



# Thailand's Develop and Management of GHG Inventory System and Low Carbon City

Mr. Kiatchai Maitriwong, Executive Director of TGO, Thailand

Side Event on Advancing GHG Inventory Systems at Korea Pavilion, COP26, Glasgow, UK on 9 November 2021

Thailand Greenhouse Gas  
Management Organization  
(Public Organization)

[www.tgo.or.th](http://www.tgo.or.th)



# Content

- 1 Rationale of Low Carbon City in Thailand
- 2 Achievement and Engagement of Cities
- 3 Successful Activities to Move Forward
- 3 Lessons Learned and Challenges
- 4 Future Plans



# Rationale of Low Carbon City in Thailand



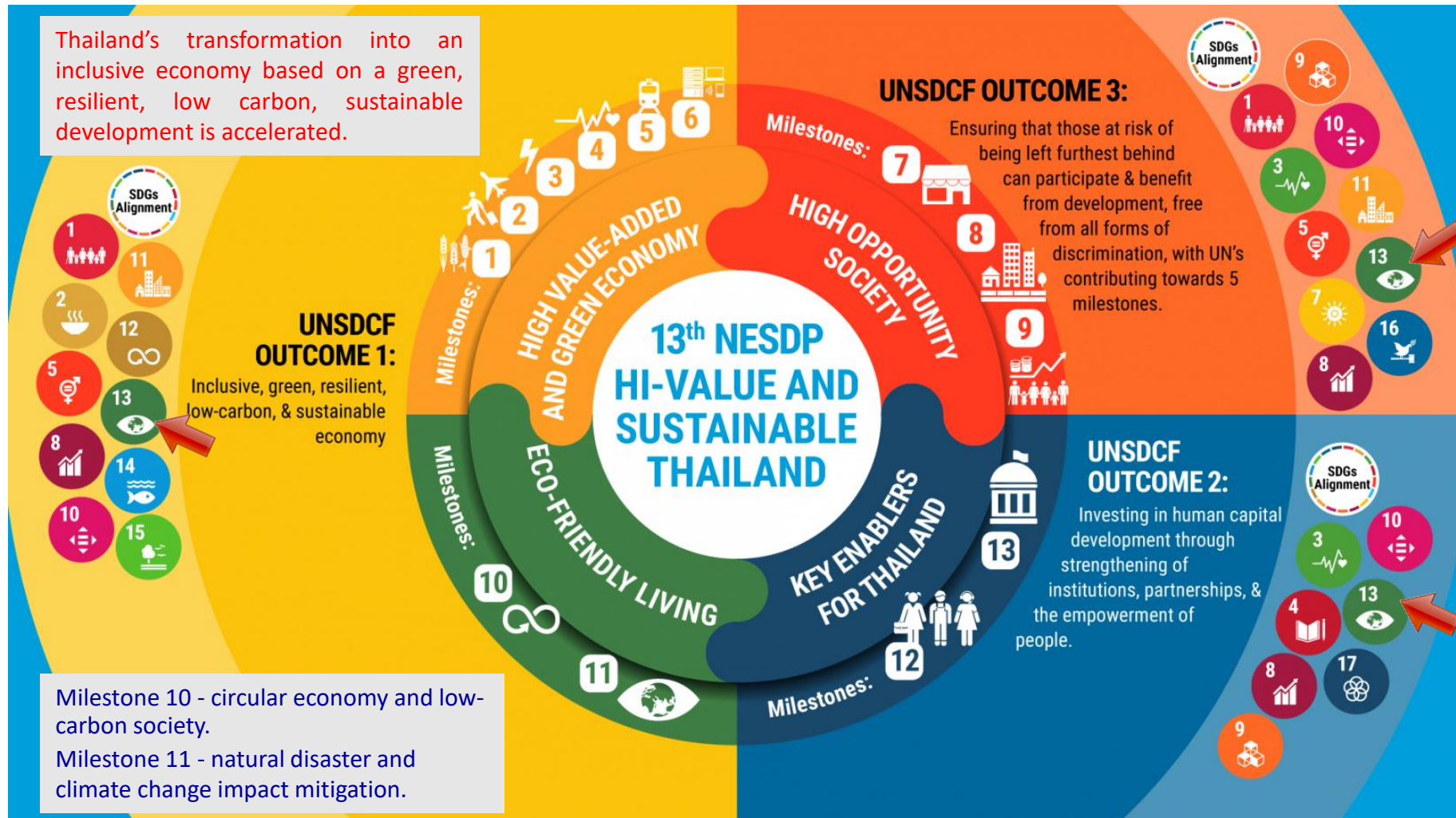
# Rationale of Low Carbon City in Thailand





