

8th LoCARNet

**How We Could Promote Evidence-Based Policymaking
by Bridging the Gap between Policymakers and
Research Communities?**

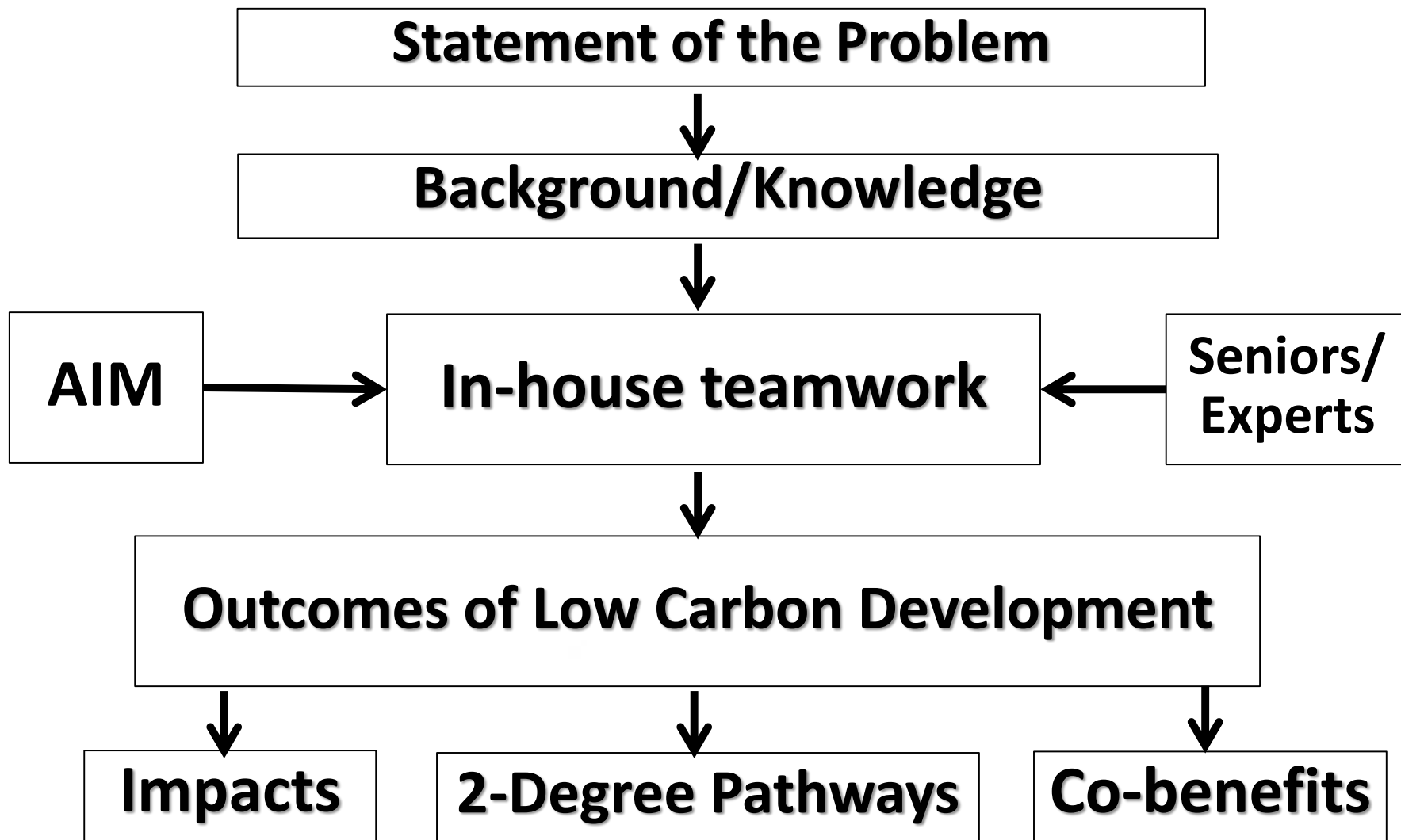
8 November 2019

Beijing, CHINA

**Climate Change Policies and Roles of Research
Communities in Thailand**

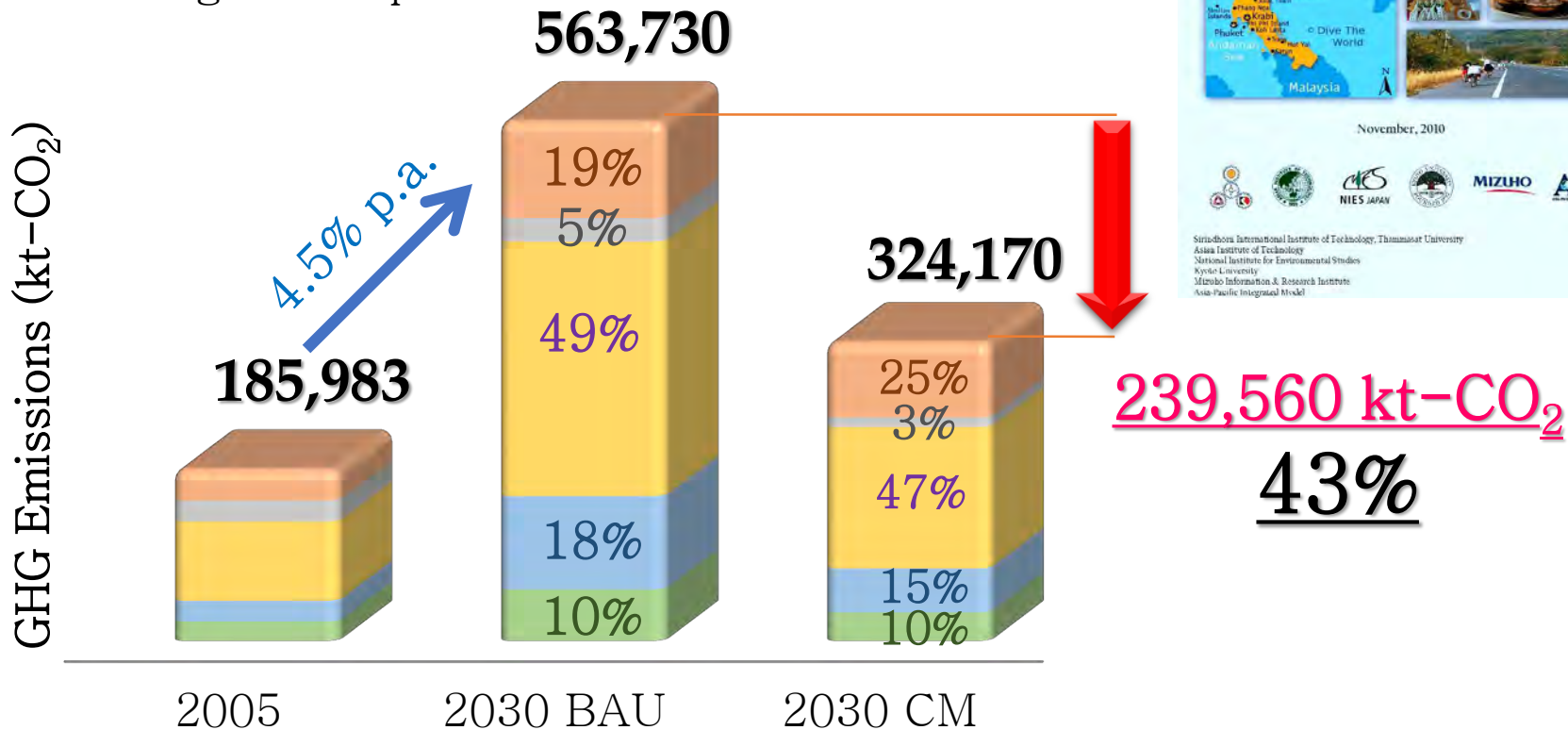
**Bundit Limmeechokchai
SIIT, Thammasat University**

