Attachment A - Key Terms Glossary

July 2021 Briefing - Council Emissions Footprints and Emissions Targets

Term	Definition	Example
Carbon Dioxide **CO_2**	The most important GHG produced by human activity. The gas that is created when carbon returns to the atmosphere through respiration, combustion or decay. Carbon dioxde remains in the atmosphere from 300 – 1,00 years.	The main sources of carbon dioxide emissions are combustion of fossil fuels for coal, oil and gas, land clearing (deforestation), and agricultural intesification.
Carbon Dioxide Equivalent **CO_2e**	A standard unit for measuring carbon footprints. The impact of each different GHG is expressed in terms of the global warming potential (GWP) of one unit of CO2. Standard ratios are used to convert gases into equivalent amounts of CO2; these are based on each gas's GWP. CO_2e allows different bundles of GHGs to be easily compared.	Purchased electricity (electricity consumption) is 0.101kg CO2e per 1 kWh.
Carbon Footprint	The total equivalent amount of carbon dioxide equivalent (tCO_2e) added to the atmosphere as a result of that activity.	Council's 20FY carbon footprint for purchased electricity is 194.2 tCO_2e.
Carbon Neutral	An activity that has a carbon footprint of zero. This can be gross carbon zero or net carbon zero.	NZPost domestic letter and parcel services are carbon neutral.
Carbon Sequestration **aka** **Carbon Capture and Storage**	The process of securing carbon dioxide to prevent it from entering Earth's atmosphere. This invovles removing carbon dioxide from the atmosphere and storing it in a fixed molecule. This process can be biological, geological or technological.	Plants removing CO_2 from the air through photosynthesis and storing it in the soil as soil organic carbon.
Carbon Sink	Natural biological and geological features where large amounts of carbon dioxide are captured and stored. Carbon sinks can change or stop their rate of absorbtion, or become significant carbon sources (large sources of carbon dioxide emission).	Oceans and kelp forests, forests, wetlands, grasslands and tundra, carbonate rocks like limestone and coal

Term	Definition	Example
Greenhouse Gases	Gases that trap heat from the Sun and warm the Earth. Natural greenhouse gases include water vapour (H_2O), carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O). Human-made greenhouse gases include CO_2, CH_4, N_2O, and F-gases. These are long-life gases that are increasing faster than they are removed from the atmosphere, causing global warming and climate change.	
Halocarbon gas **aka** **F-Gases**	Hydrofluorocarbons (HFCs), Perfluorocarbons (PFCs), Sulfur hexafluoride (SF6) and Nitrogen trifluoride (NF3)[2] These gases are 1,000-10,000+ times more potenant than CO_2.	Used extensively as refrigeration agents and in other industrial processes before international regulation came into effect due to ozone depletion.
Methane **CH_4**	The second most important greenhouse gas, after CO_2, produced by human activities. CH_4 is 25 times more potent than CO_2.	The largest CH_4 sources are from agriculture activities (e.g. grazing animals such as cows and sheep, manure management, biomass burning and rice agriculture) and decomposition in landfills.
Nitrous Oxide **N_2O**	N_2O is produced by bacteria in soils and oceans. N_2O emissions are 298 times more potent than CO_2.	The largest sources of N_2O are animal waste and nitrogen fertilization of soil.
Scope 1 Emissions	Direct GHG emissions from sources that are owned or controlled by the company.	Fleet fuel consumption (Mobile fuel combustion)
Scope 2 Emissions	Indirect GHG emissions from the generation of purchased electricity, heat and steam consumed by the company.	Purchased electricity (electricity consumption)
Scope 3 Emissions	Indirect GHG emissions required by Council work that occur because of the activities but occur from sources not owned or controlled by the company. Inclusion of other Scope 3 emissions sources is done on a case-by-case basis.	Business travel