Ministry for the Environment
Manatū Mō Te Taiao

December 2019

Fourth Biennial Report Snapshot

Overview

This snapshot provides an overview of the *Fourth Biennial Report*, which describes how New Zealand is meeting its international commitments under the United Nations Framework Convention on Climate Change (UNFCCC).

It describes New Zealand's progress towards achieving our emissions reduction targets and how we are supporting developing countries in their climate change work.

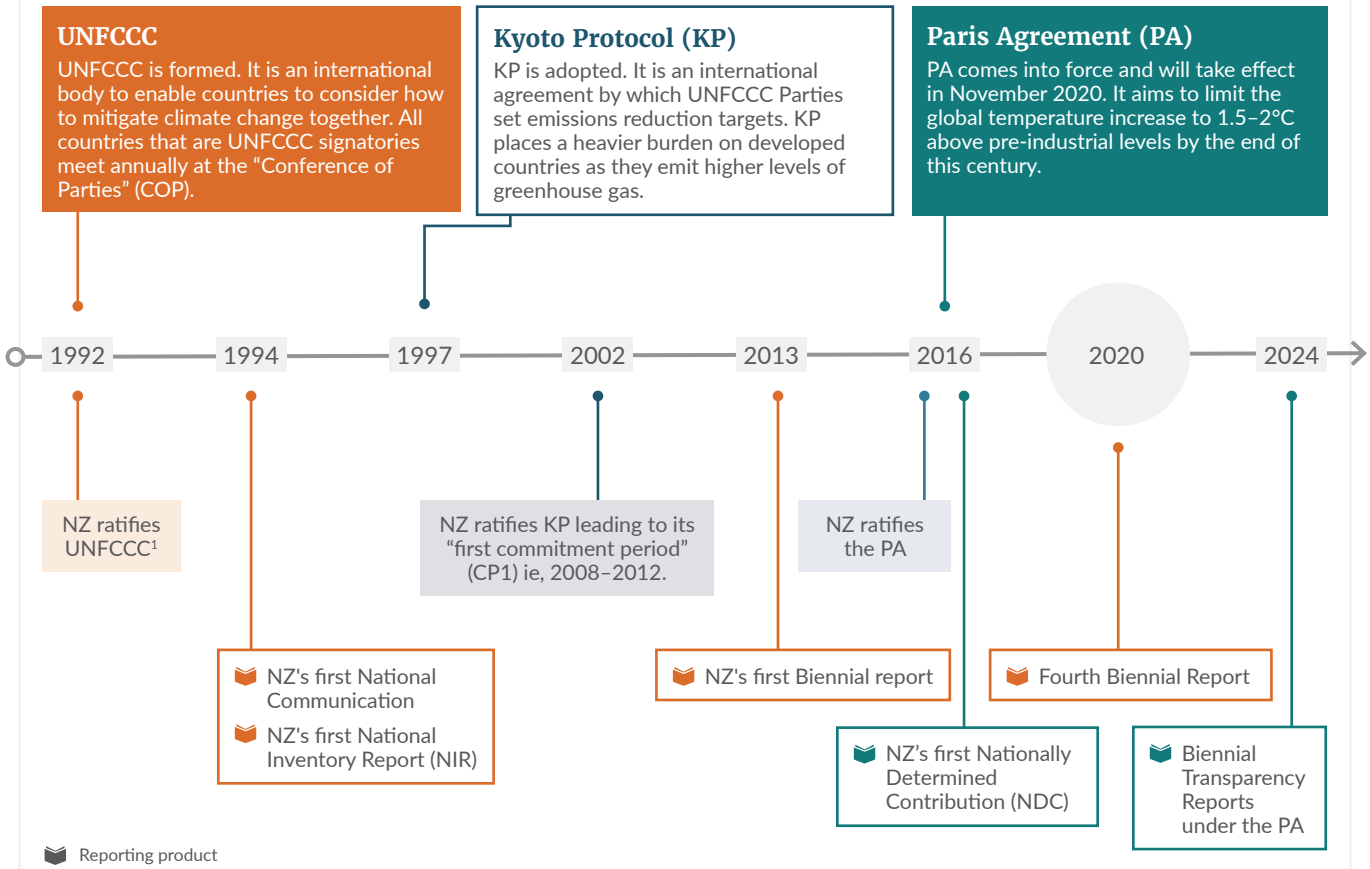
The report is produced every two years, with the Ministry for the Environment as the lead agency working with other agencies to compile the content.

