

TNChE Asia 2024 Conference "Decarbonization, AI and Digital Transformation for Sustainability in Process Industries"

June 19th, 2024, Time 11.00-11.30, Dusit Thani Pattaya Hotel, Chonburi



GLOBAL MOVEMENT FROM COP28 AND DECARBONIZATION ACTIONS OF THAILAND



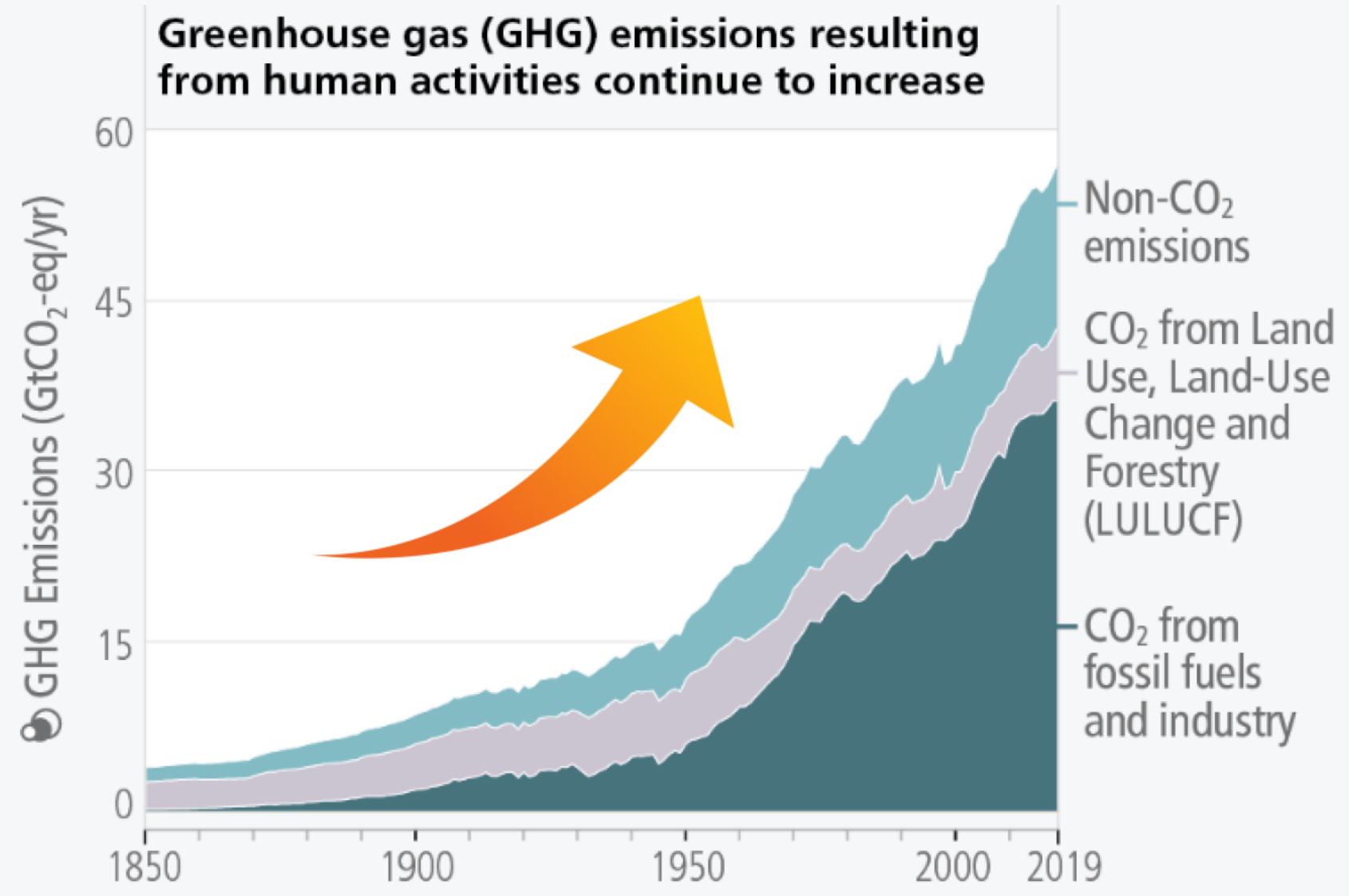
Mr. Pavich Kesavawong

Deputy Director General

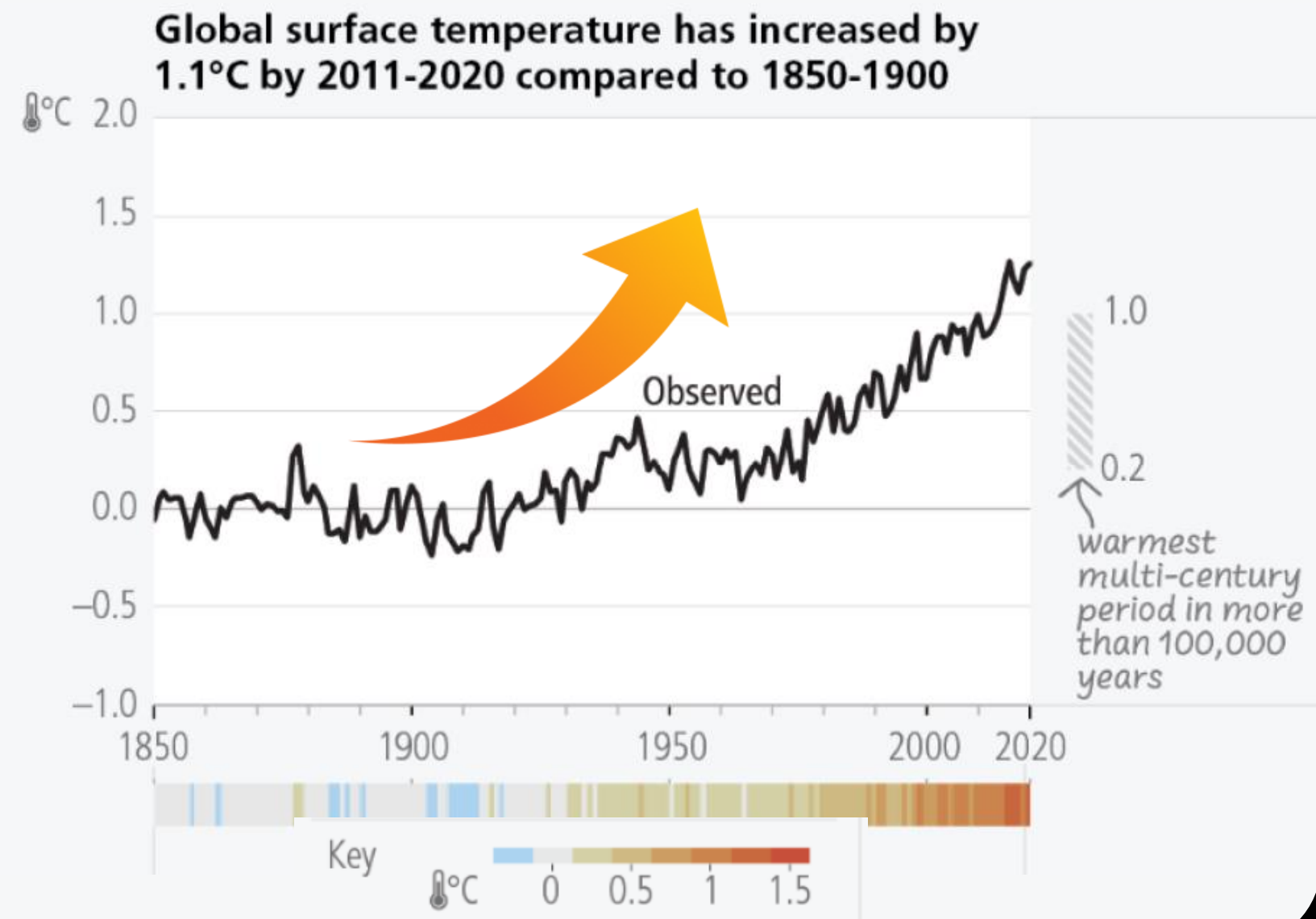
Department of Climate Change and Environment

