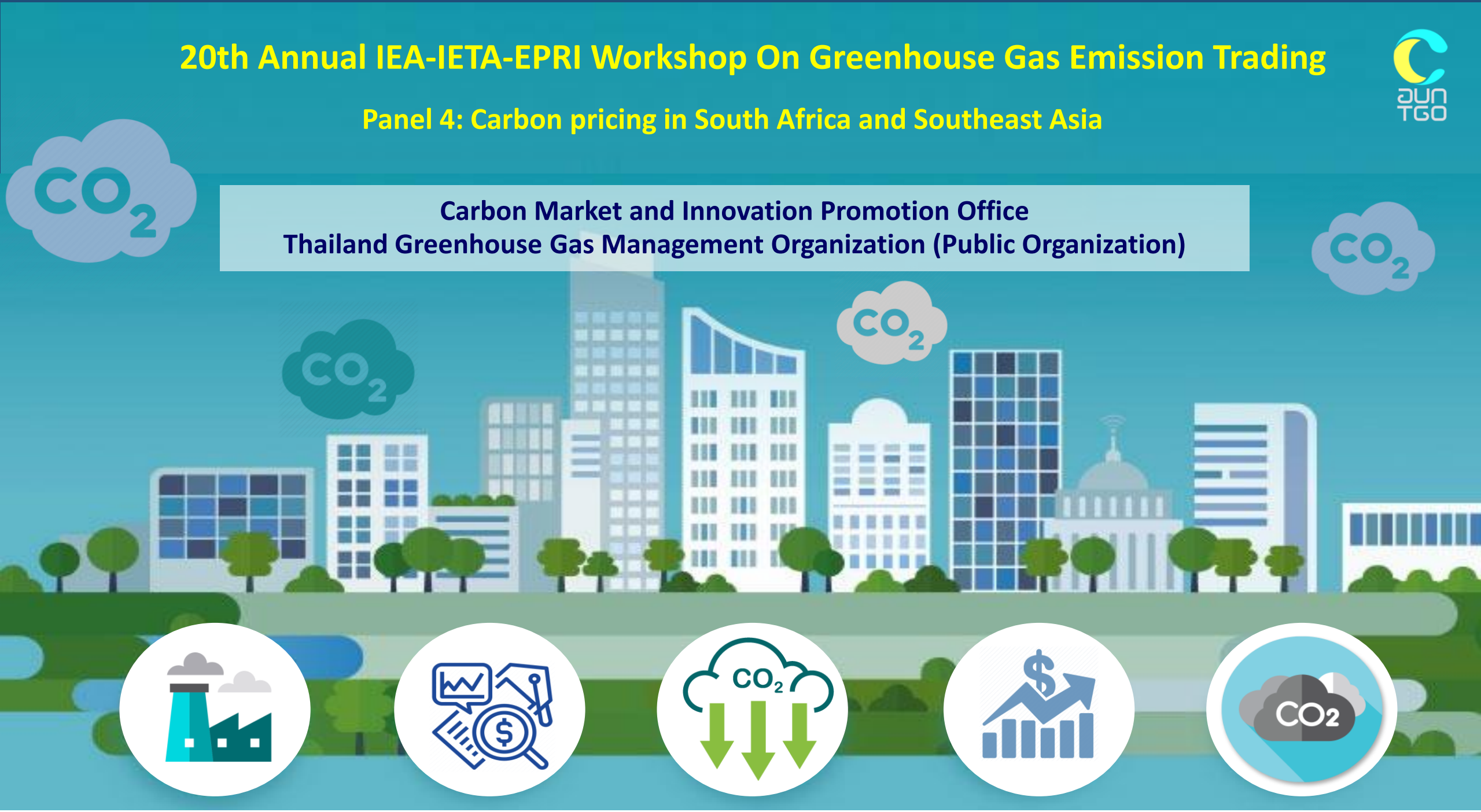
20th Annual IEA-IETA-EPRI Workshop On Greenhouse Gas Emission Trading

