



THAILAND'S GHG INVENTORY AT MUNICIPAL LEVEL

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PROJECT : GHG INVENTORY FOR MUNICIPAL

BACKGROUND

- The Eleventh National Economic and Social Development Plan (2012-2016)
 - To develop an efficient and sustainable economy by upgrading production and services based on technology, innovation and creativity using effective regional links, by improving food and energy security, and by upgrading eco-friendly production and consumption toward a **low carbon society**.
- National Strategy on Climate Change
 - To support municipal development toward “**Low Carbon City**”
- TGO’s initiative to develop the inventory for municipal

MITIGATION ACTION PLAN AT MUNICIPAL LEVEL

- Low Carbon City Project under Partnership for Market Readiness (PMR)
- TVER Program

Transform to practical projects



OBJECTIVE

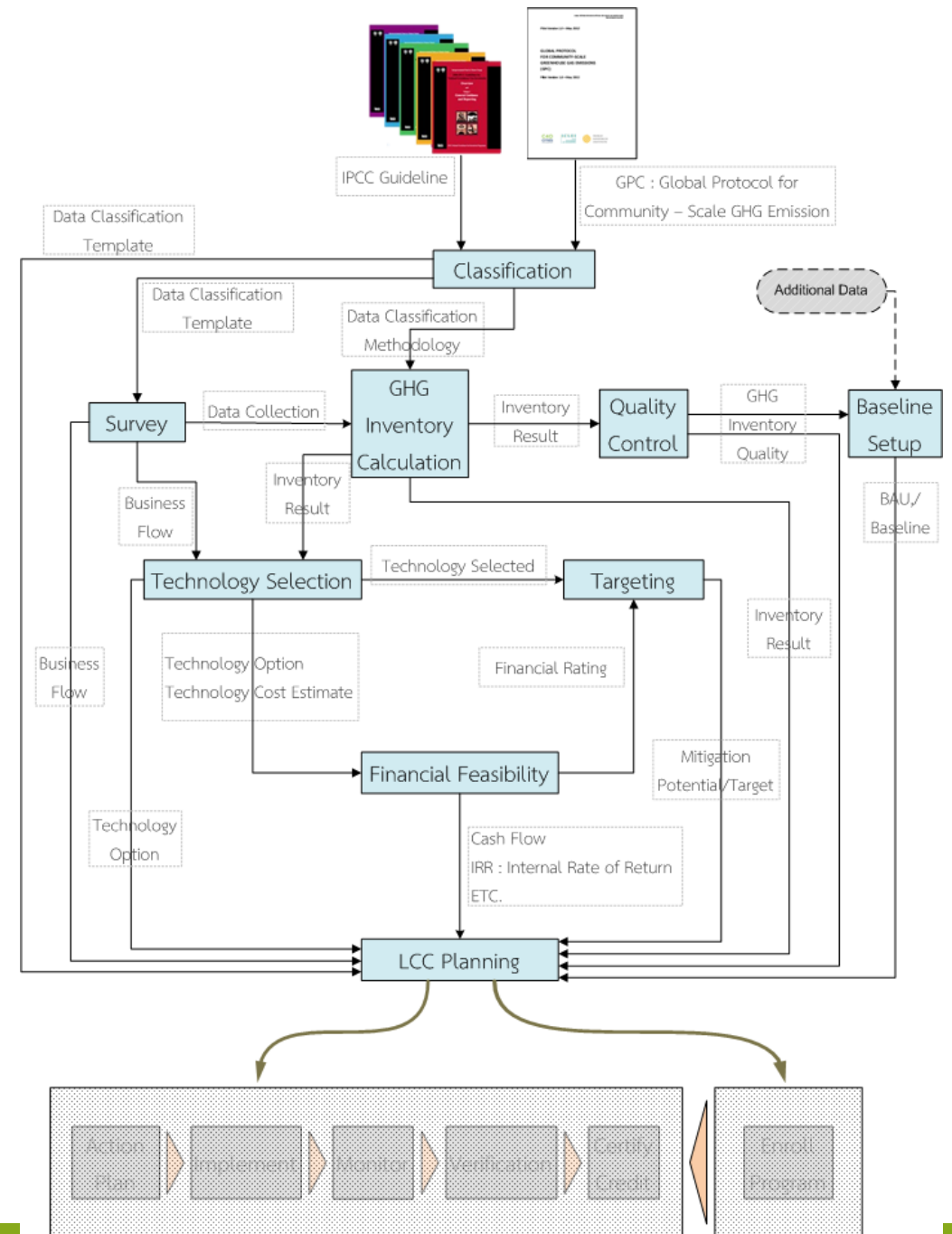
- To help municipal governors can spot the current emission of their city/town
- To emphasize the local development plan toward Low Carbon City
- To build the capacity for municipal officer to understand on emission, mitigation, and removal of GHG
- To help municipal governor implement the mitigation project
- To be a tool for monitor the progressive of development plan

