THAILAND'S FIRST

BIENNIAL TRANSPARENCY REPORT

The Third Facilitative, Multilateral Consideration of Progress (FMCP3)
SB64, Bonn - June 2026

OUTLINE

- National context
- GHG Inventory 2022
- NDC Tracking
- Barriers and support needed and received

National context

POPULATION

66.1 million (2022)

In 2022, the average annual populations growth rate was -0.12%

TOURISM

- Avg. Spending: ~2,058 USD/Person/Trip
- High Per-Trip Spending (2,058 USD)
- Tourist Expenditure: 2,058 USD/Head

ENERGY SITUATION

Energy Consumption

- In 2022, the final energy consumption increase of 13.6% ⏫
- Commercial Energy consumption 88.3%
- Renewable Energy 11.7%

Energy Production

- In 2022, the energy production decrease of 7.4% ⏬
- Commercial Energy 58.1% ⏫
- Renewable Energy increase 30.1%
- Traditional RE 7.9%
- Biofuel 3.4%

ECONOMIC

GDP Growth:

- Expanded by **2.5%** (Accelerating from 1.6% in 2021)

Key Growth Drivers:

- Tourism Recovery
- Domestic Demand

total GDP **495.1** Bil. USD

NATURAL RESOURCES

Land area approximately **513,115 km²**

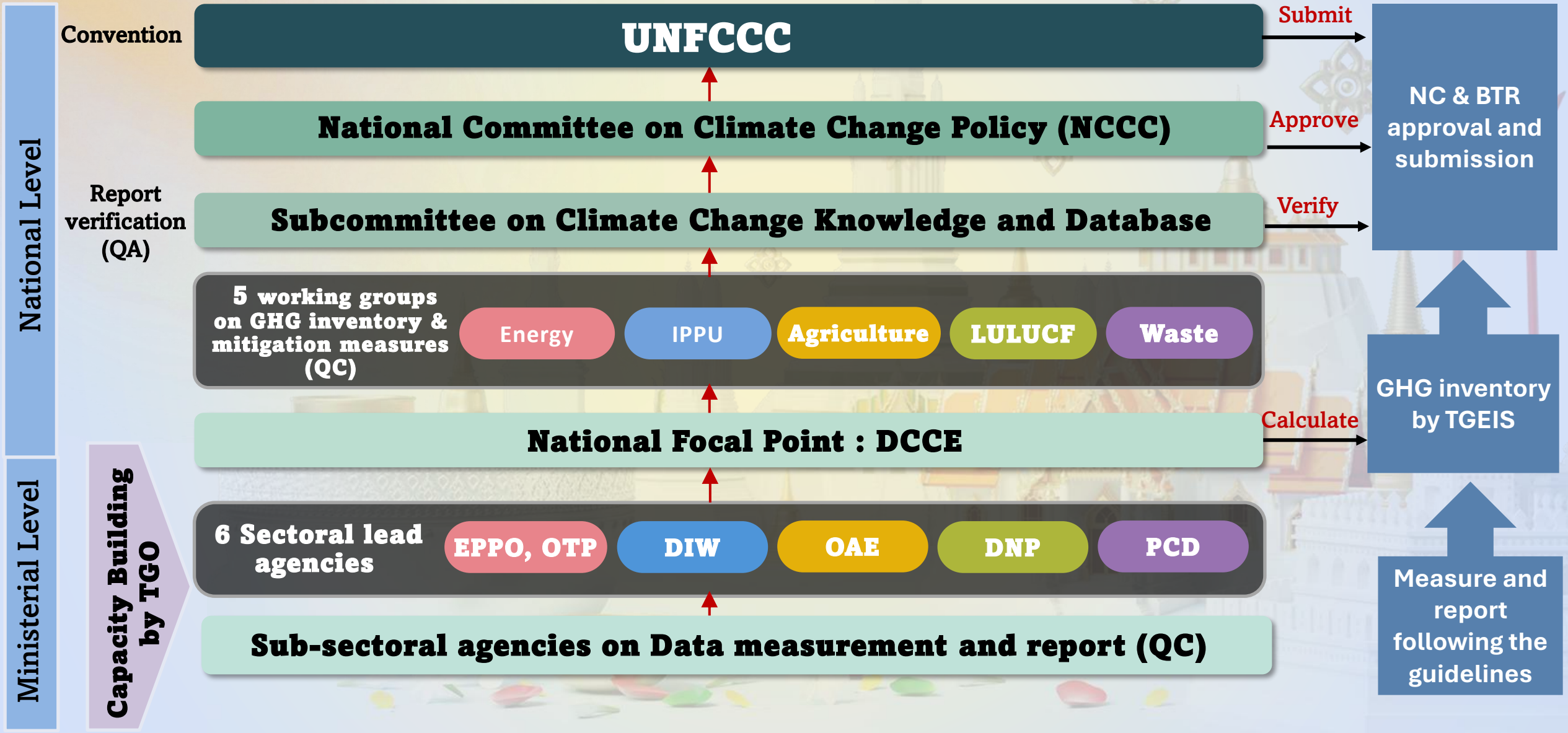
Land use in Thailand **~35% Forest**

Agricultural **~46.4%**

Non-Agricultural **~ 18.6%**

Institutional Arrangement of Inventory

