



NEW ZEALAND

Submission under the Paris Agreement New Zealand's first Nationally Determined Contribution Updated 4 November 2021

New Zealand hereby communicates its updated first Nationally Determined Contribution (NDC) under the Paris Agreement for the period 2021 to 2030.

The Nationally Determined Contribution of New Zealand is:

To reduce net greenhouse gas emissions to 50 per cent below gross 2005 levels by 2030.

This corresponds to 41 per cent when managed using a multi-year emissions budget starting from New Zealand's 2020 emissions target. Based on New Zealand's most recent greenhouse gas inventory, this budget provisionally equates to 571 Mt CO₂e over 2021 – 2030.

This constitutes a significant progression in ambition from New Zealand's initial first NDC, which implied a provisional emissions budget over 2021-2030 of 623 Mt CO₂e.

As communicated in the submission New Zealand made on 20 April 2020, this update is informed by the advice on the NDC from New Zealand's Climate Change Commission.

The NDC is contextualised by New Zealand's aims under the Paris Agreement to hold the increase in the global average temperature to well below 2°C and pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels.

New Zealand intends to separately communicate its action on climate finance in its biennial reports; and its adaptation efforts in its 8th national communication and then in successive biennial transparency reports under the Paris Agreement.

Time period	2021 to 2030
Type of commitment	A point year target managed using a carbon budget across the NDC period.
Target reference year	2005
Reduction level	Emissions will be reduced by 50 per cent below gross 2005 levels by 2030, which corresponds to a 41 per cent reduction when managed using a multi-year emissions budget.
Scope and coverage	This responsibility target is economy-wide covering all sectors: <ul style="list-style-type: none"> • Energy • Industrial processes and product use • Agriculture • Forestry and other land use • Waste and all greenhouse gases: <ul style="list-style-type: none"> • CO₂ • CH₄ • SF₆ • HFCs • PFCs • N₂O • NF₃
Methodological approaches for estimating anthropogenic greenhouse gas emissions and removals	This NDC applies 100 year Global Warming Potentials (GWPs) from the IPCC 5 th assessment report, and methodologies from the IPCC 2006 greenhouse gas inventory guidelines and the 2013 IPCC KP Supplement.

Use of market mechanisms and cooperative approaches

In meeting its target New Zealand intends to use international market mechanisms, cooperative approaches and carbon markets that enable trading and use of a wide variety of units/emission reductions/mitigation outcomes that meet reasonable standards and guidelines to:

- ensure the environmental integrity of emissions reductions generated or purchased
- guard against double-claiming/double-counting, and
- ensure transparency in accounting and governance.

Approach to accounting for forestry and other land use

New Zealand's preferred approach for accounting for forestry and other land use sector is described below (as per its INDC). This approach sets out core assumptions. We reserve the right to adjust our selection of methodologies, without reducing ambition. New Zealand's approach to forestry and other land use accounting will be fully described in its first communication under the Paris Agreement.¹

Methodologies	New Zealand's assumed accounting for the forestry and other land use sector will be based on a combination of the 2006 IPCC Guidance and the 2013 IPCC Kyoto Protocol Supplement, providing for Kyoto Protocol accounting approaches to be applied to the greenhouse gas inventory land-based categories. New Zealand looks forward to considering methodologies introduced by the 2013 IPCC Wetlands Supplement and the 2019 Refinement to the 2006 IPCC Guidelines in the future. New Zealand's existing activity start year of 1990 will continue to apply, ensuring continuity of action with previous commitments.
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¹ The first communication being the submission of the first biennial transparency report (BTR1) and national inventory report, as required under the Paris Agreement, at latest by 31 December 2024.

New Zealand's forestry and other land use approach assumes accounting will be either land or activity based, and will apply existing IPCC methodologies to distinguish areas subject to direct human-induced change from those under pre-existing management, as follows:

- a. Forests established from the activity start year will continue to be accounted for as they would under the Kyoto Protocol, but once they attain their long-term average carbon stock, taking into account all carbon pools and activities, the forest will transfer to the Forest management/Forest remaining forest category, where it will be accounted for under a business-as-usual reference level. New Zealand will continue to account for all deforestation emissions.
- b. Forests established before the activity start year will continue to be accounted for under a business-as-usual reference level, as per the Kyoto Protocol, to address the dynamic effects of age structure resulting from activities and practices before the reference year, and the ongoing cycles of forest harvest and regrowth that occur as part of normal, sustainable forest management in production forests.
- c. Accounting provisions to address natural disturbances on managed lands, non-anthropogenic effects and additionality since the activity start year will also continue to apply, building on existing guidance. Accounting for harvested wood products will be based on the production approach.

New Zealand's forestry and other land use approach builds on experience with accounting under the Kyoto Protocol to recognise and focus on additional action, and will create incentives for the establishment of new forests, recognise permanent, long-term enhancements of carbon sinks resulting from management, and take responsibility for deforestation, while accommodating the long-term cycles in net emissions and removals that arise from sustainable forest management of production forests.

