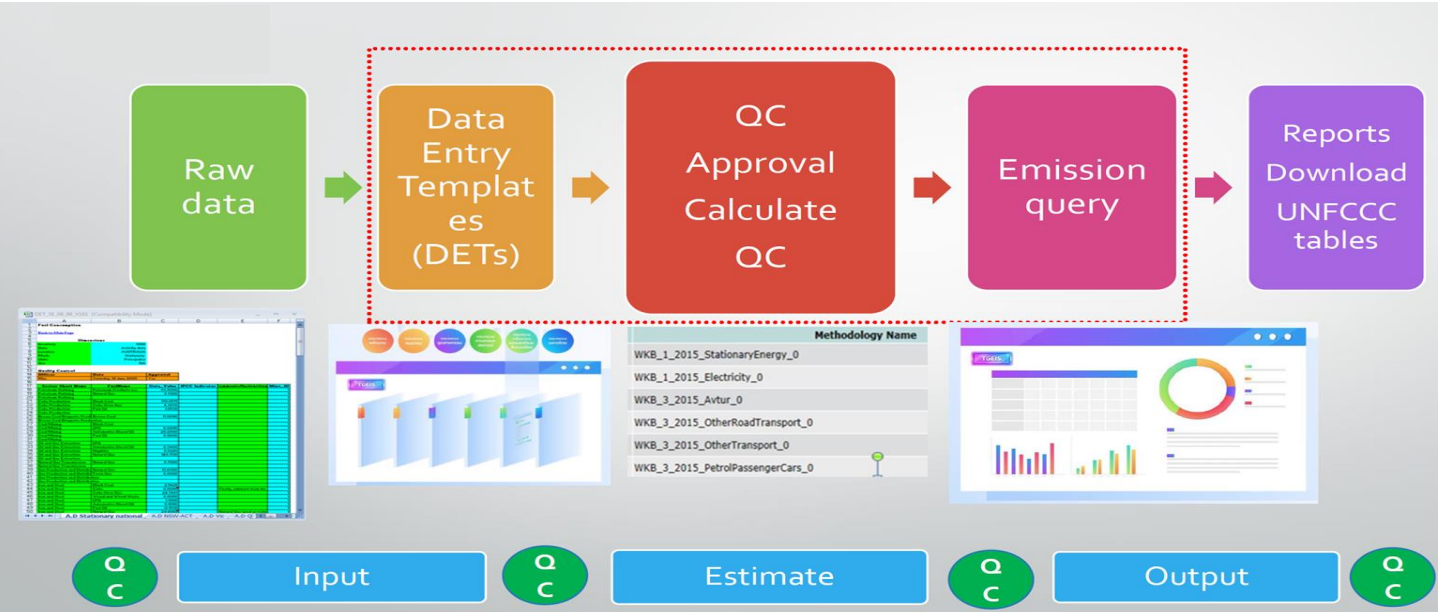
Good Practice Series on Transparency

Thailand Greenhouse Gas Emission Inventory System - TGEIS

Institutional Arrangements | GHG Inventory Information System | Data Quality | Data Collection & Management



Background

The TGEIS is a comprehensive framework designed to calculate, compile, and manage the nation's greenhouse gas (GHG) emissions data. Developed by the Office of Natural Resources and Environmental Policy and Planning (ONEP), TGEIS aligns with the 2006 IPCC guidelines. Its primary objective is to support Thailand's commitments under the UNFCCC by providing accurate and transparent GHG inventories for NCs and BURs.

Challenges addressed

Data Management: Prior to TGEIS, Thailand faced difficulties in compiling consistent and comprehensive GHG data across various sectors.

International Compliance: The need to meet international reporting standards and commitments under climate agreements necessitated a robust inventory system.

Sectoral Disparities: Different sectors had varying levels of capacity and methodologies for emissions reporting, leading to inconsistencies. Insufficient technical capacity for regular inventory updates.

Transparency and Accessibility: Enhancing transparency and accessibility of GHG emission data to the public and stakeholders.

Approach

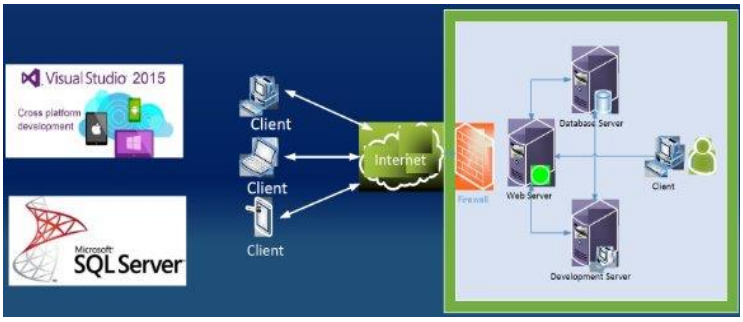
Institutional Arrangements: Established inter-ministerial committees to oversee climate policy development and implementation, ensuring comprehensive national systems to monitor, evaluate, and report on progress.

Data Entry Templates (DETs): Developed standardized DETs for sectors such as Energy, Industrial Processes and Product Use (IPPU), Agriculture, Land Use, Land-Use Change, and Forestry (LULUCF), and Waste to ensure uniform data collection.

