

Training on 2006 IPCC Guidelines for preparing National GHG Inventory: Energy, IPPU and Waste Sector

-- Onsite Training --

Date: 18 - 22 March, 2024

Timing: 9:00 - 16:00 Manila Time

Venue: Philippines

Co-organized by the Capacity Building Initiative for Transparency - Global Support Programme (CBIT-GSP), Climate Change Commission (CCC) and Climate Change Service of Department of Environment and Natural Resources (DENR), Philippines

Background

Exploring the 2006 Intergovernmental Panel on Climate Change (IPCC) Guidelines for National Greenhouse Gas Inventory (GHGI) is essential in the Energy, IPPU and Waste Sectors, providing a comprehensive roadmap for effective emission reporting measures. Originating from the IPCC, these guidelines are crucial for nations striving to assess and report their greenhouse gas inventories within these domains. In the Energy Sector, the focus will be on the distinct considerations and challenges posed by the transportation industry. Participants in this session will delve into methodologies, principles, and reporting requirements, gaining insights to contribute meaningfully to the accurate measurement and reporting of greenhouse gas emissions. The session encourages active participation, fostering a dynamic exchange of ideas and experiences to enrich the collective understanding of how these guidelines can be practically applied to enhance sustainability within the energy and transportation domains.

Industrial processes and product use emissions are a crucial component that needs to be reported in national greenhouse gas inventories. These emissions arise from various industrial activities such as chemical production, cement manufacturing, and metal processing, as well as from the use of products such as refrigerants and insulating foams. The quantification of these emissions is essential for understanding the overall impact of industrial processes on climate change and for developing effective mitigation strategies. Including industrial processes and product use emissions in national greenhouse gas inventories provides policymakers with valuable data to make informed decisions on reducing emissions and transitioning towards more sustainable industrial practices.

Dive into the intricacies of the 2006 IPCC Guidelines for National Greenhouse Gas Inventory tailored for the Energy, IPPU and Waste Sector in this dedicated training session. Unveiling the compass for precise measurement and reporting of greenhouse gas emissions, participants will explore core principles, methodologies, and reporting intricacies outlined in these guidelines. Originating from the Intergovernmental Panel on Climate Change, these guidelines serve as an essential resource for nations navigating the assessment and reporting of greenhouse gas inventories in all sectors. This session aims to demystify key aspects, including inventory planning, data collection, and reporting practices, empowering participants to actively contribute to national and global efforts addressing climate change within the Energy, IPPU and Waste Sector.

Objectives and purpose of the training

The primary objectives of this training session are to provide participants with a comprehensive understanding of the 2006 IPCC Guidelines for National Greenhouse Gas Inventory (GHGI) in the Energy, IPPU and Waste Sectors. Participants will explore the fundamental principles, methodologies, and reporting requirements outlined in these guidelines, with a specific focus on their practical application within the unique contexts of energy and waste management.

The session aims to equip participants with the knowledge and insights necessary to actively contribute to accurate measurement and reporting of greenhouse gas emissions, fostering a deeper understanding of sustainability practices in these critical sectors.

Methodology and approach

The training focused on hands-on training of the Philippines experts on methodologies for the estimation of GHGs emissions in different sectors, with the support of the IPCC Inventory Software. The following sections describe the main activities conducted, topics discussed and results to achieved for energy and waste IPCC GHG inventory sectors.

This session will be divided into three modules, for specific source categories in the Energy, IPPU and in the Waste sectors. The training covered almost two categories in the Energy sector (Stationary combustion, Mobile combustion, and Fugitive emissions).

The Energy module followed the same structure for each of the source categories covered. This included presentations covering the key elements for the preparation of a GHG inventory of the 7 categories (emission sources, methodological issues, completeness, time series consistency, uncertainty assessment and QA/QC), questions and answers and a practical exercise using the IPCC Inventory Software. The categories covered in the training were stationary combustion, mobile combustion – road transportation, civil aviation, rail and water borne transport and fugitive emissions. In each subsector, the differences between methodological approaches Tier 1 and Tier 2, which define the level of accuracy of the GHG

inventory, will be presented and the requirements in terms of information and resources to use a Tier 2 approach in the subsector will be discussed.

