

Newsletter on the Climate Policy in Thailand

Issue 5: September 2015

Climate policy

News

- Thailand has officially submitted the Intended Nationally Determined Contribution (INDC) to the United Nations Framework Convention on Climate Change (UNFCCC). Therein, Thailand promises to reduce its greenhouse gas emissions from 20-25% from the projected business-as-usual (BAU) level by 2030. The priority of the mitigation actions is the energy and transportation sector. The additional costs of the implementation as well as the demand for capacity development were mentioned as the biggest support needs. Consequently, the achievement of 25% against BAU is defined as depending on adequate international support. Additionally, in the INDC the importance of adaptation for Thailand is emphasised in order to draw attention to the financing needs. In the development of INDC, Thailand was also supported by the International Climate Initiative (IKI).
- At the international level, Thailand was assigned to be the Chair of the group of 77 of developing nations (G-77) for 2016-2017. This will strengthen Thailand's role in climate change negotiations.
- The cabinet approved the Climate Change Master Plan (CCMP) 2014-2050, developed with support from GIZ. The Office of Natural Resources and Environmental Policy and Planning (ONEP) is currently coordinating the implementation of the plan and the targets with all relevant ministries and partners.
- At the ministry level, there were several personnel changes in the field of Climate Protection. General Surasak Kanchanalak was assigned to be the Minister of the Ministry of Natural Resources and Environment (MoNRE) and Dr. Raweewan Bhuridej was assigned to be the Secretary General of ONEP. His predecessor, Dr. Kasemsun Chinnavaso was promoted to be the Permanent Secretary of MoNRE. The former Deputy Permanent Secretary of MoNRE, Mr. Wijarn Simachaya is currently the Director General of the Pollution Control Department (PCD). Mr. Areepong Bhoocha-Oom is appointed to be the Permanent Secretary of Ministry of Energy after the retirement of Dr. Kurujit Nakornthap.
- In its role as the National Designated Authority (NDA) for the Green Climate Fund (GCF), ONEP is coordinating the accreditation process for the National Implementing Entities (NIE). In the first phase of this process (self-assessment) three potential NIEs were identified. Additionally, ONEP is initiating the necessary structures for the GCF such as a "no objection procedure".
- **The background paper has been updated.**

Nationally Appropriate Mitigation Actions (NAMA)

News

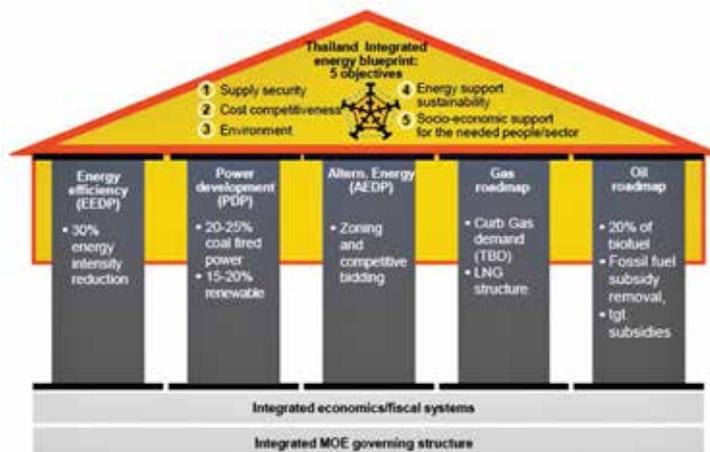
- The details of the implementation plan of RAC-NAMA were discussed extensively among a variety of stakeholders and were eventually decided among the project steering committee (including ONEP, the Department of Alternative Energy Development and Efficiency (DEDE) and GIZ). This mutual implementation plan was submitted to the NAMA Facility at the end of September 2015. The implementation of the project is expected to start in the beginning of 2016.
- In May 2015, ONEP in its role as the NAMA Focal Point organised a meeting wherein all NAMA projects were presented. The meeting is considered to be an exchange of knowledge between ministries. ONEP has further organised a seminar in order to inform the agencies under the Ministry of Energy (MoE) about the NAMA registry.
- The working group for developing a NAMA proposal in Thailand's land transport includes the Office of Transport and Traffic Policy and Planning (OTP), Bangkok Mass Transit Authority (BMTA), Thai Traffic Police, Mass Rapid Transit Authority of Thailand (MRTA), State Railway of Thailand and Thailand Greenhouse Gas Management Organization (TGO) all of which have worked on the development of NAMA under the concept note "People-Centred Urban Mobility in Thailand".
- **The background paper has been updated.**

Energy Efficiency

News

Thailand Energy Integrated Blueprint:

Summary of Thailand Integrated Energy Blueprint

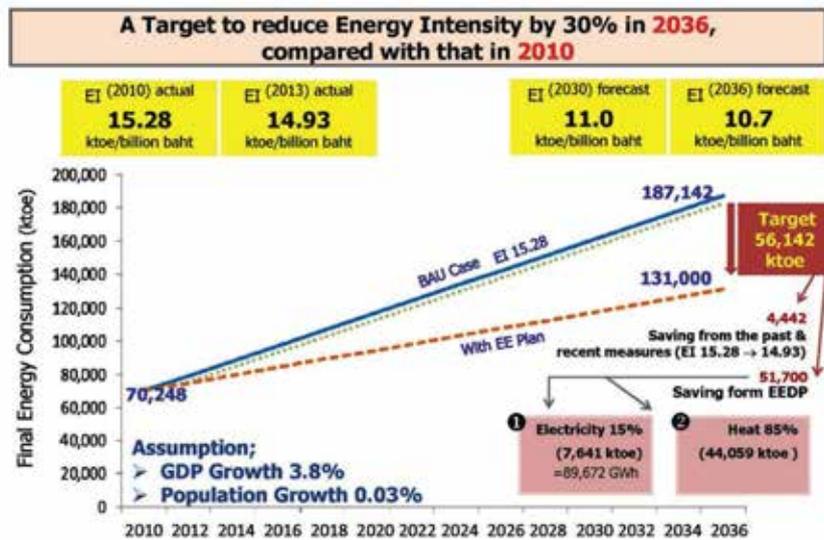


Source: Ministry of Energy, Thailand

News

- The revised Power Development Plan (PDP 2015) was presented in the second half of 2015 in the public consultation. Afterwards, the revised form was submitted to the National Energy Policy Council (NEPC). The version starts from a lower electricity demand which was made in line with the expected decline in economic growth from 4.41% to 3.94%. Nevertheless, the final PDP shows that Thailand plans to double the installed energy capacity to reach 70,410 MW by 2036 and highlights less dependency on natural gas (with a target of 40% from 65% by 2036) and the development of renewable energy will be promoted. At the same time, Thailand continues to promote "clean" coal technologies and the development of electricity importation from neighbouring countries.

