



บรรยายพิเศษโครงการพัฒนาผู้นำทางยุทธศาสตร์ และความมั่นคงสำหรับผู้บริหารระดับสูง  
ณ ศูนย์ศึกษายุทธศาสตร์กองทัพไทย เฉลิมพระเกียรติ 80 พรรษา แหลมแท่น จังหวัดชลบุรี  
วันที่ 11 กรกฎาคม 2566

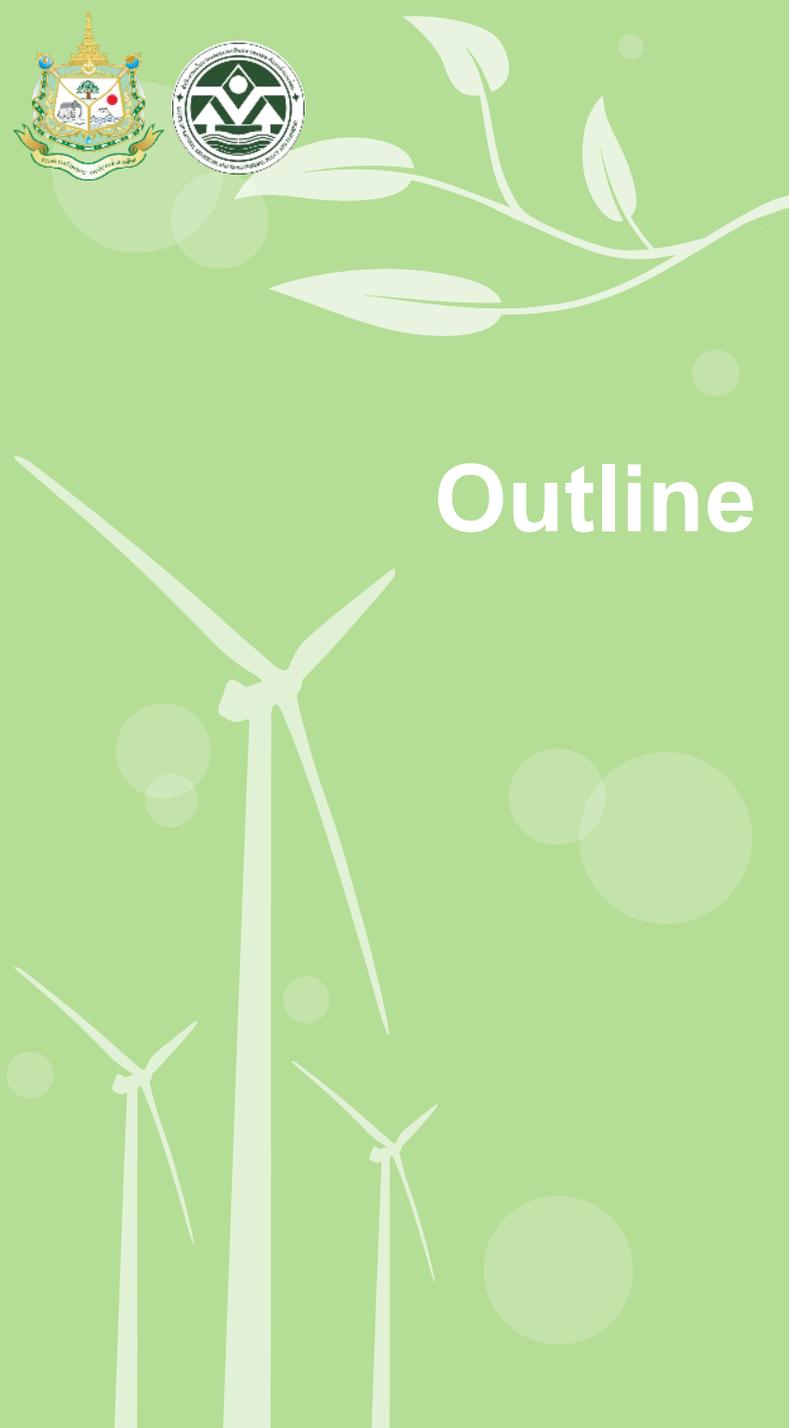


# THAILAND'S CLIMATE CHANGE POLICY AND IMPLEMENTATION



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# Outline



**01 Current Situation**

**02 Development of Thailand's Climate Change**

**03 From COP 27 to Actions**

**04 Thailand's Climate Change Implementation**

**05 Stakeholders Engagement**



# Current Situation



# Sources of Greenhouse Gas Emissions



## Carbon dioxide (CO<sub>2</sub>)

Carbon dioxide enters the atmosphere through burning fossil fuels (coal, natural gas, and oil), solid waste, trees and other biological materials, and also as a result of certain chemical reactions

## Nitrous oxide (N<sub>2</sub>O)

Nitrous oxide is emitted during agricultural, land use, and industrial activities; combustion of fossil fuels and solid waste; as well as during treatment of wastewater.

## Hydrofluorocarbons (HFCs)

a group of industrial chemicals primarily used for cooling and refrigeration. HFCs were developed to replace stratospheric ozone-depleting substances

## Perfluorocarbons (PFCs)

are used to replace chlorofluorocarbons (CFCs) in manufacturing semiconductors

## Methane (CH<sub>4</sub>)

Methane is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices, land use, and by the decay of organic waste in municipal solid waste landfills.

## nitrogen trifluoride (NF<sub>3</sub>)

a chemical that is released in some high-tech industries, including in the manufacture of many electronics

## sulfur hexafluoride (SF<sub>6</sub>)

is a synthetic fluorinated compound with an extremely stable molecular structure SF<sub>6</sub> is used in electric power systems for voltage electrical insulation





# Type of Impact



## 1. Slow on set

sea level rise



Degradation of land or forest



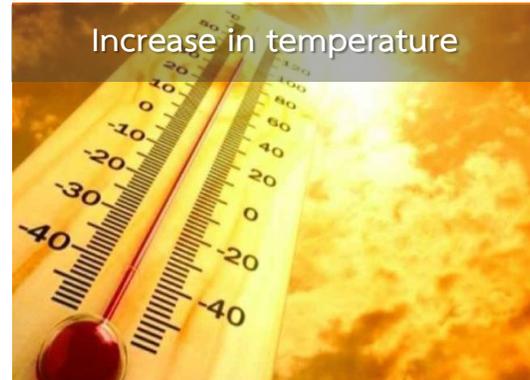
Coastal erosion



Soil salinity



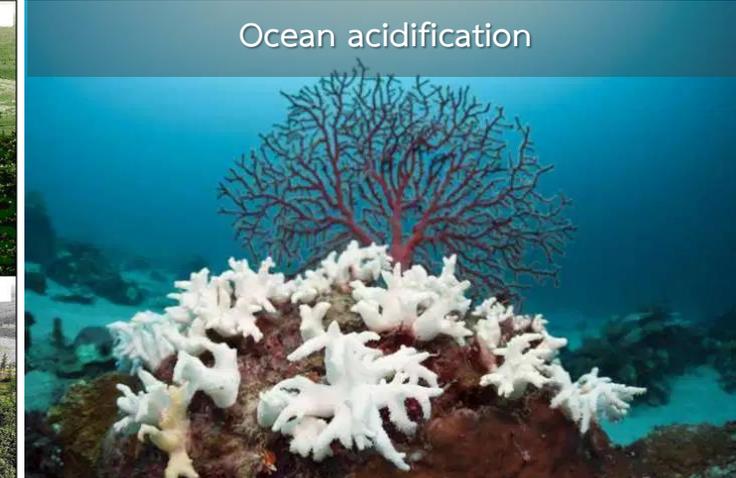
Increase in temperature



Ecosystem change



Ocean acidification





# Nature of Impact



## 2. Extreme event

storm



mudslide



flood



drought





# The Impacts of Rising Global Temperatures



Source: IPCC Special Report on 1.5°C

## Impacts

### Sea Level Rise

1.5 °C

48 cm.

