

Kingdom of Thailand

Sustainability-Linked Financing Framework

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สำนักงานบริหารหนี้สาธารณะ
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Contents

	1
1. INTRODUCTION AND RATIONALE	3
1.1 THE KINGDOM OF THAILAND’S COMMITMENT TO THE PARIS AGREEMENT	3
1.2 KEY POLICIES TARGETING CLIMATE CHANGE MITIGATION AND ADAPTATION	7
1.3 THAILAND’S DRAFT NATIONAL ENERGY PLAN, POWER DEVELOPMENT PLAN, AND ALTERNATIVE ENERGY DEVELOPMENT PLAN	10
1.4 THAILAND’S COMMITMENT TO BIODIVERSITY CONSERVATION	11
2. THE KINGDOM OF THAILAND’S SUSTAINABILITY-LINKED FINANCING FRAMEWORK	16
2.1 SELECTION OF KEY PERFORMANCE INDICATORS (KPIs)	17
2.2 CALIBRATION OF SUSTAINABILITY PERFORMANCE TARGETS (SPTs)	22
2.3 CHARACTERISTICS OF SUSTAINABILITY-LINKED FINANCE INSTRUMENTS	26
2.4 REPORTING	27
2.5 VERIFICATION	27
3. SECOND-PARTY OPINION	28

1. Introduction and Rationale

The Kingdom of Thailand (“**Thailand**” or “**KOT**”) continues to recognize climate change as one of the most critical factors affecting economic development, communities’ livelihood and sustainable development. Notwithstanding that Thailand accounts for less than 1% of global emissions in 2013 and 0.5% of global net greenhouse emissions in 2019, Thailand continues to place high priority to pursue efforts to limit the increase to 1.5°C under the Paris Agreement.

Thailand became a party to the United Nations Framework Convention on Climate Change (“UNFCCC”) in 1994 and subsequently ratified the Kyoto Protocol in 2002 and the Paris Agreement in 2016. In line with these commitments, Thailand announced the advancement of its net-zero emissions target to 2050, accelerating its previous 2065 goal to align with the 1.5°C pathways. Thailand also remains committed to supporting the United Nations Sustainable Development Goals (“SDGs”) to combat poverty, inequality, and environmental degradation, and to realize improvements in health and justice by 2030.

1.1 The Kingdom of Thailand’s Commitment to the Paris Agreement

Thailand’s carbon neutrality and net zero greenhouse gas (“GHG”) emissions pathway have been developed based on the country’s aspiration to contribute to global efforts to achieve mid-century carbon neutrality and net zero GHG emissions, in line with the Paris Agreement. Thailand has mainstreamed the climate change agenda into its national plans, including the 20-Year National Strategy, National Economic and Social Development Plans, Climate Change Master Plan, National Adaptation Plan, Nationally Appropriate Mitigation Action (NAMA), and Nationally Determined Contributions (“NDCs”).

Further to Thailand’s submission of its revised **Long-Term Low Greenhouse Gas Emission Development Strategy (LT-LEDS)**¹ and **2nd Updated NDCs (NDC 2.0)**² to the UNFCCC ahead of COP27 in 2022, Thailand has progressively strengthened its climate ambition through successive NDC submissions. In November 2025, the KOT approved and submitted the **second updated NDC (NDC 3.0)**³ to the UNFCCC, which provides the framework for reducing GHG emissions during the period 2031–2035 to effectively demonstrate and enhance its national efforts in mitigating GHG emissions and address the impacts of climate change.

KOT’s NDC 3.0 was developed with domestic institutional arrangements, public participation, and engagement with local communities, including gender-responsive considerations with outcomes of the UNFCCC’s global stocktake taken into consideration. Thailand’s NDC 3.0 reflects enhanced ambition including:

- **Economy-wide absolute target:** NDC 3.0 sets a net GHG emissions ceiling of 152 MtCO₂e by 2035, a reduction of 47% (135.2 MtCO₂e) from the 2019 baseline of 287.2 MtCO₂e net emissions. This marks a fundamental shift from the previous business-as-usual (“BAU”) formulation, improving comparability with international peers and investor transparency. In addition, NDC 3.0 targets key sectors including energy and transport, industrial processes and product use, agriculture, land use, land-use change and forestry and waste.
- **Land Use, Land-Use Change and Forestry (“LULUCF”) now in scope:** Excluded under Thailand’s NDC 2.0, NDC 3.0 encompasses LULUCF removals within its economy-wide absolute GHG reduction target which covers all anthropogenic emissions and removals across various Intergovernmental Panel on Climate Change (“IPCC”) sectors under NDC 3.0. This reflects the critical role of forests and land

¹ https://unfccc.int/sites/default/files/resource/Thailand%20LT-LEDS%20%28Revised%20Version%29_08Nov2022.pdf

² <https://unfccc.int/sites/default/files/NDC/2022-11/Thailand%202nd%20Updated%20NDC.pdf>

³ <https://unfccc.int/sites/default/files/2025-11/TH%20NDC%203.0.pdf>

management, estimated to provide 118 MtCO₂e and 120 MtCO₂e of net annual removals by 2035 and 2037 in the net zero pathway.

- **Accelerated net zero targets:** Thailand's net zero target has been brought forward by 15 years from 2065 to 2050, aligning Thailand with the IPCC 1.5°C pathway.
- **Implementation period 2031–2035:** NDC 3.0 establishes an implementation period running from 1 January 2031 to 31 December 2035 and a single target year of 2035. Thailand has also committed to peaking gross GHG emissions before 2030.
- **Intention to use voluntary cooperation under Article 6 of the Paris Agreement:** During the previous NDC period (2021–2030), Thailand engaged in cooperative approaches under Article 6.2 with countries such as Switzerland, Japan, and Singapore, and authorizing pilot mitigation activities potentially resulting in the transfer of internationally transferred mitigation outcomes (“ITMOs”). For NDC 3.0 (2031–2035), Thailand is considering the use of ITMOs in line with future policy decisions and the established national guidelines.

Table 1: Progress of Thailand's Climate Mitigation Targets under the NDC

	NDC 1.0	NDC 2.0	NDC 3.0
Timeframe	2021-2030	2021-2030	2031-2035
GHG emission reduction target	20% reduction from the projected BAU level by 2030 (BAU 2030: approx. 555 MtCO ₂ e)	30% reduction from projected BAU level by 2030 (BAU 2030: approx. 555 MtCO ₂ e)	47% net emission reduction from 2019 by 2035 (2019 Baseline: 287.2 MtCO ₂ e)
Target GHG emissions level	Approx. 444 MtCO ₂ e by 2030	Approx. 388.5 MtCO ₂ e by 2030	152 MtCO ₂ e by 2035
Net Zero Goals	N/A	Carbon Neutrality by 2050 Net-Zero by 2065	Net Zero by 2050
Sectors In-Scope	Economy-wide	Economy-wide, excluding LULUCF	Economy-wide, including LULUCF
Date of Submission	Sep 2016 (updated in October 2020)	Nov 2022	Nov 2025

Thailand's updated NDC 3.0 takes into account key national plans and policies, including the 13th National Economic and Social Development Plan (2023–2027), 2022 National Energy Plan Framework, Climate Change Master Plan (2015–2050), Power Development Plan (2018–2037), Thailand Smart Grid Development Master Plan (2015–2036), Energy Efficiency Plan (2018–2037), Alternative Energy Development Plan (2018–2037), Master Plan for Sustainable Transport System and Mitigation of Climate Change Impacts (2013–2030), National Industrial Development Master Plan (2012–2031), and Waste Management Roadmap.

Thailand's **National Adaptation Plan (NAP)** (2024) defines six priority sectors for increasing climate resilience: 1) water resources management, 2) agriculture and food security, 3) tourism, 4) public health, 5) natural resources management, and 6) human settlements and security. NAP implementation is still at an early stage and will be underpinned by adaptation action plans (under development as of November 2025). At the moment, a monitoring system for NAP implementation is under development and expected to be piloted by late 2026.

According to the Paris Agreement, all Parties to the Convention and the Paris Agreement are required to submit national inventories of GHG emissions and removals, in accordance with the Modalities, Procedures and Guidelines (“MPG”), for the Transparency Framework for Action and Support Referred to in Article 13 of the Paris Agreement (Decision 18/CMA.1 Annex). In December 2024, Thailand submitted its **First Biennial Transparency Report (BTR1)**⁴ which contains updates of national GHG inventories, with national GHG emission data from 2000-2022, including a national inventory report and information on tracking progress of the implementation and achievement of NDCs, needs and support received, prepared in accordance with the MPGs.

Institutional Arrangement toward Climate Change

Thailand’s National Committee on Climate Change Policy (“NCCC”), established in 2007, is the main decision-making body for climate change management in Thailand. The NCCC is chaired by the Prime Minister with the Ministry of Natural Resources and Environment (“MNRE”) serving as its Secretariat. Its members include representatives from relevant government agencies, including sectoral ministries such as the Ministries of Foreign Affairs, Tourism and Sports, Transport, Digital Economy and Society, Energy, Commerce, Interior, Labor, Education, Public Health, Industry, Agriculture and Cooperatives, and Higher Education, Science, Research and Innovation, as well as the Ministry of Finance, the Bureau of the Budget, experts from academia and the private sector, and other relevant stakeholders.

The NCCC is responsible for considering and approving national climate change policies, strategies, guidelines, and mechanisms for international cooperation. It also oversees national climate mechanisms, monitors and evaluates implementation outcomes, and approves selected internationally funded climate projects and activities. The NCCC is supported by nine subcommittees, chaired by MNRE, with the Department of Climate Change and Environment (“DCCE”) serving as the Secretariat. These subcommittees provide technical inputs and review policy proposals before they are submitted to the NCCC for consideration.