The revised EEDP or Energy Efficiency Plan 2015:



- In August 2015, the NEPC approved the latest version of the Energy Efficiency Plan (EEP, 2015-2036), which aims to lower Thailand's Energy Intensity (EI) rate by 30% in 2036. The plan was adjusted in terms of content in order to support the government's actions regarding the energy consumption for industries and public (state) office buildings.
- In July 2015, the Energy Conservation Fund Committee (ENCON) has approved the Energy Efficiency Revolving Fund of 1.5 billion THB to financial institutions that will extend loans to entrepreneurs who propose projects aimed at reducing energy consumption.
- The ENCON Fund will also provide a budget for the replacement of lamps in public places with LED bulbs, and provide about 2.5 billion THB to promote the use of inverter system air conditioners.
- **The background paper has been updated.**

Renewable Energy

News

- At the beginning of the year, the National Reform Council (NRC) suggested a programme that should allow all citizens to install solar roof tops and connect them to the local network. More precise details on this net-metering approach, also known as "Quick Win Solar" have not been released yet.
- Thailand's Power Development Plan has been revised in May (PDP 2015-2036) and is intended to set the framework for the country's integrated energy planning. As set in the PDP 2015, the share of coal has been raised from 19% to 25%, while the goal of 15-20% of renewables in the overall electricity production remains comparatively low (currently at 8%). The Alternative Energy Development Plan (AEDP) was currently approved in July 2015.
- **The background paper has been updated.**

Sustainable Consumption and Production (SCP)

News

- The Pollution Control Department (PCD) has made a linkage to the Ministry of Industry's Green Industry Program. If the Thai Green Label or Green Cart products are not available, it is suggested that products from manufactures should be certified with Green Industry Mark level four or five.
- The office of the Prime Minister announced in the Royal Gazette on February 4th, 2015 that the notification on Procurement Guidelines for Electronic-market and Electronic-bidding included the possibility for procurement agents to also specify price performance into the selection criteria. The parameters that can be included in the considerations of price performance include, for example, total cost of ownership, Thai Green Label, Green Cart etc.
- The PCD has started the drafting of Thailand's SCP roadmap in July 2015 with the assistance from the European Commission. The paper is expected in March 2016.
- Currently, PCD has started the preparation process for the Thai Green Public Procurement (GPP) phase III (2017-2021). A public hearing has been organised in August 2015.
- [The background paper has been updated.](#)

Adaptation to Climate Change

News

- The ONEP started up the preparation of the National Adaptation Plan (NAP). The first draft of vulnerability assessment will be presented in November 2015.
- As the key topic for Thailand, the adaptation to the climate change was integrated into INDC. Therein, Thailand has prioritised adaptation actions in order to enhance climate resilience.
- [The background paper has been updated.](#)

Flood and Drought Management

News

- On July 21, 2015, the government announced that the worst drought of the century was over. However, serious water shortages are persisting in many parts of the country, including important rice cultivation provinces.
- The government states that the cause for this severe drought is due to the mistakes and mismanagement of the previous government, who after the floods of 2011 recommended to keep water levels in the reservoirs low. Other actors believe that the drought is mostly due to El Nino.
- The government still heavily focuses on water allocation, while waste water and flood management mostly lies in the hands of local governments and some central government institutions. The water user groups founded in the 90s are still lacking proper legal force and network to work along the same catchment areas with groups of other provinces.
- [The background paper has been updated.](#)

Biodiversity

News

- The cabinet has approved the fourth National Biodiversity Strategy and Action Plan (NBSAP) developed in 2014 by the ONEP.
- Currently, neither law nor regulation can provide the adequate protection for the critically endangered species. Thailand is now working on improving the public awareness in terms of knowledge of critically endangered species and invasive species which destroy Thai biodiversity. Both fields are a part of NBSAP.
- The possession of exotic species has gradually increased among Thai citizens. Thailand is making an effort on raising public awareness and increase knowledge about the destructive effects of this practise, among others, through effective communication strategies for all levels and target groups.
- [The background paper has been updated.](#)



Background
Information
on the
Climate Policy
in Thailand



Background and Development Target of the Partner Country

As the second largest economy in South-east Asia, Thailand is one of the emerging countries important for climate protection. The economic growth of recent years has led to a continuous increase in CO₂ emissions in Thailand, as well as a heavy loss of primary forest areas. At the same time, Thailand is one of the countries around the world which are most severely affected by the consequences of climate change, with a large potential for CO₂ reductions. As an active member of ASEAN and a major economy in the region, Thailand can assume a leading role and become a reference point for its neighbouring countries.

In accordance with the decision of the National Climate Change Committee (NCCC), Thailand has set a target to reduce 7-20% of its CO₂ emissions by 2020, compared to the BAU scenario with the reference year 2005. This target has been introduced as a pledge during COP 20 in Lima by the MoNRE. Seven percent of the emission reductions shall be achieved through domestic NAMAs, the implementation of which will bring about a cost reduction in the short term. The additional savings of up to 20% shall be achieved through supported NAMAs, particularly in the areas of energy efficiency, renewable energy and transportation. In September 2015, Thailand published an INDC target to achieve 20-25% mitigation against BAU. The achievement of 25% mitigation will be made with the help of international support. How ambitious Thailand will be in the next few years in terms of the implementation of climate policy and which role it will play in terms of climate negotiation is closely linked to the support and the trust placed upon it by its international partners. The established German-Thai dialogue for climate cooperation is of particular significance in this context.

In climate negotiations so far Thailand does not play an active progressive role, even though Thailand does not belong to the like-minded group. The Thai pledge on the reduction target of 7-20% by 2020 measured by the BAU is a step in the right direction.

While Thailand strives to contribute to the reduction of greenhouse gas emissions, adaptation to the climate change also has a high priority. Thailand is one of the countries around the world which are mostly affected by the consequences of the climate change in accordance with the Climate Risk Index (CRI) of Germanwatch. Also in response to the increasing extreme weather events and rising costs, the MoNRE by ONEP has initiated the process for the development of the NAP based on Climate Change Risk Assessments. Thailand aims to define development-orientated adaptation actions in the NAP. Although, data required for the risk assessment are mostly available through international and national sources, they are currently not systematically evaluated and utilised. As a central topic for the Thai climate policy, the topic of adaptation was also included in the INDC.

For the current political situation in Thailand the interim government currently does not have discernible negative impact on the development of the climate policy. On the contrary, the Government has made important climate policy decisions. For example, the National Climate Change Committee not only confirmed the INDC by 2030 and the reduction targets of 7-20% by 2020 compared to the BAU scenario, but also the Climate Change Master Plan.

Laws and Strategies

A central component of the climate policy is the Climate Change Master Plan (CCMP). It defines the short, medium and long-term mitigation, adaptation and capacity development targets for different sectors. The preparation was supported by the IKI, and the CCMP was confirmed by the NCCC as well as the cabinet.

Currently, the Climate Change Action Plan (formerly called the Climate Change Strategy) is being developed by ONEP with the support of IKI. The action plan has a duration of five years and defines measures to achieve the short and medium-term targets of the CCMP for this period. A first draft of the strategy was discussed in public hearings and is now being revised with the support of GIZ.

In 2015, the development of the National Adaptation Plan (NAP) has commenced in Thailand. In addition to the Climate Change Master Plan and Action Plan, the NAP represents the third central document of the climate policy in Thailand and will complete the instruments of the climate policy at national level.

Additional plans important for the mitigation are the Energy Efficiency Development Plan 2015-2036, the Alternative Energy Development Plan 2015-2036 and the Thailand Power Development Plan 2015-2036 of the Ministry of Energy (MoE). The MoE is currently in the finalising process of the energy plans integration. For the transportation sector, the National Transport Master Plan defines the framework.

Institutional Set-up

The National Climate Change Committee (NCCC) is headed by the Prime Minister and has the mandate to define the national climate policy. Members of the Committee are the Ministry of Environment and its subordinate agencies, as well as other sectoral ministries, whose working areas are closely connected with the climate change.

The Thai MoNRE is responsible for matters related to environmental and climate protection in Thailand and represents Thailand at international climate negotiations, as recently as was the case at COP 20 in Lima. MoNRE is a partner of BMUB in the German-Thai dialogue on climate change, as well as at the annual steering committee meeting on the German-Thai climate cooperation.

As a subordinate agency of MoNRE, ONEP takes over the central tasks in the field of the climate policy. In this regard, ONEP is currently working on the development of the climate strategy and the NAP. In addition, ONEP represents Thailand as UNFCCC Focal Point and assumes the role of NAMA Focal Point within the government. The development of INDCs were also coordinated by ONEP, particularly as Thailand's National Designated Authority (NDA) in the Green Climate Fund (GCF) process. In pursuing all central tasks related to the climate protection, ONEP has been supported by the IKI.

Additional important subordinate agencies under the Ministry of Environment are the Thai Greenhouse Gas Management Organization (TGO) and the Pollution Control Department (PCD).

