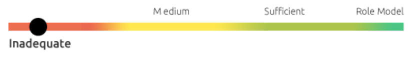
CLIMATE ACTION TRACKER

New Zealand

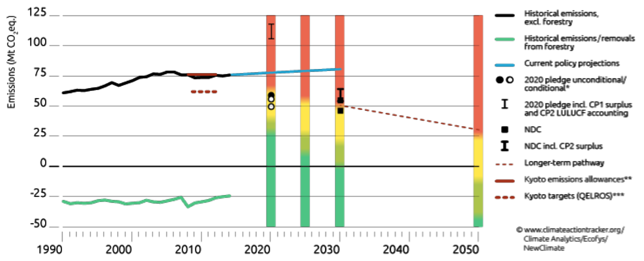
History: 2017 2016 2015 2013 2011

Page last updated: 2nd November 2016

Rating



Basic | + Pledges | + Kyoto accounting



Note: Hover over the coloured bars for a pop-up with the fair emissions range per effort sharing category. More information here.

* Emissions level in 2020 resulting from conditional/unconditional pledge. This differs from the Kyoto pathways as it depicts final 2020 levels whereas the Kyoto emissions allowances consider the average level of emissions over the second commitment period (2013-2020).

** Incl. LULUCF credits and debits, incl. LULUCF base year emissions accounting rules and application of historical threshold on emissions allowances in 2020 under the Doha decision.

***Excl. LULUCF credits and debits, excl. LULUCF base year emissions accounting rules and without application of historical threshold on emissions allowances in 2020 under the Doha decision.

Assessment

Emissions from all sectors (except transport) are projected to continue growing at least until 2030. Implemented policies have an impact of less than 10% in emissions reductions compared to the 'without measures' national scenario, withexpected emissions levels being far from New Zealand's emissions targets for both 2020 and 2030. The NZ Emissions Trading System has not significantly influenced domestic emissions or business decisions. However, the government intends to make use of its "creative accounting" rules for the forestry sector, which if applicable, would result in it artificially achieving its 2020 reduction targets without any improvement in mitigation policies or real reductions in emissions.

New Zealand ratified the Paris Agreement on 4 October 2016. We rate its Nationally Determined Contribution (NDC) target ofa 30% reduction from 2005 levels by 2030 as "inadequate," meaning that it is not in line with any interpretations of a "fair" approach to reach a below 2°C pathway, let alone with the Paris Agreement's stronger 1.5°C limit.

In its INDC, the 30% reduction below 2005 levels was previously stated by the New Zealand Government to translate into an 11% reduction below 1990 levels (a reference that has disappeared from its NDC). The CAT estimated in last year's update report that New Zealand's INDC target to reduce emissions 11% below 1990 could translate into an increase in GHG emissions, excluding LULUCF, of up to 11% above 1990 levels by 2030, given its preferred approaches to account for LULUCF sector emissions. In its NDC, New Zealand states that its preferred approach to forestry and other land use accounting will be fully described in its first communication under the Paris Agreement; until then, uncertainty remains.

Under current policies, New Zealand's emissions, excluding LULUCF, are expected to reach 78 $MtCO_2e$ in 2020 and 81 $MtCO_2e$ in 2030, representing, respectively, a 27% and 32% increase above 1990 levels. The LULUCF sector has traditionally been a significant carbon sink of around 30 $MtCO_2e$, which is projected to decrease significantly to around 11 $MtCO_2e$ in 2030 (in AR4 GWP) due to increased deforestation and forest aging. This means that net emissions (including LULUCF) in 2020 and 2030 are expected to be 65% and 114% above 1990 levels, respectively.

Expected emissions levels are far from the government's emissions targets for both 2020 and 2030, which means New Zealand will need to stop relying on the use of the international market mechanism to comply with its international commitment and instead significantly strengthen its current policies and implement new mitigation measures. To be on track for its long-term target, which we also rate "inadequate," New Zealand's emissions would need to peak and start declining at much higher rates of reduction post-2030.

Pledge description

Paris Agreement targets

New Zealand ratified the Paris Agreement on 4 October 2016; its NDC contains a target ofa 30% reduction from 2005 levels by 2030. New Zealand intends to use international market mechanisms, cooperative approaches and carbon markets to meet its target.

