



## **Low Carbon Asia Research Network (LoCARNet) First Annual Meeting Mobilizing Wisdom for a Low-carbon Asia**

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## **Policy Making Process and Use of Integrated Assessment Model**

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# Low-Carbon Society Vision 2030

# Thailand



October, 2010



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

# **Lesson learned in Thailand**

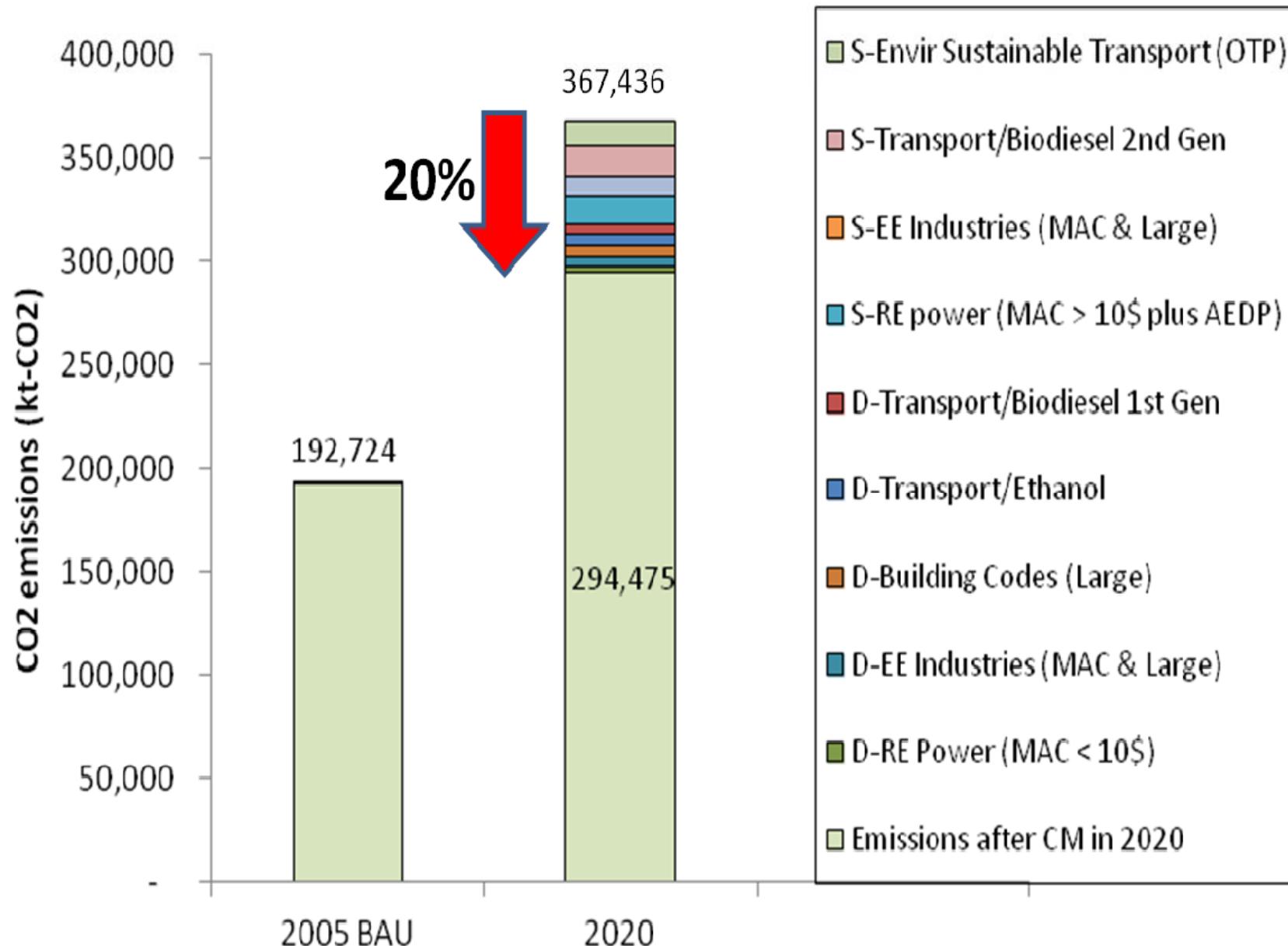
## **Linkage to policy makers**

- **LCS Scenarios and LCS Roadmap in Thailand**
  - Cost-effectiveness
  - GHG Mitigation potential
  - Conflict with other policies
  - Co-benefits
  - Consensus of stakeholders