# Rationale of Low Carbon City in Thailand

Implementing SDGs Goal in Thailand aligned with the priorities and milestones of the draft 13<sup>th</sup> National Economic and Social Development Plan called UN Sustainable Development Cooperation Framework (UNSDCF)



# Objective and Scope of Low Carbon City Scheme



1. Develop City GHG Inventory



2. Analysis of GHG reduction potential



3. Develop an Appropriate Mitigation Plan

**Provincial / Sub national Level**

**Municipality Level**



Set up policies, plans, goals and guidelines in reducing greenhouse gases to become circular economy and low-carbon society city as well as natural disaster and climate change impact mitigation



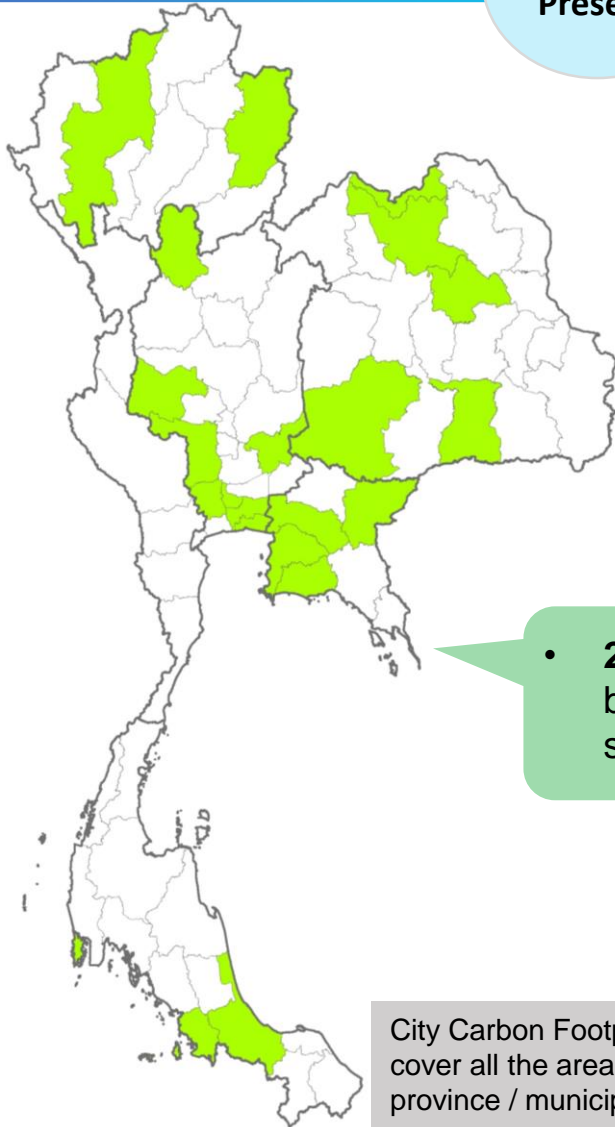
# Achievement and Engagement of Cities





## Provincial / Sub national

2016 –  
Present



- **22 provinces** have been conducted the study on CCF

City Carbon Footprint (CCF): The boundary will cover all the area which is responsible by province / municipality.



- **237 municipalities** have been conducted the study on CFO
- **4 municipalities** on CCF under GEF 5 project supported funding by UNDP

Carbon Footprint of Organization (CFO): The boundary will cover only the buildings/activities belong to the municipality.