The *Fourth Biennial Report* includes New Zealand's:

- circumstances that are relevant to our emissions profile
- past and projected greenhouse gas emissions
- actions on climate change, at home and overseas.

The full version of the *Fourth Biennial Report* is available on our website www.mfe.govt.nz/publications/climate-change/new-zealands-fourth-biennial-report-under-united-nations-framework

Figure 1: Roadmap to New Zealand's international climate change reporting



1 Ratification is a formal step that countries must take to become full participants and to ensure the deal takes effect.

Past and projected greenhouse gas emissions

New Zealand's national circumstances form our emissions profile

Gross greenhouse gas emissions

New Zealand must report on gross greenhouse gas emissions from the agriculture, energy, industrial processes and product use, and waste sectors (see figure 2). The energy sector includes emissions from both transport and energy generation.

In 2017, New Zealand's gross emissions were 80.9 million tonnes of carbon dioxide equivalent (Mt CO_2-e),[2] an increase of 23.1 per cent from 1990 levels (see figure 3). This increase is on the back of strong population growth and an increase in domestic production. Methane from the digestive systems of dairy cattle and carbon dioxide from road transport have contributed the most to this increase in our emissions.

Agriculture and energy sectors

New Zealand's emissions profile is dominated by the agriculture and energy sectors, which together form around 89 per cent of our gross greenhouse emissions. More than three-quarters of New Zealand's electricity generation (82 per cent in 2017) comes from renewable resources, mainly hydro generation.