Challenge of Thailand Climate Change Scenario Development

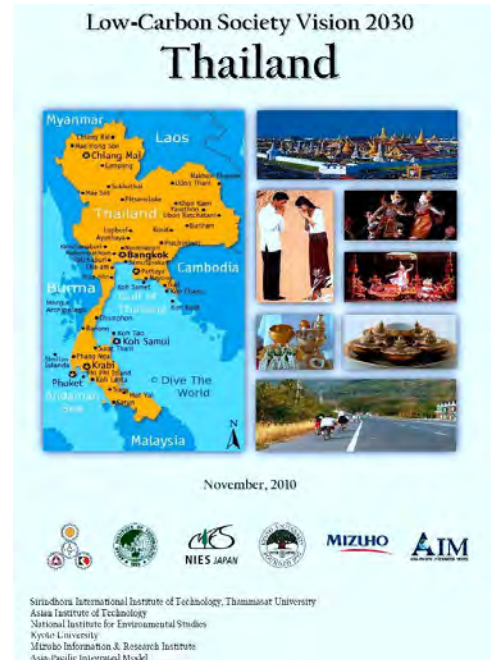


GHG EMISSIONS

- Residential
- Industry
- Freight transport
- Commercial
- Passenger transport



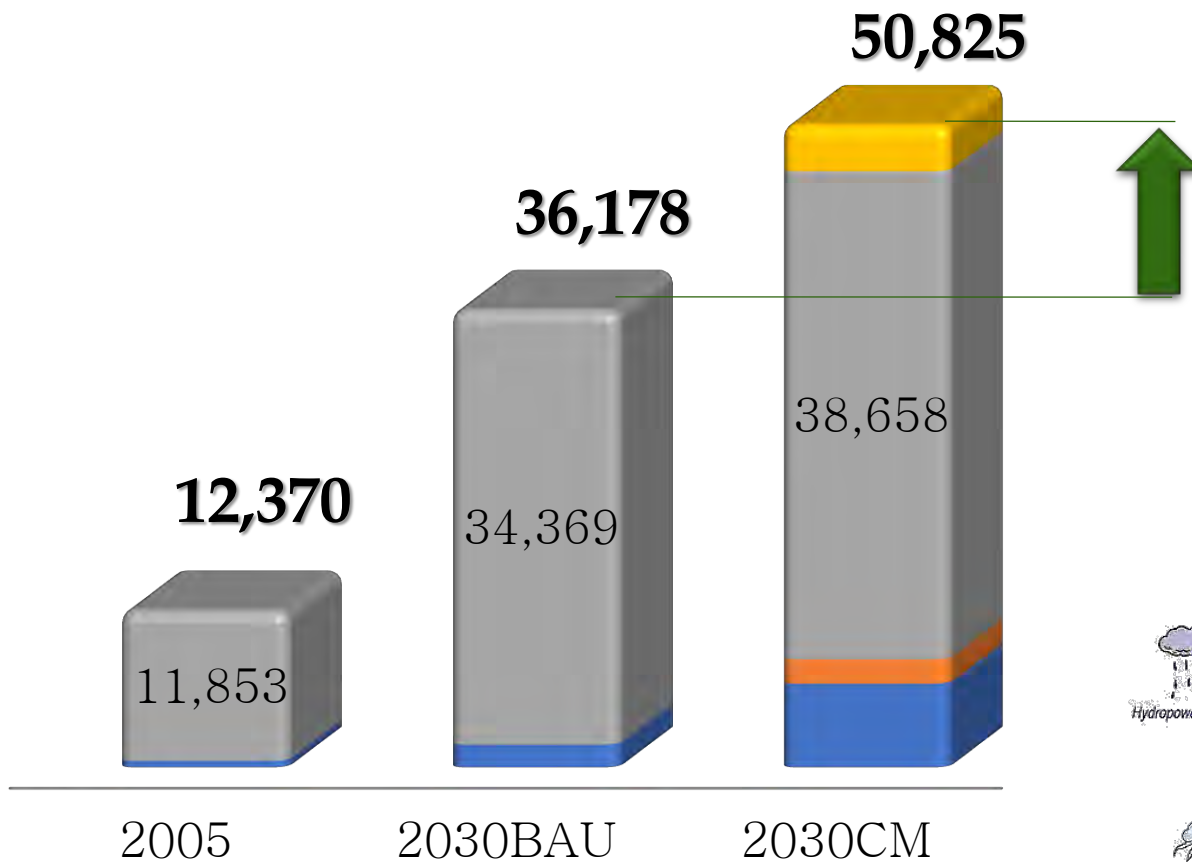
Remarks: BAU is Business as Usual
CM is Countermeasure



RENEWABLE ENERGY FOR SUPPLY SIDE

■ Hydro ■ Solar & Wind ■ Biomass ■ Nuclear

Primary Energy Demand (ktoe)

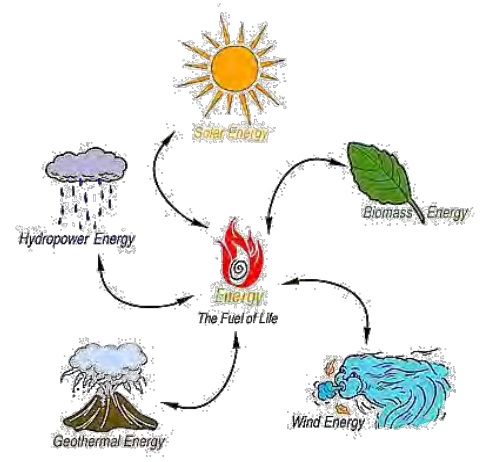


Low-Carbon Society Vision 2030
Thailand

November, 2010

Srinakhon International Institute of Technology, Thammasat University
Asia Institute of Technology
National Institute for Environmental Studies
Kyoto University
Mitsubishi Information & Research Institute
Asia-Pacific Integrated Model

14,647 ktoe
41%



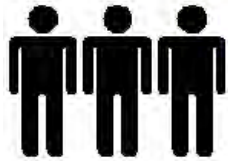
Source: Bundit L. et al, , 2011

Alternative Energy Development Plan 2015 vs 2018

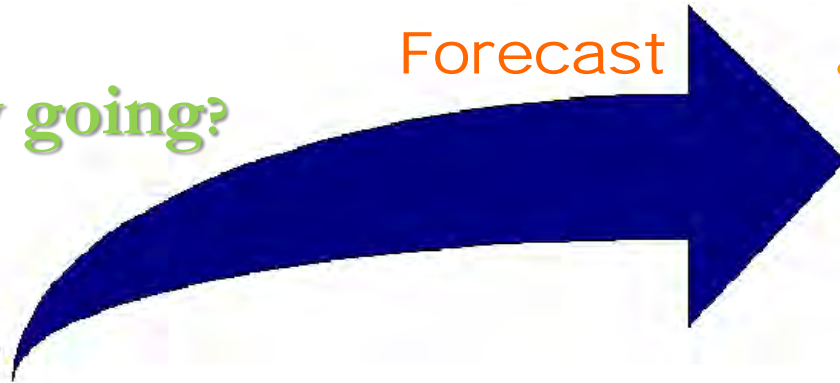
RE Electricity (MW)	AEDP 2015		AEDP 2018		Difference 2018-2015
	Target 2036	Existing	PDP2018	New Target	
Solar PV	6,000	2,849	12,725	15,574	9,574
Biomass	5,570	2,290	3,496	5,786	216
Wind	3,002	1,504	1,485	2,989	13
Biogas (Waste)	600	382	546	928	328
Municipal Solid Waste	500	500	400	900	400
Industrial waste	50	31	44	75	25
Mini-hydro	376	188	-	188	188
Large hydro (EGAT)	2,906	2,918	-	2,918	12
Biogas (Crop)	680	-	-	-	-680
Total	19,684	10,662	18,696	29,358	9,674
RE electricity (%)	20%	10%	20%	33%	13%

LCS Forecasting & Backcasting

Where is society going?

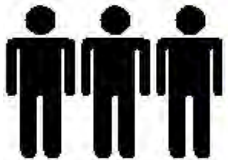


Forecast



Target
2050

How do we get there?



