



Ministry of Tourism and Environment
Republic of Maldives

Overview of the National Greenhouse Gas Inventory Guidelines and Tool

Deliverables 1.2.2 – Guidelines and Protocols for GHG Data Collection, and 1.2.3 – Sector-Specific GHG Emission Spreadsheets, Toolkits, and Guidelines

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CBIT Maldives

Capacity Building for Improved Transparency
of Climate Change Mitigation and Adaptation
Actions in the Maldives





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Overview of the National Greenhouse Gas Inventory Guidelines and Tool

1. Introduction

The Maldives' National Greenhouse Gas (GHG) Inventory Guideline and Tool were developed under the project “[Capacity Strengthening for Improved Transparency of Climate Change Mitigation and Adaptation Actions in the Maldives \(CBIT Maldives\)](#)”, funded by the Global Environment Facility (GEF) and supported by the United Nations Environment Programme (UNEP).

The objective of these outputs is to strengthen national capacity to meet reporting obligations under the UNFCCC Enhanced Transparency Framework (ETF) by facilitating accurate, transparent, and sustainable data systems. Together, the guideline and tool provide a structured framework and practical resources to ensure consistent, transparent, and comparable reporting of GHG emissions across key sectors.

2. Guidelines for National Greenhouse Gas Inventory

“Maldives’ Guidelines for National Greenhouse Gas Inventory – Compiler’s Guide 2025” was developed to support the consistent and continuous reporting of GHG emissions in line with the ETF of the Paris Agreement. It was developed in accordance with internationally recognized methodologies provided by the Intergovernmental Panel on Climate Change (IPCC), as well as the modalities, procedures, and guidelines of the United Nations Framework Convention on Climate Change (UNFCCC).

The guideline provides a structured, step-by-step approach to collecting and managing activity data, ensuring data quality, and applying sector-specific IPCC methods for estimating emissions. It covers key emitting sectors in the Maldives, including Energy, Industrial Processes and Product Use (IPPU), and Waste, and aims to ensure consistency, transparency, and comparability in national GHG inventory reporting.

By establishing a harmonized approach aligned with international standards, this national guideline enables institutions and stakeholders across the

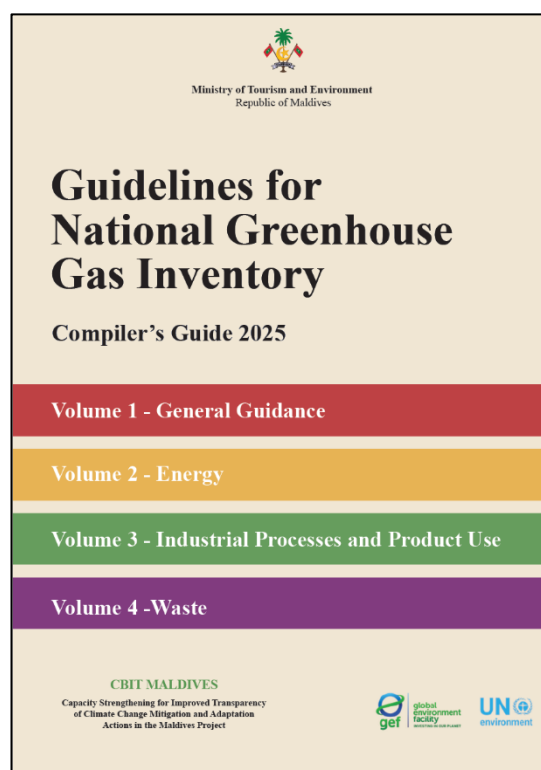


Figure 1: Cover page of the Guidelines for National Greenhouse Gas Inventory – Compiler’s Guide 2025



country to contribute effectively to the GHG inventory process. It strengthens national capacity to meet ETF reporting obligations by facilitating accurate, transparent, and sustainable data systems.

Importantly, the document is designed as a living guideline—one that evolves alongside improvements in data systems, technological advancements, and sectoral practices. Through regular updates, it will continue to reflect the evolving national context and support credible, responsive climate reporting.

What the Guidelines Cover

These guidelines provide detailed, step-by-step procedures for three critical sectors:

- **Energy Sector:** Covering emissions from fuel combustion including emissions from electricity production, transport and other fuel combustions
- **Industrial Processes and Product Use (IPPU):** Addressing emissions from manufacturing, chemical processes, and product applications
- **Waste Management:** Including emissions from solid waste management and, wastewater treatment

Each sector chapter provides clear guidance for emission inventory compilers and sectoral experts, including data collection protocols, quality assurance and control (QA/QC) measures, and the application of appropriate IPCC emission factors and methodologies for accurate emissions estimation.

This guideline was developed as part of Deliverable 1.2.2: Guidelines and protocols for GHG data collection of the project. It is primarily intended for use by GHG inventory compilers and sectoral experts involved in national reporting.

3. National Greenhouse Gas Inventory Tool

The Excel-based GHG Inventory Tool was developed to assist inventory compilers to estimate emissions for sectors relevant to Maldives. The tool is intended to be used as a quality control for the emission estimation using the IPCC software.

It should be used in conjunction with the “*Guidelines for National Greenhouse Gas Inventory – Compiler’s Guide 2025*,” which provides sector-specific instructions for using the tool effectively. The tool provides output results for each step of the calculation, making it easier to identify any issues in GHG estimation and generate graphs and figures for use in reporting. This tool strengthens national capacity to meet reporting obligations under the UNFCCC Enhanced Transparency Framework (ETF) by facilitating accurate and sustainable data systems.