Panel 4: Carbon pricing in South Africa and Southeast Asia

Carbon Market and Innovation Promotion Office
Thailand Greenhouse Gas Management Organization (Public Organization)



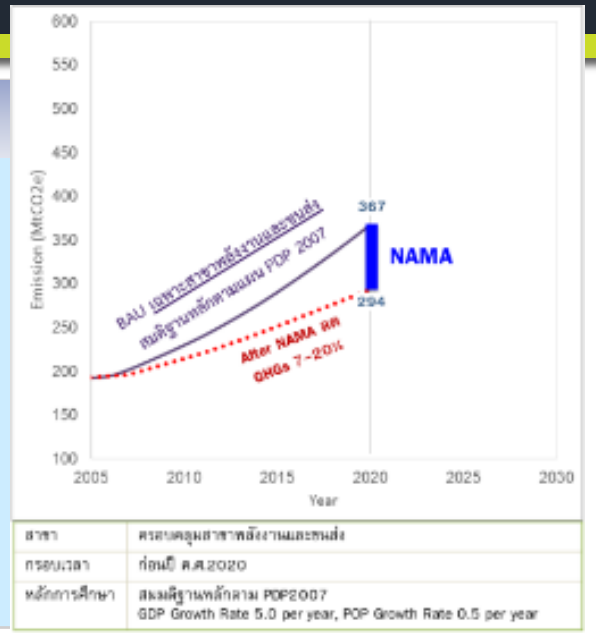
Thailand Mitigation Targets

❖ Nationally Appropriated Mitigation Actions (NAMAs) – Pre 2020



"Thailand will endeavor, on a voluntary basis, **to reduce its GHG emissions** in the range of **7 to 20 percent below the Business as Usual (BAU) in energy and transportation sectors in 2020**, subject to the level of international support provided […]"

Coverage: RE | EE | Bio-fuels | Transport



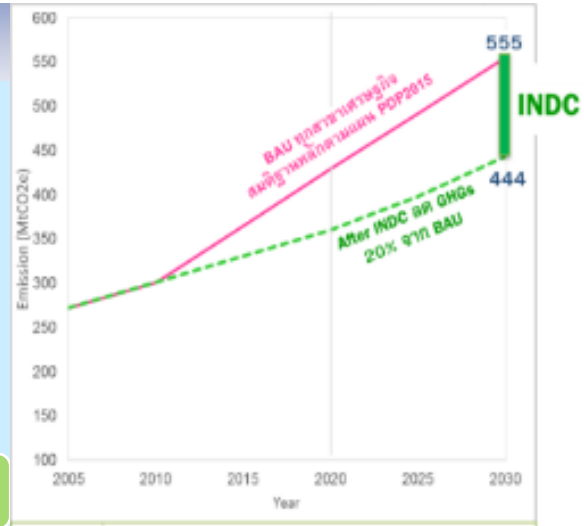
สาขา	ครอบคลุมสาขาพลังงานและคมนาคม
กรอบเวลา	ก่อนปี ค.ศ.2020
หลักการศึกษา	สมมติฐานหลักตาม PDP2007 GDP Growth Rate 5.0 per year, POP Growth Rate 0.5 per year

