



The Government asked the Productivity Commission to identify how New Zealand could transition to a low-emissions economy, while continuing to grow incomes and wellbeing. The inquiry investigates the challenges of, and identifies opportunities for, reducing New Zealand's emissions, in the context of an ambition to achieve net-zero emissions by 2050.

This *At a glance* brings together the important messages from the Commission's draft report on New Zealand's transition to a low-emissions inquiry. The Commission seeks your input – particularly on the draft findings, recommendations and questions – by **8 June 2018**.

New Zealand's role in the global climate challenge

New Zealand has among the highest per person greenhouse gas (GHG) emissions in the world. This is despite most of New Zealand's electricity coming from renewable sources. Major emissions sources in the New Zealand economy are agriculture and transport.

While per person emissions are large, New Zealand's emissions are very small as a share of the global total (less than 0.2%). But this does not justify inaction. Climate change is a classic case of the "tragedy of the commons", where individuals have incentives to maximise personal value to the detriment of the public interest. Collectively, small emitters account for around 30% of global emissions. Countries such as New Zealand do matter and a concerted effort by all is needed to solve this issue. By achieving a successful transition to a low-emissions economy, New Zealand strengthens its ability to influence other nations, including by sharing its technology and experience.

Pathways to a low-emissions economy

It is clear that the transition to a low-emissions economy will be a long journey through very uncertain terrain. Modelling undertaken for this inquiry suggests that New Zealand can make the transition at costs similar to those likely to be experienced by other developed countries. But, the sooner that emissions reductions begin, the less disruptive the transition will be.

Three key drivers will set New Zealand on a path to achieving its mitigation goals: replacing combustion of fossil fuels with electricity where feasible, reductions in emissions intensity in agriculture, and changes in land use in favour of afforestation and, to a smaller extent, horticulture. Forestry will play a vital part in New Zealand's ability to achieve large net emissions reductions to 2050, but it can only buy time for other, more permanent, mitigation technologies to emerge.

Policy change is needed to drive an effective transition

New Zealand has had climate mitigation policies in place for some time, such as the New Zealand Emissions Trading Scheme (NZ ETS). Yet these policies have not lowered emissions.

Without more ambitious policies that endure over the long haul, New Zealand will not successfully transition.

To help the private sector and civil society to plan and take long-term decisions with confidence, a stable and credible policy environment is needed. The Government must signal a strong commitment to the transition, be clear about its policy intent, and establish broad and enduring political support.

A stable and credible climate policy should be underpinned by:

- getting **emissions pricing** right, to send the right signals to motivate investment in low-emissions technologies and processes;
- harnessing the full potential of **innovation** and supporting **investment** in low-emissions activities and technologies;
- creating **laws and institutions** that endure over time and act as a commitment device for future Governments; and
- ensuring other **supportive regulations and policies** are in place (including to encourage an inclusive transition).

Getting emissions pricing right

An emissions price is the price an emitter pays for each unit of GHG they release to the atmosphere. Effective emissions pricing provides a strong incentive to reduce emissions at least cost and provides a clear and credible signal to investors contemplating long-term investments in new production assets that have different emissions consequences.

New Zealand should retain the NZ ETS rather than switch to a carbon tax. But the NZ ETS needs reform if it is to be effective. Specifically, higher emissions prices, comprehensive coverage across the economy, and greater clarity about the future supply of emission permits (NZUs) are needed. The inquiry's modelling suggests that New Zealand's emissions price will need to rise to at least \$75 a tonne of carbon dioxide equivalent, and possibly over \$200 a tonne, over the next three decades.

An emissions price that includes agriculture should be the main driver of land-use change. A significant increase in forestry, in the range of 1.3 and 2.8 million more hectares, mostly on land currently used for marginally profitable sheep and beef farming, will be needed. This rate of afforestation, while challenging, is comparable to the rate at which, over the last 30 years, sheep and beef farming converted to forestry, dairying, and other uses.

Stable and enduring laws and institutions

New Zealand has lacked clear and stable climate-change policies. This lack of clarity and political agreement about longer-term goals has weakened incentives for change and undermined confidence in existing policies. But governments also need some flexibility when making policy decisions, to allow for future uncertainties.

