





11th International Research Network for Low Carbon Societies (LCS-RNet)

Thailand NDC Roadmap

ENEA, Rome October 17, 2019

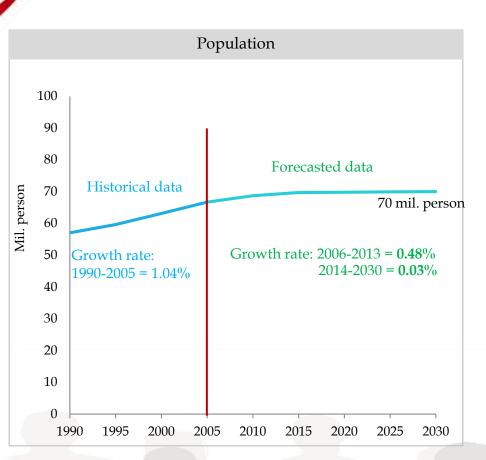
Sirindhorn International Institute of Technology
Thammasat University
Thailand

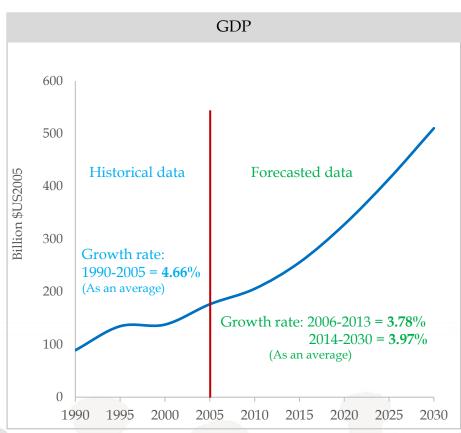
ESTIMATED SOCIO-ECONOMIC IN 2030

	2005	2030	2030/2005
Population (Mil. Person)	66,698	70,043	1.1
No. of Household	19,016,784	30,288,247	1.6
GDP (Bill. US2005)	176,402	510,404	2.9
Per capita GDP (US2005/Person)	2,645	7,287	2.8
Industry value added (Mil. USD)	169,834	573,759	3.4
Primary industry (Mil. USD)	18,090	<i>57,</i> 361	3.2
Secondary industry (Mil. USD)	60,876	200,899	3.3
Tertiary industry (Mil. USD)	90,868	315,499	3.5

Source: SIIT-TU (2015)

SOCIO-ECONOMIC ASSUMPTIONS





Source: SIIT-TU (2015)

SUMMARY INFORMATION ON THAILAND'S NDC MITIGATION MEASURES

Sector	Measure	Description
Energy and transport		Thailand's NDC Roadmap on Mitigation 2021-2030
Power generation	Energy efficiency improvementSubstitution of RE	was formulated based on the following plans already approved or in the pipeline for approval by the Cabinet. The example are as follows:
Manufacturing industry	Energy efficiency improvementSubstitution of RE	 National Economic and Social Development Plans Climate Change Marter Plan B.E.2558-2593
Transportation	Energy efficiency improvementSubstitution of RE	(2015-2050) • Power Development Plan B.E.2558-2579 (2015-2036)
• Buildings	Energy efficiency improvement	Thailand Smart Grid Development Master Plan B.E. 2558-2579 (2015-2036)
Residential	Energy efficiency improvementSubstitution of RE	 Energy Efficiency Plan B.E.2558-2579 (2015-2036) Alternative Energy Development Plan B.E.2558-2579 (2015-2036)
IPPU		Master Plan for Sustainable Transport System and Mitigation of Climate Change Impacts
Cement industry	Substitution of clinker substance	National Industrial Development Master Plan B.E.2555-2574 (2012-2031)
Consumption of Halocarbons and Sulphur Hexafluoride	Substitution of refrigerant substance	 National Waste Management Master Plan B.E. 2559-2564 (2016-2021) Thailand Transport System Development Strategy 20 years B.E 2560-2579 (2017-2036)
Waste		 Environmental Quality Management Plan B.E. 2560-2564 (2017-2021)
• Waste	Waste management	(2017 - 2021)
Wastewater	Methane recovery from industrial wastewaterClean technology	
	Municipal wastewater management	