# Potential of CO<sub>2</sub> Mitigation in Thailand

NAMAs	CO <sub>2</sub> Countermeasures	CO <sub>2</sub> reduction in 2020 (kt-CO <sub>2</sub> )
Domestic NAMAs	RE Power (MAC < 10\$/t-CO <sub>2</sub> )	2,568
	EE Large Industries (MAC < 10\$/t-CO <sub>2</sub> )	4,762
	Building Codes (Large buildings)	5,909
	Transport/Ethanol (AEDP 2012)	5,069
	Transport/Biodiesel 1 <sup>st</sup> Gen (AEDP 2012)	5,022
	<i>Sub-total</i>	<i>23.0 Mt-CO<sub>2</sub></i>
Internationally Supported NAMAs	RE Power (MAC > 10\$/t-CO <sub>2</sub> plus AEDP)	13,456
	EE Large Industries (MAC > 10\$/t-CO <sub>2</sub> )	9,743
	Transport/Biodiesel 2 <sup>nd</sup> Gen (AEDP 2012)	14,459
	Environmental Sustainable Transport	12,000
	<i>Sub-total</i>	<i>50.0 Mt-CO<sub>2</sub></i>
<b>Total Domestic and Supported NAMAs</b>		<b>73.0 Mt-CO<sub>2</sub></b>
<b>Total emissions in 2005</b>		<b>192,724 kt-CO<sub>2</sub></b>
<b>Total emissions in BAU2020</b>		<b>367,436 kt-CO<sub>2</sub></b>