Line ministries and their subordinate agencies, including but not limited to the Ministry of Energy, Ministry of Transport, Ministry of Agriculture and Cooperatives, and Ministry of Industry, are responsible for sectoral planning and implementation. They also serve as primary collectors of sectoral emissions data, which is relevant to the preparation of Thailand’s Biennial Transparency Reports under the UNFCCC.

The NCCC comprises nine subcommittees:

- 1) Subcommittee on Climate Change Policy and Planning Integration;
- 2) Subcommittee on Climate Change Knowledge and Database;
- 3) Subcommittee on Climate Change Negotiation and International Cooperation;
- 4) Subcommittee on Public Relations and Actions for Climate Empowerment;
- 5) Subcommittee on Climate Law;
- 6) Subcommittee on the Mobilization of GHG Mitigation with Carbon Sequestration in the LULUCF Sector;
- 7) Subcommittee on the Mobilization of GHG Mitigation with Carbon Capture, Utilization, and Storage (“CCUS”) Technology Implications; and
- 8) Subcommittee on Preparation of project proposals to study approaches for the prevention and mitigation of coastal erosion in the Upper Gulf of Thailand
- 9) Ad-hoc Subcommittee on Preparation of Thailand Climate Action Conference

⁴ <https://unfccc.int/sites/default/files/resource/THAILAND%E2%80%99S%20BTR1.pdf>

Approval and Methodology of Thailand’s LT-LEDS

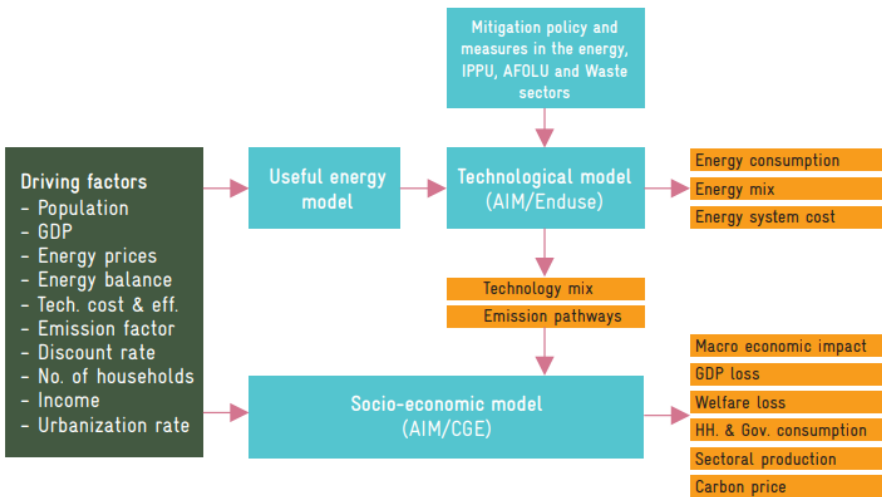
The preparation and approval process of Thailand’s LT-LEDS includes a domestic consultative process among various interministerial working groups and relevant stakeholders to identify a set of long-term mitigation actions in the energy, transport, industrial processes and product use (“IPPU”), waste, agriculture, and LULUCF sectors.

A national consultation was organized for feedback and discussions on the outcome of the technical study, followed by consideration and approval from the interministerial working group, the Subcommittee on Climate Change Policy and Planning Integration, the NCCC, and the Cabinet, before submission to the UNFCCC. A similar approval process was undertaken for the preparation of the National Adaptation Plan, which provides a basis for Thailand’s Climate-Resilient Development Pathway.

In this context, the Department of Climate Change and Environment is currently updating Thailand’s LT-LEDS to align with the Government’s policy directions and the enhanced NDC 3.0, which sets more ambitious GHG mitigation targets. The updated LT-LEDS is intended to support Thailand’s pathway toward achieving net zero GHG Emissions by 2050, consistent with the 1.5°C pathway, and is expected to be completed and officially submitted to the UNFCCC before COP 31 in November 2026.

In terms of the methodology used to determine Thailand’s net zero pathway, the Asia-Pacific Integrated Model (“AIM”)/End-Use Model is used to quantify climate change assessment and relevant policies to mitigate GHG emissions. To assess the macroeconomic impacts of Thailand’s net zero GHG scenarios, a multi-sector, dynamic recursive AIM/Computable General Equilibrium (“CGE”) Model is used. A high-level overview of Thailand’s Framework for determining the net-zero pathway highlighted in the LT-LEDS is indicated in the Figure below.

Figure 1: Framework for Thailand’s LT-LEDS⁵



Thailand’s LT-LEDS is modelled using a bottom-up approach with detailed technological information. The technological selection is based on an optimization framework that minimizes the total system cost subject to various constraints (e.g., the potential of solar, wind, and bioenergy used in power generation to satisfy the end-user demand among the economic sectors). The CGE model is adopted to assess the economic and environmental impacts of climate policies at the national and sub-national levels. The CGE model used for the development of Thailand’s LT-LEDS uses the input–output table obtained from the Office of the National Economic and Social Development Council to calibrate the model.

⁵ Source: Thailand's Long-Term Low Greenhouse Gas Emission Development Strategy (Revised Version) November 2022

1.2 Key Policies targeting Climate Change Mitigation and Adaptation

Energy Sector

The energy sector is a main component of Thailand's transition towards net zero GHG emissions, as it is the country's largest source of GHG emissions, accounting for 65.89% of total national GHG in 2022 (excluding removals from the LULUCF sector).

Thailand is currently developing its **National Energy Plan** which will integrate five key energy plans: **1) Power Development Plan (PDP)**, **2) Alternative Energy Development Plan (AEDP)**, **3) Energy Efficiency Plan (EEP)**, **4) Gas Plan** and **5) Oil Plan**. The consolidated framework together with its key sectoral sub-plans, is currently under revision to align with the country's updated climate commitments under NDC 3.0 and its target of achieving net-zero GHG emissions by 2050.

While Thailand's National Energy Plan is being updated, the key initiatives and targets detailed below reflect the latest published policies. Further details of the draft version of the key plans, namely the PDP and AEDP, are included in Section 1.3 of the Framework.

- **Power Generation Sector:** To achieve carbon neutrality by 2050, the share of renewable electricity is expected to account for 68% of total electricity generation in 2040 and 74% in 2050. The plan also expects the total phase-out of coal power plants by 2048, with any bioenergy-based power generation being fully equipped with CCS technologies by 2050. To achieve net zero emissions by 2050, the plan anticipates additional mitigation technologies such as solar PV with battery storage; fossil- and biomass-based power plants equipped with CCS and CCUS technologies; fuel-cell power plants; gas turbines using a natural gas–hydrogen blend, and 100% green hydrogen.
- **Transportation Sector:** Thailand targets to increase the share of new battery electric vehicles (EV) in the market to at least 30% in 2030, while internal combustion engine vehicles will be phased out after 2035. Efficiency improvements for internal combustion engine vehicles include shifting to EURO5 and EURO6 standards, promoting liquid biofuels, and removing petroleum subsidies. Thailand's Electric Vehicle Board has also put in place a 30@30 Policy Plan, which establishes a target for zero emission vehicles (ZEVs) to account for at least 30% of total automotive production by 2030 based on a three-phase development plan for the EV industry.

Further potential mitigation measures in the transport sector from relevant plans include Travel Demand Management, Transit-Oriented Development, expansion of the railway network to double-track, expansion of mass-rapid transit, high-speed trains, Single Rail Transfer Operation at Laem Chabang Port, improved river logistics efficiency, an east–west ferry connecting Pattaya to Hua-Hin, adjustment of excise and annual vehicle tax collection rates according to the amount of CO₂ emissions, promotion of electric and hybrid intercity and public buses, and minibus and delivery motorcycle fleet upgrades.

- **Manufacturing Industries:** Thailand is targeting the energy efficiency, fuel-switching, and electrification of end-use technologies as key to the decarbonization of the industrial sector. Green hydrogen, produced using renewable-based electricity, will also play an important role in decarbonization of hard-to-abate sectors that cannot be electrified easily, such as iron and steel, aluminium, and cement. Hydrogen burners could be used in conjunction with electric heating to generate the high temperatures required in many heavy industrial processes, thereby replacing fossil-fuel burning.

- **Residential Sector:** Thailand seeks to improve the efficiency of cooling technologies such as air-conditioners and refrigeration, cooking technologies, electrical devices, and lighting technologies. Electrification of end-use technologies (e.g., shifting from liquefied petroleum gas cooking to electric cooking and using solar for water heating) will also be considered.
- **Commercial Buildings:** Efficiency improvement of cooling technologies such as air-conditioners and refrigeration will have a major impact in this sector. Electrification of end-use technologies will also contribute to decarbonization efforts. Solar water heating systems will be considered as an option for water heating in commercial buildings, particularly hotels, condominiums, and hospitals.
- **Agriculture:** The use of efficient devices; electrification of end-use technologies such as tractors, threshing equipment, pumps, and motors; and solar-powered pumping are some of the mitigation measures that will be implemented in the agriculture sector.

Industrial Processes and Product Use Sector

The IPPU sector accounted for 10.5% of Thailand's total GHG emissions in 2022. As the major sources of GHG emissions in the IPPU sector are the cement, chemical, and refrigeration and air-conditioning industries, key mitigation measures in the IPPU sector focus mainly on clinker substitution and the substitution of high-global warming potential refrigerants. Both of these mitigation measures were included in the **National Action Plan for GHG Mitigation from the IPPU Sector** and the **Industrial Wastewater Measure (2021–2030)**, prepared by the Department of Industrial Works in the Ministry of Industry, and are currently being implemented. The refrigerant substitution measure will also be implemented in conjunction with hydrofluorocarbons phase-down activities in preparation for the Kigali Amendment to the Montreal Protocol.