The IPPU sector training will cover various aspects such as understanding the different industrial processes that contribute to greenhouse gas emissions, identifying key sources of emissions within each process, and calculating emission factors specific to each activity. Additionally, the training should focus on data collection methods, quality assurance procedures, and reporting requirements to meet international standards. The training will cover understanding chemical reactions and emission pathways in various production processes, calculating emissions from calcination, combustion of fuels, and electricity consumption in cement plants, quantifying emissions from processes like iron smelting, steelmaking, and aluminum production, calculating emissions from the use of refrigerants, insulating foams, and other products throughout their lifecycle.

The waste sector training will be started with a presentation from an international expert on the characteristic of the sector and how inventory data for this sector is estimated in Philippines. Subsequent sessions will be dedicated to understanding the estimation of waste amounts generated as well as waste composition, which are relevant for inventory preparation. Additionally, general changes between the 1996 and 2006 IPCC guidelines will be discussed.

The training will be included separate sessions for each of the following source categories:

- Solid Waste Disposal
- Biological Treatment of Solid Waste
- Incineration and Open Burning
- Wastewater Treatment and Discharge (Domestic and Industrial)

In each of the sessions, a presentation will be delivered to explain the key concepts and to discuss methodologies which will be used to estimate emissions using different methodological tier approaches. Moreover, sources of data, QA/QC, and uncertainty in parameters will be discussed. Moreover, methodologies on how to account for emissions from managed, unmanaged, and uncategorized solid waste disposal sites will be presented. Exercises on the IPCC Inventory Software on estimating emissions from solid waste disposal sites (managed, unmanaged, and uncategorized) will be conducted with the participants.

For the wastewater treatment and discharge source category (domestic and industrial), a presentation of the impact of different treatment techniques used in the country on the estimated emissions will be held. Further, approaches which will be used for different methodological tiers will be discussed. Exercises on the use of the IPCC Inventory Software on how to estimate emissions from wastewater handling (domestic and industrial) will also be conducted with the trainees.

Participants and resource persons

The participants for this training session include a diverse group comprising representatives from CCC (Climate Change Commission) and DENR (Department of Environment and Natural Resources). An international consultant, already available through CBIT-GSP, is set to enrich the session with expertise. Additionally, a National Expert, potentially supported by the UNDP NSPP Project, is anticipated to join. The key resource person for this training is Mr. H.M. Buddika Hemashantha, MRV Transparency Advisor to CBIT-GSP. With a wealth of experience, Mr. Buddika is poised to contribute valuable insights and knowledge, enriching the training session with practical expertise and guidance for participants. The collaboration of these individuals from various sectors and backgrounds promises a dynamic and comprehensive learning environment.

Training Agenda

Time	Activity	Speaker
Day 01 - 18/03/2024		
10:00 - 10:20	Registration	Philippines Team
10:20 - 10:30	Prayers and National Anthem	Philippines Team
10:30 - 10:50	Opening session and welcoming remarks	Elenida DR. Basug, Director, DENR CCS Senior Representative, CCC Senior Representative, DoE Senior Representative, DoT
10:50 - 11:00	Welcome by CBIT-GSP, Introduction to Trainers	Fatima-Zahra Taibi (TBC) Jaypalsinh Chauhan
11:00 - 11:15	Purpose and Objectives for the next 5 days	Sandee Recabar, DENR CCS
11:15 - 11:30	Mentimeter and Group Photo	Facilitator
11:30 - 12:30	Lunch Break	
12:30 - 13:00	Presentation: Provisions of the ETF & MPGs including commonalities and differences between MRV arrangements under the Convention and ETF under the Paris Agreement, Outline of BTR and Contents of National Inventory Document (NID), Common Reporting Tables (CRT) and Notation Keys followed by Q &A session	Jaypalsinh Chauhan (Virtually)
13:00 - 13:45	Presentation: BUR status, plans for preparation of National GHG Inventory for BTR, Challenges in preparing GHG Inventory under the ETF (NID/BTR) compared with the MRV (BUR), Institutional Arrangement followed by Q &A session	CCC