# Potential of CO<sub>2</sub> Mitigation in Thailand



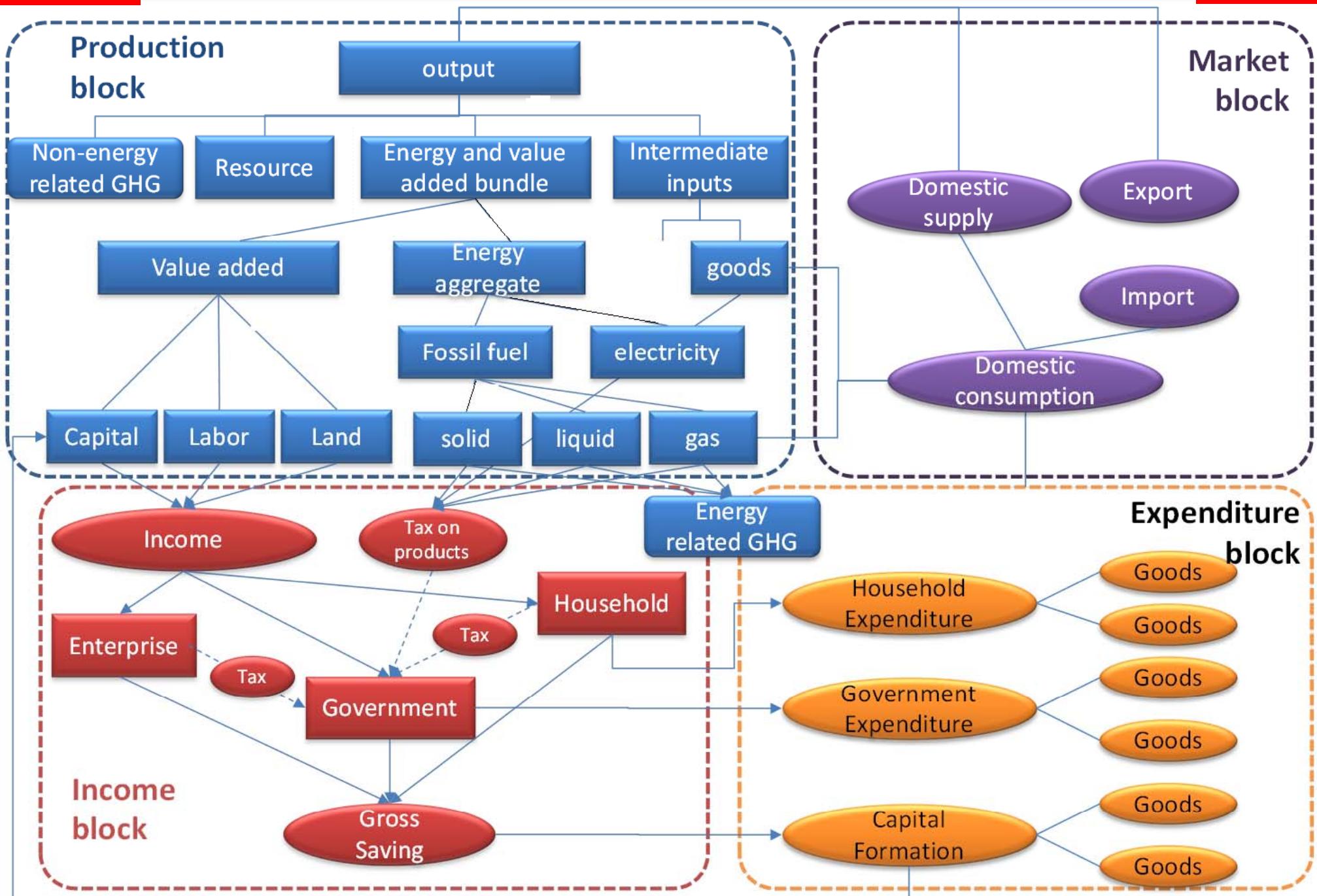
# Co-benefits of Low Carbon Thailand

## Energy Security of LCG in Thailand NAMAs

Year	DoPED*	Energy Intensity (toe/1000 USD)	CO <sub>2</sub> Intensity (t-CO <sub>2</sub> /USD)
2005	68.82	0.280	0.696
2020 BAU	69.24	0.274	0.564
2020 NAMA	76.63	0.225	0.461

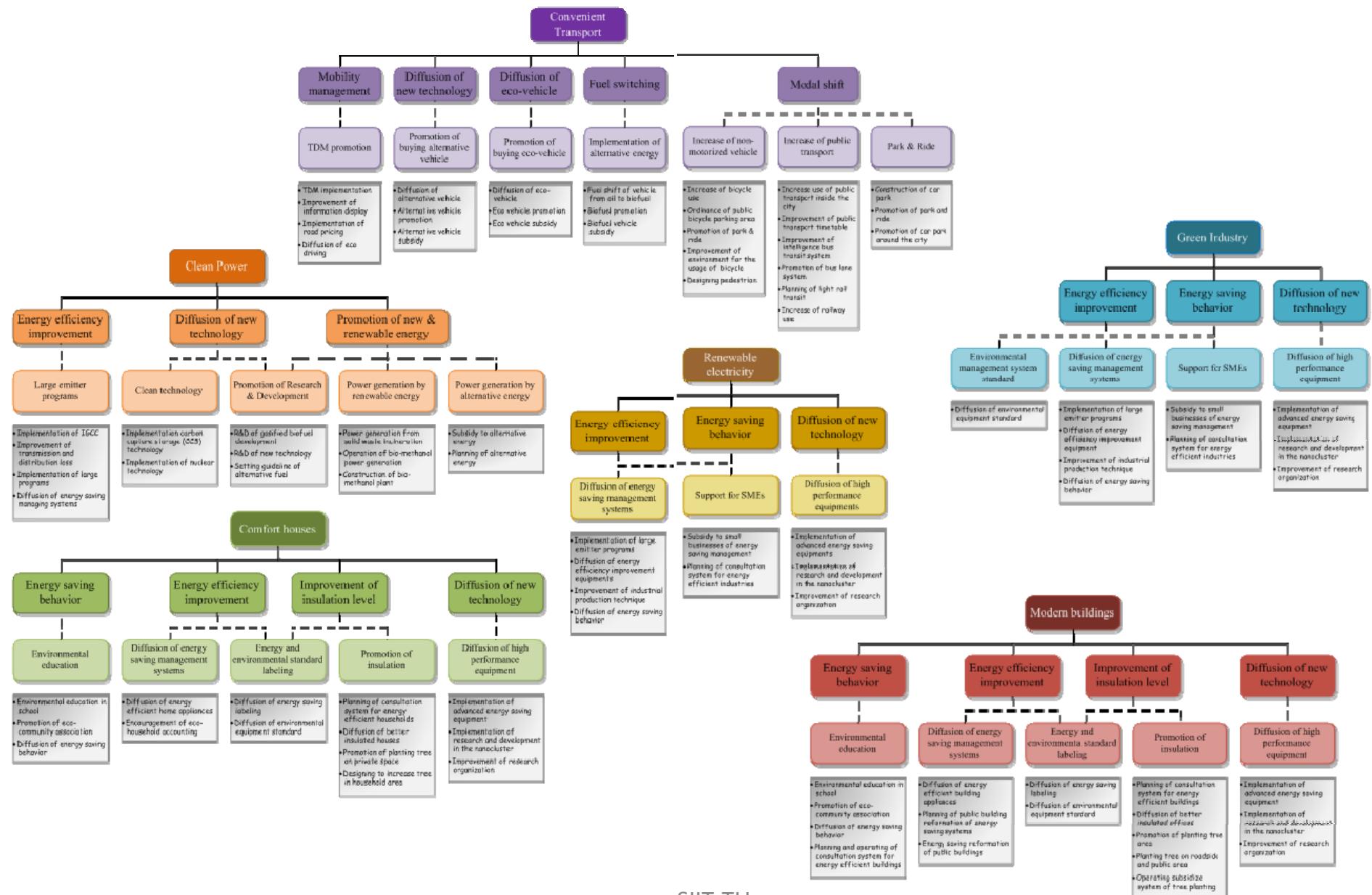
\* DoPED: Diversification of primary energy demand