Appendix one: Information to facilitate clarity, transparency and understanding of New Zealand's NDC

This NDC update is accompanied by information to facilitate clarity, transparency and understanding as set out below (decision 4/CMA.1 refers).

PART 1: Contextual information on New Zealand's updated NDC	
Sub-element:	Information:
New Zealand's updated NDC1 is a commitment to reducing net emissions 50 per cent below gross 2005 levels by 2030.	<p>The updated NDC is a point year target managed using a carbon budget across the NDC period. Starting with New Zealand's projected net emissions in 2020 and using New Zealand's most recent greenhouse gas inventory, this budget provisionally equates to 571 Mt CO₂e over 2021 – 2030. The updated NDC corresponds to a reduction of 41 per cent if managed using a multi-year emissions budget starting from New Zealand's 2020 emissions target.</p> <p>We will account for all emissions in the years between 2021 and 2030, not only in the target year (2030). It is the total amount emitted altogether that matters most for addressing climate change.</p> <p>With net emissions under current settings estimated to be 720 million tonnes of carbon dioxide-equivalent (including Tokelau) over the NDC period, and a likely emissions budget of 571 Mt CO₂e over 2021 – 2030, we would be responsible for reducing emissions by 149 Mt CO₂e between now and 2030.</p>
New Zealand is committed to taking decisive action on climate change, with our first NDC constituting our international contribution to reduce emissions in the near-term.	<p>We previously set and met our target for 2008-2012 under the Kyoto Protocol and are on track to meet our target for 2013-2020 under the United Nations Framework Convention on Climate Change (UNFCCC).</p> <p>Each of New Zealand's international targets have exceeded the last. Our first NDC target represented progression beyond our 2013-2020 target, and now the updated first NDC is a progression from the first NDC submitted upon ratification of the Paris Agreement.</p>
New Zealand is focused on the Paris Agreement goal related to pursuing efforts to limit global temperature increase to 1.5°C above pre-industrial levels.	The benefits of staying within 1.5°C, and making far-reaching and rapid transformations, are clearly outlined in the Intergovernmental Panel on Climate Change Special Report on Global Warming of 1.5°Celsius and reiterated in the Talanoa Call to Action.

	New Zealand has taken on board these findings in the development of its emissions reduction plan; we are placing the objective of 1.5°C at the heart of our response.
New Zealand plans to achieve its 2021-2030 NDC target, by prioritising domestic emissions reductions across all sectors and greenhouse gases and increasing carbon dioxide removals through forestry.	We may supplement our efforts by using international carbon markets with environmental integrity. Cooperating with other countries will enable us to contribute to greater global emissions reductions.
New Zealand's national circumstances include trends of continuing growth of our population and economy, along with our gross emissions.	The largest contributors to these emissions are our agriculture (48 per cent) and energy (42 per cent) sectors. Given our existing high proportion of renewable electricity generation (80 to 85 per cent), this means New Zealand has a challenging task ahead. We are mindful, however, that a successful transition to a low-emissions, climate-resilient future will require us to overcome these challenges and to capitalise on opportunities.
The Climate Change Response (Zero Carbon) Amendment Act 2019 established a broader framework that will enable New Zealand to develop and implement clear and stable climate change policies over time.	<p>In addition to the 2050 target, the Zero Carbon Act framework:</p> <ul style="list-style-type: none"> • establishes a system of successive emissions budgets and plans to act as stepping stones toward our domestic 2050 target • established a Climate Change Commission to provide independent advice to the Government and monitor our progress toward long-term climate goals • institutes adaptation measures. <p>The framework aligns New Zealand's transition to a low-emissions, climate-resilient future, including balancing emissions and removals in the second half of the century, and supports our commitments to the Carbon Neutrality Coalition. The framework also provides opportunities to reflect on our ambition, with our Climate Change Commission able to advise on any necessary enhancements.</p>
Beyond our 2021-2030 NDC target, we will continue working with other countries to galvanise and facilitate greater ambition through collaborative initiatives.	This includes advocating for ambitious and effective disciplines on inefficient fossil fuel subsidies, employing trade policies, practices and rules to achieve the goals of the Paris Agreement (such as the Agreement on Climate Change, Trade and Sustainability), and committing resources to undertake research and develop technologies for growing more food without growing greenhouse gas emissions (such as the Global Research Alliance on Agricultural Greenhouse Gases).

