



# Mutual Learning on Energy Sector

by  
Thailand and Cambodia

**Thailand:** Ms. Nilapha Paemanee  
and Ms. Anchalee Natikool

**Cambodia:** Mr. Va Chanmakaravuth

**Secretariat:** Dr. Yuriko HAYABUCHI (Facilitator),  
Mr. Akira OSAKO (Rapporteur) ,  
Mr. Kohei SAKAI,  
Mr. Takashi MORIMOTO,  
and Ms. Kana SUZUKI



# Materials used

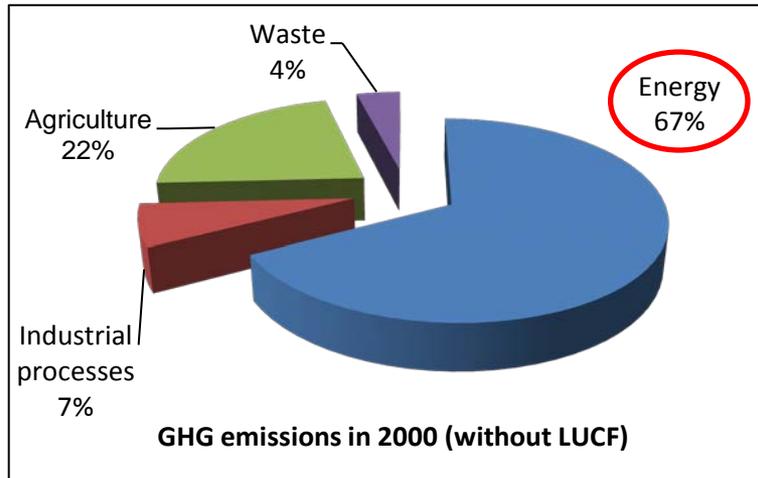
- Inventories subjected to study
  - Thailand: Inventory for 2000 (from SNC in 2011)
  - Cambodia: Inventory for 2000 (from SNC Technical Report Draft in 2009)
- **Materials used** (Those underlined are publicly available.)

Country	Inventory Report	Spreadsheets
Thailand	- <u>SNC (February 2011)</u>	- Ghg_energy_agriculture (word) - Overview (excel)
Cambodia	- SNC Technical Report Draft (August 2009)	- Overview (excel) - Module 1 (excel) - Trend (excel) - Summary result-15-July-09 (excel)



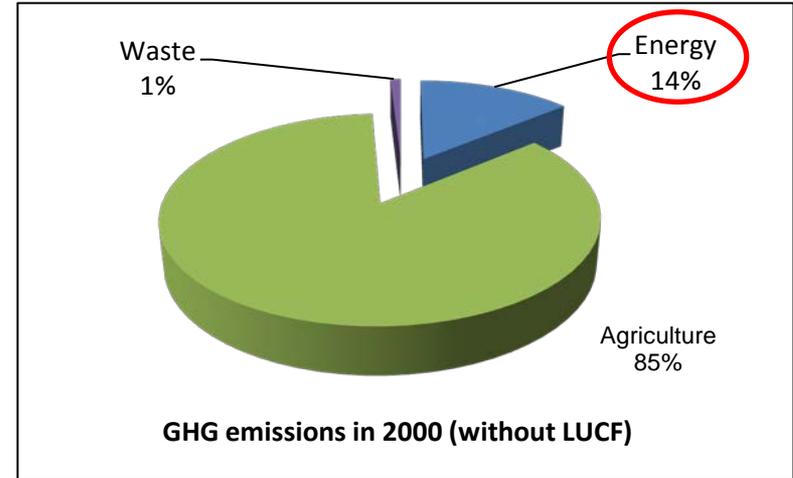
# Country overview

## Thailand



- **GHG Emissions in 2000**
  - 236,948 Gg-CO<sub>2</sub>eq. without LUCF
  - 6% Increase from 1994 to 2000
- **Key Category Top 3** (Level, excl. LUCF)
  - CO<sub>2</sub> Mobile Combustion: Road Vehicles (18.2%)
  - CO<sub>2</sub> Stationary Combustion: Natural Gas (13.8%)
  - CO<sub>2</sub> from Manuf. Industries and Const. (12.8%)
- **Other features**
  - 69 million population
  - 513,000 km<sup>2</sup> area