Structure of Thailand's Greenhouse Gas Inventory process



Institutional Arrangement of NDC

Structure and mechanism to track progress made in implementing and achieving its NDC

Implementation Period 2021 - 2030

Acknowledge on implementation progress and updates

National Committee on Climate Change Policy (NCCC)

Report the GHG reduction result in BTRs (2 years) and NC (4 years)

Consider and provide comments/ recommendations

Subcommittee on Climate Change Policy and Planning Integration

Working Group on Climate Change Mitigation Policy and Planning

Publish an annual progress report to the public

Lead agency for driving the implementation of greenhouse gas reduction efforts

Department of Climate Change and Environment (DCCE)

Report annually on the progress/results of greenhouse gas reduction

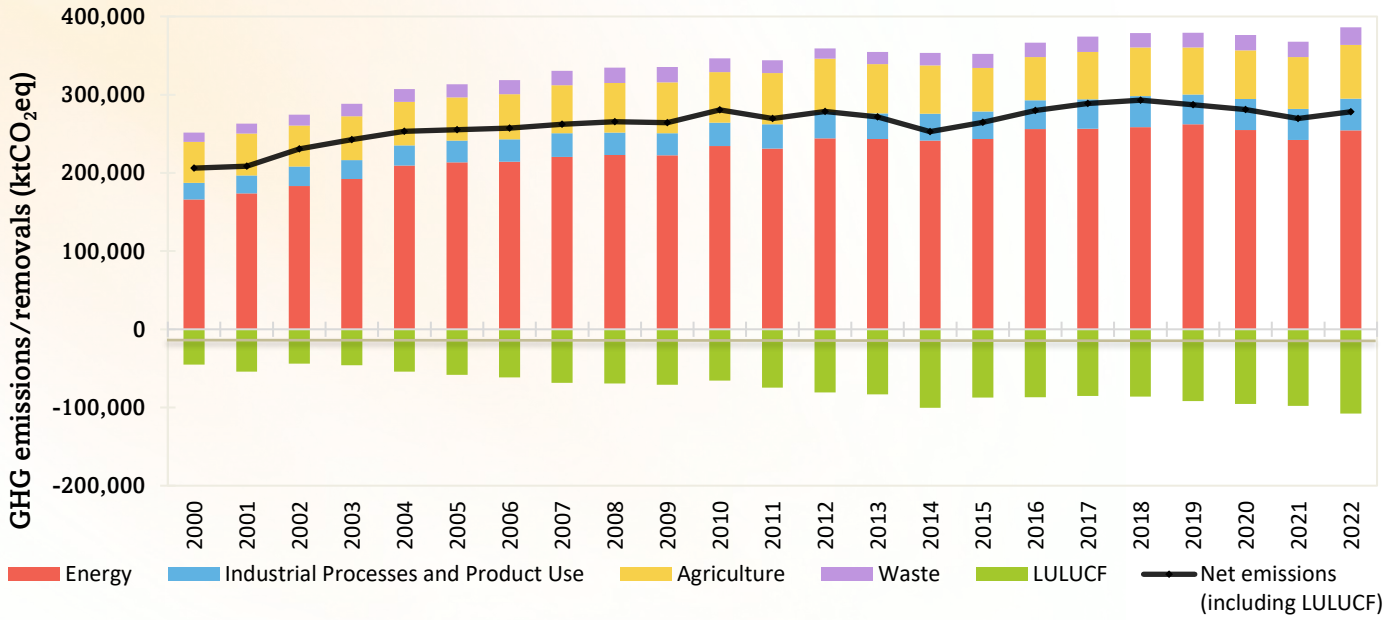
Through the NDC Tracking System

Calculated GHG reduction and report

Key agencies					
	Energy Policy and Planning Office (EPPO) (Energy)	Office of Transport and Traffic Policy and Planning (OTP) (Transport)	Pollution Control Department (PCD) (Waste Management)	Department of Industrial Works (DIW) (IPPU)	Office of agricultural economics (OAE) (Agriculture)