Backcast



2 Degree PATHWAY

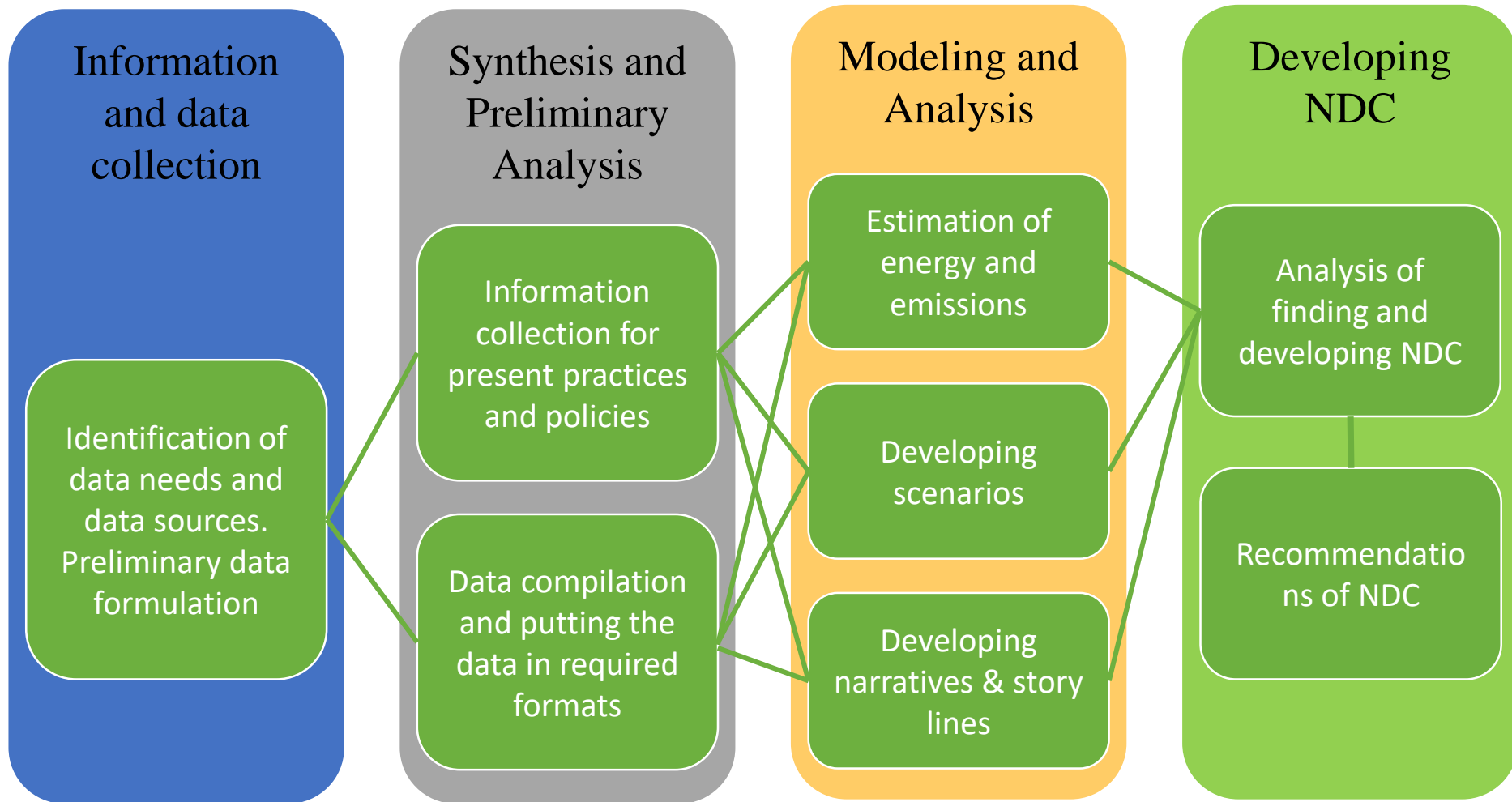
Key concept of AIM/Enduse Modeling

Technology System in Modeling

- Technology consumes energy and produces service
- By using this energy-technology- service relation, the model user defines technology system.



