



GREEN
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Thailand Country Programme on Climate Change (2nd Edition) 2024



Department of Climate Change and Environment

Foreword

It is my great pleasure to present the Thailand Country Programme on Climate Change (2nd Edition) 2024. This comprehensive programme represents Thailand's commitment to addressing climate change and building a sustainable and resilient future.

Climate change poses significant challenges to our nation, impacting various sectors such as agriculture, water resources, biodiversity, and human settlements. Recognising the urgency and significance of decisive action, Thailand has embraced GCF as a crucial platform for mobilising climate finance and implementing transformative projects and initiatives.

This Thailand Country Programme (TCP) for GCF serves as a strategic roadmap, outlining priority areas, objectives, and actions to effectively utilise GCF resources and achieve climate goals. The TCP is the outcome of rigorous consultations, extensive stakeholder engagement, and robust assessments, ensuring its alignments with the needs and aspirations of our nation.

Through this Country Programme, Thailand aims to advance climate action in key sectors, foster sustainable development, and enhance the resilience of our communities. It provides a framework for innovative project implementation to reduce greenhouse gas emissions, enhance adaptation measures, and promote sustainable practices.

The success of TCP hinges on the strong collaboration and partnerships forged amongst the government agencies, civil society, private sector entities, educational institutions, and local communities. Together, we will harness our collective expertise, resources, and innovation to drive a meaningful change and create a greener, more sustainable future. While the primary focus is on GCF, the framework and strategies can also serve as a valuable guideline for our country in evaluating and gaining access to additional funding sources, both bilateral and multilateral.

On behalf of the Department of Climate Change and Environment, Ministry of Natural Resources and Environment, and acting as Thailand National Designated Authority (NDA) to the GCF, I would like to express our sincere gratitude to all stakeholders who have contributed to the development of this programme. Their invaluable insights, unwavering commitment, and tireless efforts have been instrumental in shaping this transformative roadmap. I would also extend our appreciation to GCF for their support and partnership throughout this journey.

I am confident that the Thailand Country Programme on Climate Change will serve as a catalyst for sustainable development and climate resilience. Together, let us forge ahead, inspired by our shared vision of a thriving, low-carbon, and climate-resilient Thailand.



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Director General
Department of Climate Change and Environment

Acronyms and Abbreviations

AE	Accredited Entity
AEDP	Alternative Energy Development Plan
AF	Adaptation Fund
CB	Capacity Building
CBD	Convention on Biological Diversity
CCS	Carbon Capture and Storage
CCUS	Carbon Capture, Utilisation, and Storage
CFS	Climate Finance Strategy
CIP	Competitive Industrial Performance
COP	Conference of the Parties
CVM	Constant Volume Measures
DAE	Direct Access Entities
DCCE	Department of Climate Change and Environment
DP	Delivery Partner
EbA	Ecosystem-based Adaptation
EE	Energy Efficiency
EE	Executing Entity
EEP	Energy Efficiency Plan
ESS	Environmental and Social Standards
EV	Electric Vehicle
FAO	Food and Agriculture Organization
GCF	Green Climate Fund
GCF-2	GCF's Second Programming Cycle
GDP	Gross Domestic Product
GEF	Global Environment Facility
GgCO ₂ eq	Gigagram of carbon dioxide equivalent
GGGI	Global Green Growth Institute
GHG	Greenhouse Gas
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH
GNI	Gross National Income
HDI	Human Development Index
IKI	International Climate Initiative
IPPU	Industrial Processes and Product Use
IPS	Independent Power Supply
ITMOs	Internationally Transferred Mitigation Outcomes
KBank	Kasikorn Bank
LT-LEDS	Low Greenhouse Gas Emission Development Strategy
LULUCF	Land Use, Land-Use Change and Forestry
MAF	Mitigation Action Facility
M&E	Monitoring and Evaluation
MNRE	Ministry of Natural Resources and Environment

MRC	Mekong River Commission
MRV	Measurement, Reporting, and Verification
MtCO ₂ eq	Million tonnes of carbon dioxide equivalent
NAMA	Nationally Appropriate Mitigation Actions
NAP	National Adaptation Plan
NC4	Fourth National Communication
NCCC	National Committee on Climate Change
NDA	National Designated Authority
NDC	Nationally Determined Contributions
NESDC	National Economic and Social Development Council
ONEP	Office of Natural Resources and Environmental Policy and Planning
PDP	Power Development Plan
PES	Payment for Ecosystem Service
PPF	Project Preparation Facility
RE	Renewable Energy
REDD+	Reducing Emissions from Deforestation and forest Degradation, plus the sustainable management of forests, and the conservation and enhancement of forest carbon stocks in developing countries
RID	Royal Irrigation Department
RNA	Readiness Needs Assessment
SDGs	Sustainable Development Goals
SEAH	Sexual Exploitation Abuse and Harassment
TGEIS	Thailand Greenhouse Gas Emission Inventory System
TS	Technical Support/Assistance
TT	Technology Development and Transfer
UNCCD	United Nations Convention to Combat Desertification
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
WHO	World Health Organization

Executive Summary

The Thailand Country Programme (TCP) holds great importance for the country's climate and sustainable development goals. It provides a framework that aligns national strategies with the aim of achieving climate resilience and green growth. The programme's collaborative and inclusive approach ensures that priorities are well-informed, relevant, and widely supported by key stakeholders. Through collective decision-making, it fosters shared responsibility towards addressing climate change and achieving sustainable development. Regular monitoring, evaluation, and updates allow for adaptive management in response to changing circumstances and policies. The programme guides Thailand towards a low-carbon and resilient future.

Thailand, located in Southeast Asia, has a land area of approximately 514,000 km² and a population of 66.09 million. The country's maritime economic zones cover 212,200 km² in the Andaman Sea and Gulf of Thailand. Thailand has a Gross National Income (GNI) per capita of USD 7,090 and a Competitive Industrial Performance (CIP) index of 0.128. The Human Development Index (HDI) for Thailand is 0.800. Thailand faces climate change impacts, including rising temperatures, fluctuating precipitation, coastal erosion, and sea-level rise. The country is implementing sustainable development goals and climate change actions. Thailand's economy experienced a contraction due to the COVID-19 pandemic, especially in the tourism sector, but it showed signs of recovery in 2022, with a GDP growth of 2.6%. The 13th National Economic and Social Development Plan (2023-2027) aims to transform Thailand into a progressive and sustainable economy. The country's GHG emissions in 2018 were 372,648.77 GgCO₂eq, with the energy sector being the largest contributor.

Thailand's Climate Financing

Thailand's climate finance landscape focusses on the current and expected financing from public, private, and other sources, both domestic and international, to address the country's low-emission and climate-resilient development needs. The Long-Term Low Greenhouse Gas Emission Development Strategy (LT-LEDS) outlines Thailand's goal to achieve a net greenhouse gas (GHG) emission of 64.1 MtCO₂e by 2050 and net zero GHG emission by 2065, with GHG emissions expected to peak at 388 MtCO₂e in 2025. Leading to substantial climate finance required to meet Thailand's ambitious Nationally Determined Contributions (NDC) targets, with an estimated THB 5,000 billion needed for the unconditional target and THB 7,000 billion for the conditional target.¹

The financial commitment encompasses various sectors, and collaboration among the government, private sector, and international partners is crucial to mobilise the necessary funding. Overcoming barriers to climate investment requires concerted efforts and initiatives such as clear policies, enhanced technological capacity, innovative financing mechanisms, improved data availability, capacity building, and public awareness campaigns. Thailand's overall climate financing strategy considers factors such as financial feasibility, technology maturity, and the distinction between unconditional and conditional NDC targets in allocating resources. Thailand recognises the significance of international financial support, particularly for projects aligned with conditional NDC targets. By leveraging international support strategically and developing a climate finance strategy, Thailand aims to implement climate actions effectively, drive sustainable development, and contribute to global climate change

¹ DCCE (2024). Thailand's Climate Finance Strategy.

efforts. Figure 2C provides a visual representation of Thailand's climate finance landscape, aiding decision-makers in identifying priority areas for climate finance support.

Thailand's Project and Programme Priorities

This Thailand's Country Programme emphasises the period of GCF's second programming cycle (GCF-2) from 2024 to 2027. The updated Country Programme has been developed collaboratively, led by the Department of Climate Change and Environment (DCCE) with support from the Global Green Growth Institute (GGGI). The process involved reviewing and analysing national strategies to align climate objectives. Initial project and priorities were formulated and presented during a multi-stakeholder consultation, involving programme government agencies, accredited entities, development partners, private sector entities, educational institutes and civil society organisations. This inclusive approach ensures a well-informed and widely supported updated Country Programme. As a result, apart from in-the-pipeline projects, Thailand emphasises its strong attention to five key priority areas as follows:

- Priority Area 1: Mitigation Strategies, Technologies, Systematic Planning, and Best Practices
- Priority Area 2: Knowledge and Database Enhancement in Agriculture and Waste
- Priority Area 3: Advanced Adaptative Technologies and Crosscutting Area
- Priority Area 4: Strengthening Climate Financing Mechanism
- Priority Area 5: Knowledge Sharing and Awareness Raising

Thailand's Support Needs and Multi Stakeholder Engagement

Thailand has established institutional arrangements, developed a comprehensive policy framework, and implemented a domestic MRV system to address climate change. The country aims to achieve ambitious targets for GHG emissions reduction and seeks support from international organisations like the GCF to facilitate climate action.

Readiness requests over the GCF-2 period cover a wide range of capacity support and enhancement including accreditation of the direct access entities (DAEs), capacity building, institutional arrangement, climate finance, pipeline development that is align with investment criteria and promotes achievement towards NDC target, and Country Programme Realignment. A readiness needs assessment (RNA)² was conducted in parallel with preparation of the country programme and the highlights are included in Chapter 4.

Thailand has proposed a multi-stakeholder engagement plan over a 4-year period to develop priority projects and programmes for funding proposals to the Green Climate Fund (GCF). The plan includes periodic consultations at the national and regional levels, involving relevant stakeholders. Monitoring and evaluation of the Country Programme's progress are planned annually, with the possibility of adjustments as needed. The Country Programme will be updated every four years, considering previous cycle results, mid-term reviews, and major policy changes. The updating process includes consultations with all stakeholders. The engagement plan is summarised in *Table 5A*, outlining the periodicity and relevant stakeholders involved in each stage of the Country Programme development.

² GIZ (2023). GCF Readiness Needs Assessment.

Contents

Foreword	2
Acronyms and Abbreviations	3
Executive Summary	5
CHAPTER 1: COUNTRY CONTEXT	8
Sustainable Development Agenda	8
Climate Change Profiles	10
CHAPTER 2: CLIMATE FINANCE STRATEGY AND PRIORITIES	12
Climate Financial Needs	12
Barriers to Climate Investment	15
Overall Climate Financing Strategy.....	16
CHAPTER 3: PROJECTS AND PROGRAMME PRIORITIES FOR THE GCF	21
GCF Portfolios in Thailand	22
Project and Programme Priority Areas	25
CHAPTER 4: POLICY, STRATEGY, PLANNING, AND INSTITUTIONAL NEEDS	29
Climate Change Strategy, Policy and Plans	29
Institutional Arrangements and Policy Framework.....	30
Policy and Institutional Needs.....	31
CHAPTER 5: MULTI-STAKEHOLDER ENGAGEMENT PROCESS	37
Initial Development of the Updated Country Programme.....	37
Multi-Stakeholder Engagement Plan and Cycle	37
Annex 1: Overview of Thailand’s Collaboration with International Climate Funds	40
Annex 2: Programme Priorities Determination	41
Annex 3: Thailand and its Engagement with GCF	43
Annex 4: Key Stakeholders for Assessing Policy and Institutional Needs	45
Annex 5: Key Stakeholders for Programming Strategy	46
Annex 6: Brief Project Information regarding each Prospective Funding Proposal	50

CHAPTER 1: COUNTRY CONTEXT

Thailand is located in Southeast Asia with a land area of approximately 514,000 square kilometres (sq.km.). The maritime economic zones cover 72,200 sq.km. in the Andaman Sea and 140,000 sq.km. in the Gulf of Thailand, totalling 212,200 sq.km., with a population of 66.09 million (2022)³ and Gross National Income (GNI) per capita of USD 7,090 in 2021⁴. The Competitive Industrial Performance (CIP) index of Thailand is 0.128, ranking 25 amongst 154 countries⁵. The Human Development Index (HDI) for Thailand is 0.800, placing the country at 66 out of 191 countries⁶.

Thailand's national circumstances in all climate-related domains displaying the social, environmental, and economic conditions and how they are intertwined with climate change. In addition, the link between the reported information and Thailand's implementation for achieving sustainable development is highlighted as sustainable development goals, and climate change actions are complementary and greatly aligned.

The physical context reveals the country's vulnerability to climate impacts as above-average temperatures tend to rise, precipitation has fluctuated over time, population structure is becoming an "aging society," and its long coastal zone faces coastal erosion and sea-level rise. Thailand relies largely on commercial energy production and consumption, but renewable energy shares have continued to increase. The country's natural resources exhibit not only the abundance and absorptive capacity but also the degrading conditions from climate-induced disasters.

Sustainable Development Agenda

Thailand's development prospects have been steadily directed by the 5-year National Economic and Social Development Plans. The past development followed the 12th National Economic and Social Development Plan (2017-2021) with its core principles of sustainable development, sufficiency economy, and people-centred development. The plan adhered to the 20-Year National Strategy Framework (2017-2036) and commitments to the Sustainable Development Goals (SDGs). It sets out to achieve "Security, Prosperity, and Sustainability." The 13th National Economic and Social Development Plan (2023-2027)⁷ are currently being implemented with the objective to transform Thailand into a progressive society with a high-valued and sustainable economy. To achieve the objective, the development will prioritise five key development targets:

- 1) transforming the production structure toward innovation to enhance competition capacity in production and service sectors and respond to modern environmentally friendly technology development;

³ Thailand Board of Investment (2023). "Thailand in Brief: Demographic". Accessed on 15th August 2023. Available at: [BOI: The Board of Investment of Thailand](#)

⁴ The World Bank. "GNI per capita, Atlas method (current US\$) - Thailand". Accessed on 15th August 2023. Available at: [GNI per capita, Atlas method \(current US\\$\) - Thailand | Data \(worldbank.org\)](#)

⁵ UNIDO. "Competitive Industrial Performance Index (CIP)". Accessed on 15th August 2023. Available at: [UNIDO Statistics Data Portal](#)

⁶ UNDP (2024). Human Development Report 2023/2024. Accessed on 18th April 2024. Available at: [hdr2023-24reporten.pdf \(undp.org\)](#)

⁷ Office of the National Economic and Social Development Council (2022). Announcement on the 13th National Economic and Social Development Plan (2023-2027). Accessed on 15th August 2023. Available at: [Plan13_Final.pdf \(nesdc.go.th\)](#)

- 2) equipping Thai people with skills and capacities adjusting to the modern world norms and market;
- 3) reducing poverty and inequality gaps by providing opportunities for business competition, enabling social mobility for vulnerable and underprivileged groups, and providing impartial and high-quality public service;
- 4) moving toward sustainable production and consumption aligning with the absorptive level of the ecosystem and mitigating climate change impacts by reducing GHG emissions and reaching carbon neutrality; and
- 5) building Thailand's capacity to handle risk and change in the modern world context such as climate change impacts, pandemics, and cyber threats.

