



Development of F-gas emissions estimation from non-Annex I Parties: A case Study of Thailand

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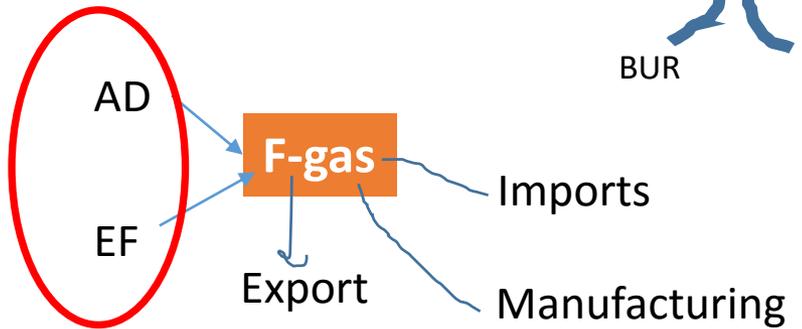
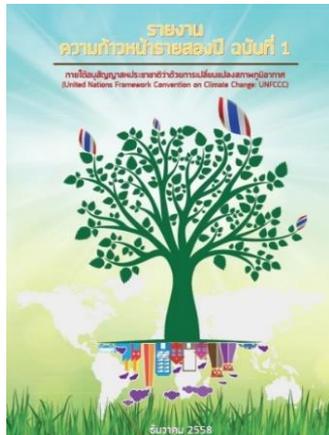
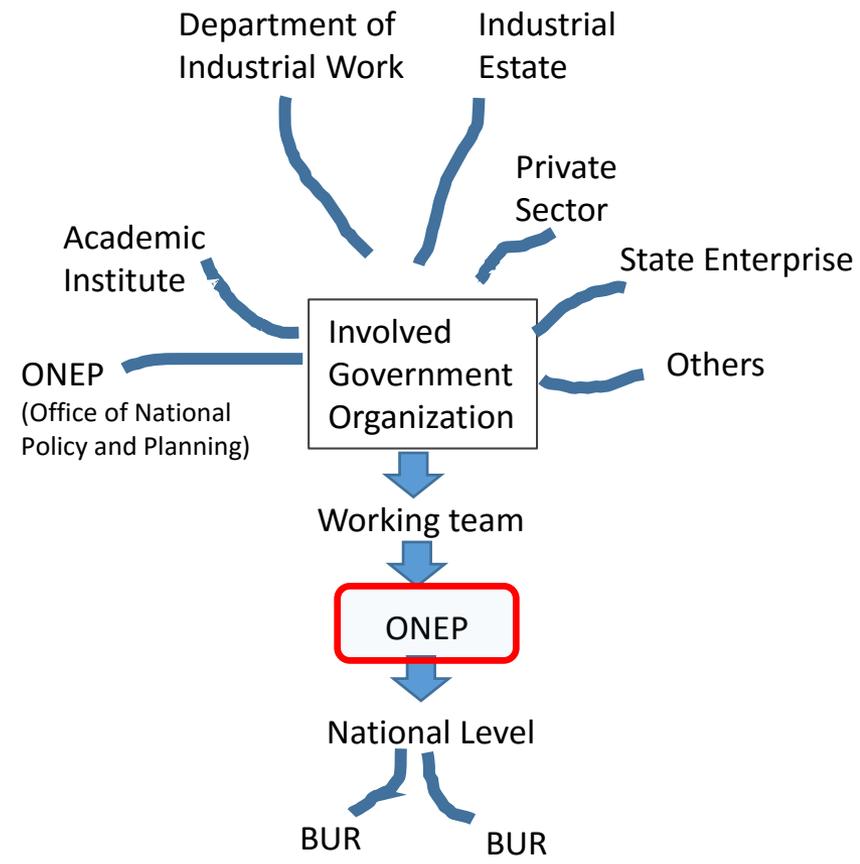
Outline presentation

- Thailand BUR2
- The development of F-gas estimation and other GHG estimation system
- TGEIS (Thailand Green House Gas Estimation Inventory System)