13:45 - 14:30	Institutional Arrangement <ul style="list-style-type: none"> • Overview of institutional arrangement for managing and overseeing emissions reporting. • Discussion on roles and responsibilities of key stakeholders. Insights into successful institutional model followed by Q & A session	Buddika Hemashantha
14:30 - 14:45	Tea/Coffee Break	
14:45 - 15:45	Presentation on IPCC National GHGI Reporting and Guidelines for Energy, IPPU and Waste Sectors <ol style="list-style-type: none"> Approaches to Data Collection, Existing data management system, gaps, and suggestions Uncertainty analysis Methodological Choice and Identification of Key Categories Followed by Q&A session	a): Buddika Hemashantha b) & c): Jaypalsinh Chauhan (Virtually)
15:45 - 16:45	Presentation on IPCC National GHGI Reporting and Guidelines for Energy and Waste Sectors <ol style="list-style-type: none"> Time Series Consistency including splicing techniques (Including practical exercise) Quality Assurance/Quality Control and Verification Reporting Guidance and Tables Recalculation Followed by Q&A session	d) & e): Jaypalsinh Chauhan (Virtually) f) & g): Buddika Hemashantha
16:45 - 17:45	Tools and Software for Reporting <ul style="list-style-type: none"> • Introduction to the tools and software available for facilitating reporting. • Live demo of the IPCC Inventory software tool • Quick information on UNFCCC ETF Reporting Tool 	Buddika Hemashantha
17:45 - 18:00	Discussion and wrapping up	Organizers and Host Country
Day 02 - 19/03/2024 (Energy Sector)		
09:00 - 09:15	Recap Day 1 and Agenda for Day 2	Buddika Hemashantha
09:15 - 09:45	Recap from Virtual Webinar Series, Introduction and Overview of GHG Inventory	Buddika Hemashantha
09:45 - 10:30	Introduction to Energy sector in Philippines	DoE
10:30 - 10:45	Tea/Coffee Break	
10:45 - 12:00	Stationary Combustion Followed by Q&A session	Buddika Hemashantha
12:00 - 13:00	Lunch Break	
13:00 - 14:30	Mobile combustion: Road transportation Followed by Q&A session	Buddika Hemashantha

14:30 - 15:30	Mobile combustion: Civil aviation, Maritime, Navigation, Consumption of Fuels in Military, International Bunkers Followed by Q&A session	Buddika Hemashantha
15:30 - 15:45	Tea/Coffee Break	
15:45 - 16:45	Fugitive Emissions Followed by Q&A session	Buddika Hemashantha
16:45 - 17:00	Discussion and wrapping up	Organizers and Host country
Day 02 - 19/03/2024 (IPPU Sector)		
09:00 - 10:00	Introduction to Industrial Processes and Product Use (IPPU)	Alith Jean Leyba
10:00 - 10:30	Philippine Scenario for the IPPU Sector	DENR
10:30 - 11:00	Tea/Coffee Break	
11:00 - 12:00	Mineral Industry: Cement, Lime, Glass	Alith Jean Leyba
12:00 - 13:00	Lunch Break	
13:00 - 13:30	Mineral Industry: Other Process Uses of Carbonates	Alith Jean Leyba
13:30 - 15:00	Hands on exercise and on using the 2006 IPCC GHG Inventory Tool – IPPU Sector <ul style="list-style-type: none"> Simulation exercise on inventory compilation and computation Reporting tables What kind of data required when we are moving towards to Tier 2 Followed by Q&A session. 	Alith Jean Leyba
15:00 - 15:30	Tea/Coffee Break	
15:30 - 16:30	Chemical Industry: Ammonia, Nitric Acid, Adipic Acid, Caprolactam, Glyoxylic Acid, Carbide, Titanium Dioxide, Soda Ash, Petrochemical and Carbon Black, Fluorochemical	Alith Jean Leyba
16:30 - 17:30	Metal Industry: Iron and Steel, Ferro Alloys, Aluminium, Magnesium, Lead, Zinc, Rare Earths, Others	Alith Jean Leyba
Day 03 – 20/03/2024 (Energy Sector)		
09:00 - 09:15	Recap Day 1 and Agenda for Day 2	Buddika Hemashantha
09:15 - 10:00	Reference and Sectoral Approach Calculation	Buddika Hemashantha
10:00 - 10:45	Hands on exercise with data	Buddika Hemashantha
10:45 - 11:00	Tea/Coffee Break	
11:00 - 11:45	Presentation with Hands on exercise: Verification, Quality Analysis and Quality Control, Global Warming Potential Values, Time Series Reporting	Jaypalsinh Chauhan (Virtually)
11:45 - 12:30	Presentation and Discussion: Data Management, Approach and Data Collection (What types of data	Buddika Hemashantha