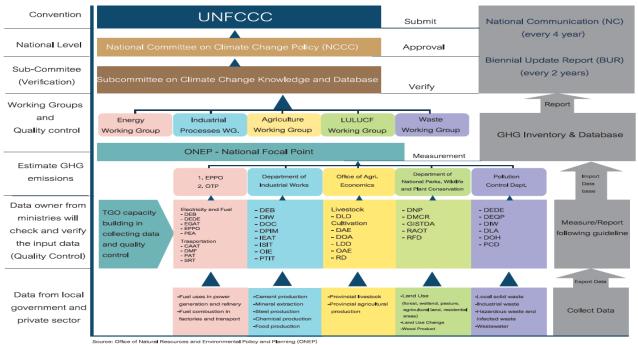
Source: Thailand's Nationally Determined Contribution Roadmap on Mitigation 2021-2030, 2017

STRUCTURE OF THE NATIONAL COMMITTEE ON CLIMATE CHANGE POLICY

National Committee on Climate Change Policy (NCCC)				
Prime Minister		Chairman		
Minister of National Resources and Environment		Vice-Chairman	Vice-Chairman	
Minister of Foreign Affairs		Vice-Chairman		
NCCC members: 1. Prime Minister's Office 2. Ministry of Finance 3. Ministry of Agriculture and Cooper 4. Ministry of Transport 5. Ministry of Digital Economy and So 6. Ministry of Energy 7. Ministry of Commerce 8. Ministry of Interior		14. Office of the Nat	ation c Health ctry polotan Administration ional Economics and nent Board (NESDB) et	
Subcommittee on Climate Change Policy and Planning Integration	Subcommittee on Climate Change Knowledge and Database	Subcommittee on Climate Change Negotiation and International Cooperation	Subcommittee on Action for Climate Empowerment and Public Relations	
Chair: Permanent Secretary, MNRE Vice-Chair 1: Secretary General, ONEP Vice-Chair 2: Secretary General, NESDB Members: 24 persons Secretariat: ONEP	Chair: Permanent Secretary, MNRE Vice-Chair: Secretary General, ONEP Members: 29 persons Secretariat: ONEP	Chair: Permanent Secretary, MNRE Vice-Chair 1: Secretary General, ONEP Vice-Chair 2: Director-General of the Department of International Organizations (DIO) Members: 18 persons Secretariat: ONEP & DIO	Chair: Permanent Secretary, MNRE Vice-Chair 1: Director-General, Department of Environment Quality Promotion (DEQP) Members: 22 persons Secretariat: DEQP	

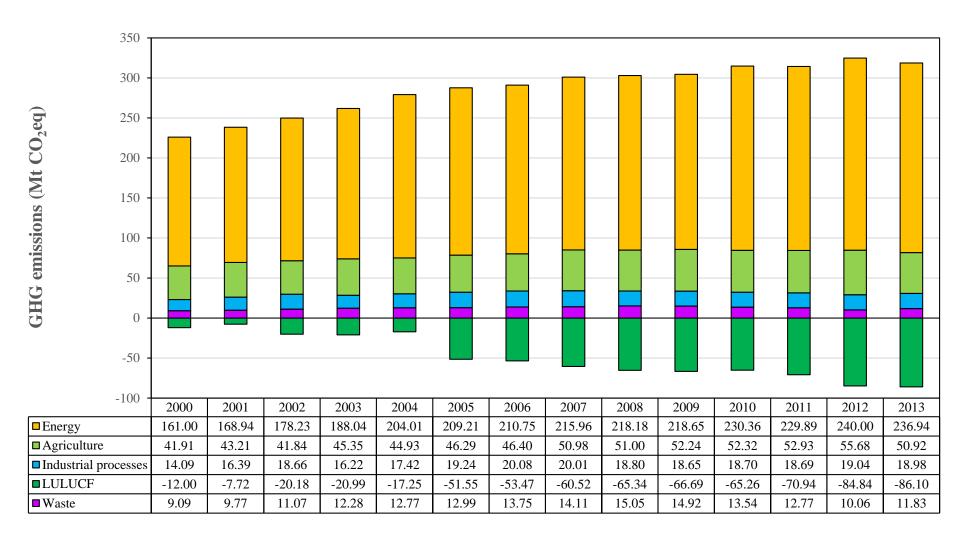
Sourec: Office of Natural Resources and Environmental Policy and Planning (ONEP)