# AIM/CGE model for Thailand



# Roadmap to Low Carbon Thailand towards 2050

## by AIM/Enduse

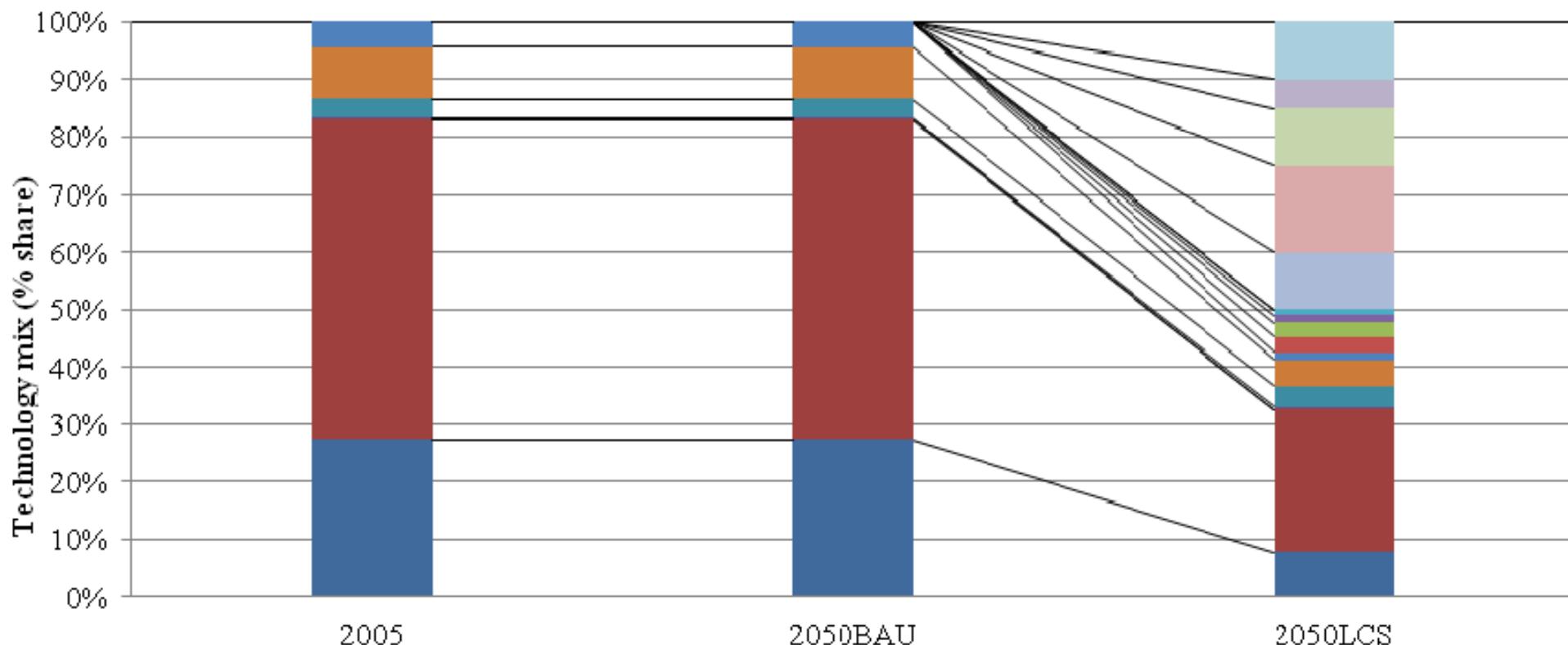


# Roadmap to Low Carbon Thailand towards 2050

## by AIM/Enduse

### Technology Mix in *the Clean Power Generation*

- Conventional steam power plant
- Gas engine
- Imported hydro
- Solar
- IGCC
- IGCC with CCS
- Combined cycle power plant
- Hydro power plant
- Biomass steam power plant
- Wind
- Supercritical powerplant
- Supercritical powerplant with CCS
- Gas turbine power plant
- co generation
- Nuclear
- Municipal solid waste
- Steam power plant with CCS