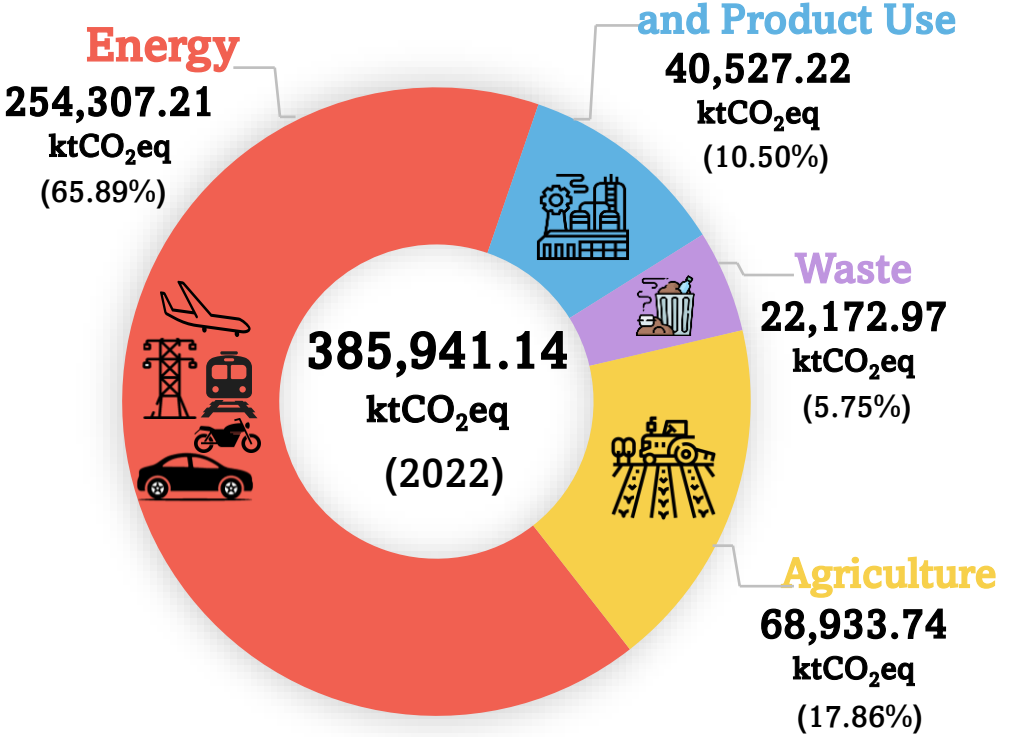
Review and revise the NDC Action Plan every 5 years

GHG Inventory 2022



Net emissions (including LULUCF) 278,039.74 $ktCO_2eq$

- National inventory period: 2000-2022
- The proportion of GHG emissions in the Energy sector accounted for 66.02% of total emission sources in 2000, slightly decreasing to 65.89% of total emission sources in 2022.
- Forests absorbed **34.90%** of annual GHG emissions, compared to the year 2000.