The MoE is responsible for the area of energy supply and energy consumption. Planning of the MoE is of great importance to the climate policy as a significant proportion of the reduction potential in Thailand is identified to be in the areas of energy efficiency and renewable energy. Major subordinate agencies of the MoE are the Energy and Policy Planning Office (EPPO) and the Department for Alternative Energy Development and Efficiency (DEDE).

Another key player in the climate policy is the Ministry of the Interior (Mol). Cities and regions fall under the Mol's responsibility. Thus, the implementation of climate protection measures depends heavily on the cooperation of Mol at sub-national level.

BMUB – Support in the Sector

The BMUB currently promotes the development and implementation of two of the three key instruments for the climate protection, the climate strategy and the NAP. The third instrument which is an adopted climate master plan was also supported by IKI.

For the development of the third key instrument, the BMUB has opted for a draft prepared by the GIZ. The relevant proposal is currently in the process at BMUB. Additionally, ONEP receives support from the BMUB in the development of INDCs.

In addition, the BMUB supported Thailand in the development of NAMAs through a large number of projects implemented by United Nations Environment Programme (UNEP), Center for Clean Air Policy (CCAP), Energy Research Centre for the Netherlands (ECN) and GIZ among others. In cooperation with ONEP and DEDE, GIZ has submitted the Refrigeration and Air-Conditioning (RAC) NAMA proposal to the NAMA Facility. The project will start to implement in early 2016.

The largest reduction potential in Thailand is recognized in the energy sector. Currently, the MoE still receives the BMUB support through the project "National Energy Efficiency Plan as a Core Element of Emission Reduction Strategy" until the end of 2015. In regard to REDD+, the BMUB promoted the currently discontinued project of World Wide Fund for Nature (WWF). In the area of adaptation to climate change which is important for Thailand, the IKI supported Thailand through a project on risk based national adaptation plan and ecosystem-based management in watershed areas.



Background and Development Target of the Partner Country

In the coming years, the economic growth achieved by Thailand as an ambitious emerging country will be accompanied by an increase of CO₂ emissions. While the emissions accounted for 192,724 ktCO₂ in 2005, the Thai government estimates that the emissions will increase to 367,437 ktCO₂ in 2020 under the BAU scenario. This represents almost a doubling of CO₂ emissions in 15 years. In order to limit the increase of CO₂ emissions, Thailand has set a target to cut 7-20% of CO₂ emissions under the BAU scenario by 2020. The target was introduced in 2014 by MoNRE as a pledge within the frame of COP 20 in Lima. In this context, 7% of the reduction shall be generated by domestic NAMAs that are funded by the country's own budgets. Through domestic NAMAs, measures which can be re-financed in a short period of time shall be implemented. This should lead to an expected reduction of 23,330 ktCO₂ by 2020. The savings of higher than 7% and up to 20% shall be achieved through supported NAMAs and are therefore dependent on the international support in the area of mitigation. Through the implementation of supported NAMAs, up to 49, 658 ktCO₂ shall be saved by 2020. The largest saving potential is recognized in the development of renewable energies, increasing energy efficiency as well as in the transportation sector.

To take account of the growing importance of NAMAs, the ONEP was designated as the national NAMA focal point. In the mentioned capacity, ONEP shall not only incorporate developed NAMA concepts and NAMA registry, but also support other sectoral ministries in the development of NAMAs, using a relevant MRV system. The "Roadshow" of MoNRE in sector ministries is planned for 2016 in order to inform the opportunities from NAMAs.

In this regard, the most advanced NAMA aims to increase energy efficiency and reduce F-gases in the area of cooling technologies (RAC NAMA). The development of this NAMA was supported by the initiatives of IKI and NAMA facility. The RAC NAMA plans to achieve, through collaboration with partners from the government, producers of RAC equipment, customers and banks, a transition to climate-friendly, energy efficient cooling technologies. The implementation of NAMAs is expected to start in the beginning 2016.

Besides the MoNRE, the MoE and its subordinate DEDE have also been working on the development of NAMAs. The central document for increasing energy efficiency in Thailand is the EEDP, for the implementation of which measures have been developed, targeted at different energy-intensive sectors. These measures will be worked out in detail as NAMAs, using a relevant Measuring, Reporting and Verification (MRV) system. The Ministry of Transport is currently working on NAMA and thus allows for meaningful expectations for the reduction in the transportation sector.

Laws and Strategies

The CCMP which was developed with the IKI support and approved in July 2015 by the Cabinet is the framework document for the climate protection in Thailand. The Climate Change Action Plan (formerly called the Climate Strategy) defines measures to achieve the short-term goals of the Master Plan.

In the area of energy efficiency, the Energy Efficiency Development Plan is the authoritative document. On the basis of the energy intensive sectors defined by the Plan, NAMAs are designed to increase energy efficiency. For the development of renewable energy, the Alternative Energy Development Plan 2015-2036 was set to be a framework document. However, no NAMAs have yet been derived from the document although renewable energy in Thailand offers a significant reduction potential.

The National Transport Master Plan 2011-2020 defines targets in the area of transportation.

Institutional Set-up

The NCCC is headed by the Prime Minister and has the mandate to define the national climate policy. It is therefore also for the development and implementation of NAMAs of relevance. Members of the Committee are the MoNRE and its subordinate agencies, as well as other ministries, whose working areas are closely connected with climate change. The Secretariat of the Committee is located at the MoNRE.

The MoNRE is responsible for matters related to environmental and climate protection in Thailand and represents Thailand at international climate negotiations. MoNRE is a partner of BMUB in the German-Thai dialogue on climate change, as well as at the annual steering committee meeting on the German-Thai climate cooperation.

As a subordinate agency of MoNRE, ONEP and in particular its Climate Change Coordination and Management Division (CCMC) assume key responsibilities in the area of the climate policy. In this context, CCMC is currently working on the development of the Climate Change Action Plan and assumes the role of the NAMA Focal Point within the government. In this function, ONEP shall support other sectoral ministries in the development of NAMAs and in the submission of developed NAMAs in the NAMA registry or to the NAMA Facility.

The Thailand Greenhouse Gas Management Organization (TGO), which is a subordinate agency under the Ministry of Environment, is also involved in the development of MRV systems of NAMAs.

The Ministry of Energy (MoE) is responsible for the area of energy supply and energy consumption. It is of great importance in terms of the climate policy since a large part of the reduction potential of 7-20% identified in Thailand and to be tapped through NAMAs lies in the field of energy efficiency and renewable energy. Major subordinate agencies of the MoE are the DEDE and EPPO, which is currently working on the implementation and the derivation of NAMAs from the Energy Efficiency Development Plan. For the development and implementation of NAMAs in the transportation sector, the Ministry of Transport is responsible.

BMUB – Support in the Sector

As part of the IKI project “Support to the Development and Implementation of the Thai Climate Change Policy”, the BMUB supports the Thai Ministry of Environment through ONEP in the development of the climate change strategy. The project also provides ONEP with advice on the definition and fulfilment of its duties as the national NAMA Focal Point in the process of NAMA development, as well as on its cooperation with sectoral ministries.

The MoE through EPPO is supported by the IKI project “National Energy Efficiency Plan as a Core Element of Emission Reduction Strategy” in the derivation of NAMAs from the Energy Efficiency Development Plan.

In addition, the BMUB promotes global projects aimed at developing NAMAs with components in Thailand, which have been implemented by the World Resources Institute and the Center for Clean Air Policy among others. With the support of IKI, the RAC-NAMA was developed as well, which will be the first NAMA to be implemented by Thailand with the support of the NAMA Facility.



