucrats to reduce the number of flights from Wellington to Auckland and use videoconferencing instead.

By the logic of the ETS, none of these measures can shift New Zealand's total emissions. Not even by a single gram of carbon dioxide.

Sure, such interventions will have an effect on the emissions from coal boilers or cars or airlines. But by the logic of the ETS, the freed-up permits will just go somewhere else. Overall emissions are capped by the number of issued permits, and that number has not changed.

Less demand for permits from coal boilers, cars and airlines will reduce the price of carbon permits for all other energy users, and that will raise their emissions. The overall change in emissions will be zero.

So, ironically, if the Government pursues any "green" policies on top of the ETS, it unwittingly makes it cheaper for V8 drivers to fill their gas-guzzlers – which was not the intention.

Just so it is easier to understand what is going on, here is a stylised example:

The economy has two companies, a paper manufacturer Paper Ltd. and a glass manufacturer Glass Ltd. Each produce 5000 tonnes of emissions.

An ETS is introduced and caps emissions at 9,000 tonnes for the whole economy. There are now 9,000 emission permits available. Both companies receive 4,500 each – an overall reduction of 1,000 tonnes.

The emissions cap could be achieved if each company reduces its emissions by 500 tonnes.

As it turns out, Paper can reduce its emissions at much lower cost than Glass. So the companies make a deal.

Glass leaves its emissions unchanged at 5000 tonnes. Paper reduces its emissions to 4000 tonnes. That leaves Paper with 500 spare permits while Glass is 500 permits short. Glass writes a cheque at an agreed price to buy the permits from Paper.

The climate protection goal is achieved. Emissions total 9000 tonnes, within the cap.

Notice how the ability for both companies to trade with each other led to cutting emissions where they were cheapest. Paper sold its spare permits for a price greater than the cost of cutting its emissions. Glass paid a price for the permits which was less than the cost of cutting its emissions. Win-win.

Now re-run the scenario. There is still an ETS and a 9000-tonne cap, but this time the Government intervenes. Emissions from glass manufacturing must come down, says the Government. Subsidies pay Glass to upgrade its equipment. Emissions from the company fall to 4500 tonnes.

What does Paper do in response? Does Paper still reduce its emissions down to 4000 tonnes? No. There is nobody to buy 500 spare permits, since Glass has the 4500 permits it needs. Paper only cuts its emissions to 4,500 tonnes.

Total emissions are still 9000 tonnes – exactly the same as without intervention. The first effect of the subsidy was to shift emissions reductions from low-cost Paper to high-cost Glass. The second effect was that taxpayers were asked to fund subsidies that did nothing to drop net emissions.

As we have seen in this example, it is logically impossible to combine an ETS with other subsidies or regulations designed to drive down emissions. Unless the excess certificates are removed from the system (but that never happens).

In its last monumental report on the Mitigation of Climate Change (2014), the Intergovernmental Panel on Climate Change reaches this conclusion. It is a tome of 1436 pages, but its take on the compatibility of emissions trading schemes and other measures is short and to the point:

“[I]f a cap-and-trade system has a sufficiently stringent cap then other policies such as renewable subsidies have no further impact on total GHG emissions. ... [O]ther policies cannot be ‘added on’ to a cap-and-trade system.”

As I mentioned at the beginning, the IPCC is not the only body holding this view. But it is the world’s top organisation dealing with climate change and its verdict could not be stronger.

Which makes the direction of climate change policy in New Zealand even more worrying.

Thanks to more than a dozen years of work gone into building the ETS, New Zealand has a great tool to deal with emissions. And yet, our Government is rolling out policy after policy to “add on” to the ETS – none of which make sense:

- Shifting the Government’s vehicle fleet: no change to overall emissions;
- Electric vehicle subsidies: no change to overall emissions;
- Moving electricity to 100% renewable: no change to overall emissions (but potentially even increased emissions if rising electricity prices slow down electrification of the economy);
- Making the public sector carbon-neutral: no change to overall emissions;
- A new \$70 million fund to help industries switch from fossil fuels: no change to overall emissions.