A long-term and quantified GHG mitigation target should be set in law, to clearly signal the direction of travel. Underneath this all-gases target, separate additional mitigation targets should distinguish between short- and long-lived GHGs because of their different effects on the atmosphere. A series of successive "emissions budgets" that translate long-term targets into clear, short-to-medium term mitigation targets are also needed. These will provide visible stepping stones towards the long-term goal. An independent expert body should be

created to provide advice to the Government on these emissions budgets and other matters, and to regularly assess New Zealand's progress towards its goals.

Harnessing the full potential of innovation and investment

New technologies to support the low-emissions transition will be necessary. In most cases, New Zealand will adopt technologies developed overseas. But in some areas, such as agriculture, New Zealand will need to be actively involved in developing solutions. Substantially more, and better targeted, funding for innovation and technology adoption that supports the low-emissions transition is critical. Bold action on climate change will require making the transition a high priority within the national innovation system.

Enough capital exists globally to support the transition to a low-emissions future. But the challenge is for it to be invested in low-emissions activities and technologies. Greater transparency about climate risk is needed for investors to be able to correctly assess investment opportunities and avoid stranded assets. The Commission recommends introducing mandatory climate-risk related financial disclosures.

Supportive regulation and policies

Stable policy and emissions pricing are needed to change behaviour and promote investment. But, on their own, they will not be enough to maximise the opportunities of the transition for all New Zealanders. A range of other, specific, policies will be required.

Transforming New Zealand's transport system

New Zealand's transport network is dominated by private road transport. Compared to other developed countries, vehicle ownership rates are high, public transport use is low, and the vehicle fleet is old with poor fuel economy.

Transport is one of the main sectors where deep emissions reductions are both necessary and possible given existing and emerging technology. Electric vehicles (EVs) offer a major mitigation opportunity, but a faster uptake is needed. The Government should encourage EVs and other low-emissions vehicles by introducing a "feebate" scheme (where vehicle importers either pay a fee, or receive a rebate, depending on the emissions intensity of the vehicle), providing funding support for EV infrastructure, and encouraging government agencies to procure low-emissions vehicles.

Regulating fossil-fuel vehicle imports will be required to avoid New Zealand becoming a dumping ground for old technology. Emissions standards for new and used imported vehicles will help to avoid this risk. The Government should also put emissions-reduction goals more centrally in government transport planning.

A low-emissions electricity system that keeps the lights on

New Zealand's low-emissions transition will rely on abundant and cheap renewable electricity. But there are trade-offs between cost, emissions, and security of supply in the electricity system. Given current technology, it could be very expensive to completely eliminate GHG emissions from electricity because of the need to have backup generation (currently supplied by fossil fuels) for those years when it does not rain enough to fill up the hydro lakes. Eliminating this backup generation entirely would likely raise electricity prices and discourage users of fossil fuels in other areas of the economy from switching to renewable electricity.

New technologies such as tidal power may emerge over time, while existing technologies such as wind power and battery storage are likely to become more cost-effective. But it is still uncertain what paths these technologies will take. The emissions price in the NZ ETS should drive investment in electricity generation, rather than the Government favouring particular technologies, or setting stringent targets for electricity-sector emissions.

Targeted interventions across the economy

While the main emissions mitigation opportunities are in agriculture and transport, the cumulative effect of numerous smaller emissions reductions across the economy will also be important. Many opportunities exist to achieve such change. For example, emissions from the waste sector account for 5% of New Zealand's total emissions. These emissions should be addressed through extending the coverage and rate of the waste disposal levy, and through the collection of better data on waste emissions and support to local councils to regulate waste.

Support for households facing significant transition costs

The transition to a low-emissions economy presents many opportunities, but also challenges, particularly for low-income households. Government policies could increase the costs of energy, food and transport, which may disproportionately affect these households and which can be offset through the tax and welfare system. Where emissions-reduction policies generate significant shocks (eg, the loss of a major employer) the response should be targeted toward re-training opportunities for those who will have the most difficulty gaining new employment.

Challenging but achievable

While the challenges of achieving a low-emissions economy are large, they are not beyond the will or ability of communities to respond. New Zealand can reach its low emissions targets if it has the right institutions and policy settings in place, and the journey is embarked upon without delay.

Read the full report ... and make a submission

Submissions on the draft report are invited by **8 June 2018**. Government will receive the final report by the end of August.

Read the full version of the draft report and make a submission at www.productivity.govt.nz/low-emissions/draftreport or call us on 04 903 5150.

The **New Zealand Productivity Commission** – an independent Crown Entity – conducts in-depth inquiries on topics selected by the Government, carries out productivity-related research, and promotes understanding of productivity issues.