USAID
FROM THE AMERICAN PEOPLE

REDUCING GHG EMISSIONS IN USAID PROGRAMMING AND OPERATIONS

Source: DevelopmentAid

WHY WE MUST REDUCE GREENHOUSE GASES

Greenhouse gas (GHG) emissions from economic activities around the world trap heat in the Earth's atmosphere, **changing climate and weather patterns globally**. Total global GHG emissions must be halved by 2030 and reduced to net zero by 2050 to keep the average global temperatures within 1.5°C above pre-industrial levels and avoid catastrophic changes to the global climate system.

In addition to carbon dioxide (CO_2) and other potent GHGs like nitrous oxide (N_2O), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6), **short-lived climate pollutants (SLCPs)** such as black carbon, methane (CH_4), tropospheric ozone (O_3), and hydrofluorocarbons (HFCs), are responsible for about 45% of current warming. Cutting SLCP emissions can be particularly effective for keeping global temperatures in check in the near-term since they have a stronger warming potential than carbon dioxide.

The main GHGs and SLCPs are:

CO_2	Carbon Dioxide
CH_4	Methane
N_2O	Nitrous Oxide
HFCs	Hydrofluorocarbons
PFCs	Perfluorocarbons
SF_6	Sulfur Hexafluoride
BC	Black Carbon
O_3	Tropospheric Ozone

Source: USAID Clean EDGE Asia

REDUCING GHG EMISSIONS AT USAID

USAID Missions and Operating Units must address climate change in their country and regional Strategies (see **USAID Climate Strategy 2022-2030**) and incorporate methods and approaches to reduce or avoid emissions in Project and Activity design and implementation. USAID is also doing its part to lessen its carbon footprint and reduce emissions from operations, including electricity use in buildings, air travel, and motor pools.

Contact the USAID Center for Climate Positive Development at eei.climate@usaid.gov for more information.

STRATEGIES FOR AVOIDING GHG EMISSIONS

Development activities in **all sectors produce GHGs**. The list below provides examples of some common GHG emissions sources and potential solutions for USAID to work with countries and partners to reduce them.

USAID Program Area	Principal Emissions Sources	Solutions
Energy–Generation, Transmission, and Distribution	**CO_2** **CH_4** **N_2O** **SF_6** **BC** **O_3** • Burning fossil fuels for electricity • SF_6 use in electricity transmission and distribution • Fugitive emissions from gas flaring and venting	• Renewable energy electricity generation: solar, wind, small-scale hydro, geothermal, biofuels • Prevent the need for flaring or venting, or recover gas for alternate uses; eliminate equipment leakages
Energy–Electricity in Buildings (End-Use)	**CO_2** **CH_4** **N_2O** **SF_6** **BC** **O_3** • Use of electricity from fossil fuel-based generation • Use of diesel generators	• Green building siting, design, and operations • Energy-efficient heating, cooling, and appliances • Building use of 100% renewable electricity sources
Energy–Transportation (End-Use)	**CO_2** **CH_4** **N_2O** **BC** **O_3** • Burning fossil fuels in transportation	• Electric, hybrid, and energy-efficient personal, commercial, and public vehicles • Improved zoning, planning, and city development to reduce commuter reliance on motor vehicles and enable public transportation, bicycling, and walking • Convening location, timing, and format of meetings and events (e.g., virtual) to reduce transport emissions
Infrastructure Development–Roads, Buildings, and Other Construction	**CO_2** **CH_4** **N_2O** **HFCs** **PFCs** **O_3** • Manufacturing cement and construction materials • Using energy in construction process • Fugitive emissions from leaking refrigerants and coolants in buildings and vehicles (e.g., air conditioning) • Deforestation and ecosystem destruction from the development of roads allowing people to clear forests and land for agriculture and commodity production	• Greener, low-emission, sustainable construction and demolition materials and low-carbon concrete • Green supply chains • Maintaining, repairing, and replacing equipment to eliminate leaks of refrigerants and coolants • Land use planning and strategic siting of roads and infrastructure to avoid intact forests and other high carbon ecosystems like peatlands
Agriculture and Food Security	**CO_2** **CH_4** **N_2O** **BC** **O_3** • Deforestation, forest degradation, and other ecosystem destruction from land clearing • Enteric fermentation from livestock • Rice cultivation • Use of fertilizer • Crop residue burning • Burning fossil fuels in agricultural machinery	• Avoiding new deforestation and other land clearing while increasing agricultural productivity on already cleared land • Increase efficiency of digestion and nutrition of livestock, such as through feed quality and additives and herd composition • Alternate wetting and drying irrigation in rice cultivation • Nutrient management for crops • Reusing crop residue as mulch • Agroforestry and tree planting to increase carbon sequestration in agricultural lands • Growing cover crops to increase soil carbon sequestration • No-till farming to increase soil carbon sequestration • Methane gas recovery and biogas as a fuel source • Electric, hybrid, and energy-efficient agricultural vehicles and equipment
Economic Growth and Trade–Industries and MSMEs	**CO_2** **CH_4** **N_2O** **HFCs** **PFCs** **BC** • Burning fossil fuels as well as using electricity from fossil fuel-based generation in industries and micro, small, and medium enterprises (MSMEs) • Manufacturing cement, aluminum, steel, and plastics	• Energy-efficient and electric motors and processes • Use of 100% renewable electricity sources • Greener manufacturing processes • Green refrigerants • Promoting manufacture of and trade in renewable energy, green technologies, and products