New Zealand's accounting of LULUCF remains unclear; New Zealand plans to fully describe its approach in its first communication under the Paris Agreement. Further uncertainty has been added with the deletion of the reference that New Zealand's 30% reduction would be equivalent to a reduction of 11% from 1990 levels. We therefore show a range of calculating the target, excluding LULUCF, in the base year, as well as a net-net approach.

We further analysed the implications of New Zealand seeking to continue to apply a Kyoto-type accounting system, despite having not signed up to the second commitment period (CP2), and to carry over surplus units from CP2 to the post-2020 period, even though their ability to do so in the PA has not been verified. For a more detailed description of the methodology and assumptions used to estimate the impacts of a Kyoto-type accounting system for New Zealand's INDC target refer to our last **country report**.

Kyoto Protocol (KP)	
Member of KP CP1 (2008–2012)	yes
Member of KP CP2 (2013–2020)	no
KP CP1 target (below base year)	0% below 1990
Copenhagen pledge	
2020 target	Unconditional: 5% below 1990 by 2020 [74-94% above 1990 by 2020 incl. LULUCF accounting rules Conditional: 10%–20% below 1990 by 2020
Conditions	a) Global agreement sets the world on a pathway to 2 °C, b) all parties making comparable or adequate efforts to New Zealand, c) an effective set of rules for LULUCF and d) full recourse to a broad and efficient international carbon market
Paris Agreement target	
Ratified	Yes
2030 target	30% below 2005 by 2030 [11-24% below 1990 by 2030 excl. LULUCF]
Coverage	economy-wide, incl. LULUCF
LULUCF	Kyoto Protocol accounting approaches
Long term goal(s)	
Long-term goal(s)	50% below 1990 by 2050

2020 Pledge and Kyoto target

New Zealand's Kyoto Protocol target for the first commitment period (CP1) (2008–2012) was to return its GHG emissions excl. LULUCF to 1990 levels (QELRO of 100% of 1990 emissions).

Under the Kyoto Protocol accounting rules applicable to New Zealand in CP1, certain land-use change and forestry activities provided credits that were added to allowed GHG emissions, excl. LULUCF, during this commitment period. In CP1, these activities resulted in extra emission allowances for New Zealand of, on average, 14 $MtCO_2e$ per year (equivalent to about 23% of base year emissions in 1990). As a consequence of its large volume of LULUCF credits, New Zealand had a substantial surplus of unused emission units at the end of CP1. As explained below, New Zealand proposes to use these surplus emission allowances from CP1, which are derived, in part from Kyoto LULUCF credits and acquired emission units from other countries, to meet its 2020 reduction target under the Convention.

In 2013 New Zealand put forward an unconditional pledge to reduce GHG emissions excluding LULUCF by 5% below 1990 levels by 2020. This pledge is complemented by an earlier conditional pledge from 2009 to reduce emissions 10–20% below 1990 levels by 2020 (Government of New Zealand, 2013). The government provided further details, including its plans to apply Kyoto-type accounting rules governing the second commitment period (2013–2020).

New Zealand's unusual decision to adhere to the Kyoto rules and subsequently ratifying the Doha amendments without signing up to the CP2 raises a number of legal issues, as the Protocol provides certain benefits only to Parties that have emission reduction commitments for CP2.[1] If New Zealand were able to apply its preferred accounting rules, and use these units to offset its fossil fuel and industrial emissions, we calculate that its nominal 5% reduction by 2020 from 1990 levels pledge could, in reality, enable an increase in GHG emissions excluding LULUCF of 74–94% above 1990 levels by 2020.

Long-term goal

In 2011, the New Zealand Government announced its long-term target: a 50% reduction in GHG emissions from 1990 levels by 2050. The Government has stated that "[t]he 2050 target is based on New Zealand's net GHG emissions and will take into account any removals or emissions arising from afforestation or deforestation since 1990 consistent with the Kyoto Protocol under the United Nations Convention Framework rules on climate change"(Government of New Zealand, 2011). The INDC text reiterates New Zealand's intent to meet this target.