In striving for net zero emissions, the Ministry of Industry is currently implementing the **Bio, Circular, and Green economic model** to drive sustainable growth of Thai industries with the ability to produce value-added products and increase competitiveness. As part of the Bio, Circular, and Green policy, the Department of Industrial Works is promoting businesses transition to green industry. Support is provided to increase social responsibility and environmentally friendly operations within the industrial sector through the use of technologies and innovations to maximize resource efficiency and transition to eco-friendly manufacturing.

Waste Sector

The waste sector accounted for 5.75% of Thailand's total GHG emissions in 2022. Thailand has attempted to address its waste management challenges by developing national frameworks for waste management such as the **National Solid Waste Management Master Plan (2016–2021)** and the **Roadmap on Plastic Waste Management (2018–2030)**. At the provincial level, municipal waste management action plans have been adopted. Various measures and approaches have been implemented, including the life cycle approach, reduce-reuse-recycle principle, public–private partnerships, circular economy promotion, and eco-friendly and responsible production and consumption.

Thailand has set a goal to reduce food waste by 50% by 2030 by implementing actions in all stages of food production from raw material processing, production, and transport to household consumption and disposal. To reduce its plastic waste, Thailand banned the use of bottle cap seals, OXO-degradable plastic, and plastic microbeads in 2019. In addition, the use of thin plastic bags with a thickness of less than 36 microns, styrofoam food boxes, plastic straws, and single-use plastic cups were banned in 2022. Under the **Roadmap on Plastic Waste Management (2018–2030)** and with a shift towards sustainable plastic waste management under the circular economy model, Thailand aims to have 100% of its plastic waste recycled or reused by 2027.

The **Zero Industry Waste to Landfill Policy** and the **“Green Industry Mark”** for green processes were adopted to reduce industrial waste generation. Thailand also plays a key role in addressing marine debris at a regional level through the adoption of the Bangkok Declaration on Combating Marine Debris in the ASEAN Region and the ASEAN Framework of Action on Marine Debris at the 34th ASEAN Summit in June 2019, which led to the preparation of ASEAN Regional Action Plan for Combating Marine Debris (2021–2025). In addition to reducing solid and wastewater generation, suitable waste disposal technologies, such as mechanical biological treatment and semi-aerobic technologies that have been proven effective to reduce GHG emissions from landfills, will be further explored by local Thai authorities, with examples from already successful sites to be emulated.

In sum, priorities for mitigation actions in the waste sector include community solid waste management, community wastewater management, waste reduction, landfill gas, waste-to-energy processes, semi-aerobic landfills, composting, anaerobic digestion and mechanical biological treatment, and industrial wastewater management, including increased biogas production from industrial wastewater by recycling methane gas.

Agriculture Sector

The agricultural sector plays a vital role in Thailand’s economy as a major source of employment and in the generation of the domestic food supply and exports. Major agricultural exports include rubber, rice, fruits, fish, chicken meat, cassava, sugar, shrimp, and vegetables. Thailand’s agricultural land area is approximately 178 million rai (0.284 million km²), or around 46% of the country’s total land area (during 2019-2021), contributing 17.86% of total GHG emissions in 2022.

The **20-Year Agricultural Development Plan (2017–2036)** was adopted to lay a foundation for long-term and systematic growth of this sector. This plan aims to improve farmers’ livelihoods, increase productivity and the quality standards of agricultural commodities, enhance the sector’s competitiveness through technology and innovation under the “Agriculture 4.0” model, promote balanced and sustainable management of agricultural resources and the environment, and enhance the capacity of the public administration system. In relation to climate change, Thailand places high priority on addressing the impacts on and vulnerabilities of the agriculture sector through adaptation measures as climate impacts—including shifting temperatures, more unpredictable rainfall, and extreme floods and drought—have been widely experienced across the country, affecting the yields of major crops, such as rice, maize, and sugarcane. In addition, measures to enhance competitiveness and promote balanced and sustainable agricultural systems are also important. Mitigation actions in the agricultural sector will likely focus on those with multiple benefits such as increasing climate resilience, resource efficiency, and productivity. These activities include better manure management, improved agriculture waste management, enhanced rice cultivation practices, increased efficiency in water resource management, smart farming, high-efficiency plant cultivation and livestock, promotion of organic fertilizers, increased renewable energy use (e.g., solar, biofuels, and electrification), and energy efficiency in water pumping, threshing, and tilling.

Thailand’s Commitment to Just Transition

KOT also recognizes the importance of a Just Transition in achieving its environmental and climate objectives and seeks to ensure that the shift towards a more sustainable and low-carbon economy is undertaken in a manner that is fair, inclusive and supportive of sustainable economic development, decent work and social well-being. In line with this, Thailand is making an important step to align climate ambition with inclusive economic growth and decent work through the adoption of evidence-based policy tools. On 26 January 2026, senior policymakers, researchers, social partners and development partners convened to discuss the application of the Just Transition Assessment Model (JTAM-Thailand), a nationally calibrated assessment model to support policy analysis, jointly developed to assess the potential impacts of climate and development

policies on gross domestic product, investment, sectoral output, productivity, employment and emissions. The model has been developed through close cooperation between the International Labour Organization, National Economic and Social Development Council, Thammasat University, and international research partners, ensuring strong national ownership, academic rigour, and relevance to Thailand's policy context. By enabling scenario analysis, the model is expected to help policymakers explore policy trade-offs and synergies across sectors and over time. The initiative reflects Thailand's commitment to ensuring that the transition towards a more sustainable and resilient economy is fair and inclusive, safeguarding economic growth, employment, and people's well-being.

1.3 Thailand's Draft National Energy Plan, Power Development Plan, and Alternative Energy Development Plan

While the 2024-2037 **National Energy Plan ("NEP")** is currently being updated to align with Thailand's latest national commitments, the NEP is expected to provide a strategic roadmap to enhance the sustainability and resilience of the country's energy sector. The NEP will combine and synchronize five key action plans namely Thailand's Power Development Plan; Alternative Energy Development Plan; Energy Efficiency Plan (EEP); Gas Plan; and Oil Plan.

Thailand's Power Development Plan 2026 (Draft) ("Draft PDP 2026") is a strategic plan for the development of the country's electricity generation capacity and power system development over 2026 - 2050. The Draft PDP 2026 aims to ensure a secure, affordable and sustainable electricity supply while supporting Thailand's transition towards a low-carbon economy and contributing to the country's Net Zero GHG emissions target by 2050.

Key directions under the current draft include the discontinuation of new coal-fired power capacity and a clean electricity generation target of up to 70% of total generation by 2050; these figures reflect the draft at this stage and remain subject to revision prior to final adoption.

The Draft PDP 2026 is underpinned by three key policy objectives:

- 1) **Security:** Maintaining a secure and reliable electricity supply while ensuring sufficient system flexibility to accommodate increasing shares of variable renewable energy.
- 2) **Economic Efficiency:** Supporting affordable and competitive electricity prices through efficient investment planning and optimal utilisation of existing infrastructure.
- 3) **Sustainability:** Accelerating the transition to cleaner electricity generation and contributing to Thailand's greenhouse gas emission reduction targets, in line with its Net Zero 2050 commitment.

At present, the Draft PDP2026 remains under stakeholder consultation and work-in-progress. Any reference to targets or figures herein reflects the status of the draft plan at the time of writing and does not represent a finalised government commitment.

The Alternative Energy Development Plan for 2024–2037 ("AEDP 2024") (draft) is a strategic framework developed by Thailand to enhance the use of renewable and alternative energy sources. This plan outlines specific goals and measures aimed at increasing the share of renewable energy in the country's energy mix, reducing GHG emissions, and achieving long-term sustainability targets.

There are three renewable energy targets included in the AEDP 2024:

- 1) **Electricity Generation:** The plan targets 73,286 megawatts (MW) of renewable energy capacity by 2037, including significant contributions from solar (38,974 MW), wind (9,379 MW), biomass (5,490

MW), and hydropower (2,918 MW). Ground-mounted and floating solar energy is expected to be the largest contributor.

- 2) **Heat Production:** Heat production from renewable sources is set to reach 17,061 kilotonnes of oil equivalent (ktoe) by 2037, with biomass being the primary source (15,551 ktoe). Other contributors include biogas, waste, and solar thermal energy.
- 3) **Biofuels:** The biofuel targets include 1,621 ktoe, with specific goals for biodiesel (775 ktoe), ethanol (289 ktoe), and sustainable aviation fuel (553 ktoe).

The AEDP 2024 aims to reduce CO₂ emissions by at least 75 MtCO₂e by 2037 compared to current levels. This reduction is crucial for meeting Thailand's long-term goal of net zero GHG emissions by 2050 and aligns with the National Energy Plan.

To achieve these ambitious targets, AEDP 2024 includes measures to facilitate access to financing under favourable environmental conditions. This involves incentives such as investment privileges from the Board of Investment and green financing mechanisms. The plan also outlines policy measures to promote the purchase of electricity from renewable sources at appropriate rates and to support the development of energy storage systems. The plan details significant investments in infrastructure to support the integration of renewable energy into the grid. This includes expanding energy storage solutions and enhancing the capacity of the transmission network to handle the increased share of renewable energy. It also highlights the importance of research and development to drive innovation in renewable energy technologies and improve efficiency.

The **Oil Plan** aims to strike a balance between advancing the clean energy transition and ensuring energy security and national competitiveness. According to the plan, although Thailand's oil demand is projected to peak by 2030, the transport, industrial, households, and commerce sectors will continue to rely on fossil fuels.

The **Energy Efficiency Plan** aims to decrease energy intensity by 36%, meaning less energy will be consumed for the same level of production or economic activity.