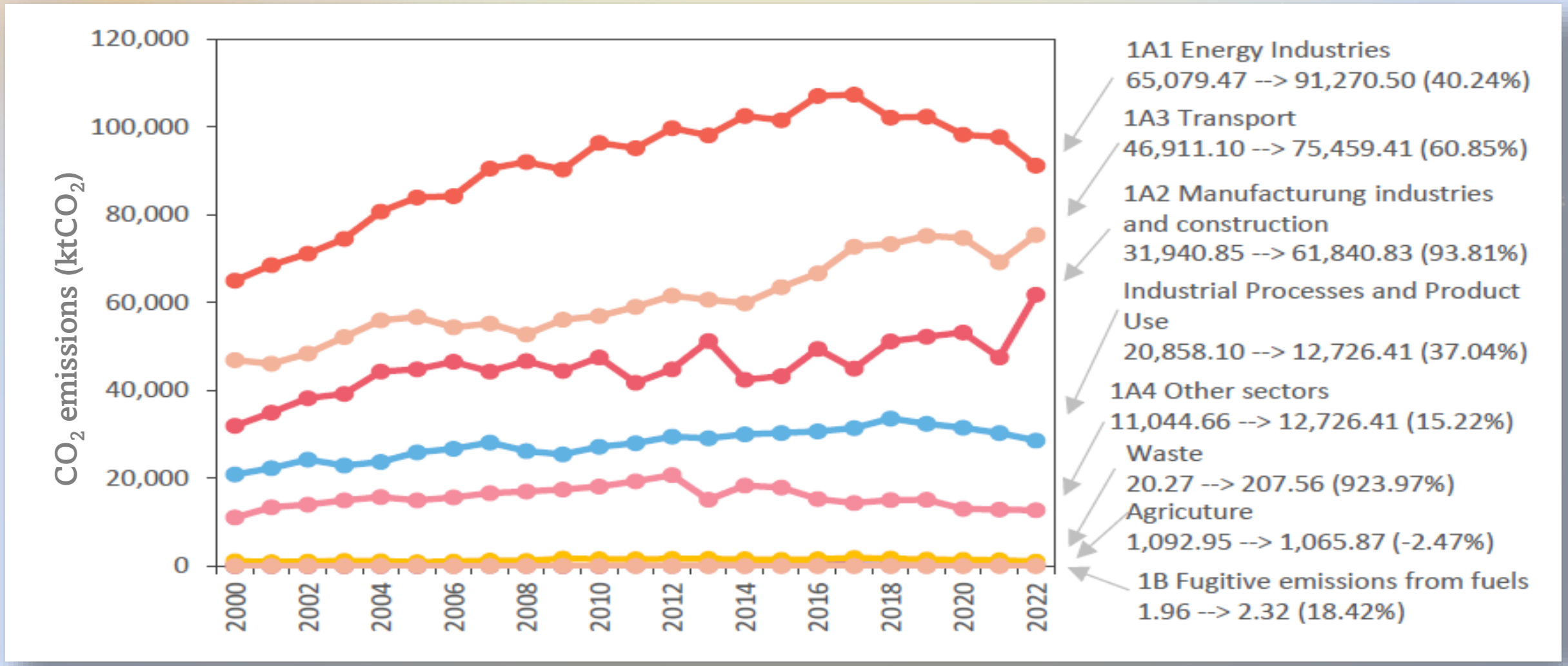
Total GHG emission by sector (excluding LULUCF)

Flexibilities in reporting emissions

1. Time series since 1990	**Time series between 1990-1999 is under process.** The time series of national GHG emissions from sources and removal from sinks starting from 1990 is under planned improvements for all sectors and categories.
2. Tier 2 approach	**The upper Tier of key categories need support.** The Tier 2 approach and country-specific emission factors of the key categories are under planned improvements for time series since 1990.

GHG Inventory 2022

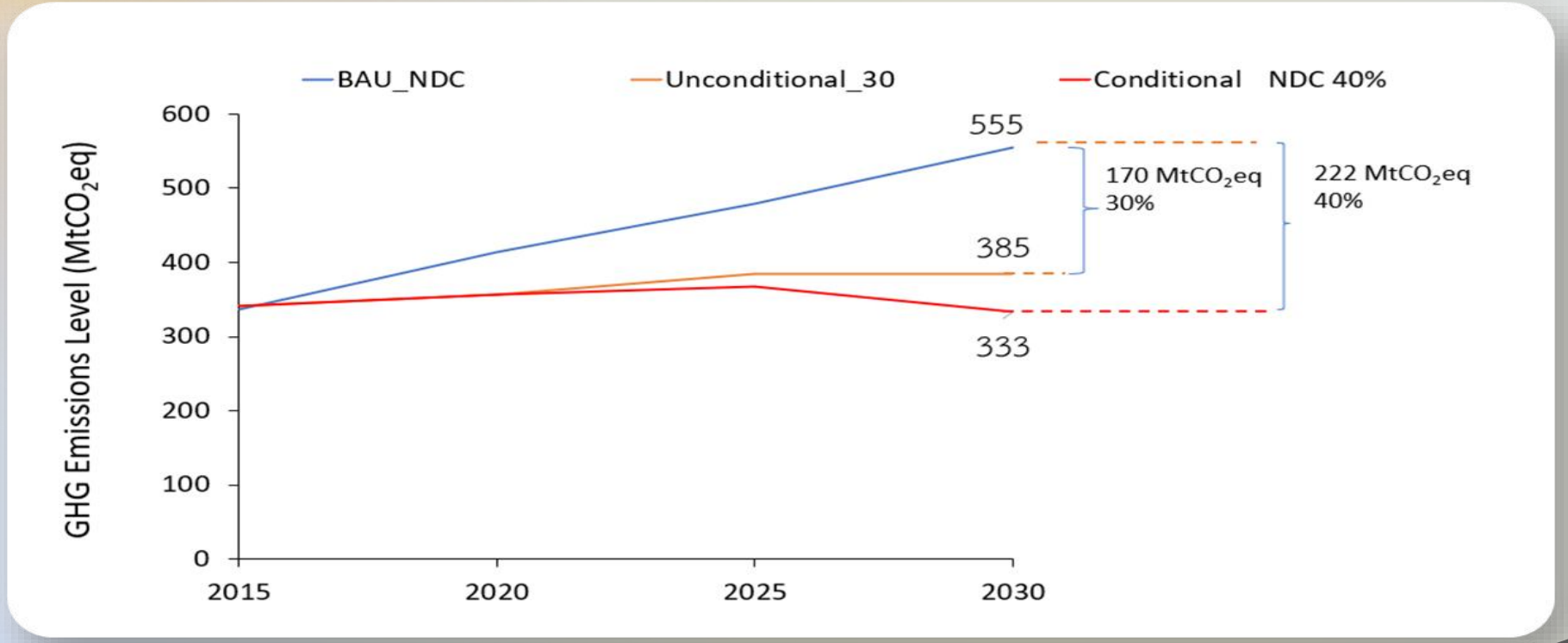
- The trend of CO_2 emission in all sectors increased from 2000, but decreased in recent years.
- Trends of the Energy Industries (1A1) decreased after 2018.