Footnotes

[1] The Kyoto rules New Zealand seeks to apply, broadly relate to: (i) The carry over of surplus emission units and allowances from the first commitment period; (ii) The ability to generate LULUCF credits during the CP2 period; (iii) The ability to purchase and sell Kyoto emission units from other Kyoto Parties during CP2; and (iv) Provisions relating to the carryover of any surplus from earlier commitment periods to the post-2020 period.

Fair share

We rate New Zealand's 2020, 2030 and long-term emissions targets as "inadequate" under all interpretations of a "fair" approach to hold warming below 2°C, let alone let alone with the Paris Agreement's stronger 1.5°C limit. In order to be rated "sufficient," these commitments should be substantially strengthened. This means the emissions levels resulting from the targets exceed the acceptable emissions level for New Zealand in all effort-sharing proposals evaluated by the CAT. For New Zealand, effort-sharing proposals based on capability require less reduction in emissions levels than proposals that focus on equal cumulative/equal per capita emissions.

Current policy projections

According to the most recent national emissions projections, with currently implemented policies, total national GHG emissions excluding LULUCF are projected to reach 78 $MtCO_2e$ in 2020 and 81 $MtCO_2e$ in 2030. This represents an increase in emissions from 1990 levels of 27% in 2020 and 32% in 2030, which is equivalent to an emissions reduction of less than 10% compared to the 'without measures' or "Business as Usual" national scenario and thus highly insufficient to meet New Zealand's 2030 target (Ministry for the Environment, 2015). Emissions from all sectors (except transport) are projected to continue growing until 2030. Additionally, the LULUCF sector, which historically has represented a big carbon sink, will see a progressive reduction (from -29 Mt CO_2e in 1990 to approximately -11 Mt CO_2e in 2030) with a consequent upward tendency of the net emissions in the future (reaching 65% and 114% above 1990 in 2020 and 2030, respectively).

New Zealand's main instrument to reduce greenhouse gas emissions is an Emissions Trading Scheme (NZ-ETS) (Ministry for the Environment, 2013b). Forestry was the first sector to enter the NZ-ETS in 2008, followed by liquid fossil fuels, stationary energy and industrial processes in 2010, and waste and synthetic greenhouse gas sectors in 2013. The present Government weakened the ETS in 2009, soon after being elected. The agriculture sector, responsible for around 50% of New Zealand's emissions, is exempted from the NZ-ETS. There is also no fixed cap on total emissions (and no stated plans to do so), which implies that there is no restriction on the supply of emissions units, and hence no strong enough price to constrain the overall level of emissions. These weaknesses have resulted in sustained criticism to the NZ-ETS for lacking ambition and for failing to provide credible incentives to reduce emissions (Bailey, Håkon, & Inderberg, 2016) (Richter & Chambers, 2014).

According to the last government evaluation of the NZ-ETS, its mitigation impact has been limited mainly because of the low carbon price observed in recent years, which has not significantly influenced domestic emissions or business decisions (New Zealand Government, 2016c). Since June 2015, the NZ-ETS transitioned into a domestic-only scheme, with only national units now eligible to meet surrender obligations. This change has resulted in a slow but steady increase of the carbon price in recent months (New Zealand Government, 2016c). Additional measures to strengthen the NZ-ETS in the future, including the end of the transitional phase arrangement of one unit for two emissions between 2017 and 2019 (New Zealand Government, 2016b), have been proposed in the framework of the 2015/16 NZ-ETS review (New Zealand Government, 2016a).

Apart from its ETS, other climate policies are small in scale and potential mitigation potential, and include programmes to improve energy and fuel efficiency (although some of these have been scaled back in recent years); investment in public and active transport; funding to encourage and support the planting of new forests, and investment in research, technology development. There is a domestic target to increase renewable electricity to 90 per cent of total generation by 2025 (Ministry for the Environment, 2015). In 2015, renewable sources made up 80.8% of electricity generation, a level that has been high in New Zealand for decades, due to its large share of hydropower built in the 1970's, and extensive geothermal resources. However, we can find few policies in place that would support this increased renewable energy target. In some areas, companies are now imposing an extra charge on new solar power users, and there are at least two proposed gas-fired power stations in various stages of the consent process (Frykberg, 2016).

