

Newsletter No. 210 (EN)

**Renewable Energy
in Thailand**

September 2022

Table of Contents

Abstract.....	3
I. Introduction	3
II. Energy Plan 2036.....	3
1. Political Plans	3
A. Thailand Integrated Energy Blueprint (“ <i>TIEB</i> ”)	3
B. Plans and indicators.....	4
2. Authorities.....	4
III. Promotions.....	5
1. Solar Energy	6
a) Feed-in-Tariff for Solar Energy.....	6
b) BOI Promotion.....	6
c) Public Private Partnerships	6
2. Wind Energy	7
a) Feed-in-Tariff.....	7
b) BOI Promotion.....	7
3. Hydropower	7
a) Feed-in-Tariff.....	7
b) BOI Promotion.....	8
4. Waste-to-Energy.....	8
a) Feed-in-Tariff.....	8
b) BOI Promotion.....	8
5. Biomass.....	8
a) Feed-in-Tariff.....	8
b) BOI Promotion.....	9
6. Biogas.....	9
a) Feed-in-Tariff.....	9
b) BOI Promotion.....	9
IV. Foreign Investment Law	10
V. Outlook.....	10

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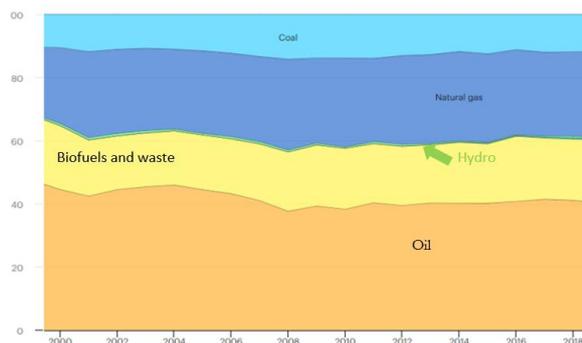
Abstract

The following newsletter shall give an overview of the current situation in Thailand’s energy sector (I.), particularly the Energy Plan 2036 (II.), the investment promotions provided by the Thai government (III.), and the restrictions on foreign investors and available exemptions (IV).

I. Introduction

Thailand’s total energy consumption will obviously increase year by year.

As shown in Tab 1 below, Thailand’s current energy consumption is mainly covered by fossil fuels, particularly gas and oil (nonrenewable energy sources).



Tab 1: Total energy supply by the source of Thailand 2000 – 2018
Source: International Energy Agency (IEA)

Renewable energy development in Thailand is multi-faceted.¹ The electricity industry's total renewable energy generation capacity has increased twofold since 2012. Bioenergy and hydropower make up the majority of the power generation mix, although solar PV and wind power are swiftly catching up.²

II. Energy Plan 2036

The Thai government’s goal is to increase the ratio of renewable energies to total consumption by 30% by 2036. The Thai prime minister has recently announced that greenhouse gas emissions shall be reduced by 20-25% by 2030.

1. Political Plans

A. Thailand Integrated Energy Blueprint (“TIEB”)

To achieve these goals, the Thai government has developed the **Thailand Integrated Energy Blueprint (“TIEB”)**, a comprehensive framework for developing the energy sector by 2036. The TIEB has the following objectives:

- Renewable energies shall become a major part of the national energy supply to replace fossil fuels and oil imports
- Strengthening of the national energy security

¹ International Trade Administration of U.S.A, Energy Resource Guide (Thailand), 2021.