No matter the rhetoric, each dollar spent on these measures is a complete waste of money.

Incidentally, an economy-wide shift to electric vehicles, for example, may well happen anyway. But it would happen automatically because of the ETS, and without needing any further intervention.

The situation is absurd. Having successfully established a world-leading ETS, the Government continues to behave as if the ETS did not exist. New Zealand is now at risk of throwing away billions of dollars because the most basic environmental economics has not been allowed to enter the public’s thinking.

The first question anyone should ask about a new climate change measure is: Can this policy reduce emissions under the ETS? If the answer is “No,” the policy-making process should stop right there.

With 96% of the economy covered by the ETS – everything except for agriculture (which, according to StatsNZ, accounts for 4% of GDP) – there is very limited scope for any climate change policy to have a positive effect. Agriculture is the only place Government policies can directly reduce emissions since the sector is outside the ETS. For everything else, the emissions are taken care of.

By the way, it does not even matter that some certificates are issued free of charge. What matters is that all certificates are subject to the same overall cap.

Despite all that, we have recently observed some ludicrous examples of intervention. One was an electric vehicles scheme which cost the Government \$27m. After three years, the scheme was evaluated to have removed a total of 891 tonnes of carbon emissions from the atmosphere. Nominally, that is an average cost of \$30,300 per tonne. But because transport emissions are covered by the ETS, the actual cost per tonne was infinite. Because not a gram of emissions was cut. The emissions were only shifted to other emitters.

Had the Government purchased emissions certificates from the ETS and shredded them, it could have removed about 770,000 tonnes from the atmosphere (at current carbon prices) – or about 1% of New Zealand’s emissions.

Let me say that again: The electric vehicle scheme reduced not a single gram of carbon, whereas the money spent on it could have cut our emissions by 1% by retiring ETS certificates.

But wait, it gets even better. Under the Government's climate policy, New Zealand has cut itself off from international carbon offsetting.

Carbon offsetting is the practice of actively removing carbon from the atmosphere. From an environmental perspective, cutting emissions by a tonne or removing one tonne of carbon from the atmosphere are the same thing.

A recent paper in the *American Economic Review* reported that a forest conservation project in Uganda managed to sequester carbon for a cost of \$US1 per tonne. At that rate, the electric vehicle fund mentioned above could have removed 19 million tonnes of carbon – equivalent to about a third of New Zealand's net emissions each year.

Previously, we found projects in the Brazilian Amazon rainforest achieving a carbon offset for \$US2 a tonne. But even at a conservatively-high \$10 a tonne, New Zealand could offset all its net emissions for an annual cost of under \$600 million.

Imagine that: If New Zealand entered a partnership with countries like Brazil and Uganda we would become net carbon neutral tomorrow – not in 2050.

Such a deal has a precedent. Switzerland and Peru recently announced a carbon offsets deal. Peru will receive funding for sustainable development, and Switzerland will receive credits for lower emissions. The deal is recognised under the Paris climate agreement, to which New Zealand is a signatory.

Of course, we would continue to run our ETS to bring down domestic emissions. Over time, a mix of domestic reductions and international offsets means New Zealand could claim carbon-neutral status.

From an economics perspective, the combination of our domestic ETS with both domestic and international offsetting measures will yield the best outcomes. The efficiency gains will be tremendous, large enough that we can reduce greenhouse gas emissions sooner and better.

But that is not what the Government has in mind. New Zealand will get something else on 1 February, 2021. That is the day when the Government's new Climate Change Commission will present its first climate budget. It will be a detailed prescription of what each sector will be allowed to emit. The climate change minister James Shaw has already warned it will be painful.

Unfortunately, these policies will not just be painful but futile – for all the reasons outlined above. Next year's climate change policies will be among the most damaging, inefficient and wasteful policies our country has ever witnessed.

We must stop this costly policy mistake. The better path is a policy introduced by David Parker and Helen Clark, perfected by James Shaw and promoted by the IPCC.

It is called the ETS.