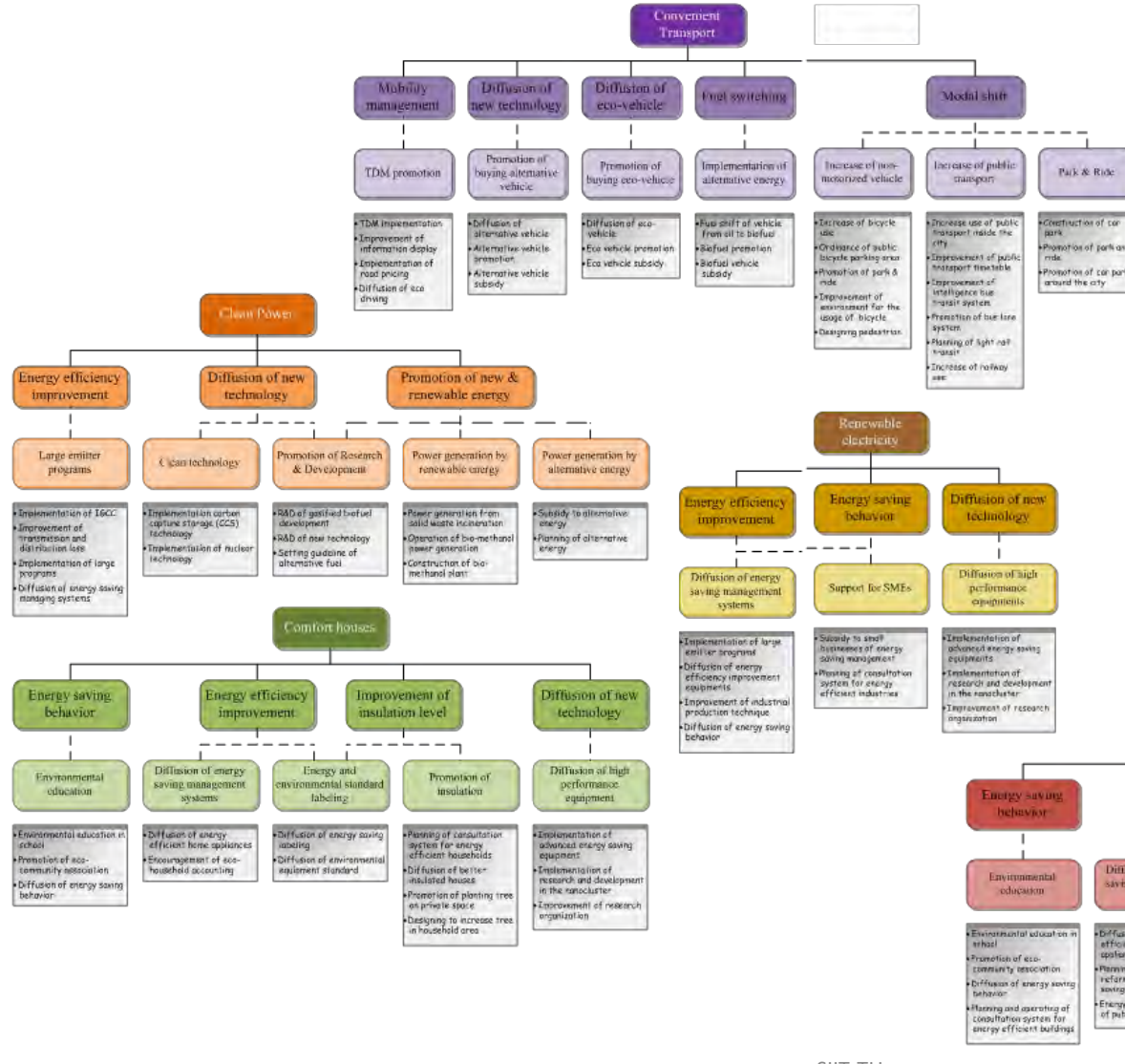
Methodology of Roadmaps for NAMA & NDCs



Roadmap to Low Carbon Thailand towards 2050

Low Carbon Society Scenario Toward 2050

Thailand



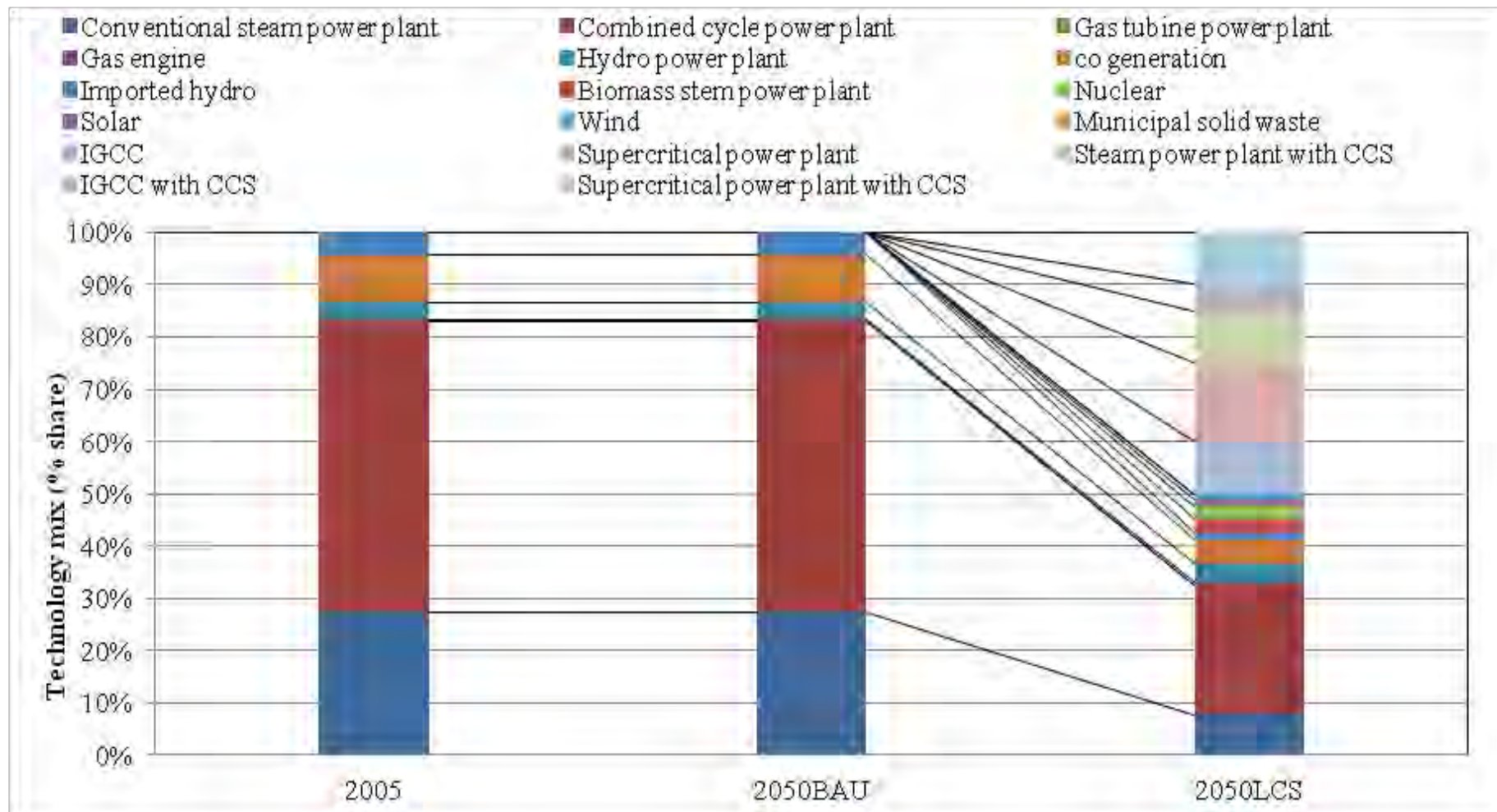
DRAFT

Sirindhorn International Institute of Technology, Thammasat University
 Asian Institute of Technology
 Asia Pacific Integrated Model (AIM) Team
 National Institute for Environmental Studies (NIES)
 Kyoto University

AIM
 NIES
 MIZUHO

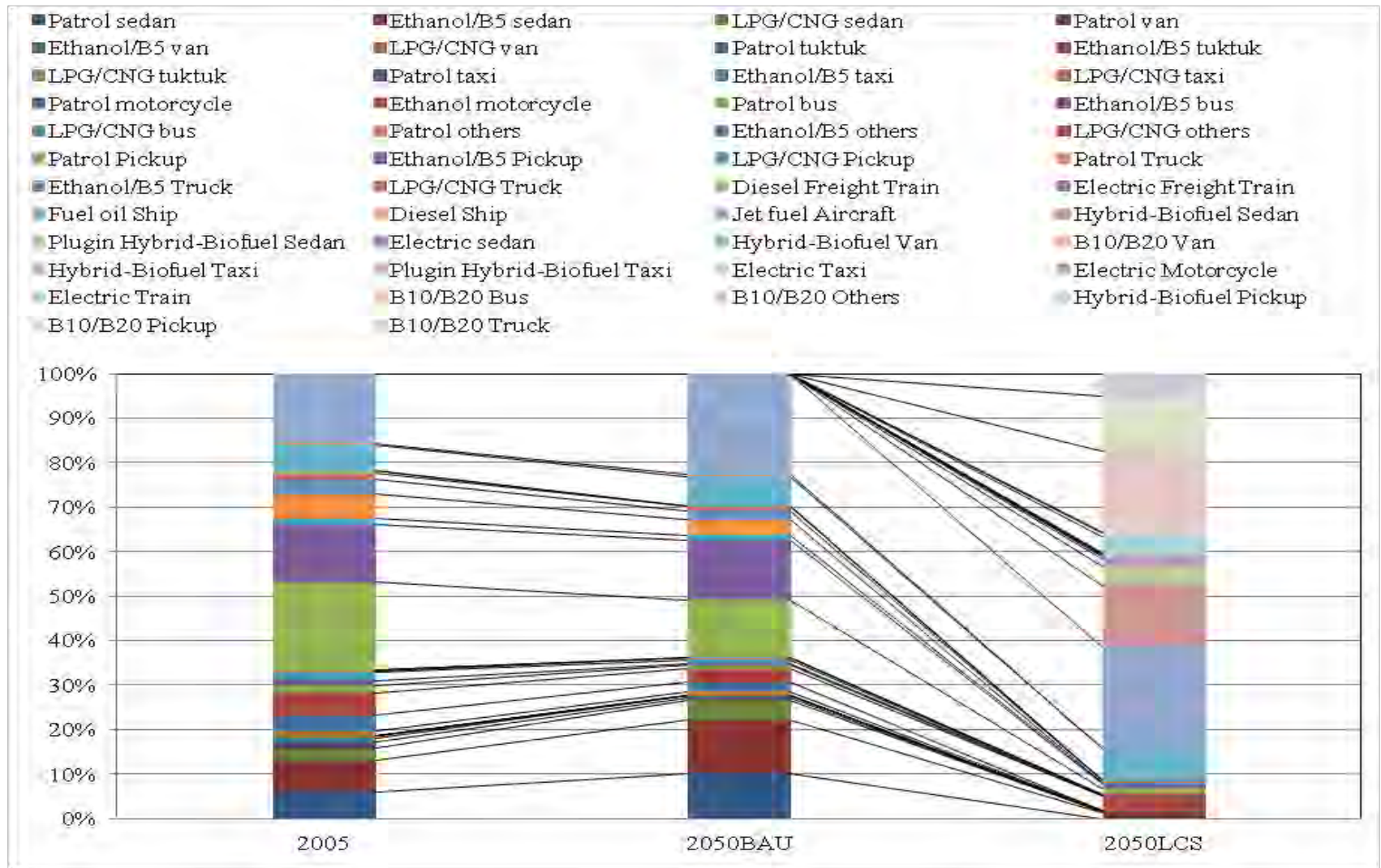
Roadmap to Low Carbon Thailand towards 2050

Technology Mix in the *Clean Power Generation*



Roadmap to Low Carbon Thailand towards 2050

Technology Mix in the *Convenient Transport*



Institutions towards Low-Carbon Growth in Thailand

National Committee on Climate Change Policy (NCCC)

Prime Minister

Chair

"HIERARCHICAL STRUCTURE"

Minister of Natural Resources and Environment

Vice-Chair

Minister of Foreign Affairs

NCCC members:

- | | | |
|---|---------------------------------------|---|
| 1. Prime Minister's Office | 6. Ministry of Energy | 13. Bangkok Metropolitan Administration |
| 2. Ministry of Finance | 7. Ministry of Commerce | 14. Office of the National Economics and Social Development Board (NESDB) |
| 3. Ministry of Agriculture and Cooperatives | 8. Ministry of Interior | 15. Bureau of Budget |
| 4. Ministry of Transport and Communications | 9. Ministry of Science and Technology | 16. 5-9 Experts |
| 5. Ministry of Information and Communication Technology | 10. Ministry of Education | |
| | 11. Ministry of Public Health | |
| | 12. Ministry of Industry | |

Secretariat
Permanent Secretary, Ministry of Natural Resources and Environment

ONEP

TGO

Integrated Policy and Plan Sub Committee

Chair: Permanent Secretary, MNRE
Vice-Chair1: Secretary General, ONEP
Vice-Chair2: Secretary General, NESDB
Members: 24 persons
Secretariat: ONEP