SUMMARY INFORMATION ON THAILAND'S NDC MITIGATION MEASURES



CAAT	= The Civil Aviation Authority of Thailand	IEAT	= Industrial Estate Authority of Thailand
DAE	= Department of Agricultural Extension	ISIT	= Iron and Steel Institute of Thailand
DEB	= Department of Energy Business	LDD	= Land Development Department
DEDE	= Department of Alternative Energy Development and Efficiency	OAE	= Office of Agricultural Economics
DEQP	= Department of Environmental Quality Promotion	OIE	= Office of Industrial Economics
DIW	= Department of Industrial Works	ONEP	= Office of Natural Resources and Environmental Policy and Planning
DLA	= Department of Local Administration	OTP	= Office of Transport and Traffic Policy and Planning
DLD	= Department of Livestock Development	PAT	= Port Authority of Thailand
DMCR	= Department of Marine and Coastal Resources	PCD	= Pollution Control Department
DMF	= Department of Mineral Fuels	PEA	= Provincial Electricity Authority
DNP	= Department of National Parks, Wildlife and Plant Conservation	PT I T	= Petroleum Institute of Thailand
DOA	= Department of Agriculture	RAOT	= Rubber Authority of Thailand
DOC	= Department of Customs	RD	= Rice Department
DOH	= Department of Health	RFD	= Royal Forest Department
DPIM	= Department of Primary Industries and Mines	RID	= Royal Irrigation Department
EGAT	= Electricity Generating Authority of Thailand	SRT	= State Railway Authority of Thailand
EPPO	= Energy Policy and Planning Office		
GISTDA	= Geo-Informatics and Space Technology Development Agency (Pu	blic Organizati	ion)

THAILAND INVENTORY



THAILAND'S NDC ROADMAP

Information and data collection

Identification of data needs and data sources. Preliminary data formulation Synthesis and Preliminary Analysis