Thailand BUR2

- National Communication Report and Biennial Updated Report
- F-gas was not reported in BUR2
- The limitation of available data
- **Challenges** for our country



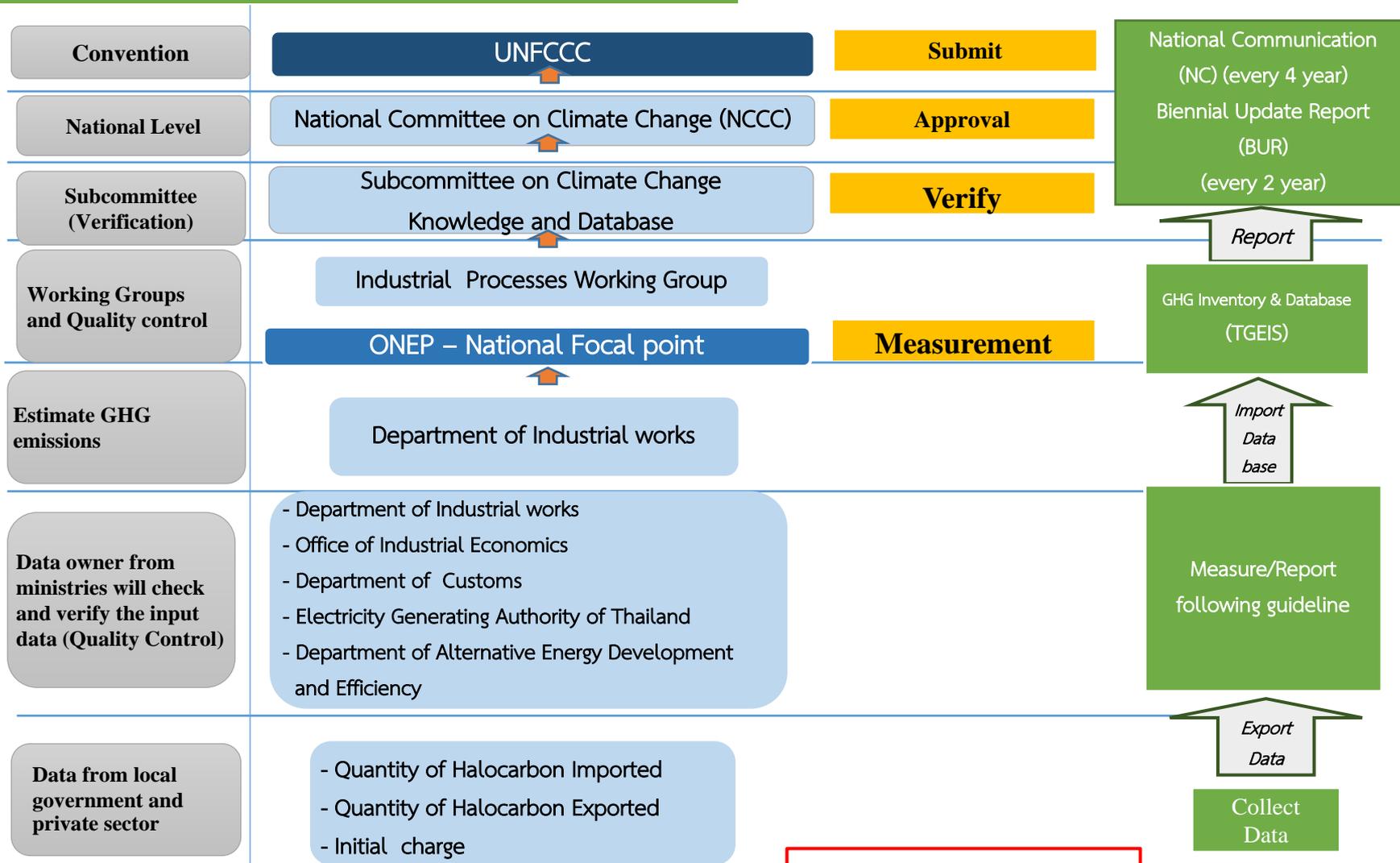
The development of F-gas estimation and other GHG estimation system