The COVID-19 pandemic caused a significant economic contraction during 2019-2020. In particular, the tourism sector, which has always been a significant part of Thailand's economic growth generating approximately 20-22% of GDP, suffered a drastic decline. However, according to the outlook by the Office of the National Economic and Social Development Council (NESDC) on Thai Economic Performance in Q4 of 2023 and the Outlook for 2024⁸, it shows the following results.

- The **Thai economy in 2023 grew by 1.9%**, decelerating from 2.5% in 2022.
- On the **expenditure side**, private consumption favourably expanded by 7.1%, accelerating from 6.2% in 2022. Meanwhile, private investment and export of services expanded by 3.2% and 38.3%, slowing from 4.7% and 59.9% in 2022, respectively. Nevertheless, export of goods decreased by 1.7%, from a 5.4% growth in 2022. Similarly, public investment dropped by 4.6%, continuing from a 3.9% decline in 2022.
- In terms of the **production side**, accommodation and food service activities sector, agriculture, forestry production, and fishery sector, wholesale and retail trade sector, and transport and storage services sector expanded by 18.0%, 1.9%, 3.8% and 8.4%, increasing from 34.5%, 2.5%, 3.7%, and 8.0% in the preceding year. Nonetheless, manufacturing sector declined by 3.2%, compared with a 0.7% growth in the preceding year. Similarly, construction sector decreased by 0.6%, declining from 2.4% in 2022.
- **GDP value at current prices** was 17.9 trillion baht (513 billion US dollars), increasing from 17.4 trillion baht (495 billion US dollars) in 2022.
- **GDP per capita** was 255,867.7 baht per person per annum (7,331.5 US dollars per person per annum), increasing from 248,788.6 baht per person per annum (7,094.1 US dollars per person per annum) in 2022.
- For the **economic stability**, the unemployment rate was at 0.98%, headline inflation was at 1.2%. Additionally, the current account registered a surplus of 1.3% of GDP.

The **Thai economy in 2024 is projected to expand in the range of 2.2-3.2%** (with the midpoint of 2.7%). Key supporting factors include: (1) the return to an expansion of exports of goods in line with the global economic recovery; (2) the favourable growths of private consumption and private investment; and (3) the continual recovery of tourism sector. Private consumption expenditure and private investment are expected to increase by 3.0% and 3.5%, respectively. Private and public investments are projected to increase by 2.1% and 2.7%, respectively. Meanwhile, export value of goods in US dollar terms is anticipated to expand by

⁸ Office of the National Economic and Social Development Council (2024). Thai Economic Performance in Q4 of 2023 and the Outlook for 2024. Accessed on 25th February 2024. Available at: [PRESS ENG 2566-Q4 Final V.2.pdf \(nesdc.go.th\)](https://www.nesdc.go.th/PRESS/ENG/2566-Q4-Final-V.2.pdf)

2.9%. Headline inflation is estimated to be in the range of 0.9-1.9% and the current account is projected to record a surplus of 1.4% of GDP.

Table 1: Thailand's economic projection for 2024

Indicators	Actual data			Projection for 2024	
	2021	2022	2023	20 Nov 2023	19 Feb 2024
GDP Growth (CVM, %) ¹	1.6	2.5	1.9	2.7-3.7	2.2-3.2
Investment (CVM, %)	3.1	2.3	1.2	1.6	2.5
• Private	2.9	4.7	3.2	2.8	3.5
• Public	3.5	-3.9	-4.6	-1.8	-1.8
Private Consumption (CVM, %)	0.6	6.2	7.1	3.2	3.0
Government Consumption (CVM, %)	3.7	0.1	-4.6	2.2	1.5
Export of goods (growth rate, %)					
• Value	19.2	5.4	-1.7	3.8	2.9
• Volume	15.5	1.2	-2.9	3.3	2.4
Import volume of goods (growth rate, %)					
• Value	27.7	14.0	-3.1	4.7	4.4
• Volume	17.9	1.2	-3.6	3.7	3.2
Current Account to GDP (%)	-2.0	-3.2	1.3	1.5	1.4
Inflation ² (%)	1.8	4.8	1.2	1.7-2.7	0.9-1.9

Source: Thai Economic Performance in Q4 of 2023 and the Outlook for 2024, Office of the National Economic and Social Development Council

Remark: 1 Indicate the percentage change in Gross Domestic Product, adjusted for changes in volume and excluding the influence of price fluctuations. (CVM = Constant Volume Measures)

2 Using GDP Deflator

Climate Change Profiles

The inventory report was prepared using the 2006 IPCC Guidelines for National Greenhouse Gas Inventories and presented Thailand's national GHG emissions from 2000 to 2018 by sources and removals by sinks. The GHG emissions estimated in this report include both direct and indirect emissions: Carbon Dioxide (CO₂), Methane (CH₄), Nitrous Oxide (N₂O), Hydrofluorocarbons (HFCs), Sulphur Hexafluoride (SF₆), Nitrogen Oxides (NO_x), Carbon Monoxide (CO), Non-Methane Volatile Organic Compounds (NMVOCs) and Sulphur Dioxide (SO₂). The GHG emission is calculated by the Thailand Greenhouse Gas Emission Inventory System (TGEIS).

In 2018, total GHG emissions (excluding those from LULUCF) were 372,648.77 GgCO₂eq. Net GHG emissions were 286,680.47 GgCO₂eq (including those from LULUCF) resulted from the Energy sector (257,340.89 GgCO₂eq), Agriculture sector (58,486.02 GgCO₂eq), IPPU sector (40,118.18 GgCO₂eq), and Waste sector (16,703.68 GgCO₂eq). The Energy sector remained the most significant contributor to Thailand's GHG emissions, accounting for 69.06% of the total GHG emissions. The share of emissions from the Agriculture, IPPU, and Waste sectors were 15.69%, 10.77%, and 4.48%, respectively. LULUCF contributed to a net removal of -85,968.30 GgCO₂eq.

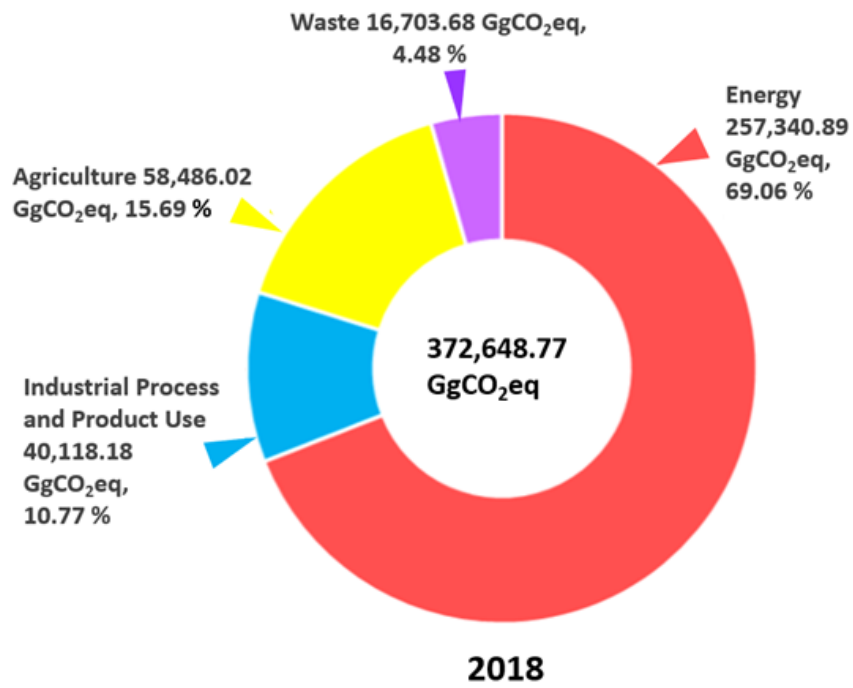
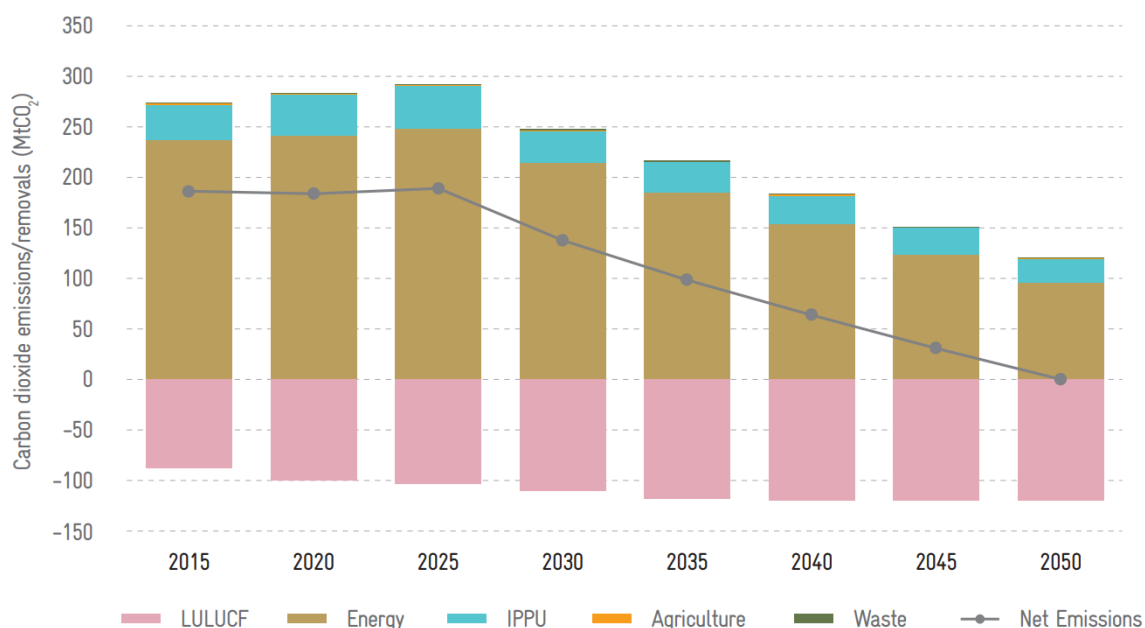


Figure 1A: Total GHG emissions by sector (excluding LULUCF) 2018

CHAPTER 2: CLIMATE FINANCE STRATEGY AND PRIORITIES

This Chapter summarises the climate finance landscape of the country including the current and expected public, private and other financing, domestic and international, to address the country low-emission, climate-resilient development needs and priorities. According to the Long-Term Low Greenhouse Gas Emission Development Strategy (LT-LEDS), Thailand will achieve the net GHG emission of 64.1 MtCO₂eq in 2050, while the GHG emissions from sources are expected to reach the peak level of 388 MtCO₂eq by 2025. To achieve net zero, contribution from the LULUCF sector at 120 MtCO₂eq is expected from 2037. Thus, it is apparent that the country's climate financing priorities over medium- and long-period up to 2050 will be needed to be materialised.



Source: Thailand LT-LEDS (November 2022)

Figure 2A: Thailand's 2050 carbon neutrality pathway

Climate Financial Needs

The focus is on estimating the climate finances needed to effectively meet the national greenhouse gas (GHG) reduction targets. These estimations are based on initial assessments of investment trajectories, considering the specific requirements of each sector.

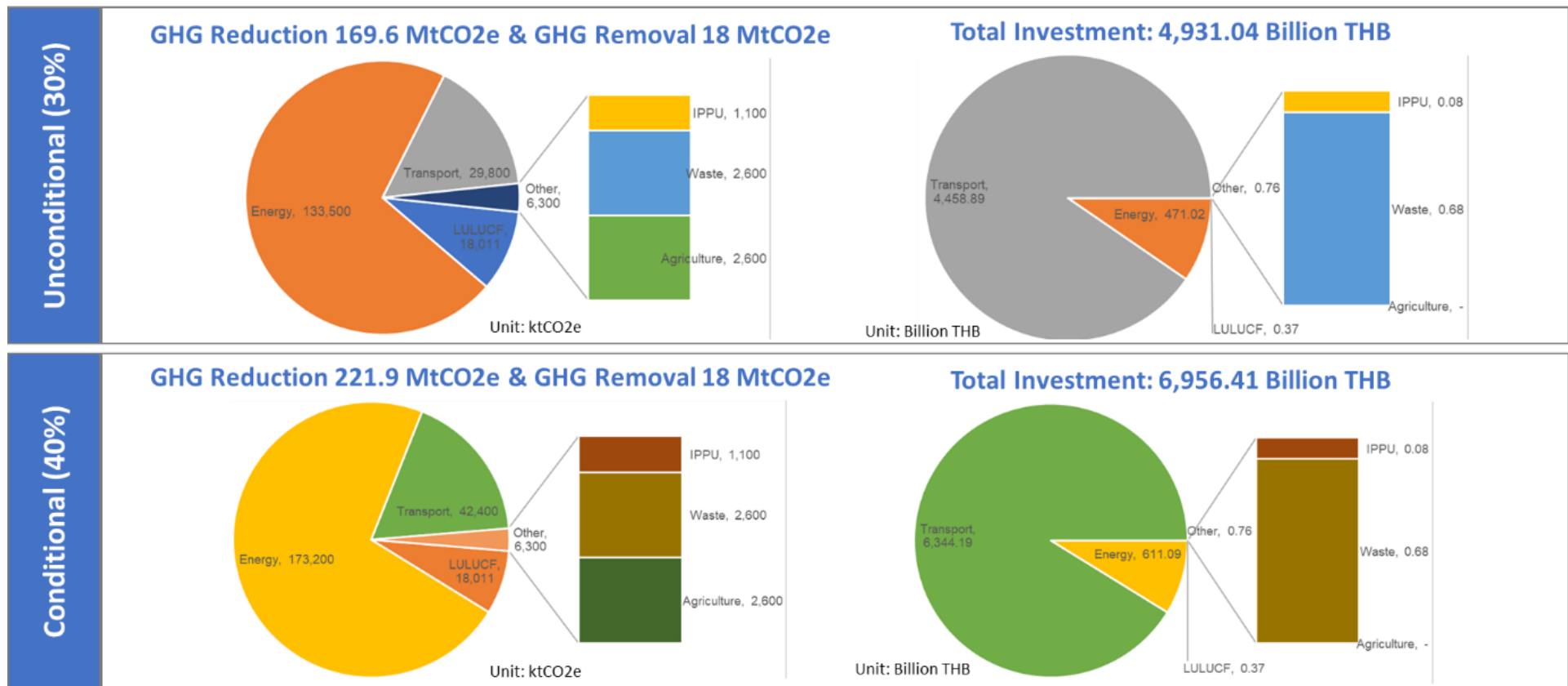
Upon analysing the data, it has been determined that substantial climate finance is essential to drive the necessary adaptation and mitigation efforts across key priority sectors in order to achieve Thailand's ambitious NDC targets. To meet the unconditional NDC target, an approximate amount of THB 5,000 billion is required, while reaching the conditional NDC target demands an estimated THB 7,000 billion⁹. These financial projections underscore the magnitude of the challenge ahead and emphasise the importance of sustained investment in climate-related initiatives. By allocating the necessary resources, Thailand can enhance its

⁹ An additional THB 2,000 billion will be allocated if the international community provides financial support, technology transfer, capacity building, or other forms of assistance. This funding aims to help the country achieve an additional 10% reduction on top of its unconditional NDC target.

capacity to adapt to the adverse impacts of climate change and mitigate GHG emissions effectively.