² *ibid.*

- Establishing facilities for alternate energy production on the communal level
- Nationwide support for the production of renewable energy
- Promotion of competitiveness through research and development

B. Plans and indicators

The TIEB includes the following independent plans:

The independent plans of TIEB	Status
- <i>the Alternative Energy Development Plan 2018 – 2037 (“AEDP”)</i> ³	Amended
- <i>the Power Development Plan 2018 – 2037 (“PDP”)</i> ⁴	Amended
- <i>the Energy Efficiency Plan 2018 – 2037 (“EEP”)</i> ⁵	Amended
- <i>the Gas Plan 2015 – 2036 (“GP”)</i>	Effective
- <i>the Oil Plan 2015 – 2036 (“OP”)</i>	Effective

The government also plans to amend the Gas Plan 2015 – 2036 (“GP”) and the Oil Plan 2015 – 2036 (“OP”) to align with the new Power Development Plan 2018 – 2037 (“PDP”).⁶

However, during the amendment and approval of other plans, the plans 2015-2036 remain in force.

AEDP2018 was adopted by the *National Energy Policy Council* on 19 March 2020 and defines goals for increasing renewable energy

³ The AEDP 2018-2037 has been approved by the Cabinet on 20 October 2020.

⁴ The PDP 2018-2037 has been approved by the Cabinet on 30 April 2019.

from the current 7,300 MW to almost 20,000 MW by 2036. The following capacities are envisaged for the respective sectors:

- Waste-to-energy: 444 MW (household waste and industrial waste)
- Biomass: 3,376 MW
- Biogas: 546 MW
- Wind energy: 1,485 MW
- Solar energy: 10,000 MW
- Floating hydro-solar hybrid project: 2,725 MW (new scheme)

The Power Development Plan 2018 – 2037 (aimed to be amended every 5 years) outlines the strategic goals for Thailand’s energy sector, namely:

- security of supply
- profitability and
- eco-friendliness.

The Energy Efficiency Plan 2018 – 2037 aims to reduce the energy intensity (consumption divided by GDP) by 30% by 2036.

2. Authorities

The *Ministry of Energy* and the prime minister are in charge of decisions on energy policy and oversee the following authorities on the planning and implementation:

Authorities	Responsible for
<i>Energy Policy and Planning Office (“EPPO”) of the Ministry of Energy</i>	the development of the energy sector’s basic <u>strategies</u> .
<i>Department of Alternative Energy Development and Efficiency (“DEDE”) of the Ministry of Energy</i>	the <u>promotion</u> of renewable energies and investigating

⁵ The EEP 2018-2037 has been approved by the Cabinet on 20 October 2020.

⁶ Announcement of the Energy Policy and Planning Office (EPPO) on 2 May 2019.

	possibilities to use un-tapped potential.
<i>Electricity Generating Authority of Thailand (“EGAT”)</i>	being a state enterprise run by the <i>Ministry of Energy</i> and <u>operates</u> most of the <u>power plants and energy infrastructure</u> .
<i>Energy Regulatory Commission (“ERC”)</i>	serves as the regulatory and <u>supervisory</u> body for the Thai energy market.
<i>Metropolitan Electricity Authority (“MEA”) and Provincial Electricity Authorities (“PEA”)</i>	<u>purchases</u> energy from the EGAT. The MEA provides power to the Bangkok metropolitan area, and the PEAs to the rest of the country.

The so-called *Feed-in-Tariff* (“**FiT**”) provides that energy producers receive a fixed price for the energy they sell to Metropolitan Electricity Authority (“**MEA**”) or Provincial Electricity Authorities (“**PEA**”).⁷ The MEA or PEA conclude a so-called *Power Purchase Agreement* (“**PPA**”) with the energy producer, which guarantees the FiT for a fixed period. This way, the investment in renewable energies can be secured.

The *Board of Investment* (“**BOI**”) offers various investment promotions, e.g. the exemption of corporate income tax⁸ for up to 8 years, exemption from import duties on machines and raw materials, as well as the possibility for foreigners to own land and to facilitate the employment of foreign experts.