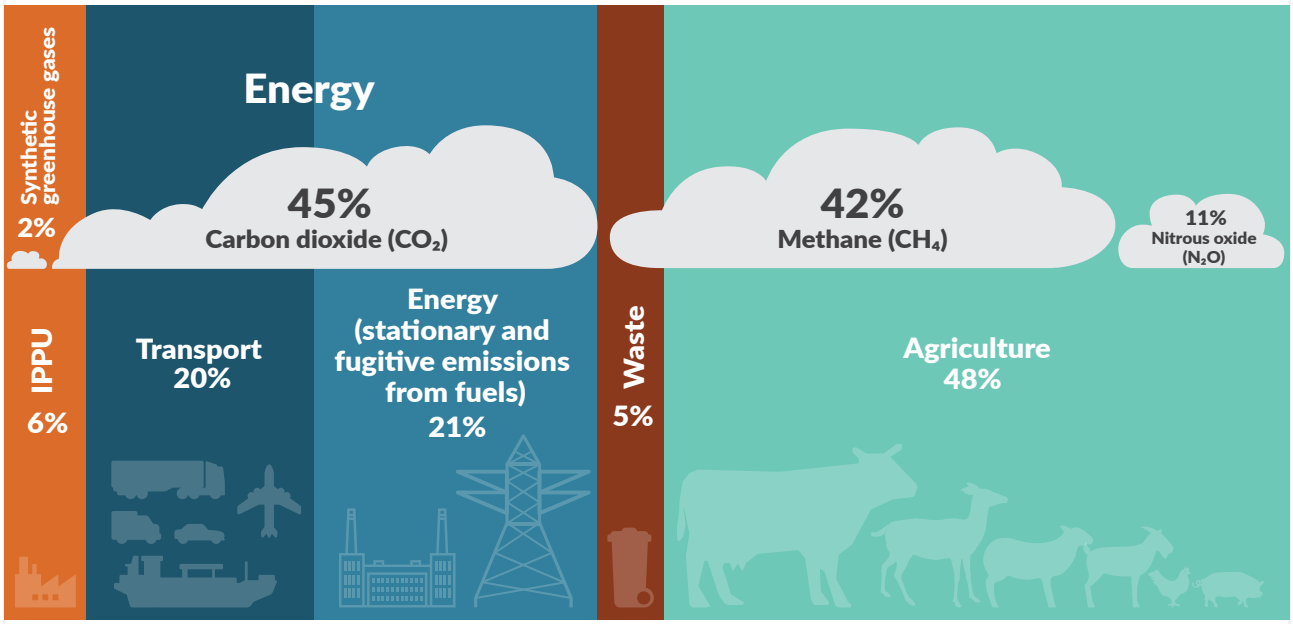
Our net emissions

Net emissions under the UNFCCC rules consist of gross emissions combined with emissions and removals from the land use, land-use change and forestry (LULUCF) sector. Forests remove greenhouse gas emissions from the atmosphere as the stem and roots of trees absorb carbon dioxide as they grow. Forests also emit carbon dioxide after being harvested, deforested or following natural disturbance, such as storm damage. **Net emissions were 56.9 Mt CO_2-e in 2017, with the LULUCF sector offsetting 29.6 per cent of New Zealand's gross emissions.**

Tokelau emissions now included

On 13 November 2017, New Zealand extended its ratification of the UNFCCC and the Paris Agreement. This resulted in emissions from Tokelau being included in New Zealand's greenhouse gas inventory for the first time. In 2017, emissions from Tokelau were 0.004 per cent of New Zealand's gross emissions (3 kt CO_2-e).

Figure 2: New Zealand's emissions profile in 2017

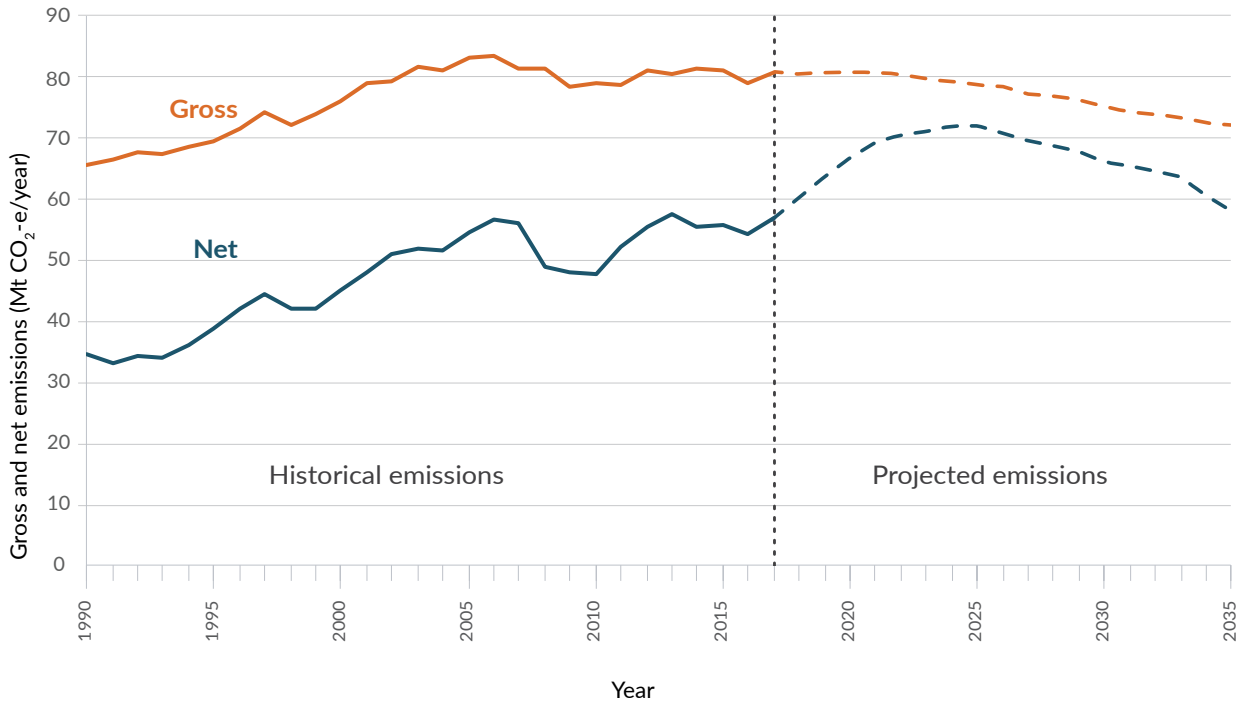


Notes:

> IPPU stands for Industrial Processes and Product Use.
> Energy sector includes emissions from transport, energy generation, energy consumption and fugitive emissions from fuels. Figure 2 shows energy emissions from transport separately.
> Tokelau's emissions are too small to be displayed.
> Percentages may not add up to 100 per cent as they are rounded to the nearest percent.