## Municipality

2011 –  
Present





## 1 PROPOSED & PREPARATION

- Official Letter & MOU
- Set up Working Group – Institutional Arrangement
- Capacity Building

## 2 GHG INVENTORY & PROJECTION

- Source and Sink Identification
- Data Collection
- GHG Emissions and Removals Estimation
- GHG Emissions Projection
- QA/QC

## 3 GHG REDUCTION POTENTIAL & TARGET

- National Plan
- Provincial Plan
- GHG Reduction Technology
- Public Hearing to GHG Mitigation Measure



## 4 GHG Mitigation Plan

- Analysis Factor: Technical, Social, Economic and Environment
- Target Setting of Mitigation Plan
  - > Short Term
  - > Medium Term
  - > Long Term

## 5 Implementation

- Following by GHG Mitigation Plan

## 6 MONITORING & EVALUATION

- Measuring (and Monitoring) Reporting and Verification (MRV)





Signing Ceremony of Memorandum of Understanding



## Capacity Building to Practitioner / Representative of Relevant Agencies

- Pre of project cycle
  - Identify emission sources and sinks in the boundary
  - Data input for GHG Inventory
- Post of project cycle
  - Knowledge Transfer
  - Activities and Technologies to reduce GHG emissions
  - Best Practice & Lesson Learned

## Notification on appointment of working group

- Provincial Governor, Chairman
- Deputy Governor, Vice President
- Relevant Agencies, Representative



# Stakeholder Engagement (2)



Working Group Meeting organize in quarterly

- Progress on project activities
- Improvement result of project from relevant agencies' comment which bring it to completeness



Public Hearing to GHG Mitigation Measure



Organize a plaque awarding event to honor the low-carbon society initiative



Consolidate the strategy and mitigation action on City Master Plan





## Funding Opportunity

Achieving an initial step towards, city will have opportunities to apply for funding from international and national government to implement mitigation actions in line with city's mitigation plan.



## Domestic Carbon Credits

GHG mitigation actions through undertaking projects that will apply the Thailand Voluntary Emission Reduction Programme (T-VER) for certifying, issuing and trading carbon credits.

<http://ghgreduction.tgo.or.th/en/t-ver-en.html>



Alternative Energy



Energy Efficiency Improvement



Waste Management



Transportation Management



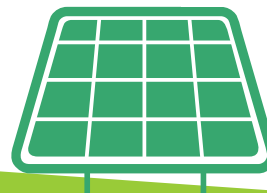
Forestry and Green Space



Agriculture



Others



## Become Climate-Smart City

Data, innovation, practical are a basis to promote sustainable urban system management which is an important aspect of smart cities. Meanwhile, city can cope with impact and adapt to climate change with cross-government, private and community collaboration.

