Thailand

National Urban Mobility Policies and Investment Programme | Completed

Basic information

Population	→	66.17 million (2021)
Growth rate	→	-0.01%
Percentage of urban population	→	34.47%
GDP per capita	→	USD 6,730.31 (2020)
Percentage of the population living below the national poverty line (2021)	→	6.84% (2020)
Nationally Determined Contribution (NDC)	→	Reducing annual GHG emissions by 20%, or 115.6 MtCO2, in 2030 compared to BAU. Transport will aim to reduce 41 MtCO2 or 35.42% of the total NDC target (MoT).
National GHG emissions per capita	→	5.37 tCO2eq (excluding LULUCF), 3.99 tCO2eq (including LULUCF)
Proportion of transport-related GHG emissions	→	25.93% (including LULUCF)
Exposure to climate change	→	HIGH

Context

Thailand is in the heart of Southeast Asia and borders Lao PDR, Myanmar, Cambodia, and Malaysia. Its capital is Bangkok, also known as Krung Thep in Thai. Thailand has the second-largest economy in Southeast Asia after Indonesia. The services sector accounts for 45.75% of jobs in Thailand and contributes 58.59% of GDP, followed by the agriculture sector, which employs 31.62% of the active workforce and 8% of GDP. Last is the industry sector, which accounts for 22.63% of the active workforce and contributes 33.4% of GDP (Statista, 2019). Thailand relies heavily on tourism, with nearly 40 million visitors in 2019. This places Thailand among the top 10 most-visited countries in 2019. However, many sectors have suffered from the decline in tourism caused by the COVID-19 pandemic, which had a major impact on Thailand's economy. Thailand experienced negative GDP growth in 2020 for the first time since 1998.

Private vehicles are the most popular mode of transportation in Thailand. Bangkok has the most diverse transport options in the country, including the BTS (skytrain), MRT (subway), metered taxis, motorcycle taxis, and Tuk-Tuks. However, the city remains notorious for traffic congestion, as many

people prefer private vehicles for convenience and flexibility. To travel across the country or to the suburbs, there are many minivans and buses that connect most cities and popular destinations. Thailand also has 38 airports, seven of which are international airports. It typically takes around an hour to reach anywhere in Thailand by plane. Thailand also has a rail system spanning 4,925 km (BOI) that serves every part of the country, although it is not a high-speed network.

The national government has collaborated with GIZ to develop a NUMP, the Thai Clean Mobility Program, aiming to reduce GHG emissions from the transport sector, reduce air pollution, and promote a modal shift away from motorised private vehicles toward public transport.

The development of the NUMP is a participatory process which requires several preparatory steps and discussions. These steps include:

- Building on existing sector studies to assess city and national government mechanisms for funding, financing and transport planning and implementation
- Identifying support needs for cities that are to be included in the NUMP (capacity, financial instruments, funding, planning procedures, institutional framework)
- Assessing the main current barriers to low-carbon transport in Thailand
- Providing recommendations for "Vision & Goal setting" to:

  → Draft a national vision for urban mobility (in line with the NDC action plan);

  → define the objectives of the National Urban Mobility Programme; and

  → provide strategic direction on using the various levers of action available (governance, financing, funding, capacity building, technological choices, etc.) in Thailand

Support from the Partnership

Technical Assistance: National Urban Mobility Program (NUMP)
Type of NUMP: Programme NUMP
Funded by: Bundesministerium für Umwelt, Naturschutz und nukleare Sicherheit (BMU)
Funding amount: EUR 1,661,634
Implemented by: Gesellschaft für Internationale Zusammenarbeit (GIZ) through the TRANSfer III Project
Local counterpart: Office of Transport and Traffic Policy and Planning (OTP), Ministry of Transport
Final NUMP report: Development of a National Urban Mobility Programme (NUMP) for Thailand | MobiliseYourCity

Main purpose of the NUMP:

- Provide necessary groundwork that allows policymakers in the Thai government to make an informed decision on the implementation of the NDC action plan
- Develop a funding mechanism that supports the implementation of urban transport measures
- Provide a planning framework for urban transport planning (quality standards, clear guidance on roles and responsibilities, capacity development)