Integrated Database: Created a centralized emissions database capable of generating queries, producing graphs, and downloading data reports.

Quality Control Measures: Incorporated inbuilt quality control mechanisms to enhance data accuracy.

Capacity Building: Conducted training sessions for relevant agencies to ensure proper data collection and reporting.



Software and Hardware

Country Report's History

NCs	BURs	NIRs	BTR
4	4	1	1

Responsible Institution

- Office of Natural Resources and Environmental Policy and Planning (ONEP)
- Thailand Greenhouse Gas Management Organization (TGO)

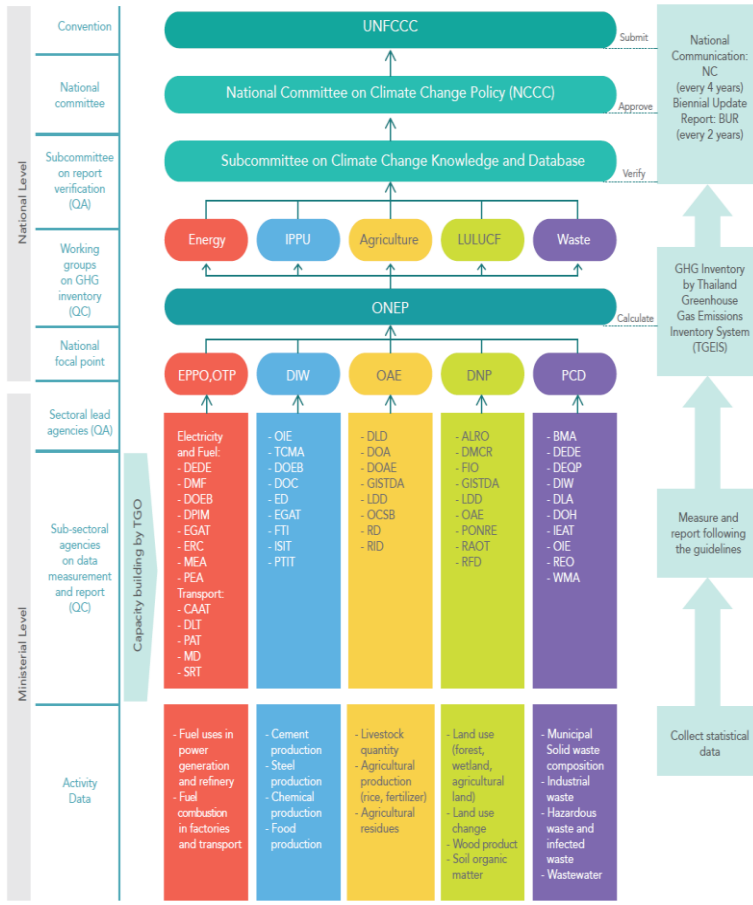
Success Factors

- **Strong Government Commitment:** Strong political will and commitment from the Thai government.
- **Inter-agency Collaboration:** Effective collaboration among various government agencies, research institutions, and stakeholders has been crucial for the system's success.
- **Capacity Building Initiatives:** Regular training and capacity-building programs have enhanced the skills and knowledge of personnel involved in GHG inventory compilation.
- **Data Quality Assurance:** Robust quality assurance mechanisms have been implemented to ensure the accuracy and reliability of GHG emission data.
- **Technological Integration:** Utilization of database systems streamlined data management and reporting processes.

Function and Operation

- TGEIS operates on a robust technical infrastructure comprising two dedicated servers for system and database operations, powered by Microsoft Visual Studio and SQL Server, with a comprehensive firewall system protecting data integrity. The system has evolved significantly since its inception following the 2016 MoU between Thai and Australian governments, particularly in its reporting capabilities and sector structure alignment.
- A key advancement has been the transition from IPCC 2006 sector structure to the CRT sector structure, while expanding its gas dimension coverage to include AR5 alongside AR2 and AR4 measurements.
- For ETF reporting, TGEIS implements a streamlined workflow where data outputs flow through the CRT Wizard to populate the UNFCCC reporting tool software, enabling automated report generation and maintaining consistency with international standards.
- The system's architecture supports approximately 40 different Data Entry Templates (DETs) covering various sectors including stationary energy, electricity, transportation, solid waste, wastewater treatment, rice cultivation, and industrial processes, allowing for comprehensive national GHG inventory management. This sophisticated integration ensures that Thailand can effectively track, report, and verify its emissions data while meeting its international climate commitments under the Paris Agreement.

Institutional Arrangement in Thailand



Source: Thailand's Fourth National Communication

Further Areas of Improvement

- **Data Granularity:** Increasing the granularity of data to enable more detailed analysis and targeted interventions.
- **Sectoral Coverage:** Expanding coverage to include emerging sectors such as waste management and tourism.
- **Technology Integration:** Further integrating advanced technologies such as artificial intelligence and machine learning to improve data analysis and forecasting.
- **Public Engagement:** Enhancing public awareness and engagement to promote wider understanding and support for GHG emission reduction efforts.
- By continuously improving and refining the TGEIS, Thailand can effectively monitor its progress towards its climate change mitigation goals and contribute to global efforts to combat climate change.