CONSTRAINT

- The data are not available at municipal level
 - Using various scoping approach to determine the activity data at municipal level
- The GHG accounting and reporting standard
 - Adaptation of GPC standard
<http://www.iclei.org/our-activities/our-agendas/low-carbon-city/gpc.html>
 - Calculation methodology base on IPCC GL
- The data gap and overlapping between neighbor province still existing
 - The GHG report cannot support for National GHG Inventory
 - Can provide some verification parameter for National GHG Inventory

LCC PROCESS FLOW CHART

- Preliminary approach for method testing before full launching of LCC program
- To develop approach methodology for local governor to formulate mitigation project.



PILOT PROJECTS : MUNICIPAL GOVERNOR ENGAGEMENT

- Lampang
- Chiang Rai
- Nong Samrong; Udonnathani



CAPACITY BUILDING PROGRAM

- Training by doing approach by TGO staff to municipal officers
 - Overview of GHG emission source and sink in municipal area
 - Classification of GHG Report
 - Calculation Methodology => Activity Data, Emission Factor vs. Carbon Footprint Factor
 - Train on some basic data analysis technique
- Support municipal governor to assess the potential and feasibility of mitigation project
- GHG related data will be add to common data survey of municipal governor

REPORT CLASSIFICATION

- GPC Reporting Structure
- Match to IPCC categories
- Calculation Worksheet

Table 1. GPC 2012 Accounting and Reporting Pilot Framework

| GPC No. | IPCC Class | Scope | GHG Emissions Sources |
|------------|--------------|-------|---|
| I. | | | Stationary Units |
| I.1 | | | Residential Buildings |
| I.1.1 | 1A4b | 1 | Direct Emissions (Scope1) |
| I.1.2 | | 2 | Energy Indirect Emissions (Scope2) |
| I.2 | | | Commercial/Institutional Facilities |
| I.2.1 | 1A4a | 1 | Direct Emissions (Scope1) |
| I.2.2 | | 2 | Energy Indirect Emissions (Scope2) |
| I.3 | | | Energy Generation |
| I.3.1 | 1A1 | 1 | Direct Emissions (Scope1) |
| I.3.2 | | 2 | Energy Indirect Emissions (Scope2) |
| I.4 | | | Industrial Energy Use |
| I.4.1 | 1A2+1A5+1A4c | 1 | Direct Emissions (Scope1) |
| I.4.2 | | 2 | Energy Indirect Emissions (Scope2) |
| I.5 | | | Fugitive Emissions |
| I.5.1 | 1B | 1 | Direct Emissions (Scope1) |
| II. | | | Mobile Units |
| II.1 | | | On-Road Transportation |
| II.1.1 | 1A3b | 1 | Direct Emissions (Scope1) |
| II.1.2 | | 2 | Energy Indirect Emissions (Scope2) |
| II.1.3 | | 3 | Indirect Emissions from Transboundary On-Road Inter-City or International Transportation Trips that Originate and/or Complete their Journey Within the Community (Scope3) |
| II.2 | | | Railways |
| II.2.1 | 1A3c | 1 | Direct Emissions (Scope1) |
| II.2.2 | | 2 | Energy Indirect Emissions (Scope2) |
| II.2.3 | | 3 | Indirect Emissions from Transboundary Inter-City or International Railway Trips that Originate and/or Complete their Journey Within the Community (Scope3) |
| II.3 | | | Water-Borne Navigation |
| II.3.1 | 1A3dii | 1 | Direct Emissions (Scope1) |
| II.3.2 | | 2 | Energy Indirect Emissions (Scope2) |
| II.3.3 | | 3 | Indirect Emissions from Inter-City or International Water-Borne Navigation Trips that Originate their Journey Within the Community (Scope3) |
| II.4 | | | Aviation |
| II.4.1 | 1A3aii | 1 | Direct Emissions (Scope1) |

DATA COLLECTION TEMPLATE

อาคารที่พักอาศัย (Residential Buildings)