Water shortages in Mediterranean, Australia, Brazil and Asia

### Water

2 °C

56 cm.

8% of the global population faces severe water shortages

3 °C

7+ meters

Almost half of Himalayan high mountain glaciers lost

4 °C

Nearly 9 meters

More frequent and severe extreme droughts

### Food

Wheat, rice, maize and soybean production suffers

Agriculture yields fall rapidly

Fish species go extinct locally

High levels of food insecurity, development path reversed

### Flora & Fauna

9 out of 10 coral reefs at risk from severe degradation

All coral reefs disappear

Marine ecosystems may collapse

Half of all plant and animal species face local extinction



# Top 3 Global Risk in Next 10 Years



## 1. Failure to reduce GHG

The most severe threats in the short term but the least prepared global risk.

## 2. Failure to adapt to the impact

Not enough progress in preparing for the impact of climate change

## 3. Natural disasters and extreme climate events.

Impacts on low- and middle-income countries.

Accelerating the implementation of the Paris Agreement.



Opportunity

Source: World Economic Forum 2023

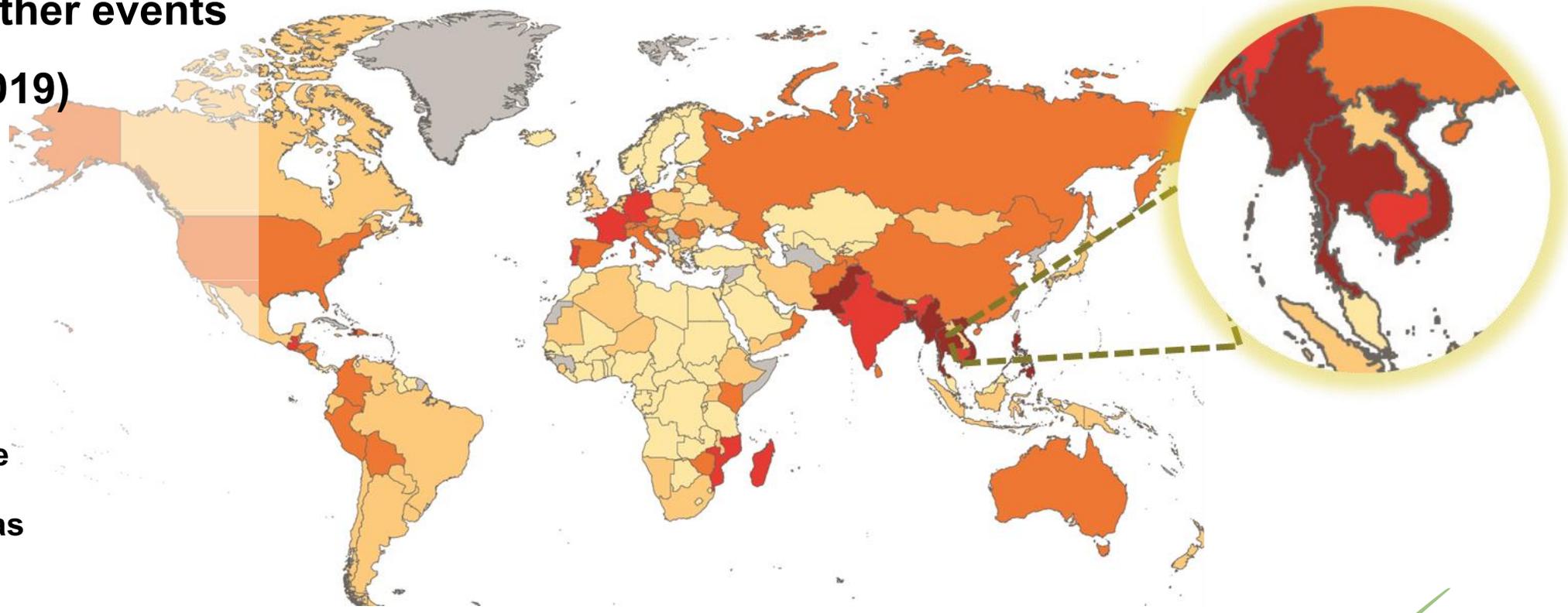




# World Map of the Global Climate Risk Index 2021

## Countries most affected by extreme weather events (2000-2019)

- 1 Puerto Rico
- 2 Myanmar
- 3 Haiti
- 4 Philippines
- 5 Mozambique
- 6 The Bahamas
- 7 Bangladesh
- 8 Pakistan
- 9 **Thailand**