	New Zealand extended its ratification of the UNFCCC and the Paris Agreement to include Tokelau as of 13 November 2017. Tokelau is particularly vulnerable to climate change, and as a small set of atolls, is committed to tackling climate change. Tokelau has been included in New Zealand's greenhouse gas reporting since 2017, setting a positive example of transparency of its emissions and commitments.
PART 2: Information to facilitate clarity, transparency and understanding of New Zealand's NDC	
Quantifiable Information on the reference point and a base year	
Sub-element:	Information:
Reference year(s), base year(s), reference period(s) or other starting point(s):	Base year: 2005
Quantifiable information on the reference indicators, their values in the reference year(s), base year(s), reference period(s) or other starting point(s), and, as applicable, in the target year:	Total emissions in base year (2005): provisional estimate 85.922 (Mt CO ₂ -e) ²
Information on sources of data used in quantifying the reference point(s):	Base year emissions will be taken from the most recently reviewed national greenhouse gas inventory report. GWP 100 from the IPCC 5th Assessment Report
Information on the circumstances under which the Party may update the values of the reference indicators:	When New Zealand submits its first biennial transparency report under the Paris Agreement, further information will be provided on how ongoing technical improvements to the national greenhouse gas inventory will be treated. Until then the base year emissions estimate remains provisional.
Timeframes and/or periods for implementation	
Sub-element:	Information:
Time frame and/or period for implementation, including start and end date:	Period covered by NDC: 2021 to 2030.
Whether it is a single-year or multi-year target:	A point year target managed using an emissions budget approach to account for emissions in all the years for the period 2021 to 2030.

² Applies IPCC 5th Assessment Report (AR) GWP₁₀₀ values to the latest reported estimate for 2005 of 82,486 Mt CO₂-e that was calculated using the IPCC 4th AR GWP₁₀₀ values as reported in the 2019 National Greenhouse Gas Inventory

	<p>Projected gross emissions with existing measures for the period 2021-2030: 802 Mt CO₂-e</p> <p>Expected emissions budget for the period 2021-2030: 571 Mt CO₂-e</p> <p>Estimated abatement or sequestration needed (i.e. the difference between total gross emissions and the emissions budget for the period 2021 to 2030): 149 Mt CO₂-e</p> <p>*Note: figures are based on New Zealand's Greenhouse Gas Inventory, published in April 2019 and the emissions projections contained in New Zealand's Fourth Biennial Report, published in December 2019; these are provisional until confirmed during the NDC period.</p>
Scope and coverage	
Sub-element:	Information:
General description of the target	The 2021-2030 NDC target is a responsibility target.
Sectors, gases, categories and pools covered by the nationally determined contribution, including, as applicable, consistent with Intergovernmental Panel on Climate Change (IPCC) guidelines:	The 2021-2030 NDC target is economy-wide covering all sectors: energy, industrial processes and product use, agriculture, land use, land-use change and forestry, waste, and all greenhouse gases: CO ₂ , CH ₄ , N ₂ O, SF ₆ , HFCs, PFCs, NF ₃ .
Element: Planning processes	
Sub-element	Information:
Information on the planning processes that the Party undertook to prepare its nationally determined contribution:	In preparing its 2021-2030 Intended Nationally Determined Contribution (INDC), the New Zealand Government undertook a comprehensive process that included: carrying out analysis about how options for New Zealand's contribution would compare to global efforts to reduce emissions, taking into account factors such as the cost of effort, national circumstances, historical responsibility for climate change, and national GDP; modelling the impact of different NDC target options on New Zealand's economy and households. This work is published on the Ministry for the Environment's website (<i>A general equilibrium analysis of options for New Zealand's post-2020 climate change contribution</i> ³ , and <i>Modelling the economic impact of New Zealand's post-2020 climate change contribution</i> ⁴); and, conducting public consultation through publication of a discussion document available on the Ministry for the Environment's website (<i>New Zealand's Climate Change target</i> ⁵),

³ <https://environment.govt.nz/publications/a-general-equilibrium-analysis-of-options-for-new-zealands-post-2020-climate-change-contribution/>

⁴ <https://environment.govt.nz/publications/modelling-the-economic-impact-of-new-zealands-post-2020-climate-change-contribution/>

⁵ <https://environment.govt.nz/publications/new-zealands-climate-change-target-our-contribution-to-the-new-international-climate-change-agreement-discussion-document/>

public meetings, hui (meetings), and inviting the public to make submissions on target options and the NDC.

New Zealand ratified the Paris Agreement in October 2016 and submitted a 2021-2030 NDC. The submitted NDC underwent a substantial public consultation process, with 15 public meetings and hui held. Additionally, 17,023 written submissions were received from 15,639 submitters. This NDC built on, and reflected a streamlined version of, our INDC. This submission process made the NDC accessible to the public. However, the NDC was misinterpreted on occasion, with confusion around its communication as a budget rather than a point-year target. This update of the 2021-2030 NDC, including communicating New Zealand's updated NDC as a point year target, therefore enhances the information provided in an effort to improve understanding.

New Zealand's point year NDC will be managed as a budget. Under a budget approach, the NDC puts a limit on the total amount of emissions allowed over the 2021-2030 period.

The 2021-2030 NDC is one part of New Zealand's wider policy response to climate change. New Zealand's Climate Change Response (Zero Carbon) Amendment Act (passed into law in late 2019) provides a framework to transition New Zealand to a low-emissions, climate-resilient economy. The Government received over 15,000 submissions on the proposals for this Act, and 10,000 submissions as the legislation was being shaped. The Zero Carbon Act set up the Climate Change Commission, an expert-group that provides independent advice to the Government.

The Zero Carbon Act provides for the Climate Change Commission to review New Zealand's 2050 emissions reduction target, and when directed, the ability to consider the ambition of our NDCs. The Climate Change Commission was established on 1 December 2019.