1.4 Thailand's Commitment to Biodiversity Conservation

Thailand is one of the most biodiversity-rich countries in Southeast Asia and the world, with extensive forest resources, coastal ecosystems and marine biodiversity that support livelihoods, food security and climate resilience. It is situated within two major biogeographical regions: the Indochinese region in the north and the Sundaic region in the south. In 2022, Thailand was ranked 20th among countries globally in terms of the rate of biodiversity, having previously been ranked 18th in 2016⁶.

The KOT recognizes biodiversity conservation as a critical pillar of sustainable development, given the country's rich natural ecosystem and high exposure to environmental degradation risks.

Thailand ratified the Convention on Biological Diversity in October 2003 in which it became an official party in January 2004 and has committed to implementing global biodiversity frameworks including the Kunming-Montreal Global Biodiversity Framework which was adopted at the 15th Conference of the Parties to the Convention on Biological Diversity (CBD COP15) in 2022. At the national level, biodiversity conservation is embedded within Thailand's long-term development strategies as outlined under **Thailand's National Biodiversity Action Plan 2023-2027 ("NBAP")**. NBAP is Thailand's master plan on biodiversity designed and developed to guide Thailand's comprehensive efforts in protecting, conserving, and promoting the sustainable use of biodiversity, developed in compliance with Article 6 of the Convention on Biological

⁶ Source: undp-nbsaps-eng-060625.pdf

Diversity in line with the Kunming-Montreal Global Biodiversity Framework. Developed through extensive consultations with stakeholders and leveraging collaborative inputs from all societal sectors, including government, private sector, and civil society, NBAP outlines three key national strategies of the KOT to be executed via 12 established national biodiversity targets.

- 1) **Strategy 1** focuses on strengthening conservation efforts by enhancing habitat and key species protection through improved management approaches, expanding protected areas, and developing various measures to safeguard threatened species.
- 2) **Strategy 2** promotes the sustainable and equitable use of biodiversity resources to benefit local communities, including sustainable management of agricultural lands, forests, tourism, and fisheries to ensure balanced utilization without harming nature.
- 3) **Strategy 3** integrates biodiversity considerations into national policies, sectoral strategies, planning processes, and development projects by mainstreaming biodiversity into policies and plans across all development sectors, including tools, financial support mechanisms, incentives, and legislation.

Thailand’s NBAP and the National Biodiversity Targets to be achieved in 2030 were approved by the Cabinet on 29 October 2024, including its ambition to effectively conserve at least 30% of terrestrial and marine areas by 2030 (the “30×30” target). Thailand intends to achieve this target through a combination of protected areas and Other Effective Area-based Conservation Measures (“OECMs”) which together, are expected to contribute to the expansion and effective management of areas of biodiversity importance, restoration of degraded ecosystems and the long-term conservation of species and natural habitats.

Protected Areas in Thailand

Thailand adopts a definition of protected area consistent with the International Union for Conservation of Nature (“IUCN”), referring to clearly defined geographical areas that are managed to ensure the long-term conservation of nature, biodiversity, ecosystem services, and associated cultural values. Under Thai law, protected areas are classified through various sectoral legislation and are managed by relevant government agencies. Based on inter-agency review and expert consultation, 10 categories of conservation areas are recognised as consistent with IUCN’s protected area criteria. These areas are established under key legislation such as the Wildlife Preservation and Protection Act (2019), National Park Act (2019), Marine and Coastal Resources Management Act (2015), Environmental Quality Act (1992), and Fisheries laws, and are managed primarily by Thailand’s governmental agencies.

Table 2: Types of Protected Areas in Thailand

No	Type of Protected Area	Relevant Law	Responsible Agency	IUCN Category
1	Wildlife sanctuary	Section 47 of the Wildlife Preservation and Protection Act B.E. 2562 (2019)	Department of National Parks, Wildlife and Plant Conservation	Ia Strict Nature Reserve
2	Non-Hunting Area	Section 62 of the Wildlife Preservation and Protection Act B.E. 2562 (2019)		IV Habitat/Species Management Area
3	National Park	Section 6 of the National Park Act B.E. 2562 (2019)		II National Park
4	Forest Park	Section 26 of the National Park Act B.E. 2562 (2019)		
5	Botanical Garden	Section 26 of the National Park Act B.E. 2562 (2019)		
6	Arboretum	Section 26 of the National Park Act B.E. 2562 (2019)		

7	Marine and Coastal Resource Protected Area	Sections 20 and 22 of the Act on the Promotion of Marine and Coastal Resources Management B.E. 2558 (2015)	Department of Marine and Coastal Resources	VI Managed Resource Protected Area
8	Conservation Mangrove Forest	Section 18 of the Act on the Promotion of Marine and Coastal Resources Management B.E. 2558 (2015)		VI Managed Resource Protected Area
9	Environmental Protected Area	Section 43 of the Enhancement and Conservation of National Environmental Quality Act B.E. 2535 (1992) and as amended Section 45 of the Enhancement and Conservation of National Environmental Quality Act B.E. 2535 (1992) and as amended	Office of Natural Resources and Environmental Policy and Planning	VI Managed Resource Protected Area
10	Fishery Resource Conservation Area / Aquatic Plant Protection Area	Section 56 in conjunction with Section 55 of the Royal Ordinance on Fisheries B.E. 2558 (2015) and as amended Section 8 of the Fisheries Act B.E. 2490 (1947)	Department of Fisheries	Ia Strict Nature Reserve

Thailand's protected areas are established through formal legal and administrative processes under the relevant conservation legislation. While the specific procedures vary depending on the type of protected area, they generally follow a common sequence involving technical assessment of the proposed area, coordination among relevant government agencies, stakeholder consultation, governmental review and approval, and formal legal designation.

Figure 2: Designation Process of Protected Areas⁷



⁷ Government Structure Handbook

Other Effective Area-based Conservation Measures

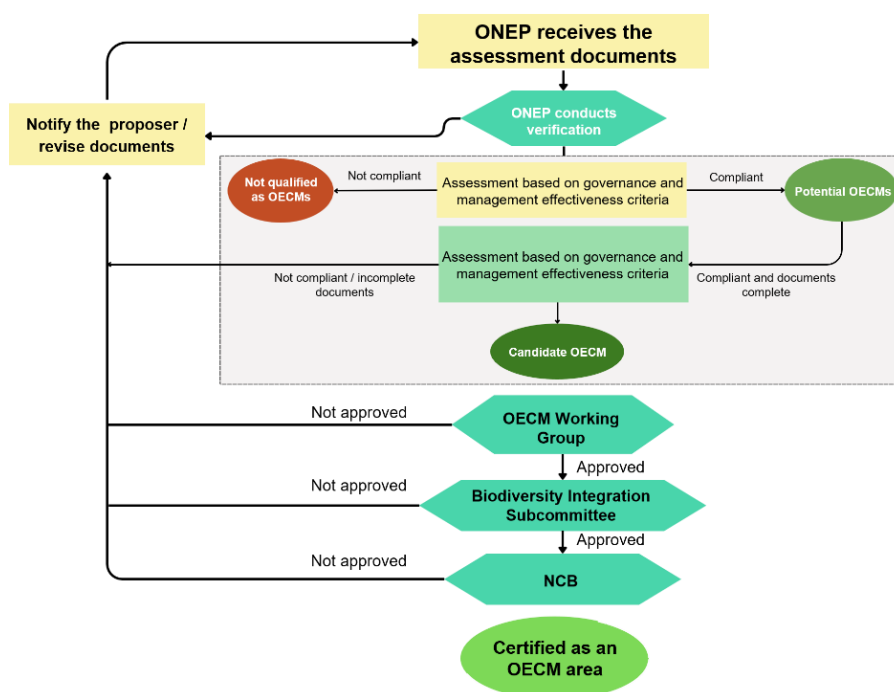
As defined under the resolution of the National Committee on Conservation and Utilization of Biodiversity (“NCB”), OECMs in Thailand are aligned with the criteria of the Convention on Biological Diversity and refer to geographically defined areas located outside protected areas, which are governed/managed to achieve positive and long-term outcomes for the conservation of biological diversity in natural habitats, with associated ecosystem functions and services, and where applicable, cultural, spiritual, socio-economic, and other locally relevant values in a way that achieves positive and sustainable long-term outcomes for the conservation of biodiversity in natural habitats. OECMs in Thailand cover terrestrial ecosystems, inland waters, and marine and coastal areas and comprises 4 types which are determined based on the management structure:

- i) area managed by individuals / local communities
- ii) area managed by government agencies
- iii) area managed by private sector / legal entities
- iv) co-managed area (co-management)

As outlined under the resolution of the NCB Meeting No. 2/2024, dated 23 September 2024, the categories of OECM areas are classified into 3 main ecosystem categories comprising terrestrial areas, inland water areas, coastal and marine areas.

Thailand’s OECM framework undergoes a structured process for identifying, assessing and certifying biodiversity conservation areas outside protected areas, based on eight criteria covering initial screening (e.g. location and biodiversity value) and governance and management effectiveness (e.g. boundaries, conservation outcomes, and equity considerations). Areas are proposed by relevant stakeholders and undergo a multi-stage review and certification process led by the Office of Natural Resources and Environmental Policy and Planning (“ONEP”), with final approval by NCB. Certified OECM areas are granted a renewable five-year status, subject to ongoing monitoring and evaluation against defined metrics, with provisions for renewal, corrective action, or removal where conservation outcomes are not maintained.