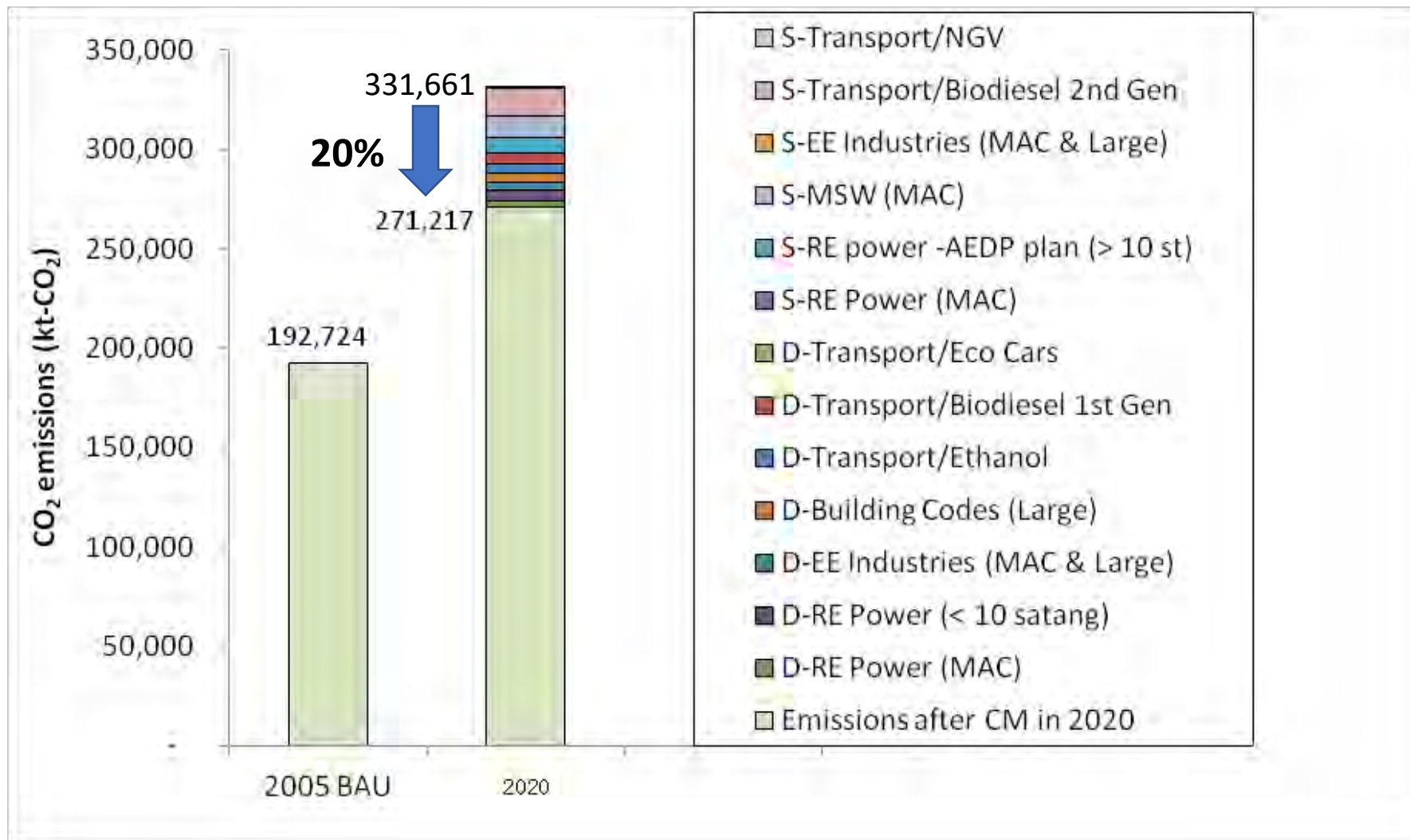
Technical and GHG Data base Sub Committee

Chair: Secretary General, ONEP
Vice-Chair: Executive Director, TGO
Members: 28 persons
Secretariat: ONEP & TGO & DEQP

Coordination & Negotiation Sub Committee

Chair: Permanent Secretary, MNRE
Vice-Chair1: Secretary General, ONEP
Vice-Chair2: Director-General of the Department of International Organizations (DIO)
Members: 14 persons
Secretariat: ONEP & DIO

Potentials of CO₂ Countermeasures in Thailand's NAMAs in 2020

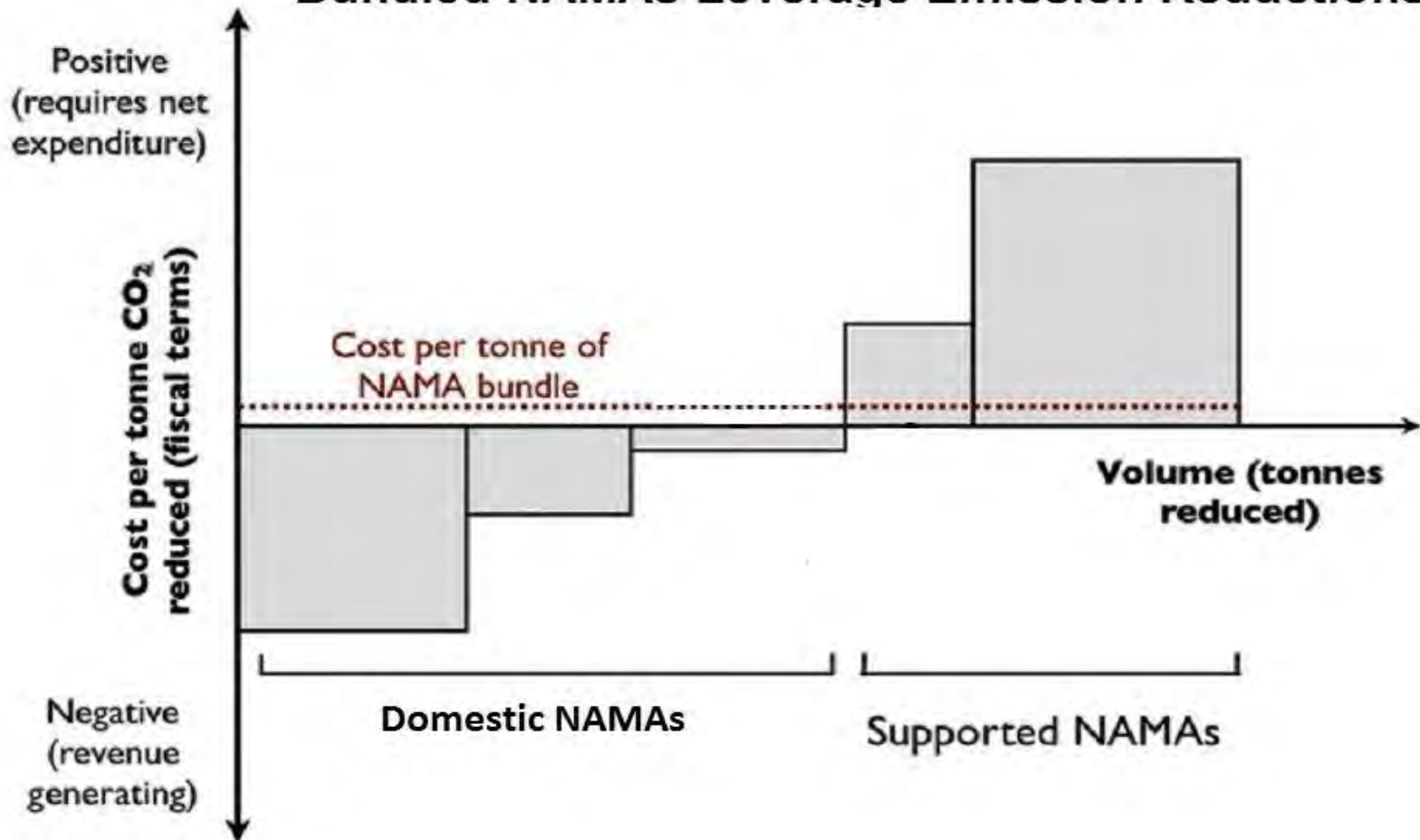


Source: Thailand NAMAs, 2011

Criteria for Domestic & Internationally Supported NAMAs

$$\text{Abatement Cost (\$/t-CO}_2\text{)} < \text{Cost per tonne of NAMA bundle}$$