The financial commitment required to implement these actions encompasses various sectors, including but not limited to energy, transportation, agriculture, and industry. It is crucial for relevant stakeholders, including the government, private sector, and international partners, to collaborate closely in mobilising the substantial funding needed to support Thailand's climate goals. By securing the required climate finances, Thailand will be better positioned to foster sustainable development, promote green technologies and practices, and ultimately contribute significantly to the global efforts in combating climate change. This financial commitment will not only facilitate the achievement of Thailand's NDC targets but also drive the transition towards a low-carbon and climate-resilient future for the country.

Figure 2B provides an overview of the initial estimations regarding the financial requirements for each target level and across various sectors. These estimations play a crucial role in understanding the magnitude of the financial investments necessary to achieve the desired outcomes. Anyhow, it should be noted that these results are based on estimations using previous NDC targets and action plans. It is important to consider that the financial estimation will be more accurate once the new sectoral action plans are finalised as new information and strategies may influence the financial projections.



Remark: Detailed analysis must be conducted after the revised NDC sectoral action plans published, expected by the end of 2024.

Figure 2B: Initial estimations of climate financing trajectories

Through a careful examination of the data presented in *Figure 2B*, one can glean valuable insights into the anticipated financial needs associated with different target levels and their distribution across sectors. This information enables policymakers, stakeholders, and investors to evaluate the scale of investment required and prioritise sectors accordingly. The estimations take into account particularly mitigation endeavours, providing a comprehensive outlook on the financial landscape. This comprehensive approach facilitates a holistic understanding of the resources required to effectively address the challenges posed by climate change across multiple sectors concurrently.

Comprehending the financial needs across diverse target levels and sectors is crucial for the judicious allocation of resources, strategic planning, and mobilisation of funds. It empowers decision-makers to make well-informed choices and formulate robust policies that can steer sustainable development while simultaneously meeting the climate objectives articulated in the NDC.

Thailand's commitment to leveraging climate finance resources strategically demonstrates its dedication to addressing climate change and transitioning to a low-carbon and resilient future. By effectively utilising international support and aligning investments with priority areas, Thailand aims to accelerate climate action and achieve its sustainable development objectives.

Barriers to Climate Investment

The key barriers observed in climate investments in Thailand can be categorised into four main barriers:

- 1) **Policy and Regulation Barrier:** This barrier encompasses challenges related to policy clarity, inadequate incentives, and a lack of mandates on climate actions. Unclear policies can create uncertainty among investors, hindering their confidence in committing to climate-related projects. Furthermore, insufficient incentives may discourage potential investors from actively participating in climate investments. The absence of clear mandates can also result in a fragmented approach to climate actions, impeding the overall progress in the sector.
- 2) **Technological Barrier:** This barrier revolves around the lack of confidence in and access to new technologies. The adoption of innovative technologies is crucial for effective climate mitigation and adaptation measures. However, the limited familiarity with and access to these technologies can deter potential investors. Building confidence in emerging technologies through demonstration projects, knowledge sharing, and capacity building is essential to overcome this barrier.
- 3) **Financial Barrier:** The financial barrier encompasses challenges associated with infeasible investments, particularly in carbon capture and storage (CCS) and small-scale renewable energy and energy efficiency (RE & EE) projects. These investments may face technical and economic feasibility challenges, impeding their implementation. Additionally, inadequate capabilities to access finance, high investment costs, and insufficient collateral can pose significant barriers for investors seeking to fund climate-related projects.
- 4) **Capacity Barrier:** This barrier encompasses challenges related to insufficient data and information for making investment decisions, a lack of technical manpower, inadequate measurement, reporting, and verification (MRV) systems, and low public awareness. Insufficient data and information hinder the ability to assess the viability and potential

risks associated with climate investments. The shortage of technical experts with the necessary skills and knowledge can also limit the implementation of climate projects. Furthermore, the absence of robust MRV systems hampers the monitoring and evaluation of climate investments. Low public awareness can lead to a lack of support and understanding of climate actions, limiting the overall progress in this field.

Addressing these barriers requires concerted efforts from the government, private sector, and relevant stakeholders. Clear and consistent policies, enhanced technological capacity and access, innovative financing mechanisms, improved data availability, capacity building initiatives, and public awareness campaigns are essential components in overcoming these barriers and unlocking the potential for increased climate investments in Thailand.

Overall Climate Financing Strategy

Thailand has established a preliminary climate finance landscape as a foundation for developing the country's climate finance strategy. This landscape considers several critical factors that determine the priority and allocation of financial resources. Key considerations include the financial feasibility of the project or programme, the maturity level of the technology involved, whether the measures are classified as part of the unconditional or conditional Nationally Determined Contributions (NDC) targets, and characteristic and readiness of business entities.

Financial feasibility is a crucial criterion for determining the viability of a project or programme. Assessing the financial feasibility, whether a project is financially viable, helps identify whether the project or programme can attract sufficient investments and generate sustainable returns. Projects that face significant financial barriers, whether there is the obstacles or challenges preventing investment or funding in a project such as high upfront costs or uncertain revenue streams, may require additional financial support. The support denotes the augmentation of monetary resources, typically aimed at addressing specific financial requirements. This can encompass an expansion in available funding avenues, such as loans or investments, or the provision of complimentary aid, such as grants or subsidies. It is worth noting that natural capital projects are not generally commercially viable and concessional finance or grants may be required to finance such projects.

The **maturity level of the technology** is another vital factor in the climate finance landscape. Technologies at different stages of development require varying levels of financial support. Early-stage or emerging technologies may face higher investment risks and require more substantial financial backing to support their deployment and commercialisation. In contrast, mature technologies may have lower financial barriers and could attract private investments without significant external support.

The **classification of measures as part of unconditional or conditional NDC targets** is also considered in the climate finance landscape. Unconditional targets refer to actions that Thailand commits to implement regardless of external support, while conditional targets require international financial assistance to be realised. Projects or programmes aligned with conditional targets, which face unavoidable financial barriers, are particularly dependent on financial support from international donors.

The selection of financial instruments to promote green investments is influenced by the **characteristics and readiness of business entities** such as MSMEs or large enterprises. Various factors such as financial stability, creditworthiness, and track record, along with differing financing needs of businesses, shape this selection process. MSMEs, often requiring

smaller loans or grants, may also need additional support like technical expertise, while large enterprises, typically seeking larger-scale solutions, are capable of handling complex projects. Cost-effectiveness and viability are key considerations too, with grants or concessional loans being more suitable for financially constrained MSMEs and conventional loans or market-based instruments for large firms. This considered approach aids successful green initiatives and promotes a sustainable economy.

Acknowledging these critical factors, Thailand recognises **the importance of international financial support for projects and programmes where financial barriers cannot be overcome without external assistance**. This highlights the need for collaboration with international donors and partners to mobilise the necessary resources and overcome financial obstacles hindering the implementation of crucial climate initiatives. By leveraging international financial support strategically, Thailand can enhance its capacity to implement climate actions effectively, drive sustainable development, and contribute to global efforts in addressing climate change. The country's climate finance strategy will play a pivotal role in guiding the allocation of financial resources, ensuring their optimal utilisation, and facilitating the achievement of Thailand's climate goals.

Moreover, Thailand seeks synergistic opportunities among different entities such as the International Climate Initiative (IKI), Global Environment Facility (GEF), Mitigation Action Facility (MAF), and the Adaptation Fund (AF), in tandem with its collaboration with the GCF to emphasise potential avenues for scaling up initiatives, replicate successful models, invest concurrently, assimilate lessons learned, and explore avenues for blended finance. This approach aims to maximise the impact of climate finance efforts by leveraging collective strengths and resources from various entities, thereby contributing more substantially to global climate action. *Annex 1* provides a concise overview of the significant collaborative approaches and achievements achieved thus far in the collaboration between Thailand and international climate funds managed by DCCE (superseding the roles and responsibilities of ONEP since August 2023).

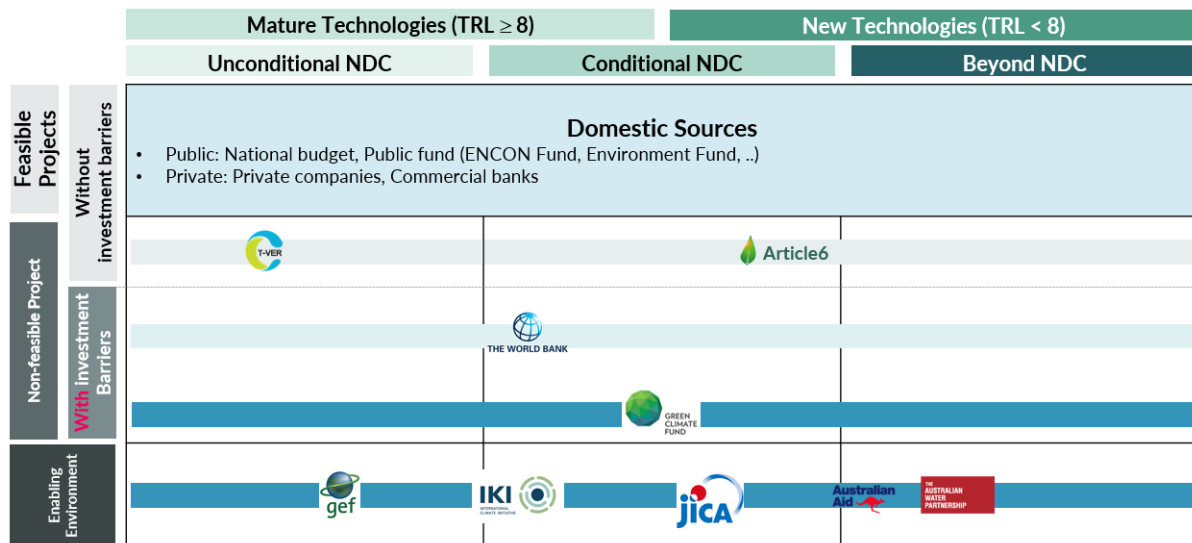
Goals and Objectives of Climate Finance Strategy

Thailand's climate finance strategy encompasses several key objectives intended to counter the effects of climate change and promote sustainable development. These objectives include climate change mitigation, wherein the strategy promotes the reduction of greenhouse gas emissions and fosters a transition to a low-carbon economy. It also aims at climate change adaptation by fortifying the resilience of communities, ecosystems, and infrastructure against climate change impacts. Besides, it aligns with broader sustainable development goals, such as inclusive economic growth, poverty reduction, gender equality, and biodiversity protection. To fund these efforts, the strategy seeks to mobilise financial resources from diverse sources. Furthermore, it targets capacity building and knowledge sharing to strengthen climate finance management and underlines transparency and accountability in resource allocation. The strategy also aims to foster collaboration with different stakeholders to magnify the effect of climate finance initiatives. Nevertheless, the objectives are not exhaustive and can be customised according to Thailand's unique context and priorities to establish a sustainable and climate-resilient future.

Thailand Strategic Climate Financing Landscape

Thailand's Climate Finance Strategy (CFS) leverages the assessment of technology maturity, NDC-target conditionality, financial feasibility, and investment barriers to determine suitable sources of climate finance. This strategy helps distinguish between technologies that are mature for large-scale deployment with minimal financial support and early-stage technologies that necessitate more substantial financial aid. A comprehensive evaluation within the framework of Thailand's CFS ensures effective climate finance allocation, identifies apt funding types and sources, and aligns financial resources with Thailand's climate objectives. In terms of resource allocation, the CFS framework incorporates domestic resources to support financially viable initiatives without upfront investment barriers. It utilises resources from domestic carbon markets and internationally transferred mitigation outcomes (ITMOs) to advance financially unviable technologies without investment impediments. International climate finance is crucial where technologies are financially challenging and encounter investment hurdles. Additionally, the CFS emphasises strengthening enabling conditions through policy frameworks, capacity-building initiatives, and knowledge sharing, which can include both technical assistance and financial resources from international support.

Figure 2C provides an overview of Thailand's climate finance landscape, presenting a visual representation of the country's prioritisation and allocation of resources. This landscape serves as a valuable reference, guiding decision-makers and stakeholders in identifying areas where climate finance support is most needed and can deliver the greatest impact.



Remark: Note that the international organisations presented in the figure are only illustrative, but not limited to, of those currently active in Thailand.

Figure 2C: Strategic Prioritisation of Climate Finance in Thailand

By considering these aspects and appropriately allocating resources within the CFS framework, Thailand shall be able to optimise the use of domestic and international resources to address climate challenges effectively. This approach ensures that available funds are directed towards financially feasible measures, while also providing support for technologies that face investment barriers and require international climate finance. Strengthening enabling conditions is crucial to create a conducive environment for successful implementation and maximise the impact of resource allocation within the CFS framework.