Information collection for present practices and policies

Data compilation and putting the data in required formats Modeling and Analysis

Estimation of energy and emissions

Developing scenarios

Developing narratives & story lines

Developing NDC

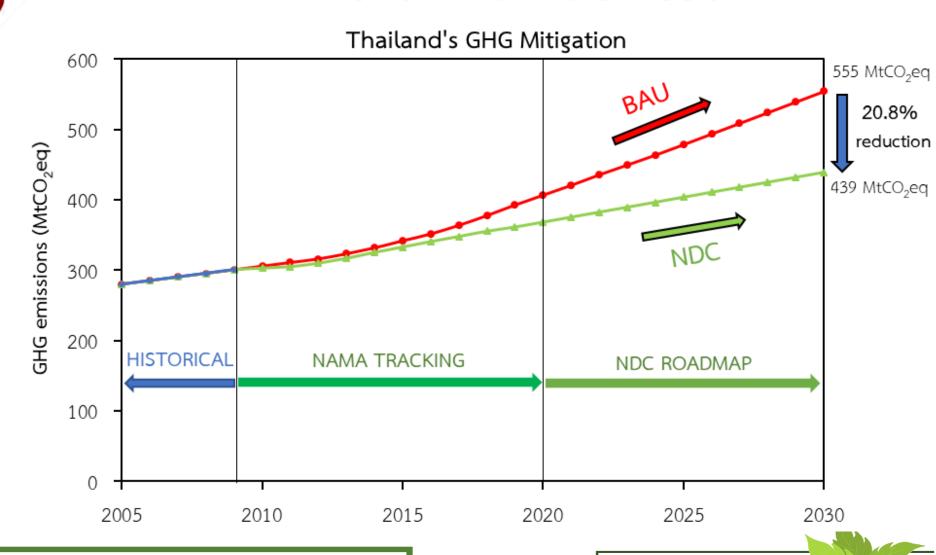
Analysis of finding and developing NDC

Recommendations of NDC

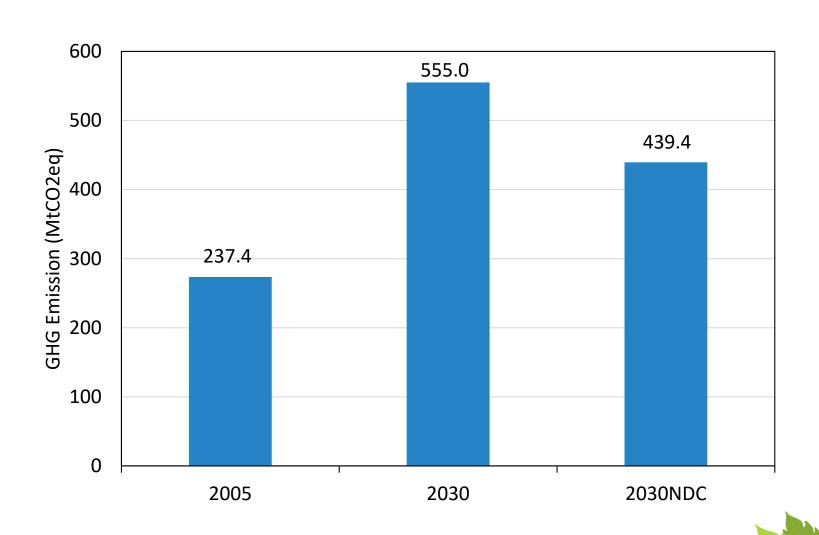
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Source: SIIT-TU (2015)

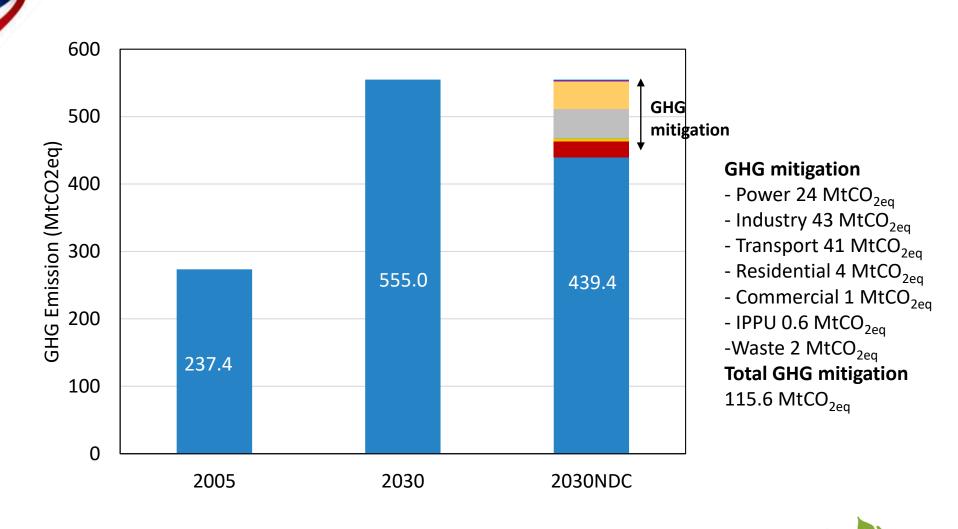
THAILAND'S GHG MITIGATION: NAMA 2020 AND NDC 2030



THAILAND'S GHG EMISSION AND MITIGATION: NDC 2030



THAILAND'S GHG EMISSION AND MITIGATION: NDC 2030



POLICY PACKAGE FOR THAI NDC VISION 2030

Electricity Generation

Efficient electricity generation
Power plants efficiency improvement
Renewable energy