❖ Nationally Determined Contribution (INDC) – Post 2020



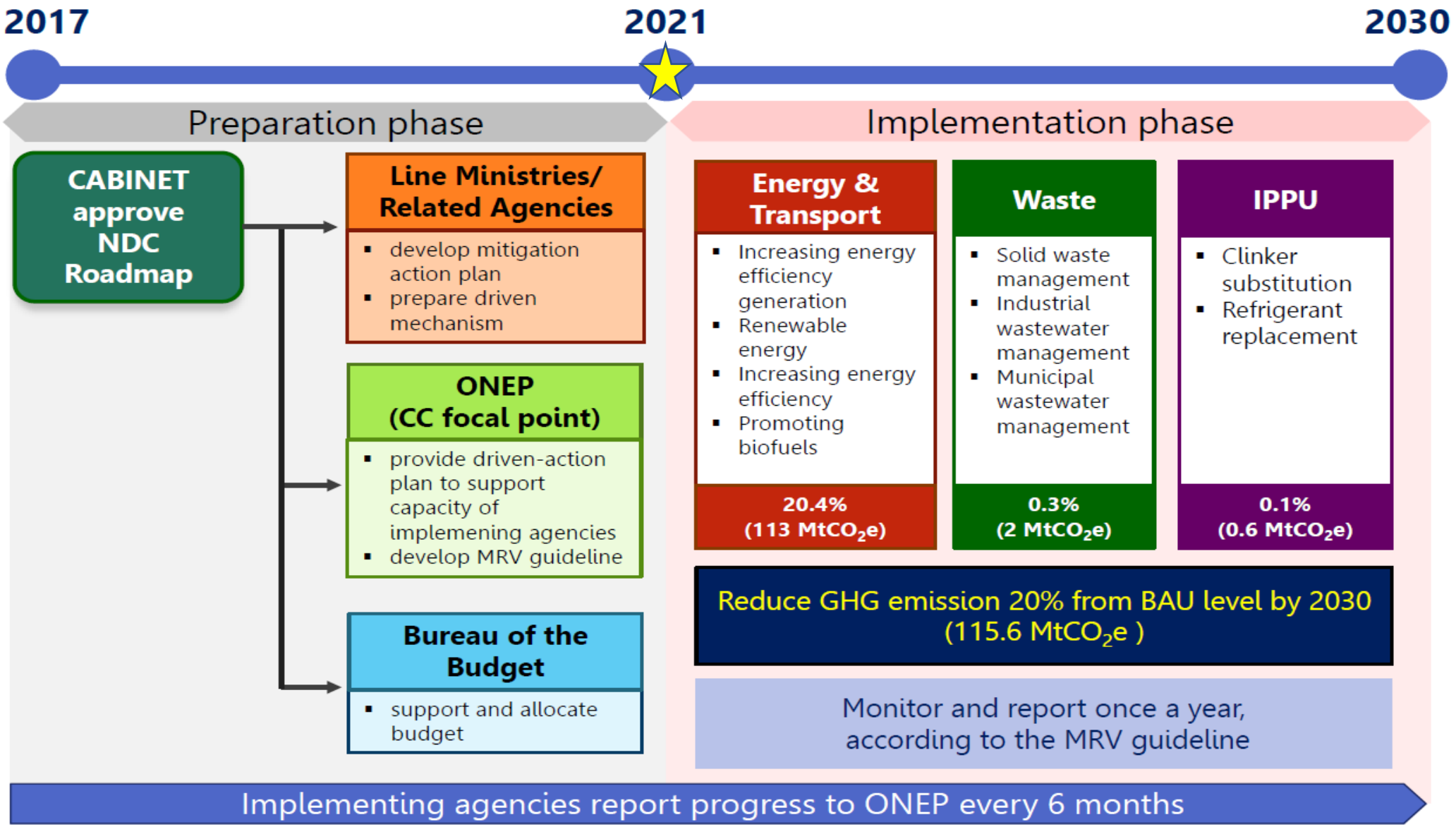
"**Thailand intends to reduce its greenhouse gas emissions by 20 percent from the projected business-as-usual (BAU) level by 2030.** The level of contribution could increase up to 25 percent, subject to adequate and enhanced [support] through a balanced and ambitious global agreement […]"