The tool was developed under the Deliverable 1.2.3: “Sector-specific GHG emission spreadsheets, toolkits, and guidelines” of the project.



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Maldives National Greenhouse Gas Emissions estimation tool

This spreadsheet tool assists to synthesize the activity data used to calculate the Maldives national greenhouse gas inventory. The activity data from the sectors are used with the IPCC default emissions factors and NCVs. The method Tier 1 or Tier 2 might differ depending on the sector. For details of the method see the 2006 IPCC Guidelines for National Greenhouse Gas Inventories.

This tool have the following sheets:

- [Dashboard](#) Dashboard shows a summary of the emissions. The first pie chart allows to select on year to show the respective proportions and emissions for the selected year. It also shows a time series of emissions of the major sectors in the next panel. The number of years can be selected to adjust the time series.
- [Fuel Liters](#) This sheet takes the input for total annual fuel use (in liters) from the stakeholders. This includes fuel use for electricity generation, aviation, and for land and marine transport sectors. Input into the waste sector is also covered in this sheet. For emissions from domestic wastewater, population projections are required.
- [Fuel mass in Gg](#) The fuel in liters as volume, is converted to mass value (Gg) in this sheet. Density of the respective fuels in that sheet is for conversion.
- [Fuel mass in TJ](#) The fuel amounts are converted to energy values using the Net Calorific Values (NCV) from the IPCC default factors. These TJ values are used as input to the IPCC emissions calculation software.
- [IPCC Emissions](#) This sheet calculates the final emissions of the sectors and sub-sectors. Emissions are estimated for the IPCC sectors for ease of comparison with those estimates done via the IPCC software.
- [Emission Summary](#) Provides a summary of emissions of the sectors, subsectors and gases. It also provides the profiles of the timeseries.

NOTE:

Note that emissions from Industrial Processes and Product Use (IPPU) are included in the 'IPCC_Emissions' sheet. The emissions are only calculated for Ozone Depleting Substance (ODS), Refrigeration and Stationary Air Conditioning. Due to the nature of the input of the activity data for IPPU, the IPPU emissions have to be calculated separately either using the IPCC software or the supplementary sheets provided by the IPCC (link below) and input under the 'IPCC_Emissions' sheet in Gg.

[Link to IPCC tool sheet](#)

As years progress and new years and respective data are added, the links with the sheets, dashboard, tables, pivot table, and graphs will need to be updated for full functionality of the dashboard and the graphs.

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Figure 2: Screenshot of the instruction sheet of the National GHG Inventory Tool (Excel-based)

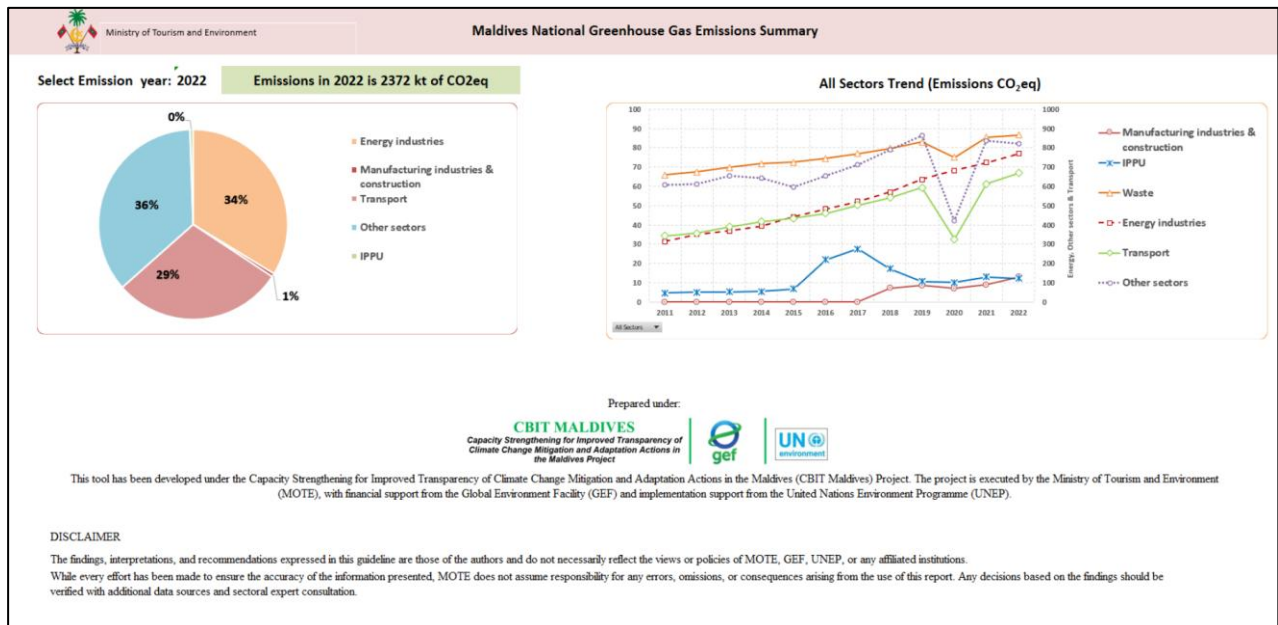


Figure 3: Screenshot of the dashboard sheet of the National GHG Inventory Tool (Excel-based)



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