GLOBAL'S TREND

GHG Emissions (GtCO₂eq/yr)



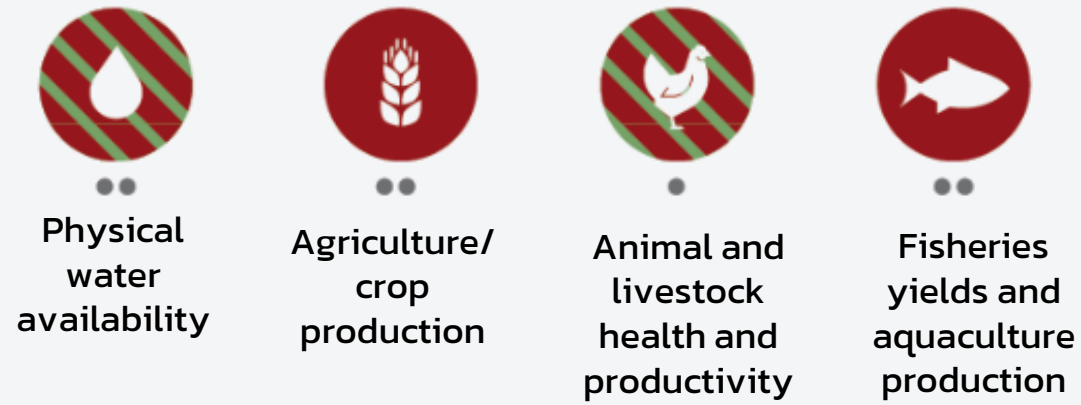
Global Surface Temperature



Global net anthropogenic GHG emissions include CO₂ from fossil fuel combustion and industrial processes led to increases the global warming, with global surface temperature reaching 1.1°C above 1850–1900 in 2011–2020.

IMPACTS FROM RISING GLOBAL TEMPERATURES

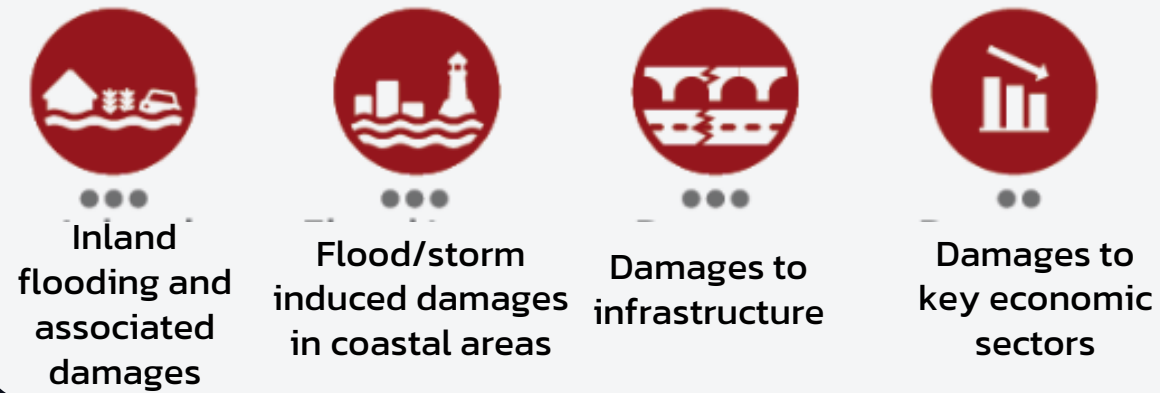
Water availability and food production



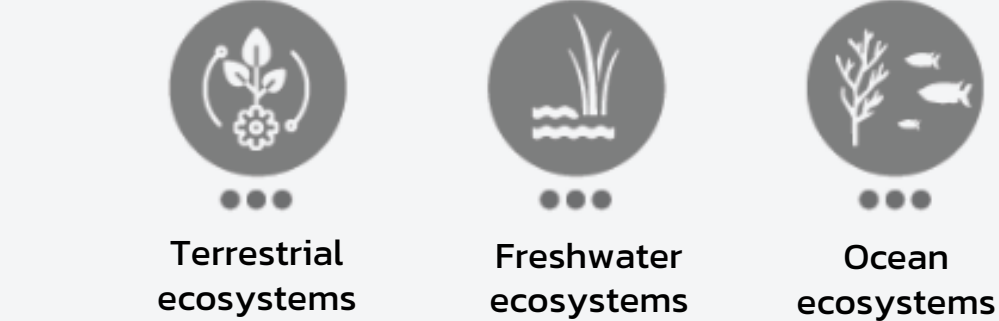
Health and well-being



Cities, settlements and infrastructure



Biodiversity and ecosystems



Observed increase in climate impacts assessed at global level

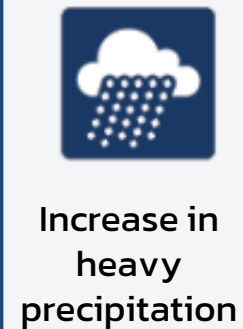


Impacts are driven by changes, which are increasingly attributed to human influence