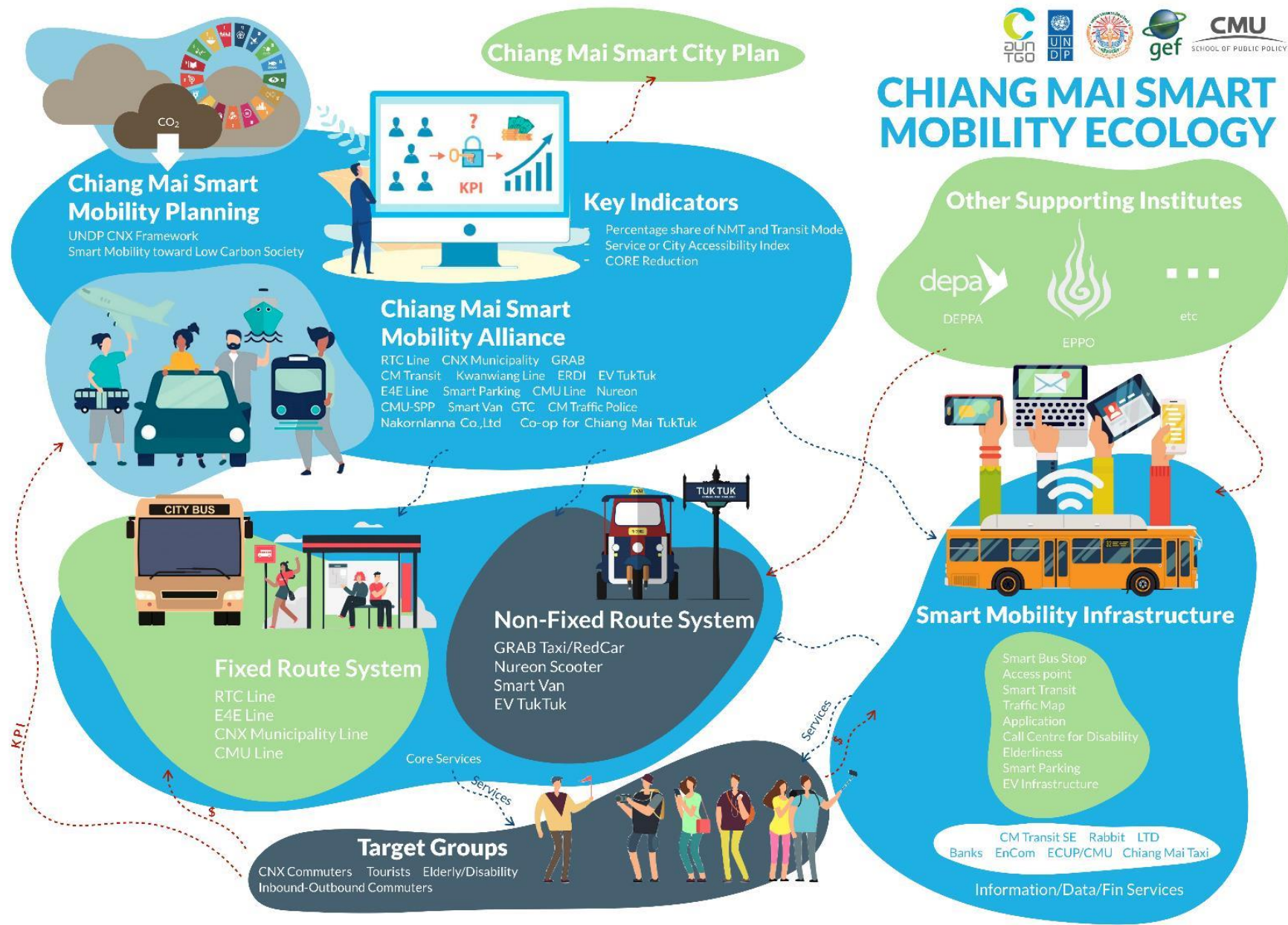




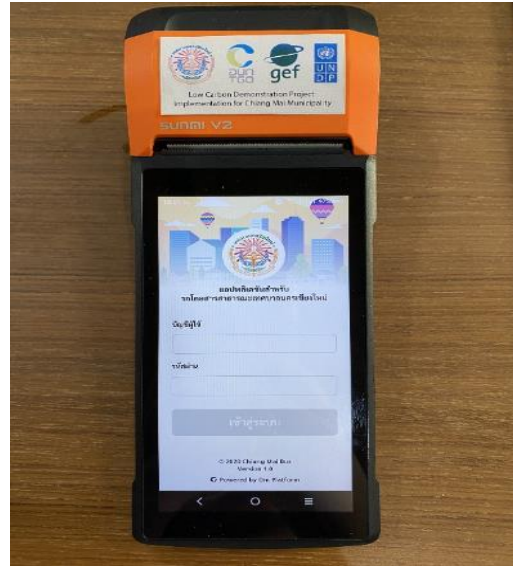
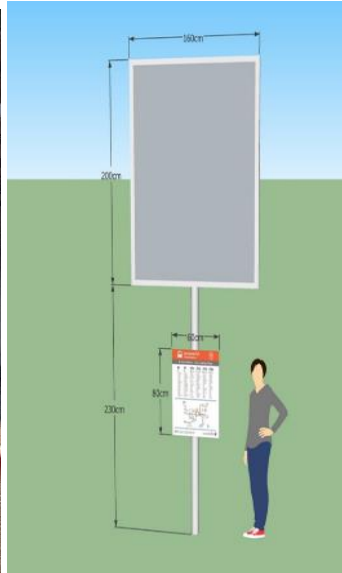
## Successful Activities to Move Forward



