



Roadmap to Thailand's Low Carbon Society towards 2050

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OBJECTIVES

- To estimate the quantitative CO₂ emissions from Thailand's energy sector
- To investigate more efficient and clean technologies for Thailand's LCS initiative
- To formulate a realistic methodology for Thailand's LCS efforts

Key Assumptions

Socio-economic indicators	2005	2050	2050/2005
■ Population (Person)	62,418,054	78,071,984	1.25
■ No. of Households	19,016,784	67,478,570	3.55
■ GDP (Million USD)	169,870	1,247,449	7.34
■ Gross output (Million USD)	407,157	2,939,643	7.23
■ Per capita GDP (USD/Capita)	2,721	15,978	5.87
■ Floor space for commercial (Million m ²)	88	519	5.90
■ Passenger transport demand (Million passenger-km)	521,985	2,555,466	4.90
■ Freight transport demand (Million tonne -km)	1,826,631	9,701,505	5.31
■ Value Added in Industry sector (million US\$)	50,836	554,093	10.90

Energy Consumption in 2050

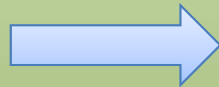
2005 (Base year)

BAU scenario in 2050

LCS scenario in 2050

Industrial sector

23 Mtoe



100 Mtoe

27% ↓

73 Mtoe

Transport sector

19 Mtoe



94 Mtoe

20% ↓

76 Mtoe

Residential sector

10 Mtoe



20 Mtoe

40% ↓

12 Mtoe

Commercial sector

4 Mtoe



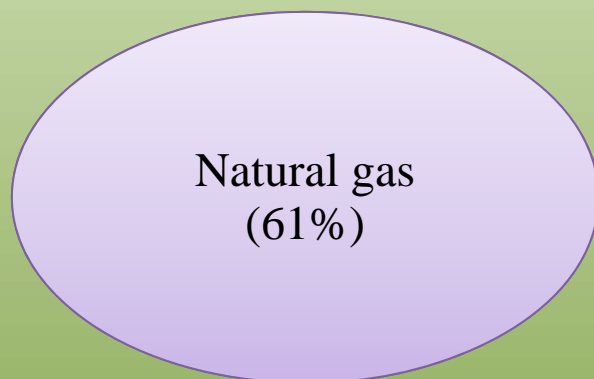
23 Mtoe

48% ↓

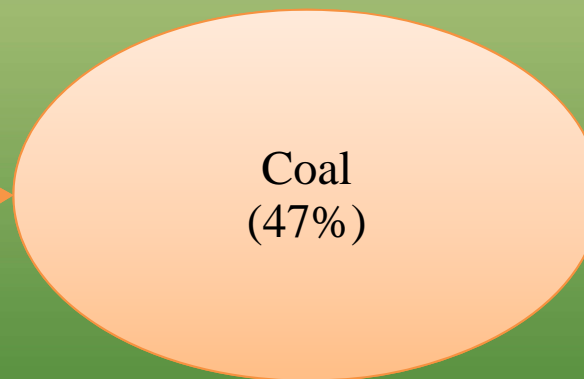
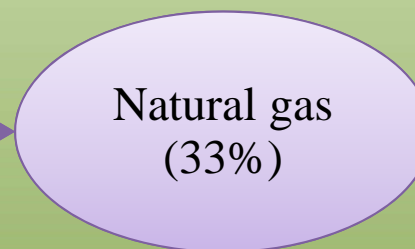
12 Mtoe

Fossil Fuel Supply for Power Generation in 2050

BAU scenario



LCS scenario



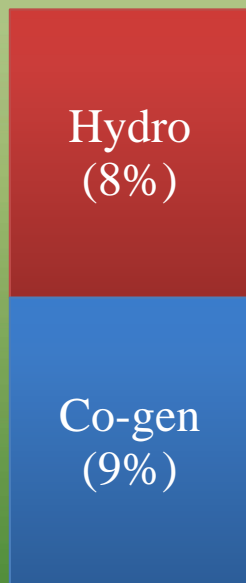
Coal for
CCS
(31%)



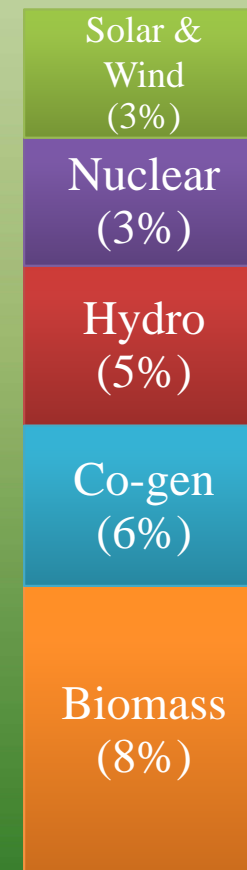
Traditional
coal
(16%)

