Technical Glossary

2050 targets	The targets set out in the Climate Change Response Act for Aotearoa to: • reduce emissions of greenhouse gases, other than biogenic methane, to net zero by 2050 and beyond. This relates to emissions of carbon dioxide, nitrous oxide, non-biogenic methane and F-gases (hydrofluorocarbons, perfluorocarbons and sulphur hexafluoride). • reduce biogenic methane emissions by at least 10% by 2030 and 24-47% by 2050 and beyond, compared to 2017 levels.
Adaptation	Actions that can help people or natural systems adjust to the actual or expected impacts of climate change. Actions can be incremental and temporary in their effect or transformational by changing systems and their functions, depending on the scale and pace of change and what is at stake.
Biogenic methane	Methane emissions resulting from biological processes in the agriculture and waste sectors.
Biomass	Material originating from living organisms. Some forms of biomass in the environment store significant amounts of carbon. Solid biomass such as wood chips, wood pellets and briquettes can be used as fuel in residential, commercial and industrial situations.
Climate Change Response Act 2002 (the Act)	The Act that establishes the Climate Change Commission and contains the framework for the 2050 emissions reduction targets and emissions budgets. It also provides a legal framework to enable Aotearoa to meet its international obligations under the United Nations framework Convention on Climate Change and the Kyoto Protocol, and provides for the implementation of the New Zealand Emissions Trading Scheme (NZ ETS) and the synthetic greenhouse gas levy.
Climate resilience	Climate resilience is the ability to anticipate, prepare for, and respond to the impacts of changing climate, including those that we know about and can anticipate and those that occur as extreme events. This includes planning now for sea level rise and more frequent flooding. It is also about being ready to respond to extreme events like forest fires or extreme floods, and to trends in precipitation and temperature that emerge over time like droughts.

CO_2e	Carbon dioxide equivalent. This is a way to describe different greenhouse gases on a common scale that relates the warming effect of emissions of a gas to that of carbon dioxide. It is calculated by multiplying the quantity of a greenhouse gas by the relevant global warming potential.
Deforestation	The conversion of forest land to another use such as grazing. In greenhouse gas emissions accounting and policy relevant to Aotearoa, deforestation is defined as clearing forest and not replanting within four years. It does not include harvesting where a forest replanted.
Dry year	In Aotearoa, hydro lakes only hold enough water for a few weeks of winter energy demand if inflows (rain and snow melt) are very low. When inflows are low for long periods of time, hydro generation is reduced and the system relies on other forms of generation such as natural gas and coal. These periods of time are often colloquially referred to as 'dry years'.
Embodied emissions	The sum of emissions involved in making a product, sometimes termed the "carbon footprint".
Emissions	Greenhouse gases released into the atmosphere. The Climate Change Response Act 2002 covers the following greenhouse gases: carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulphur hexafluoride.
Emissions budget	The cumulative amount of greenhouse gases that can be emitted over a certain period. In the Climate Change Response Act 2002, emissions budgets are the total amount of all greenhouse gases (expressed as a net amount of carbon dioxide equivalent) that can be released over a five-year period (or four years in the case of 2022-2025).
Emissions leakage	Emissions leakage would occur if efforts to reduce emissions in one location caused an increase in emissions somewhere else so that global emissions overall do not reduce. Emissions leakage risk is created by the uneven implementation of climate policies around the world.
Emissions reduction plan	A plan setting out the policies and strategies for meeting an emissions budget, as required by the Climate Change Response Act 2002.
Exotic production forests	Forests consisting of non-native species, such as pine, that have been planted for harvesting.
F-gases	Fluorinated gases, such as hydrofluorocarbons, perfluorocarbons and sulphur hexafluoride.

Free allocation	The distribution of emissions units without cost to specific businesses by the government.
Global Warming Potential (GWP)	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 gases	Atmospheric gases that trap heat and contribute to climate change. The gases covered by the Climate Change Response Act 2002 are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF_6).
Gross emissions	Gross 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.
Kyoto Protocol	An international treaty under the UNFCCC that deals with emissions limitation or reduction commitments for ratifying developed (Annex 1) countries.
Long-lived gases	Greenhouse gases that have a long lifetime in the atmosphere, i.e. they persist in the atmosphere without breaking down for multi-decadal, centennial or millennial timeframes. For ease of presentation, this report refers to all greenhouse gases other than biogenic methane collectively as long-lived gases, although this includes small amount of other short-lived gas emissions (non-biogenic methane and certain fluorinated gases).
Methane inhibitors and vaccines	Chemical compounds that reduce the production of methane in animals' rumen (stomachs). They typically do this by targeting enzymes that play a key role in the generation of methane.
Mitigation	Human actions to reduce emissions by sources or enhance removals by sinks of greenhouse gases. Examples of reducing emissions by sources include walking instead of driving or replacing a coal boiler with a renewable electric powered one. Examples of enhancing removals by sinks include growing new trees to absorb carbon, or industrial carbon capture and storage activities.
Mt	Megatonnes (million tonnes)
Nationally Determined Contribution (NDC)	Each country that is party to the Paris Agreement must define its contribution to achieving the long-term temperature goal set out in the Paris Agreement. The first NDC adopted by Aotearoa is a target to reduce greenhouse gas emissions by 30% below 2005 levels by 2030.

Net emissions	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.
NZ ETS	New Zealand Emissions Trading Scheme.
Organic waste	Waste containing organic matter that decays to create methane emissions.
Paris Agreement	An international treaty under the UNFCCC to address climate change after 2020.
Post-1989 forests	New forest established after 31 December 1989 on land that was not forest at that date.
Pre-1990 forests	Forest or shrub land established before 1 January 1990.
UNFCCC	United Nations Framework Convention on Climate Change. This is the major foundation global treaty focused on climate change that was signed in 1992 at the Earth Summit in Rio de Janeiro.