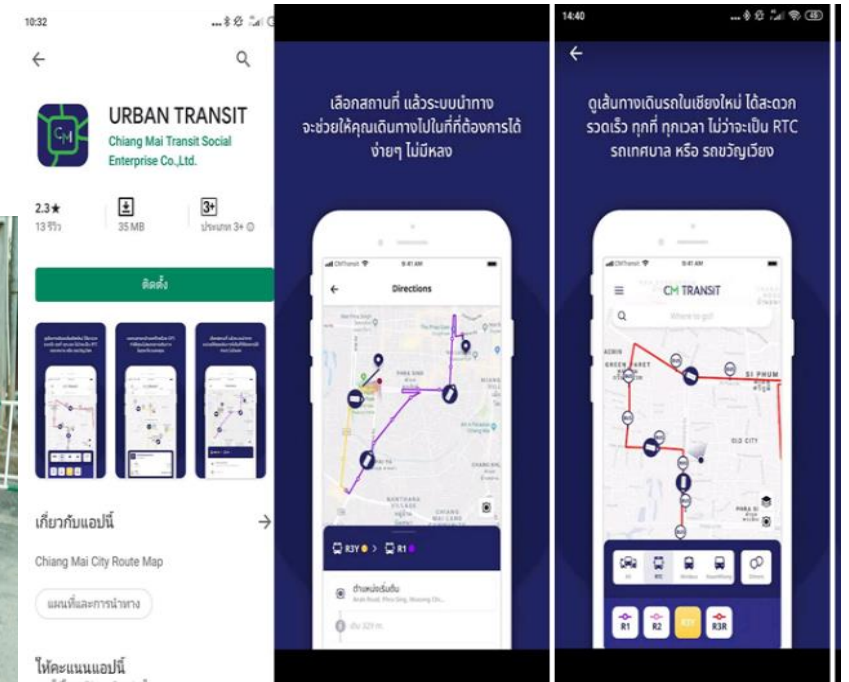
# Chiang Mai Smart Mobility Ecology







## Success Stories



## Success Stories



Treatment Plant



Market

### Project Description

**About project:** Wastewater treatment plant installed at Hua Thanon Fish Market, location of a market close to sea.

**Baseline:** Sewage is directly discharged to the sea.

**Why this project:** To treat a sewage prior discharge to the sea.

**Capacity of plant:** 15 Cubic meter / day

**Stakeholder:** Samui Municipality

**How does the GEF project support?**

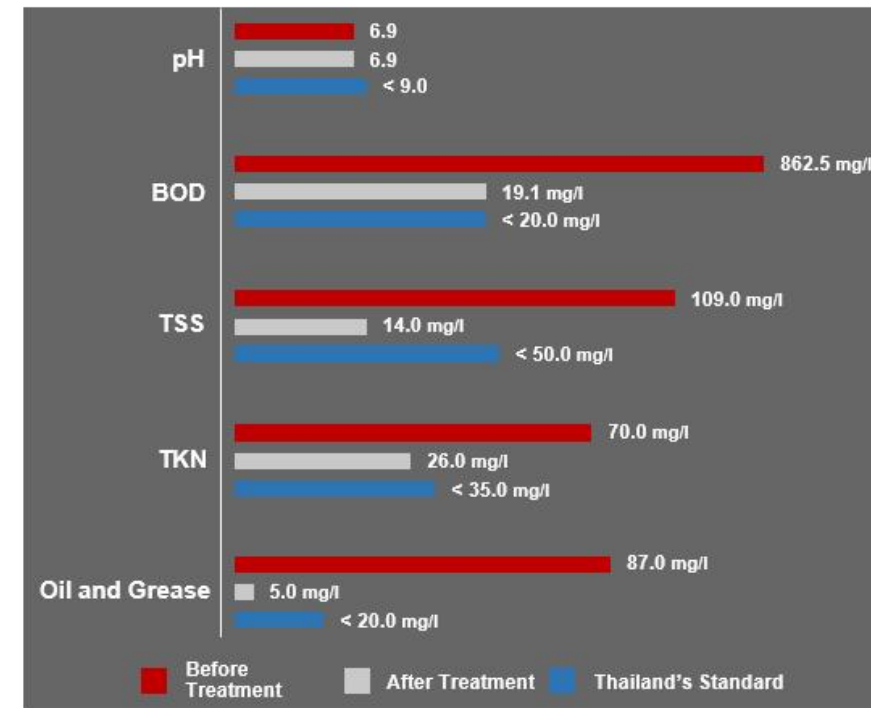
- **Stage 1: Initiate the project**
- Financial support for plant construction / system monitoring