Coverage: Economy-wide | Inclusion of LULUCF will be decided later

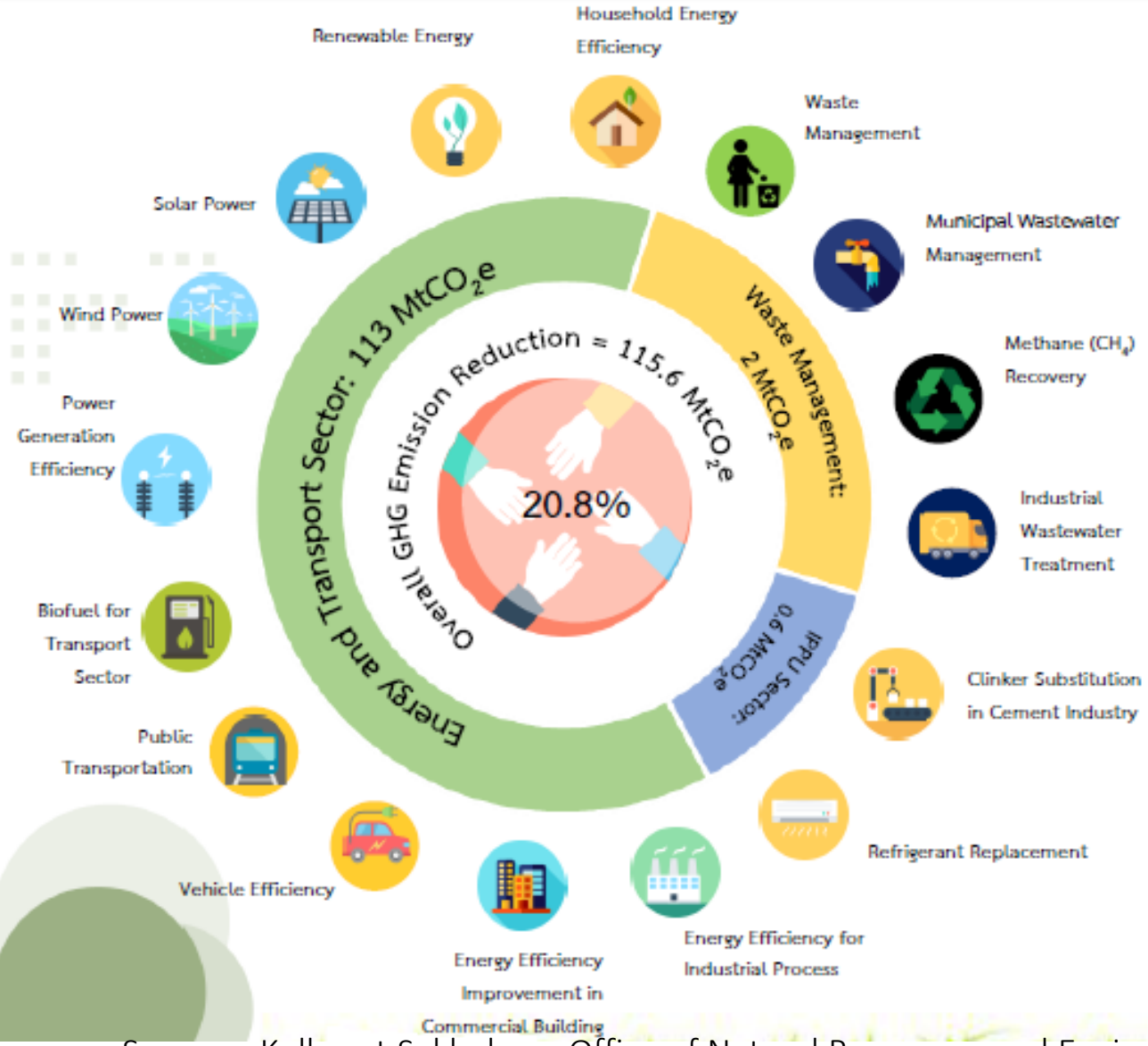


สาขา	ครอบคลุมทุกสาขาเศรษฐกิจ
กรอบเวลา	ค.ศ.2021 - 2030
หลักการศึกษา	สมมติฐานหลักตาม PDP2015 GDP Growth Rate 3.94 per year, POP Growth Rate 0.03 per year