2 Carbon dioxide equivalent (CO_2-e) is a measure for describing how much global warming a given type and amount of greenhouse gas may cause, using the equivalent amount of carbon dioxide as the reference. It allows the different greenhouse gases to be reported consistently.

Figure 3: New Zealand's historical and projected gross and net emissions[3]



Projections show we need to do more to meet our targets

Projections of New Zealand's greenhouse gas (GHG) emissions are useful in showing the impact of government policies, long-term trends in emissions and our progress towards New Zealand's emissions reduction targets.

Based on current data and policies, New Zealand's gross emissions are projected to gradually decrease to 72.2 Mt CO_2-e annually by 2035 (figure 3). This is 9.9 per cent above 1990 levels or 10.8 per cent below 2017 levels.

The decreasing trend in gross emissions to 2035 is anticipated due to forecasts of:

- more land-use change from agriculture to forestry
- adoption of more sustainable farm management practices
- reduced energy use, combined with less carbon-intensive fuels used for energy production
- government policies and measures introduced to mitigate climate change.

Forestry a main driver of net emissions

New Zealand's net emissions are projected to increase to 72.0 Mt CO_2-e in 2025 before decreasing to 57.9 Mt CO_2-e in 2035 (figure 3).

Forest harvest rates are a significant driver of net emissions. Plantation forests established in the late 1980s and early 1990s will be harvested for timber during the 2020s, increasing net emissions. We expect this trend to reverse around 2025 as these harvested forests are replanted and new forests are established.

The impact of policies and measures

New Zealand's existing policies and measures are estimated to reduce net emissions by 6.4 Mt CO_2-e in 2020 and 21.7 Mt CO_2-e in 2035.

The combination of government forestry initiatives and New Zealand's Emissions Trading Scheme (NZ ETS) are projected to make an important contribution to increasing net removals in the future. Without these forestry-related policies and measures, net emissions would be 37 per cent higher over the 2018–2035 period.

While these estimates are based on the best data available, projections are inherently uncertain. Economic variables, such as oil prices and assumed carbon prices, have significant effects on projected emissions and removals. In addition, seasonal changes, especially variation in rainfall, can affect emissions from agriculture and electricity generation.