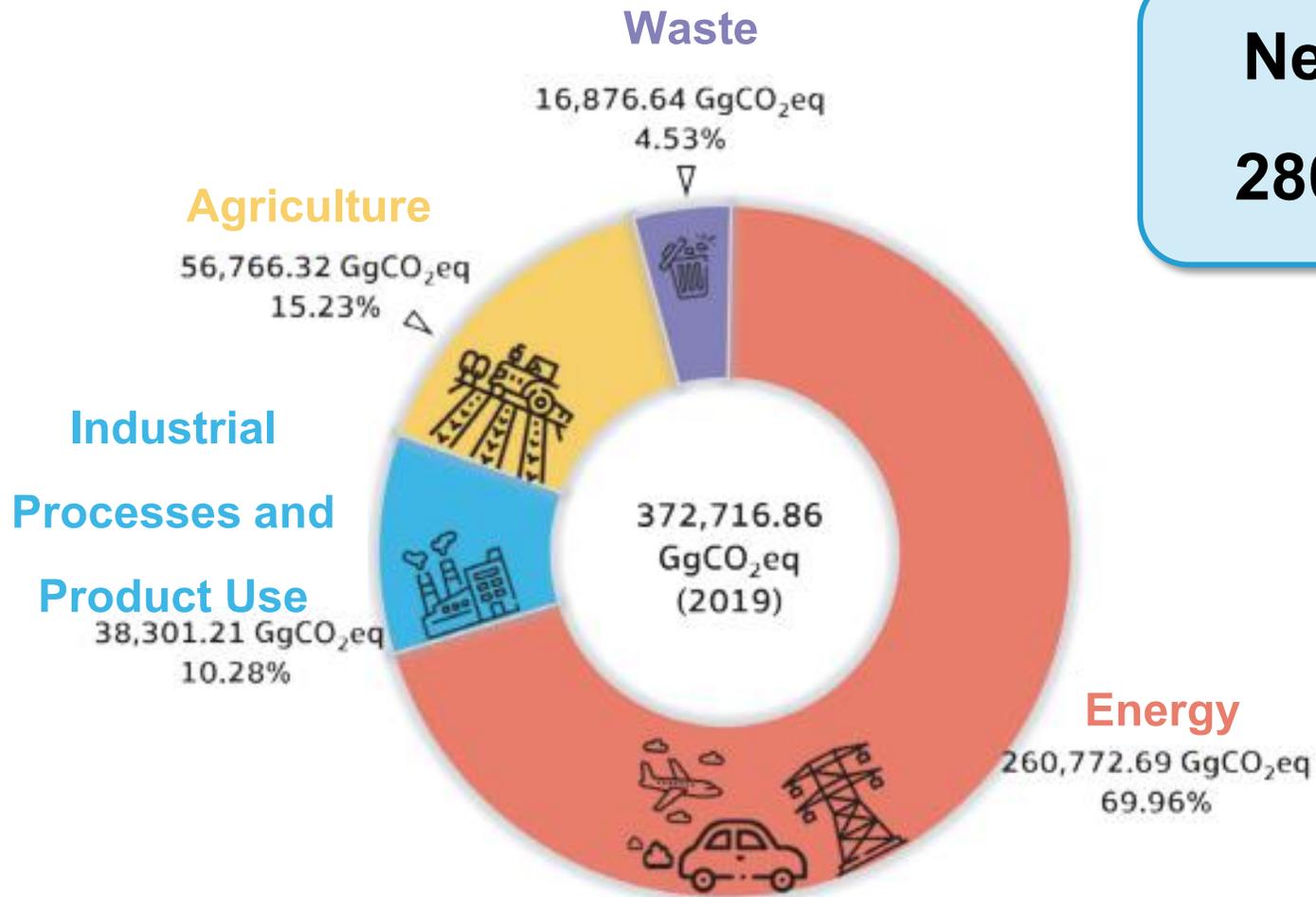


Risk Index: Assessed by the number of fatalities and damage.  
 Source: Germanwatch, January 2021

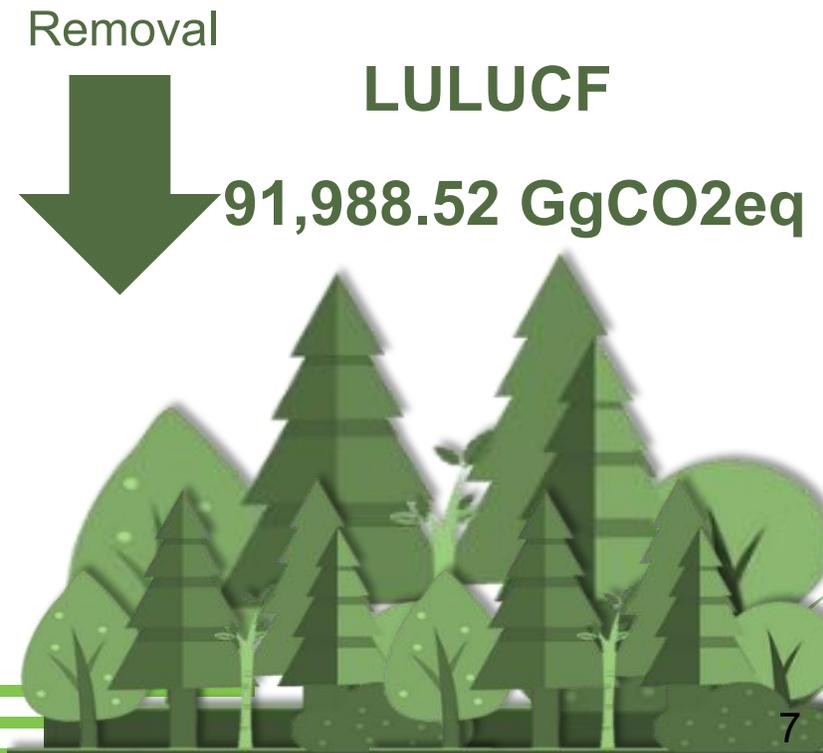




# Total GHG Emissions by Sector in 2019



**Net GHG Emissions**  
**280,738.34 GgCO<sub>2</sub>eq**



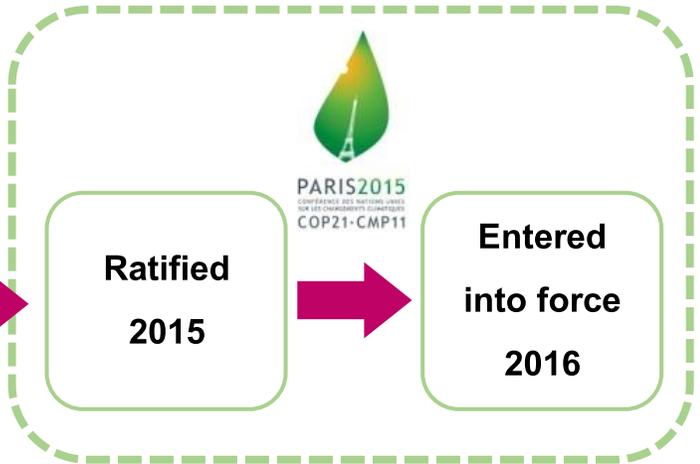
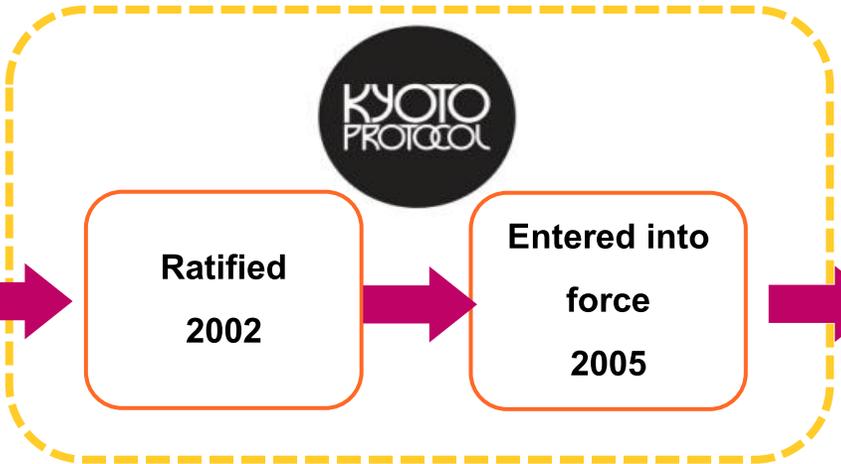
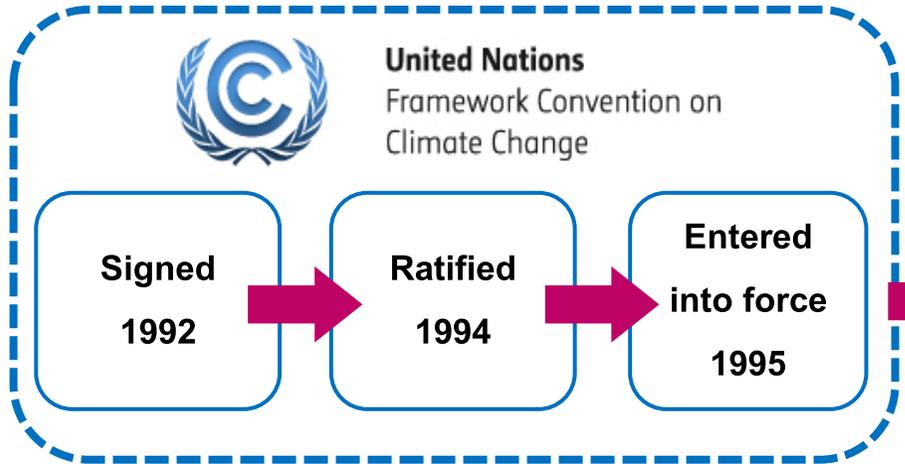
Source: 4<sup>th</sup> Biennial Update Report 2022



# Development of Thailand's Climate Change



# United Nations Framework Convention on Climate Change



Maintain GHG concentrations which not to affect food production and sustainable development.