Financial Instruments for Key Sectors in achieving Thailand's NDC 2030

The measures needed to achieve Thailand's Nationally Determined Contributions (NDC) by 2030 are based on the Thailand Long-Term Low-Emission Development Strategy (LT-LEDS).¹⁰ In order to effectively fund projects for these mitigation actions, it is crucial to evaluate suitable financial tools. This evaluation entails identifying appropriate financing instruments for various types of investments, considering factors like the country's policy landscape, technology risks, and the availability of feasible projects. Moreover, the choice of financial instruments is influenced by the characteristics and capabilities of the business entity, the project's preparation stage, and the maturity level of the business, whether it is an early-stage or start-up venture. The list of financial instruments for key sectors in achieving Thailand's NDC 2030 can be accessed from the Climate Finance Strategy.¹¹

Ways Forward in achieving Thailand's NAP

Thailand's National Adaptation Plan (NAP) is a strategy to cope with the challenges of climate change in six key sectors: water management, agriculture and food security, tourism, public health, natural resources management, and human settlements and security. The NAP outlines the goals, objectives, and measures for each sector, based on the existing policies and plans. Some of the common measures across the sectors are:

- Implementing integrated river basin management and water resources conservation.
- Developing location-based disaster preparedness plans and early warning systems for extreme weather events.
- Enhancing knowledge and capacity of individuals, communities, and institutions to prevent and respond to climate risks.
- Monitoring and assessing the impacts of climate change on biodiversity, natural resources, and human health.
- Applying economic instruments such as Payment for Ecosystem Service (PES) to support sustainable management of ecosystems and resources.
- Integrating adaptation into land use planning and development at different levels, considering climate risks and vulnerabilities.

To finance the implementation of the NAP, Thailand will need to mobilize various sources of funds from domestic and international public and private sectors, international funds, and Multilateral Development Banks while financial supports from the governments and international funds are crucial for the investments in infrastructures that provides social benefits but have high risks and low returns.

¹⁰ Office of Natural Resources and Environmental Policy and Planning (2022). Thailand Long-Term Low-Emission Development Strategy (LT-LED). Accessed on 20th July 2023. Available at: [Thailand LT-LEDS \(Revised Version\)_08Nov2022.pdf \(unfccc.int\)](#)

¹¹ DCCE (2024). Thailand's Climate Finance Strategy.

Some of the potential financial instruments that can be applied to implement the NAP are:

- **Grants:** Grants are non-repayable funds that can support the initial costs or leverage other sources of finance for adaptation projects or programmes.
- **Loans:** Loans are repayable funds that can finance the capital costs of adaptation projects or programmes. Loans can be blended with grants or guarantees to reduce the interest rate or the risk for borrowers.
- **Equity:** Equity is a form of ownership that can finance the operational costs or generate returns for adaptation projects or programmes. Equity can attract private investors who are interested in innovation or profitability.
- **Bonds:** Bonds are debt securities that can finance large-scale and long-term adaptation investments. Bonds can be labelled as green or climate bonds to attract investors who are interested in environmental and social benefits.

CHAPTER 3: PROJECTS AND PROGRAMME PRIORITIES FOR THE GCF

The Country Programme contains the summary of country-specific priority projects, which are being developed for the GCF's second programming cycle (GCF-2) covering the period of 2024-2027, to be submitted to the GCF for funding during the four years.

The Green Climate Fund (GCF) operates in programming cycles to allocate resources for climate projects and initiatives. The Country Programme is a strategic framework developed by countries to outline their priorities, needs, and strategies for addressing climate change. It serves as a blueprint for how a country plans to tackle climate issues and identifies areas where funding is required. Projects and initiatives proposed to the GCF for funding during this cycle are expected to align with and support the goals and priorities outlined in the country's strategy, ensuring that the investments made by the GCF are in sync with the country's climate objectives and needs.

The Government of Thailand have identified priority areas, where international supports are needed, in line with the country's ultimate goal of achieving climate resilience and green growth. In addition to the country-specific priority projects and programmes, the Country Programme may also include the country's participation in regional or multi-country programmes initiated and designed by GCF Accredited Entities.

In the area of country's readiness preparatory support, the discussion will be emphasised in the following Chapter (*Chapter 4: Policy, Strategy, Planning and Institutional Needs*), while this Chapter will focus mainly on supports needed for project/programme priorities.

Below is an overview of various recommendations by the GCF to help Thailand access its funding sources effectively and efficiently:

- 1) **NDC/NAP/National Strategies and Plans:** The proposed initiatives and projects are aligned with Thailand's National Determined Contributions (NDC) and National Adaptation Plans (NAP), crucial components within the country's strategic framework. These projects specifically address key objectives outlined in the GCF's updated strategic plan, targeting mitigation and adaptation strategies.
- 2) **Project Preparation Facility, Readiness, and Technical Support:** Technical support is vital for the development of concept notes, particularly in advancing identified projects requiring assistance. The GCF-2 programming priorities directly link to the Readiness Programme, enhancing Thailand's capacity to access readiness grants. These resources are instrumental in supporting initiatives outlined in the country programme by providing necessary technical expertise and resource allocation for identified entities.
- 3) **Beneficiaries:** The intended beneficiaries of proposed projects encompass various vulnerable groups, including women, indigenous peoples, children, individuals with disabilities, and local communities. These stakeholders are critical considerations in the planning, execution, and decision-making processes for GCF-financed activities, ensuring their active involvement and consultation.
- 4) **Gender:** Acknowledging the gender disparities exacerbated by climate change, it is essential to integrate considerations of gender equality and women's empowerment

into project designs. GCF's Updated Gender Policy¹² is integral in guiding the Country Programme and individual project designs, requiring gender assessments and project-level gender action plans to ensure equitable outcomes.

- 5) **Local, Traditional, and Indigenous Knowledge and Practices:** Recognising the significance of local, traditional, and indigenous knowledge, incorporating such practices in project development enriches project outcomes where relevant. The proposed GCF projects aim to benefit various groups, including indigenous peoples, local communities, women, children, and people with disabilities, thereby honouring and integrating their knowledge into project designs.
- 6) **Knowledge Sharing and Resources:** Specific actions concerning indigenous peoples and local communities, particularly those related to indigenous/local/traditional knowledge, may be shared with the GCF Secretariat for potential recognition as good practices or case studies. Consultation with the GCF's Indigenous Peoples Advisory Group (IPAG) is recommended for relevant concept notes to incorporate diverse perspectives.
- 7) **SEAH (Sexual Exploitation Abuse and Harassment):** In compliance with the GCF's Revised Environmental and Social Policy (2021), robust measures addressing Sexual Exploitation Abuse and Harassment (SEAH) safeguarding are mandatory in the Environmental and Social Standards (ESS) due diligence of proposed projects and programmes.

GCF Portfolios in Thailand

Thailand has received the first financial support from GCF for the implementation of **Enhancing climate resilience in Thailand through effective water management and sustainable agriculture** project¹³ in late 2021. The project targets to improve the water management capacity of the Royal Irrigation Department (RID) and local communities in the critical area between the Yom and Nan Rivers (Phitsanulok, Sukhothai and Uttaradit provinces) to address the core problem that climate-induced droughts and floods threatening agriculture livelihoods and infrastructure in Yom and Nan river basins, which are key to Thailand's flood risk management and irrigation system, and host some of the most vulnerable groups of society. This project, having UNDP in its capacity as GCF Accredited Entity, was approved in October 2021.

Another project, recently approved by the GCF Board at its 37th meeting on 25 October 2023 is **Thai Rice: Strengthening climate-smart rice farming**. The project aims to sustainably shift smallholder rice agriculture in Thailand onto a low-emission, climate-resilient development trajectory. The project promotes the adoption of climate technology, aims at upscaling and extending the Thai Rice NAMA Support Programme, and firmly roots the established financial instruments within a 'joined up', Thai-driven framework. The project is supplementary to Thailand's international commitments as well as its domestic sectoral policies and standards, especially the mitigation efforts, where the agricultural sector has also been emphasised in the current NDC (2022)¹⁴. More information on Thailand and its engagement with GCF is presented in Annex 3.

¹² Green Climate Fund (2019). Gender Policy. Accessed on 14th December 2023. Available at:

<https://www.greenclimate.fund/sites/default/files/document/gcf-gender-policy.pdf>

¹³ Green Climate Fund (2021). Enhancing climate resilience in Thailand through effective water management and sustainable agriculture. Accessed on 13th June 2023. Available at: [Enhancing climate resilience in Thailand through effective water management and sustainable agriculture | Green Climate Fund](#)

¹⁴ The Royal Thai Government (2022). Thailand's 2nd Updated Nationally Determined Contribution. Accessed on 5th June 2023. Available at: [Thailand 2nd Updated NDC.pdf \(unfccc.int\)](#)

Table 3A: Thailand's Country Specific Funding Proposals (as of March 2024)¹⁵

Project Name / Priority Area # (Elaborated in the following subsection)	Type of GCF Proposal	Project Preparation Facility (PPF) Required	Baseline	Estimated GCF Financing (million USD)	Estimated Co-financing (million USD)	Accredited Entity	Fiduciary Standards	ESS	Estimated Submission			
									2024	2025	2026	2027
1. Electrified intercity bus with green terminals* / #1	Funding Proposal	N/A	Developing Concept Note / determining AE	250	N/A	TBD	TBD	TBD		X		
2. Thailand Circular Economy Financing Facility (T-CEFF)* / #4	Funding Proposal	N/A	Developing Concept Note	100 as loan guarantee	200	KBank	Basic, Project Management, On-lending & Blending	TBD	X			
3. Thailand Climate Technology Private Equity Trust Fund* / #4	Funding Proposal	N/A	Developing Concept Note	50 as equity	50	KBank	Basic, Project Management, On-lending & Blending	TBD	X			
4. Climate-Resilient and Low-Carbon Healthcare Facilities in Thailand* / #3	Funding Proposal	N/A	Developing Concept Note / determining AE	N/A	N/A	TBD	TBD	TBD		X		

Note: Priority is assigned numerically based on the readiness of the proposed projects.

Remark: *Note that the proposal-related documentation of this prospective project in this table is available in Annex 6.

¹⁵ Some information in this table is subject to additional consultations with NDA, AEs or prospective DAEs, and/or project-specific relevant stakeholders. Also, note that the proposal-related documentation of prospective projects in this tables are available in Annex 6.

Table 3B: Thailand as a Party included in Multi-Country Funding Proposals (as of March 2024)¹⁶

Project Name / Priority Area # (Elaborated in the following subsection)	Type of GCF Proposal	Project Preparation Facility (PPF) Required	Baseline	Estimated GCF Financing (million USD)	Estimated Co-financing (million USD)	Accredited Entity	Fiduciary Standards	ESS	Estimated Submission			
									2024	2025	2026	2027
1. Climate and Health Co-Investment Facility Coordination Programme ^{1,2} / #3	Funding Proposal	Yes	PPF approved on 1 Dec 2023	64	58	UNDP	TBD	TBD		X		
2. Wetland-based Adaptation in the Indo-Burma region ³ / #2	Funding Proposal	N/A	Concept note submitted to GCF	67.8	N/A	AFD	TBD	TBD	X			

Remarks: 1 Global programme covers following countries: Bhutan, Cabo Verde, Côte d'Ivoire, Georgia, Guinea, Indonesia, Jordan, Morocco, Nepal, Sri Lanka, State of Palestine, Thailand, Uganda, Viet Nam. PPF available at [Climate and Health Co-Investment Facility Coordination Programme | Green Climate Fund](#)

2 Note that the initial information of this prospective project is available in Annex 6.

3 Multi-country programme covering Bangladesh, Cambodia, Lao PDR, Thailand, Viet Nam, and potentially Myanmar. Concept note available at [Wetland-based adaptation and mitigation in the Indo-Burma region | Green Climate Fund](#)

¹⁶ Some information in this table is subject to additional consultations with NDA, AEs or prospective DAEs, and/or project-specific relevant stakeholders.

Project and Programme Priority Areas

In tandem with Thailand's Nationally Determined Contributions (NDC), it is crucial to precisely define the priority areas and sectors within the Country Programme earmarked for GCF support. Despite the publication or governmental endorsement of the Country Programme, Thailand maintains an openness to forthcoming project opportunities which might not have initially been incorporated into the country program. This commitment underscores our dedication to aligning initiatives with Thailand's overarching climate objectives and international cooperation.

Additionally, it is imperative to underscore that both mitigation and adaptation endeavours are eligible for comprehensive supports in terms of skills development, financial assistance and technology transfer. Furthermore, initiatives spanning various sectors or priority areas, such as transportation or public health, which seamlessly integrate both mitigation and adaptation measures, are highly encouraged.

Therefore, in addition to the above in-the-pipeline projects, Thailand has identified key priority areas where the relevant proposals would be placed at high priority. These key areas are aimed to guide the GCF's accredited entities to bring forward project or programme ideas or concepts supporting climate action in line with the country's needs and priorities.

Abiding by its commitments under the Convention, Thailand has unceasingly undertaken climate actions in mitigation, adaptation, and enabling environment. Still, constraints and gaps remain primarily regarding access to finance, technical expertise, technology development and transfer, and capacity building. Support from international communities will help Thailand overcome these impasses and expose its full capacity to implement climate actions. Thailand's project and programme priority areas have been developed based on the constraints and gaps identified in *Thailand's 4th National Communication (2022)*¹⁷, which had gone through several consultations with various stakeholders and recently launched on UNFCCC website on 27 December 2022.

Thailand's mitigation measures focus on the energy and transport, IPPU, agriculture, and waste sectors accountable for overall national GHG emissions. In addition, with growing attention on the natural-based solutions for climate mitigation, forests and their carbon sequestration capacity have become subjects of research and technology development. Support in various types is still needed to ensure the achievement of Thailand's NDC and LT-LEDS.

According to the DCCE database, adaptation support is needed primarily for:

- Developing a data map showing areas at risk of climate change impacts. The map should show an overview and data on a specific sector (e.g., showing drought and floods for water management and agriculture sectors or showing ecological risks or disasters for the tourism sector)
- Developing assessment data on climate change impacts, using both models and observation data. The data includes loss or damage from impacts and effects on ecosystems, watershed cycle, life cycle of insects, various pathogens, and outbreaks of pathogens, including their impacts on food security, tourist attractions, and communities that settle near or rely on such natural resources.

¹⁷ Office of Natural Resources and Environmental Policy and Planning (2022). Thailand's Fourth National Communication. Accessed on 1st June 2023. Available at: [Thailand NC4_22122022.pdf \(unfccc.int\)](https://unfccc.int/Thailand_NC4_22122022.pdf)

- Creating a central data centre that manages and links information related to adaptation, research data, weather research, forecasting information (WRF-ARW model), and relevant information between fields, such as information on agriculture and water for effective management.

Based on the identified longlist of financial, technology, technical, and capacity-building support needed for climate-related components—i.e. mitigation and adaptation actions, as well as enabling environment—in the 4th National Communications, the shortlisted climate actions required supports in short- and medium-term period are determined as illustrated in Figure 3A. The process for the determination of these priority areas is documented in Annex 2 and five groups of climate interventions, together with examples of key actions, are formulated for Thailand’s key climate priority areas.