USAID Program Area	Principal Emissions Sources	Solutions
Environment– Forestry, Natural Resources, and Conservation	**CO_2 CH_4** ▪ Deforestation, forest degradation, and ecosystem destruction for agricultural and other land-use ▪ Loss and degradation of wetland, coastal, and marine habitats	▪ Forest and other ecosystem conservation ▪ Reducing land clearing for agriculture and commodity production ▪ Restoration of forests and other ecosystems, to increase carbon sequestration ▪ More sustainable, low-emissions forest and land management, including deforestation-free production of commodities and products and agroforestry ▪ Improving management of forest fires and ecosystem resilience
Environment– Waste Management	**CO_2 CH_4** ▪ Release of methane from landfills and dumpsites ▪ Plastic production from fossil fuels ▪ Incineration of waste	▪ Anaerobic digestion and composting of organic waste ▪ Increasing plastic recycling to reduce the need of virgin plastic ▪ Reducing packaging and using sustainable materials ▪ Methane gas recovery and biogas as a fuel source
Water and Sanitation	**CO_2 CH_4 N_2O BC O_3** ▪ Release of methane from biological processes in wastewater ▪ Using fossil fuel energy for water treatment equipment	▪ Increasing use of renewable energy and energy efficient technologies for water treatment and pumping water ▪ Sequestering carbon from waste streams ▪ Using methane gas recovery and biogas as a fuel source
Global Health, Humanitarian Assistance, and Nutrition		▪ Same as above for Energy, Waste, and Water and Sanitation ▪ Reducing energy use and waste generation across supply chains
Conflict Prevention and Stabilization		▪ Same as above for Energy and Waste
Democracy, Human Rights, Governance, and Anti-Corruption	**CO_2 CH_4 N_2O BC O_3** ▪ Emissions from fossil fuel-based electricity generation, off-grid generators, supply chains, waste generation, and wastewater	▪ Same as above for Energy and Waste ▪ Digitalization, ideally using renewable energy sources, to reduce emissions from waste ▪ Engaging citizens and communities in climate action
Education		▪ Same as above for Energy and Waste ▪ Digitalization, ideally using renewable energy sources, to reduce emissions from waste ▪ Build workforce capacity in low-emission development technologies and practices ▪ Providing education on GHG emissions and mitigation measures
Gender Equality and Women's Empowerment	▪ These USAID Program Areas do not produce emissions but are part of the broader development assistance efforts to reduce emissions.	▪ Developing programs supporting equitable engagement and elevated voices
Innovation, Technology, and Research		▪ Developing programs driving innovation to reduce GHG emissions through technology and practices

KEY RESOURCES
Key resources to support these efforts include:

- **ClimateLinks Knowledge Portal**
- **USAID Sector Environmental Guidelines**
- **USAID Clean Energy Emission Reduction (CLEER) Tool**
- **USAID Agriculture, Forestry and Other Land (AFOLU) Use tool**