In April 2020 the Minister of Climate Change requested the Commission to provide advice on whether the NDC was compatible with contributing to global efforts to limit global warming to 1.5°C above pre-industrial levels and recommend any changes that would make it compatible. In May 2021 the Commission advised that the NDC was not compatible with global efforts under the Paris Agreement to limit the increase in global average temperature to 1.5°C. It recommended that in order to be more likely to be compatible, the contribution New Zealand makes over the NDC period should reflect a reduction of net emissions of

	<p>much more than 36 per cent below 2005 gross levels by 2030, with the likelihood of compatibility increasing as the NDC is strengthened further.</p> <p>Given New Zealand's status as a highly developed country and taking global equity principles into account, the Commission advised that New Zealand's emissions should reduce at a greater rate than the global average. It did not quantify how much greater those reductions should be, stating that how much the NDC should be strengthened should reflect the tolerance for climate and reputational risk and economic impact, and principles of effort sharing, which require political decisions. The Commission recommended that any changes to the NDC should be developed in partnership with iwi/Māori, to give effect to the principles of Te Tiriti o Waitangi/The Treaty of Waitangi and align with the He Ara Waiora framework.</p>
<p>Party's implementation plans, including, as appropriate, domestic institutional arrangements:</p>	<p>New Zealand has implemented, or is planning, a number of policies and institutional arrangements (including legislation and regulations thereunder) to meet its domestic and international climate goals, including its NDC:</p> <p>The Climate Change Response Act provides an enduring framework by which New Zealand can develop and implement clear and stable climate change policies. It achieves this purpose by enshrining in legislation four elements:</p> <ol style="list-style-type: none"> 1. A domestic emissions reduction target for 2050 in order to contribute to the global effort under the Paris Agreement to limit the global average temperature increase to 1.5° Celsius above pre-industrial levels. This target requires: greenhouse gases other than biogenic methane to reach net zero by 2050 and emissions of biogenic methane to reduce to 10 per cent below 2017 levels by 2030, and to 24–47 per cent below 2017 levels by 2050. 2. A system of emissions budgets and emission reduction plans to act as stepping stones to the 2050 target and provide a framework for planning. Emissions budgets set a limit on the amount of greenhouse gas emissions allowed across a five-year period (or, in the case of the first budget, a four-year period). These budgets must put New Zealand on a path to meeting the targets. The reductions required must also be technologically achievable, economically viable and socially acceptable. Emissions reduction plans set out the policies and strategies for achieving emissions budgets. A new plan must be published before each budget period and can also look out to the next two budget periods.

3. **A Climate Change Commission** to provide independent advice and monitor progress.

4. **Adaptation measures** to assess and address the risks from a changing climate.

In May 2021, the Climate Change Commission gave the Government its recommendations for the first three emissions budgets (between 2022 – 2035) and the policies needed to meet them. The Government has been working on a wide range of proposals that may form New Zealand’s first emission reduction plan. The Government began consultation on these proposals in October 2021 to help shape the emissions reduction plan. Final decisions on the first three emissions budgets will be made and published alongside the first emissions reduction plan by 31 May 2022.

The Government is committed to ensuring an **equitable transition** towards a low-emissions and climate resilient economy. Further, New Zealand has a package of domestic policies, including sustainable finance.

The Climate Change Response (**Emissions Trading Reform**) Amendment 2020 enacted a reform of the New Zealand Emissions Trading Scheme, a key policy tool to reduce emissions and ensure our commitments under the Paris Agreement are met. This Act passed through Parliament in June 2020.

The **Climate Implications of Policy Assessment** was established in 2019 to enable central government agencies to undertake and report a greenhouse gas emissions analysis for all new policy proposals where the impact on GHG emissions is likely to be equal or above 0.5 million tonnes carbon dioxide equivalent (CO₂e) within the first ten years of the proposal period. This allows New Zealand to measure, monitor and report on government interventions that will impact New Zealand’s greenhouse gas emissions.

In 2016, New Zealand adopted **the Kigali Amendment to the Montreal Protocol** on Substances that Deplete the Ozone Layer. New Zealand has completed the domestic processes required to meet the Amendment’s obligations, which entered into force on 1 January 2020.

The New Zealand Government is joining businesses and communities in leading the way to a net-zero future, through the establishment of the **Carbon Neutral Government Programme** (CNGP) in December 2020. The CNGP aims to make a number of public organisations carbon neutral from 2025. Participants will measure and report their