Bundled NAMAs Leverage Emission Reductions



Co-benefits of Thailand NAMAs

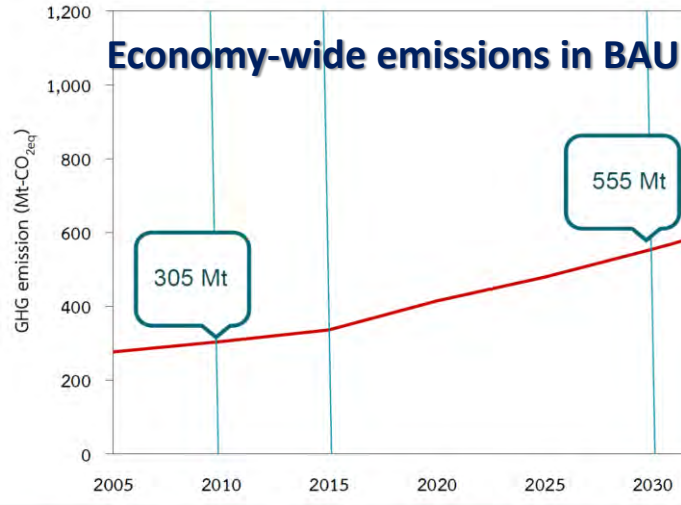
Energy Security due to Thailand's NAMAs

Year	SWI*	DoPED**	Oil Intensity (toe/1000 USD)	Gas Intensity (toe/1000 USD)	Energy Intensity (toe/1000 USD)	CO2 emissions intensity (t-CO2/USD)
2005	1.34	68.82	0.111	0.079	0.280	0.696
2020 BAU	1.35	69.24	0.093	0.077	0.260	0.556
2020 NAMA	1.44	74.18	0.069	0.045	0.197	0.456

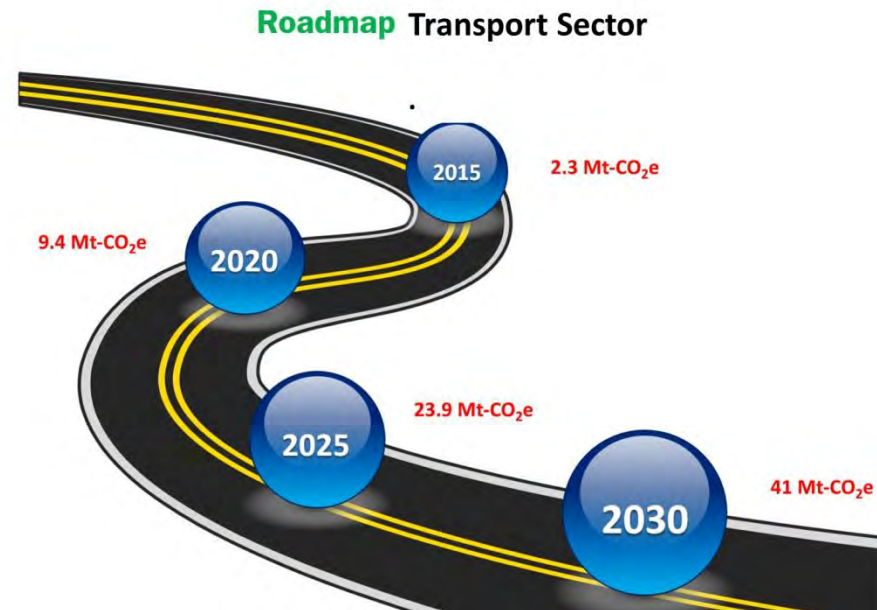
* SWI: Shannon-Wiener index

**DoPED: Index for diversification of primary energy demand

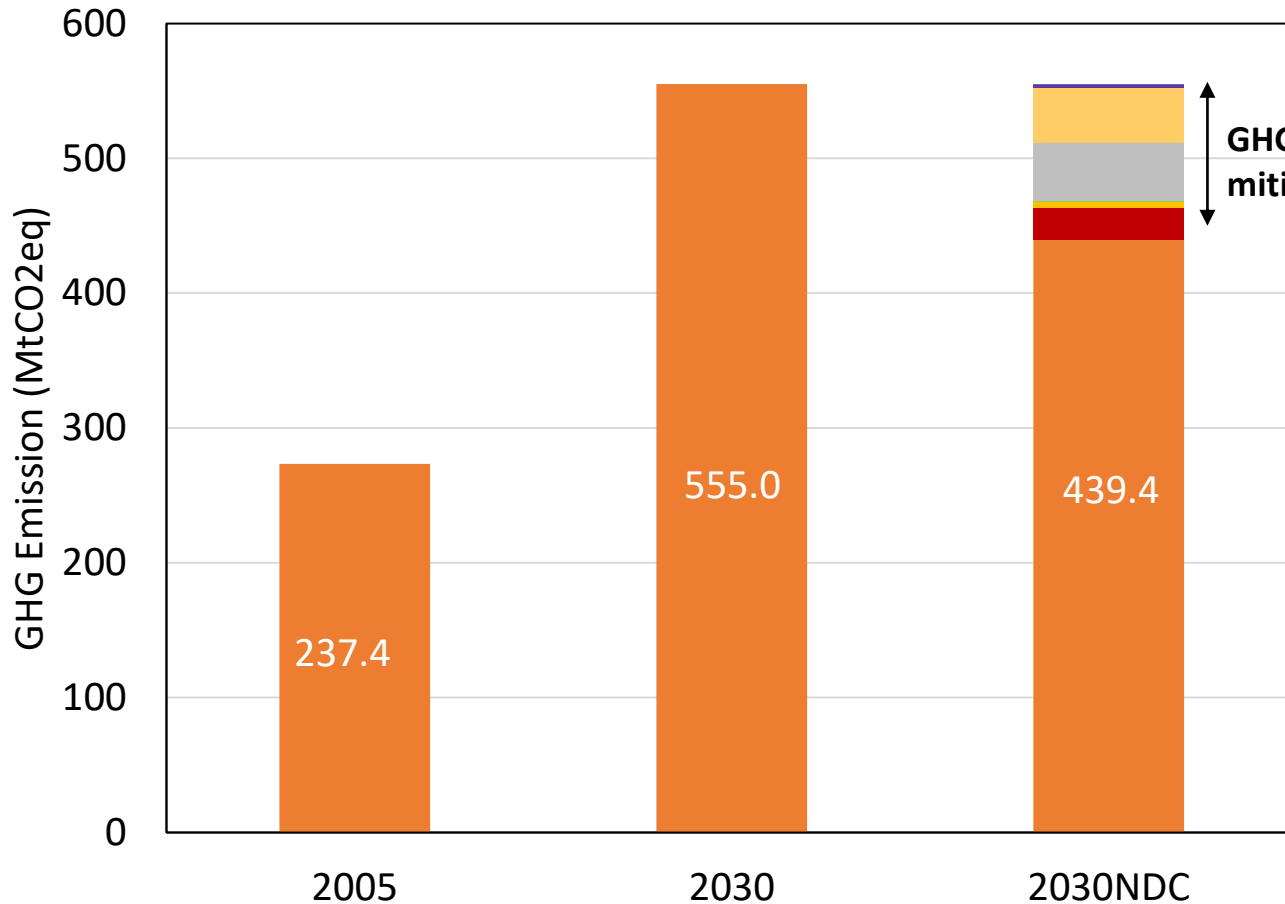
Thailand's PM Delivered National Climate Pledge at Paris Summit



“The 20% is a goal to be achieved by the country's resources alone while the additional 5% will require international support in terms of finance, knowhow and technology”