Working team for BUR2: Meeting and Workshop



Flow chart of organizing committee for F-gas



M R V approach



AD

EF

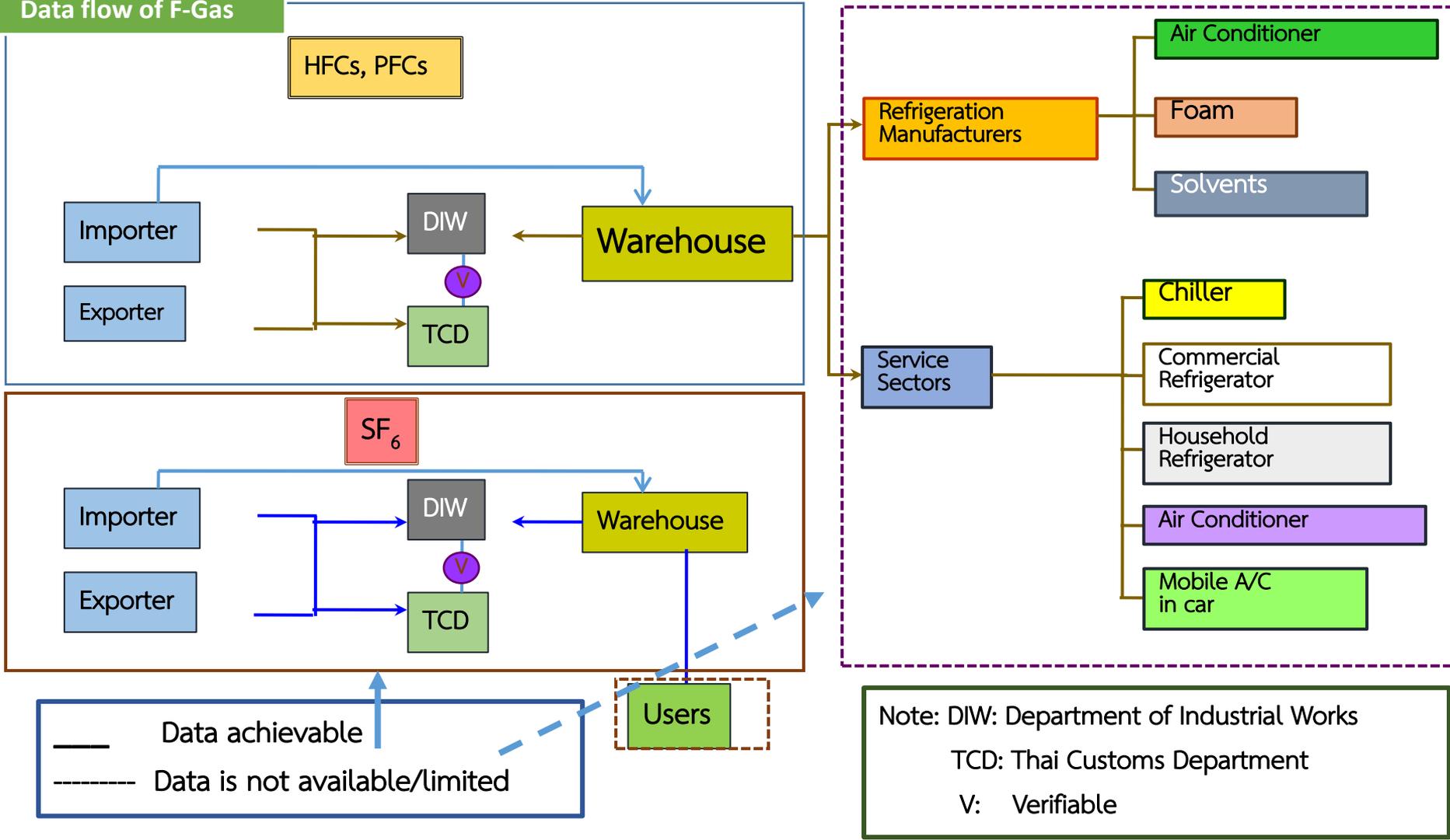


Top-Down approach

Bottom-Up approach



Data flow of F-Gas



* Based on the data collected: there have been no production of PFCs, HFCs and SF₆ in Thailand