Trends of CO_2 emissions in each sector for 2000 - 2022

NDC 2.0

NDC TRACKING PROGRESS UNDER PARIS AGREEMENT



Baseline

BAU projection from reference year 2005 in absence of major climate change polices [BAU2030: approx. 555 $MtCO_2eq$]

Target

"To reduce GHG emission 30% from BAU by 2030, up to 40% with additional support"

The NDC Roadmap established a framework for mitigation measures 5 sectors.

NDC Action Plan 2021 - 2030

	Energy	Transport	IPPU	Waste	Agriculture
Uncond.	124.6	45.6	1.4	9.1	4.1
Cond.	32.0	2.50		1.9	

($MtCO_2eq$)

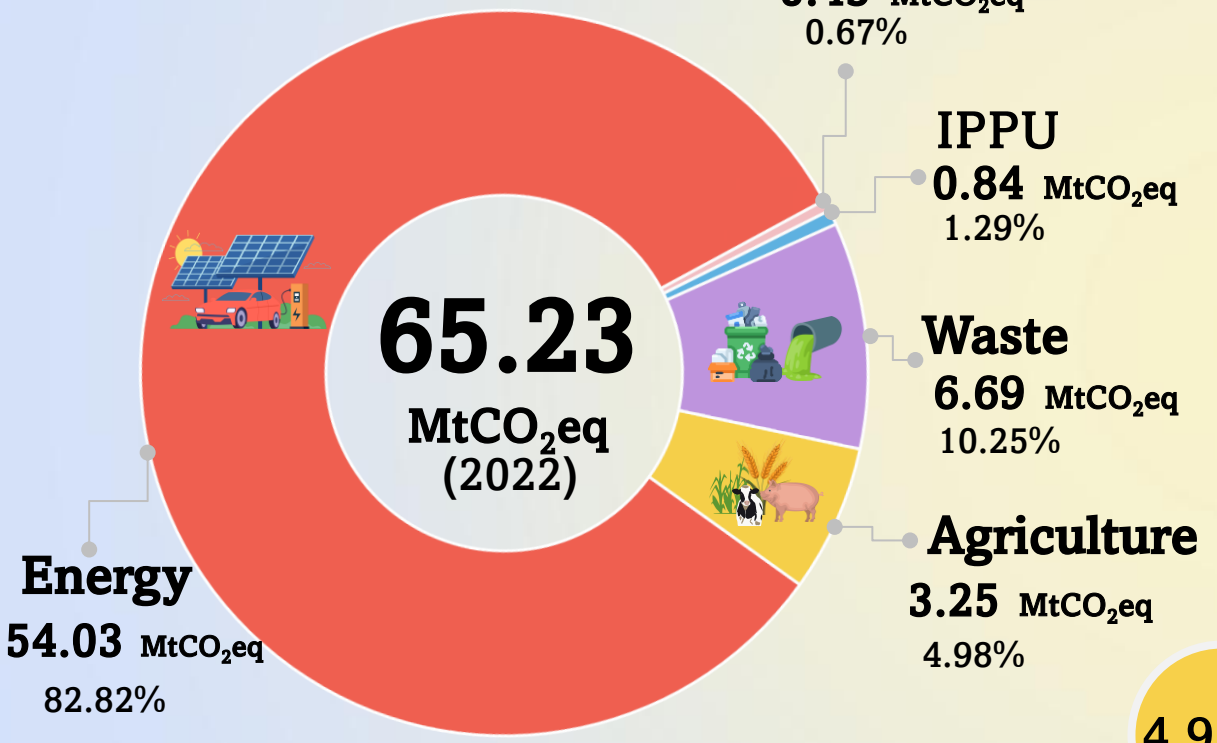
The Key milestone of Thailand for achievement of GHG emissions reduction targets in 2030.

