

In the High Court of New Zealand
Wellington Registry

CIV 2021-485-341

I Te Kōti Matua O Aotearoa
Te Whanganui-ā-Tara Rohe

Between **Lawyers for Climate Action NZ
Incorporated**

Applicant

And **The Climate Change Commission**

First respondent

And **Minister for Climate Change**

Second respondent

GLOSSARY OF KEY TERMS

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GLOSSARY OF KEY TERMS

Anthropogenic emissions:¹ Emissions of greenhouse gases (GHGs), precursors of GHGs and aerosols caused by human activities. These activities include the burning of fossil fuels, deforestation, land use and land-use changes (LULUC), livestock production, fertilisation, waste management and industrial processes.

Global warming potential (GWP):² A factor relating the warming effect of a tonne of emissions of a particular greenhouse gas to those of a tonne of carbon dioxide emissions.

Greenhouse gas (GHG):³ Greenhouse gases are those gaseous constituents of the atmosphere, both natural and anthropogenic, that absorb and emit radiation at specific wavelengths within the spectrum of terrestrial radiation emitted by the Earth's surface, the atmosphere itself and by clouds. This property causes the greenhouse effect. Water vapour (H₂O), carbon dioxide (CO₂), nitrous oxide (N₂O), methane (CH₄) and ozone (O₃) are the primary GHGs in the Earth's atmosphere. Moreover, there are a number of entirely human-made GHGs in the atmosphere, such as the halocarbons and other chlorine and bromine-containing substances, dealt with under the Montreal Protocol. Beside CO₂, N₂O and CH₄, the Kyoto Protocol deals with the GHGs sulphur hexafluoride (SF₆), hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs).

Gross emissions:⁴ The term "gross emissions" is defined or used different ways in different contexts:

1. In the context of the IPCC's *Special Report: Global Warming of 1.5°C (SR1.5)* "gross emissions" is used to refer to the "gross amount of CO₂ that humans annually emit into the atmosphere."⁵
2. The Climate Change Commission defines gross emissions in its glossary to its advice, *Ināia tonu nei: a low emissions future for Aotearoa* as: "Gross

¹ See the glossary to the IPCC's *Special Report: Global Warming of 1.5C* (2018) (SR1.5) in the Applicant's bundle of key documents, tab 5, page 567. This definition is at App Key Docs/569.

² Technical Glossary to the Climate Change Commission's advice, *Ināia tonu nei: a low emissions future for Aotearoa*. Advice Bundle/411 (native page 395). The phrase is used at footnote 12 of the Applicant's submissions.

³ Commission's technical glossary, Advice Bundle/413.

⁴ See the Applicant's submissions at [56], [88], [106]-[107], [154]-[162], [197] and [213]-[217].

⁵ SR1.5, chapter 2, page 114 (App Key Docs/140). See also the definitions of Net zero CO₂ emissions and Net Zero emissions in the SR1.5 glossary (App Key Docs/581). See also the affidavits of Dr Ivo Geoffrey Bertram dated 24 September 2021 at paragraphs [22] – [23] (Bertram/5) [[201.0069]] and the affidavit in reply of Dr Stephen Gale at [18] (Gale Reply/3) [[201.0969]].

emissions include total greenhouse gas emissions from agriculture, energy, industrial processes and product use (IPPU) and waste. Greenhouse gas emissions and removals from land use, land-use change and forestry (LULUCF) are excluded.”⁶

3. The Climate Change Response Act 2002 (s 4) defines gross emissions as “New Zealand’s total emissions from the agriculture, energy, industrial processes and product use, and waste sectors (as reported in the New Zealand Greenhouse Gas Inventory)”.⁷

Greenhouse Gas Inventory (GHGI):⁸ An annual report recording all human-induced emissions and removals of greenhouse gasses in New Zealand. The inventory is required to be kept under the United Nations Framework Convention on Climate Change (**UNFCCC**), the Paris Agreement and the Climate Change Response Act 2002.

GHGI net:⁹ Refers to all of New Zealand anthropogenic emissions and removals as reported in New Zealand’s Greenhouse Gas Inventory (defined above), required to be kept by the UNFCCC. This is also referred to as “UNFCCC accounting”, and “National Inventory Reporting”. As accepted by the Commission, the term “New Zealand GHG Inventory” reporting is also used as synonymous with National Inventory Reporting in the legislative history.¹⁰

Land use, land-use change and forestry (LULUCF):¹¹ In the context of national greenhouse gas (GHG) inventories under the UNFCCC, LULUCF is a GHG inventory sector that covers anthropogenic emissions and removals of GHG from carbon pools in managed lands, excluding non-CO₂ agricultural emissions. Following the 2006 IPCC Guidelines for National GHG Inventories, ‘anthropogenic’ land-related GHG fluxes are defined as all those occurring on ‘managed land’, i.e., ‘where human interventions and practices have been applied to perform production, ecological or social functions’. Since managed land may include CO₂ removals not considered as ‘anthropogenic’ in some of the scientific literature assessed in this report (e.g., removals associated with CO₂ fertilization and N deposition), the land-related net GHG emission

⁶ Commission’s technical glossary, Advice Bundle/413.