Figure 3: Certification Process of OECM Areas in Thailand⁸



⁸ Source: ONEP as at August 2026

On 1 December 2025, NCB, at Meeting No. 1/2025, had resolved to approve 5 areas as Thailand OECMs in Thailand. This includes:

- 1) Biodiversity and Sustainability Learning Center ‘Cheewa Panavet’, Chachoengsao Province
- 2) Wangchan Forest Learning Center, Rayong Province
- 3) Urban Forest Learning Center, Bangkok
- 4) Khlong Khanom Chin, Phra Nakhon Si Ayutthaya Province
- 5) Singha Park Chiang Rai – 70-rai reservoir area, Chiang Rai Province

2. The Kingdom of Thailand's Sustainability-Linked Financing Framework

Rationale

In July 2020, the KOT published its Sustainable Financing Framework, which enabled proceeds from its bond issuance to finance projects or expenditures related to climate change mitigation and adaptation, sustainable use and protection of water resources, and protection and restoration of biodiversity and ecosystems, as well as to foster social development and socioeconomic advancement and empowerment in Thailand. Subsequently, the KOT also established its inaugural Sustainability-Linked Financing Framework in October 2024 which reflects an enhanced commitment towards sustainability by incorporating targets linked to the nation's climate change commitments.

Building on the KOT's latest sustainability ambitions in alignment with its latest submitted NDC 3.0 and strong commitment on biodiversity, the KOT has chosen to update its Sustainability-Linked Financing Framework ("Framework") further to the version published in 2024. This updated Framework incorporates a more ambitious GHG emission target and a new commitment directly linked to Thailand's National Biodiversity strategy.

For the avoidance of doubt, any sustainability-linked finance instruments issued prior to this Framework will continue to reference the framework under which they were issued under at that point in time.

Alignment

The Sustainability-Linked Financing Framework is aligned with the International Capital Market Association (ICMA) Sustainability-Linked Bond Principles (SLBP) 2024⁹; ASEAN Capital Markets Forum (ACMF) ASEAN Sustainability-Linked Bond Standards (ASEAN SLBS) 2022¹⁰; and Loan Market Association (LMA), Loan Syndications and Trading Association (LSTA) and Asia-Pacific Loan Market Association (APLMA) Sustainability-Linked Loan Principles (SLLP) 2025.¹¹

The Framework is structured according to the following five core components of the above principles.

- 1) Selection of Key Performance Indicators (KPIs)
- 2) Calibration of Sustainability Performance Targets (SPTs)
- 3) Characteristics of Sustainability-Linked Finance Instruments
- 4) Reporting
- 5) Verification

In a similar manner to the KOT's 2024 Sustainability-Linked Financing Framework, this Framework may also be revised or updated in the future to remain consistent with the sustainability strategy of Thailand, best market practices, and regulatory developments. Any future changes to the Framework may not necessarily apply to sustainability-linked finance instruments previously issued under this Framework. The updates, if not minor or technical in nature, will be subject to the prior approval of the Public Debt Management Office (PDMO). Any new Framework will be published on the PDMO website with the date of update and replace this framework. A new second-party opinion will be obtained for a revised or updated Framework.

⁹ [ICMA Sustainability-Linked Bond Principles \(June 2024\)](#)

¹⁰ [ACMF ASEAN Sustainability-Linked Bond Standards \(October 2022\)](#)

¹¹ [LMA/LSTA/APLMA Sustainability-Linked Loan Principles \(March 2025\)](#)

2.1 Selection of Key Performance Indicators (KPIs)

KPI 1: Net Greenhouse Gas Emissions (all IPCC sectors including LULUCF) (MtCO₂e)

KPI	Net GHG emissions (all IPCC sectors including LULUCF) (MtCO ₂ e)
Baseline	2019: 287.2 MtCO₂e net GHG emissions, (Based on Thailand's First Biennial Transparency Report submitted to the UNFCCC in December 2024 (BTR1)). Note: The previous KPI 1 baseline under KOT's 2024 Framework was BAU 2030: 555,000 ktCO₂e (projection from reference year 2005). Under NDC 3.0, the formulation of the KPI has changed from a BAU-relative projection from reference year 2005 to a net GHG emission target reference year 2019.
UN SDG Alignment	SDG 13 Climate Action: ➤ 13.2 Integrate climate change measures into policy and planning
Methodology	The KOT's GHG inventory is estimated in line with the IPCC Guidelines Emissions and removals are quantified in CO₂ equivalents using the 100-year Global Warming Potentials presented in the IPCC Fifth Assessment Report, consistent with Thailand's NDC3.0. The GHGs estimated include the following direct GHG emissions: • Carbon Dioxide (CO₂) • Methane (CH₄) • Nitrous Oxide (N₂O) • Hydrofluorocarbons (HFCs) • Perfluorocarbons (PFCs) • Sulphur Hexafluoride (SF₆) • Nitrogen Trifluoride (NF₃) The KOT's GHG emissions are calculated by the Thailand Greenhouse Gas Emission Inventory System (TGEIS).
Key GHG Sectors	The KPI is set in accordance with the KOT's NDC 3.0 commitments, which include the following sectors: • Energy • Transport¹² • Industrial Processes and Product Use (IPPU) • Agriculture • Land Use, Land-Use Change and Forestry (LULUCF) • Waste GHG emissions and reductions from international aviation and shipping are not in scope, consistent with NDC3.0. For the avoidance of doubt, NDC 3.0 includes all sectors of anthropogenic emissions and removals, in which sources of emissions that were included in previous NDC have not been excluded. Note: GHG removals from LULUCF were excluded from the perimeter of KPI 1 under the KOT's 2024 Framework in line with the formulation of Thailand's NDC at that point in time.
Key KPI Reporting Characteristics	As a Non-Annex I Party to the UNFCCC, the KOT is obligated to submit a Biennial Update Report (BUR) every 2 years, containing details of its national GHG inventory. The KOT submitted its first, second, third, and fourth BURs in 2015, 2017, 2020, and 2022, respectively. Subsequently, the BUR was replaced with the Biennial Transparency Reports ("BTR"). The KOT had in December 2024, submitted its first BTR which contained details of its national GHG inventory from 2000 to 2022. As such, KPI 1 data are reported biennially covering emissions for two individual years in each report. This cycle creates a time lag of approximately 3 years (and no longer than 4 years) from the period of reporting (i.e., data on the GHG inventory for full-year 2035 will be available by the

¹² Transport is currently captured within the Energy sector under Thailand's NDC 3.0. Going forward and commencing with BTR2., transport will be reported as a standalone sector.

	BTR published in 2038). The process of reporting and verification of the national GHG inventory is subject to an international consultation and analysis process through the Subsidiary Body for Implementation. The expert review team's recommendations assist Thailand's national GHG inventory in narrowing knowledge gaps and increasing efficiency in the preparation process. The results of the technical review are available on the UNFCCC's website at https://unfccc.int/LCA-cycle3.
Key Process in Collating Thailand's GHG Inventory	The key components in estimating GHG emissions are activity data and emission factors. Activity data is sourced from a collaboration between the Department of Climate Change and Environment (DCCE) and lead agencies of the following six sectors: 1) Energy: including the subsectors of energy led by the Energy Policy and Planning Office (EPPO) 2) Transport: led by the Office of Transport and Traffic Policy and Planning (OTP) 3) IPPU: led by the Department of Industrial Works (DIW) 4) Agriculture: led by the Office of Agricultural Economics (OAE) 5) LULUCF: led by the Department of National Parks, Wildlife and Plant Conservation (DNP) 6) Waste: led by the Pollution Control Department (PCD) After collection of activity data by the lead agencies, GHG emissions are calculated by TGEIS. The results from TGEIS are submitted to sectoral working groups on GHG inventory mitigation and measures, which then perform quality control processes to ensure that GHG emission estimates are valid, accurate, and complete. Following this, the GHG inventories of the six sectors are submitted to the Climate Change Knowledge and Database Subcommittee for verification. As a final step, the DCCE, as the Secretariat of the NCCC, will submit the final GHG inventories as part of the BUR/BTR to the NCCC for approval before submission to the UNFCCC. The process of collation of Thailand's GHG inventory is subject to a domestic Measurement Reporting and Verification (MRV) system at both the national and sectoral levels.

Rationale

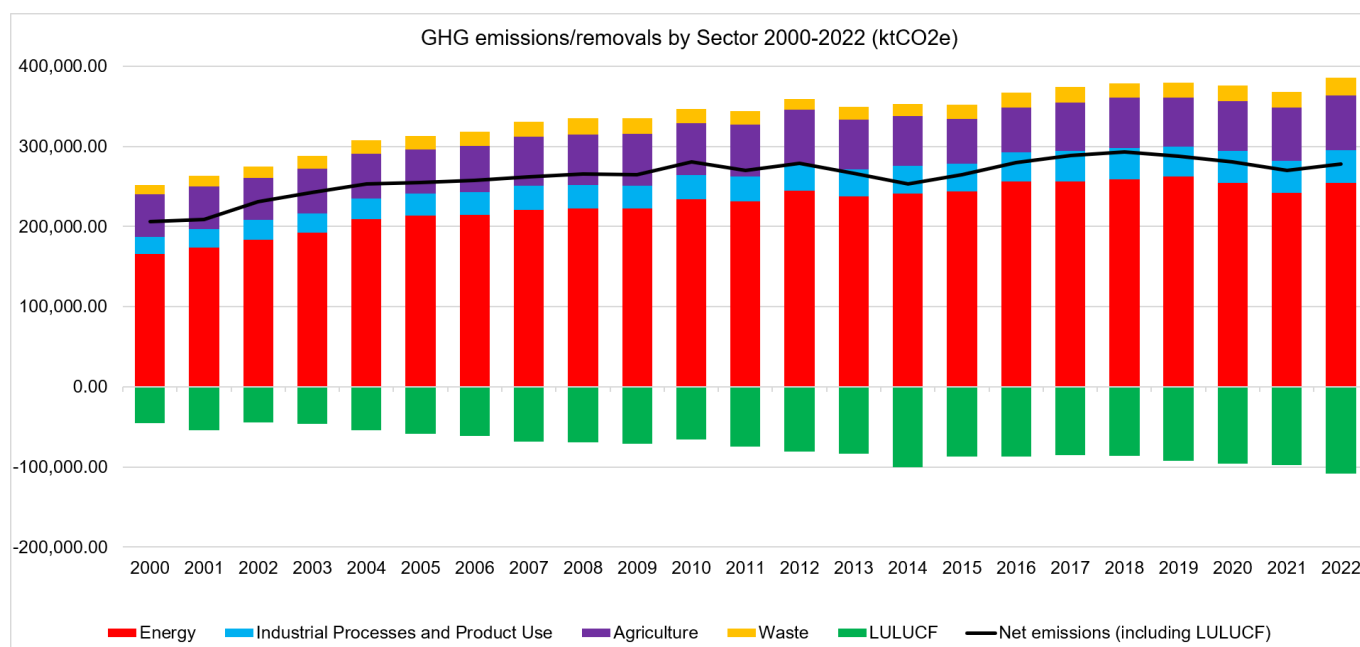
GHG emissions constitute the most material and direct indicator of a sovereign's contribution to climate change. KPI 1 reflects Thailand's aggregate, economy-wide climate commitment and is directly aligned with Thailand's overarching NDC commitment under the Paris Agreement, ensuring that the bond's sustainability credentials are anchored to the KOT's most significant and internationally recognised climate obligation. It captures the full scope of Thailand's mitigation effort, consistent with the economy-wide absolute target formulation adopted in Thailand's NDC 3.0.