Other Supplies for Power Generation in 2050

BAU scenario



LCS scenario



Cumulative CO₂ Emission Reduction

**Commercial sector
(4 Mt-CO₂)**

**Residential sector
(8 Mt-CO₂)**

**Transport sector
(56 Mt-CO₂)**

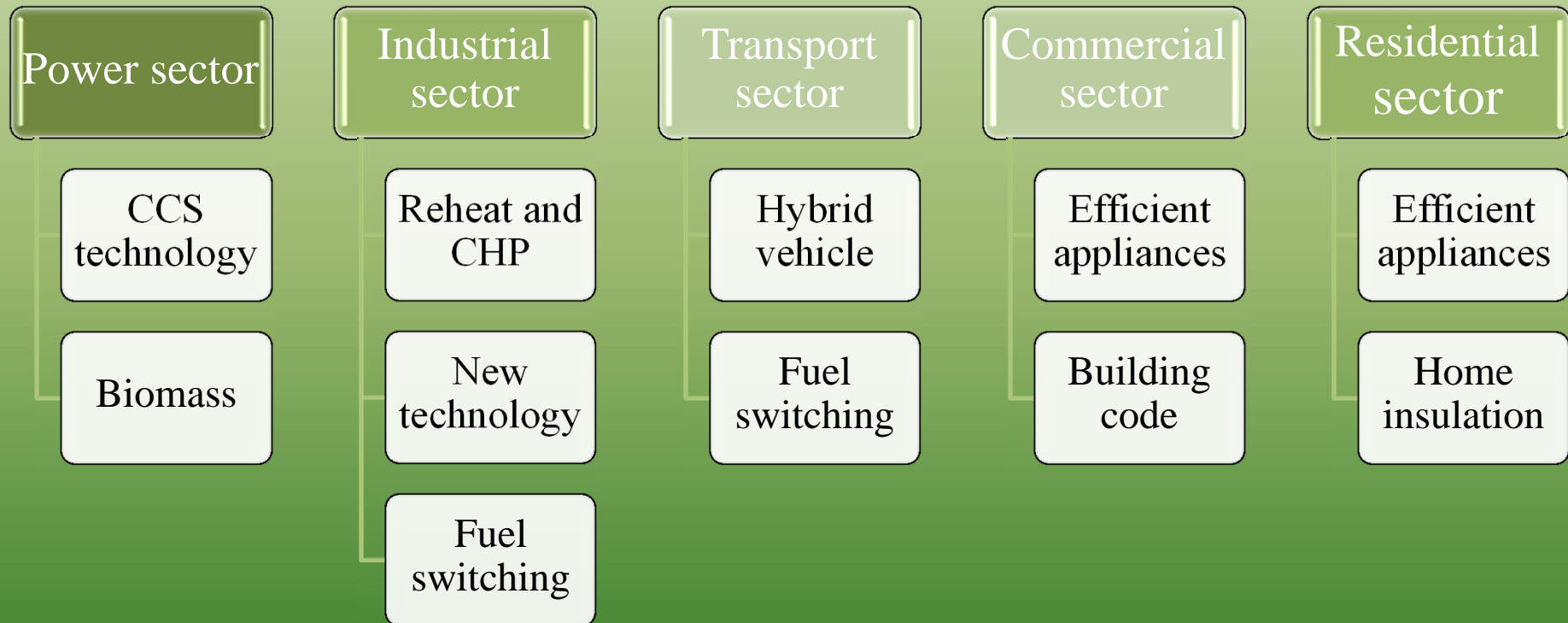
**Power sector
(81 Mt-CO₂)**

**Industrial sector
(90 Mt-CO₂)**

**Total abatement
240 Mt-CO₂**

**29.2%
Abatement**

Key technologies enabling abatement



FUTURE WORKS

Goals	Tasks
Verify the results obtained through expert analysis.	Logic of the model tested.
Peer-review the results by the scientific community	Publish a journal/conference paper
Identify key technologies in the energy sector to target in the future which yield highest abatement.	Use Marginal Abatement cost and other financial tools.
Strategies to implement the action plan derived from LCS Roadmap.	Educate relevant stakeholders and build consensus.