Domestic Implementation 33.3%	Inter. Support 6.7%	Art. 6 of PA 3 %

- CCUS/BECCS
- Advanced EV
- Hydrogen technology
- Manure Management
- Low CH_4 paddy fields

Track Progress made in implementing and achieving its NDC under Article 4 of PA

In 2022, Progress NDC implementing at 30.46% below the reference level (BAU)



Total GHG emission reduction (Unconditional)

82.82% Energy 54.03 $MtCO_2eq$

Key measures

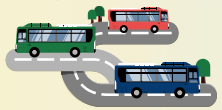
Biomass Energy

Electricity generation efficiency improvement

Renewable energy (Solar wind hydropower)

0.67% Transport 0.43 $MtCO_2eq$

Key measures

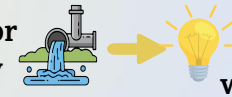


Development of urban public transport infrastructure

10.25% Waste 6.69 $MtCO_2eq$

Key measures

Burning landfill gas or using it for electricity generation



Biogas from industrial wastewater and use of methane

4.98% Agriculture 3.25 $MtCO_2eq$

Key measures

Waste management in the livestock sector

1.29% IPPU 0.84 $MtCO_2eq$

Key measures

Use of alternative materials to replace clinker in hydraulic cement production

Preparation and approval process of NDC

Cabinet

National Committee on Climate Change Policy (NCCC)

Subcommittee on Climate Change Policy and Planning

National Working Groups

GHG Mitigation | Adaptation

LT-LEDS/NDC | NAP

Focus group consultation meetings

MNRE
By DCCE
National Focal Point

UNFCCC
United Nation Framework Convention on Climate Change

National Consultation

Relevant Stakeholders

- Government agencies
- Academia
- Public Sector
- International organization
- Gender
- Private Sector
- Civil Society
- Experts
- Mass media

Thailand NDC3.0: Absolute emission reduction in 2035

47% **Net GHG Reduction from 2019 Levels**

2019 Base Year: 287.3 $MtCO_2eq$

2035 Target: 152 $MtCO_2eq$

Emissions Reduction
135.2
$MtCO_2eq$

Key Sectoral Targets

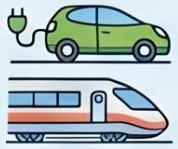
Energy

2019: **185.2 $MtCO_3eq$**

2035: **68.1 $MtCO_2eq$**

Transport

2019: **76.8 $MtCO_3eq$**



2035: **22.6 $MtCO_2eq$**

IPPU

2019: **38.0 $MtCO_2eq$**

2035: **4.2 $MtCO_3eq$**

Waste

2019: **18.7 $MtCO_2eq$**

2035: **6.7 $MtCO_2eq$**

Agriculture

2019: **60.5 $MtCO_2eq$**

2035: **7.6 $MtCO_2eq$**

LULUCF (Carbon Removal)

2019: **92.0 $MtCO_2eq$**

203S: **118.0 $MtCO_2eq$**

Financial Need & Strategic Investment

$7.05 Billion
Required by 2035

Substantial financial mobilization is necessary to implement the required climate technologies and infrastructure.

High-Impact Technology Focus Areas:
CCS/CCUS, Hydrogen infrastructure, SMR/MMR, BESS, Advanced EVs, SAF/Bio-Jet fuels, high-efficiency electrical devices.

