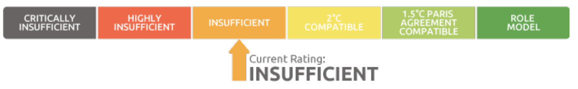
CLIMATE ACTION TRACKER

History: 2017 2016 2015 2013 2011

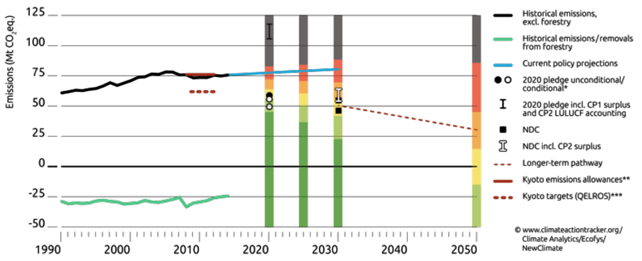
New Zealand

Page last updated: 6th November 2017

Rating



Basic Intermediate Complex



Assessment

New Zealand's climate policies are set to undergo an overhaul after the recent election of a new Government, which has announced a series of policies that look set to take New Zealand onto a new level of climate action. However, we cannot quantify these policies in detail in this update.

On the face of it, New Zealand, under the policies of the recently-departed Government, looks good on the international stage, as around 80% of its electricity is supplied by renewable sources. However, while New Zealand has a goal to increase that to 90% renewable energy generation by 2025, we can find few policies that would support this.

Greenhouse gas emissions from all sectors (except transport) are projected to continue growing at least until 2030, falling far short of New Zealand's emissions targets for both 2020 and 2030. Implemented policies have an impact of less than 10% in emissions reductions compared to the 'without measures' national scenario in the period 2020-2030.

The NZ Emissions Trading System (NZ-ETS) currently provides little incentive to drive significant emissions reductions, but there is potential to change this should the government design and implement proposed reforms effectively. New Zealand has the seventh highest energy intensity of IEA member countries. There have been no improvements to this indicator since 2011, and the government has now scrapped its target to reduce energy intensity by 1.3% a year.

We rate New Zealand's Nationally Determined Contribution (NDC) target ofa 30% reduction from 2005 levels by 2030 as "Insufficient," meaning that it is not consistent with holding warming to below 2°C, let alone limiting it to 1.5°C as required under the Paris Agreement, and is instead consistent with warming between 2°C and 3°C.

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 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. However, the New Zealand government intends to make use of its "creative accounting" rules for the forestry sector to achieve its 2020 target. 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. We therefore show a range for the NDC target, including a scenario where New Zealand carries over surplus units from the second commitment period of the Kyoto Protocol (CP2 – to which New Zealand is not a signatory) to the post-2020 period.

New Zealand should significantly strengthen its current policies and implement new mitigation measures to reach its 2020 and 2030 emissions reduction targets. To be on track for its long-term target, New Zealand's emissions would need to peak and start declining at much higher rates of reduction post-2030. Reforms to the current NZ-ETS—in particular including the agricultural sector, auctioning units to align with the emissions reductions target and removing the price ceiling—would be a positive first step towards providing incentives to achieve emissions reductions (Bailey, Håkon, & Inderberg, 2016).

On 26 October 2017, New Zealand's new coalition Government was officially sworn in. While it is too early to quantify its new policies, it is clear Prime Minister Jacinda Ardern's government is preparing to introduce a much-needed, stronger climate change regime, aiming for a "Net Zero Economy" by 2050, and 100% renewable electricity by 2035. Under agreements with its coalition partners, the Government plans to set up an independent Climate Commission, enact a Zero Carbon Act, strengthen the ETS (possibly including agricultural emissions that make up half of the country's GHG emissions), build regional rail systems, cancel roadbuilding projects, plant a billion trees, and start a NZD$100 million Green Investment Fund to stimulate investment in low carbon industries (House of Representatives of New Zealand, 2017).

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 Government, 2016c). New Zealand intends to use international market mechanisms, cooperative approaches and carbon markets to meet its target.

New Zealand's LULUCF accounting 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 in the NDC of the reference that New Zealand's 30% reduction would be equivalent to a reduction of 11% from 1990 levels, which was originally included the INDC (New Zealand Government, 2015). 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 nor prohibited. 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 NDC target see our last country report.

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.

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

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 NDC 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 NDC emissions targets as "Insufficient." The "Insufficient" rating indicates that New Zealand's climate commitments are not consistent with holding warming to below 2°C, let alone limiting it to 1.5°C as required under the Paris Agreement, and are instead consistent with warming between 2°C and 3°C. If all countries were to follow New Zealand's approach, warming would reach over 2°C and up to 3°C. This means New Zealand's climate commitments are at the least stringent end of what would be a fair share of global effort, and is not consistent with the Paris Agreement's 1.5?C limit, unless other countries make much deeper reductions and comparably greater effort.