III. Promotions

There are currently two promotion schemes available for producers of renewable energy:

The following table gives an overview of selected incentives of BOI:

Selected BOI incentives in relevant to the projects of renewable energy				
Promotion category	Exemption from corporate income tax and dividend withholding tax	Exemption from import duties on:		Non-tax incentives*
		Machines	Raw materials for the production of export goods	
A1	8 years (no cap)			
A2	8 years (cap)**	✓	✓	✓
A3	5 years (cap)			
A4	4 years (cap)			

* These include, amongst others, the possibility for foreigners to own land and easier employment of foreign experts.
 ** The amount of granted corporate income tax exemption is capped at the amount of total initial investment excluding the cost of land and working capital.

⁷ The *FiT-Scheme* replaces the previous *Adder-Scheme* where a bonus on top of the regular price per kWh was paid.

⁸ The corporate income tax rate in Thailand is currently 20%.

Listed below are the respective promotion categories for the various kinds of renewable energies.

1. Solar Energy

Solar power is a resource abundantly available in Thailand, but its potential is so far mostly untapped.

Currently, approx. 3,000 MW of commercial solar energy is being produced. According to the PDP2018 and AEDP, this amount shall be increased to 10,000 MW by 2037.

a) Feed-in-Tariff for Solar Energy

In 2013, the Energy Policy and Planning Office (“**EPPO**”) decided to promote rooftop photovoltaic facilities with a total capacity of up to 200 MW, of which 100 MW were reserved for industrial production and 100 MW for private buildings. A FiT of THB 6.85 (approx. € 0.19) per kWh is available for private rooftop photovoltaic facilities with a capacity of up to 10 MW peak performance (kilowatt peak or “**kWp**”), THB 6.40 (approx. € 0.18) for industrial facilities with a peak performance of 10 to 250 kWp, and THB 6.01 (approx. € 0.16) for industrial facilities with peak performance between 250 and 1,000 kWp. Facilities in the Southern border provinces⁹ receive an additional bonus of THB 0.50 (approx. € 0.014) per kWh.

⁹ Yala, Pattani, Narathiwat, as well as 4 districts in Songkla province.

¹⁰ Promotion category A2 according to *BOI Announcement No. 2/2557 (2014), List of Activities Eligible for Investment Promotion, Section 5.4.2.*

On 22 October 2014, the *Ministry of Industry* adopted a guideline whereby rooftop photovoltaic facilities no longer require a *Factory Permit* in order to reduce administrative restrictions especially for private investors.

b) BOI Promotion

Manufacturers of solar cells and/or related raw materials receive 8 years of corporate income tax exemption (capped at the total investment amount) and exemption from import duties on machines and raw materials.¹⁰

The production of electricity from solar energy receives the same promotion.¹¹

The manufacture of parts and/or equipment of solar-powered products receives corporate income tax exemption for 5 years, as well as exemption from import duties on machines and raw materials.¹²

c) Public Private Partnerships

Apart from the above-mentioned rooftop photovoltaic facilities, special provisions apply to large-scale photovoltaic facilities, so-called *solar farms*. These regulations (Government and Agricultural Cooperatives) were approved in 2014 and announced by the ERC in 2016, and shall replace the previous promotion for solar farms (FiT and Adder Tariff). According to this *Governmental Agency and Agricultural Cooperatives Programme (“Agro-Solar”)*, solar farms with a capacity of up to 5 MW each and a total capacity of 800 MW

<http://www.boi.go.th/upload/content/newpolicy-announcement%20as%20of%202014.03.28.23499.pdf>.

¹¹ Promotion category A2 according to *Section 7.1.1.2.*

¹² Promotion category A3 according to *Section 5.4.8.*

shall be built. These projects shall be carried out in cooperation between the private and public sectors, so-called *Public Private Partnerships* (“**PPP**”).

In order to receive the FiT of THB 5.66 (approx. € 0.16) per kWh, a PPA shall be concluded with the MEA or PEA, which guarantees the power purchase and the FiT for 25 years.

The parties to the PPA are the Metropolitan Electricity Authority (“**MEA**”)/Provincial Electricity Authorities (“**PEA**”) and the government authority or municipality, which also acts as the project owner. In contrast, each authority or municipality shall only own a maximum of one project per district.

