

GHG emission reduction pathways

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New Zealand needs to embrace biofuels, electric vehicles and energy forests, and get rid of coal and gas-fired industrial processes if it wants to meet its 2050 emissions reduction commitment, officials have told the Government.



We should aim for 63 per cent electric vehicles

But policies to get there must be put in place now, they say.

In a briefing paper to Climate Change Minister Tim Groser, dated September last year, Ministry for the Environment officials said that there was a “limited window of opportunity” to start substantial global emissions cuts if temperature rise is to be kept below 2deg.

“This is because both the global and New Zealand economies have ‘inertia’ and cannot be changed to reduce emissions ‘overnight’,” the paper said.

“The transition to a low- emissions economy is a long-term undertaking due to the scale of change required in energy, transport, built environment, food production and other system.”

Two pathways

New Zealand’s greenhouse gas emissions are currently 25 per cent above 1990 levels, but the country is committed to cutting them to 50 per cent below 1990 levels by 2050.

The paper, released to Carbon News under the Official Information Act, outlines two possible pathways to get there.

Both envisage all new baseload electricity generation coming from renewable sources, and that from 2025, 63 per cent of new vehicles will be electric.

They also see all coal-fired industrial heat processes switching to wood by 2030, with half of gas-fired process converted to wood by 2050.



Wood should be main provider of industrial heat processes

One pathway has all land transport running on domestically produced biofuels by 2050, with 50,000 hectares of energy forest being planted a year to 2020, and 80 hectares a year planted through the 2020s and 2030s. This planting would displace about 5 per cent of agricultural emissions, as well as sequestering carbon.

Better transport

The other pathway has half of domestic land transport powered by domestic biofuels by 2050, with imported biofuels running the rest, and a 23 per cent drop in the number of kilometres travelled in cities through better transport and urban planning.

This scenario sees 15,000 hectares of new energy forests planted to 2020, with 36,000 hectares a year through the 2020s and 2030s, displacing 2 per cent of agriculture emissions through changed land use.

Officials say that their analysis shows that it is only just possible to reduce New Zealand's gross domestic carbon dioxide emissions rapidly enough.

"If it were desired to increase the certainty of achieving such an emissions pathway to 2050 then it would be urgent to put in place now policies which incentivise relevant investment by asset owners," the paper says.

More investigation

The assets likely to be most affected include boilers, power plants, forests, transport infrastructure and buildings, it says.

"If action were delayed, then accelerated asset turn-over rates, and higher costs, would be required to stay within a given emission budget for CO₂."

The paper calls for more investigation to be done, including the long-term cuts possible in the energy sector, and the impact of technological developments, especially in agriculture.

Last month, former Climate Change Ambassador Adrian Macey criticised officials for their secrecy over climate change planning.