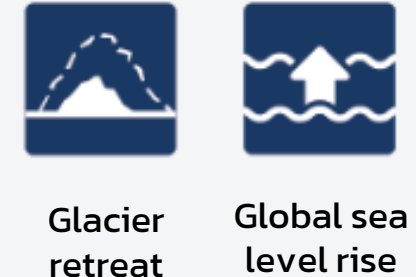
Medium confidence



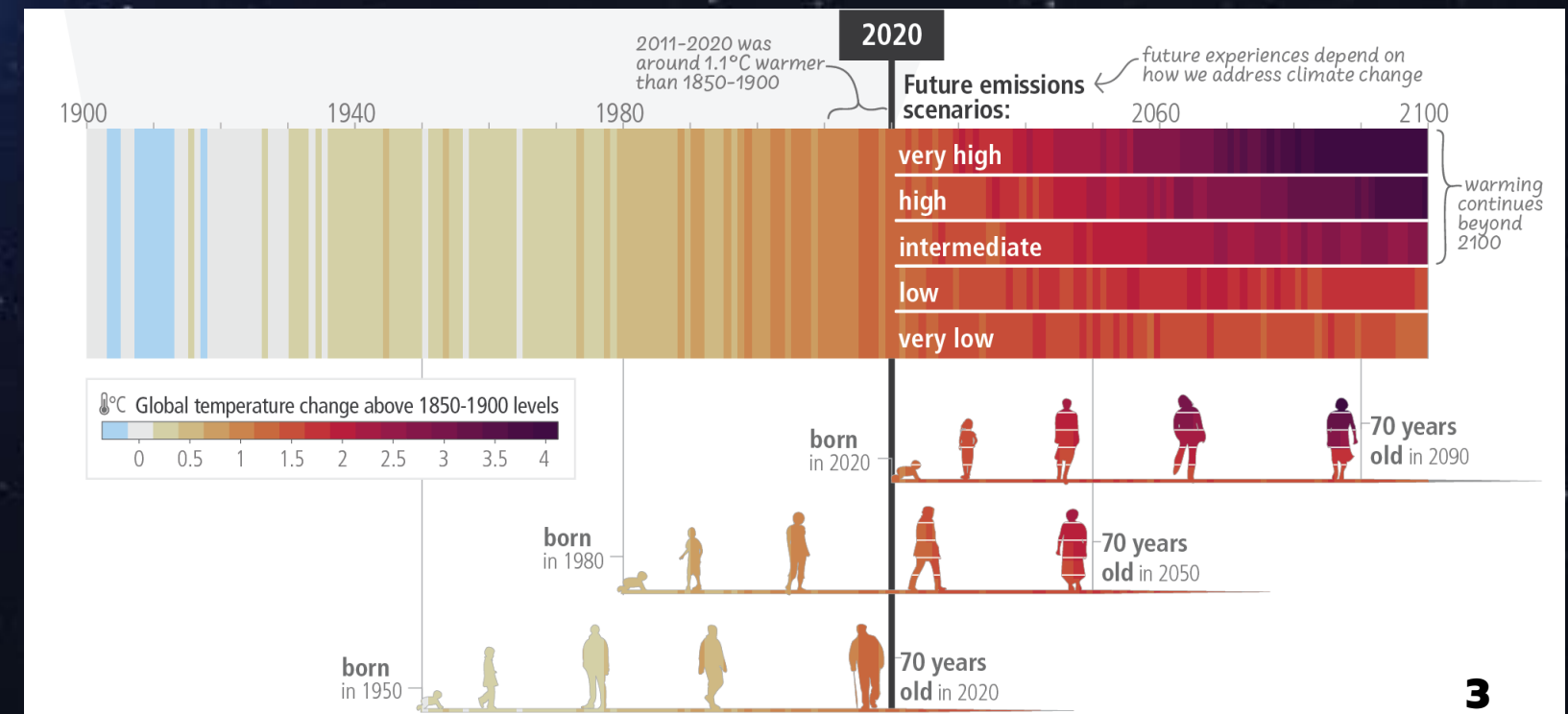
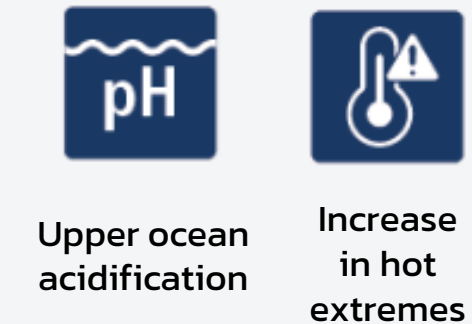
Likely