As compared to KPI 1 under Thailand's 2024 SLB Framework, the current KPI 1 is a more ambitious target which covers all anthropogenic emissions and removals across various IPCC sectors including Energy, Transport, Industrial Processes and Product Use (IPPU), Agriculture, Land Use, Land Use Change and Forestry (LULUCF) and Waste. The inclusion of LULUCF is material, especially given that Thailand's forests and land systems provided net carbon removals of approximately 92.0 MtCO₂e in 2019, and this removal capacity is expected to grow to 118 MtCO₂e by 2035 and 120 MtCO₂e by 2037 — a critical contribution to the net zero 2050 pathway. The shift from a gross emission, BAU-relative metric to a net emissions (absolute) metric is also consistent with best practices for economy-wide NDC target formulation.

The baseline emissions data presented in this Framework may differ from figures disclosed in previous publications due to updates to GHG inventory methodologies, revisions to underlying statistical data and annual reports, and the recalculation of historical emissions. In line with Thailand's commitment to the principles of Transparency, Accuracy, Completeness, Comparability and Consistency ("TACCC"), emissions data may be updated periodically to reflect the latest available information and reporting methodologies.

Table 3: Thailand's National Greenhouse Gas Inventory by Sector (ktCO₂e), 2000–2022

Year	Source category					Net emissions (excluding LULUCF)	Net emissions (including LULUCF)
	Energy	Industrial Processes and Product Use	Agriculture	Waste	LULUCF		
	ktCO ₂ eq						
2000	165,993.49	21,270.17	52,572.93	11,584.23	-45,321.86	251,420.82	206,098.96
2001	173,786.87	22,851.86	53,757.54	12,495.26	-54,351.30	262,891.53	208,540.23
2002	183,231.35	24,914.92	52,186.51	14,210.25	-44,027.61	274,543.02	230,515.41
2003	192,201.46	24,139.99	55,978.17	15,853.86	-45,802.95	288,173.48	242,370.53
2004	209,166.96	25,882.04	55,725.52	16,486.35	-54,094.53	307,260.86	253,166.33
2005	213,347.12	27,753.14	55,412.52	16,847.51	-58,311.85	313,360.29	255,048.43
2006	214,099.94	28,638.69	57,874.22	17,981.81	-61,329.22	318,594.66	257,265.44
2007	220,511.18	30,280.50	61,155.73	18,404.05	-68,334.05	330,351.45	262,017.40
2008	222,914.54	28,741.86	63,403.46	19,614.30	-69,123.15	334,674.15	265,551.01
2009	222,506.38	28,161.54	65,243.35	19,393.56	-71,135.31	335,304.82	264,169.51
2010	234,426.01	29,785.43	64,836.71	17,516.55	-65,765.77	346,564.69	280,798.92
2011	231,177.29	31,084.66	65,291.30	16,521.13	-74,574.83	344,074.38	269,499.55
2012	244,331.59	33,222.21	68,562.67	13,117.17	-80,634.49	359,233.63	278,599.14
2013	237,795.61	33,025.81	62,898.82	15,473.29	-83,060.24	349,193.53	266,133.29
2014	241,257.40	34,537.47	61,731.03	15,754.73	-100,507.61	353,280.63	252,773.02
2015	243,336.90	35,332.02	55,637.00	17,719.75	-87,328.01	352,025.67	264,697.66
2016	255,922.33	36,772.29	55,414.17	18,580.41	-87,040.09	366,689.20	279,649.11
2017	256,586.42	37,628.02	60,345.03	19,582.99	-85,379.74	374,142.46	288,762.72
2018	258,643.32	39,623.31	62,186.58	18,507.80	-85,967.13	378,961.00	292,993.88
2019	262,082.80	37,961.73	60,486.17	18,696.48	-91,986.27	379,227.18	287,240.91
2020	254,827.70	39,609.01	62,065.69	19,799.28	-95,590.26	376,301.68	280,711.42
2021	241,921.78	39,772.72	66,503.31	19,470.95	-98,028.87	367,668.76	269,639.89
2022	254,307.21	40,527.22	68,933.74	22,172.97	-107,901.43	385,941.14	278,039.71

Figure 4: Thailand's GHG Emissions Trend

Source: Thailand's Biennial Transparency Report

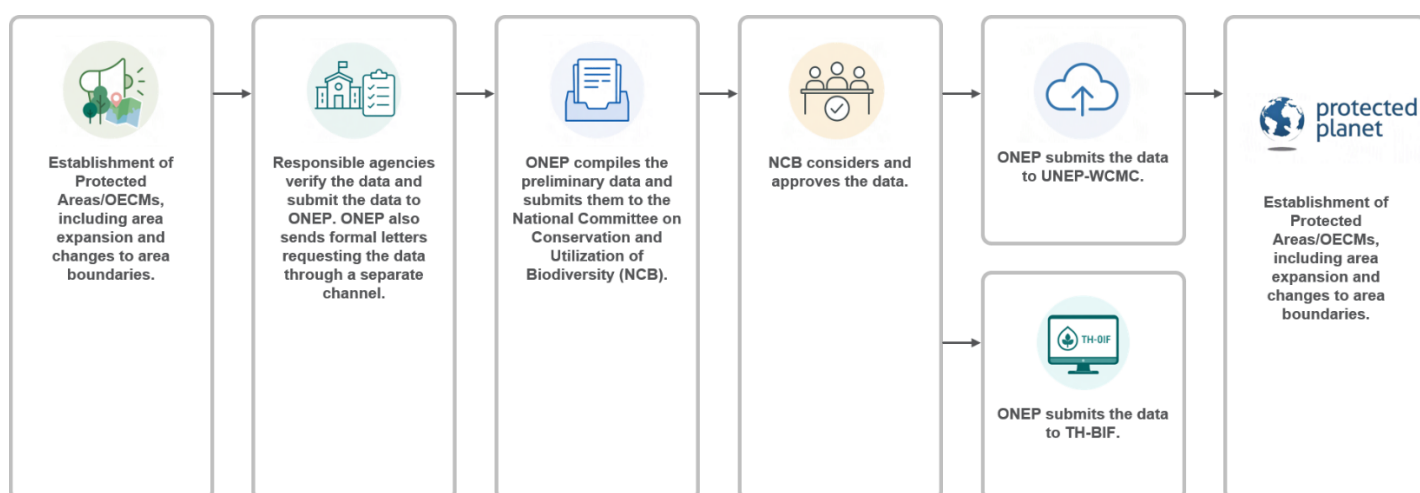
KPI 2: Percentage (%) of terrestrial and inland water protected areas and Other Effective Area-Based Conservation Measures (OECMs) relative to the total national land area

KPI	Percentage of terrestrial and inland water protected areas and Other Effective Area-Based Conservation Measures (OECMs) relative to the total national land area
Reference Year	18.44% in 2024 ¹³
UN SDG Alignment	SDG 15: Life on Land Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation, and halt biodiversity loss
Alignment to Kunming-Montreal Global Biodiversity Framework	Target 3: Ensure and enable that by 2030 at least 30 percent of terrestrial and inland water areas, especially areas of particular importance for biodiversity and ecosystem functions and services, are effectively conserved and managed through ecologically representative, well-connected and equitably governed systems of protected areas and other effective area-based conservation measures, recognizing indigenous and traditional territories, where applicable, and integrated into wider landscapes, seascapes and the ocean, while ensuring that any sustainable use, where appropriate in such areas, is fully consistent with conservation outcomes, recognizing and respecting the rights of indigenous peoples and local communities, including over their traditional territories.
Methodology	Calculated as the (Total terrestrial and inland water protected areas and OECMs km ²) / (Total national land area, km ²)
Definition of Protected Area & OECMs	Protected areas include wildlife sanctuaries, non-hunting areas, national parks, forest parks, botanical gardens, arboretums, mangrove conservation forests, environmental protected areas and aquatic animal sanctuaries in Thailand. Protected areas which are captured under the definition of this KPI shall comprise: 1) Legally Designated Protected Areas: Areas that have been formally established and declared under applicable Thai laws and regulations; and 2) Protected Areas Pending Official Publication for Designation (“Areas Pending Publication”): Areas that have completed the substantive assessment and approval process including obtaining the relevant national committee or ministerial approvals in line with applicable Thai laws, with the publication in the Royal Gazette being the sole remaining procedural step prior to formal designation¹⁴. Other Effective Area-based Conservation Measures (OECMs) refers to areas other than protected areas that have been certified as OECMs by NCB, as defined under Section 1.4.
Key KPI Reporting Characteristics	Data relating to protected areas are collected and prepared by the relevant government agencies responsible for the management of such areas in accordance with the reporting requirements and standards of the World Database on Protected and Conserved Areas (WDPCA)¹⁵ prior to submission to ONEP. Data relating to OECMs are managed and compiled by ONEP. As Thailand's central coordinating agency for biodiversity reporting, ONEP consolidates the protected area and OECM data and submits them to NCB for review and approval. Following NCB approval, the data are published through the Thailand Biodiversity Information Facility (TH-BIF) and submitted to the United Nations Environment Programme World Conservation Monitoring Centre (UNEP-WCMC). Data submitted to UNEP-WCMC are subject to verification and quality assurance procedures in accordance with WDPCA standards prior to publication on the Protected Planet website. The latest available data published on the Protected Planet website in relation to KPI 2 will be reported annually in the SLB Progress Report. Given the time required for data collection, consolidation and publication, reported KPI performance may be subject to an approximate two-year reporting lag. For example, data as at 31 December 2030 may only become available on the Protected Planet website in 2032 and will be reported accordingly.