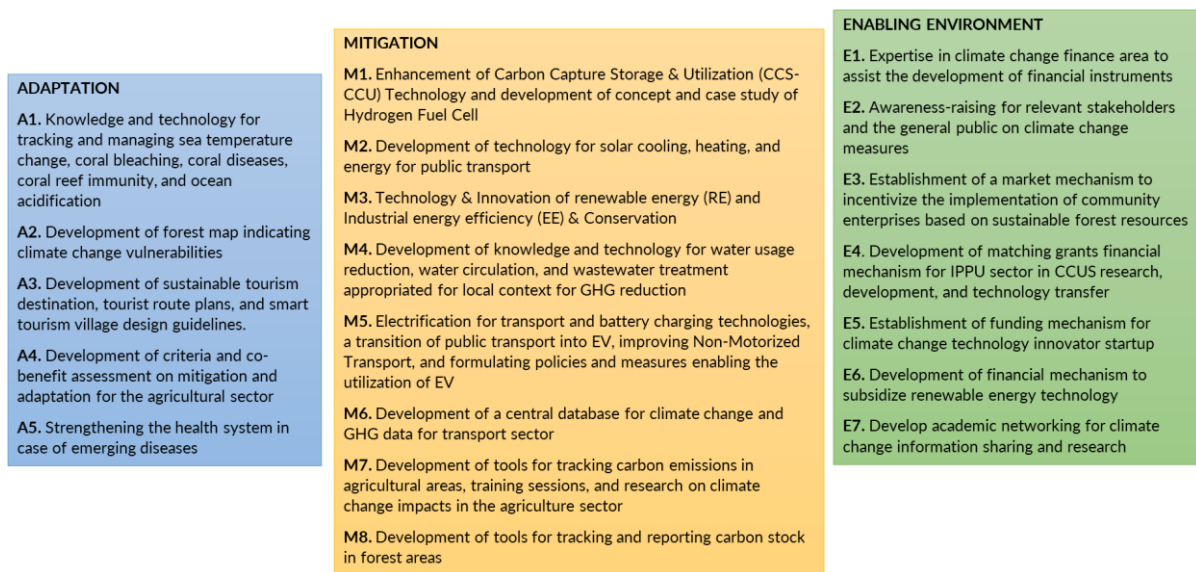


Figure 3A: Shortlisted climate interventions by components

Priority Area 1: Mitigation Strategies, Technologies, Systematic Planning and Best Practices

Thailand urgently needs support for the energy transition toward renewable sources focusing on renewable energy technologies (such as solar and wind); approaches in advanced energy storage system and demand-side management; development of electric vehicle (EV), battery, and infrastructures; and increasing grid modernisation, smart energy management, and Independent Power Supply (IPS). To achieve a well-rounded approach, support is equally needed for agriculture, waste, and LULUCF sectors. In a mid-term period, Thailand needs support to enhance the potential use of Carbon Capture Storage (CCS) & Carbon Capture, Utilisation, and Storage (CCUS) technologies in industries and power plants, and Bioenergy with CCS. Supports required over the short-term period, say GCF-2 cycle (2024-2027), should focused on, for example:

- Development of technology for solar cooling, heating, and energy for public transport
- Technology & Innovation of renewable energy (RE) and Industrial energy efficiency (EE) & Conservation
- Development of a central database for climate change and GHG data for transport sector

- Electrification for transport and battery charging technologies, a transition of public transport into EV, improving Non-Motorised Transport, and formulating policies and measures enabling the utilisation of EV
- Enhancement of Carbon Capture Utilisation & Storage (CCUS) Technology
- Development of concept and case study of Hydrogen Fuel Cell

Priority Area 2: Knowledge and Database Enhancement in Agriculture and Waste

For the waste and agriculture sectors, limited financial resources, capacity, and technology development at subnational and local levels for waste management systems remain key obstacles. In short- and medium-term period, Thailand needs support in enhancing the GHG reduction technologies in the agriculture and waste sectors such as the followings:

- Development of criteria and co-benefit assessment on mitigation and adaptation for the agricultural sector
- Development of knowledge and technology for water usage reduction, water circulation, and wastewater treatment appropriated for local context for GHG reduction
- Development of tools for tracking carbon emissions in agricultural areas, training sessions, and research on climate change impacts in the agriculture sector
- Development of tools for tracking and reporting carbon stock in forest areas

Priority Area 3: Advanced Adaptive Technologies and Crosscutting Area

The fundamental barriers to the implementation of adaptation measures are insufficient data integration and coordination on climate change projection and impacts, lack of a national climate information centre compiling climate-related information, insufficient knowledge and research on climate-related risks for key stakeholders to comprehend and implement appropriate adaptation measures, as well as limited access to adaptive technology. A disaster risk management is another crucial aspect to address these fundamental barriers, contributing to a more comprehensive and integrated approach to climate adaptation in Thailand. It reflects the commitment to overcoming challenges and fostering resilience across sectors, reinforcing the nation's dedication to proactive climate action. Some of supports needed in order to overcome these barriers include, but not limited to, the followings initiatives.

- Knowledge and technology for tracking and managing sea temperature change, coral bleaching, coral diseases, coral reef immunity, and ocean acidification
- Development of forest map indicating climate change vulnerabilities
- Development of sustainable tourism destination, tourist route plans, and smart tourism village design guidelines.
- Strengthening the health system in case of emerging diseases and disaster due to climate change.

Priority Area 4: Strengthening Climate Financing Mechanism

Incomplete systematic climate financing mechanism has been observed as one of the bottom-neck barriers for climate actions. Thailand requires appropriate financial and market mechanism to direct actions and financial flows. Pre-identified supports in the areas may include:

- Expertise in climate change finance area to assist the development of financial instruments

- Establishment of a market mechanism to incentivise the implementation of community enterprises based on sustainable forest resources
- Development of matching grants financial mechanism for IPPU sector in CCUS research, development, and technology transfer
- Establishment of funding mechanism for climate change technology innovator startup

Priority Area 5: Knowledge Sharing and Awareness Raising

For building a solid foundation suitable to enable climate actions in the country, Thailand still lacks formal and non-formal education and training programmes to improve knowledge and awareness of teachers, educators, students, stakeholders, and the general public on climate change at all levels, and networks for climate research and information. Such activities are deemed to be widely implemented in wide ranges of societal groups from spreading in public to embedding in formal educational systems.

- Awareness-raising for relevant stakeholders and the public on climate change measures
- Develop academic networking for climate change information sharing and research

CHAPTER 4: POLICY, STRATEGY, PLANNING, AND INSTITUTIONAL NEEDS

Climate Change Strategy, Policy and Plans¹⁸

The **Long-Term Low Greenhouse Gas Emission Development Strategy (LT-LEDS)** serves as Thailand's key driving climate change strategy, which is in accordance with Article 4 of the Paris Agreement, which requires all countries to develop and communicate a long-term strategy for low GHG emission development to the UNFCCC Secretariat aiming to limit global temperature from rising above 2°C or 1.5°C. Thailand sets long-term targets and guidelines for GHG reduction toward carbon neutrality by 2050 and net-zero emission in 2065 by identifying key measures in the sectors of energy, transport, IPPU, waste, agriculture, and LULUCF, which is the GHG removal sector of the country, for relevant agencies and sectors to use as operational guidelines.

The revised LT-LEDS was submitted to the UNFCCC on 7 November 2022. The revised LT-LEDS sets goals and measures aligning with an increase in global average temperatures of 1.5°C and moving toward carbon neutrality by 2050. It was developed by using the Asia-Pacific Integrated Assessment Model (AIMEnduse) to project the long-term low-level greenhouse gas emissions, including remedial policy measures for climate change adaptation action, and using a computable general equilibrium (AIM/CGE) model to assess the economic and environmental impacts of energy policy and others in the development of LT-LEDS. The document clearly illustrates a long-term perspective that prioritises not only the deployment of mitigation innovations but also emphasises addressing insufficient interventions, such as those associated with increased GHG emissions like fossil fuel usage. The current national plans used to develop and define LT-LEDS are as follows:

- 20-Year National Strategy 2018-2037
- Climate Change Master Plan 2015-2050
- Thailand Nationally Determined Contribution (NDC) 2021-2030
- National Energy Plan 2022
- Energy Efficiency Plan 2018-2037 (EEP 2018)
- Alternative Energy Development Plan 2018-2037 (AEDP 2018)
- Power Development Plan 2018-2037 (PDP 2018 Rev.1)
- The guideline for promoting electric vehicles (EV) under policy 30@30.
- National Industrial Development Master Plan 2012-2031
- Industrial Development Strategy of Thailand 4.0 2017-2036
- Thailand Forest Reference Emission Level and Forest Reference Level REDD+ under the UNFCCC
- 20-Year Strategy of the Royal Forest Department 2017-2036

The **2nd Updated NDC** was submitted to the UNFCCC on 4 November 2022. The revised NDC concept framework of Thailand is similar to that of Thailand's Long-Term Low Greenhouse Gas Emission Development Strategy (LT-LEDS). The revised NDC is carried out with reference to the planned implementation goals of each relevant Ministry in the energy, IPPU, Agriculture, LULUCF, and waste management sectors. The plans include the Energy Efficiency Plan 2018 - 2037 (EEP2018), the Alternative Energy Development Plan 2018 -

¹⁸ More detailed information available in Thailand's Fourth National Communication. Available at: [Thailand NC4_22122022.pdf \(unfccc.int\)](https://unfccc.int/nc4/22122022.pdf)

2037 (AEDP2018), the Power Development Plan 2018 – 2037 No. 1 revised edition (PDP2018 Rev.1), and the guidelines for the promotion of electric vehicles (EV) of the country according to the 30@30 policy. Measures from the agricultural sector were incorporated into the revised NDC goal and guidelines to reduce greenhouse gas emissions. The revised NDC guidelines and measures include:

- Energy and transport sector: The energy sector has the most significant potential to reduce greenhouse gas emissions. It includes measures to increase the energy efficiency of equipment/machines in power plants and renewable energy utilisation.
- IPPU sector, comprising clinker substitution measures and refrigerant replacement.
- Waste management sector consists of municipal solid waste management, domestic wastewater management, and industrial wastewater management.
- Agriculture sector consists of fixed dome digester biogas production measures and improvements in rice farming to reduce Methane emissions.

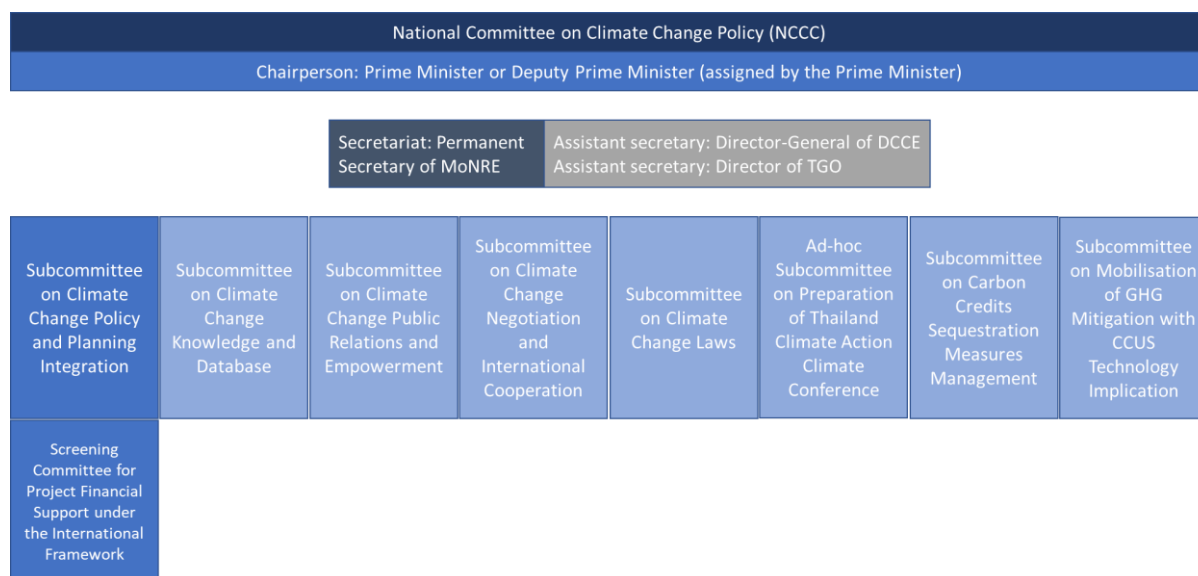
Thailand places significant emphasis on the harmonisation of its climate action plans, specifically the Nationally Determined Contributions (NDC) and National Adaptation Plans (NAP), ensuring a seamless transition from the planning phase to effective implementation. Moreover, the country actively and proactively engages with various environmental conventions, including but not limited to the United Nations Convention to Combat Desertification (UNCCD), the Convention on Biological Diversity (CBD), and the Montreal Protocol. This proactive involvement will foster a more comprehensive and collaborative approach towards addressing environmental challenges.

Institutional Arrangements and Policy Framework

Thailand has established an institutional arrangement to enable its access to the Green Climate Fund. It reflects a holistic and inclusive approach to addressing environmental concerns and also shows a commitment to involving various stakeholders in sustainable development efforts. The structure of the institutional arrangement is a three-layered approach, including a working group for technical aspects, a policy level for policy perspectives, and a higher authority for policy approval as indicated below.

1. **National Committee on Climate Change Policy (NCCC):** Thailand established the National Committee on Climate Change Policy (NCCC). The NCCC is chaired by the Prime Minister and has members from both the public and private sectors, including experts from relevant agencies. The NCCC has the mandate to define national climate policies and establish guidelines and mechanisms for international collaboration regarding conventions and protocols on climate change, including supporting and evaluating domestic relevant agencies to be in accordance with the national established policies and plans. The NCCC is composed of 8 subcommittees. *Figure 4A* shows the institutional arrangements of Thailand's NCCC.
2. **Subcommittee on Climate Change Policy and Planning Integration:** This committee is responsible for providing input on policy integration, strategy, and planning linked with climate mitigation and adaptation; providing suggestions on mechanisms and measures, legal regulations, and financial measures; and pushing forward an integrated budget allocation system on climate change. One of the working groups assembled within the subcommittee is the Screening Committee for Project Financial Support under the International Framework.

3. **Screening Committee for Project Financial Support Under the International Framework:** This is working group consists of representatives from related agencies such as finance and international cooperation, and cross sectoral experts. The committee is responsible for providing technical perspectives to projects/programmes requesting supports from international framework, technical instructions to develop related policies, and inputs to the Subcommittee on Climate Change Policy and Planning Integration.