Very likely

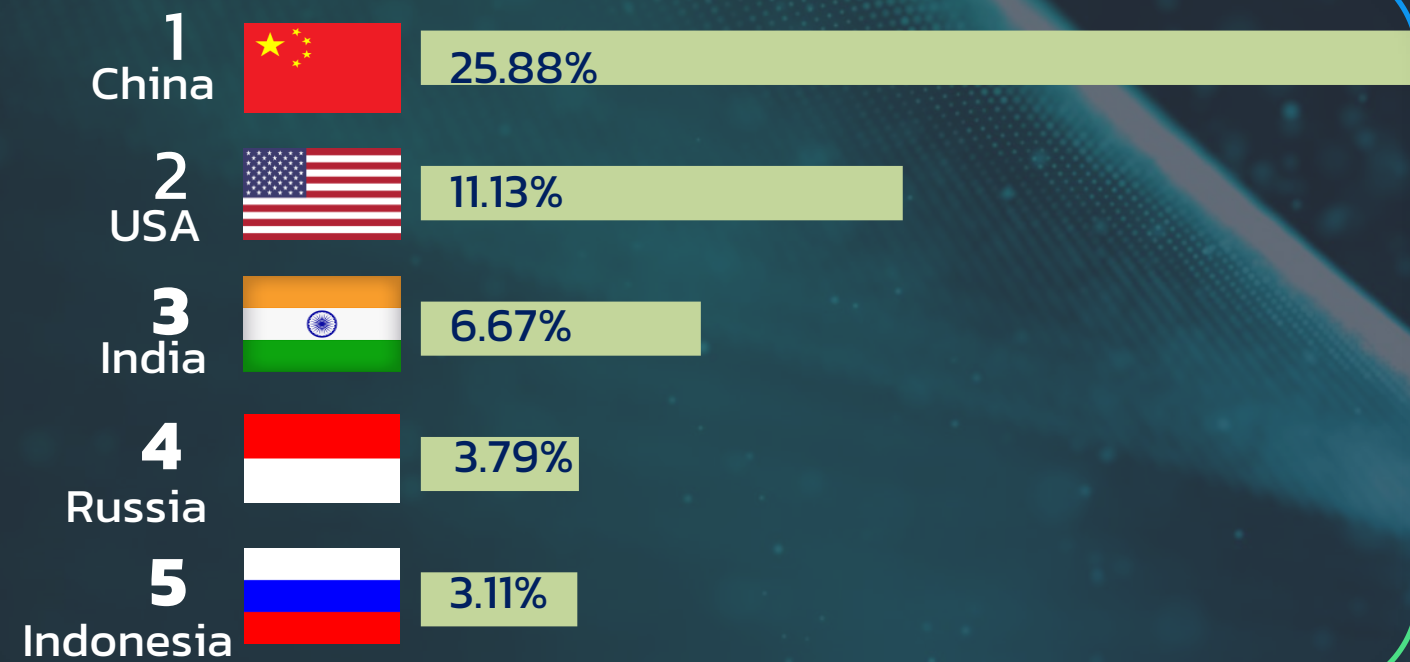


Virtually certain



THE WORLD'S GHG EMISSIONS

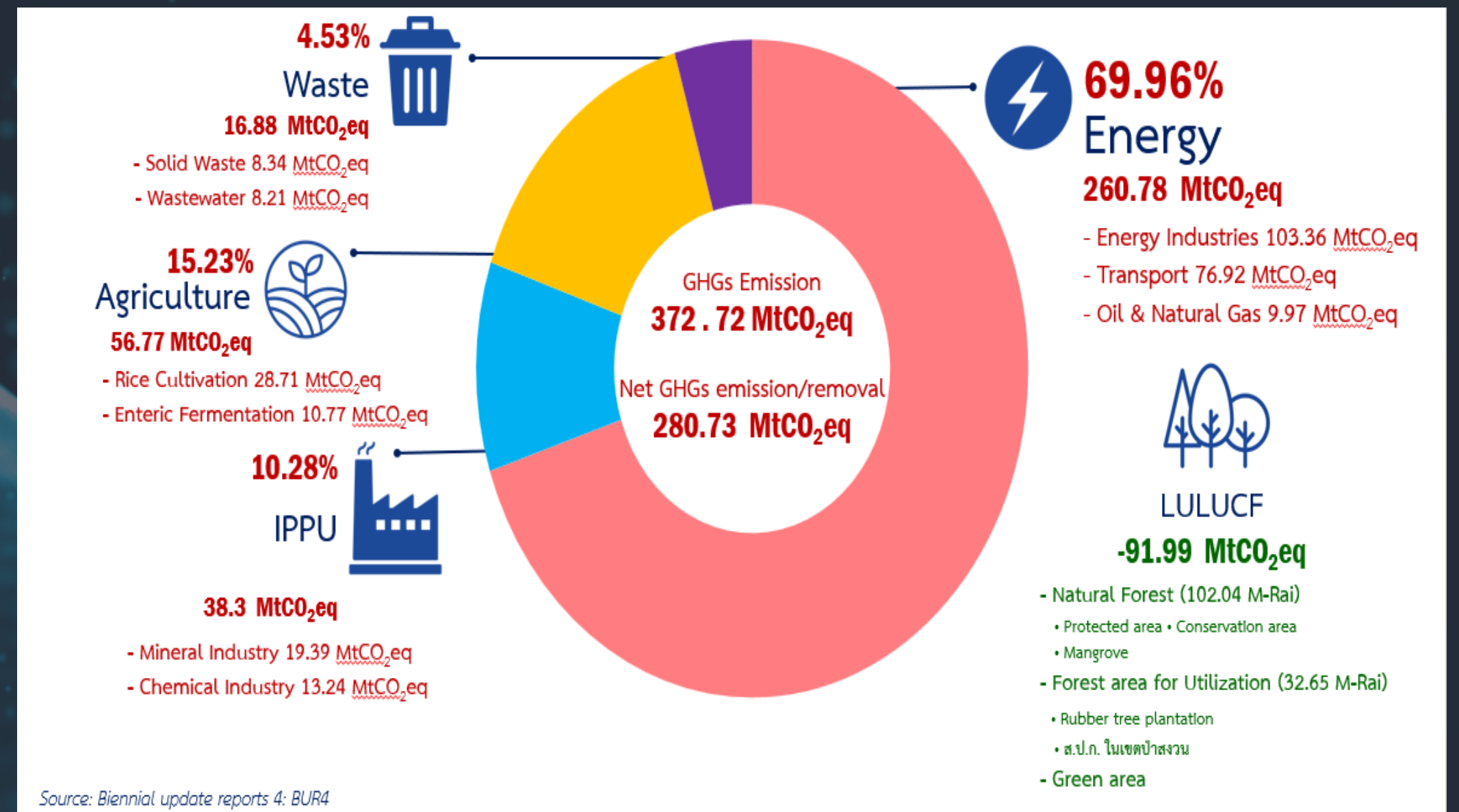
Top 5 countries emitted GHG



Top 5 sectors emitted GHG



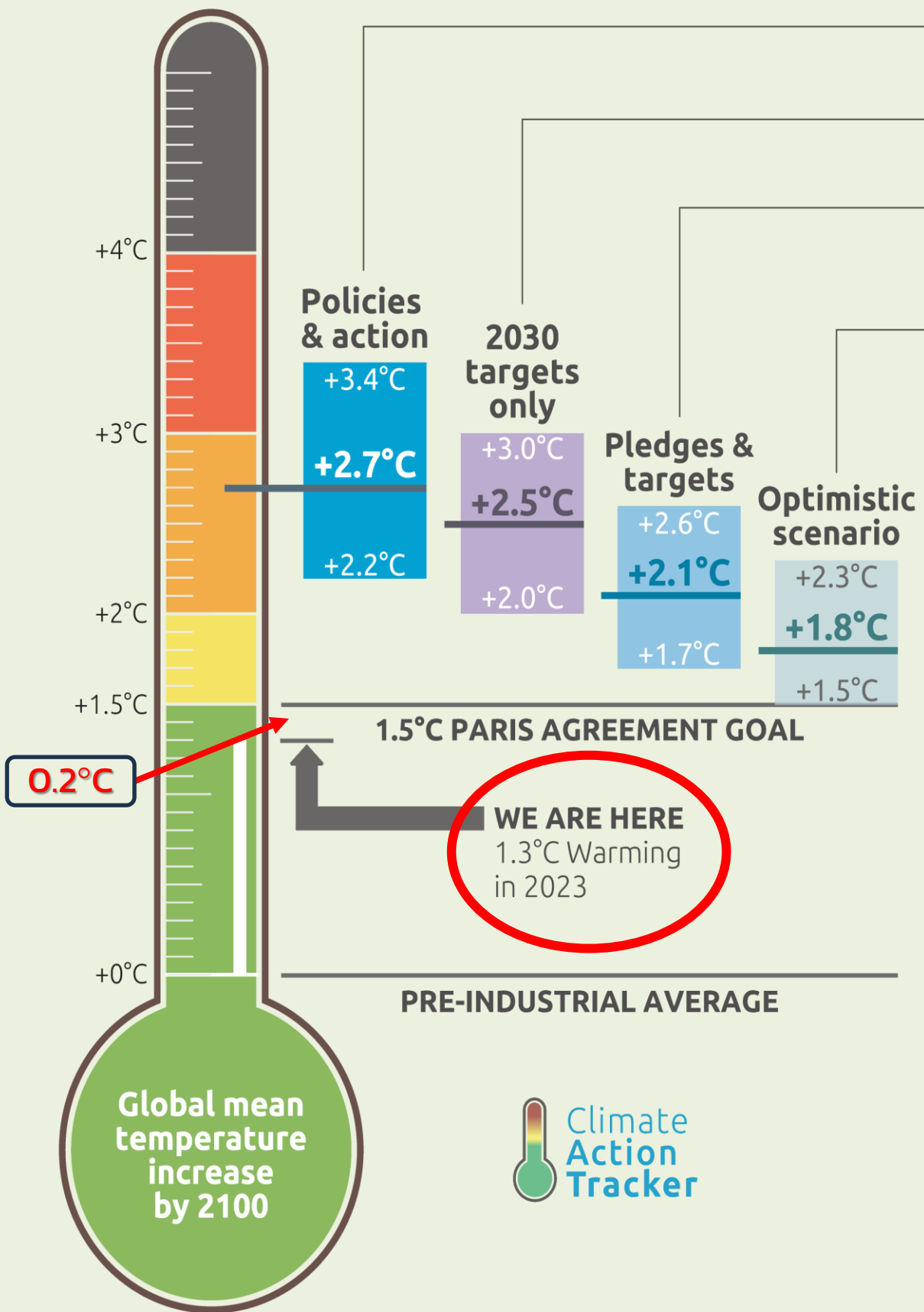
Source: Climate Watch Data, 2020