The Roadmap to Net Zero

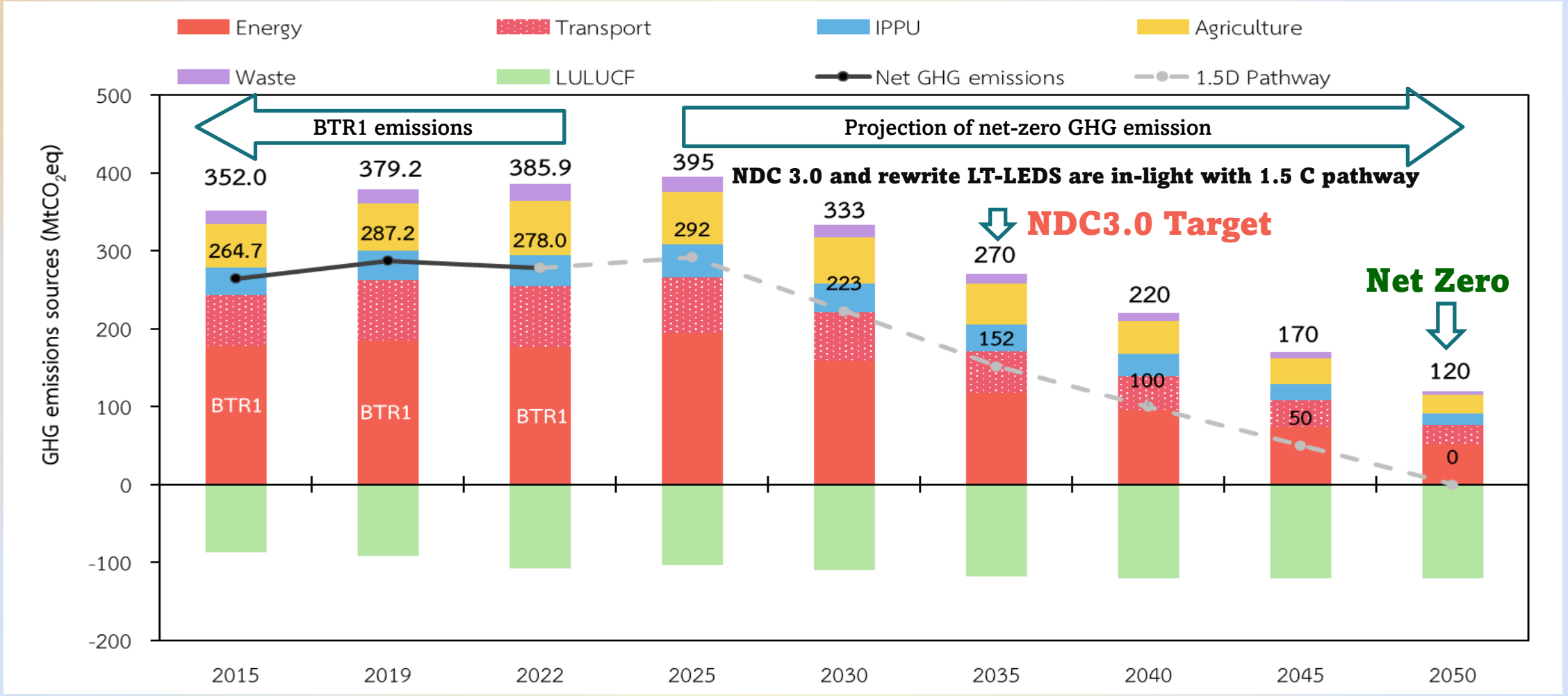
2019: The Base Year
(Starting point for progress)

2030: NDC2.0
(Medium-term target phase)

2035: NDC3.0
(Achievement of 47% GHG reduction target)

2050: Net Zero Emissions
(Thailand's long-term goal for total carbon neutrality)

Thailand NDC 3.0 Emissions Pathways (Economy-wide)



Good practice and Lessons Learned from BTR is applied to NDC and LT-LEDS process for Net Zero 2050

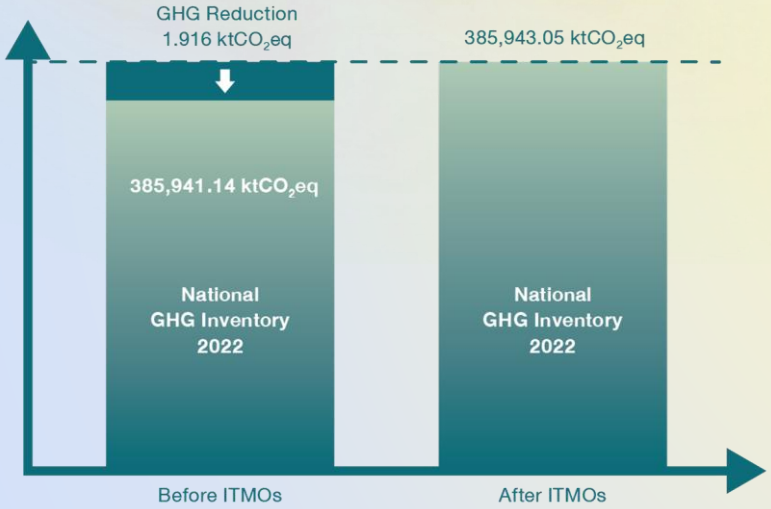
International transferred mitigation outcomes: ITMOs