Annex I Parties : Developed countries  
Non-Annex I Parties : Developing countries

Thailand is Non Annex I and small group G77+China

Developed countries have commitment to reduce emissions by 5% by 2012 compared to 1990 and 18% by 2020 compared to 1990.

- Mechanisms**
- Emission Trading Scheme (ETS)
  - Clean Development Mechanism (CDM)

Limit global warming to well below 2, preferably to 1.5 degrees Celsius

Enhance resilience and adaptation to climate impact

Align financial flows toward low-emission, resilient development



# Institutional Mechanisms for Climate Change in Thailand



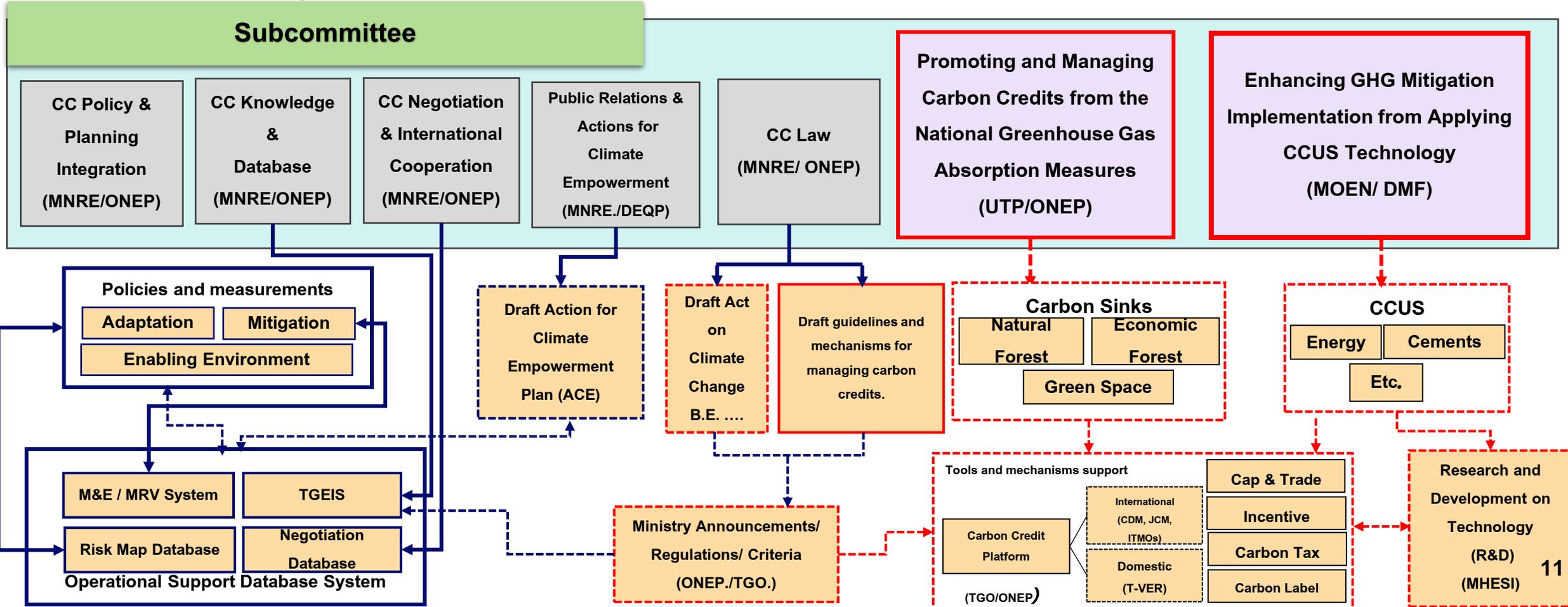
National Committee on Climate Change Policy

(NCCC)



Cabinet

Subcommittee





# Thailand's Climate Change Master Plan

## 2015 - 2050



Approved by the Cabinet on 14 July 2016

### Vision 2050

*“Thailand is resilient to the impacts of climate change and achieves low carbon growth through sustainable development”*

- Agriculture and Food Security
- Natural Resource
- Human Health
- Tourism
- Human Settlement and Security
- Water Management



**3 Main Approaches**



- Power Generation
- Transportation
- Industry
- Building Energy Consumption
- Waste Management
- Agriculture
- Forest
- Urban Management

- Research Studies and Technologies
- CC Local Knowledge and Public Awareness

- Climate Change Implementing Mechanism
- International Collaboration/Cooperation

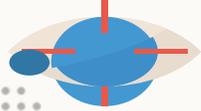




# National Adaptation Plan: NAP



## Vision



*“Thailand is resilient to climate change and has low-carbon growth following a sustainable development approach”*

## Missions

- ✓ **Building resilience** to climate change in nation developments
- ✓ **Empowerment** and awareness of development partners at all levels
- ✓ **Development** database, research and study **Knowledge and technology**