Private investors can participate in the project through a PPP. Private investors must be companies registered in Thailand and can participate in more than one project (with a total capacity of 50 MW).

During the term of the PPA, a project transfer is only possible in limited cases and only with the approval of the ERC. In practice, this means that the PPP is committed for 25 years, after which the project may be transferred to one of the partners, as is commonly the case with BOT projects (*Build-Operate-Transfer*).

2. Wind Energy

The total installed capacity of wind energy in Thailand was 1,500 MW in 2021.¹³ AEDP2018 envisages 1,485 MW by 2037.

¹³ Statista, “[Total wind energy capacity in Thailand from 2012 to 2021](#)”.

a) Feed-in-Tariff

The FiT for small-scale wind energy producers (capacity of up to 200 kW) is THB 6.06 (approx. € 0.17) per kWh, guaranteed for up to 20 years. Facilities in the Southern border provinces receive an additional bonus of THB 0.50 (approx. € 0.014) per kWh.

b) BOI Promotion

The electricity production from wind power receives 8 years of corporate income tax exemption (capped at the amount of total investment), as well as exemption from import duties on machines and raw materials.¹⁴

3. Hydropower

In 2021 facilities for producing energy from hydropower with a total capacity of approx. 3,700 MW were installed in Thailand (including large power plants operated by the Electricity Generating Authority of Thailand (“**EGAT**”) with a capacity of approx. 2,900 MW).

The Alternative Energy Development Plan 2018 – 2037 (“**AEDP**”) foresees a capacity increase of small-scale hydropower plants from the current 187.72 MW (as of 2018) to 371 MW by 2037. The growth of the existing large power plants is not planned.

a) Feed-in-Tariff

The FiT for small-scale producers of energy from hydropower (capacity of up to 200 kW) is THB 4.90 (approx. € 0.13) per kWh,

¹⁴ Promotion category A2 according to *Section 7.1.1.2*.

guaranteed for up to 20 years. Facilities in the Southern border provinces receive an additional bonus of THB 0.50 (approx. € 0.014) per kWh.

b) BOI Promotion

Hydropower projects receive 3 years of corporate income tax exemption (capped at the amount of total investment), as well as exemption from import duties on machines and raw materials.¹⁵ However, the approval of BOI incentives in relation to the Hydropower projects still depends on other relevant laws, regulations, and the discretion of competent authorities on case by case basis (e.g., the location and EIA situations).

4. Waste-to-Energy

Currently, 320 MW of commercial energy are produced by *waste-to-energy* projects. This capacity shall be increased to 444 MW by 2037 according to the PDP2018 and AEDP2018 (400MW from household waste and 44 MW from industrial waste).

a) Feed-in-Tariff

The FiT for small-scale producers of waste-to-energy (capacity of up to 200 kW) consists of a fixed amount between THB 2.39 (approx. € 0.066) and 3.13 (approx. € 0.086) (depending on capacity) per kWh, guaranteed for up to 20 years, as well as a variable part that is fixed at THB 2.72 (approx. € 0.075) to 3.25 (approx. € 0.089) (depending on capacity) per kWh until 2019 and shall be adjusted by inflation thereafter. Facilities in the Southern

border provinces receive an additional bonus of THB 0.50 (approx. € 0.014) per kWh.

b) BOI Promotion

Waste-to-energy projects receive 8 years of corporate income tax exemption (without being capped at the amount of total investment), as well as exemption from import duties on machines and raw materials.¹⁶

The production of fuel from agricultural waste receives 8 years of corporate income tax exemption (capped at the amount of total investment), as well as exemption from import duties on machines and raw materials.¹⁷

5. Biomass

Currently, approx. 3,000 MW of commercial energy is produced from biomass. This capacity shall be increased to 3,380 MW by 2037 according to AEDP2018.

a) Feed-in-Tariff

The FiT for small-scale producers of energy from biomass (capacity of up to 200 kW) consists of a fixed amount between THB 2.39 (approx. € 0.066) and 3.13 (approx. € 0.086) (depending on capacity) per kWh, guaranteed for up to 20 years, as well as a variable part that is fixed at THB 1.87 (approx. € 0.051) to 2.24 (approx. € 0.061) (depending on capacity) per kWh until 2019 and shall be adjusted in accordance with inflation thereafter. Facilities in the Southern border provinces receive an additional bonus of THB 0.50 (approx. € 0.014) per kWh.