Supported activities:

The "Thai Clean Mobility Programme" consists of three pillars:

- Congestion charging
- Set-up of a Clean Transport Fund
- Public transport electrification

Status of project implementation

Project start: 2017 Q1
Project completion: 2022 Q4

Completed outputs:

- Study Tour to Berlin and London (February 2020);
- Pre-feasibility study on congestion charging design for Bangkok (November 2020);
- 2 congestion charge videos for communication and educational purposes for the broad public, as well as for the expert and policy maker community (December 2020);
- Study for the development of a Clean Transport fund (December 2020);
- Thailand Clean Mobility vision of the youth (July 2022);
- Study for Thailand's upscaling of public and private investment in public transport electrification (October 2022).

NUMP key measures and cost estimates

The following table highlights the most significant measures identified in the NUMP.

Measure	Cost estimate (EUR)
Congestion Charge	662,279,406
Bus Modernisation	124,902,630
BTS/MRT Fare Subsidy	290,633,646

Finance leverage

Leveraged financing (resulting or enabled by the NUMP preparation process)

Description	Source	Type	Status	Amount (EUR)
SMMR – Sustainable Mobility for Metropolitan Regional Projects[1]	BMZ	Grant	Secured	6,800,000
Urban Act project[2]	The International Climate Initiative	Grant	Secured	22,980,000
Electric Bus Leasing Project[3]	Bangkok Mass Transit Authority)	Domestic Fund	Secured	387,000,000

[1] The SSMR project supports activities on urban mobility in Cambodia, Thailand, Laos, Vietnam https://www.thai-german-cooperation.info/en_US/sustainable-design-of-urban-mobility-in-medium-sized-metropolitan-regions-smmr/
[2] The Urban Act project supports activities on urban mobility in China, India, Indonesia, Philippines, Thailand.
[3] https://mahanakornpartners.com/thailand-approves-landmark-electric-bus-leasing-project-to-drive-sustainable-urban-mobility/

Core impact indicator baselines

Indicator	Baseline - 2020
Total annual GHG emissions (Mt CO2eq)	68.26 Mt CO2eq from the energy sector
Annual transport related GHG emissions per capita (kg CO2eq)	1.04 kgCO2eq
Air pollution Decrease in mean urban air pollution of particulate matter (in µg PM2.5) at road-based monitoring stations	43 µg/m³ of PM2.5
Road safety Decrease of traffic fatalities in the urban area, per 100,000 inhabitants	11 fatalities / 100,000 habitants (2020)

Perspectives for implementation

Urban Act Project

The Urban ACT project[4] supports Thailand in integrating climate action and low-carbon mobility into urban development. It helps local authorities enhance urban resilience and reduce emissions, with a strong focus on sustainable transport systems. Building on MobiliseYourCity's prior work, the project improves climate adaptation and urban mobility strategies, positioning Thailand to address climate challenges and sustainable growth in its cities.

In 2025, Thai cities advanced their climate-responsive planning through new technical collaborations and capacity-building. Experts from TU Dortmund and the University of Stuttgart trained officials and researchers in Chiang Mai, while the Thai Meteorological Department, supported by the WMO, piloted urban climate services in Khon Kaen, Chiang Mai and Phuket, generating hazard maps to guide adaptation planning. Regional South–South cooperation also expanded, with Tongji University providing technical assistance on Ecological Spatial Planning and Thai delegations visiting Penang and Singapore to learn about nature-based solutions, water management and climate-adaptive urban design.

In addition, under the Urban-Act programme, together with the Office of Transport and Traffic Policy and Planning (OTP), a workshop on enhancing resilience in Thailand's transport system was held. Participants from over 15 agencies, including transport, public works, environment, climate policy, and meteorological bodies, came together to learn about climate-adaptation strategies for infrastructure (roads, rail, ports), risk assessment methods, and how to integrate resilience into transport planning. Through lectures, interactive simulations, and discussions, the workshop equipped decision-makers and planners with practical tools to design transport systems that are better able to withstand climate hazards such as floods, storms, and heat extremes, marking a concrete shift toward proactive, climate-resilient mobility planning in Thailand.