### Achievement

**GHG Reduction:** N/A

**Treated Results:** All parameters are comply with Thailand's regulation and standard.

**Sustainability:** Municipality office must prepare sewage treated results for center government annually.





## Success Stories



Chopping coconut waste



Chopping machine



Soil conditioner



Mr. Somwong,  
Leader of center



Mr. Somwong is working with kilns



Wood vinegar



Charcoal from coconut



Charcoal kilns



Charcoal from wood



Charcoal from coconut



Kiln



Charcoal from different materials



Kiln



## Success Stories



Gold Bin @Samui



Knowledge sharing among local people



Composting bin with organic waste



Mr. Lertsinsathaphon, Leader of group



Installation Location



Dr. Meepean, Leader of the station



Pellet making machine



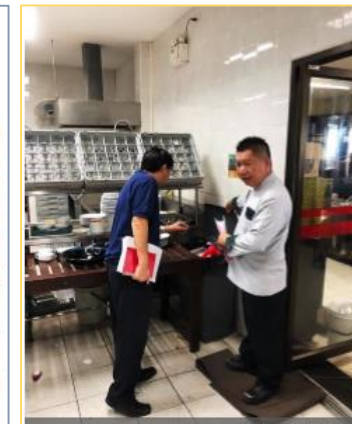
Station



Soil conditioner



Mixing machine



Walk-through audit activity



At household level

GHG Reduction: 116 tCO<sub>2</sub>e (EOP)

Animal feed

25 tCO<sub>2</sub>e (EOP)

At hotels

Paused due to COVID-19



## Success Stories



Gold Bin @Samui



Knowledge sharing among local people



Composting bin with organic waste



Mr. Lertsinsathaphon, Leader of group



Installation Location



Dr. Meepean, Leader of the station



Pellet making machine



Station



Soil conditioner



Mixing machine



Walk-through audit activity



At household level

GHG Reduction: 116 tCO<sub>2</sub>e (EOP)

Animal feed

25 tCO<sub>2</sub>e (EOP)

At hotels

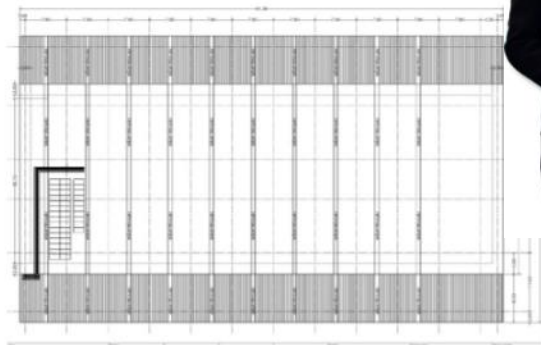
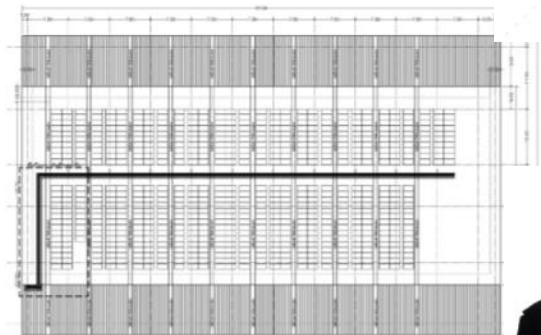
Paused due to COVID-19