NDC Roadmap


2017
2021
2030
Preparation phase
Implementation phase
CABINET approve NDC Roadmap
Line Ministries/ Related Agencies
develop mitigation action plan
prepare driven mechanism
ONEP (CC focal point)
provide driven-action plan to support capacity of implemening agencies
develop MRV guideline
Bureau of the Budget
support and allocate budget
Energy & Transport
Increasing energy efficiency generation
Renewable energy
Increasing energy efficiency
Promoting biofuels
20.4% (113 MtCO2e)
Waste
Solid waste management
Industrial wastewater management
Municipal wastewater management
0.3% (2 MtCO2e)
IPPU
Clinker substitution
Refrigerant replacement
0.1% (0.6 MtCO2e)
Reduce GHG emission 20% from BAU level by 2030 (115.6 MtCO2e)
Monitor and report once a year, according to the MRV guideline
Implementing agencies report progress to ONEP every 6 months

Thailand NDC Roadmap (2021-2030)



Primary plans supporting implementation of NDC Roadmap

- Energy Efficiency Plan 2015-2036
- Alternative Energy Development Plan 2015-2036
- Power Development Plan 2015-2036
- Smart Grid Development Plan 2015-2036
- Environmentally Sustainable Transport System Plan 2013-2030
- National Industrial Development Master Plan 2012-2031
- Environmental Quality Management Plan 2017-2021
- Implementation under the Montreal Protocol

Sources: Kollawat Sakhakara, Office of Natural Resources and Environmental Policy and Planning (Oct 2018)

National Reform Plan on Natural Resources and Environment

Published in the Royal Thai Government Gazette on 6 April B.E.2561 (2018)

Environment Reform Issue 3: Encouraging all sectors to engage in addressing climate change

Sub-issue 3.3: Formulate appropriate mechanism[s] to provide economic incentives to reduce greenhouse gas emissions by private sector.

2018 | 2561	2019 | 2562	2020 | 2563	★ 2021 | 2564	2022 | 2565

Develop provisions under Climate Change Act B.E. … concerning appropriate mechanism[s] to provide economic incentives. For instance, by setting overall greenhouse gas emissions threshold for each manufacturing sector, including allocation of emissions allowances for each place of business and allow for trading of such allowances (cap and trade system)





Relevant agencies conduct study on appropriate approaches and modalities to develop a system for enable implementation by the private sector, 5 years after the enactment of the Act.

ROADMAP ON CARBON PRICING AND RELEVANT INITAITIVES

TIMELINE

2007 TGO

2009 CARBON LABEL

2011 CFO

2013 T-COP

2015 Thailand-VETS

2019 LCSI

Low Carbon and sustainability index

2020-2024 ICP CE SBT

T-VER

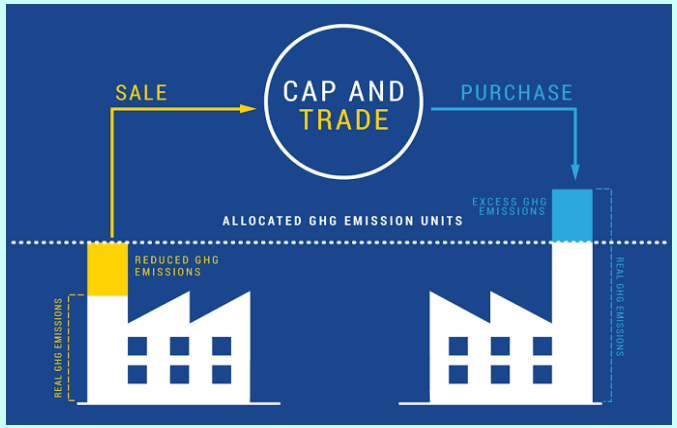
T-VER JCM

SCIENCE BASED TARGETS

DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

Thailand Voluntary Emission Trading Scheme | Thailand V-ETS

Emissions Trading Scheme: ETS



Components : ETS

Technical

- **Design Features**
- **MRV system**
- **Credit Registry system**
- **Trading system**

Support

- **Economic impact assessment**
- **Law and regulation**
- **Instituional arrangement**
- **Capacity building and Stakeholder engagement**

Thailand Voluntary Emission Trading Scheme Pilot Implementation Project

objective:

to engage target stakeholders (GHG intensive Industrial sectors) in testing the Measurement, Reporting and Verification System (MRV) and to develop and improve operation rule of Thailand V-ETS