Starting situation and development aim of Thailand

Thailand is the largest electricity consumer among South-east Asian countries and this trend is likely to continue in the decades to come. Historically, electricity demand has been growing by 6% per year (Vithayasrichareon & MacGill 2012). The energy sector is the largest contributor to greenhouse gas (GHG) emissions in Thailand, accounting for about 67% of total emissions (159 MtCO_{2e} in 2000). GHG emissions in the energy sector are almost exclusively due to the combustion of fossil fuels in energy industries, manufacturing industries, and transportation. According to Thailand Directive on Development of Emission Inventory Data and model (TGO, 2010b), the total GHG emissions are expected to double from the 2000 and continue to rise sharply until 2050 (TGO, 2011). In the recent development of the Thailand GHG emissions reduction pledge, Thailand aims to realise all of its GHG emission reduction in the energy sector, with reductions equally expected to come from energy efficiency in all end use sectors and renewable energy on the supply side.

In the early 1990s, the Thai government laid the foundation for transformative energy policy planning in the country by passing the Energy Conservation Promotion Act in 1992 that set energy efficiency standards for industry and by establishing an Energy Conservation Promotion Fund, which raised funds for energy efficiency projects by taxing petroleum products. In order to develop an understanding of energy efficiency projects amongst banks, the Thai government introduced an Energy Efficiency Revolving Fund in 2002, offering credit lines—initially at no interest—to local banks so that they could provide loans for energy efficiency projects. The Revolving Fund made commercial banks more familiar with energy efficiency projects, and by 2010, it had financed projects worth a total investment of more than 300 million EUR, resulting in energy cost savings in the region of more than 100 million EUR each year.

Laws, Policies, and Strategies

The main energy policy plans in the Thai energy sector relevant to date are the AEDP 2015-2036, developed by DEDE in the MoE, the PDP 2015 which is the main planning instrument of Thailand's Electricity Generating Authority (EGAT), as well as the Energy Efficiency Development Plan –2015-2036 (EEDP) of the EPPO.

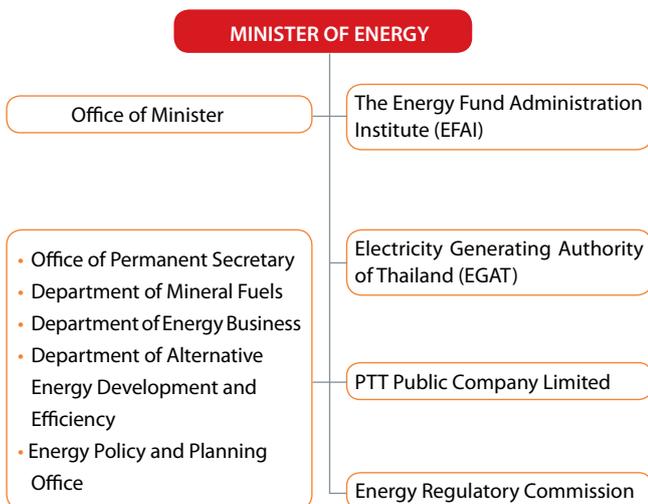
Support of BMUB

At the moment BMUB is supporting the Ministry of Energy or the EPPO by implementing the EEDP 2011-2030 through the project "National energy efficiency plan as a core element for an activity- and evidence-based mitigation strategy". The project aims at promoting the increase of energy efficiency in industry and building sectors.

Furthermore, one component of the global project called Towards carbon neutral water and waste water utilities is working on the reduction from CO₂ emissions in wastewater facilities. In this regard energy efficiency plays an important role.

Institutional setup

The MoE is the main government institution responsible for energy in Thailand. Under the MOE, there are six departments and four state enterprises, as shown in the figure below. The EPPO is in charge with setting energy policy, measures and plans while the DEDE is the main department responsible for development of implementation of renewable energy and energy efficiency programmes.



Source: Ministry of Energy, Thailand



Background and Development Target of the Partner Country

With an import rate of around 55-60%, Thailand is heavily dependent on energy imports, which is one of the main reasons why Thailand promotes the development of renewable energy. Thailand reaches an electrification rate of 99%, one of the highest values in South-east Asia. However, the issue of energy supply security is of great importance due to the high import rate. Since power outages occur regularly partly in some widespread areas in the country, renewable energies are definitely perceived by the decision makers and the public as an option for cleaner and safer energy production. Also, against the background of the planned development of coal power as well as allocating the additional licenses for oil and gas extraction, the first (although low-key) discussion about a **transformation of the energy supply system** has begun in Thailand.

In 2014, the majority of Thailand's electricity was generated from natural gas (64%). Coal power plants (20%) is the second highest percentage of the power generation capacity, followed by renewable energy (8%) and large hydropower (7%). Around 1% was generated from diesel and fuel oil products. Of the total energy consumption, the amount of renewable energy was around 8% in the form of biomass for heat.

The PDP, together with the AEDP, is the central planning document for the renewable energy area. The PDP 2015 was recently revised and states that the percentage of electricity generated from renewable energy should be raised from 15-20% by 2036. According to the AEDP 2015-2036 which is currently approved by the NEPC in September, the starting point of the total capacity is currently at 7,490 (MW) and 19,635 MW from renewable resources should be available with the main focus on solar (6,000 MW), biomass (5,570 MW) and wind (3,002 MW) by 2036.

The expansion targets for biogas were clearly adjusted downwards within the latest revision of AEDP. In July 2013, the NEPC has significantly raised the expansion target for biogas from an installed capacity of 600 to 3,600 (MW) by 2021. The additional capacity should be generated in particular with the help of an increased usage of energy crops. The current draft of AEDP plans for 600 MW of biogas from manure and agricultural waste including 680 MW from energy crops by 2036. In addition to electric power generation Bio-CNG should be isolated and not applied to the gas distribution network for the connected rural areas as the fuel substitute for natural gas vehicles.

In the end of 2014, the former adder program was replaced by a new feed-in tariff (FIT) developed by the MoE. The new FIT is composed of three components: $FIT = FIT(F) + FIT(V) + FIT\ Premium$. FIT(F) is a portion of the remuneration that is fixed throughout the whole support period of 20 years, while FIT(V) is a portion that varies according to the inflation rate. Variable portions are applicable only for certain technologies for which the feedstock price is considered to be volatile such as for biomass and biogas from energy crops as well as waste-to-energy projects (excluding landfill gas projects). The last component is the FIT Premium which again is split into two categories: one is an additional FIT granted to promote the use of the certain renewable fuels and which is granted for the first 8 years of project lifetime, the other one is a premium which is granted for the whole project duration for VSPPs located in three southern border provinces and four districts of Songkla province (i.e. Chana, Thepa, Saba Yoi and Na Thawi). The suggested FITs will only serve as a ceiling for the proposals made. Power producers are requested to make a competitive offer not exceeding this ceiling. Competitive bidding will be employed as a selection process for FIT applications instead of on a first-come first-served basis. The most cost-competitive offers will be selected until a fixed quota is reached. A general opening without quota is not expected.

Currently, the new FiT rates only apply to projects that already hold a PPA. Only 280 MW shall be given out in a first round of "FiT Bidding". Very Small Power Producers (VSPP) (below 10MW capacity) will be allowed to hand in applications for approximately 189 MW of biomass and 91 MW of biogas projects. The regional distribution of the licenses is highly regulated, and applications will only be considered for the East, West and Central region. It is not yet concerned regional grid network stability (Zoning Policy).

The renewable energy policy should also benefit in particular the low-income rural regions of the country. For this purpose, the Ministry of Energy has established different programmes which should promote decentralised generation of energy and support the participation of local added value in the communities. Among other things it also supports the pilot Napier grass plantations in 10 communities with natural conditions, the cultivation of fast-growing tree for the woodchips and pallets productions as well as the development of **municipal business models**.

In order to take into account the concept of subsidiarity and participation in the area of PV, the MoE concentrates as well on the support programmes that benefit fewer institution investor and private sectors and provides among other things a stronger focus on rooftop installation. The National Reform Council (NRC) spoke in early January 2015 in favour of a programme that aims at simplifying the installation of rooftop equipment and shall allow all citizens to install this equipment and connect it to the power network. Details to net metering approach will be discussed under the topic "Quick Win Solar" and have not yet been released to the public.