***Thailand ranked 20th for global GHG emitter (0.95%)**

SYNTHESIS REPORT OF

1ST GLOBAL STOCKTAKE



Policies & action
Real world action based on current policies †

2030 targets only
Based on 2030 NDC targets* †

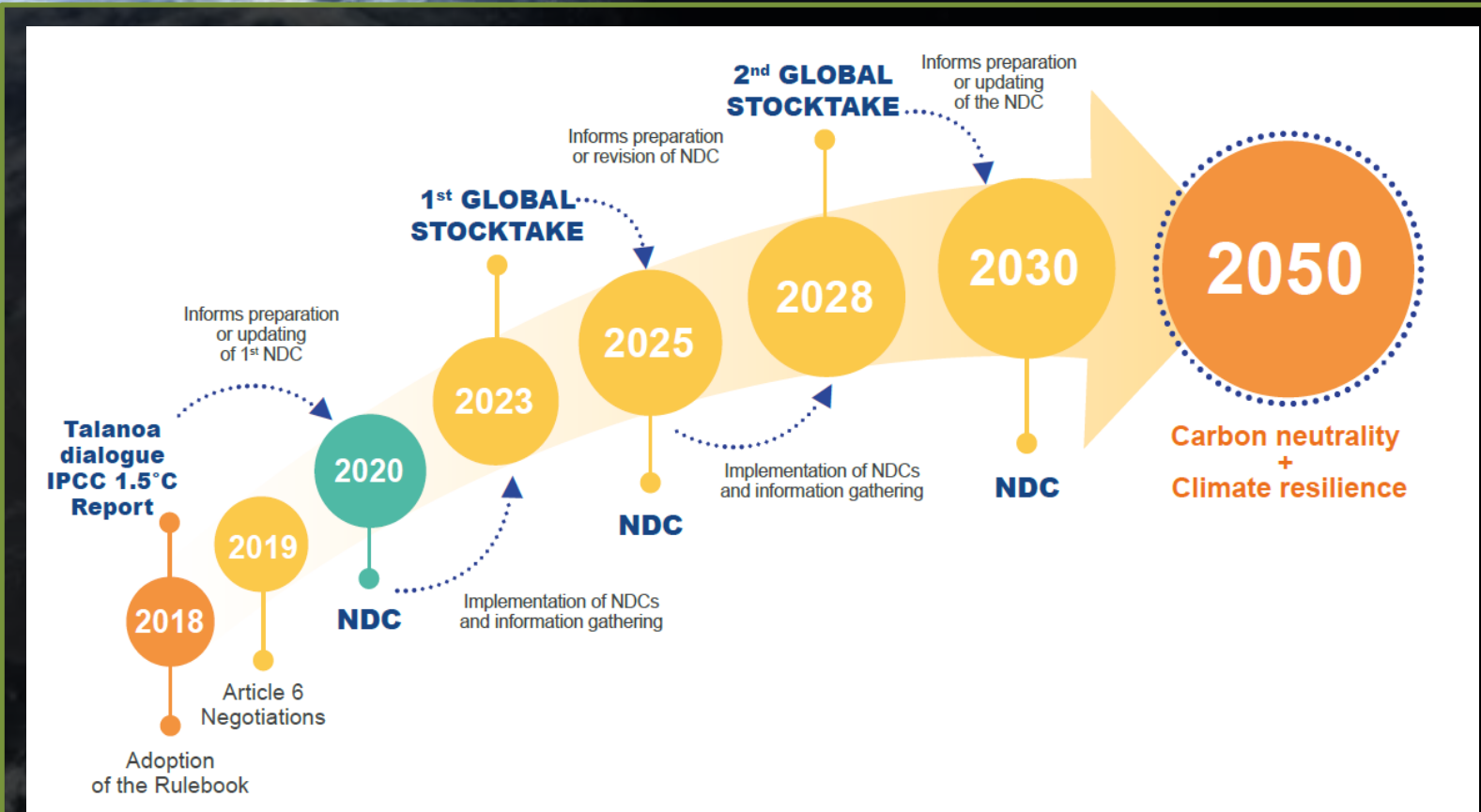
Pledges & targets
Based on 2030 NDC targets* and submitted and binding long-term targets