T-VETS pilot implementation sectors

- Petrochemical
- Cement
- Steel and Iron
- Pulp and paper
- Plastic
- Petroleum refiery
- Food and Beverage
- Glass
- Ceramic
- Textile

Benefit

- Cost effectiveness in Achieving GHG reduction Target
- Flexibility due to economic and relevant policies
- Promote GHG reduction innovation and technology
- Enabling sustainable business in cost effective manner

Thailand Voluntary Emission Trading Scheme | Thailand V-ETS

Statistic (As of August 27, 2020)

Fiscal Year	Number of Factory/company, classified by industrial sector										
	Petro chemical	Cement	Pulp& Paper	Iron& Steel	Refinery	Glass	Plastic	Food	Ceramic	Textile	Total
2013 – 2014	Initial Phase: propose study results of the voluntary ETS of Thailand to the targeted industries and relevant agencies										–
2015	7	–	–	–	–	–	–	–	–	–	7
2016	7	4	4	4	–	–	–	–	–	–	19
2017	7	4	4	4	2	2	6	8	3	–	40
2018	–	4	5	4	2	3	4	8	3	–	33
2019	–	–	–	–	2	3	4	8	3	–	20
2020	–	–	–	–	–	2	–	11	–	2	15
Total	**7**	**4**	**5**	**4**	**2**	**3**	**6**	**19**	**3**	**2**	**55**

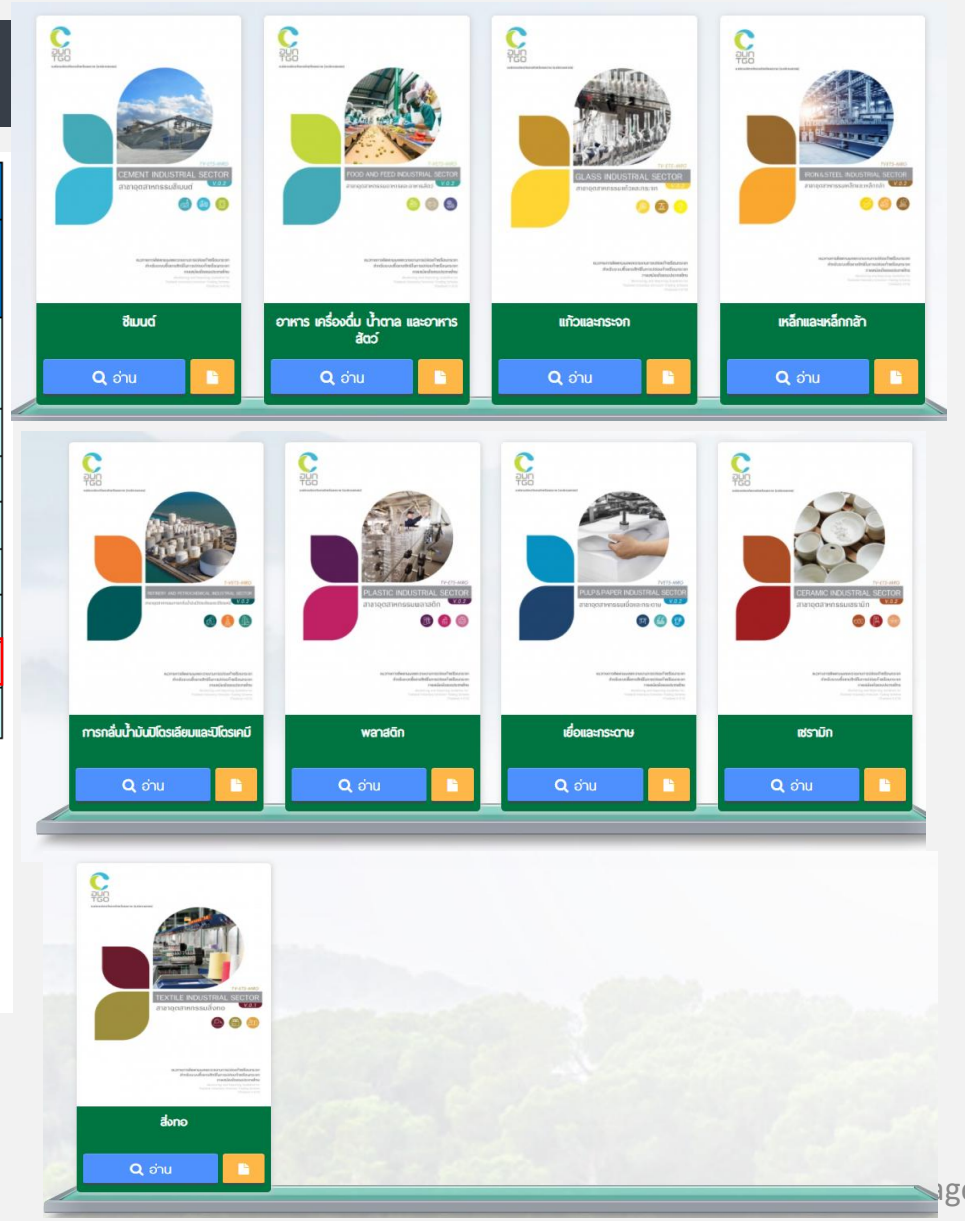
Noted: In 2016: 7 factories of the year 2014 continued to participate.