In 2013, another programme was adopted, which should support the local solar systems up to 1 MW. However, this was converted in summer 2014 so that the additional 800 MW could be installed only as public private partnerships on public property or from agricultural cooperatives. The official release of the implementation guidelines, the timeline and the selection criteria to the "Government and Agricultural Cooperatives 800 MW can be expected.

For the **solar industry** in Thailand, the so-called "Adder" has so far been the most important promotional instrument. The feed-in premium model was launched in 2007 and has led to a rapid growth in the field of solar parks. In this context, licenses for 2,537 MW were granted. Until the end of 2014, however, only 1,084 MW were in operation and about 253 MW under construction. The government therefore decided to approve further projects in order to achieve the goal of 2,800 MW (solar parks). For this purpose, the government is making use of the previously submitted, but not approved projects (totalling about 1,000 MW). After a re-examination, an additional 148 MW is expected to receive a PPA shortly, therefore hopefully leading to a feed-in tariff of 5.66 THB/kWh for 25 years. The previous "Adder" is no longer applicable. The plants which are to be newly approved should be in operation by the end of 2015.

Laws and Strategies

Thailand has specified its long-term energy planning in the Power Development Plan (PDP) which was revised by the end of last year and was entered into force since May 2015. This document is the primary planning document for the demand for energy production and states the planning in the 2015-2036 version.

Besides the PDP, there exists different plans that address the areas of energy efficiency, renewable energy and climate change, namely the Climate Change Master Plan (CCMP, 2015-2050), the Alternative Energy Development Plan (AEDP, 2015-2036), and the Energy Efficiency Development Plan (EEDP, 2015-2036). AEDP and EEDP were developed by the MoE; AEDP was developed by the Department of Alternative Energy Development and Efficiency (DEDE) and EEDP was developed by the Energy Policy and Planning Office (EPPO). The CCMP was developed by the ONEP, both under MoNRE.

The revised **PDP 2015** was presented in the first half year of 2015 in the public consultations and then submitted to the NEPC in its revised version. The version is, among others, based on lower power demand since the projected economic growth rate of 4.5% was corrected down to 3.9%. It is surprising that higher generating capacity from coal has been planned in the PDP 2015: In 2036, 25% of electricity demand shall be covered by coal, instead of 19% so far. The EGAT in particular is committed to the **development of coal capacity**. Besides the controversial 800 MW power plant in Krabi, additional power plants in Songkhla, Nakhon Si Thammarat, Trang and Satun would be planned for. The projects however encounter significant resistance from the population and non-governmental organizations and support the reform movement. Although the target for renewable energy in the new PDP was raised, it may be viewed as not particularly ambitious and lags behind the goals of the last AEDP: 15-20% of the power supply (8% in the PDP 2010). The development target for nuclear power was corrected from 5% to 0-5%, a slight reduction by 2036.

Institutional Set-up

The MoE is the most important government agency in charge of energy planning and policy. Under the MoE, EPPO is nominally responsible for the design of energy policies, measures and planning while the DEDE is responsible for the implementation of the policies and implementation in regard to renewable energy. In practice, however, the responsibilities between the departments frequently overlap.

National energy policies and energy management and development plans are recommended by the NEPC to the cabinet. The Council oversees and supports all other operational energy committees in Thailand. The Council is presided over by the Prime Minister and further represented by different ministers (Minister of Foreign Affairs, Minister of Defence, Minister of Finance, etc.). The Secretariat of the NEPC is EPPO.

EGAT is the state enterprise that manages electricity generation in Thailand. EGAT holds and operates about 45 percent of the generation capacity of the country by itself. The rest is supplied to EGAT by independent power producers. EGAT is also the owner and operator of the transmission networks in Thailand.

The distribution networks in Thailand are operated by the Metropolitan Electricity Authority (MEA) and the Provincial Electricity Authority (PEA). The electricity network is regulated by the Energy Regulatory Commission (ERC).

BMUB – Support in the Sector

The “Support to the Development and Implementation of the Thai Climate Change Policy” project supports the Ministry of Energy striving to achieve the set development goals for renewable energy, in particular through an assessment of renewable energy potential in different regions of Thailand in collaboration with the Fraunhofer Institute. The existing political dialogue between Germany and Thailand will be extended to cover the topic of a turnaround in energy policy. In addition, the BMUB supports Thailand in the development of renewable energy through the “Capacity Development on Renewable Energy and Grid Integration” (CapREG) project implemented by the Renewable Academy AG (RENAC). Already completed projects are the GIZ project for the promotion of “Sustainable palm oil production”, as well as the project on “Combined Heat, Cooling and Power from Solar Energy and Biomass” or TRESERT implemented by SOLARLITE.

Support of Other German Donors in the Sector

The Project Development Programme (PEP) of GIZ, on behalf of the Federal Ministry of Economic Affairs and Energy (BMWi), supports German companies in their step into these promising, but often difficult markets. It promotes business partnerships between German and local companies and accompanies them in the long term through the different stages of market positioning and concrete project development. In this context, the PEP supports the transfer of technology and know-how and promotes sustainable market structures and the dissemination of renewable energy and energy efficiency solutions. The PEP is implemented by GIZ as part of the Export Initiative Renewable Energies (EEE) of the BMWi and focuses in the coming years especially on the establishment of renewable energies in communities through providing advice on municipal business models.

Further information:

<http://www.giz.de/fachexpertise/html/4029.html>



Background and Development Target of the Partner Country

Green Public Procurement (GPP) and eco-labelling have been important instruments to increase sustainable consumption and production and at the same time contribute directly to reduce GHG emissions and mitigate climate change impacts. Recently, these instruments have gained more and more importance in Thailand and ASEAN region. It is noteworthy that the government sector is one of the largest consumers that can drive the manufacturers to produce environmental friendly products. In Thailand, the fiscal budget of the governmental sector for purchasing products, constructions and services is approximately 15% of the GDP. The SCP strategy in Thailand identified the public procurement as a central mechanism for the long-term establishment of SCP which at the same time will also have an impact on private consumption towards a more climate-friendly direction.

Pollution Control Department (PCD) was assigned from the Permanent Secretary of Ministry of Natural Resources and Environment to be a coordination agency among the departments in MoNRE and lead the pilot implementation phase of (GPP). The Thai GPP is not enforced by law but the government sector is encouraged to be a role model for stimulating the demand for green or climate friendly products and services through the Green Public Procurement Plan (GPP Plan). The first GPP Plan was made mainstream during 2008-2011. It was approved and endorsed by the cabinet Resolution on January 22nd, 2008. The PCD was assigned to implement the GPP Plan with relevant ministries and stakeholders e.g. the Thai Environment Institute (TEI), National Science and Technology Development Agency (NSTDA) and the private sector. In this plan, target groups were Central Government Agencies, departments within MoNRE both in head departments in Bangkok and in the regional offices as well as departments of other Ministries. The goal of the first GPP Plan (2008-2011) was to increase the government's spending on environmental friendly products and services. The achievement

of this plan was measured through the increased number of governmental agencies participating and the procured amount of environmentally friendly products and services compared to the overall procurement budget.

The first GPP Plan aimed for a participation of governmental agencies of no less than 25%, 50%, 75%, and 100% in 2008, 2009, 2010, and 2011 respectively. Regarding the procured amount, it aimed for the Governmental Agencies to quantitatively procure of 17 environmentally friendly products and services for not less than 25%, 30%, 45%, and 60% of the respective annual budgetary. Results from the implementation of GPP Promotion Plan were presented as following:

- 170 Central Government agencies participated in the GPP Plan which accounts for 100% participation,
- The volume of green products and services procured was 570.02 million THB (approximately 13 Million EUR) from the total procured amount of 929.25 million THB,
- The number of products being certified by the Thai Green Label Scheme increased significantly, illustrating a good market acceptance,
- 25,685 tonnes of CO₂ were reduced through procurement of 10 environmentally friendly products as reported by implementing agencies.