The CAT ratings are based on climate commitments in (I)NDCs. If the CAT were to rate New Zealand's projected emissions levels in 2017 under current policies, we would rate New Zealand "Highly Insufficient," indicating that New Zealand's current policies are not consistent with holding warming to below 2°C, let alone limiting it to 1.5°C as required under the Paris Agreement, and are instead consistent with warming between 3°C and 4°C: if all countries were to follow New Zealand's approach, warming could reach over 3°C and up to 4°C. This means New Zealand's current policies are not in line with any interpretation of a "fair" approach to the former 2°C goal, let alone the Paris Agreement's 1.5°C limit.

For further information about the risks and impacts associated with the temperature levels of each of the categories **click here**.

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 MtCO2e in 2020 and 81 MtCO2e 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 CO2e in 1990 to approximately -11 Mt CO2e 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 NZ-ETS was weakened in 2009 after a change in Government. The agriculture sector, responsible for around 50% of New Zealand's emissions, is exempt from the NZ-ETS. There is also no fixed cap on total emissions, which implies that there is no restriction on the supply of emissions units, and hence no strong price signal to constrain the overall level of emissions.

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, 2016e). 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 et al., 2016) (Richter & Chambers, 2014).

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, 2016e).

From 2015 to 2017 the New Zealand Government undertook a review of its ETS (New Zealand Government, 2016b) (Ministry for the Environment., 2017), and has proposed a range of additional measures to strengthen the NZ-ETS in the future. These include:

- ending the transitional phase arrangement of one unit for two emissions between 2017 and 2019 (New Zealand Government, 2016d),
- introducing auctioning of units to align the NZ-ETS to climate change targets,
- developing a different price ceiling to eventually replace the current one of NZ$25/$tCO_2e$ (USD$18/ tCO_2e), and
- limiting the use of international units when the NZ-ETS reopens to international carbon markets.

Without a limit on units allowed to be purchased and a corresponding price signal, the NZ-ETS will fail to deliver the right incentives to reduce emissions. Therefore, if designed and implemented well, these proposed measures – if introduced - should strengthen the functioning of the NZ-ETS to drive down emissions, but only in the sectors covered.

Expected emissions levels are still far from the government's emissions reduction targets for both 2020 and 2030, which means New Zealand should significantly strengthen its current policies and implement new mitigation measures to comply with its international commitments. 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. The absence of strong policy to reduce agricultural and transport sector emissions will make achieving New Zealand's targets difficult and costly in the long term (OECD, 2017).

Energy supply

There is a domestic target to increase renewable electricity to 90% 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 1970s, and extensive geothermal resources. However, we can find few policies in place that would support this increased renewable energy target.

In some regions, power distribution companies are now imposing an extra charge on new solar power users, with the High Court indirectly giving the green light to this "solar tax" by ruling against a request from solar companies for a hearing to contest the charge (High Court of New Zealand, 2017). There are also at least two proposed gas-fired power stations in various stages of the consent process (Frykberg, 2016).

New Zealand's energy intensity ranks seventh-highest among IEA member countries (International Energy Agency, 2017). Under the previous New Zealand Energy Efficiency and Conservation Strategy 2011-2016 (NZEECS), the government's energy efficiency target was to achieve a rate of energy intensity improvement of 1.3% per year. So far this target has not been met; the energy intensity level in 2015 was the same as in 2011. The energy intensity target has been droppedout ofthe revised 2017-2022 NZEECS, released in 2017 (New Zealand Government, 2017).

Industry

New Zealand supports the Montreal Protocol to phase down HFCs worldwide and is now consulting on how New Zealand could implement the agreement, which would lead to a 80% reduction over 2019-2036. However, this would cut NZ's GHG emissions by only 2% (New Zealand Government, 2016a).

Transport

The Government announced its Electric Vehicles Programme aimed to encourage the uptake of electric vehicles (EVs), with a target of 64,000 EVs registered in New Zealand by the end of 2021 (New Zealand Government, 2016a).

Agriculture

New Zealand invests in agricultural greenhouse gas research but lacks any strong policy to reduce emissions in the sector. The expansion of New Zealand's dairy industry has seen emissions from this sector rocket up, with (non-C02) emissions from agriculture now accounting for over half of the country's emissions.

Assumptions

Pledge

Targets for 2030 and 2050 were calculated from the 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 2015, Annex I emissions inventory reporting has used the global warming potentials (GWPs) of the IPCC's second assessment report (SAR). Most NDCs, 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 NDC 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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