F-gas Emission Estimation

Tier 1 Method

$$\text{Potential Emissions} = \text{Production} + \text{Imports} - \text{Exports} - \text{Destruction}$$

$$\text{Annual Emissions} = \text{Net consumption} * \text{Composite EF}$$

Scenario

- Tier 1a**, chemicals contained in products are not considered. Only chemicals imported or exported

$$\text{Potential Emissions} = \text{Production} + \text{Imports} - \text{Exports} - \text{Destruction}$$

$$\text{Exports} = \text{Exported HFC/PFC in bulk}$$

$$\text{Imports} = \text{Imported HFC/PFC in bulk}$$

- Tier 1b**, chemicals contained in products are considered. An extension of **Tier 1a** and includes HFCs/PFCs contained in various products that are imported and exported.

$$\text{Potential Emissions} = \text{Production} + \text{Imports} - \text{Exports} - \text{Destruction}$$

$$\text{Exports} = \text{Exported chemical in bulk} + \text{quantity of chemical exported in HFC/PFC containing products}$$

$$\text{Imports} = \text{Imported chemical in bulk} + \text{quantity of chemical imported in HFC/PFC containing products}$$



Development of our GHG Inventory System

Thailand's Greenhouse Gas Emissions Inventory System (TGEIS)

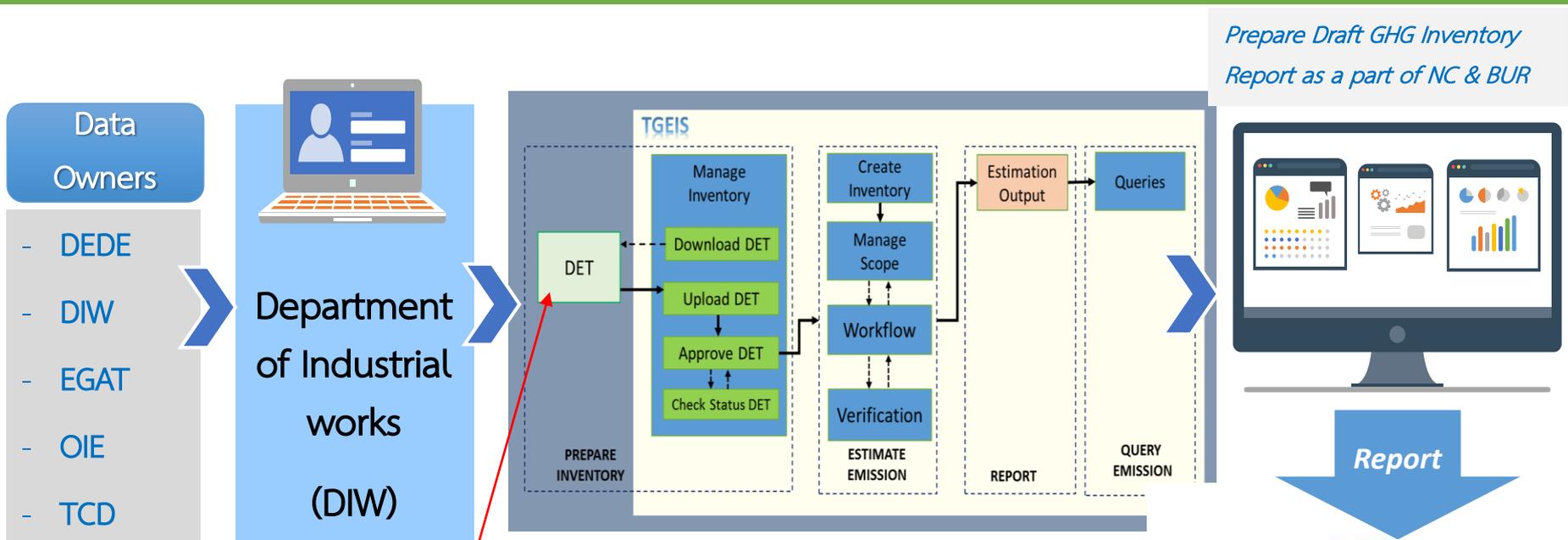
- The **Australian Department of the Environment and Energy**, has entered into a bilateral agreement with **ONEP** to support development of Thailand's Greenhouse Gas Emissions Inventory System (TGEIS).