The current second Green Public Procurement Promotion Plan (2013-2016), which aims to firstly encourage governmental units in implementing GPP, secondly support the private sector in green production leading to an increased number of green products on the market, and thirdly to change consumption behaviours towards sustainable consumption. The governmental units include governmental departments of all ministries, municipalities, state enterprises, public organisations, and universities. More target groups also include the private sector (production, services and distributors) as well as the general public. From the 1st GPP Plan, the number of GPP products and services has been increased from 14 to 17 products and from three to five services. The four strategies of the 2nd GPP Plan are 1) increasing the GPP volume, 2) encouraging production of green products and services to comply with GPP criteria, 3) supporting sustainable consumption in the public and private sector and among the general public and 4) monitoring, evaluation and steering of GPP implementation. The targets of this plan have been set in terms of (1) purchasing volume of environmentally friendly products and services and (2) number of participating organizations in Thai GPP.

Regarding the purchasing volume, the governmental agencies at department level or equivalent, who have been participating in the 1st GPP plan, aim to increase the amount of purchasing volume of the 17 environmentally friendly products and 5 services by not less than 70 % of the total purchasing volume of each product and service category in 2013, 75% in 2014, 80% in 2015, and 90% in 2016.

For the organisations at the municipality level, it aims for participation of at least 10% of municipalities nationwide in 2013, 15% in 2014, 30% in 2015, and 50% in 2016. For State enterprises, public organizations, and universities, the GPP Plan aims to have not less than 50% participation in 2013, 60% in 2014, 70% in 2015, and 100% in 2016.

Lastly, awareness of the relevance of the integration of climate-relevant aspects in the framework of GPP is increasing significantly. Therefore, GPP will be developed further and complemented by climate-relevant aspects as additional criteria. An eco-label extended by climate aspects and a more strict, eco-friendly public procurement can serve as role-models both for climate protection strategies and low carbon economies.

Laws, Policies, and Strategies

As early as the ninth National Economic and Social Development Plan, Sufficiency Economy (2002-2006), sustainable development was incorporated according to Agenda 21 of the Earth Summit to address the rising concerns about sustainable development issues in Thailand.

In the 10th National Economic and Social Development Plan, Green & Happy Society (2007-2011), and the Environmental Quality Management Plan (2007-2011) it was stated that the government sector should be a leader in the area of green procurement in order to create a green market of environmental friendly products and services.

The current 11th National Economic and Social Development Plan, Balanced Growth (2012-2016) and the Environmental Quality Management Plan (2012-2016) address key development issues such as encouraging sustainable consumption, including GPP, creating favourable conditions for environmentally friendly industries, shifting the development paradigm and redirecting the country to a low carbon and environmentally friendly economy as well as empowering communities in adapting to climate change and fostering environmentally friendly cities.

The first and second Green Public Procurement Promotion Plan were well aligned with other national Policies and Strategies, for example the 10th -11th NESDP, Environmental Quality Management Plan (EQMP), Green Growth National Strategy, etc.

Institutional setup

Ministry of Natural Resources and Environment (MoNRE)

The **Pollution Control Department (PCD)** was assigned by the Permanent Secretary of MoNRE to be the coordination agency and to pilot the Thai GPP. The PCD was responsible for selecting products, establishing the criteria for environmentally friendly products and services, leading the GPP implementation in the pilot phase in order to evaluate, adjust and expanding the implementation of Thai GPP to other governmental agencies.

The **Department of Environmental Quality Promotion (DEQP)** plays an important role in raising awareness of SCP among the general public, municipalities and SMEs through: capacity building programs, project implementation and public relation campaigns. The current project related to sustainable consumption is called "Low Carbon City", which contributes to an increase in demand for green products from end-users in the society.

Ministry of Finance

The **Comptroller General's Department (CGD)** is the main actor involved in Thai GPP. Generally, the CGD sets out the rules and regulations for procuring products and services, distributes the allocated budget to governmental agencies and monitors the spending of the budget. Most of the governmental agencies are subjected to the regulations of the CGD except for some organisations such as the municipalities, which are subjected to regulations of the Ministry of the Interior. To support the Thai GPP, the CGD circulated a document in August 2008 to all governmental agencies under the regulations of the office of the Prime Minister on procurement to urge for the purchasing of environmentally friendly products and services. The document aimed to increase the procurement of products and services from the GPP list. However, the procuring procedure has to strictly follow the regulations, which determines that the lowest price is always the final decision threshold. There is no extra points or award system for environmentally friendly products or services at all. GPP is still not a mandatory process for governmental procurement.

Ministry of Industry (Mol)

The **Department of Industrial Work (DIW)** plays an important role in promoting sustainable production because its mandate is to regulate the industry to ensure the sustainability of industrial development while safeguarding the environment. One of the programs, called "Green Industry", aims to promote sustainable production in the Industrial sector. The Thai green industry is divided into 5 levels. The levels ranging from 1 to 5 are Green Commitment, Green Activity, Green System, Green Culture, and Green Network, respectively. The Green Industry Program can help to increase the number of products complying with GPP criteria.

The **Department of Industrial Promotion (DIP)** has the mandate to promote and foster the industrial section in Thailand. There are a number of programmes to support manufacturers, for example, to improve energy and resource management, to enhance energy efficiency and clean technology etc. The DIP can contribute to GPP by accelerating the number of manufacturers with green production facilities and producing green products.

The **Thai Industrial Standards Institute (TISI)** was established in the Ministry of Industry as the national standards body of Thailand in 1969. TISI, in co-operation with the Thai Environment Institution (TEI), carries out the Green Label Scheme which aims to reduce environmental pollution as well as to encourage manufacturers to use clean technologies in their production processes. The certified product is allowed to carry the green label. With regards to Thai GPP, the green label certified products are also automatically qualified for GPP as environmentally friendly products.

The **Thailand Environmental Institute (TEI)** is an NGO which plays many key roles for climate protection, emission reduction and SCP such as research, project implementation, consultation and providing of training in environmental aspects. TEI together with TISI carries out the Thai Green Label Scheme (Type I eco-label).



Background and Development Target of the Partner Country

In accordance with the fifth IPCC report, the impact of climate change today is not only already noticeable all over Asia, but will continue to increase in intensity worldwide. Throughout the region, it is expected that there will be a sharp rise in temperatures and changes in the rainy seasons. The rising sea levels and increasing storms will cause damages to the coastal areas. Due to the increasing temperatures, as well as the growing number of extreme weather events, adverse effects on the health of the population and on numerous other socio-economic factors are increasingly expected. The fact that South-east Asia, also in an international comparison, suffers especially from the consequences of climate change is clearly demonstrated by the Global Climate Risk Index 2015 of the Germanwatch. According to the index, five South-east Asian countries are among the 15 countries most severely threatened by climate risks - including Thailand. Taking into account only the financial damage inflicted between 1994 to 2013 by the disasters, which were influenced by climate change. Thailand even ranks fourth in the index.

While the 2011 flood alone has caused an economic damage at the amount of 45 billion USD, it is expected that further damages will occur through breakdowns in major economic sectors of the country. The agricultural sector in Thailand is not only one of the most important economic sectors but it also employs about 40% of the population. Agriculture is strongly affected by the climate change due to the rise in temperatures and changes in precipitation. The impact on widespread and intensively used agricultural areas is already noticeable today. Inappropriate land use planning is also affected by the climate change and extreme weather events. The tourism industry, especially in the coastal areas is affected as well by climate change. In addition to an increase of malaria and dengue fever, cities are expected to face flooding and destruction caused by storms.