# 6



Water



Agriculture



Tourisms



Public health



Natural resource



Settlement

Related fields



# From COP 27 to Actions



# Climate Ambition to Actions



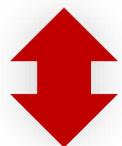
COP26

## Raising climate ambition

LT-LEDS submitted by 57 Countries



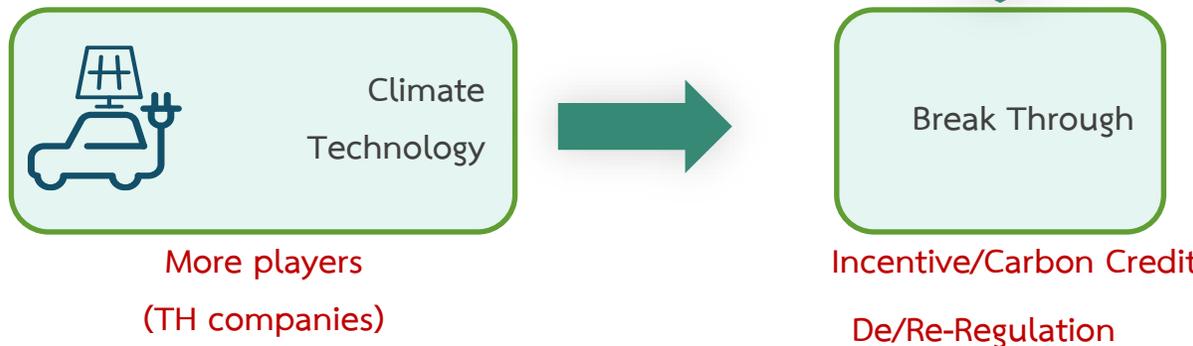
## Transition to Decarbonized Economy



CBAM



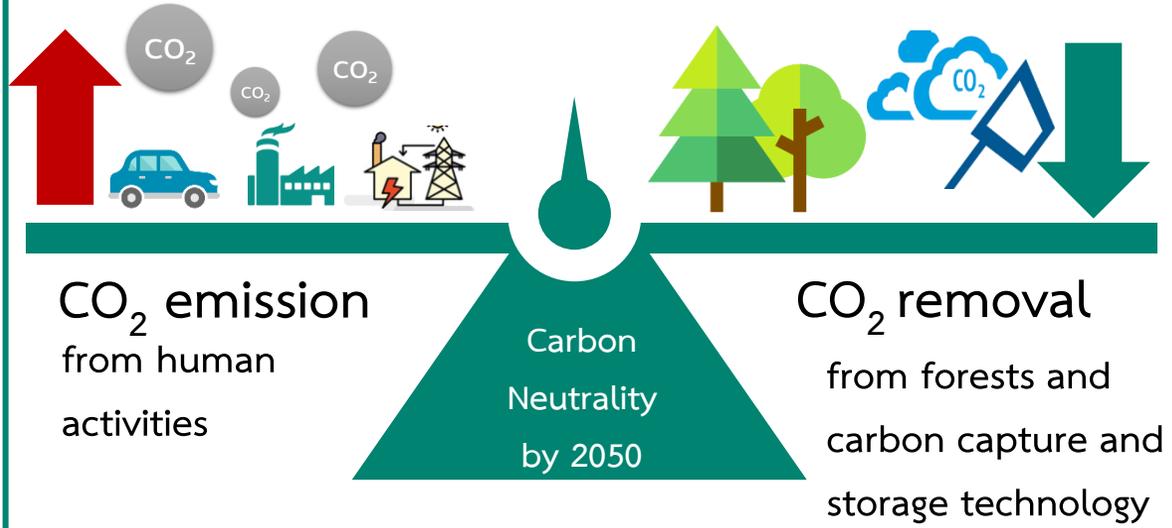
Global CH<sub>4</sub> Pledge



A fair transition least impact on the economy and society

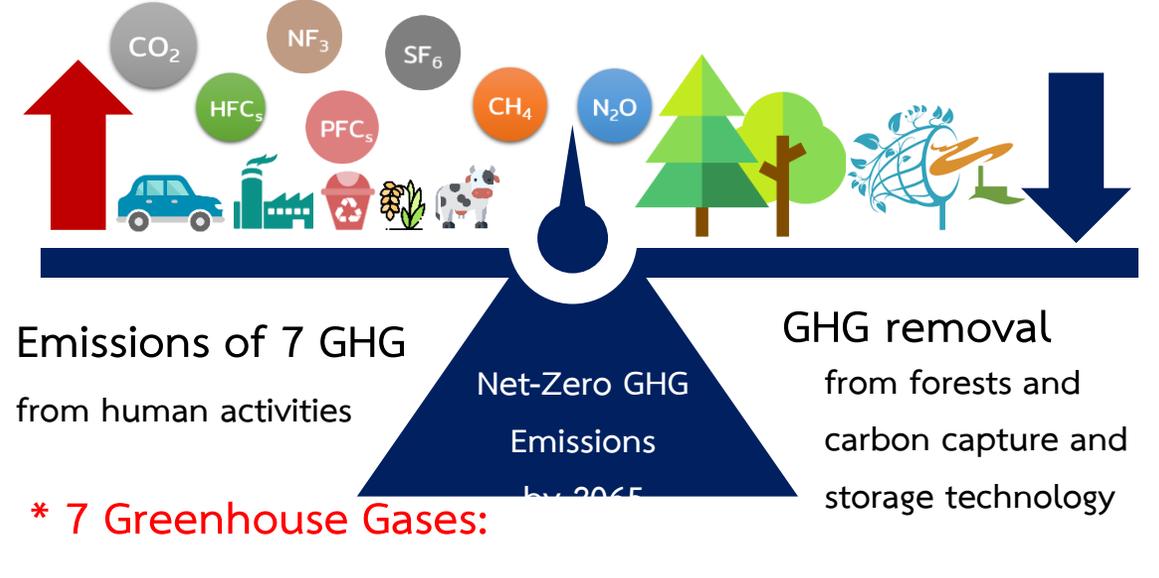
## Carbon Neutrality

Balancing between



## Net-Zero GHG Emissions

Balancing between



\* 7 Greenhouse Gases:

Carbon Dioxide, Methane, Nitrous Oxide, Hydrofluorocarbons, Perfluorocarbons, Sulphur hexafluoride, Nitrogen trifluoride



# COP 27 Outcome



*From Paris Agreements  
to Implementation*

## Sharm El-Sheikh Implementation Plan



### Monetary

mechanism for loss and damage

- New funds establishment

### Climate change monetary

- GCF 2<sup>nd</sup> round fundraising
- 5.8–5.9 trillion for pre-2030

### Transparency Framework

### Forestry and Ocean

- Include Ocean and NbS/EbS

issues in the action plan.

### Adaptation Plan

- Gap & Need for NAP
- Global Goal on Adaptation (GGA)

### Mitigation plan

- Mitigation Work Program
- Accelerate GHG reduction 43% by 2030

### Cooperation under 6 Paris Agreements

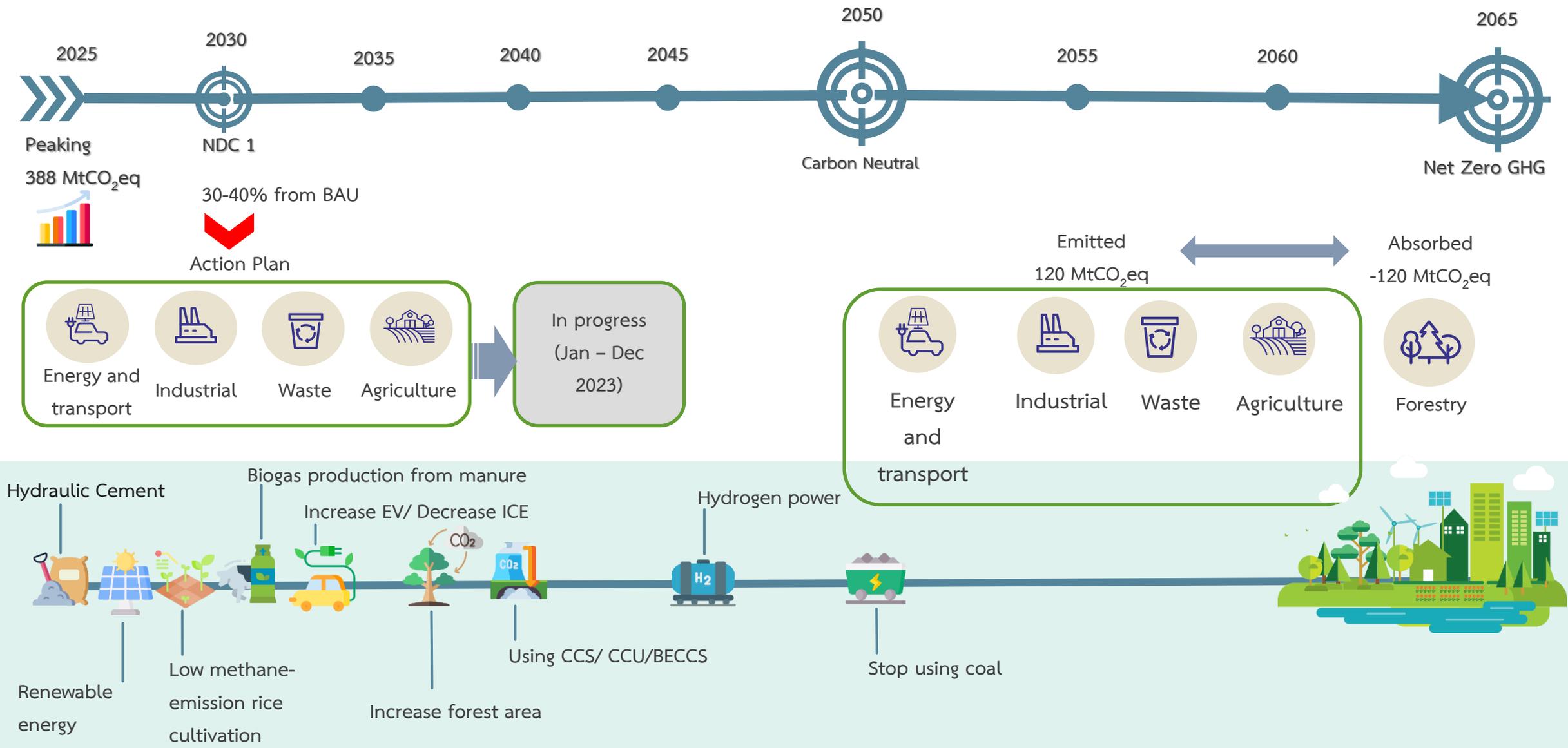
### Scientific data and urgency



# Thailand's Climate Change Implementation



# Thailand toward Net Zero GHG Emission



# Main Measures to Achieve the Net Zero

## Energy/ transport



- Increasing alternative energy consumption
- Increasing production and energy consumption efficiency
- Use of electric vehicles (EVs)