## Cambodia

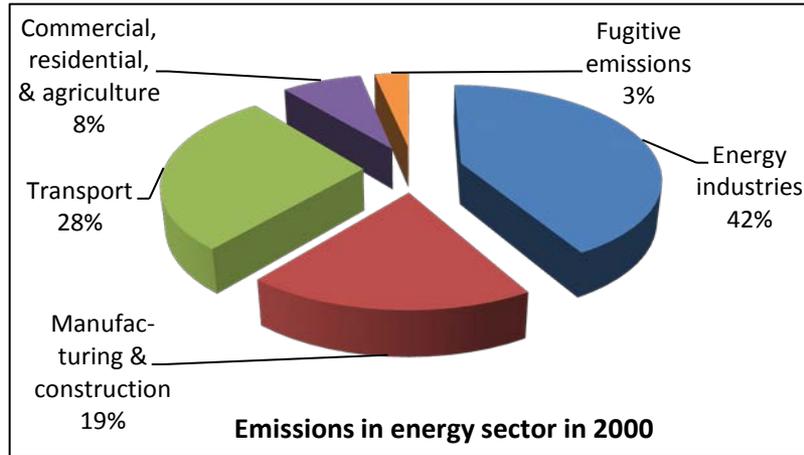


- **GHG Emissions in 2000**
  - 24,783 Gg-CO<sub>2</sub>eq. without LUCF
  - 95% Increase from 1994 to 2000
- **Key Category Top 3** (Level, excl. LUCF)
  - CH<sub>4</sub> Emissions from Rice Production (58.0%)
  - CH<sub>4</sub> from Enteric Ferment. in Dom. Livestock (13.9%)
  - N<sub>2</sub>O (Direct & Indirect) from Agricultural Soils (9.5%)
- **Other features**
  - 14 million population
  - 181,035 km<sup>2</sup> area



# Energy sector overview

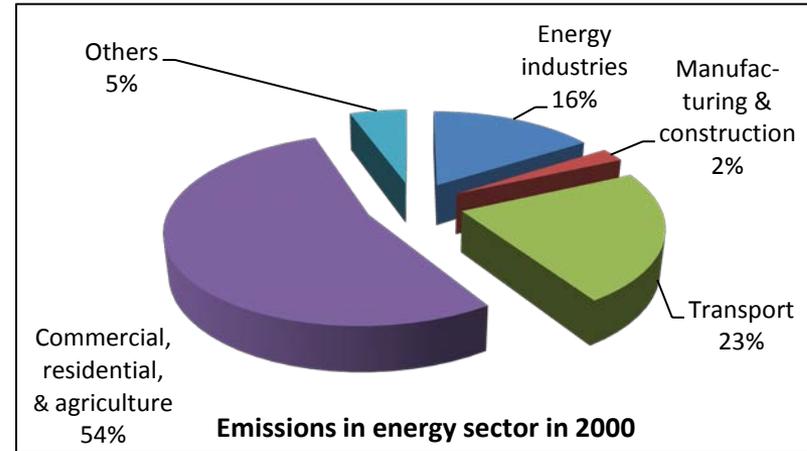
## Thailand



### Emissions from energy sector

- 159,382 Gg-CO<sub>2</sub>eq. in 2000
  - CO<sub>2</sub>: 149,915 Gg (94%)
  - CH<sub>4</sub>: 8,692 Gg-CO<sub>2</sub>eq. (5.5%)
  - N<sub>2</sub>O: 775 Gg-CO<sub>2</sub>eq. (0.5%)
- Other features
  - 23% Increase from 1994 to 2000

## Cambodia



### Emissions from energy sector

- 3,443 Gg-CO<sub>2</sub>eq. in 2000
  - CO<sub>2</sub>: 2,048 Gg (59%)
  - CH<sub>4</sub>: 1,163 Gg-CO<sub>2</sub>eq. (34%)
  - N<sub>2</sub>O: 233 Gg-CO<sub>2</sub>eq. (7%)
- Other features
  - 83% Increase from 1994 to 2000
  - 9,042 Gg-CO<sub>2</sub> from biofuel combustion is not included in the emissions above



# Overview of outcome

- Classification and number of questions asked prior to the workshop

Classification	Question to Thailand	Question to Cambodia
Activity data	4	5
Estimation method	2	5
Transparency	0	4
Responsible system structuring	1	2
Quality assurance & quality control	1	1
Emission factor	1	1
Uncertainty	1	0



# Issues & solutions (Thailand)

- Although the emissions from energy industry are classified as major key-category, the country-specific emission factor is under preparation.
  - Government by related agencies in cooperate with JGSEE (The Joint Graduate School of Energy and Environment) is now developing the CS emission factor for energy industry emissions.
  - Meetings among relevant agencies are planned to be held in order to develop the tier 2/3 method.



# Issues & solutions (Cambodia)

- Tier 2 method is not used for key category emissions.
- Specific data by sector is still limited, need to improve.
- Specific emission factor is not prepared, need to conduct in the future.
- Lack of funding disables continuous activity data collection and survey.
- Stable organization for inventory is necessary, but current team is not functioning well and needs improvement.
- National energy balance sheet is not available.
  - The institutional arrangement is in draft plan for discussion with top management level.



# Good practice (Thailand)

- Government by related agencies in cooperate with JGSEE is developing country-specific emission factor for energy industry in order to mitigate the GHG emissions by understanding the actual emissions.
- Thailand has a good national policy and system in collecting activity data.
- Thailand seeks to develop an estimation method for key sectors to higher tier.



# Good practice (Cambodia)

- Cambodia has provided so transparent material that the attendees of the mutual learning easily understood the emission estimate.
- Cambodia has an ideal institutional arrangement plan for the near future, which plan was introduced during the mutual learning.



# Possible follow-up activities

- Keep in touch for sharing and updating new information and experiences in order to improve the existing results.



# Participants' comments

- Mutual learning is a good chance to understand the situation of inventory preparation in the other countries and also in one's own country.
- The material exchange and question and answer preparing process of the mutual learning seems to be fine.
- Half day session of mutual learning is adequate in length.