THAILAND'S GHG EMISSION AND MITIGATION: NDC 2030



GHG mitigation **20%**

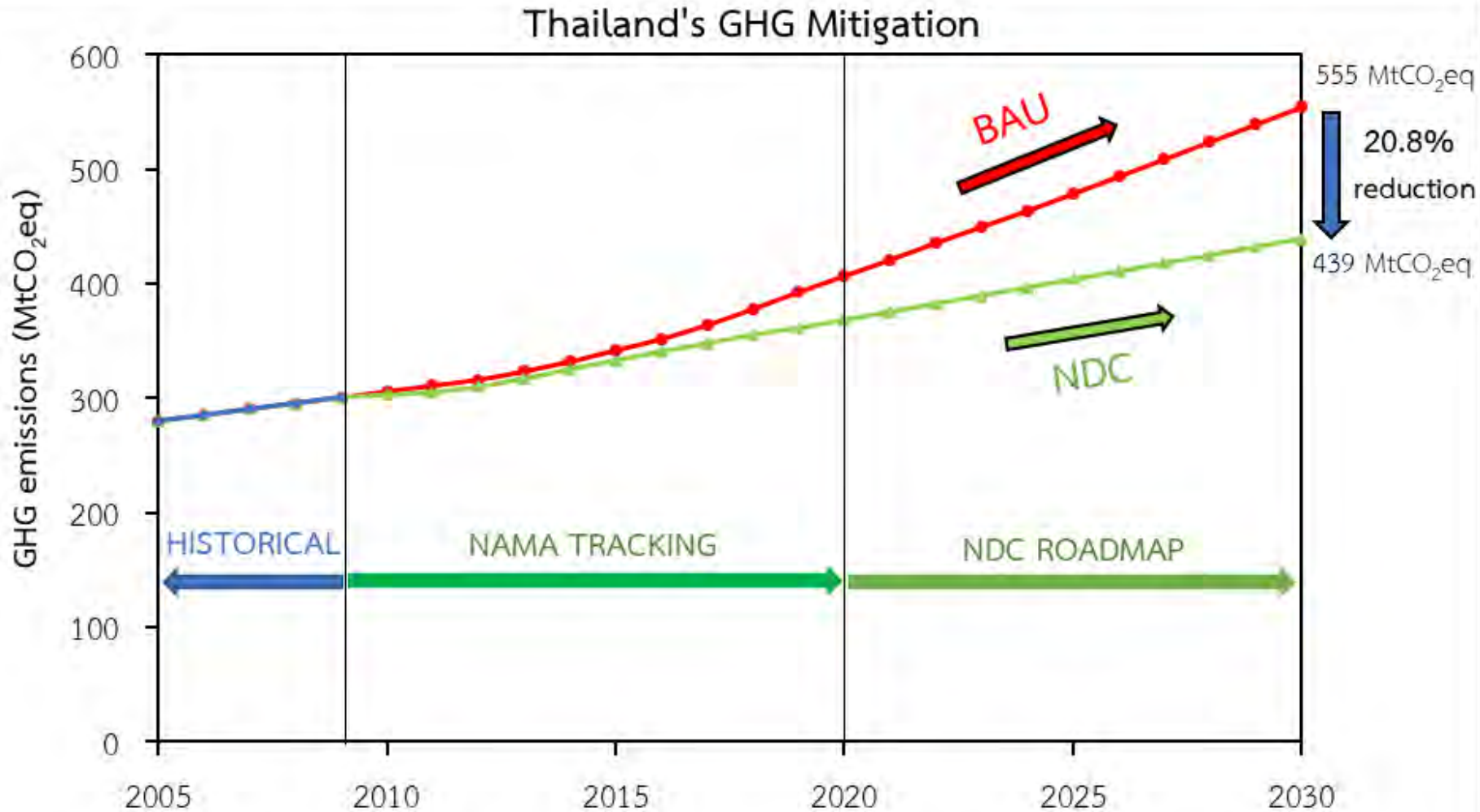
GHG mitigation

- Power 24 MtCO_{2eq}
- Industry 43 MtCO_{2eq}
- Transport 41 MtCO_{2eq}
- Residential 4 MtCO_{2eq}
- Commercial 1 MtCO_{2eq}
- IPPU 0.6 MtCO_{2eq}
- Waste 2 MtCO_{2eq}

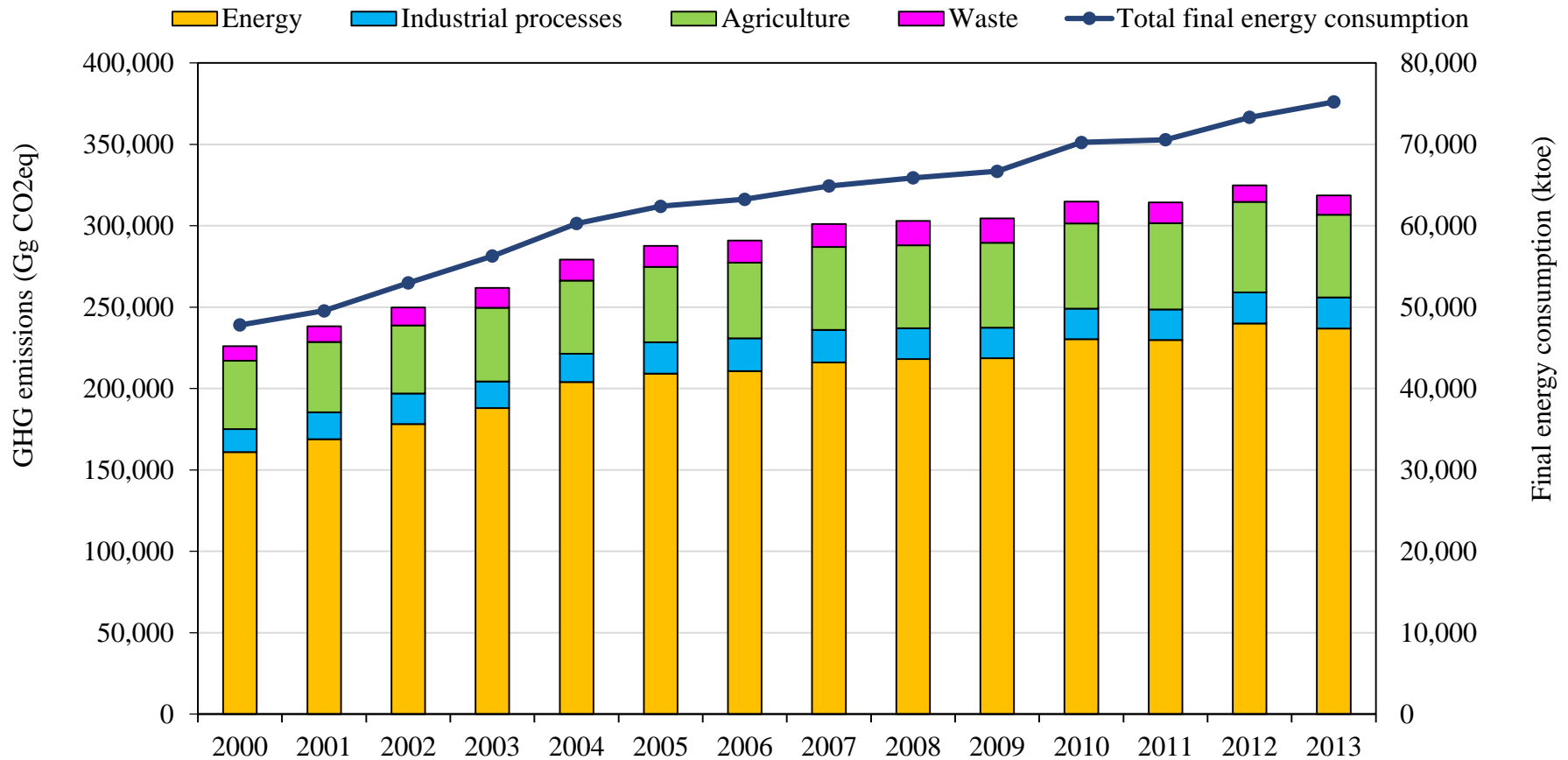
Total GHG mitigation

115.6 MtCO_{2eq}

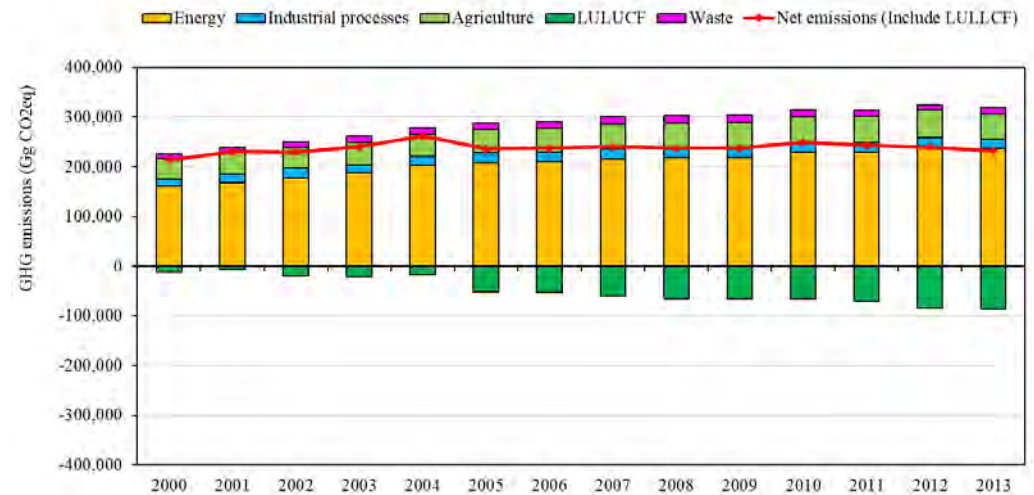
THAILAND'S GHG MITIGATION: NAMA 2020 AND NDC 2030