**จาก 153.08 >> 216 MtCO<sub>2</sub>eq**

## IPPU



- Promoting the use of hydraulic cement
- Replacing of refrigerant
- CCUS in cement industry

**จาก 2.25 >> 2.4 MtCO<sub>2</sub>eq**

## Waste



- Waste management
- Municipal wastewater and industrial waste water management
- Waste to Energy

**จาก 1.53 >> 1.6 MtCO<sub>2</sub>eq**

## Agriculture



- Low CH<sub>4</sub> emission rice cultivation
- Production of biogas from manure

**จาก 0 >> 2.6 MtCO<sub>2</sub>eq**

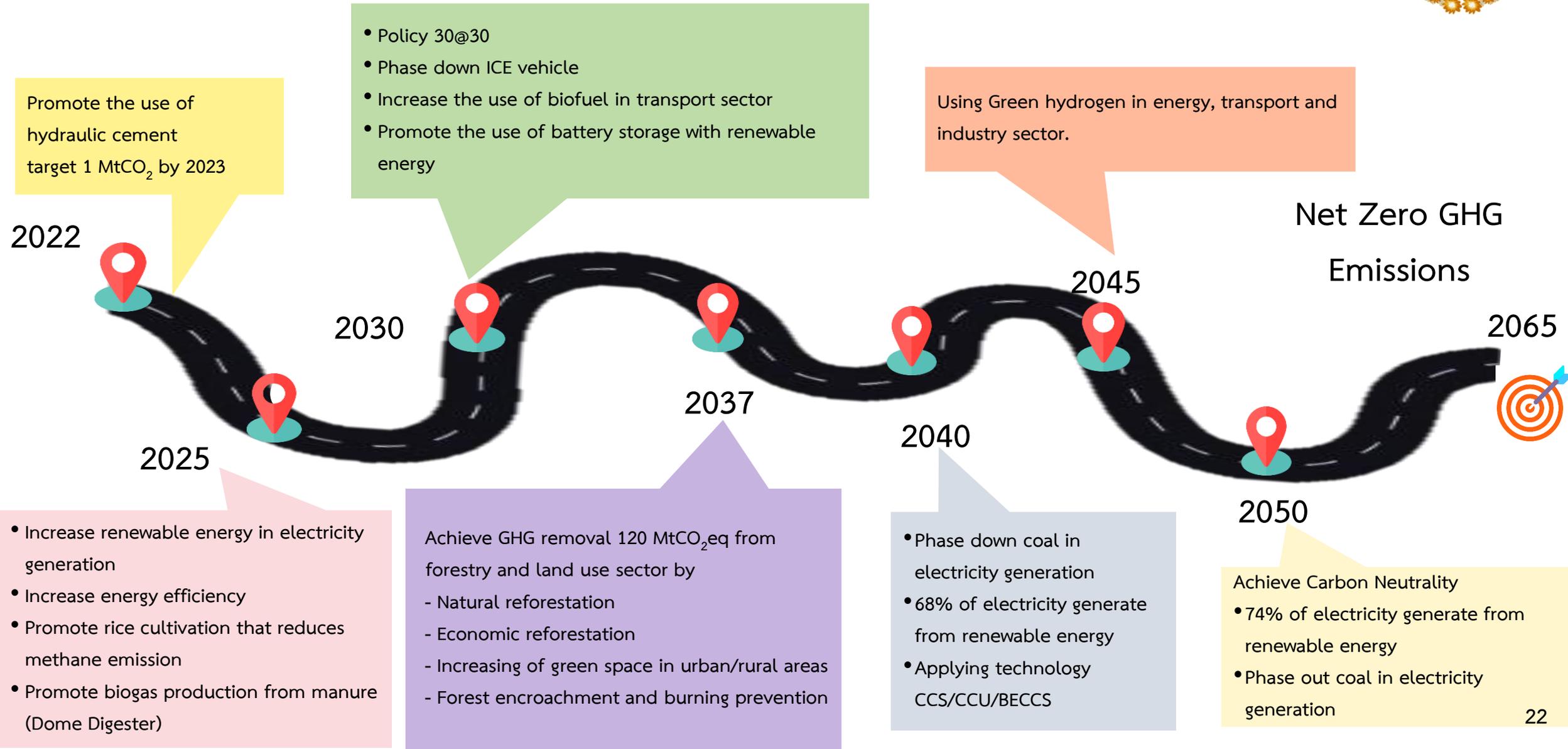
## Forestry

- Promoting planting of natural/ economic forests
- Increasing urban and rural green spaces
- Preventing encroachment and destruction of forests





# Roadmap to Net Zero GHG Emissions by 2065

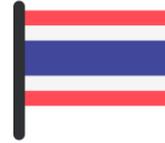
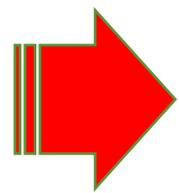




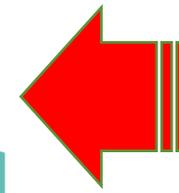
# Challenges towards Net Zero



More extreme weather



THAILAND



Non-tariff barriers



Energy and Transport sector

Industry sector

Agriculture sector

- Policies
- Production capacity
- Technology
- infrastructure
- Labor skills

- Policies
- Technology
- Labor skills

- Policies
- Production costs
- Insurance
- Technology/
- knowledge
- Young Smart Farmer

Energy security

Competitiveness

Domestic use

Management cost

Export

Food security

farmers' quality of life



# Mechanisms for Implementation

## Policies



- Climate Change Act
- Establish department of climate change

## Organization/ Law/Regulation



- Integrate Net zero targets
- Drive BCG model
- CC project at provincial level
- Develop NDC Action Plan
- Institutional arrangement for CC

## Finance/ Investment



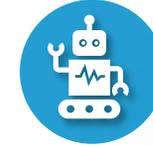
- CC Funding sources (GCF, GEF, EF)
- Incentive (BOI)
- Thailand taxonomy (BOT)
- Green procurement

- RE&CC exchange platform (TGO+FTI)
- Reforestation (Carbon sink) + communities

## Development of Carbon credit market mechanisms



## Technology development/ Innovation



- CCUS technology
- Green hydrogen
- Disruptive tech. (DAC, etc.)