Expected emissions levels are far from the government's emissions targets for both 2020 and 2030, which means New Zealand will need to stop relying on the use of international market mechanisms to comply with its international commitment and instead significantly strengthen its current policies and implement new mitigation measures. .

To be on track for its long-term target of a 50% reduction of emissions below 1990 levels, New Zealand's emissions would need to peak and start declining at much higher rates of reduction post-2030. A first step in this direction could be the strengthening of the ETS by measures like the full inclusion of the agriculture sector and the removal of the ceiling price (Bailey et al., 2016).

Assumptions

Pledge

Targets for 2030 and 2050 were calculated from the most recent national inventory data published in the second biennial report submitted to the UNFCCC. The target for 2020 is calculated using the reference level submitted by the party under the Kyoto Protocol.

We note that our projection methods do not take into consideration the effects of forest maturation on LULUCF emissions, and therefore we currently consider our estimate to be an upper bound. New Zealand supports proposals to remove emissions from natural disturbances and to count removals from harvested wood products, which have not been accounted for here. This could lead to higher credits (or lower debits).

We calculated New Zealand's LULUCF accounting quantities in 2020 for afforestation, reforestation and deforestation using the current Kyoto rules and for forest management using a net-net approach with a projected reference level for 2013–2020 (New Zealand Government, 2009a). If calculations are performed using New Zealand's own projections for Afforestation/Reforestation and Forest Management activities (New Zealand Government, 2009b), the country would gain 10 $MtCO_2e$ LULUCF debits per year. However, the government projections date from 2009 and are not consistent with subsequently reported historical emissions for 2008–2012. We therefore also perform calculations based on our own projections (using historical averages) which result in 17 $MtCO_2e$ credits a year. Because our estimates are more consistent with historical data, we consider that our estimates—and hence the 17 $MtCO_2e$ credits a year—may be more likely estimates. For the 2030 target, we have estimated credits and debits of LULUCF using only the Government's projections and applying a Kyoto type accounting system. This would lead to large debits in the LULUCF sectors. These estimates are, however, associated with very high uncertainty.

Current policy projections

The current policy projections are based on the "with measures" scenario of the 2nd biennial report of New Zealand. The 'with measures' scenario includes the effects of key quantifiable policies and measures currently implemented. Specifically, it includes the New Zealand Emissions Trading Scheme, EECA Efficient Products Programme, EECA ENERGYWISE Homes, EECA Business Programmes, Vehicle Fuel Economy Labelling Scheme, Heavy Vehicle Fuel Efficiency Programme, Fuel efficient tyres programme, Afforestation Grant Scheme, Hill Country Erosion Programme, East Coast Forestry Project, Permanent Forest Sink Initiative, National Environmental Standards for Air Quality and the Waste Minimisation Act.

The values provided in the 2nd biennial report are reported in AR4. For the purposes of this analysis growth rates were applied onto the historical CRF2016, that is converted from AR4 into SAR by our scientific collaborator, the Potsdam Institute for Climate Impact Research (PIK).

IPCC AR4 Global Warming Potentials (GWPs)

Until last year, Annex I emissions inventory reporting has used the global warming potentials (GWPs) of the IPCC's second assessment report (SAR). Most INDCs, including New Zealand's, are based on the more up to date GWPs of the fourth assessment report (AR4). Estimates of the GWPs of methane, nitrous oxide, and many fluorinated gases changed significantly between the two reports that affect the absolute values in accounting and target calculations. Due to the large contribution of emissions from the agriculture sector, a high proportion of New Zealand's emissions are in the form of methane and nitrous oxide. Under AR4 GWPs, CH_4 and N_2O contributed 43% and 11% respectively of New Zealand's total Annex A GHG emissions in 2005.

If New Zealand's INDC 2030 reduction target is calculated against their 2005 emissions using the more up to date (AR4) GWPs it would be 59.2 $MtCO_2e$, which is 4.5 $MtCO_2e$ higher than a target calculated using second assessment report GWPs. The effort-sharing calculations are based on the older, second assessment report GWPs. The change in GWP's does not affect the percent reduction targets.

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