The Thai Government has begun to take into account the growing economic damages caused by climate change. The 11th National Economic and Social Development Plan specifically responds to the risks of rapidly changing environmental conditions and refers to the strengthening of resilience of Thailand as one of the top goals of the Thai development policy. The CCMP developed by the MoNRE defines the higher-ranking national goals for adaptation, mitigation and capacity development. The Climate Change Action Plan focuses on the implementation of the short-term goals of the Master Plan, including the area of adaptation which was included as a key topic in INDC. However, in order to address the growing challenge and to more strongly integrate adaptation considerations into strategies and development plans of sectoral ministries, as well as those at the sub-national level, Thailand has started to work on the development of the NAP. Through the NAP, Thailand aims to integrate development-orientated adaptation measures into adaptation planning and define development-orientated development measures.

Although the data needed for the risk assessment are mostly available through international and national sources, they are currently not systematically evaluated, nor forwarded to the stakeholders and utilised. National and local decision makers therefore lack a basis for the assessment and the definition of development-orientated adaptation measures. In order to improve the basis for planning, ONEP entrusted with the NAP development decided to develop the NAP based on a vulnerability assessment. ONEP has started the development of vulnerability assessment and is supported by IKI. The first result will be presented in 2015.

Laws and Strategies

A central component of the climate policy is the CCMP. It defines the short, medium and long-term adaptation, mitigation, and capacity development targets for different sectors. The preparation was supported by the IKI, and the CCMP was approved by the cabinet.

Currently, the Climate Change Action Plan (formerly called the Climate Change Strategy) is being developed by ONEP with the support of IKI. The action plan shall be valid for 5 years and defines measures for the implementation of the short- and medium-term targets of the CCMP for this period. A first draft of the strategy was discussed in public hearings and is now being revised with the support of GIZ.

In 2015, the development of the NAP has commenced in Thailand. In addition to the Climate Change Master Plan and Action Plan, the NAP represents the third central document of the climate policy in Thailand. It will complete the instruments of climate policy at national level and contribute to the mainstreaming of adaptation into strategies and planning of sectoral ministries.

Institutional Set-up

The NCCC is headed by the Prime Minister and has the mandate to define the national climate policy. Members of the Committee are the Ministry of Environment and its subordinate agencies, as well as other sectoral ministries, whose working areas are closely connected with climate change.

MoNRE is responsible for matters related to environmental and climate protection in Thailand and represents Thailand at international climate negotiations, just as recently the case at COP 20 in Lima. MoNRE is a partner of BMUB in the German-Thai dialogue on climate change, as well as at the annual steering committee meeting on the German-Thai climate cooperation.

As a subordinate agency of MoNRE, ONEP takes over the central tasks in the field of climate policy. In this regard, ONEP is currently working on the development of the Climate Change Action Plan and will later take care of the NAP development. In addition, ONEP represents Thailand as UNFCCC Focal Point. Furthermore, ONEP is the NDA of Thailand in the GCF process. In pursuing all central tasks related to the climate protection, ONEP has been supported by the IKI.

Another key player in the climate policy is the Ministry for the Interior (Mol). Cities and regions fall under the Mol's responsibility. Thus, the implementation of climate protection measures depends heavily on the cooperation of Mol at sub-national level.

BMUB – Support in the Sector

The BMUB currently promotes the development and implementation of two of the three key instruments for the climate protection, the climate strategy and the National Adaptation Plan (NAP). The third instrument which is an adopted climate master plan was also supported by IKI. Additionally, ONEP receives support from BMUB in the development of INDCs.

In the area of EbA, the BMUB supports Thailand through the bilateral GIZ project "Improved management of extreme events through ecosystem-based adaptation in watersheds (ECOSWat)". In addition, a number of regional or super-regional projects are being carried out by different organisations. In cooperation with various other organizations, the International Union for Conservation of Nature and Natural Resources (IUCN) identifies and documents the benefits of conserving ecosystems in the project "Ecosystems Protecting Infrastructure and Communities (EPIC)" and supported the conservation of mangrove forests through the project "Promotion of Ecosystem-based Adaptation through Reforestation and Sustainable Utilization of Mangrove Forests in Thailand and Vietnam". The Asian Institute of Technology also promoted until the end of 2014 the exchange of instruments and methods to adapt to the climate change through the project "Adaptation to Climate Change in Water Resources Management in South-east Asian Coastal Towns". In 2015 several BMUB financed global and regional adaptation projects with relevance to Thailand have begun. They include: a project of making the EbA mainstream, a project which integrates the agriculture sector into the NAP-Process and the Mekong WET Project (Building Resilience of Wetlands in the Greater Mekong Subregion through the Ramsar Regional Initiative).



Flood and Drought Management



Background and Development Target of the Partner Country

Thailand regularly fights the consequences of flooding and drought. In 2011, Thailand was affected by the worst flooding in 50 years (there were more than 650 deaths and hundreds of thousands left homeless; Measured by the economic costs, this was the fourth most expensive environmental disaster worldwide). The fourth and fifth Intergovernmental Panel on Climate Change (IPCC) report calls large river basins and here “African and Asian mega-deltas” (Synthesis Report) and refers to them as the most vulnerable regions to the climate change. As a result of climate change, more frequent extreme events are projected for Thailand.

Among the four objectives of Thailand’s new NESDP, one focusses on sustainable management of natural resources and environment. Eight of its sub-goals include capacity development towards a society that better withstands climate changes (climate change resilient society), as well as improvement of preparation against natural disasters. Similarly, the CCMP, which is in a draft version for approval, refers to the issue of water management among adaptation measures as one of the key sectors for action. The plan also names, among others, the relevance of the transfer of competences to the local level and the transfer of a functioning management to the national level as fields of action.

Laws and Strategies

The general water policy that was prepared in the year 2000 is currently the applicable guideline. A comprehensive water policy was later drawn up but never became legally binding. It still exists as a suggestion since it is considered to require a revision. In addition to these general documents, there exists a large number of different strategies.

His Majesty the King’s seven principles for sustainable water management, which are not legally binding, but have a great influence, have higher priority over the water vision and water policy adopted in 2000. In addition, there is the “Water Act”, which is only present as a draft and has not yet been adopted. The official vision for the water sector reads: “By the year 2025, Thailand will have sufficient water of good quality for all users through to efficient management, organizational and legal systems that would ensure equitable and sustainable utilization of its water resources with due consideration on the quality of life and the participation of all stakeholders.”

The different strategies and policies of the water-related institutions should focus on the ordained strategies and visions. An excerpt of strategies is as follows:

- Integrated Water Resource Management Project (2012) by Department of Water Resources (DWR)
- Strategic Plans for Water Resources Management in 25 Basins (2007) by DWR
- Formulation of Integrated Plan for Water Resources Management in Chi River Basin (2006) by DWR
- Formulation of Integrated Plan for Water Resources Management in South East and Pattani River Basin (2006) by DWR
- Royal Irrigation Department's (RID) strategies based on the Royal Irrigation Act
- National Economic and Social Development Plan 2012-2016 by NESDB
- Climate Change Master Plan 2013-2050 (draft) by ONEP,
- Master Plan of Water Resource Management by SCWRM/NWFPC/WFMC/ONWFPC

Except that of the RID, all the mentioned strategies make references to ecosystems, nevertheless, without indicating the positive effects of functioning ecosystems on flood and drought management. In the Climate Change Master Plan, the clearest indication of these positive effects is to be found under the catchword: Ecosystem-based Adaptation (EbA).

The government is currently preparing a 10 year - Master Plan with the volume of 900 billion THB. The key points of the strategy are the overall and integrated approach of the water sectors which include besides flood protection also the measures against drought and the improvement of water quality. Although the time frame of the projects remain unclear, the budget for 2015 which is equal to 108 billion THB was nationally approved and various institutions have started with the implementation processes.

Institutional Set-up

The Royal Irrigation Department (RID), which is a subordinate agency under the Ministry of Agriculture and Cooperatives (MAC), was formerly the most important organisation in the water sector and still has major influence in almost all water related matters. The DWR under the MoNRE is responsible for the implementation of integrated water resources management approach (IWRM). Upon its establishment, the DWR took over the personnel and the agendas of the RID, which has time and again since then led to discussions regarding the areas of responsibility. This situation has led to only a modest cooperation between these two key institutions.