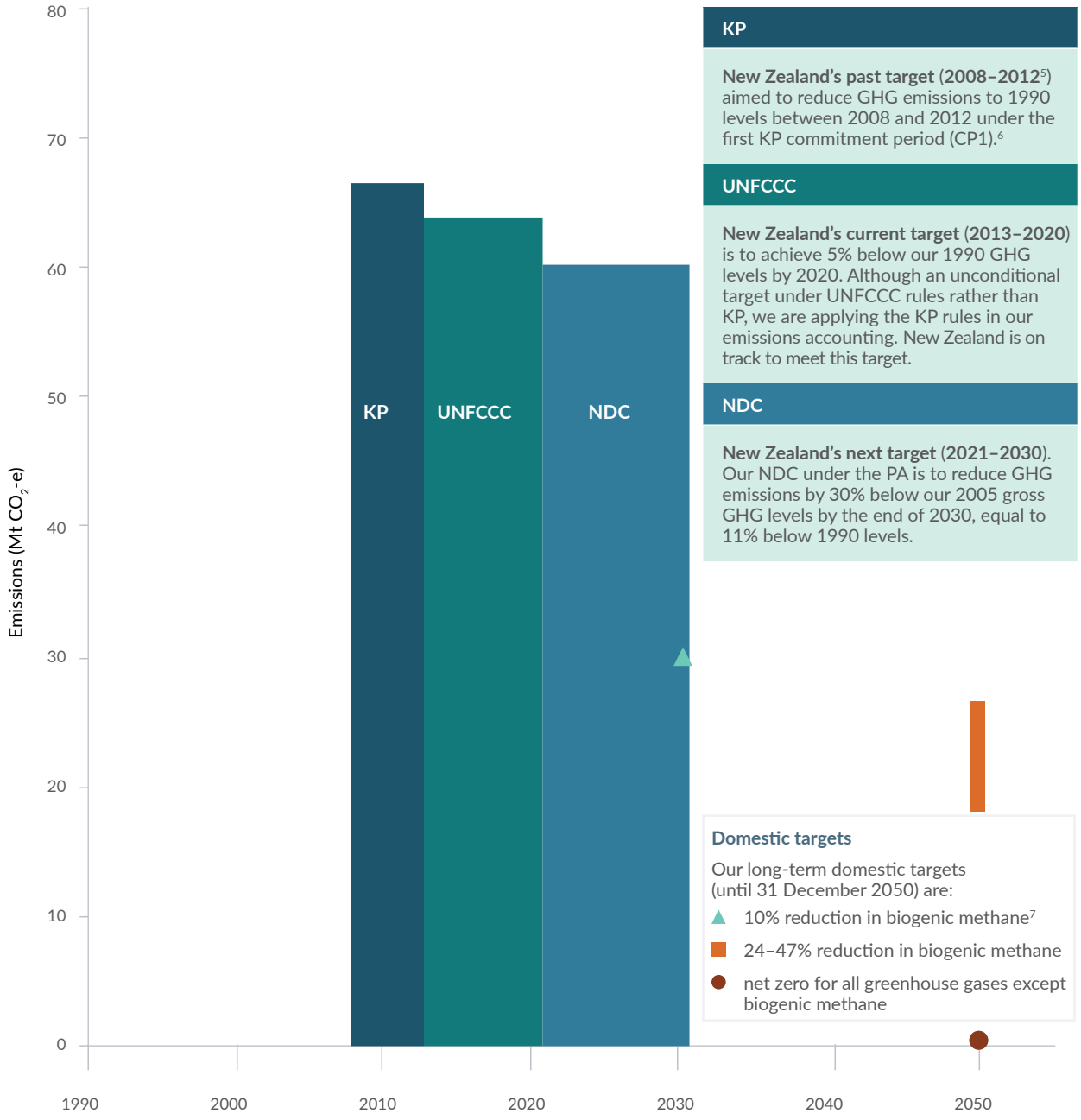
3 The projected emissions are based on our current data and policies (with existing measures (WEM) scenario). WEM encompasses currently implemented and adopted policies and measures. This scenario reflects the current state of legislation, also taking into account the stipulated strengthening of existing policies and measures (ie, any strengthening foreseen under current legislation).

New Zealand's emissions reduction targets

Global momentum from the Paris Agreement continues to shape New Zealand's climate change policies. We have ratified the Paris Agreement, committed to our Nationally Determined Contribution (NDC)[4] and set new reduction targets for greenhouse gas emissions. These targets will contribute to the global effort to limit the global average temperature increase to 1.5°C above pre-industrial levels.

The NDC under the Paris Agreement is one of four targets the Government has set for reducing New Zealand's greenhouse gas emissions (see figure 4). The other three are our past target (2012), current target (2020) and long-term target (2050).

Figure 4: New Zealand's emissions reduction targets



Note: New Zealand's international targets are multi-year budgets. The long-term domestic targets are point-year targets, however these targets will be achieved using a system of multi-year emissions budgets that are yet to be set.[8]

4 Before the negotiations in Paris, all countries put forward a reduction target known as a Nationally Determined Contribution (NDC).

5 Date range is always from 1 January of the mentioned year to 31 December of the mentioned year (eg, thus 1 Jan 2008 to 31 Dec 2012).

6 'True-up report' confirmed New Zealand met this target in 2016.

7 Biogenic methane is defined as the methane produced by the agriculture and waste sectors from biological sources.

8 In 2021, the Climate Change Commission will recommend emissions budgets for the periods 2022–2025, 2026–2030 and 2031–2035. The Government will then set these budgets by the end of 2021.