¹³ UNEP-WCMC (2026), Protected Area Profile for Thailand from the World Database on Protected Areas, August 2026. Available at: www.protectedplanet.net and is based on 2024 data

¹⁴ Awaiting publication in the Royal Gazette to give effect to the area's legal designation as a protected area

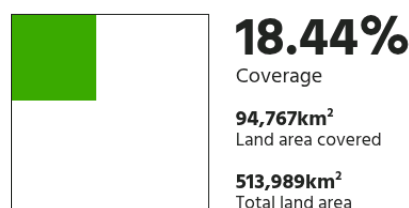
¹⁵ In January 2026, Protected Planet merged two of their key databases – the World Database on Protected Areas (WDPA) and the World Database on Other Effective Area-based Conservation Measures (WD-OECM) – into a single database: the World Database on Protected and Conserved Areas (WDPCA)

Figure 5: Protected Area and OECM Data Collection Process and Reporting to UNEP-WCMC¹⁶

Rationale

Figure 6: Protected Area coverage in Thailand for terrestrial and inland waters¹⁷

Terrestrial and inland waters protected area coverage



Protected areas and OECMs constitute one of the most material and direct indicators of a sovereign's commitment to biodiversity conservation. This reflects a wider climate–nature–livelihood nexus, where well-managed protected areas and OECMs may help support community resilience to climate impacts, alongside emerging opportunities in carbon and biodiversity credit markets. KPI 2 reflects Thailand's national biodiversity commitment to conserve ecologically important areas and is directly aligned with Thailand's NBAP. In Thailand, areas of significant biodiversity importance have faced degradation. Globally, it is estimated that between 20% and 40% of areas with high biodiversity value have already deteriorated, affecting the well-being of at least 3.2 billion people. While Thailand has not yet clearly quantified the extent of its degraded biodiversity areas, the country's biodiversity challenges are broadly consistent with this global trend.

KPI 2 directly reflects one of Thailand's core national biodiversity priorities in relation to expanding Protected areas and OECMs across terrestrial and inland water ecosystems. Legally designated protected areas have undergone comprehensive technical, scientific and administrative assessment processes in accordance with applicable Thai laws and regulations, including site surveys, local stakeholder consultations and approvals from the relevant ministerial level authorities, prior to receiving formal legal designation. Similarly, Areas Pending Publication have progressed through the same assessment and approval processes and have

¹⁶ Implemented in accordance with the Resolution of the National Committee on Conservation and Utilization of Biodiversity (NCB), Meeting No. 1/2025, held on 1 December 2025

¹⁷ Data as of 2024, land area covered includes terrestrial and inland water Protected Areas only as certified OECMs were not available prior to 2025. Source: UNEP-WCMC (2026). Protected Area Profile for Thailand from the World Database on Protected Areas, July 2026. Available at: www.protectedplanet.net

received the necessary ministerial approvals under applicable Thai laws and regulations, with publication in the Royal Gazette being the sole remaining procedural step required for formal designation. Accordingly, these areas represent a clear and measurable commitment towards the expansion of Thailand's protected area network and contribute meaningfully to the achievement of national biodiversity objectives under the NBAP.

The inclusion of OECMs also ensures that KPI 2 captures the full breadth of Thailand's area-based conservation efforts. While protected areas remain the cornerstone of biodiversity conservation, OECMs provide an additional pathway for recognising and sustaining conservation outcomes across areas that may not be suitable for formal protected area designation, while also supporting co-benefits in terms of local community livelihoods. Their inclusion is aligned with the Kunming-Montreal Global Biodiversity Framework's "30x30" target, which recognises the contributions of both protected areas and OECMs towards biodiversity conservation.

OECMs are internationally recognised by the CBD as areas that achieve sustained biodiversity conservation outcomes outside formal protected areas. Thailand's OECM framework became operational in 2025 and adopts assessment criteria consistent with relevant CBD guidance. Given the recent operationalisation, certified OECMs were not available prior to 2025. The inclusion of OECMs in KPI 2 reflects Thailand's commitment to recognising diverse governance and management approaches that contribute to biodiversity conservation, expand conservation coverage and support the achievement of national biodiversity targets under the NBAP.

2.2 Calibration of Sustainability Performance Targets (SPTs)

SPT 1: Reduce its Total Net GHG emissions to 152 million tCO₂e by 2035, representing a 47% reduction (135.2 MtCO₂e) compared to 2019 levels

Baseline: 287.2 million tCO₂e net GHG emissions (2019, per BTR1, December 2024)

Target Observation Date: December 31, 2035

The KOT has set this SPT in line with Thailand's NDC3.0 under the Paris Agreement, which targets reducing net GHG emissions to 152 million tCO₂e in 2035 from its 2019 levels, which is consistent with a reduction of 135.2 MtCO₂e or 47 percent, compared to the net emissions in 2019. This target has been established in line with 1.5°C pathways of Thailand's best efforts.

As such and as outlined in its NDC3.0, the GHG emissions in the base year (2019) are subject to updates, depending on the progress of future estimation and accounting, the revision of statistical data and annual reports, and the recalculation of the GHG inventory.

SPT 1 Comparison vs Previous 2024 Framework

Parameter	SPT 1 — NDC 2.0 basis (Oct 2024 Framework)	SPT 1 — NDC 3.0 basis (Updated Framework)
Emissions metric	Gross GHG excluding LULUCF	Net GHG including LULUCF (all IPCC sectors)
Target level	≤ 388,500 ktCO ₂ e	≤ 152,000 ktCO ₂ e

Parameter	SPT 1 — NDC 2.0 basis (Oct 2024 Framework)	SPT 1 — NDC 3.0 basis (Updated Framework)
Reduction measure	30% below BAU 2030	47% below 2019 net emissions
Base year / reference	2005 (BAU anchor)	2019 (BTR1 actual net GHG emissions reported)
Target year	2030	2035
Gases covered	CO ₂ , CH ₄ , N ₂ O, HFCs, PFCs, SF ₆	CO ₂ , CH ₄ , N ₂ O, HFCs, PFCs, SF ₆ + NF ₃ (newly added)
Net zero goal	Carbon neutrality 2050; net zero 2065	Net zero 2050 (15 years accelerated)
Alignment	NDC 2.0 / IPCC 2°C pathway	NDC 3.0 / IPCC 1.5°C pathway

Key Strategies for Achieving SPT 1

The key strategies to achieving the SPT are in line with Thailand's NDCs. Thailand is pursuing a comprehensive decarbonisation pathway supported by the acceleration of the energy transition through the expansion of renewable energy capacity, improvements in energy efficiency, and the gradual transition away from carbon-intensive energy sources. Given that the power, transport and industrial sectors account for approximately two-thirds of national emissions, Thailand is prioritising emissions reductions across these sectors through cleaner energy deployment, electrification, operational efficiency improvements and the adoption of low-carbon technologies. Thailand is also exploring the role of next-generation solutions, including hydrogen, nuclear energy and CCUS to support decarbonisation in hard-to-abate sectors and address residual emissions. Beyond emissions reduction, Thailand's climate strategy seeks to safeguard people, livelihoods, ecosystems and natural capital while supporting a just and orderly transition. Recognising that achieving its climate ambitions will require substantial investment and technical expertise, Thailand intends to leverage international partnerships, climate finance, technology transfer and other forms of cooperation to accelerate implementation and support its pathway towards net-zero emissions by 2050.

Periodic meetings on and updates to the NDC Action Plan will be conducted to evaluate progress and address challenges. The plan incorporates feedback and recommendations from these sessions to refine and strengthen implementation efforts. Thailand aims to achieve its long-term GHG reduction targets through these collaborative efforts, contributing to global climate change mitigation.

Challenges to Achieving SPT 1

As outlined under the NDC 3.0, achieving Thailand's climate targets hinges critically on securing substantial financial resources and robust international support. A key challenge lies in the heavy reliance on international finance; many of Thailand's climate goals depend on external funding, underscoring the urgent need for better access to global climate finance mechanisms. Currently, Thailand faces limited access to these funds, hampered by complex application processes, administrative delays, and insufficient capacity at both national and provincial levels. Nevertheless, Thailand is actively pursuing diverse domestic financing strategies, exploring public and private investment, alongside bilateral and multilateral international finance. The nation

is also focused on bolstering its scientific and technical expertise and integrating climate investment into its national strategies.