- Domestic partnership (MoUs)
- Private sector Network (TBCSD, TCNN)
- Global partnership (E-Bus)

## Participation

*...consistent with the country's goals*

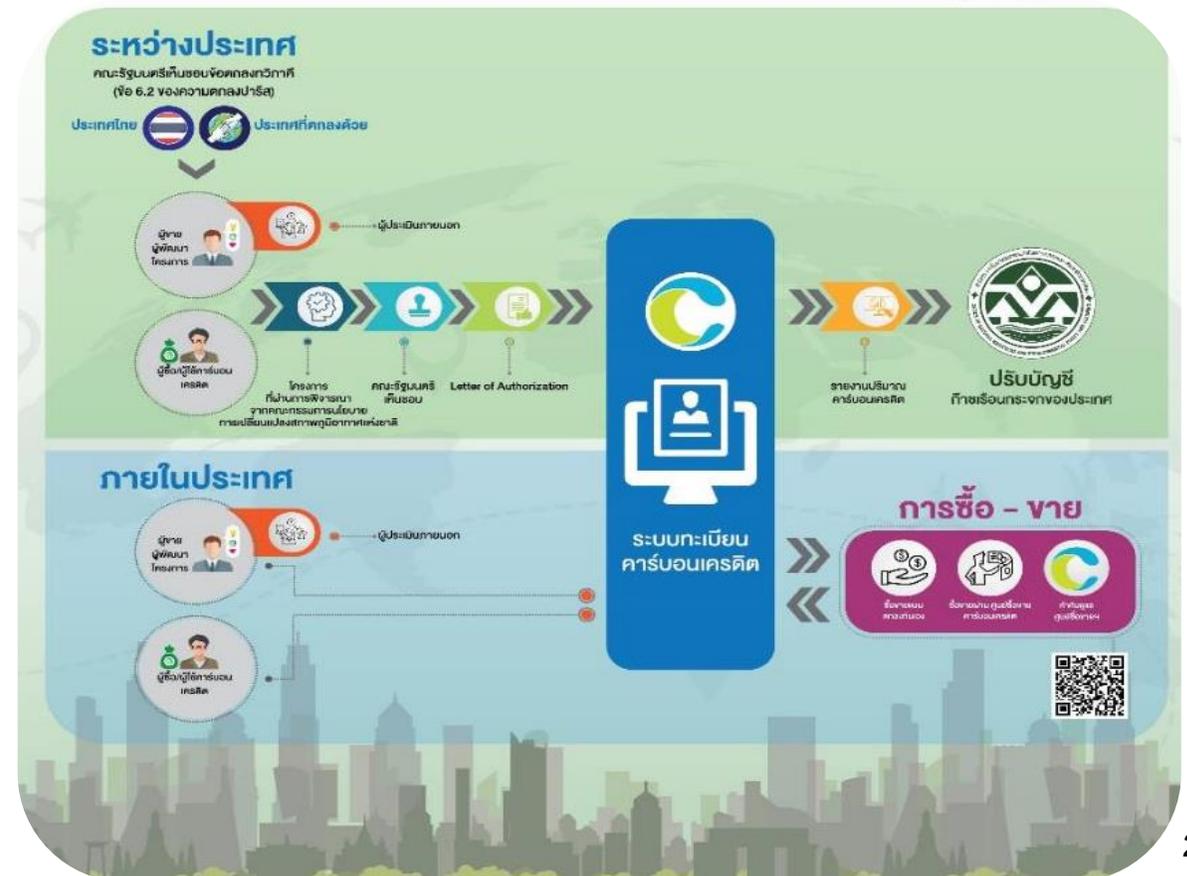


## Domestic & International



- Guidelines and Mechanisms for Carbon Credit Management (ONEP)
- Regulations on the registration criteria for the buying, selling and transferring of carbon credits (TGO)
- Clean Energy and Carbon Credit Trading Platform (FTI + MNRE)

## Guidelines and mechanisms for carbon credit management





The public sector can participate in 2022

**Approx. 600,000 Rai**

\* NO. of Joined Companies

- RFD 7 companies
- DNP 4 companies
- DMCR 3 companies

T-VER project Developers participated in reforestation and conservation in government areas by sharing credits with Project developers 90% and government agencies 10% or as agreed

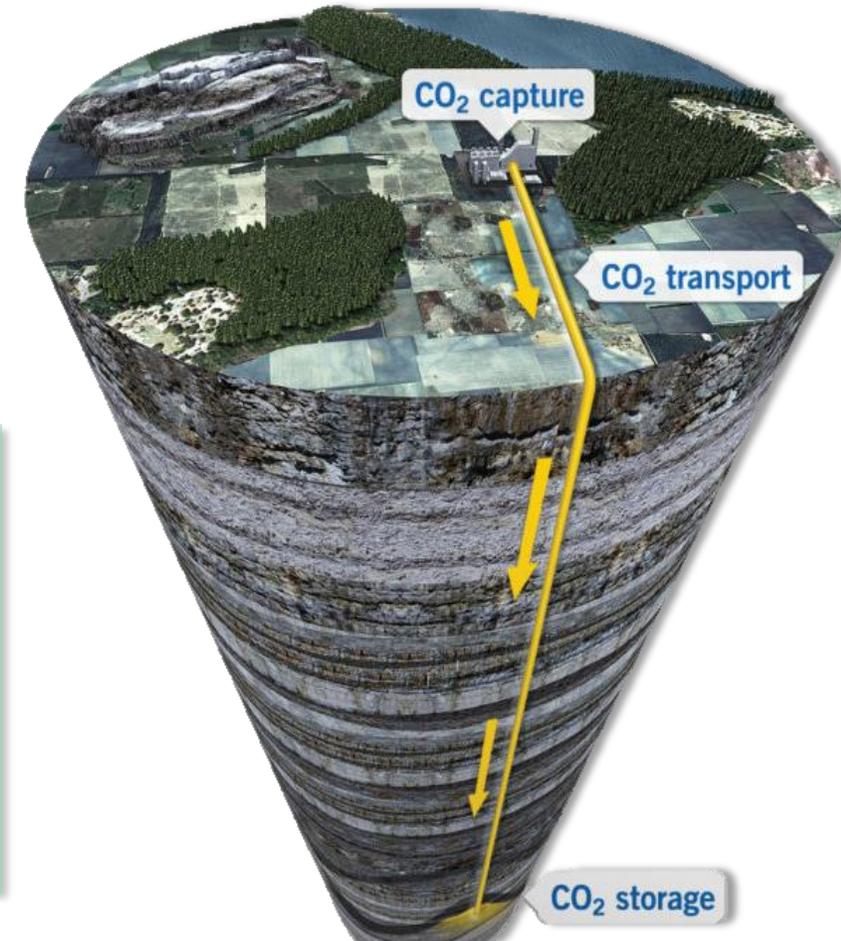


## CCS/CCUS subcommittee

Working group  
on Technical

Working group  
Law/ Economics

- Preparation of relevant regulations and laws
- Choosing the right technology and technology research and development
- Investment model
- Added Value of carbon credits and tax benefits





# (Draft) Climate Change Act B.E. ....

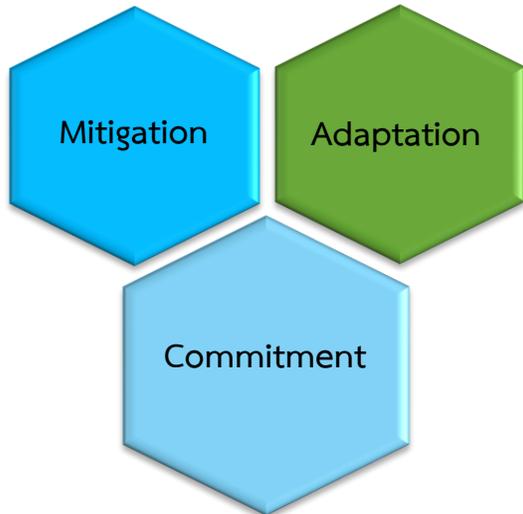


## National reform issue

- Issue 3 Solving climate change problems
- Issue 8 Environmental law reform



## Principle and Rationale



A law promoting and supporting **economic, social and environmental development** by considering **nation competitiveness** through international operations