In 2017: 19 factories of the year 2015 and 2016 continued to participate.

In 2018: 33 factories of the year 2016 and 2017 continued to participate.

In 2019: 20 factories of the year 2017 and 2018 continued to participate.

In 2020: 15 new pilot factories as additional participation.



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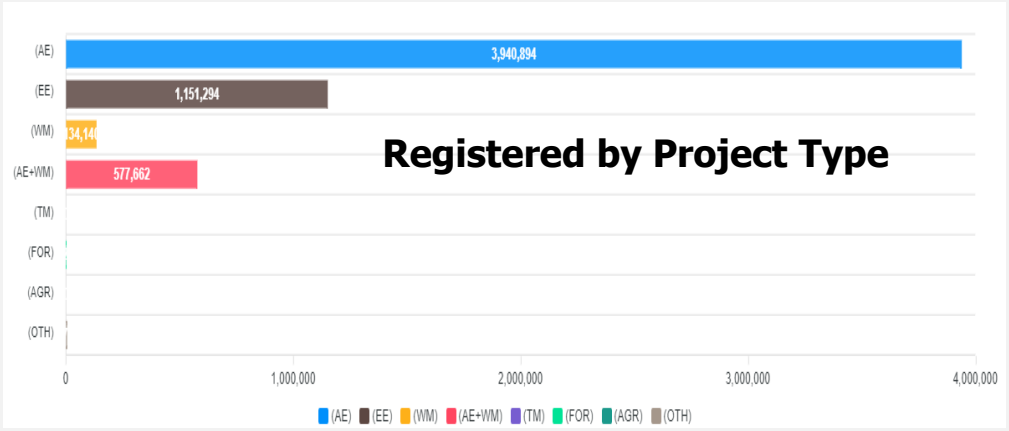
Statistic (As of October 9, 2020)

Fiscal Year	Registered Project		Issued Project	
	Number of Project	Expected GHG Reduction/Sequestration (tCO_2e/y)	Number of Project	GHG Reduction Approval (tCO_2e)
2014	9	114,237		
2015	11	590,175	7	339,537
2016	19	378,122	15	249,612
2017	41	1,035,672	21	493,207
2018	50	1,303,944	27	887,523
2019	50	1,664,150	34	1,262,757
2020	**45**	**916,936**	**49**	**2,578,321**
Total	**225**	**6,003,236**	**153**	**5,810,957**

Expected GHG Reduction

6,003,236

---- tCO_2e/year ----



GHG Reduction Issuance

5,810,957

---- tCO_2e ----

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Carbon Offset | Carbon Neutral

Statistic

Category	FY2020	Total
Product	16 Products 3 Companies	53 Products 16 Companies
Company	18 Companies	86 Companies
Event	26 Events	92 Events
Individual	234 Persons	1,321 Persons