Source: Department of Climate Change and Environment (DCCE)

Figure 4A: Structure of the National Committee on Climate Change Policy

Regarding the **legal framework**, DCCE is in the process of drafting Thailand’s Climate Change Act, which will empower public sectors to employ certain measures aimed at enhancing climate change mitigation and adaptation efforts. The Climate Change Act aims to increase the efficiency of climate actions in Thailand, put in place long-term adaptation to climate change, and promote sustainable development. The Climate Change Act stipulates that there should be climate projection and the risk and vulnerability assessments. In addition, the national central climate change database should be developed and accessible to the public so that the data can be used to assess the risks and impacts of climate change. The National Adaptation Plan will provide guidelines and measures to support adaptation to climate change and reduce the risks of climate change.

Policy and Institutional Needs

A “**GCF Readiness Needs Assessment**”¹⁹ (RNA) assesses a country’s human, institutional, and technical gaps and challenges that constrain its ability to programme, access, deploy, and monitor the financial resources available from the GCF. The RNA not only informs the country’s strategic approach to requesting Readiness Support but also helps to improve the quality of readiness proposals. The RNA covered (i) institutions and governance; (ii) policy environment; (iii) pipeline development; and (iv) information, data, and knowledge

¹⁹ GIZ (2023). GCF Readiness Needs Assessment.

management. The RNA development process included extensive stakeholder engagement. *Annex 3* provides the list of key interviewed stakeholders for the RNA.

The proposed 4-year GCF Readiness support programme 2024-2027 included in the RNA focuses on responding to the gaps in the institutions and governance; policy environment; pipeline development; and information, data, and knowledge management in Thai climate sector (see *Table 4A* for details).

Table 4A: Proposed Four Year Action Plan for GCF Readiness Support During GCF-2 (2024-2027)

Gaps	Outcomes	Outputs	Suggested Activities	Timeline
1. Institutions and Governance				
<ul style="list-style-type: none"> - NDA - systematic project prioritisation mechanism, private sector engagement procedures, targeted training for proposal assessment and management. - DAE applicants – climate science knowledge, pipeline development, technical support for application review process, and technical advice for accreditation process. - EE - GCF knowledge and EE obligations, advice on EE oversight tools during project implementation. - DP – insufficient domestic delivery partners. - Private sector – knowledge of internal carbon pricing and carbon/climate finance bankable project development. 	<p>1.1 The capacity of the NDA in systematically act as the GCF focal point and engage in GCF funded projects is strengthened.</p>	<p>1.1.1 Numbers of targeted training for NDA related to GCF, climate finance, GCF programming and management (10)</p> <p>1.1.2 Standard Operating Procedures and project management oversight tool for NDA (1)</p> <p>1.1.3 Numbers of forums organised by NDA to engage with various stakeholder to advance climate implementation (8)</p>	<ul style="list-style-type: none"> - Develop of Standard Operating Procedures for NDA roles and responsibilities, e.g. NOL, M&E of GCF funded projects, cycle to revise the Country Work Programme. - Develop project oversight tool for NDA to oversee GCF project implementation, monitoring, and reporting. - Elaborate 4-year NDA training plan. - Implement targeted trainings to DAE and key stakeholders on national/GCF policy change and requirements, GCF project management - reviewing, assessing, prioritising projects ideas, draft CNs and draft FPs. - Outreach and continuous dialogues to sectoral agencies on GCF mandates and opportunities 	<p>2024</p> <p>2024-2025</p> <p>2024</p> <p>2025-2027</p> <p>2025-2027</p>
	<p>1.2 The capacity of the DAEs, local EEs, and domestic DP is systematically strengthened</p>	<p>1.2.1 Number of accredited DAE (1)</p> <p>1.2.2 Numbers of targeted and tailor-made trainings/workshop for DAEs applicants (8)</p> <p>1.2.3 Standard Operating Procedures and project implementation oversight tools for local EE (1)</p>	<ul style="list-style-type: none"> - Technical support DAEs applicants during its application review process to meet accreditation standards (i.e. EFD and Kasikorn Bank) - Support targeted trainings/ workshop for DAE applicants in GCF business and meeting accreditation standards. - Support the development of for Standard Operating Procedure and oversight management and reporting tools for local EE on GCF funded project. <p><i>If the DAE candidates were accredited by the <u>end of 2025</u>, the following activities are recommended through DAE support modality (implemented</i></p>	<p>2024-2025</p> <p>2025-2026</p> <p>2025</p>

Gaps	Outcomes	Outputs	Suggested Activities	Timeline
			<p>directly by the DAE)</p> <ul style="list-style-type: none"> - Technical support to prepare DAEs for annual accreditation reviews and accreditation upgrade applications. - On the job training for high quality concept note and funding proposal development - Develop tools with training for reporting compliance 	
	1.3 The capacity of private sector to develop internal carbon pricing and carbon/climate finance bankable projects is strengthened.	1.3.1 Numbers of targeted and tailor-made trainings on bankable project development for targeted (4)	<ul style="list-style-type: none"> - Technical support for bankable project development based on Thailand GCF investment plan. - Develop internal carbon pricing tool and training for private sector 	2024-2027
2. Policy Environment				
<ul style="list-style-type: none"> - No legal framework on climate change yet - No clear implementation pathways and instruments - Unclear alignment of investment, incentives, technology, and regulatory framework to promote scaled-up investment. - Inadequate provision of climate related domestic financing - No de-risking tools to attract investment in priority sectors is in place. - Unclear socially responsive approach for 	2.1 Thailand's Country Programme, in line with LT-LEDS, NDC, and NAP, is approved by the NCCC	2.1.1 Updated country programme 2028-2031 that is aligned with LT-LEDS, NDC, and NAP (1)	<ul style="list-style-type: none"> - Review and update Thailand's Country Programme 2024-2027 in alignment with the NDC 2 and Thailand's GCF investment plan - Develop and adopt the next GCF Country Programme 2028-2031 which includes updated Readiness Need Assessment 	2025 2026-2027
	2.2 Thailand has concrete investment plan towards the GCF, and other international funding instruments which is approved by the NCCC	2.2.2 GCF investment plan based on LT-LEDS, NDC, and NAP (1) 2.2.3 Implementation progress of GCF investment plan (50%)	<ul style="list-style-type: none"> - Feasible study and recommendation on Thailand's engagement with the Private Sector Facility and existing instruments/mechanism from development banks - Costing of NDC measures and feasible investment plan for selected NDC sectors/measures 	2025 2026

Gaps	Outcomes	Outputs	Suggested Activities	Timeline
climate policy development			<ul style="list-style-type: none"> - Design appropriate financial instruments/de-risking tools for selected NDC and NAP measures - Develop and implement Thailand's GCF investment plan which is in line with Thailand's NDC and NAP. 	<p>2026</p> <p>2026-2027</p>
3. Pipeline Development				
<ul style="list-style-type: none"> - No systematic concept notes pipeline planning yet. - No concept notes to be built on pipeline planning, climate rationale, and GCF sectoral guideline basis 	3.1 Thailand has a concrete roadmap for GCF concept note development that is in line with the country investment plan (2.2)	3.1.1 Roadmap of GCF pipeline development in alignment with GCF investment plan (1) 3.1.2 Numbers of concept notes in alignment with GCF pipeline development roadmap (4)	<ul style="list-style-type: none"> - Develop roadmap for GCF concept note pipeline development based on Thailand's GCF investment plan. - Develop of concept notes and associated Project Preparation Facility requests with Thai DAE candidates as accredited entity 	<p>2024</p> <p>2025-2026</p>
4. Information, data, and knowledge management				
<ul style="list-style-type: none"> - Lack of assessing and communication tools for vulnerabilities and emission-reduction strategies in focused sectors and target groups. - Climate-relevant information is not yet easily accessible. - Lack of knowledge tools to link climate impacts in planning/budgeting process. - No MRV system of climate finance flows and the impacts of the activities 	4.1 Different target groups benefit from developed knowledge products	4.1.1 Numbers of (updated) knowledge products for low-carbon and resilient investment and implementation (2) 4.1.2 Numbers of stakeholders have access to developed knowledge products (200)	<ul style="list-style-type: none"> - Develop M&E system of climate finance policies and the impact to LT-LEDS, NDC, and NAP - Develop internationally accepted Thailand climate risk as well as loss and damage rationale. - Develop communication tools/products for climate risk information, emission reduction, climate investment strategy for selected target group. 	<p>2025</p> <p>2025-2026</p> <p>2026-2027</p>

For GCF-related activities, Direct Access Entities (DAEs) are deemed to play an important role in facilitating and accelerating the project implementation and financial access in the country. Currently, DCCE, acting as Thailand's NDA, aims to push forward nomination of the prospective DAEs (see *Table 4B*). Thus, Thailand will apparently carry on capacity supports for in-country entity accreditation during the period of GCF-2 cycle.

Table 4B: Thailand's plan on nomination for the application for DAE accreditation to the GCF

Priority ranking	Name of Entity	Type of DAE	Risk category	Impact Areas	Project size	Financing tools
1.	Environment Fund (Public Sector)	National	B	Mitigation, Adaptation	XS	Grants
2.	Kasikorn Bank (Private Sector)	National	A	Mitigation (Energy, Transport, Industries)	S, M	Loans, Guarantees, Equity
3.	Mekong River Commission (MRC)	Regional	B	Adaptation	S	Grants
4.	Export-Import Bank	National	B	Mitigation	M	Loans

Source: DCCE 2023

CHAPTER 5: MULTI-STAKEHOLDER ENGAGEMENT PROCESS

Initial Development of the Updated Country Programme

The updated Country Programme has been developed through a collaborative effort led by the Department of Climate Change and Environment (DCCE). The process began with a comprehensive review and analysis of national strategies, policies, and plans to ensure alignment and integration of climate objectives.

Based on these assessments, the initial project and programme priorities were formulated, serving as the foundation for further discussions and consultations. Subsequently, the proposed updates were presented during the first multi-stakeholder consultation held on 31 March 2023. The consultation brought together a wide range of key stakeholders who have actively participated in the process. This includes representatives from other government agencies at both national and sub-national levels, accredited entities, development partners, private sector entities, and civil society organisations (see *Annex 5*). The diverse participation of these stakeholders ensures a comprehensive and inclusive approach to shaping the updated Country Programme.

This multi-stakeholder consultation process serves as a vital platform for collective decision-making and consensus-building, ensuring that the updated Country Programme is well-informed, contextually relevant, and widely supported. The active engagement of stakeholders fosters a sense of shared responsibility and commitment towards achieving climate objectives and sustainable development goals without compromising the below principles.

- The intended **Beneficiaries** of the projects include vulnerable populations, groups and individuals – such as women, indigenous peoples, children, people with disabilities, local communities, and other specialised groups of people and individuals. When considering these beneficiaries or stakeholders it should be noted how they will be affected (or potentially affected) by GCF financed activities. Also, the beneficiaries and other stakeholders should be given due consideration in relation to stakeholder consultation and be enabled to participate in decision making on GCF projects and programmes.
- The **Principles of Inclusion, Equality and Non-discrimination** will apply with respect to stakeholder consultations and decision-making aligned with any existing capacities and applicable policies and priorities of the country on gender equality. More importantly, concerning should also place on be gender-sensitive and culturally-aware, if needed be.

Multi-Stakeholder Engagement Plan and Cycle

Over the 4-year period of GCF programming cycle, Thailand has proposed step-by-step engagement activities in order to ensure that priority projects and programmes can ultimately be developed into funding proposals for submission to the GCF, as well as for the alignment between country programmes and entity work programmes.

The cycle begins from the **Country Programme development** conducting periodically prior to the beginning of each GCF programming cycle. Scope and priorities will be first developed at national level amongst relevant government agencies. Then initial Country Programme will be further assessed with regional prospects and AEs' compatibilities before being finalised and having final consultation with public and private sectors.

The **Monitoring of Country Programme progress**, together with results sharing, are planned to be held annually in order to make it possible to control the good progress of the Country Programme according to the established priorities and schedule. Evaluation, acceleration and/or minor adjustment may be needed as appropriate. Besides, monitoring and evaluation will also have to be planned at individual project/programme level.

The **Country Programme update** will integrate findings from the previous cycle and the mid-term review, aligning them with the country's evolving circumstances and significant policy shifts. This iterative process will involve extensive consultations with both public and private stakeholders, culminating in finalisation every four years. Furthermore, this phase will initiate the collection of insights for the subsequent programming cycle (post-GCF-2). Moreover, it will entail the consolidation of knowledge and lessons learned from projects funded by the GCF.

Table 5A summarises periodicity and relevant stakeholders for each stage of Thailand's proposed multi-stakeholder engagement plan for the Country Programme development.

Table 5A: Thailand's proposed multi-stakeholder engagement plan for the Country Programme development

	Steps	Periodicity	Govt	AEs	DAEs	Private	CSOs	DPs
DEVELOPMENT	National-level development scope and priorities	Every 4 years	○					
	Aligning country's priorities with regional prospects and AEs' compatibilities	Every 4 years	○	○	○			
	Planned project/programme priorities consultation	Every 4 years	○	○	○	○	○	○
MONITORING	Country Programme progress (e.g. project pipeline, priority concept notes and/or Funding Proposals)	Annually	○	○	○			
	Overall funded project implementations	Annually	○	○	○	○	○	○
	Accreditation of Direct Access Entities	Annually	○	○	○			○
UPDATING	Mid-term review of the Country Programme against country's circumstances and any major policy changes	Biennially	○	□	□			
	Final review and Country programme updates, taken into account refined scopes, priorities and lessons learned	Every 4 years	○	○	○			
	Updated Country Programme public consultation	Every 4 years	○	○	○	○	○	○

Remarks: ○ = required, □ = subject to level of relevance

Annex 1: Overview of Thailand's Collaboration with International Climate Funds

Fund	Fund Objective(s)	Past and To-date Engagement
Adaptation Fund (AF)	The goal is to drive adaptation efforts and bolster resilience across various sectors such as agriculture, food and water security, disaster risk reduction, coastal management, forestry, as well as urban and rural development.	Thailand's first supported project by the climate change adaptation fund involves ecosystem-based adaptation in the context of South-South cooperation between Thailand and Vietnam in the Mekong Basin (Thailand and Vietnam – Mekong EbA South: Enhancing Climate Resilience in the Greater Mekong Sub-region through Ecosystem-based Adaptation in the Context of South-South Cooperation) by UNEP. This initiative, operated in Thailand by the Department of Water Resources and in Vietnam, has a budget of 7 million US dollars.
Mitigation Action Facility (MAF) (formally, Nationally Appropriate Mitigation Actions (NAMA))	Established in the year 2012 in Doha, Qatar, its objective is to accelerate development initiatives aimed at significantly reducing net carbon dioxide emissions as a means to limit global temperature rise to less than 2 degrees Celsius.	. Thailand has received support from the Mitigation Action Facility for two projects in the past: the RAC NAMA project (2016-2021) and the RICE NAMA project (2018-2022), totalling 29.6 million euros.
Global Environment Facility (GEF)	It supports projects related to biodiversity, waste management, chemicals, climate change, international waters, and land degradation. It also promotes integrated approaches to sustainable management of food systems, forestry, and sustainable cities in developing countries.	Thailand became a member of the GEF on 30 June 1994. The Ministry of Natural Resources and Environment serves as the Operational Focal Point, responsible for evaluating project endorsements seeking support from the GEF. Additionally, the Director-General of the Department of International Organisations, Ministry of Foreign Affairs, serves as the Political Focal Point, coordinating policy and operational guidelines for the fund. The Office of Natural Resources and Environmental Policy and Planning, now the Department of Climate Change and Environment, serves as the secretariat and filters projects seeking support from the Global Environmental Facility in the area of climate change.
International Climate Initiative (IKI)	The German Federal Ministry for Economic Affairs and Climate Action (BMWK) administers a fund aimed at supporting efforts related to climate change and biodiversity. This fund serves to bolster sustainable development strategies within countries and assist partner nations in fulfilling their NDCs.	Thailand has engaged in collaboration with IKI since 2009. Between 2009 and 2021, Thailand received funding of approximately THB2.16 billion. From 2022 to 2030, Thailand has received support for three programs, totalling around THB1.65 billion (46 million euros). These projects encompass policies such as reducing GHG emissions, adapting to climate change, biodiversity initiatives, and enhancing the Environment Fund's capacity to support climate change-related projects (ThaiCI).