- The system is to support future development of Thailand's NC and BUR, inform policy formulation and improve the decision-making process.



Thailand's Greenhouse Gas Emissions Inventory System (TGEIS)



2.G OTHER PRODUCT MANUFACTURE AND USE									
1									
2									
3	Author	Mark Hunstone							
4	Updated	31 January 2018							
5									
6									
7	INDUSTRIAL PROCESSES AND PRODUCT USE, OTHER PRODUCT MANUFACTURE AND USE, Electrical Equipment, Manufacture of Electrical								
8	Facility ID	Facility name	Location	Variable					
9	14THET00000_00000	None	Northern Thailand	Total SF ₆ Consumption by Equipment Manufacturers					
10	14THET00000_00000	None	Northeast Thailand	Total SF ₆ Consumption by Equipment Manufacturers					
11			Central Thailand (excluded Bangkok)	Total SF ₆ Consumption by Equipment Manufacturers					
12			Southern Thailand	Total SF ₆ Consumption by Equipment Manufacturers					
13			Bangkok City	Total SF ₆ Consumption by Equipment Manufacturers					
14			Northern Thailand	Total SF ₆ Consumption by Equipment Manufacturers					
15				Total SF ₆ Consumption by Equipment Manufacturers					
16				Total SF ₆ Consumption by Equipment Manufacturers					
17				Total SF ₆ Consumption by Equipment Manufacturers					
18				Total SF ₆ Consumption by Equipment Manufacturers					
19				Total SF ₆ Consumption by Equipment Manufacturers					
20				Total SF ₆ Consumption by Equipment Manufacturers					
21				Total SF ₆ Consumption by Equipment Manufacturers					

A	B	C	D	E	F	G	H
1) Emissions of PFCs can be estimated by the same calculation procedure							
2) Default emission factors depend on region for which emissions are being estimated. See Tables B.2 through B.4 in Chapter B of this volume.							
						Northern Thailand	SF ₆
						Northeast Thailand	SF ₆
						Central Thailand (excluded Bangkok)	SF ₆
						Southern Thailand	SF ₆
						Bangkok City	SF ₆
						All	SF ₆
						Northern Thailand	SF ₆
						Northeast Thailand	SF ₆
						Central Thailand (excluded Bangkok)	SF ₆
						Southern Thailand	SF ₆
						Bangkok City	SF ₆
						All	SF ₆
INDUSTRIAL PROCESSES AND PRODUCT USE, OTHER PRO							
1) Emissions of PFCs can be estimated by the same calculation procedure							
2) Default emission factors depend on region for which emissions are being estimated. See Tables B.2 through B.4 in Chapter B of this volume.							
3) The use emission factor includes emissions due to leakage, servicing, maintenance, and equipment failures.							
						Northern Thailand	
						Northeast Thailand	
						Central Thailand (excluded Bangkok)	
						Southern Thailand	
						Bangkok City	
						All	
						Northern Thailand	
						Northeast Thailand	
						Central Thailand (excluded Bangkok)	
						Southern Thailand	
						Bangkok City	
						All	





Challenge

- Promoting understanding among industrial owners and other stakeholders about the significance of GHG estimation is the highest priority for supporting a new data collection
- Difficulties for data collection due to project similarity with DIW so that the manufacture may confuse and inconvenience to provide data.
- Insufficient national data to support the data collected from manufacturers
- Difficulties of data collection due to sub-application characteristics (confidential data: agreement (MOU or MOA))

13 July 2018 : TGEIS Launching

Capacity Building

16 July 2018 : DIW Launching the project to support TGEIS



Thank you very much for your attention