Figure 5: New Zealand's projected balance of emissions, removals and units over the 2013–2020 period

Our emissions budget approach[9]

New Zealand uses a multi-year emissions budget approach for setting and measuring progress towards its targets. This means progress is not measured by looking at emissions in a single year, but by comparing emissions in all years of each target period (2008–12, 2013–20 and 2021–30, see figure 4).

This budget approach was required by countries that took a first commitment period target under the Kyoto Protocol. New Zealand is using this approach for the 2020 and 2030 targets as well. New Zealand will also be establishing a system of emissions budgets to act as stepping stones towards our long-term domestic target.

How we will meet our future targets

New Zealand will meet its future targets and emissions budget by:

> reducing emissions domestically, including all sectors and all GHGs
> planting forests to absorb carbon dioxide, and using an accounting approach based on a long-term average carbon stock for plantation forests
> offsetting our emissions by buying emissions reductions from overseas
> using market mechanisms and cooperative approaches while ensuring environmental integrity and transparency, and avoiding double counting.

New Zealand's 2020 net position report

Progress towards the 2020 target is published in New Zealand's Net Position Report. The latest 2020 report shows New Zealand is projected to meet its target of reducing emissions to 5 per cent below 1990 levels by using 108 million units from forestry and 27.7 million surplus units carried over from the first commitment period of the Kyoto Protocol (2008–2012).

The 2020 net position in figure 5 above shows:

> New Zealand's gross emissions from 2013 to 2020 are projected to be 645.4 Mt CO_2-e
> New Zealand will hold units equal to the gross emissions for the period. This consists of:
  - a carbon budget of 509.8 million units
  - carbon dioxide removals from forestry and land-use activities included in the Kyoto Protocol corresponding to 108.0 million units
  - using 27.7 million surplus units from the first commitment period (2008–2012).

9 Quantity of emissions New Zealand is allowed to emit to reduce our emissions and meet a target.

Our 2050 target and Climate Change Response (Zero Carbon) Amendment Act

On 14 November 2019, the Climate Change Response (Zero Carbon) Amendment Act came into force. The Act replaced New Zealand's previous 2050 target, set in 2011, with a new 2050 target. The Act establishes:

> new GHG emissions reduction targets
> a framework for a series of emissions budgets to act as stepping stones towards the long-term target, and plans and policies to achieve them
> regular measures to plan for the impacts of climate change in a coordinated way, including a national climate change risk assessment and a national adaptation plan
> a new, independent Climate Change Commission to provide expert advice and monitoring to help successive governments stay on track to meeting long-term goals.

New Zealand's action on climate change

New Zealand is working towards transitioning to a low-emissions economy while adapting to the impacts of climate change. We are taking action, both at home and abroad, to reduce greenhouse gas emissions to meet international climate change obligations. Furthermore, there has been a considerable increase in public interest in action on climate change.

What we are doing at home

New Zealand has three main responses to climate change:

1. Durable long-term institutional arrangements to set a long-term direction and keep us on track towards targets, including support for innovation and investment.
2. Effective emissions pricing.
3. Policies and regulations to support emissions reductions and ensure the transition is just and inclusive.

New Zealand climate change legislation

Several government agencies implement climate change policy in New Zealand, with the Ministry for the Environment being the main advisor on climate change. The following legislation relates to climate change in New Zealand.

> The Climate Change Response Act 2002 is the main climate change legislation in New Zealand.
> The Climate Change Response (Zero Carbon) Amendment Act came into force on 14 November 2019. It is similar to the UK's Climate Change Act.
> The Climate Change Response (Emissions Trading Reform) Amendment Bill was introduced in 2019.
> The Resource Management Act, which governs the use of New Zealand's natural resources, has been reviewed and amendments will likely include new climate change considerations.
> Te Tiriti o Waitangi/The Treaty of Waitangi, New Zealand's founding document, has significant implications for climate change policy given its principles of partnership, participation and protection between Māori and the Crown.

Actions to mitigate the effects of climate change

Cross-sector policy and initiatives

> **The New Zealand Emissions Trading Scheme is the Government's principal policy tool for reducing emissions. It aims to reduce emissions by creating a market through which emitters pay for emissions covered by the scheme.**
> The Productivity Commission has produced an extensive report on the path to a low-emissions economy with 77 recommendations. The Government has agreed with, or agreed to investigate, most of these findings and published a response to the report in 2019.
> We have established a transition team within our Ministry to help all government agencies collaborate on climate change policy.
> New Zealand's Green Investment Finance, a Crown-owned investment vehicle, has been set up to invest in business opportunities that accelerate reductions in domestic greenhouse gas emissions.