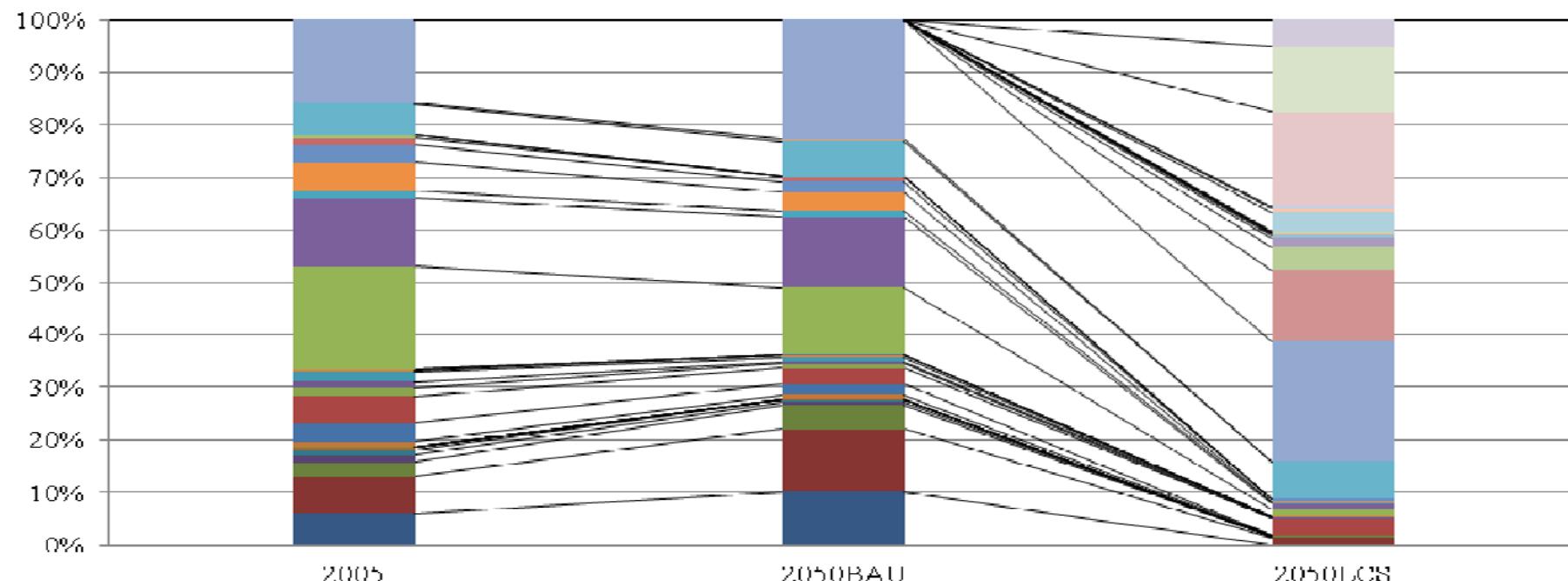


# Roadmap to Low Carbon Thailand towards 2050

## by AIM/Enduse

### Technology Mix in the *Convenient Transport*

■ Patrol sedan	■ Ethanol/B5 sedan	■ LPG/CNG sedan	■ Patrol van
■ Ethanol/B5 van	■ LPG/CNG van	■ Patrol tuktuk	■ Ethanol/B5 tuktuk
■ LPG/CNG tuktuk	■ Patrol taxi	■ Ethanol/B5 taxi	■ LPG/CNG taxi
■ Patrol motorcycle	■ Ethanol motorcycle	■ Patrol bus	■ Ethanol/B5 bus
■ LPG/CNG bus	■ Patrol others	■ Ethanol/B5 others	■ LPG/CNG others
■ Patrol Pickup	■ Ethanol/B5 Pickup	■ LPG/CNG Pickup	■ Patrol Truck
■ Ethanol/B5 Truck	■ LPG/CNG Truck	■ Diesel Freight Train	■ Electric Freight Train
■ Fuel oil Ship	■ Diesel Ship	■ Jet fuel Aircraft	■ Hybrid-Biofuel Sedan
■ Plugin Hybrid-Biofuel Sedan	■ Electric sedan	■ Hybrid-Biofuel Van	■ B10/B20 Van
■ Hybrid-Biofuel Taxi	■ Plugin Hybrid-Biofuel Taxi	■ Electric Taxi	■ Electric Motorcycle
■ Electric Train	■ B10/B20 Bus	■ B10/B20 Others	■ Hybrid-Biofuel Pickup
■ B10/B20 Pickup	■ B10/B20 Truck		



# Thank you