Optimistic scenario
Best case scenario and assumes full implementation of all **announced** targets including net zero targets, LTSs and NDCs*

† Temperatures continue to rise after 2100
* If 2030 NDC targets are weaker than projected emissions levels under policies & action, we use levels from policy & action

CAT warming projections Global temperature increase by 2100

December 2023 Update



- Actions are still **insufficient to limit global temperature increases to 1.5 °C** and respond to their impacts.
- Emphasizes the need for **system-wide transformation**, adhering to the principle of Common But Differentiated Responsibilities (CBDR).
- Urgent support for **developing countries**.

COP28 OUTCOME

I. Global Stocktake

"It reflects the need to raise the level of action both within and between countries"

II. Mitigation

*"Accelerating a just energy transition
Increase globally 3RE and 2EE.*

Reduce the use of fossil fuels and stop using coal."

III. Adaptation

*"Create global adaptation targets in 7 sectors
and every country must have a comprehensive climate
warning system and information service by 2027"*

IV. Finance

*"Accelerate tracking of progress in support of developed countries
according to the USD 100 billion target/years until 2025"*

V. Loss and Damage

*"Fund support: 792 million dollars
operation will begin in 2024"*

VI. Just Transition

*"Taking into account the fair transition of developing
countries, especially from fossil fuel to green energy"*

VII. Technology

*"Promote access to technology to reduce
greenhouse gases"*

VIII. Related Issue

"Public health

Health crisis = Climate crisis

Agriculture and food

*Endorse the declaration on agriculture
with immunity and food Security*

Capacity building covers all sectors

"Promote equal participation ready to adapt to climate change"



KEY FINDING 1ST GLOBAL STOCKTAKE IN COP28



1.5 – 2 °C



Still unable to implement the 1.5 °C Pathway, tripling of renewable energy capacity and doubling of energy efficiency



“Phase down-Phase out ” unabated fossil fuels in particular coal, as well as inefficient fossil fuel subsidies



Start reducing GHG emissions levels by 43% in 2030 and 60% in 2035 (compared to 2019) to net zero CO₂ emissions in 2050



Create the UAE Framework for Global Climate Resilience in 7 sectors and every country must have a comprehensive early warning systems by 2027.



Loss and damage fund support: 792 million USD, operations in 2024



Accelerate the tracking of developed countries' support progress towards the goal of 100 billion USD/year until 2025.



Accelerate support for energy production technologies that emit low or zero GHGs, such as nuclear, hydrogen production, and CCUS.



Taking into account Just Transition and financing to implement NDC 2030, which is estimated to require approximately 5.8 – 5.9 trillion USD.

Mitigation

Adaptation

Finance

Technology



**To Drive Climate Change Act
To solve Global Boiling**

**From the Issues of Climate
Change and Global Boiling**

THAILAND'S LONG-TERM LOW GREENHOUSE GAS EMISSION DEVELOPMENT STRATEGY

- NDC2035 submission
- Peaking Emission 388 MtCO₂eq



2nd Updated NDC
30-40% reduction BAU



- Renewable energy
- Low CH₄ paddy fields
- Manure Management

- 30@30 Policy
- Reduce the use of ICE
- Use of biofuels in the transportation sector
- Promote the use of Battery storage with renewable energy

- Achieve the GHG absorption target in the forestry sector of 120 MtCO₂eq

- Phase down of coal power plants
- CCS/CCU/BECCS technology

- Green hydrogen

Carbon Neutrality

- 74% share of RE electricity
- Phase out coal power plants

Net Zero GHG Emission

NDC ACTION PLAN 2021-2030

NDC Target: 40% from the projected BAU level by 2030

Domestic (33.3%)

Support (6.7%)

Article 6.2 (3%)

Energy



สำนักงานนโยบาย
และแผนพลังงาน
กระทรวงพลังงาน

**124.6 MtCO₂eq
(22.5%)**

Transport



สทช
สำนักงานนโยบายและแผนการขนส่งและจราจร

**45.6 MtCO₂eq
(8.2%)**

IPPU



กรมโรงงานอุตสาหกรรม
DEPARTMENT OF INDUSTRIAL WORKS

**1.4 MtCO₂eq
(0.3%)**

Waste



กรมควบคุมมลพิษ
POLLUTION CONTROL DEPARTMENT
กระทรวงทรัพยากรธรรมชาติและสิ่งแวดล้อม

**9.1 MtCO₂eq
(1.6%)**

Agriculture



สำนักงานเศรษฐกิจการเกษตร
Office of Agricultural Economics

**4.1 MtCO₂eq
(0.7%)**

Development guideline 1

Sectoral mitigation actions
and tracking progress

Development guideline 2

Develop/improve the
efficiency of using tools
and mechanisms to
support GHG reduction
operations

Development guideline 3

Capacity building,
Participation, and
cooperation networks
between the public and
private sectors
and the public sector

Development guideline 4

preparation of long-term
implementation to
achieve the country's goals

Development guideline 5

Promote international
cooperation on
mitigation actions

THAILAND'S NATIONAL ADAPTATION PLAN: NAP

“Thailand has increased its adaptive capacities and the country’s sustainable development is resilient to climate impacts



water resources management

Increased water security and decreased losses and damage from water-related disasters.



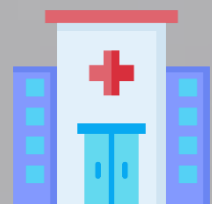
Agriculture and Food Security

Productivity and food security maintained amidst climate risks and impacts.



Tourism

Strengthened capacity of the tourism sector toward climate-resilience and sustainable development.



Public Health

Established effective public health systems to manage risks and reduce impacts from climate change.