	<p>emissions, set targets and plans to reduce emissions in line with the global goal to limit temperature rise to 1.5°C, and offset their remaining emissions from 2025.</p> <p>The Government Investment in Decarbonising Industry Fund (GIDI) provides funding to support the adoption of energy efficiency and fuel switching to renewable technologies in industry, including electrification and bioenergy. It aims to accelerate industrial heat decarbonisation to catalyse adoption of low-emission technologies, and to contribute to the COVID-19 recovery.</p> <p>The Clean Car Discount will support New Zealanders to buy cleaner vehicles by addressing their high upfront cost through incentives. From 1 January 2022, a charge on high-emitting vehicles will apply at point of first registration in New Zealand, to discourage purchase. The Clean Car Standard will be implemented in 2022 and support a cleaner vehicle fleet by improving the efficiency of imported new and used light vehicles.</p> <p>New Zealand provides leadership in research, innovation and technical solutions to reduce emissions from agriculture. An example of this is the New Zealand Agricultural Greenhouse Gas Research Centre. The purpose of the Centre is to deliver knowledge, technologies and practices to enable New Zealand to enhance agricultural productivity in an emissions constrained world.</p> <p>As technologies become available and national circumstances evolve, New Zealand may realign the aforementioned policies and/or introduce new policies to reduce emissions.</p> <p>Further information about these policies and institutional arrangements is available online, noting the New Zealand Ministry for the Environment, Ministry of Foreign Affairs and Trade, and Ministry for Primary Industries’ websites in particular. Details are also included, or anticipated for inclusion, in New Zealand’s National Communications and Biennial Reports under the UNFCCC, and future Biennial Transparency Reports under the Paris Agreement.</p>
<p>Party’s implementation plans, including public participation and engagement with local communities and indigenous peoples, in a gender-responsive manner:</p>	<p>New Zealand is founded on a partnership between the Crown and indigenous New Zealanders, Māori, through Te Tiriti o Waitangi (Treaty of Waitangi).</p> <p>Te Puni Kōkiri is the Ministry for Māori Development. It advises on policy affecting Māori wellbeing and development. Further, Te Arawhiti is the Ministry of Māori-Crown relations and provides guidance and support relationships with Māori.</p>

The Climate Change Response Act (CCRA) recognises the Government's responsibility to give effect to the principles of the Treaty of Waitangi. The CCRA requires emissions reduction plans to include a strategy to recognise and mitigate the impacts on Māori, and that Māori are adequately consulted on these plans.

Final decisions on the first three budgets will be made and published alongside the first emissions reduction plan in May 2022. This plan will set out how New Zealand will achieve the first budget and manage the impacts policies may have on employers and employees, regions, Māori, and wider communities.

Government has been working on a wide range of proposals that may form Aotearoa New Zealand's first emission reduction plan. Current proposals include:

- Government and iwi/Māori working together, designing a number of national-level strategies, including a National Energy Strategy, Circular Economy Strategy, Bioeconomy Strategy, National Low-emission Freight Strategy, Industry plans and policies to decarbonise the industrial sector, and a Building Transformation Plan.
- Supporting Māori to create a transition strategy that responds to the particular priorities and needs of the Māori economy and Māori people. This includes applying Māori values and mātauranga Māori (Māori knowledge) to the transition.

Existing policies include:

- Vision Mātauranga is a government policy that aims to unlock the science and innovation potential of Māori knowledge, resources and people for the environmental, economic, social and cultural benefit of New Zealand.
- Māori-focused research aligned with integrated farm systems, which seeks to assist the Māori pastoral sector to increase resource efficiency and farm productivity while lowering greenhouse gas emissions.

A number of approaches are used to engage with Māori on their perspectives of the risks and opportunities presented by climate change and specific policies in response. The Government has developed the Māori-Crown Engagement Framework and Partnership Guidelines to ensure Māori have full involvement in all phases of policy design, implementation, and evaluation to support agencies to develop true partnerships with Māori.