Thailand has made significant progress in implementing cooperative approaches under Article 6.2 of the Paris Agreement through two key agreements:

- the Implementation Agreement between the Thailand and the Swiss Confederation.
  - ❑ Agreement to transfer carbon credits of 500,000 tCO_2eq within the time frame from 1 October 2022 to 31 December 2030.

Pilot mitigation activity
"the Bangkok e-bus program"

Adjustment of National GHG Inventory after ITMOs



Impacts of ITMOs on National GHG Inventory of Thailand

Emission in years	GHG Inventory before ITMOs ($ktCO_2eq$)	ITMOs ($ktCO_2eq$)	GHG Inventory after ITMOs ($ktCO_2eq$)	Change (%)
2022	385,941.14	1.916	385,943.05	0.0005

- the Implementation Agreement between the Thailand and Japan under the Joint Crediting Mechanism (JCM).

Financial Support Received

PORTFOLIO OVERVIEW

66 Total Climate Action Projects

Diversified Climate Strategy

Support is divided into three critical areas: GHG Mitigation, Adaptation, and Cross-cutting initiatives.

GHG MITIGATION

23,505.97
Million THB Total Value
($670.45M USD)

40 Distinct Projects Focused on Reducing Greenhouse Gas Emissions

Multilateral vs. Bilateral Support

Multilateral: 27 Projects
18,837.71M THB
($537.30M USD)

Bilateral: 13 Projects
4,668.27M THB
($133.15M USD)

CLIMATE ADAPTATION

3,230.03
Million THB Total Value
($92.13M USD)

8 Projects Aimed at Increasing Resilience to Climate Impacts

Bilateral Dominance in Adaptation

Bilateral: 6 Projects
2,369.76M THB
($67.59M USD)

Multilateral: 2 Projects
860.27M THB
($24.54M USD)

CROSS-CUTTING INITIATIVES

11,932.46
Million THB Total Value
($340.43M USD)

18 Projects Addressing Multiple Climate Goals Simultaneously

Heavy Bilateral Financial Focus

Bilateral: 13 Projects
11,421.36M THB
($325.77M USD)

Multilateral: 5 Projects
511.11M THB
($14.58M USD)

Support Need

GHG inventory

Emission Factors and Key Categories
Developing and updating country-specific emission factors for some key categories (energy, waste, agriculture, etc.).

Comprehensive Activity Data
Developing approaches to collect activity data for categories/gases not currently included in the inventory or for upper tiers (F-gases, land-use data, etc.).

QA/QC Improvements
Improving QA/QC procedures to ensure the highest standards of data integrity and reporting.

Electronic Reporting Capacity
Capacity building for the electronic reporting in the CRT (Common Reporting Tables) and CTF (Common Tabular Formats).

Remote Sensing Monitoring
Remote sensing-based monitoring of land use and land cover to provide accurate, real-time environmental data.

Mitigation

Renewable Energy Transition
The energy transition towards renewable sources focusing on renewable energy technologies (such as solar and wind).

Advanced Technology & Transfer
Advanced technology development and transfer, including energy storage systems (EES), EV, batteries, infrastructure, smart grid, sensor technology, AI, CCUS, and BECCS.

Technical Support for Mitigation
Technical support and capacity building to support mitigation actions with advanced technologies.

Financial Support Mechanisms
International financial support mechanisms for purchasing intellectual property rights of clean energy technologies.

Adaptation

Ecosystem Forecasting
Database development for forecasting climate change impacts on the ecosystem and natural resources.

Risk Mapping
Developing a data map showing areas at risk of climate change impacts to guide resource allocation.

National Adaptation Plan (NAP)
Capacity building of relevant stakeholders on the National Adaptation Plan's M&E (Monitoring and Evaluation) system.

Subnational Integration
Capacity building of sectoral and subnational agencies to integrate adaptation measures into their plans.

Department of Climate Change and Environment
Ministry of Natural Resources and Environment

THANK YOU

“ Thailand grows sustainably with a low-carbon economy and is immune to climate change through the participation of its citizens ”