## Success Stories



### Solar PV at Municipality Fresh Market



### Wastewater Treatment Plant



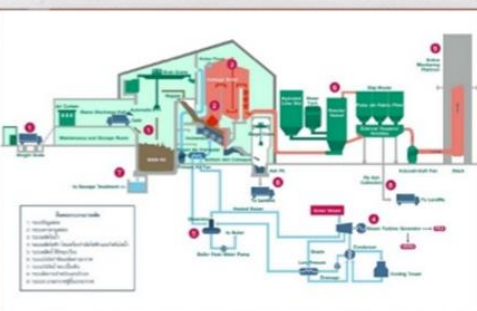


## Success Stories

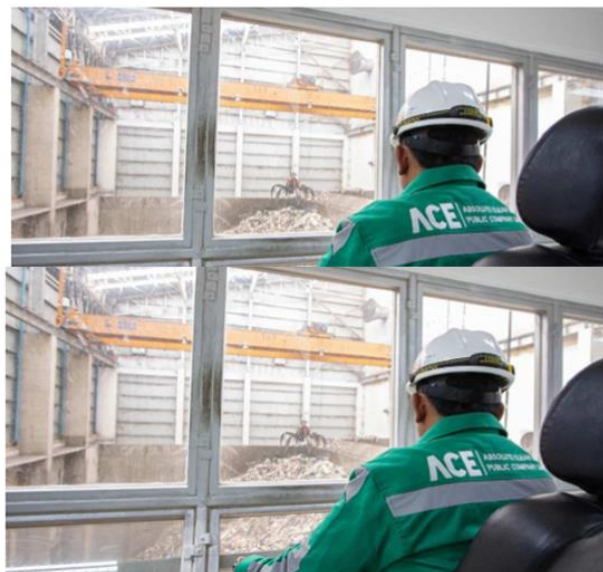


### Waste-to-Energy/Electricity

### Organic and inorganic Waste Management



"เขตรองระบบปิด ที่เป็นมิตรกับสิ่งแวดล้อม"



Additional 50 stations

138,028 tons of waste during EOP  
6 MW of electricity



## Lesson Learned & Challenges



## City's Pride and being a role model

City (Provincial and Municipality) with ambition to explore implement following GHG Mitigation Plan will raise awareness to other cities. They are interested and take as a role model for developing their own areas.



## Lesson Learned



## City GHG Accounting & Reporting System

Providing GHG accounting template to robust consistent and complete inventory GHG data.



## Strengthen Institutional Arrangement

The governor's vision to focus on managing greenhouse gases is a key factor for success. This will enable all sectors to be aware and cooperate to achieve success.



## Private Sector Collaboration

How to create an incentive for the private sector to be partner with the cities to promote decarbonization



## The COVID-19 pandemic and associated economic impacts

Despite climate change is global agenda and focused policies, the COVID-19 may cause to achieving the low carbon or carbon neutral cities and abate the impacts of climate change.



## Challenges



## Strengthen Capacity Building

How continuous capacity building and maintain strengthen knowledge of GHG management in both of practitioner and management level



## Discontinuous Budget / Funding

Lack of funding from international support and inadequate national budget will prevent GHG reduction plan from being implement as planned.



## Future Plans



- TGO has vision to motivate and support the opportunity to achieve goals beyond expectations by having competition at the City level (provincial/Municipality)

## City Climate Action Initiators



City (Provincial and Municipality) with ambition to explore and promote carbon neutrality at activity or organization level as well as implement following GHG Mitigation Plan

Support Paris Agreement

## Future Plans



## City Climate Action Forum

Initiate Campaign among city actors to participate forum: promote climate policy and reduction target; sharing achievements and experiences in low carbon cities in line with national policies and plan.

Support SDGs



## City Climate Action Innovators

City (Provincial and Municipality) with desire to develop innovative mitigation projects aligning with sustainable development objectives and SDGs

Support NDC & National Policies





ขอบคุณครับ

Thank you for your attention



องค์การบริหารจัดการก๊าซเรือนกระจก (องค์การมหาชน)  
THAILAND GREENHOUSE GAS Management Organization  
(Public Organization)



SCAN ME

Address : 120 Ratthaprasasanabhakti Building,  
9th Fl. The Government Complex Commemorating His  
Majesty, Chaeng Wattana Road Laksi, Bangkok 10210  
Thailand

Tel : +66 (0) 2141 9790 | Fax : +66 (0) 2143 8400

E-Mail : [info@tgo.or.th](mailto:info@tgo.or.th)

Website : <http://www.tgo.or.th>