## Synopsis

- Category
- 1 General
  - 2 Policy Committee
  - 3 Master Plan
  - 4 GHG Information
  - 5 GHG mitigation
  - 6 Adaptation
  - 7 Promotional Measures
  - 8 Penalties
- Transitional chapter

## Current status

Under review RIA (Regulatory Impact Assessment) and additional related issues

- GHG mitigation targeting
- Carbon credit
- Finance mechanisms
- Carbon Tax

Submitted to the Cabinet  
2023





## Bank of Thailand

Green Taxonomy:  
classification of economic activities based on their  
environmental impact



Green loan/Green bond

*Published Green Taxonomy framework (phase I) in  
2022*

## Environment Fund

Support CC projects at the  
local level

(2023-2027)

IKI supported 4 Million Euro (160  
Million Baht)



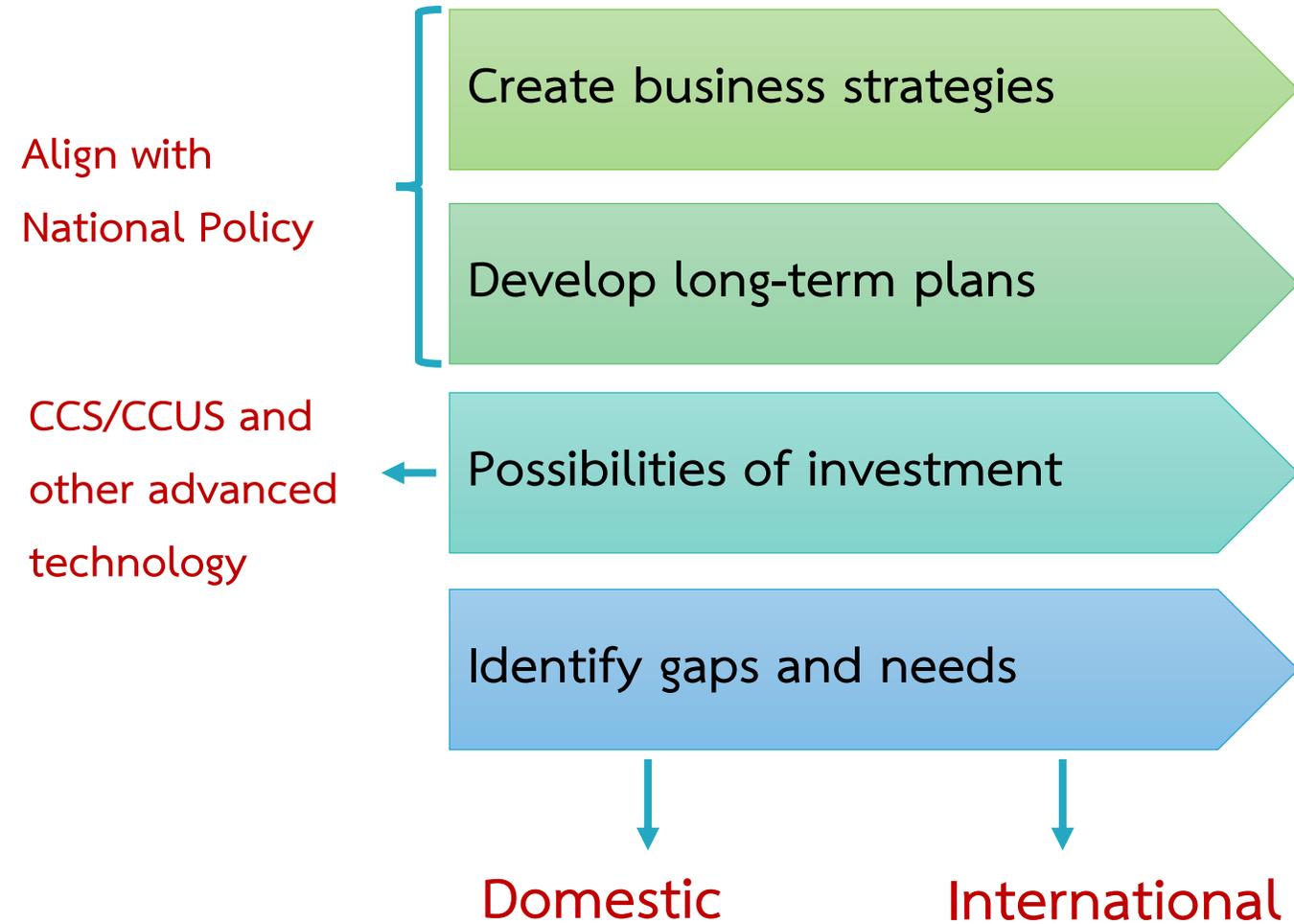
## Energy Conservation Promotion Fund (ENCON fund)

- Support low interest loans
- Venture money
- equipment leasing



# Stakeholders Engagement

# 4 Ways to Corporate for Actions



Businesses can be climate leaders, become resilient, drive innovation and create growth at the same time





# Green Recovery

## BCG Model



# Build Forward

## Greener

## ESG

### Bio

#### ● Economy

- Create added value
- Do less get more
- Stable income

### Circular

#### ● Economy

- Utilize resources efficiently
- reduce losses

### Green

#### ● Economy

- Environmentally friend
- Sustainability



environment

# ESG



governance



social



# Raising Awareness and Participation from All Sectors



**Thailand Climate Action Conference**  
“อนาคตไทย อนาคตโลก : โอกาสและความรับผิดชอบ”  
Our Future : Our Responsibility, Our Opportunity

- To reflect the commitment of all parties including government, private sector, people and more than 500 organizations.
- To achieve the nation’s goals



“ วิกฤตนี้ คือ โอกาสสำคัญที่เราจะจับมือกัน จับเคลื่อนประเทศไทยให้เติบโตอย่างสมดุลยั่งยืน และเป็นมิตรต่อสิ่งแวดล้อม ถึงเวลาแล้ว ที่พวกเราทุกคน จะต้องปรับตัว ปรับความคิด เพื่อเปลี่ยนผ่านสู่การพัฒนา ที่คำนึงถึงสิ่งแวดล้อมและความสมดุลของสรรพสิ่ง ”

— พลเอก ประยุทธ์ จันทร์โอชา  
นายกรัฐมนตรี  
พิธีเปิดการประชุมวิชาการขับเคลื่อนการปฏิบัติงานด้านการเปลี่ยนแปลงสภาพภูมิอากาศของไทย (TCAC) 5 สิงหาคม 2565



## Civil Society

Support/strengthen the capacity to take action on climate change in collaboration with local networks.



## Government

Determine policies, measures, budgets and incentives to support climate change operations.



## Education sector

- Improve curriculum/create learning materials on climate change
- Promote research and study



## Mass communication sector

Publicize and communicate to spread information and understanding.  
public participation



## Private sector

- Promote investment that consider lowering GHG emissions and impacts on climate change
- Improve industrial energy efficiency



## public sector

- Reduce energy consumption.
- Altering travel patterns using public transport.
- Reduce household waste.
- Planting trees/ increasing green space.
- Ready to handle with risk and impact.



## International Organization

Support experts and budget.



Call on developed countries to speed up their promises to reduce GHG emissions and assist developing countries to transition to low-emission and sustainable development.



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