Industry

Electricity consumption improvement
Thermal energy consumption
improvement

Waste

Waste management
Wastewater management

Residential and Commercial

Efficient appliances Renewable energy

Transportation

Energy efficiency improvement Renewable & clean fuel

IPPU

Clinker substitution F-gas reduction



Incentive to introduce energy efficient equipment and building



Energy efficiency improvement



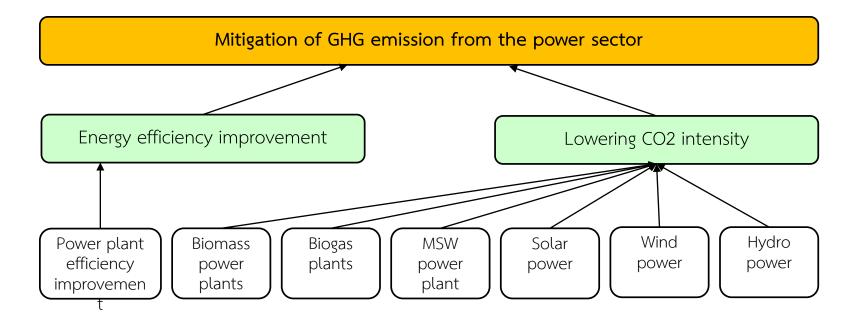
Lowering CO₂ intensity



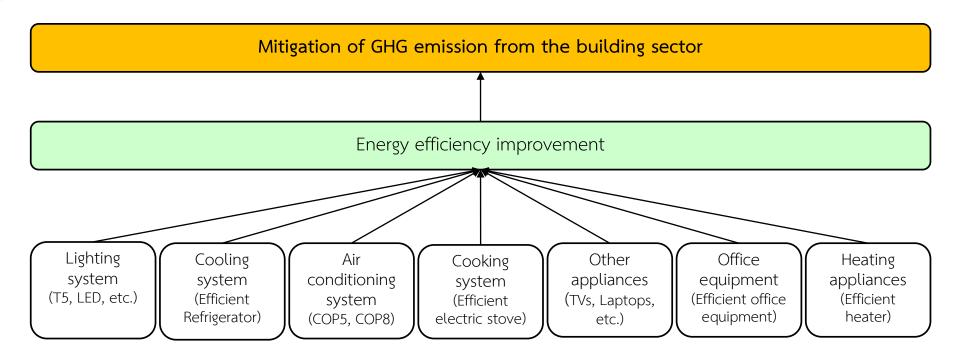
Mitigation of GHG emissions from Thailand



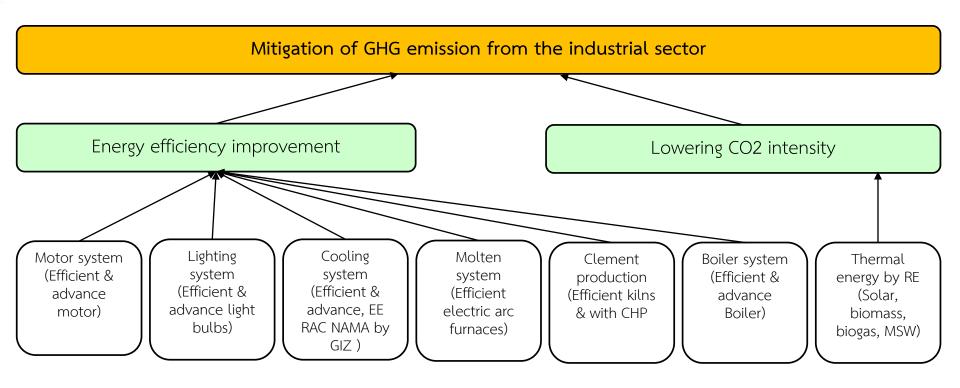
MITIGATION MEASURES AND POLICIES FOR POWER SECTOR