Annex 2: Programme Priorities Determination

The process to obtain Thailand's priority areas involves a comprehensive and formal approach that ensures a systematic identification and categorisation of key focus areas. The following steps are followed to accomplish this:

Step 1 Thailand initiates the process by conducting a thorough review of its fourth National Communication (NC4). This review aims to identify any gaps and needs within the country's current climate actions. The findings from this review serve as a crucial foundation for prioritising future measures. Under the development of NC4, once the identified measures were compiled, each measure underwent a rigorous evaluation.

Step 2 Each identified measure is scored in order to determine a longlist of projects. The scoring of each project is subject to types of supports needed, as follows:

- Technology Development and Transfer (TT): support needed to develop and transfer innovative and practical technologies to support Thailand's actions on climate change.
- Technical Support/Assistance (TS): non-financial assistance needed from international specialists can take the form of sharing information and expertise, the transmission of working knowledge, and consulting services and may also involve the transfer of technical data, know-how and knowledge.
- Capacity Building (CB): support needed for developing and strengthening the skills, abilities, processes, and resources of organisations and stakeholders for planning and taking climate actions.
- Financial Support (FS): support needed in the form of money or financial instruments such as a grant, soft loan, equity, or guarantee to support and leverage government and private sector investment in climate actions.

The scoring system used to evaluate the barriers in climate investments in Thailand indicates that the highest score, denoted as 3, is assigned to the Financial Barrier (FB). This implies that the financial challenges associated with climate investments are considered the most critical and significant barrier in the context of Thailand.

Following the financial barrier, the technological barrier (TT) receives a score of 2, indicating its relatively lower but still notable level of significance. This suggests that limited confidence in and access to new technologies pose a moderate barrier to climate investments in the country.

In contrast, both the policy and regulation barrier (TS) and capacity barrier (CB) receive a score of 1, indicating a lower level of significance compared to the financial and technological barriers. While policy and regulatory uncertainties and capacity constraints are recognised as barriers, they are considered to have a relatively lesser impact on impeding climate investments in Thailand.

Step 3 Based on the scoring results, the high-priority measures are then categorised into five distinct priority areas. This categorisation provides a structured framework for addressing the most critical climate-related challenges faced by Thailand. It ensures a focused and targeted approach towards addressing these challenges effectively.

Step 4 To gather valuable insights and engage stakeholders, a consultation meeting is held. During this meeting, the steps and results of the Thailand Country Programme development are shared. Stakeholders are given the opportunity to provide input, feedback, and suggestions

regarding the proposed priorities and strategies. This collaborative approach ensures that diverse perspectives are considered in shaping the priority areas.

Step 5 Throughout the process, close consultation and collaboration are maintained with the Thai National Designated Authority (NDA). **The expertise and guidance of the NDA play a vital role in aligning the identified priorities with national climate change objectives.** Their input helps to ensure that the priority areas selected are in line with Thailand's broader sustainability goals.

Step 6 To validate the identified priorities and gauge actual demand, a validation survey is conducted. This survey allows for feedback collection from various stakeholders, including investors. It serves as a means to explore potential areas for investment and obtain insights into the practical needs and expectations of stakeholders.

Step 7 Taking into account the findings from the review, scoring, consultation, and validation processes, a comprehensive list of Thailand's priority areas is summarised. This list represents the key focus areas that require immediate attention and action to address climate change challenges effectively.

Annex 3: Thailand and its Engagement with GCF

The Green Climate Fund (GCF) is a financial mechanism established under the United Nations Framework Convention on Climate Change (UNFCCC) in 2010, during the 16th Conference of Parties (COP) in Cancun, Mexico. It commenced full-fledged operations in 2015, aiming to support a paradigm shift towards sustainable development with low greenhouse gas emissions and resilience to climate change. The fund allocates equal proportions of its resources for activities addressing greenhouse gas reduction and adaptation to climate change. Notably, 50% of the adaptation funding is specifically earmarked for particularly vulnerable countries, including the least developed countries, small island developing states, and African nations.

The Office of Natural Resources and Environmental Policy and Planning (ONEP), appointed by the Thai Cabinet on 10 March 2015, was the National Designated Authority (NDA) to the GCF for Thailand. On 17 August 2023, a Royal Decree (B.E. 2566) was issued regarding the name change from the Department of Environmental Quality Promotion to the Department of Climate Change and Environment and the Ministerial Regulation (B.E. 2566) was issued under the Ministry of Natural Resources and Environment. Therefore, the Department of Climate Change and Environment (DCCE) is now acting as the Thailand NDA to the GCF.

Engagements

Establishing a mechanism to engage with the Green Climate Fund (GCF) is crucial for a country to access climate finance, align with global climate goals, foster international collaboration, receive technical assistance, and enhance transparency. This proactive engagement not only increases the likelihood of securing financial support for climate projects but also ensures that the country contributes effectively to global efforts in mitigating and adapting to climate change.

Thailand has actively participated in various initiatives with the GCF, encompassing a broad spectrum of activities listed below.

- The NDA developed and disseminated the Thailand Country Programme framework to enhance Thailand's access to international climate funds, highlighting urgent needs in both mitigation and adaptation. Additionally, it published a guidebook outlining the procedures for proposing climate change projects seeking financial support from the Green Climate Fund, aimed at promoting transparency and awareness within Thailand's access processes.
- Thailand received GCF Readiness Support, encompassing nine national activities and one multi-country initiative. Specifically, Thailand secured support for the project Increasing resilience to climate change impacts in marine and coastal areas along the Gulf of Thailand (GCF NAP Marine), "Enhancing climate resilience in Thailand through effective water management and sustainable agriculture," implemented by UNDP of 3 million USD.
- Thailand received initial GCF support for two projects. The first, approved in October 2021 and implemented with UNDP, "*Enhances climate resilience in Thailand through effective water management and sustainable agriculture,*" (FP170) administered by the Royal Irrigation Department, receiving approximately 17.5 million USD in grant support. This project addresses climate-induced droughts and floods threatening agriculture livelihoods and infrastructure. The second project, approved in October

2023 and implemented with GIZ, “*Thai Rice: Strengthening Climate-Smart Rice Farming*,” (FP214) of 41.4 million USD in grant, administered by the Rice Department, the Environmental Fund Division, and the Bank for Agriculture and Agricultural Cooperatives, and aiming to shift smallholder rice agriculture onto a low-emission, climate-resilient trajectory. Both projects align with Thailand’s international commitments and domestic policies, emphasising mitigation efforts outlined in the current NDC (2022).

- The Green Climate Fund approved GCF Readiness Support for refining the Thailand Country Programme, drafting a Climate Finance Strategy, and advancing access to funds in the upcoming phase (GCF-2).
- Promotion of certification for in-country agencies as operational entities for the Green Climate Fund, involving both government environmental funds and private entities like Kasikorn Bank.
- Conducting Readiness and Needs Assessments and establishing project pipelines to facilitate and allocate resources from the Green Climate Fund.

Previous and current GCF Readiness and Preparatory Support Programmes

No.	Project Code	Project Title	Delivery Partner
1	GG-1705-14610 THA-RS-001	NDA strengthening and country programming support for Thailand through GIZ	GIZ
2	GG-1801-15029 THA-RS-002	Scaling up Thailand’s climate finance readiness	GIZ
3	GG-1801-15030 THA-RS-003	Advancing Thailand’s access to GCF	GGGI
4	GG-1803-15149 THA-RS-004	Enabling readiness for up scaling investments in building energy efficiency for achieving NDC goals in Thailand	UNEP-CTCN
5	GG-1810-15505 THA-RS-005	Strengthening the capacities of the Environmental Fund Division to serve as Thailand’s key national mechanism for climate finance	GIZ
6	GG-1810-15490 THA-RS-006	Increasing resilience to climate change impacts in marine and coastal areas along the Gulf of Thailand (GCF NAP Marine)	UNDP
7	GG-1908-15852 THA-RS-007	Developing GCF pipeline of projects from locally driven climate actions	TGO
8	THA-RS-008	Building project pipeline capacities: development of GCF concept notes in the transport and health sectors in Thailand	GIZ
9	APA-RS-003	Agriculture sector readiness for enhanced climate finance and implementation of Koronivia Joint Work on agriculture priorities in Southeast Asia (multi-year and multi-country programme: Thailand, Cambodia, Lao PDR, Malaysia, Philippines, and Viet Nam)	FAO
10	THA-RS-009	Readiness support for the accreditation of Kasikornbank, updating of Thailand’s Country Programme, development of climate finance strategy, and design of blended circular economy financing facility	GGGI

Annex 4: Key Stakeholders for Assessing Policy and Institutional Needs

Ms. Krittaya Chunhaviriyakul	ONEP (functioned as NDA at the time), 31 March 2023
Mr. Ittiporn Intravisit	Kasikorn Bank, 3 May 2023
Mr. Non Kitkumthorn	EXIM Bank – by questionnaire
Environment Fund Division	– by questionnaire

Annex 5: Key Stakeholders for Programming Strategy

Event: First Consultation Workshop

Date: 31 March 2023

List of Participants:

Ministry of Natural Resources and Environment

- Office of Natural Resources and Environmental Policy and Planning
 - Climate Change Management and Coordination Division
 - Strategy and Planning Division
 - Biodiversity Management Division
 - Environmental Fund Division
- Office of Permanent Secretary
- Department of Marine and Coastal Resources
 - Mangrove Research and Development Institute
 - Marine and Coastal Resources Research & Development Institute
- Department of Water Resources
 - Water Resources Conservation and Rehabilitation Division
 - Research Development and Hydrology Division
- Pollution Control Department
 - Strategy and Planning Division
- Royal Forest Department
 - Climate Change Coordination Section
- Thailand Greenhouse Gas Management Organization (Public Organization)
 - Low Carbon Policy and Technical Support Office

Ministry of Agriculture and Cooperatives

- Department of Agriculture
 - Field and Renewable Energy Crop Research Institute
 - Horticulture Research Institute
 - Rubber Division
- Rice Department
 - Division of Rice Research and Development

Ministry of Energy

- Department of Alternative Energy Development and Efficiency
 - Strategy and Planning Division
- Energy Policy and Planning Office
 - Strategy and Planning Division

Ministry of Transport

- Office of Transport and Traffic Policy and Planning
 - Bureau of Regional Transport and Traffic System Promotion
 - Bureau of Safety Planning

Ministry of Industry

- Department of Industrial Works
 - Hazardous Substance Management Division

Ministry of Finance

- Public Debt Management Office
 - Policy and Planning Bureau
- Fiscal Policy Office
 - International Organisation Cooperation Section, Bureau of International Economic Policy

Public agencies and state enterprises

- Office of the National Economic and Social Development Council
 - Natural Resource and Environmental Development Strategy Division
- Office of the National Water Resources
 - Budget and Project Analysis Division
 - Policy and Master Plan Division
 - Foreign Affairs Division
- Electricity Generating Authority of Thailand
 - Project Environment Division
- Export - Import Bank of Thailand

Other agencies

- PTT Public Company Limited
- Stock Exchange of Thailand
- The Thai Bankers' Association
- The Federation of Thai Industries
 - Climate Change Institute
 - Thai Cement Manufacturers Association
- GIZ

Event: Public Hearing

Date: 1 November 2023

List of Participants:

Ministry of Natural Resources and Environment (MoNRE)

- Department of Climate Change and Environment (DCCE)
- Department of Marine and Coastal Resources (DMCR)
- Department of National Park Wildlife and Plant Conservation (DNP)
- Environmental Fund Division, Office of Natural Resources and Environmental Policy and Planning (ONEP)
- Foreign Affair Division
- Pollution Control Department (PCD)
- Royal Forest Department (RFD)
- Thailand Greenhouse Gas Management Organization (Public Organization) (TGO)

Ministry of Agriculture and Cooperatives

- Department of Agriculture
- Department of Fisheries
- Land Development Department
- Office of Agricultural Economics (OAE)
- Rice Department
- Royal Irrigation Department
- Agricultural Research Development Agency (Public Organization) (ARDA)

Ministry of Digital Economy and Society

- Thai Meteorological Department

Ministry of Education

- Institute for the Promotion of Teaching Science and Technology (IPST)

Ministry of Energy

- Department of Alternative Energy Development and Efficiency (DEDE)
- Energy Policy and Planning Office (EPPO)
- Electricity Generating Authority of Thailand (EGAT)

Ministry of Finance

- Fiscal Policy Office
- Public Debt Management Office

Ministry of Higher Education, Science, Research and Innovation

- National Research Council of Thailand
- Office of National Higher Education Science Research and Innovation Policy Council (NXPO)
- Hydro-Informatics Institute (Public Organization)

Ministry of Industry

- Department of Industrial Works (DIW)

Ministry of Interior

- Comprehensive Planning Bureau, Department of Public Works and Town and Country Planning
- Provincial Electricity Authority (PEA)

Ministry of Tourism and Sports

- Department of Tourism

Ministry of Transport

- Department of Airports
- Marine Department

Public Agencies

- Bangkok Metropolitan Administration (BMA)
- Office of the National Economic and Social Development Council (NESDC)
- Office of the National Water Resources
- Hydrographic Department, Royal Thai Navy

Financial Sector

- Export-Import Bank of Thailand
- Kasikorn Bank
- Thai Credit Guarantee Corporation
- The Stock Exchange of Thailand

Foundation/NGOs/Private Sector

- Energy for Environment Foundation (E for E)
- Sustainable Development Foundation-SDF
- Thai Cement Manufacturers Association (TCMA)
- Thai Renewable Energy (RE100) Association
- Thailand Development Research Institute (TDRI)
- Thailand Environment Institute (TEI)
- The Energy Conservation Center of Thailand

International Organisations

- Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)
- Food and Agriculture Organization of the United Nations (FAO)
- Global Green Growth Institute (GGGI)
- Institute for Global Environmental Strategies (IGES)
- The World Bank
- United Nations Children's Fund (UNICEF)
- United Nations Development Programme (UNDP)
- United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP)
- United Nations Environment Programme (UNEP)
- United Nations Human Settlements Programme (UN-Habitat)
- United Nations Industrial Development Organization (UNIDO)

Annex 6: Brief Project Information regarding each Prospective Funding Proposal

All prospective project information is extracted from draft Concept Notes available at the time of this document being formulated.