ASEAN EV Accelerator Programme[5]

In 2025, under the ASEAN EV Accelerator Programme, supported by Energy Foundation China, Thailand joined Indonesia, Malaysia, and Cambodia to advance the electrification of its transport. The programme helps national and energy policymakers better understand and plan for e-mobility by conducting stakeholder consultations, analysing country-specific EV needs, and defining priority policy and technical measures. It also develops country-specific EV transition roadmaps that outline priority policy actions, investment needs and implementation pathways. Through these activities, Thailand benefits from tailored analytical support, shared regional expertise

and coordinated planning tools that help accelerate the deployment of charging infrastructure, strengthen grid preparedness and advance coherent EV policies across the ASEAN region.

Insights from practice: lessons learned from the NUMP process

Balance is key, as implementing congestion charging represents a political risk

One key lesson from this project is that implementing a congestion charging system can be complex and politically sensitive. It involves balancing the objectives and constraints of multiple stakeholders, which can be challenging.

In this project, steering and working groups were formed to ensure that all relevant stakeholders were included in the policy design process. However, due to the upcoming national election in Thailand, gaining political buy-in for implementing the congestion charge in Bangkok has been difficult, as decision-makers may fear that proposing such a system could reduce their popularity with the public.

Supporting sustainable urban mobility in Thailand requires addressing institutional and regulatory barriers.

Implementing the Clean Mobility Fund presents an opportunity to address institutional and legal barriers to congestion charging. Although the Ministry of Finance has reservations due to the past performance of similar funds, this presents an opportunity to ensure transparency and exemplary performance in this initiative. The feasibility study has identified key roles and stakeholders involved in implementing the system and recommends fostering cooperation among them to ensure successful implementation. Additionally, legal issues related to vehicle identification, charging, and payment enforcement must be addressed. Addressing these issues will provide a strong foundation for the Clean Mobility Fund and pave the way for practical policy recommendations.

Highlights in the past year

PIAFF from the World Bank has positioned Transit-Oriented Development in Thailand.[6]

Supported by PPIAF (the Public-Private Infrastructure Advisory Facility) and the World Bank, Thailand in 2025 formally embraced a new generation of Transit-Oriented Development (TOD) as a core pillar of its urban-mobility strategy. A series of technical workshops held in Bangkok, Lamphun and Pattaya brought together national and local authorities, transit agencies, and private-sector actors to shift from planning to actionable, investment-ready TOD projects. These workshops laid the groundwork for public-private partnerships (PPPs), explored financing pathways, and identified pilot cities, including secondary cities beyond Bangkok, thereby embedding TOD as a structural instrument for building greener, better-connected, lower-carbon cities across Thailand.

[4] https://www.international-climate-initiative.com/en/project/urban-act-integrated-urban-climate-action-for-low-carbon-resilient-cities-22-i-416-asia-g-urban-act-integrated-climate-action/
[5] ASEAN EV Accelerator Programme (February 2025 - July 2026) https://www.unescap.org/sites/default/d8files/event-documents/2025-2026_Leaflet_ASEAN-EV-Accelerator-Programme.pdf
[6] https://www.ppiaf.org/feature_story/thailands-next-urban-leap-connecting-cities-through-transit-oriented-development

PIAFF's push for Transit-Oriented Development (TOD) in Thailand is complemented on the ground by a city-level initiative, ACTIVATE Bangkok, implemented by ICLEI. Under ACTIVATE Bangkok, transit-oriented planning goes beyond just mobility: it integrates climate resilience, green infrastructure, and inclusive urban design around transit hubs. The project aims to create climate-resilient, accessible transit stations framed by green spaces, mixed-use neighbourhoods, and safe walking and cycling links. It also seeks to foster social inclusion and accessibility for women, youth, the elderly, and people with disabilities, embedding equity and sustainability into urban mobility by aligning land use, transport and public space development.

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