<p>Contextual matters, including, inter alia, as appropriate, national circumstances, such as geography, climate, economy, sustainable development and poverty eradication:</p>	<p>New Zealand became a Party to the Paris Agreement because we are committed to contributing to collective global action on climate change. We need all countries to contribute and need to be able to hold all countries to account. We actively support the Paris Agreement not only to help protect New Zealand’s economic, social, cultural and environmental interests, and also to encourage others to take action on climate change.</p> <p>New Zealand is a long, narrow and mountainous country with two main islands, and a number of smaller outlying islands. New Zealand is expected to see a 50 per cent growth in population between 1990 and 2030. This growth is significant, with relatively low population density. New Zealand has an open, trade-reliant economy founded in the agricultural and land sectors. New Zealand is, geographically distant from international markets and trading partners, however, being located in the South Pacific. New Zealand has an export-dependent economy, with a significant reliance on the agriculture sector. Some 85 per cent of New Zealand’s total food production goes to the international market.</p> <p>New Zealand’s geography and population distribution have contributed to a dependence on fossil fuel-powered transport. Because of this, and New Zealand’s primary sector exports base, gross emissions are dominated by the agriculture and energy sectors, which together comprise approximately 90 per cent of gross emissions. New Zealand has seen strong economic growth since 1990.</p> <p>New Zealand has high levels of renewable energy use and a long history of renewable energy development. Approximately 80 per cent New Zealand’s electricity generation uses renewable resources – primarily hydro-generation. Continued development of geothermal and wind generation has seen the amount of electricity generated from these sources more than triple over the last two decades. Considering the high levels of existing renewable electricity generation, there is less gross emissions reduction potential from the energy sector than in many other jurisdictions. This presents a challenge for abatement options. Despite this, New Zealand is looking to make further gains in this area. The Government has an aspirational goal of 100 per cent renewable electricity by 2035, with five-yearly assessments to ensure that security of supply and affordability of electricity are well-maintained.</p> <p>The New Zealand Battery project has been set up to address the issue of New Zealand’s hydro dependence and dry year risk in our electricity system. The \$30 million initial study will investigate pumped hydro amongst other technological possibilities to eliminate the need for fossil fuels in our electricity system. It will provide comprehensive advice on the</p>
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	<p>technical, environmental and commercial feasibility of a grid-level, renewable energy storage solution.</p> <p>National direction on industrial greenhouse gas emissions will be developed to set out nationally consistent policies, rules and requirements to guide regional councils in their decision making on coal use. This proposal will prohibit new low and medium temperature coal boilers and phase out existing coal boilers beyond 2037.</p> <p>New Zealand is in the process of decoupling emissions from economic growth, although emissions continue to grow off the back of strong economic and population growth. The policies and measures we are putting in place now will make an impact towards reducing our emissions over the period 2021 to 2030 (as projected in New Zealand’s Fourth Biennial Report).</p>
<p>Contextual matters, including, inter alia, as appropriate, other contextual aspirations and priorities acknowledged when joining the Paris Agreement:</p>	<p>New Zealand became a Party to the Paris Agreement to contribute to collective global action on climate change, help protect New Zealand’s economic, social, cultural and environmental interests, encourage others to take action on climate change, and maintain our ability to influence international climate change processes.</p> <p>New Zealand is committed to an effective multilateral response to climate change, that has environmental and scientific integrity and is rules-based (i.e. we need all countries to contribute, and need to be able to hold all countries to account). Through implementing the Paris Agreement we will strive to ensure that the Agreement will be practical and based on continuous improvement, also that it recognises and protects the rights and interests of indigenous peoples.</p>
<p>Element: Assumptions and methodological approaches, including those for estimating and accounting for anthropogenic greenhouse gas emissions and, as appropriate, removals</p>	
<p>Sub-element:</p>	<p>Information:</p>
<p>Assumptions and methodological approaches used for accounting for anthropogenic greenhouse gas emissions and removals corresponding to the Party’s NDC, consistent</p>	<p>The NDC applies 100-year Global Warming Potentials (GWPs) from the IPCC 5th Assessment Report, in accordance with decisions 4/CMA.1 (accounting) and 18/CMA.1 (transparency).</p>

<p>with decision 1/CP.21, paragraph 31, and accounting guidance adopted by the CMA:</p>	<p>New Zealand’s accounting for Land use, land-use change and forestry (LULUCF) will be based on a combination of the 2006 IPCC Guidelines for National Greenhouse Gas Inventories and the 2013 IPCC Kyoto Protocol Supplement. New Zealand looks forward to giving future consideration to methodologies introduced by the 2013 IPCC Wetlands Supplement and the 2019 Refinement to the 2006 IPCC Guidelines. Further details are provided below. Any information on country specific methodologies applied, will be consistent with Article 13, paragraph 7(a) of the Paris Agreement and paragraph 1 (b) of Annex II of Decision 4/CMA.1.</p> <p>Forests established after the activity start year (1990) will be accounted for up until they reach their long-term average carbon stock. After this point is reached, the forest will be accounted for under a business-as-usual reference level (e.g. similar to Forest management under the Kyoto Protocol). The approach will take into account all LULUCF carbon pools (i.e. above ground biomass, below ground biomass, litter, deadwood, soil organic carbon and stocks of harvested wood products).</p> <p>New Zealand will continue to account for deforestation emissions, as per the Kyoto Protocol. Forests established before the activity start year will continue to be accounted for under a business-as-usual reference level, as per the Kyoto Protocol. This approach addresses the dynamic effects of the forest age class structure resulting from historical activities and practices, and the ongoing cycles of forest harvest and regrowth that occur as part of normal, sustainable forest management in production forests.</p> <p>Accounting for harvested wood products will be based on the production approach.</p> <p>New Zealand’s approach recognises that accounting methodologies need to focus on anthropogenic effects and create incentives for mitigation that promote sustainable land management.</p> <p>New Zealand’s approach will demonstrate consistency with greenhouse gas inventories, pursuant to Article 13, paragraph 7(a), of the Paris Agreement.</p>
<p>Assumptions and methodological approaches used for accounting for the implementation of policies and measures or strategies in the NDC:</p>	<p>Assumptions and methodological approaches include: population and GDP assumed to increase over time and effective carbon price assumptions.</p> <p>Currently implemented and adopted policies and measures: the difference between with measures (WEM) and without measures (WOM) scenarios.</p>