Natural Resources Management

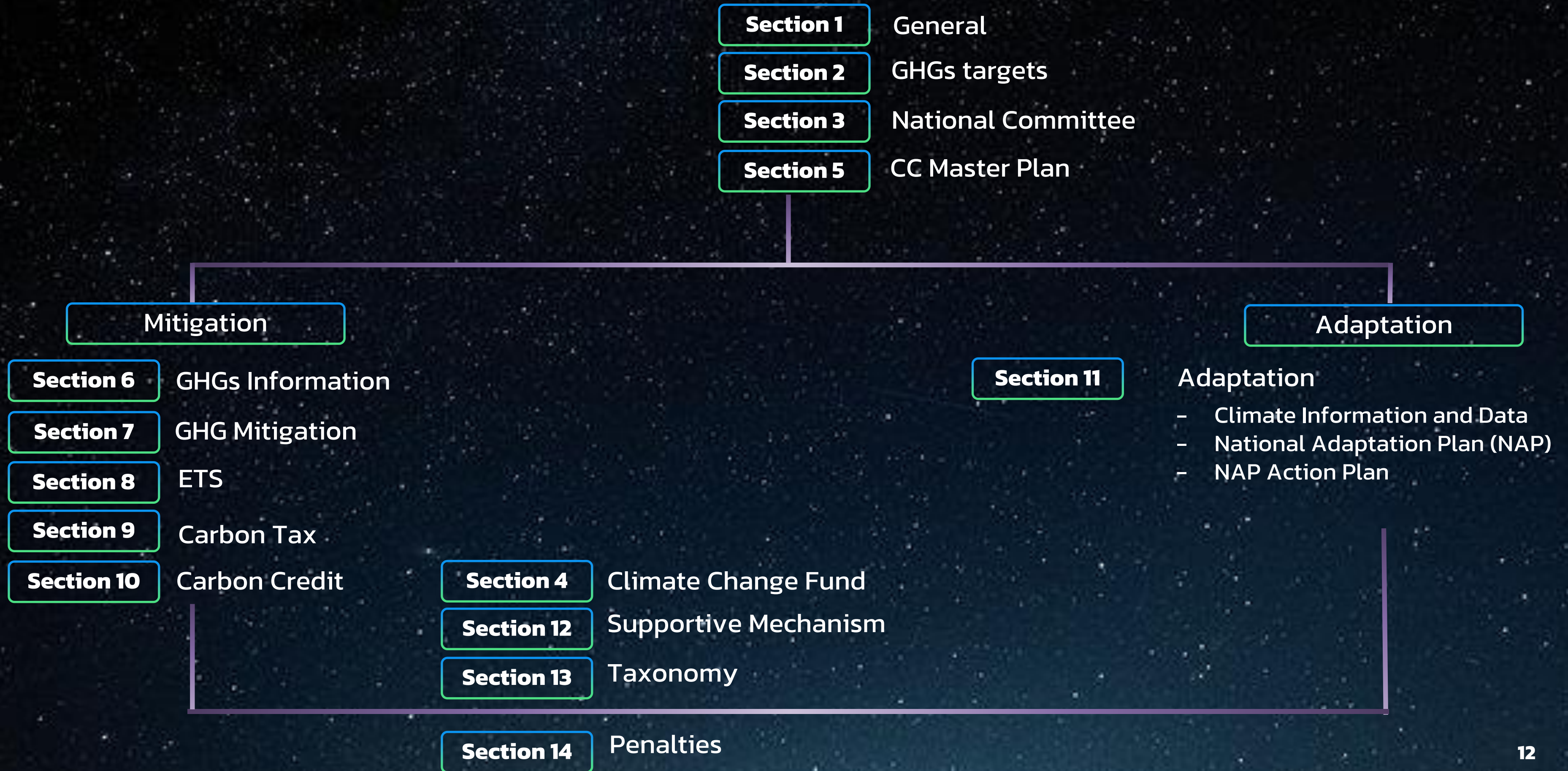
Sustainable management of biodiversity resources to respond to climate impacts.



Human Settlements and Security

Enhanced capacity of Individuals, communities, and cities to adapt to climate change impacts appropriately according to the local context.

DRAFT THAILAND CLIMATE CHANGE ACT



DRAFT THAILAND CLIMATE CHANGE ACT

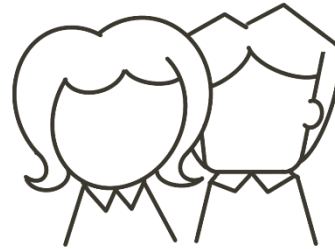
14
Categories

169
Articles

Category 1 General

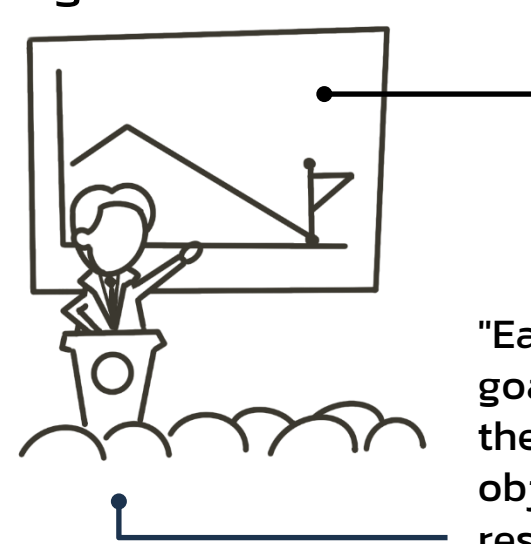
Guaranteeing citizen rights

Access to information, freedom of expression, remedies, etc.



Category 2 GHGs targets

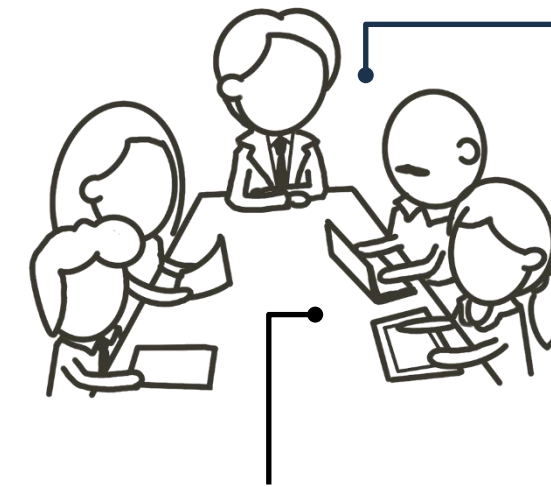
The goal for transforming Thailand's climate situation aligns with international agreements.