The central planning is responsibility of the National Economic and Social Development Board (NESDB), which develops the non-legally binding five-year plans (current NESDP 2012-2016). The content of the plans shall be considered as recommendations.

In addition, the ONEP, which is a subordinate agency under MoNRE, is another important water related organisation. On the one hand, ONEP is responsible for climate related issues and is currently working on the climate strategy for the implementation of the CCMP. On the other hand, ONEP carries out Environmental Impact Assessments (EIA) and can therefore have a direct influence on the planned infrastructure measures in the water sector.

BMUB – Support in the Sector

In the area of ecosystem-based adaptation, the BMUB supports Thailand through the bilateral GIZ project named: "Improved management of extreme events through EbA in watersheds". In addition, a number of regional or inter-regional projects are being carried out by different organizations. In cooperation with various other organisations, the IUCN identifies and documents the benefits of conserving ecosystems in the project "Ecosystems Protecting Infrastructure and Communities (EPIC)" and supported the conservation of mangrove forests through the project "Promotion of Ecosystem-based Adaptation through Reforestation and Sustainable Utilization of Mangrove Forests in Thailand and Vietnam". The Asian Institute of Technology also promotes the exchange of instruments and methods to adapt to climate change through the project "Adaptation to Climate Change in Water Resources Management in Coastal Cities of Southeast Asia". Lastly, on behalf of BMUB the GIZ implements the project "Climate-Sensitive Flood management in the Lower Mekong Basin" on as well as the global project for mainstreaming EbA.



Background and Development Target of the Partner Country

Thanks to the numerous, diverse ecosystems, Thailand's biodiversity is one of the richest in South-east Asia. The different mountain regions, the numerous tributaries of the Mekong and other wetlands, forests and rainforests, as well as coastal and marine areas in the Gulf of Thailand and in the Andaman Sea are home to a huge diversity of species. It is estimated that there are about 12,000 different species of plants in Thailand. In addition to over 300 species of mammals, there are about 350 species of reptiles, 2,800 species of fish and 900 species of birds. Nevertheless, many of these ecosystems and the species living in them are endangered. While in 1961 yet over 50% of the land area was forest, the forest covers today only just under 30% of the total land area. The unique ecosystems in the coastal and marine areas with mangrove forests, coral reefs, seagrass beds and coastal forests suffer from the growing number of tourists, the illegal logging, the industrial fishing and the development of ports. Studies show that only about 40% of seagrass beds are in good condition. The situation of the coral reefs is even more alarming: In Suratthani province which is rich in reefs, 65% of coral reefs are either in poor or very poor condition. Today, 121 species of mammals living in Thailand, 184 species of birds, 33 species of reptiles, 218 species of fish, and no less than 1,131 species of plants are considered to be in threaten status.

In order to promote the protection of biodiversity, Thailand ratified the Convention on Biological Diversity (CBD) in 2004 and the Cartagena Protocol in 2006 and significantly expanded the number of protected areas. To implement the CBD, Thailand developed and implemented three consecutive "National Biodiversity Strategies and Action Plans" (NBSAPs) for the periods 1998-2002, 2003-2007 and 2008-2012. Thailand had thus already formulated NBSAPs even prior to the ratification of the CBD. In 2015, the cabinet has adopted the fourth NBSAP in which Thailand will provide the contribution to achievement of Aichi-Target 2011-2020. The fourth NBSAP with its time frame of

2015-2021 is set to be more long-term than the former plans. The key objectives of the plan are to improve the management of protected areas, to reduce the loss of habitats and to improve the protection of endangered and endemic species. A focus of priority measures defined in the NBSAP is the protection of coastal and marine areas, as well as the mobilisation of private investment to this end, the creation of awareness among the population and the private sector with regards to the importance of ecosystems and biodiversity, as well as measures to better combine tourism with biodiversity protection. In addition, ecosystem services should be recognised and integrated into policy planning processes while positive incentives should be created and negative incentive mechanisms reduced. Mainly, there are four strategies which form the core of the NBSAP: 1) the strategy for the integrated biodiversity conservation, 2) the protection and the restoration of biodiversity, 3) the protection of national laws on biodiversity in accordance with Green Growth Concept and 4) raising an awareness and setting up a database system for biodiversity.

Thailand has already had its first experience in the recognition of ecosystem services in the terrestrial areas in conformity with "the Economics of Ecosystems and Biodiversity" (TEEB). To this effect, the Government decided to set up a TEEB Committee, which will be located at ONEP.

Laws and Strategies

The National Park Act, which went in to effect in 1961, is one of the most important laws for the protection of ecosystems and biodiversity. It forms the basis for the designation and protection of national parks. In accordance with the Act, the collection, destruction and removal of wood, animals and plants in national parks are prohibited. Other important legal foundations include the National Conserved Forest Act, the Fishery Act, as well as the Wildlife Conservation and Protection Act.

Thailand has so far developed and implemented three National Biodiversity Strategies and Action Plans (NBSAPs). The most recent NBSAP covered the period from 2015 to 2021 was approved by the cabinet since March 2015.

Furthermore, the protection of ecosystems and biodiversity is incorporated into other cross-sector national strategies of Thailand. The 11th National Economic and Social Development Plan (2012-2016) defines measures for the protection and restoration of coastal and marine areas. The plan calls for the entire government to contribute to the protection of mangrove forests, seagrass beds and coral reefs, as well as to avoid policies that counteract these protection efforts.

The CCMP was developed by MoNRE through ONEP. The Plan will be the framework document for the climate protection in Thailand until 2050, it has been approved by the cabinet since July 2015. In the plan, short, medium and long-term goals are defined, which will contribute to the protection of biodiversity, as well as to the combination of measures to adapt to the climate change with those to protect biodiversity.

Institutional Set-up

The most important ministry for the conservation and restoration of ecosystems and biodiversity is the MoNRE with its subordinate agencies, including the ONEP, the Department of National Parks, Wildlife and Plant Conservation (DNP), the Department of Marine and Coastal Resources (DMCR) and the Biodiversity-Based Economy Development Office (BEDO).

The Biological Diversity Division under ONEP was appointed by MoNRE as the national focal point for the Convention on Biological Diversity, as well as for the Cartagena Protocol. In this role, ONEP is responsible for the implementation of the CBD, the Cartagena Protocol as well as for initiating concrete measures to protect biodiversity and represents Thailand at COPs. Simultaneously, it performs a coordinating function as a focal point within the government.

The major player in the designation and management of national parks in Thailand is the DNP. It was entrusted by the MoNRE with the protection of national parks and the conservation of flora and fauna.

The conservation, restoration and management of resources of the coastal and marine regions, in particular the mangrove forests, coral reefs, seagrass beds and marine animals is the responsibility of DMCR.

BEDO is responsible for improving the administration related to the utilisation of natural resources for economic purposes and should contribute to the sustainable utilisation of biodiversity, as well as to the creation of awareness of the importance of biodiversity.

BMUB – Support in the Sector

The BMUB is currently promoting no bilateral biodiversity conservation projects in Thailand. Nevertheless, through the close cooperation of BMUB with key players of biodiversity protection (MoNRE and ONEP) and the annual management meeting between BMUB and Thailand, these institutions will be strengthened. In addition, aspects of biodiversity protection have been taken into account in other BMUB projects both on a region and global level, such as “Promotion of Ecosystem-based Adaptation through Mangrove Restoration and Sustainable Use in Thailand and Vietnam”, and “Mekong WET: Building Resilience of Wetlands in the GMS, through a Ramsar Regional Initiative”, “Sustainable use of biodiversity in tropical peatlands of the ASEAN region”, “Mainstreaming EbA - Strengthening EbA in decision making processes” and “Improved management of extreme events through ecosystem-based adaption in watersheds”.