Electrified intercity bus with green terminals

The transportation sector in Thailand contributed to 25.32% of all GHG emissions in 2016 (66.66 MtCO_{2e}) where road transportation is a major polluter (accounts for 96% of total GHG emissions from transportation sector). The traditional fossil fuel-powered engines intercity bus also emits GHG at 1.01 MtCO_{2e} per year or 1.52% of total transportation sector GHG emission. As part of Thailand's Nationally Determined Contributions (NDC), the target is to reduce GHG emissions in the transportation sector by 31 MtCO_{2e} by 2030.

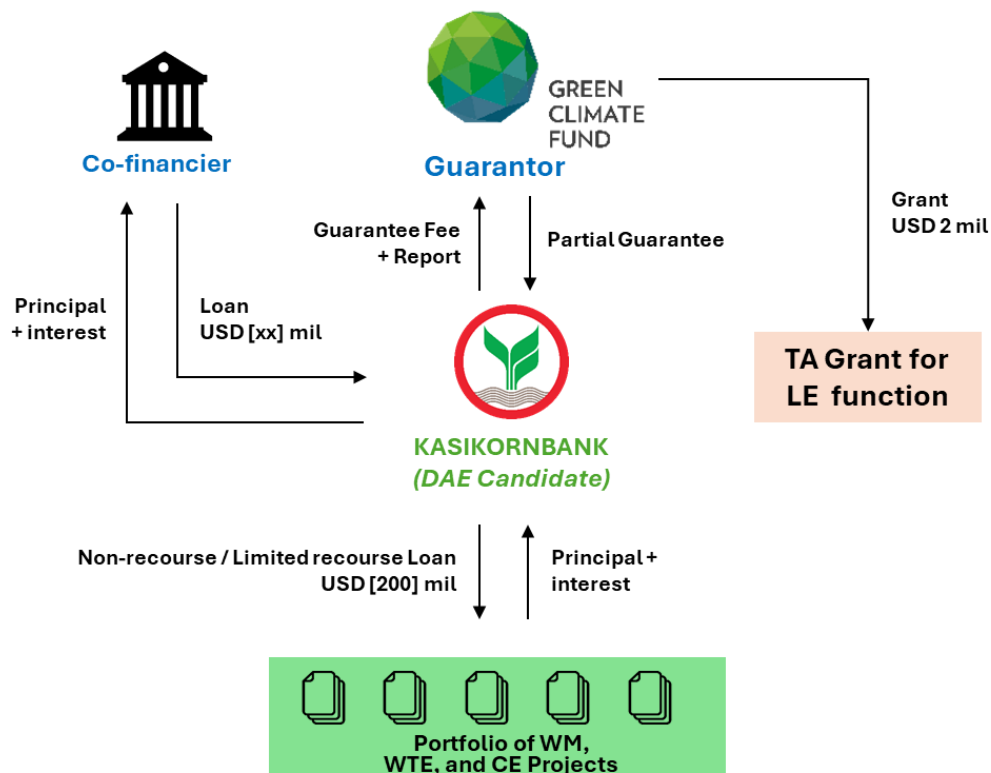
In terms of climate change, Thailand is considered highly vulnerable, with increased risks of natural disasters such as flooding, increased rainfall, droughts, and higher sea levels. These climate risks, especially flooding, pose significant challenges to public transportation including intercity bus services by obstructing continuity of the bus services and hindering the use of public transportation. The central and north-eastern part of Thailand are considered high risk in flooding during September to November, considering historical data of flooding events in 2015 – 2019.

The prospective intervention aims to address these vulnerabilities and mitigate GHG emissions through the adoption of sustainable and low-emission transport practices. This programme emphasises the need to establish a sustainable transport system by reducing the need for personal motorised travel, promoting active transport and public transport, and electrifying intercity buses. By transitioning intercity buses from traditional fossil fuel-powered engines to electric vehicles (EVs), the intervention aims to reduce GHG emissions associated with conventional buses. Additionally, it seeks to enhance resilience to climate change impacts by improving infrastructure and promoting adaptation measures in the intercity bus sector.

Thailand Circular Economy Financing Facility (T-CEFF)

Thailand Circular Economy Financing Facility (T-CEFF) is a risk-sharing instrument that supports SMEs and middle market project developers to accelerate the country's circular economy transition in a close alignment with the Nationally Determined Contributions (NDCs), the Sustainable Development Goals (SDGs), and the BCG Economic Model. Working on the basis of additionality, alignment, and non-crowding, T-CEFF is aimed at reducing greenhouse gas emissions by promoting projects in municipal solid waste (MSW) management, waste-to-energy (WTE), and other potential circular economy (CE) sub-sectors. It seeks to overcome barriers to investment in these sub-sectors by offering financial products and risk-sharing mechanisms, thus attracting private sector investment.

T-CEFF will be set up by Kasikornbank (KBank), a Direct Access Entity (DAE) candidate to the Green Climate Fund (GCF), with potential participation from the selected international development finance institutions (DFIs) as co-investors with more favorable financing terms and softer conditions. Through T-CEFF, KBank and other participating DFIs will provide financing to support a USD 200 million loan portfolio in the MSW, WTE, and other CE sub-sectors across a portfolio of 6-8 projects. USD 100 million of GCF funding is structured as a partial loan guarantee to T-CEFF as a credit enhancement instrument to improve the creditworthiness of the borrowers and reduce the lender's risk exposure in case of default. KBank will be responsible for the detailed loan portfolio management which includes loan assessment, monitoring, reporting, and verification (MRV). A technical assistant (TA) grant funding from GCF of USD 2 million is also proposed to engage independent engineering firms as lender's engineers (LEs) to assess and manage risks associated with CE projects under T-CEFF. LE grant improves project credibility and viability for lenders, increasing the chances of securing financing.



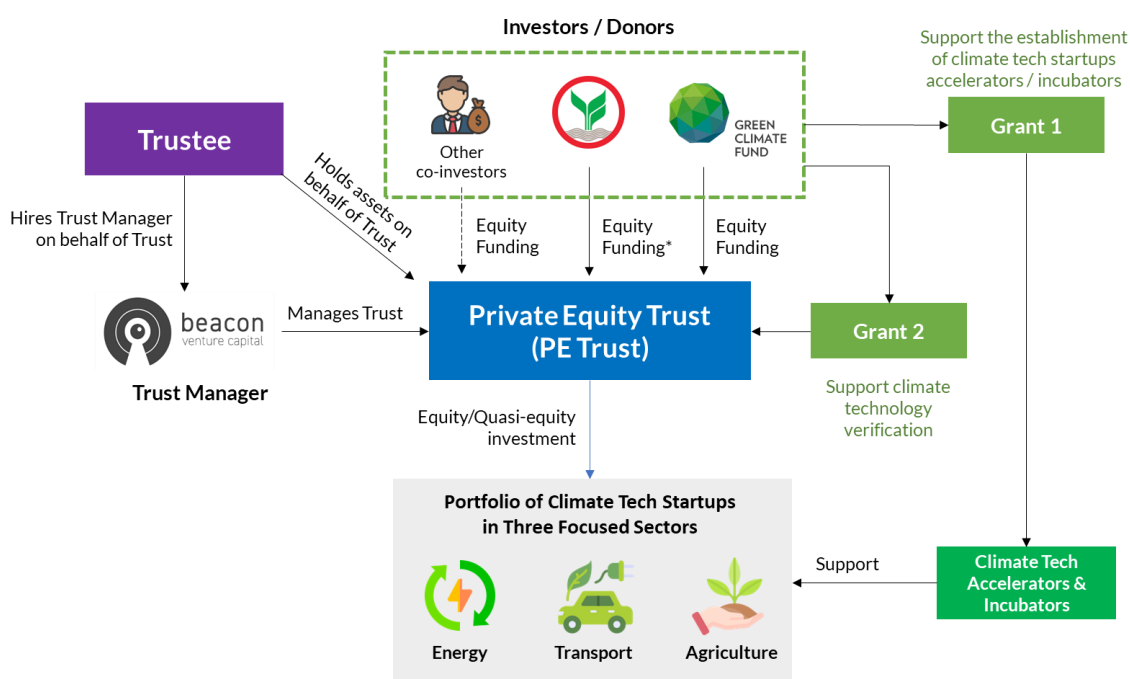
Thailand Climate Technology Private Equity Trust Fund

The project's climate rationale is rooted in the urgent need to catalyse the growth of Thailand's climate tech startups sector. By addressing the funding gap and providing targeted support, the initiative seeks to accelerate the development and deployment of innovative climate technologies, positioning Thailand as a regional leader in climate innovation. The primary objective of the project is to establish a robust financial and support ecosystem that empowers early-stage climate tech startups in Thailand. This will be achieved through two integral components:

1) Private Equity (PE) Trust Fund Establishment and Capital Mobilisation: A dedicated PE Trust Fund, governed by Thai securities regulations, will be established, serving as a conduit for channelling resources towards climate tech startups. The Trust will secure investments from Kasikornbank (KBank) and the Green Climate Fund (GCF), with a collective aim to raise USD 100 million, thereby kickstarting a sustainable flow of capital into the climate tech ecosystem.

2) Technical Assistance Grant: GCF funding will be provided in the form of Technical Assistance Grants to create specialized accelerators and incubators tailored exclusively for climate tech startups. These grants will also support the engagement of third-party experts to verify the technologies being developed, ensuring that they meet high technical standards and are viable for scaling. This combined approach will provide startups with the necessary resources, mentorship, and risk mitigation, fostering a culture of innovation and enhancing the chances of successful commercialization within the sector.

The project will be executed through a collaborative effort between the executing entity, KBank, and the GCF, both of whom will serve as equity investors in the PE Trust Fund. A licensed third-party trustee will oversee the trust's assets, ensuring diligent management. Additionally, Beacon Venture Capital ("Beacon VC"), a wholly-owned corporate venture capital fund of KBank, will act as the Trust Manager, leveraging their expertise in managing investments in climate technology startups.



Climate-Resilient and Low-Carbon Healthcare Facilities in Thailand

Climate change has increasingly adverse impacts on Thai people's health and well-being. Extreme weather events, such as floods, storms, and droughts, can also indirectly affect people's health by threatening the capacity of the health systems and healthcare facilities to protect the health of their populations. Several healthcare facilities in Thailand, particularly those in the high climate risk areas, were not built to cope with increasing risks from climate change and lack proper infrastructure to protect them from extreme weather events. On many occasions, extreme weather events, especially floods, have destroyed and damaged healthcare facilities as well as causing disruption to medical services. These healthcare facilities also emit greenhouse gases (GHGs) through energy consumption, procurement of medical products, and insufficient waste and wastewater management.

The proposed project focuses on (i) upgrading the current health surveillance and early-warning systems; (ii) developing integrated health and climate data; (iii) enhancing the capacities of health personnel and healthcare facilities for emergency management in extreme weather events; (iv) equipping the healthcare facilities in the selected intervention zones with climate-resilient infrastructure; (v) ensuring that healthcare facilities can provide continuous medical services to patients and the local population through improved logistics and construction of safe rooms; and (vi) strengthening the climate change and health literacy of local populations and the health workforce so that appropriate actions can be taken to address health challenges in case of climate emergencies. The proposed project also envisages helping the healthcare facilities in the intervention area in reducing the GHG emissions by switching to renewable energy, implementing energy efficiency measures, and upgrading the waste and wastewater management.

Climate and Health Co-Investment Facility Coordination Programme

Climate change has already driven an increase in morbidity and mortality and is projected to further alter the geographical range and numbers of injuries, illnesses and deaths from climate-sensitive health risks, and to affect the functioning of public health and health care systems. An excess of 250,000 deaths annually due to climate change has been projected between 2030 and 2050. Rapidly increasing temperatures has led to 68% increase in heat-related deaths among vulnerable groups between 2000–04 and 2017–21. According to WHO, if no additional actions are taken, substantial increases in morbidity and mortality are projected for a wide range of health outcomes over the coming decades. Vulnerable populations and geographical regions will be affected differently, with increases in poverty and inequities linked to climate change and health impacts. Furthermore, health care sector contributes over 5% of net global climate emissions. COP26 (2021) set a global ambition to build climate resilient and sustainable health systems and promote the integration of climate change and health into respective national, regional, and global plans with the leadership of WHO-led Alliance for Transformative Action on Climate and Health. Financing the COP26 health commitments on climate resilient and sustainable low carbon health systems is recognised as a central challenge and an urgent priority in order to mitigate the negative impacts of climate change on health and health systems.

The proposed GCF Programme will support the design, operation and coordination of a strategic multi-partner Co-investment Facility for transformative action on climate and health. This demand-driven global coordination and financing framework on climate and health will support national healthcare systems to access, leverage and deliver technical assistance and climate investment in order to accelerate transformative action on climate and health at both national and global levels, increase climate resilience of health services and vulnerable communities, and reduce GHG emissions from the health sectors. The GCF Programme will align, catalyse and consolidate domestic and international public and private investment flows into climate resilient and low carbon health systems and services thus resulting in improved resilience of health services and facilities, improved health outcomes and reduced greenhouse gas (GHG) emissions from health care. By leveraging public and private partnerships, the Programme will define a menu of tailored blended financial instruments to best address funding demands of the national health systems.

The programme will also provide strategic catalytic funds in support of the countries' implementation of the COP26 Health Commitments and demonstrate integrated solutions for climate resilient and sustainable low carbon health systems through selected pilot projects to be further upscaled through the Co-Investment Facility.