	Additional policies and measures effect: the difference between WEM and with additional measures (WAM) scenarios emissions and removals.
If applicable, information on how the Party will take into account existing methods and guidance under the Convention to account for anthropogenic emissions and removals, in accordance with Article 4, paragraph 14, of the Paris Agreement, as appropriate (i.e. how we promote environmental integrity, TACCC, and ensure avoidance of double counting):	<p>New Zealand's national inventory system is designed specifically to ensure robust reporting and accounting of anthropogenic emissions and removals, including the avoidance of double counting. We have developed a national monitoring, reporting and verification system for land use, land-use change and forestry that utilises wall-to-wall mapping and periodic forest monitoring. The wall-to-wall mapping approach ensures emissions and removals from land-use and forests are identified and counted only once. There is regular information sharing between the national inventory system and the NZ ETS to ensure all forests are identified and correctly classified. New Zealand has a national Emissions Trading Register which manages the accounting, reporting and reconciliation of emissions and unit holdings and transactions as part of the NZ ETS.</p> <p>Environmental integrity is ensured between the greenhouse gas inventory and the NZ ETS. Internal quality assurance processes ensure environmental integrity of the greenhouse gas inventory. The quality assurance and quality control plans are reviewed annually. The quality assurance and quality control processes have a significant role in the preparation of the greenhouse gas inventory to ensure the core principles of transparency, accuracy, completeness, comparability and consistency (TACCC) are achieved. More information can be found in New Zealand's Seventh National Communication.</p> <p>New Zealand's commitment to environmental integrity is also evident regarding the design and implementation of Article 6 of the Paris Agreement where New Zealand is a strong voice regarding the importance of robust accounting including:</p> <ul style="list-style-type: none"> • the avoidance of double counting • transparency, and • ambition in market mechanisms.
IPCC methodologies and metrics used for estimating anthropogenic greenhouse gas emissions and removals:	See assumptions and methodological approaches used for accounting for anthropogenic greenhouse gas emissions and removals, above.
Sector-, category- or activity-specific assumptions, methodologies and approaches	New Zealand will account for LULUCF sector by applying a combination of the 2006 IPCC Guidelines for National Greenhouse Gas Inventories and the 2013 IPCC Kyoto Protocol Supplement. New Zealand looks forward to considering methodologies introduced by the

<p>consistent with IPCC guidance, as appropriate, including, as applicable:</p> <p>(i) Approach to addressing emissions and subsequent removals from natural disturbances on managed lands;</p> <p>(ii) Approach used to account for emissions and removals from harvested wood products;</p> <p>(iii) Approach used to address the effects of age-class structure in forests:</p>	<p>2013 IPCC Wetlands Supplement and the 2019 Refinement to the 2006 IPCC Guidelines over time. New Zealand's existing activity start year of 1990 for forestry activities will continue to apply, ensuring continuity of action with previous commitments.</p> <p>New Zealand's LULUCF approach assumes accounting will be either land or activity based, and will apply existing IPCC methodologies to distinguish areas subject to direct human-induced change from those under pre-existing management, as follows:</p> <ol style="list-style-type: none"> a. Forests established from the activity start year will continue to be accounted for as they would under the Kyoto Protocol, but once they attain their long-term average carbon stock, taking into account all carbon pools and activities, the forest will transfer to the 'forest management/forest remaining' forest category, where it will be accounted for under a business-as-usual reference level. b. New Zealand will continue to account for all deforestation emissions. c. Forests established before the activity start year will continue to be accounted for under a business-as-usual reference level, as per the Kyoto Protocol. For production forests this will address the dynamic effects of age structure resulting from activities and practices before the activity start year, and the ongoing cycles of forest harvest and regrowth that occur as part of normal, sustainable forest management in production forests. d. Accounting provisions to address natural disturbances on managed lands, non-anthropogenic effects and additionality since the activity start year will continue to apply, building on existing guidance and experience. Accounting for harvested wood products will be based on the production approach. <p>New Zealand's LULUCF approach builds on experience with accounting under the Kyoto Protocol to recognise and focus on additional action. This approach will create incentives for the establishment of new forests, recognise permanent, long-term enhancements of carbon sinks resulting from management, and take responsibility for deforestation, while accommodating the long-term cycles in net emissions and removals that arise from the sustainable forest management of production forests.</p>
<p>The intention to use voluntary cooperation under Article 6 of the Paris Agreement, if applicable:</p>	<p>In meeting its 2021-2030 NDC, New Zealand intends to use cooperative approaches, including international market mechanisms. New Zealand is committed to ensuring all cooperative approaches it engages in have environmental integrity through robust</p>