Agriculture

> **Climate change policy for agriculture in New Zealand is largely based on research, industry collaboration, innovation and education.**
> Because New Zealand's economy relies heavily on agricultural exports and agriculture makes up almost half of total greenhouse gas emissions, our efforts focus mainly on reducing emissions in agriculture.
> The One Billion Trees Programme is a new initiative that directs grants to landowners – particularly farmers – to plant trees on their land.
> In late 2019, the Government announced it would work with the agriculture sector to develop effective pricing for agricultural emissions by 2025, with the independent Climate Change Commission to review progress in 2022.
> Since the *Third Biennial Report* (2017), the Biological Emissions Reference Group has published its final report.

Forestry

- **The largest new development in forestry policy is the One Billion Trees Programme, which has the goal of planting one billion trees by 2028.**
- Another key policy development for forestry is the introduction of the Climate Change Response (Emissions Trading Reform) Amendment Bill in late 2019. It aims to improve the NZ ETS for forestry participants.
- The Erosion Control Funding Programme and the Sustainable Land Management Hill Country Erosion Programme encourage planting trees to prevent erosion.
- Since the *Third Biennial Report* (2017), the Climate Change Forestry Reference Group has completed its research work and published its final report.

Energy

- **The Government has a long-term aspirational goal of 100 per cent renewable electricity by 2035 in a normal hydrological year.[10] The Interim Climate Change Committee published a report on this topic in 2019, and to accompany its release, the Government announced work to develop policies to help reach this goal.**
- New government procurement rules came into force in 2019 requiring state sector agencies to reduce emissions.
- The Government has stopped issuing new permits for offshore oil and gas exploration.
- Information programmes help consumers use energy better by providing accessible advice.
- The Insulation and Heating Grants Programme distributes funding to provide warmer, drier homes.
- The Efficient Products Programme aims to help New Zealand households and businesses buy and use products that use less energy and save money.
- The Productive and Low-emissions Business Programme promotes efficient energy management in large businesses.

Transport

- **The NZ ETS is the main tool for reducing greenhouse gas emissions from transport.**
- There are a number of other climate change policies for the sector which is responsible for over 18 per cent of New Zealand's total greenhouse gas emissions. For example, the Low-emissions Vehicle Package is a proposed policy aiming to make electric, hybrid and fuel-efficient vehicles more affordable.

Waste

- **The Waste Minimisation Act 2008 encourages reductions in how much waste New Zealand generates and disposes of by placing a levy on all waste going to disposal facilities.**
- Fifty per cent of this levy is allocated to waste minimisation projects through the Waste Minimisation Fund.
- The Ministry also administers a National Environmental Standard for Air Quality (which encompasses landfill methane), which is implemented by local and regional councils. The standard requires large landfill sites to collect and destroy methane emissions.

Response measures to economic and social impacts

- Just Transition is the Government's work programme to ensure a fair and equitable transition to a low-emissions economy. Held in 2019, the first Just Transition Summit aimed to start a national conversation about the best way to transition to a low-emissions economy.
- Emissions-intensive, trade-exposed industries can be vulnerable to emissions pricing so they receive free allocation of units in the NZ ETS to prevent carbon leakage.[11]
- Communities that may be heavily affected by climate change measures, such as lower-income households and Māori and rural communities, are being identified.
- All legislation goes through regulatory impact assessment and is scrutinised by Parliament, which gives opportunities to raise concerns about the impacts of proposed measures.

What we are doing overseas

New Zealand is committed to supporting climate change action in developing countries by providing financial, technology transfer and capacity-building support. Our support has a geographical emphasis on the Pacific region and is focused on renewable energy, agriculture, water and sanitation, and disaster prevention and preparedness.