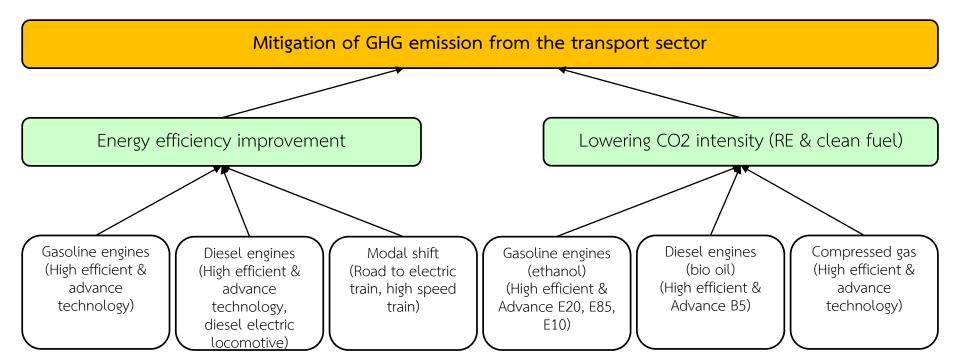
MITIGATION MEASURES AND POLICIES FOR BUILDING SECTOR



MITIGATION MEASURES AND POLICIES FOR INDUSTRIAL SECTOR



MITIGATION MEASURES AND POLICIES FOR TRANSPORT SECTOR



NDC MEASURES/POLICIES

	2030
Energy sector	113.00
Power sector	24.00
1 Efficient electricity generation	6.00
2 Renewable energy	18.00
Residential sector	4.00
3 Efficient appliances	2.79
4 Renewable energy	1.21
Commercial sector	1.00
5 Efficient appliances	1.00
Industrial sector	43.00
6 Energy consumption improvement	11.00
7 Renewable energy	72.00
Transport sector	41.00
8 Energy efficiency improvement	31.00
9 Renewable & clean fuel	10.00

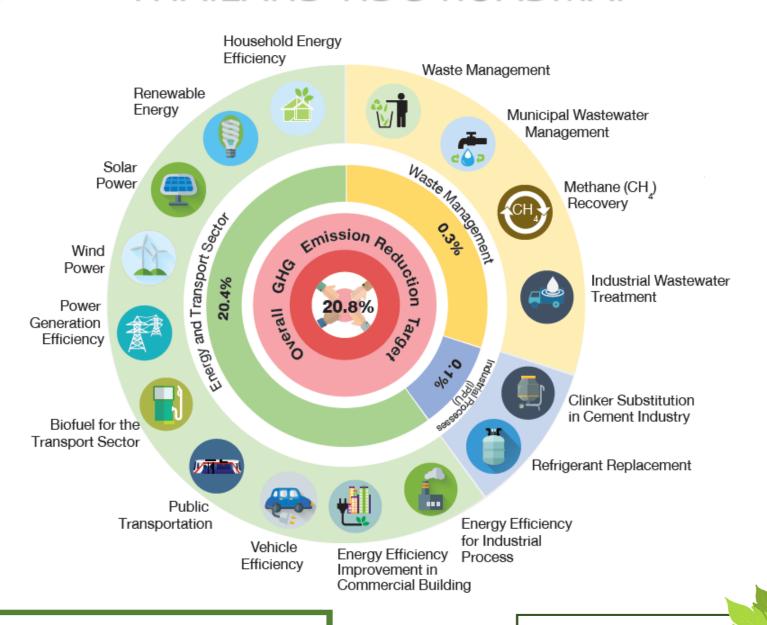
	2030
Waste sector	2.00
Waste management	1.30
10 Waste reduction	
Wastewater management	0.70
11 Biogas from industrial wastewater	
12 Other industrial wastewater management	
13 Domestic wastewater management	

	2030
IPPU sector	0.60
14 Clinker substitution	0.30
15 F-gas reduction	0.30

Source: ONEP (2016)

SELC

THAILAND NDC ROADMAP



Source: ONEP (2016)

SELC

THAILAND NDC ROADMAP