A primary area of investment is energy transition, which specifically encompasses initiatives in green energy, green transportation, and green industries. This vital sector alone is projected to require substantial funding: an estimated USD 6.11 billion by 2035, without inflation consideration. For other sectors including IPPU, agriculture, and waste, Thailand requires an additional USD 0.94 billion by 2035. This brings the total estimated investment for the transition to approximately USD 7.05 billion by 2035, clearly highlighting the considerable financial resources essential for Thailand to achieve its climate objectives.

Key barriers to transition in the energy sector include the limitations of grid connection due to inadequate capacity of transmission lines; a lack of support from financial institutions for energy efficiency and renewable energy investments; a lack of domestic technological and technical resources; and negative public perceptions, particularly related to waste-to-energy and biomass power plants. Several measures will require a high level of technical capacity and effective coordination across different sectoral agencies, whereas such technical capacity and effective coordination in a developing country like Thailand is currently lacking.

SPT 2: By 2030, achieve at least 30% of total terrestrial and inland water Protected Areas and OECMs relative to total national land area

Baseline: 18.44% in 2024¹⁸

Target Observation Date: 31 December 2030

Key Strategies for Achieving SPT 2

Key strategies include expanding area-based conservation coverage in ecologically important and representative areas, improving the effectiveness and governance of protected areas and OECMs, restoring degraded ecosystems, and enhancing ecosystem integrity and connectivity through conservation networks and corridor-based approaches. The NBAP also emphasizes participatory and inclusive implementation involving relevant stakeholders and communities, supported by a formal national indicator that tracks the percentage of terrestrial and inland water protected areas and OECMs. These measures collectively support progress toward the national target to achieve at least 30% of terrestrial and inland water protected areas and OECMs by 2030.

More specifically, Thailand's implementation approach includes the expansion and improvement of legally protected areas, OECMs, and, where appropriate, conservation areas used and managed by local communities and ethnic minority groups, with due recognition of their rights and responsibilities. The strategy also prioritizes areas of particular importance for biodiversity and ecosystem services, including biodiversity hotspot areas, habitats for threatened, endangered, endemic, or rare species, threatened habitats, and ecosystems that are representative of the country's key ecological systems. This helps ensure that any increase in area-based conservation coverage is not only quantitative, but also targeted toward areas of the highest ecological value.

To facilitate the expansion of OECM coverage, ONEP is actively engaging relevant landowners and site managers, including those of community forests, as well as universities, non-profit organizations, international development partners, and private sector, to raise awareness of the OECM framework and promote

¹⁸ Source: UNEP-WCMC (2026). Protected Area Profile for Thailand from the World Database on Protected Areas, July 2026. Available at: www.protectedplanet.net and is based on 2024 data

participation in the certification process. ONEP is also exploring potential incentive mechanisms to encourage the certification of OECMs.

In addition, the NBAP recognizes that designation alone is not sufficient to achieve positive biodiversity outcomes. Accordingly, the framework places emphasis on the effective management of protected areas and OECMs through clear conservation objectives, appropriate management processes, sound governance systems, adequate resources, and regular monitoring.

Monitoring and evaluation of the action plan's implementation will be supported through an information-system-based approach designed to facilitate operations. This should be undertaken in parallel with the continued enhancement of Thailand's biodiversity information system, so that it remains responsive to national reporting requirements, aligned with the Kunming-Montreal Global Biodiversity Framework, and updated in line with evolving biodiversity conditions.

Challenges to Achieving SPT 2

While the expansion of protected areas is a key component of Thailand's biodiversity strategy, area designation alone may not be sufficient to deliver positive biodiversity outcomes. Effective achievement of the target will also depend on clear conservation objectives, appropriate management processes, sound governance arrangements, adequate resources, and regular monitoring. In addition, identifying and prioritizing ecologically important and representative areas for protection or recognition as OECMs may be complex, particularly where there are competing land or marine uses, differing stakeholder interests, or constraints related to implementation capacity. The achievement of the target may also depend on strengthening ecosystem connectivity through conservation networks and corridor-based approaches, which may require coordination across multiple areas and stakeholders.

Achievement of the SPT may also be affected by both policy and implementation challenges. While the expansion of protected areas depends on national policy priorities and approval processes, the designation of OECMs is largely voluntary and relies on the willingness of landowners and site managers to participate. Securing the necessary consent from landowners and site managers can also be a time-consuming process. Consequently, stakeholder awareness and engagement will be critical factors influencing the rate of progress towards the target. Meaningful participation by relevant sectors, local communities, and other stakeholders will remain important to support equitable, transparent, and effective management and benefit-sharing.

In addition, continuous ecosystem restoration is also necessary, as degraded, damaged, or destroyed ecosystems may limit the effectiveness of area-based conservation if not properly rehabilitated. Environmental pressures such as forest burning and wildfires may pose a challenge, as they can degrade habitats, reduce ecosystem integrity, threaten species populations, and undermine the effectiveness of protected areas, OECMs, and broader conservation and restoration efforts.

2.3 Characteristics of Sustainability-Linked Finance Instruments

The financial characteristics of sustainability-linked finance instruments may vary, including but not limited to, coupon step-ups and step-downs, due to

- 1) success or failure in achieving the SPTs by the target observation date, and
- 2) the failure to confirm the performance of the KPIs against the SPTs through a verification assurance report provided in a timely and satisfactory manner.

Any variation of the financial characteristics will be commensurate and meaningful relative to the original sustainability-linked finance instrument's financial characteristics. Each sustainability-linked finance instrument may have one or more SPTs with an associated target observation date and financial implications.

The exact variation of the financial characteristics such as the amount, timing, and mechanism for payment of the financial implications will be specified in the corresponding legal documentation of the sustainability-linked finance instrument. The corresponding legal documentation will also detail the definition of the KPIs; calculation methodologies; SPTs; target observation dates; trigger event dates (trigger event refers to the change in financial characteristics of the instrument as a result of whether the SPT has been achieved); dates for verification assurance report to be provided; and any fallback mechanism if the SPTs cannot be calculated, observed, or reported in a timely and satisfactory manner.

Where relevant, additional language will be provided in the corresponding legal documentation to take into consideration the following:

- 1) **The potential impact on KPIs, SPTs, or baselines from a change in KPI calculation methodologies, data accessibility, or exceptional or extreme events that could significantly impact the regulatory, socioeconomic, and political environment.**

In such a situation, a recalculation of KPIs, SPTs, or baselines may be carried out in good faith to reflect such a change, subject to

- a) the government, represented by PDMO, providing the rationale for the revision; and
- b) confirmation from an external reviewer that the proposed revision is in line with KOT national policies and strategies, in line or more ambitious than the initial level of ambition of SPT, and that there is no material impact on the original second-party opinion provided to the issuer in connection with the framework. In case of a material impact, the framework will be revised, and a new second-party opinion will be obtained.

- 2) **Automatic adjustment to outstanding sustainability-linked finance instrument at the issuance of any future sustainability-linked finance instrument with an SPT of greater ambition that is based on the same KPI and target observation date.**

Such adjustments are intended to:

- a) Reflect the KOT's progressive strengthening of ambition over time,
- b) Avoid coexistence of sustainability-linked finance instruments with different SPTs at the same target observation date for the same KPI, and
- c) Facilitate the reporting exercise by avoiding the need to validate the KPI against multiple SPTs.

2.4 Reporting

Annually, the KOT will publish, and keep readily available and easily accessible, an SLB Progress Report on the PDMO's website (<https://www.pdmo.go.th/en>) at least until after the last SPT trigger event date. The report will contain qualitative or quantitative explanations of the main factors behind the evolution of the KPIs, as well as (when available) the progress of the KPIs established in this Framework.

The SLB Progress Report will be published no later than June 30 each year, subject to the following considerations:

- Information regarding KPI 1 will be produced biennially as at December 31, because the current NDC protocol limits the KOT's ability to publish results annually due to the complexity of the data collection and verification. The SLB Progress Report will contain the most updated official data as well as qualitative factors behind the evolution of the KPIs. Furthermore, there is expected to be a time lag of 3 years (and no longer than 4 years) from the end of each year to the reporting of GHG inventory data as part of the UNFCCC process.
- Information regarding KPI 2 as at December 31 will be compiled annually by ONEP and submitted to UNEP-WCMC for inclusion in the WDPCA and publication on the Protected Planet website. Subject to UNEP-WCMC's internal procedures and publication timeline, publication of the corresponding data on the Protected Planet website may be subject to time lag of 2 years from the relevant observation date. Accordingly, each SLB Progress Report will disclose the most recently available KPI 2 data published on the Protected Planet website. Consequently, the KPI 2 data included in a given year's SLB Progress Report may not necessarily correspond to December 31 of the immediately preceding year.

Where feasible, the report may also include the following:

- Any other information enabling investors to monitor the level of ambition of the SPTs or an illustration of the positive sustainability impacts of the performance improvement.
- Any Recalculation Event, including the recalculation of KPIs, SPTs, or baselines due to a change in KPI calculation methodologies, data accessibility, or exceptional or extreme events.

2.5 Verification

Performance of KPI 1, i.e., KOT's GHG inventory, will be reviewed and verified as part of the NDC process performed by the team of technical experts of the UNFCCC via the technical expert review (TER) process. A summary report will be available on the UNFCCC website.

For KPI 2, Protected Planet (managed by UNEP-WCMC) will process and validate the data reported by Thailand in an independent manner, in accordance with the WDPCA standards. In case of inconsistencies or doubts regarding the information provided, Thailand will have the option to request boundary corrections by demonstrating the validity of its data. Once validated, Protected Planet will publish the official figures on its website.

3. Second-Party Opinion

The KOT has appointed DNV (Thailand) Co., Ltd to assess the Sustainability-Linked Financing Framework and its alignment with the SLBP, ASEAN SLBS, and SLLP, and to issue a second-party opinion accordingly.

The second-party opinion will be made available on the PDMO's website.