⁷ Climate Change Response Act 2002, s 4. Applicant’s bundle of authorities at tab 16, page 911 (App Auth/16/911).

⁸ See the Applicant’s submissions at [76], [87], [161], [348]-[349] and [353]-[354].

⁹ See: Affidavit of Dr Andrea Brandon at [66] (Brandon/20 [[201.0595]]); Applicant’s submissions at [28], [38], [56], [154]-[162], [213]-[217] and [348] – [349].

¹⁰ See Commission’s submissions at [661].

¹¹ SR1.5 glossary, App Key Docs/579. See Applicant’s submissions at footnote 11, [56], [162], [211] and [349].

estimates included in this report are not necessarily directly comparable with LULUCF estimates in National GHG Inventories.

MAB accounting (Modified Activity Based accounting):¹² An accounting measure developed for the purpose of assessing New Zealand’s NDC. MAB accounting includes New Zealand’s gross emissions but only a subset of the emissions and removals from the LULUCF sector. This is also referred to as “target accounting” and “NDC accounting”.

Nationally Determined Contributions (NDCs):¹³ A term used under the UNFCCC whereby a country that has joined the Paris Agreement outlines its plans for reducing its emissions. Some countries’ NDCs also address how they will adapt to climate change impacts, and what support they need from, or will provide to, other countries to adopt low-carbon pathways and to build climate resilience. According to Article 4 paragraph 2 of the Paris Agreement, each Party shall prepare, communicate and maintain successive NDCs that it intends to achieve. In the lead up to 21st Conference of the Parties in Paris in 2015, countries submitted Intended Nationally Determined Contributions (INDCs). As countries join the Paris Agreement, unless they decide otherwise, this INDC becomes their first Nationally Determined Contribution (NDC).

Net emissions:¹⁴ As with gross emissions, the term “net emissions” is defined or used different ways in different contexts:

1. In the context of SR1.5, “net emissions are defined as anthropogenic emissions reduced by anthropogenic removals”¹⁵, or similarly, “Net global CO₂ emissions are derived from the gross amount of CO₂ that humans annually emit into the atmosphere reduced by the amount of anthropogenic CDR in each year”.¹⁶ (“CDR” meaning “carbon dioxide removal”).
2. The Climate Change Response Act 2002 uses the phrase “net accounting emissions”, which it defines as (s 4):¹⁷ “the total of gross emissions and emissions from land use, land-use change, and forestry (as reported in the New Zealand Greenhouse Gas Inventory), less—

¹² See: Brandon at [67] (Brandon/20 [[201.0595]]); The Commission’s advice at 10.3.2 (Advice Bundle/215). See also the Applicant’s submissions at [34]-[39], [228], [347]-[350] and [358],

¹³ SR1.5 glossary, App Key Docs/580. See Applicant’s submissions at [8]-[17], [69]-[73], [78]. Part 8 (pages 50-71).

¹⁴ See the Applicant’s submissions at [26]-30], [36]-[39], [56], [88], [106]-[107], [154]-[162], [194]-[197], [213]-[217] and [348] – [349].

¹⁵ SR1.5, page 13. See also Bertram/5 [[201.0069]] and Gale Reply/3 [[201.0969]].

¹⁶ SR1.5, chapter 2, page 114 (App Key Docs/140).

¹⁷ Climate Change Response Act 2002, s 4. App Auth/16/914.

- a. removals, including from land use, land-use change, and forestry (as reported in the New Zealand Greenhouse Gas Inventory); and
 - b. offshore mitigation”.
3. In the context of the Kyoto Protocol, “net emissions” refers to all emissions including emissions and removals from LULUCF. The Climate Change Commission also uses the term “net emissions” in this way. For example, in the glossary to its advice, as the Commission defined the term as: “Net emissions differ from gross emissions in that they also include emissions from the land use, land-use change and forestry (LULUCF) sector as well as removals of carbon dioxide from the atmosphere, for example due to the growth of trees.”¹⁸

Sink:¹⁹ A reservoir (natural or human, in soil, ocean, and plants) where a greenhouse gas, an aerosol or a precursor of a greenhouse gas is stored. Note that UNFCCC Article 1.8 refers to a sink as any process, activity or mechanism which removes a greenhouse gas, an aerosol or a precursor of a greenhouse gas from the atmosphere.

¹⁸ Commission’s technical glossary, Advice Bundle/414.

¹⁹ SR1.5 glossary, App Key Docs/584. The term is used in the Applicant’s submissions, see e.g. [64], [204] and [216].