TGO_LCC_DC_01

| การปล่อยทางตรง (Sc.1) | | | | | | | | | | | | | |
|-----------------------|--------------|---|---|---|---|---|---|---|---|----|----|----|-----|
| กิจกรรม | ปริมาณการใช้ | | | | | | | | | | | | รวม |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | |
| ขนาดของถังก๊าซ LPG | | | | | | | | | | | | | |
| - 4 กก. (ถัง) | | | | | | | | | | | | | |
| - 7 กก. (ถัง) | | | | | | | | | | | | | |
| - 15 กก. (ถัง) | | | | | | | | | | | | | |
| - 48 กก. (ถัง) | | | | | | | | | | | | | |
| ก๊าซชีวภาพ (ลบ.ม.) | | | | | | | | | | | | | |
| ไม้ / เศษไม้ (กก.) | | | | | | | | | | | | | |
| ถ่าน (กก.) | | | | | | | | | | | | | |
| ชีวมวลอื่น ๆ (กก.) | | | | | | | | | | | | | |
| อื่น ๆ (โปรดระบุ) | | | | | | | | | | | | | |

| การปล่อยทางอ้อมจากการใช้พลังงาน (Sc.2) | | | | | | | | | | | | | |
|--|--------------------|---|---|---|---|---|---|---|---|----|----|----|-----|
| กิจกรรม | ปริมาณการใช้ (kWh) | | | | | | | | | | | | รวม |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | |
| พลังงานไฟฟ้า | | | | | | | | | | | | | |
| - บ้านที่เป็นห้องเช่า | | | | | | | | | | | | | |
| - บ้านพักอาศัย | | | | | | | | | | | | | |
| - บ้านที่มีการประกอบการค้า | | | | | | | | | | | | | |
| อื่น ๆ (โปรดระบุ) | | | | | | | | | | | | | |

* รายงานการใช้ไฟฟ้าจากการไฟฟ้าส่วนภูมิภาคอำเภอ.....ในปี 25.....

FIELD SURVEY FOR ASSESSMENT OF MITIGATION OPTION

- Survey for finding potential mitigation option
- Assessment for possibility of mitigation option
- Inspect the data system of municipal office

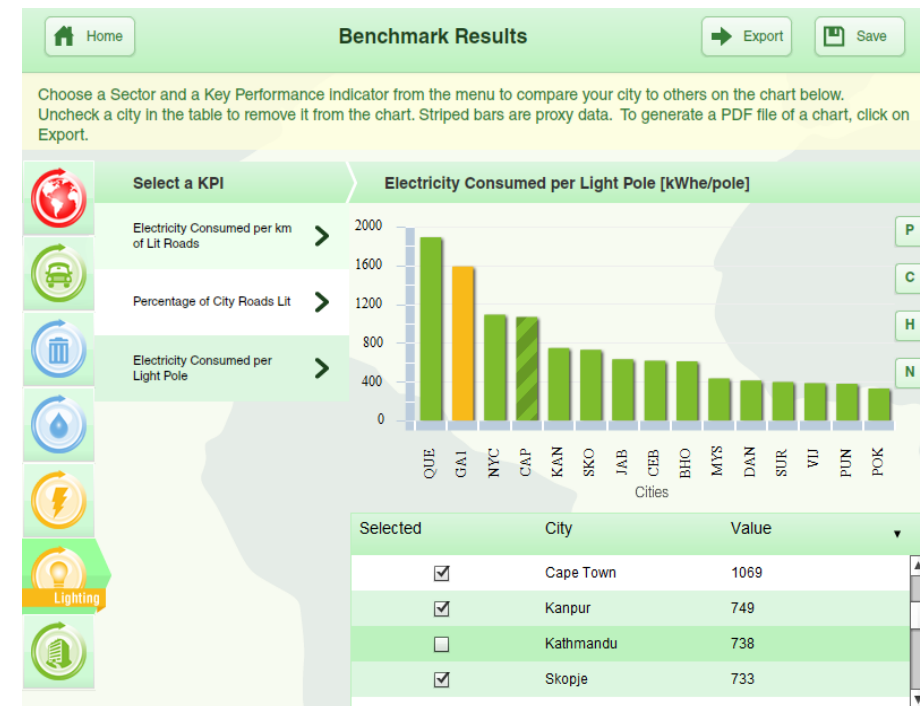


OTHER SUPPORT PROGRAM : TRACE

- Tool for Rapid Assessment of City Energy

A Decision Support Tool for Evaluating Energy Efficiency Opportunities in Cities

- Synergize project from World Bank to support the preparation of LCC under PMR program
 - Benchmarking
 - Prioritization
 - Recommendation for Energy Measure



CONCLUSION

- GHG inventory at municipal level is an TGO initiative as the first approach to help municipal governor develop toward **Low Carbon City**
- The data quality is not good enough to have accurate emission report
- The municipal GHG report cannot support to National GHG Inventory
- GHG inventory is a good capacity building tool for better understanding on GHG emission
- Municipal governor engagement is a key factor of successive



THANK YOU



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