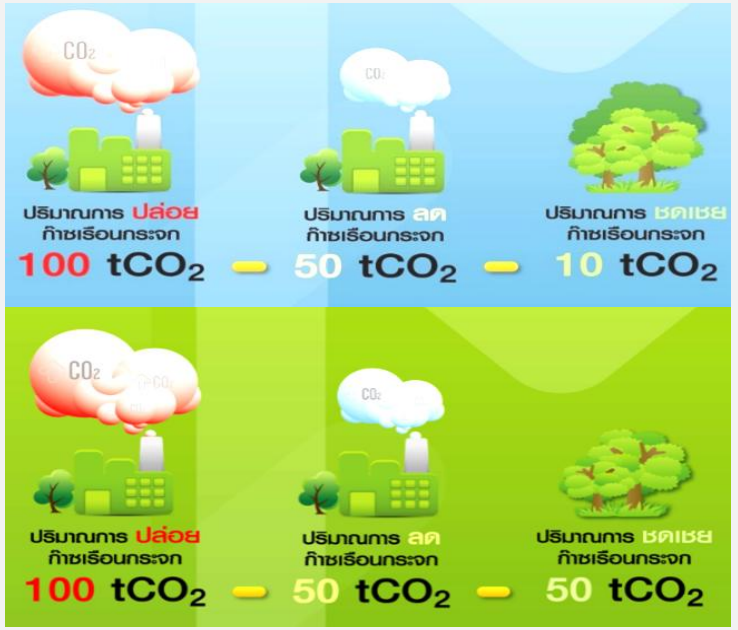
(As of August 27, 2020)

Total GHG Reduction 512,448 tCO2e



carbon offset

carbon neutral



INTERNAL CARBON PRICING & GREEN INVESTMENT

D4: Sep 30
Initial ICP values

D5: Oct 31
1 & 2 Draft
(finalized by mid-Nov)



kick-off meetings

Data collection

ICP pilots modelling

1. *Step-by-step guidelines*
2. *Implementation/monitoring plans*

=> Meanwhile, ICP values will be finalized

Jun | Jul | Aug | Sep | Oct | Nov | Dec

Consultation Meeting
9th June 2020

Technical Workshop
8th July 2020

Technical meetings

Delivery meetings

Develop Sectoral Specific Case study

Dissemination Seminar
08 (?) Dec

D6: Nov 30
Summary report

INTERNAL CARBON PRICING & GREEN INVESTMENT

Updated until Oct 01

	Industry	potential approach	Current status
GPSC	Power	• shadow price • carbon fee	• Data/information collection (partially collected) • Modelling undertaken
Gulf	Power	• carbon fee • trading scheme	• Data/information collection (waiting for response)
PTTGC	Petro-chemical	• shadow price • carbon fee • carbon trading	• Data/information collection (90% collected) • Modelling undertaken
SCG Chemicals	Petro-chemical	• shadow price • carbon fee • carbon trading	• Data/information collection (partially collected) • Modelling undertaken
IRPC	Refinery	• shadow price • carbon fee	• Data/information collection (waiting for response)
Frasers	Property development	• Shadow price • (TBD) Internal carbon trading	• Data/info received and to be considered

Key success factors & Challenges

Key success factors

- Concrete policy framework, strategic and action plan/budget
- Constructive Stakeholder engagement and partnership
- Pilot implementation program/initiative
- Enabling of Public participation process in guideline development and implementation
- Capacity Building, technical assistant and incentive program for reporter, consultant and verifier
- Effective administrative framework, structure and Reporting/ registry platform.

Challenges

- Inclusion of new measures in an existing policy, Law and Regulations framework
- Insufficiency of promotion and communication campaign/program to raise awareness and disseminate the GHG quantification management and mitigation approach
- Insufficiency of competent experts and verifiers
- Incentives to promote the CFO and create demand
- Risk in communicating public disclosure issues
- Uncertainty on implementing mandatory-base CPI