New Zealand supports climate action in developing countries through:

- Bilateral development assistance.
- Pacific regional organisations with a strategic focus on climate change.
- Multilateral organisations and programmes with a strategic focus on climate change (including the UNFCCC, World Bank, Asian Development Bank and the United Nations Development Programme).

10 For the purposes of the report, a 'normal hydrological year' was the average of weather data over 87 years.

11 Carbon leakage is when the price of emissions results in economic activity moving offshore, and an emissions decrease in New Zealand being offset by an increase elsewhere.

What we are doing overseas...

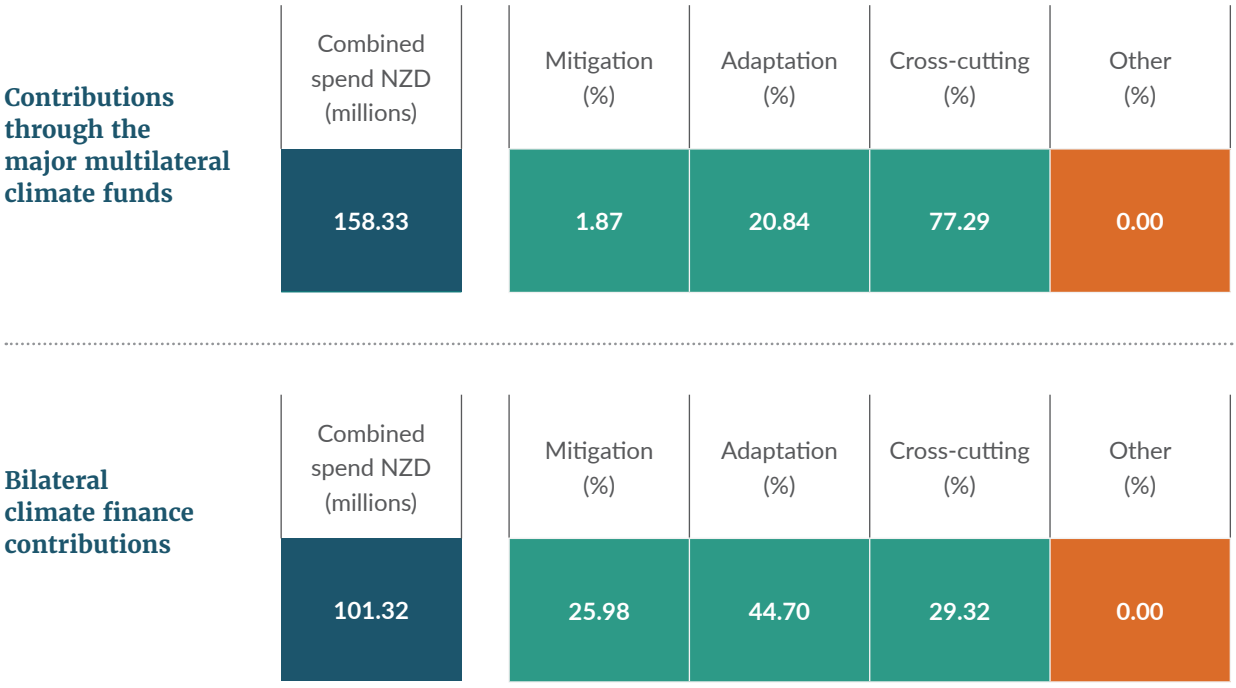
New Zealand's financial, technology transfer and capacity-building support to developing countries

New Zealand's capacity-building activities target areas where it has expertise such as agriculture, renewable energy generation and building resilience to disaster risk. We also provide support where countries have identified specific needs and capacity gaps.

We have continued to support technology transfer, with a focus on renewable energy and agriculture.

- Since the *Third Biennial Report*, New Zealand has contributed about $259.64 million in climate-related support for developing countries, an increase of about $20.56 million.
- In 2018, we increased our climate-related financial commitment from $200 million (for 2015–2019) to $300 million for the period 2019–2022.
- At least two-thirds of our climate-related support will benefit the Pacific, with a focus on adaptation.

Figure 6: New Zealand's international climate funding



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- Full reports are available on the Ministry for the Environment's website at: **www.mfe.govt.nz/climate-change/climate-change-and-government/international-climate-change-commitments**

New Zealand Government

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