	to be collected, format), and Importance of National Energy Balance	
12:30 - 13:30	Lunch Break	
13:30 - 15:30	<p>Exercise on using the 2006 IPCC GHG Inventory Tool - Energy sector</p> <ul style="list-style-type: none"> • Simulation exercise on inventory compilation • Key category analysis • Uncertainty Analysis • Reporting tables • What kind of data required when we are moving towards to Tier 2 and Tier 3 (case of Transport) <p>Followed by Q&A session.</p>	Buddika Hemashantha and Jaypalsinh Chauhan (Virtually)
15:30 - 15:45	Tea/Coffee Break	
15:45 - 16:45	<p>Option 1: Panel discussion based on Guiding questions</p> <p>Option 2: Cross Cutting Issues with all participants in one plenary (Energy and IPPU together)</p>	Organizers and Host Country
16:45 - 17:00	Discussion and wrapping up	Organizers and Host Country
Day 03 – 20/03/2024 (IPPU Sector)		
09:00 - 09:15	Recap of Day 2 and Agenda for Day 3	Participants
09:15 - 10:30	Non-Energy Products from Fuels and Solvent Use: Lubricant, Paraffin, Solvent Use, Other	Alith Jean Leyba
10:30 - 11:00	Tea/Coffee Break	
11:00 - 12:00	Electronics Industry: Integrated Circuit or Semiconductor, Displays, Photovoltaics, Microelectromechanical systems, Other	Alith Jean Leyba
12:00 - 13:00	Lunch Break	
13:00 - 14:00	Product Uses as Substitutes for Ozone Depleting Substances: Refrigeration and Air Conditioning, Foam Blowing Agents, Fire Protection, Aerosols, Solvents, Other Applications	Alith Jean Leyba
14:00 - 15:00	<p>Hands on exercise and on using the 2006 IPCC GHG Inventory Tool – IPPU Sector</p> <ul style="list-style-type: none"> • Simulation exercise on inventory compilation and computation • Reporting tables <p>What kind of data required when we are moving towards to Tier 2 Followed by Q&A session.</p>	Alith Jean Leyba
15:00 - 15:15	Tea/Coffee Break	
15:15 - 16:15	Other Product Manufacture and Use	Alith Jean Leyba
16:15 - 16:45	Data Collection and Management	Alith Jean Leyba

16:45 - 17:00	Wrap up	Organizers and Host Country
Day 04 - 21/03/2024 (Waste Sector)		
09:00 - 09:15	Recap of previous days and Agenda for Day 4	Buddika Hemashantha
09:15 - 10:15	Waste Sector Characteristics and Statistics in Philippines Followed by Q&A session	DENR CCS
10:15 - 10:30	Tea/Coffee Break	
10:30 - 11:45	General Overview of Waste Sector: Waste Generation and Management Data, Waste composition data Followed by Q&A session	Buddika Hemashantha
11:45 - 12:30	Solid Waste Disposal Sites: Managed Followed by Q&A session	Buddika Hemashantha
12:30 - 13:30	Lunch Break	
13:30 - 14:30	Solid Waste Disposal Sites: Unmanaged and Uncategorized Followed by Q&A session	Buddika Hemashantha
14:30 - 14:45	Tea/Coffee Break	
14:45 - 15:15	Incineration and Biological Treatment	Buddika Hemashantha
15:15 - 15:45	Q & A Discussion	All Participants
15:45 - 16:00	Discussion and wrapping up	Organizers and Host Country
Day 05 - 22/03/2024 (Waste Sector)		
09:00 - 09:15	Recap Day 4 and Agenda for Day 5	Buddika Hemashantha
09:15 - 10:15	Introduction to Wastewater handling in Philippines Followed by Q&A session	Buddika Hemashantha
10:15 - 10:30	Tea/Coffee Break	
10:30 - 12:00	Wastewater Handling: Domestic Followed by Q&A session	Buddika Hemashantha
12:00 - 13:00	Wastewater Handling: Industrial Followed by Q&A session	Buddika Hemashantha
13:00 - 14:00	Lunch Break	
14:00 - 15:30	Exercise on using the 2006 IPCC GHG Inventory Tool - Waste sector	Buddika Hemashantha
15:30 - 15:45	Tea/Coffee Break	
15:45 - 16:30	General Comments/Sharing by the participants of the results of the GHG assessment undertaken using 2006 IPCC GHG Inventory Tool	All Participants
16:30 - 16:45	Wrapping-up and Mentimeter	Organizers and Host Country
16:45 - 17:00	Vote of thanks, End of the session	Organizers and Host Country
