



Department of Climate Change  
Ministry of MEIDCC

**WHAT IS CLIMATE CHANGE MITIGATION?**

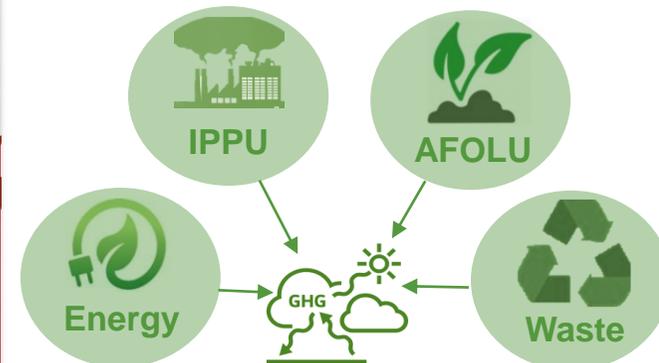
Actions to reduce emission of Greenhouse Gases.

**MITIGATION ACTIONS IN TONGA**

Mitigation Sectors	Mitigation Actions
Energy Sector	<ul style="list-style-type: none"> <li>Solar, wind, bioenergy, and wave-energy.</li> <li>Turn off electricity when not needed.</li> <li>Installing solar panels and energy efficient appliances in buildings.</li> <li>Energy efficient transport (biofuels and cleaner diesel).</li> <li>Climate proofing of transportation plans.</li> <li>Use cycling and walking as means of transport.</li> </ul>
Industrial Process and Product Use (IPPU) Sector	<ul style="list-style-type: none"> <li>Material recycling and substitution.</li> <li>Implement HFC management plan.</li> </ul>
Agriculture, Forestry and Other Land Use (AFOLU) Sector	<ul style="list-style-type: none"> <li>Livestock management (ruminant animals).</li> <li>Promote using of organic fertilizers.</li> <li>Reduce using of chemical fertilizers.</li> <li>Crop rotation, longer fallowing periods and mixed crop cultivations techniques/agro-forestry.</li> <li>Reforestation and afforestation.</li> </ul>
Waste Sector	<ul style="list-style-type: none"> <li>Home composting of domestic degradable organic waste.</li> <li>Wastewater treatment plant.</li> <li>Biocovers and biofilters to optimize methane (CH<sub>4</sub>) oxidation.</li> </ul>



**CLIMATE CHANGE AND ITS CAUSES IN TONGA**



Department of Climate Change  
Ministry of MEIDCC  
Level 3.OG. Sanft Building,  
Nuku'alofa, Tonga

Phone: (676) 26514  
Facebook: @DCCTonga  
Twitter: @DCCTonga1  
YouTube: www.youtube.com/chanel/UCqrfblpTM3EA8Gtt4W49bgw/  
Website: https://climatechange.gov.to/



**Weather** is the fluctuating state of the atmosphere over a short time ranging from minutes to days.

**Climate** refers to the "averaged weather" in terms of the mean and variability of relevant quantities over a period of time ranging from months to thousands or millions of years. The classical period is 30 years as defined by the World Meteorological Organization. Relevant quantities include temperatures, precipitation (rainfall), wind and other weather elements.

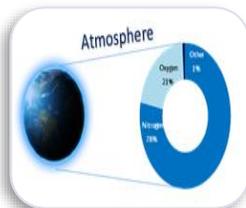


**Climate change**

Climate of the earth is always changing. It has altered as a result of natural causes however the term climate change is generally used when referring to changes we have seen over recent years and are projected over the next hundred years thought to be mainly resulted from human induced activities which alter the composition of the global atmosphere.



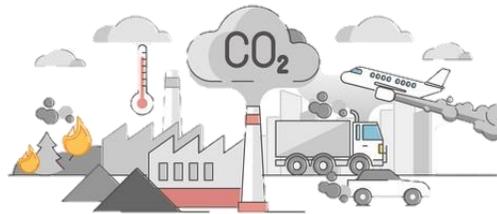
**Atmosphere** is a thin envelope of gases that surrounds planet earth. The atmosphere consists entirely of nitrogen (78%) and oxygen (21%). The other 1% is composed of a number of trace gases such as argon, helium, neon, krypton and the actively atmospheric gases known as greenhouse gases.



**Anthropogenic** emission of greenhouse gases from human activities.

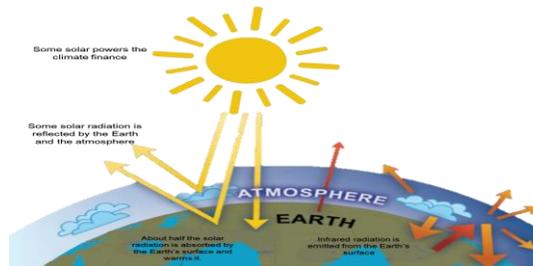


**Greenhouse gases (GHGs)** are gases in the earth's atmosphere, both natural and anthropogenic, that trap the sunlight's heat from leaving the atmosphere. Natural Greenhouse gases include carbon dioxide (CO<sub>2</sub>), nitrous oxide (N<sub>2</sub>O), methane (CH<sub>4</sub>) and water vapour (H<sub>2</sub>O) exist naturally in the atmosphere while anthropogenic Greenhouse gas include chlorofluorocarbon (CFC), hydrofluorocarbon (HFC) and perfluorocarbon (PFC) are gases made by human activities. These gases contribute to enhancing the greenhouse gas effect.



**What is Greenhouse effect?**

When greenhouse gases trap the heat from the sun, absorbed and re-emitted in all directions in the atmosphere keeping the earth warm (Global Warming).



**WHAT ARE THE SOURCES OF GHGs EMISSION?**

Gases	Sectors	Sources
Carbon dioxide (CO <sub>2</sub> )	Energy	Fossil fuel combustion (transport & power generation)
	IPPU	Cement production
	AFOLU	Land use changes, deforestation.
	Waste	Solid waste
Hydrofluorocarbon (HFC)	IPPU	Liquid coolants.
Methane (CH <sub>4</sub> )	Energy	Fossil fuel mining/distribution,
	AFOLU	Enteric fermentation of livestock,
	Waste	Decomposition of organic waste in solid waste disposal site.
Chlorofluorocarbon (CFC)	IPPU	Refrigerant, electronics and aluminum industry, air conditioning, packaging, insulation, solvents or aerosol propellants and fire extinguishers.
Nitrous oxide (N <sub>2</sub> O)	AFOLU	Agricultural fertilizers, emission from managed soil
	IPPU	Product use
Perfluorocarbon (PFC)	IPPU	Refrigerant
Water vapor (H <sub>2</sub> O)		Occurs Naturally
Non-methane volatile organic compounds (NMVOC)	IPPU	Solvent and product use, paint application and dry-cleaning.