	accounting including transparency in accounting and governance, and safeguards against double counting.
Element: How the Party considers that its NDC is fair and ambitious in the light of its national circumstances	
Sub-element:	Information:
How the Party considers that its NDC contribution is fair and ambitious in the light of its national circumstances:	<p>New Zealand is responsible for low levels of emissions now and historically (0.17 per cent of global gross emissions in 2017). Countries which each individually contribute one per cent or less of global emissions account for nearly a quarter of total emissions. Therefore, New Zealand's efforts matter.</p> <p>The likely cost to the New Zealand economy of meeting this NDC target in terms of GDP is high relative to many other Parties. This is due to a number of factors, such as the existing high level of renewable electricity generation (80-85 per cent), and the make-up of our emissions profile, where almost half of our total emissions originate from agriculture.</p> <p>New Zealand's domestic 2050 target under the CCRA places an emphasis on long-lived gases. The target is to reduce greenhouse gas emissions to net zero by 2050 (excluding biogenic methane for which the target is 24-47 per cent below 2017 levels).</p> <p>The outcome we seek for the 'form' or 'type' of contribution we deliver is an NDC that provides a fair, comparable and transparent representation of New Zealand's effort on climate change.</p> <p>Different forms of contribution will better facilitate the accurate measurement of reductions to track progress towards a country's global goal than others, or more clearly (or fairly) represent a country's "effort" (depending on their national circumstance).</p> <p>We consider that New Zealand's updated NDC, and particularly the fact that it will be achieved via a budget for the period is the right form for facilitating accurate measurement of New Zealand's effort.</p>
Fairness considerations, including reflecting on equity:	A basket of indicators can give an idea of countries' efforts, and New Zealand looked at factors such as: national circumstances, including evolving circumstances such as population growth rates, the size of the forestry sector, the size of the agriculture sector, and access to natural resources; cost of effort (sharing), including to the economy; resource sharing, such as sharing greenhouse gas emissions, including carbon dioxide versus methane per capita; historical responsibility for climate change; income and capacity, such as the ability to afford to mitigate more emissions than others; abatement required to meet

	<p>NDC headline target, and the gap between the business-as-usual emissions curve and emissions curve needed to meet the NDC target.</p> <p>This analysis concluded that the updated NDC to reduce net greenhouse gas emissions to 50 per cent below gross 2005 levels by 2030 is a fair contribution for New Zealand in light of the range of indicators outlined above.</p>
How the Party addressed Article 4, paragraph 3, of the Paris Agreement (i.e. how NDC target represents progression and highest possible ambition):	New Zealand's updated first NDC represents a progression beyond New Zealand's first NDC submitted upon ratification of the Paris Agreement in 2016. It is an increase in ambition in terms of headline number, cost and emissions impact, reduction from business-as-usual emissions and contribution to the global effort to limit warming to 1.5°C.
How the Party has addressed Article 4, paragraph 6, of the Paris Agreement (i.e. LD and small island developing states may prepare and communicate strategies, plans and actions for low greenhouse gas emissions development reflecting their special circumstances):	New Zealand is working with Tokelau on how best to reflect its strategies and plans, noting that New Zealand already includes Tokelau in its greenhouse gas inventory and provides information from Tokelau in its national communications.
Element: How the NDC contributes towards achieving the objective of the Convention as set out in its Article 2	
Sub-element:	Information:
<p><i>Article 2 of the Convention</i> (i.e. stabilisation of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system):</p> <p>How the nationally determined contribution contributes towards Article 2, paragraph 1(a), and Article 4, paragraph 1, of the Paris Agreement. (i.e. global temperature goals, including to limit global temperature to 1.5°C):</p>	<p>New Zealand welcomed the IPCC's <i>Special Report on global warming of 1.5°C</i>, and the <i>AR6 Climate Change 2021: The Physical Science Basis</i>, which emphasised the urgency of climate action that we have a duty to respond to.</p> <p>New Zealand's target choice is primarily guided by the best available scientific knowledge. The IPCC is the definitive source of evidence to support climate change policy development. The IPCC reports represent the best expert assessment of global knowledge on climate change.</p> <p>The <i>AR6 Climate Change 2021: The Physical Science Basis</i> is the most up to date report from the IPCC on the physical science of climate change. The report makes clear that it is "unequivocal that human influence has warmed the atmosphere, ocean and land", and caused "widespread and rapid changes in the atmosphere, ocean, cryosphere and biosphere". The scale of these changes is unprecedented over centuries to thousands of years. New Zealand has a duty to respond to the report's findings that "global warming of</p>

1.5°C and 2°C will be exceeded during the 21st century unless deep reductions in CO₂ and other greenhouse gas emissions occur in the coming decades”.

The *Special Report on global warming of 1.5°C* emphasises that limiting global warming to 1.5°C will “require rapid and far-reaching transitions” in most human activities. The report provides emissions pathways consistent with limiting warming to 1.5°C, which have gained considerable influence as representing what is “necessary” to achieve the aim of the Paris Agreement.

The *Special Report on global warming of 1.5°C* provided evidence to inform the 2050 target in New Zealand’s Climate Change Response Act, which will be a significant challenge requiring early and more ambitious action across all sectors. The Act has legislated a domestic target that contributes to the global effort under the Paris Agreement to limit global warming to 1.5°C.

In May 2021 the Climate Change Commission provided advice that New Zealand’s NDC was not compatible with contributing to global efforts to limit global warming to 1.5°C above pre-industrial levels. The Commission advised in order to be more likely to be compatible, the contribution New Zealand makes over the NDC period should reflect a reduction of net emissions of much more than 36 per cent below 2005 gross levels by 2030, with the likelihood of compatibility increasing as the NDC is strengthened further.

New Zealand’s updated NDC of a reduction of 50 per cent below gross 2005 levels by 2030 is aligned with this advice to have greater compatibility with contributing to global efforts to limit global warming to 1.5°C above pre-industrial levels.