"Each government agency sets goals and plans to align with their own missions, integrating objectives with their respective duties."

Category 3 National policy committee

National policy committee



Prime Minister (Chairperson)

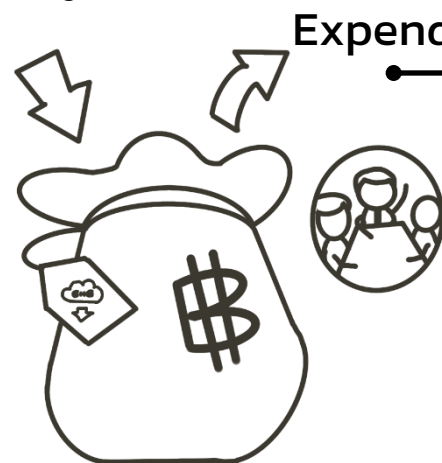
Integration of work among relevant agencies, considering Sub law, proposing policies, measures, and implementation.

Committee (Government agencies + National experts + private sector)

Category 4 Climate change fund

To drive efforts in addressing climate change.

Money, assets



Expenditure

Fund Committee
(Permanent Secretary of the Ministry of Natural Resources and Environment as the Chairperson)

Category 5 National master plan



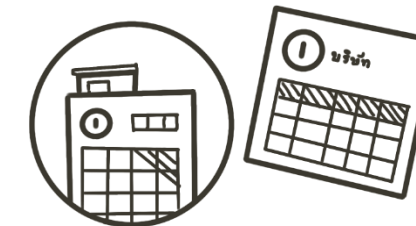
- Current situation
- National Targets
- National master plan
- Monitoring

Review every 5 years

Category 6 GHGs information



National inventory



GHGs emission Report

To establish a greenhouse gas emissions trading scheme

Category 7 GHGs mitigation



NDC Action Plan

To develop the 'National Greenhouse Gas Reduction Action strategy which outlines state agencies' operational requirements to meet Thailand's greenhouse gas reduction objectives consistent with the overarching strategy.

DRAFT THAILAND CLIMATE CHANGE ACT

Category 8 ETS

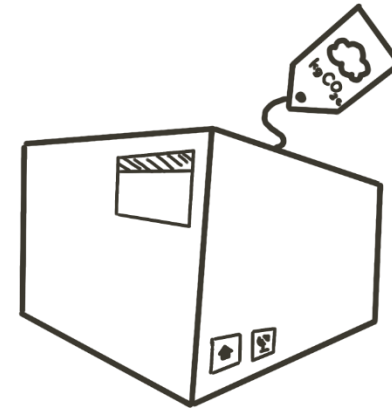
Emission Trading Scheme

To accelerate the low-carbon economy and society, mandatory greenhouse gas mitigation measures are needed.



Category 9 Carbon Tax

To reduce greenhouse gas emissions and address issues of greenhouse gas leakage.



MOF charges taxes based on the type of goods according to the quantity of carbon content

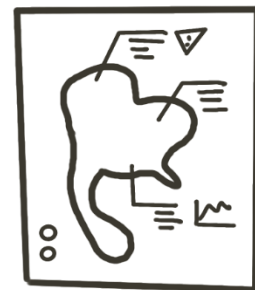
Category 10 Carbon credit



To ensure carbon credits are credible and do not conflict with the sustainable development goals

Category 11 Adaptation

Develop climate resilience



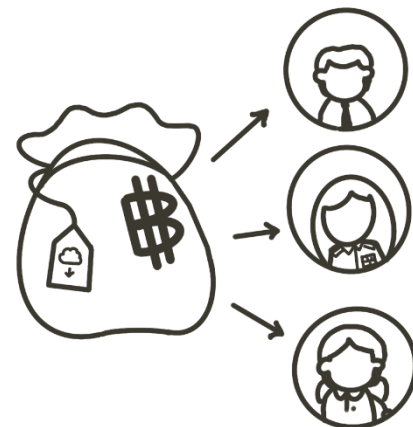
Information and Data



National Adaptation Plan

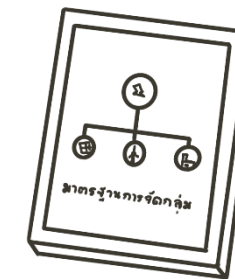
Category 12 Promotional measures

Financial support



- Government agencies
- Local Administration
- Academic Institutions
- Private sectors

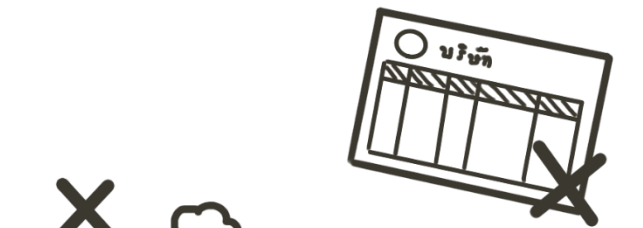
Category 13 Green Taxonomy



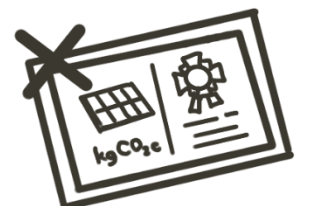
Developing the Standard for Grouping Economic Activities in Climate Change and Environmental Management aligns with the country's context and seeks worldwide acceptability.

Category 14 Penalties

Reporting false information on purpose



Offenses against the law



WAY FORWARD



Climate legislation framework

Main driving forces and governance

- Climate Change Act
- National target & pathway
- Institutional arrangements
- Mechanisms → transparency & accountability



Develop Tools & Mechanism

Supportive actions for a change initiative

- Incentives, Carbon tax, Taxonomy, Bond
- Carbon pricing, Emission Trading Scheme
- Technology transfer

Ex. Arthit CCS Pilot project, LC₃ in cement clinker



Support stakeholders

Take action together to achieve NDC 1

- Implement NDC Action Plan
- Tracking Progress → Emission reduction
→ Financial flow
- Monitoring & Evaluation → Gaps & Needs



Subsequence NDC

Ambitious, clearly and continuously

- Submit every 5 years → NDC 2 (Submit 2025)
Implementing period:
2031 – 2035
- Align with the global policy direction



CCEC



CCBCC

DCCE Data Center

Big Data, Synergy & Linkage

- Policies to actions → National to local level



DEPARTMENT OF CLIMATE CHANGE AND ENVIRONMENT

MINISTRY OF NATURAL RESOURCES AND ENVIRONMENT

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