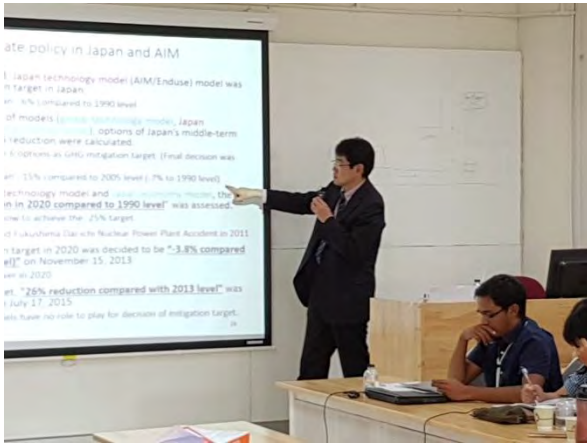


Trends of GHG emissions and Total final energy consumption: 2000-2013



Thailand Greenhouse Gases Emissions Inventory System (TGEIS) (JUL 2018)





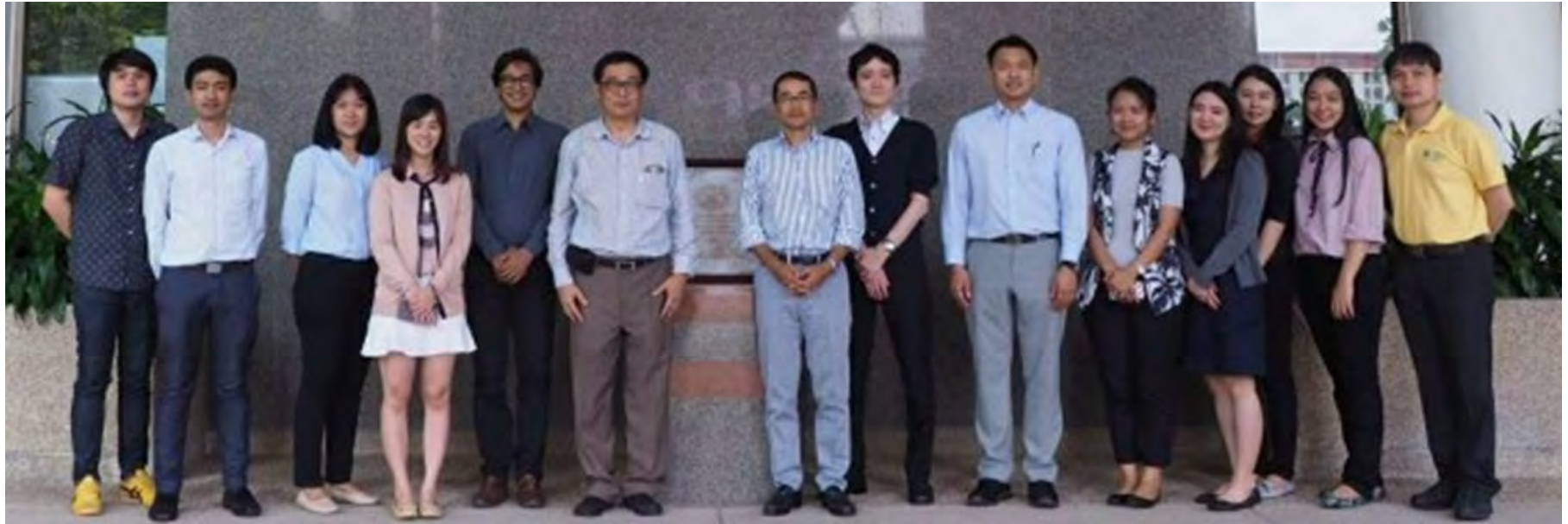
AIM Training Workshop
SIIT-TU, Thailand
January 30 - February 1, 2017



AIM Training Workshop in Thailand

AIM/Enduse Training Workshop at SIIT-TU, Thailand

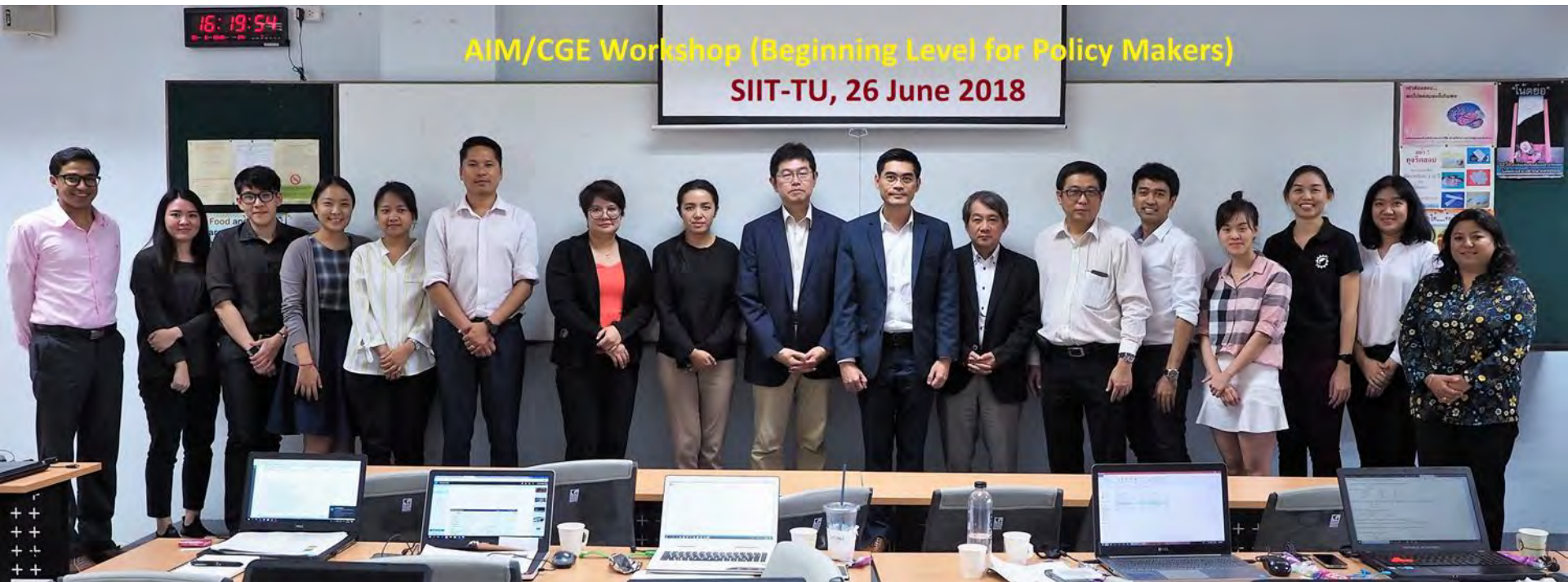
June 2018 (Beginning level for Policy maker)



AIM Training Workshop in Thailand

CGE Training Workshop at SIIT-TU, Thailand

June 2018 (Beginning level for Policy Makers)



Participant: Bhutan, Thailand: ONEP & CITC, SIIT-TU, JICA-Thailand

Climate Change Policies and Mitigation in THAILAND

BANGKOK, 30 October 2019





Sharing of View on Climate Change Policies and Mitigation Actions in THAILAND

Pullman KingPower Hotel, BANGKOK, 30 October 2019



Thailand's National Strategy for 20 years

Royal Thai Government Gazette, 13 OCT 2018

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Aging
society

International
framework
agreements

Paris
Agreement

Social
Inequality

Economic
Slow down

S&T
Advancement

SDGs

Political
Instability

Labor
Quality

Thailand's National Strategy for 20 years

6 strategies

- National security
- Competitiveness
- Human resources development and empowerment
- Opportunities and social equality
- **GROWTH ON ENVIRONMENTAL FRIENDLY QUALITY OF LIFE**
- Balancing and developing the governmental management system

To create sustainable growth in a climate-friendly society focusing on **"REDUCING GHG EMISSION"** and **"CREATING A LOW CARBON SOCIETY"**

谢谢 THANK YOU

The spirit of LoCARNet

A Japanese old maxim

- You cannot say you mastered knowledge until you use it in action on the ground

Ekiken Kaibara (1630-1714)

- 知っていてもそれを行動に移さないのであれば、知らない者となんらかわりは無い。

ຂອບໃຈ

TERIMA KASIH

どうもありがとうございます

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ず て
に 行
同 わ
じ ざ
ら ば

具原益軒