¹⁵ Promotion category A1 according to *Section 7.1.1.3.*

¹⁶ Promotion category A1 according to *Section 7.1.1.1.*

¹⁷ Promotion category A2 according to *Section 1.16.2.*

b) BOI Promotion

The production of electricity or fuel from biomass receives 8 years of corporate income tax exemption (capped at the amount of total investment), as well as exemption from import duties on machines and raw materials.¹⁸

The production of biomass briquettes and pellets receives 5 years of corporate income tax exemption (capped at the amount of total investment), as well as exemption from import duties on machines and raw materials.¹⁹

6. Biogas

Currently, approx. 360 MW of commercial energy is produced from biogas. This capacity shall be increased to 546 MW by 2037 according to the AEDP.

a) Feed-in-Tariff

The FiT for biogas producers from waste and wastewater is THB 3.76 (approx. € 0.1) per kWh, guaranteed for up to 20 years. Facilities in the Southern border provinces receive an additional bonus of THB 0.50 (approx. € 0.014) per kWh.

The FiT for producers of biogas from plants consists of a fixed amount of THB 2.79 (approx. € 0.077) per kWh, guaranteed for up to 20 years, and a variable part fixed at THB 2.58 (approx. € 0.071) per kWh until 2019 and shall be adjusted in accordance with inflation thereafter. Facilities in the Southern border provinces receive an additional bonus of THB 0.50 (approx. € 0.014) per kWh.

b) BOI Promotion

The production of electricity from biogas and the production of biogas from wastewater receive 8 years of corporate income tax exemption (capped at the amount of total investment), as well as exemption from import duties on machines and raw materials.²⁰

Project Category		Promotion Category
Solar	Production of solar cells and/or required raw materials	A2
	Production of electricity from solar power	A2
	Production of parts or equipment for solar-powered products	A3
Wind	Production of electricity from wind power	A2
Hydro	Production of electricity from hydropower	A4
Waste-to-Energy	Production of electricity from waste-to-energy	A1
	Production of fuel from agricultural waste	A2
Biomass	Production of electricity from biomass	A2
	Production of biomass briquettes and pellets	A3
Biogas	Production of electricity from biogas	A2
	Production of biogas from wastewater	A2

¹⁸ Promotion category A2 according to *Section 7.1.1.2. and 1.16.2.*

¹⁹ Promotion category A3 according to *Section 1.16.3.*

²⁰ Promotion category A2 according to *Section 7.1.1.2. and 1.16.2.*

IV. Foreign Investment Law

Foreigners doing business in Thailand are subject to the restrictions of the *Foreign Business Act B.E. 2542 (1999)* (“FBA”). According to the FBA, foreigners are all natural persons not having Thai citizenship, juristic persons not registered in Thailand, and juristic persons registered in Thailand but having 50% or more of their shares held by the two aforementioned kinds of persons.

BOI-promoted companies can be exempted from most FBA’s restrictions, and foreigners can hold 100% of the shares. In addition, foreigners can buy and own land (as far as required for the project). Apart from the BOI promotion, foreign companies only have this possibility if they are situated in designated *Industrial Estates*.

Furthermore, the employment of foreign experts (as far as required for the project) is facilitated, and work permits will be granted hassle-free. Non-BOI-promoted companies must fulfil certain capital requirements in order to employ foreigners, i.e. having a registered and fully paid-up capital of THB 2 million (approx. € 54.900) for each work permit.

One possibility to operate without BOI promotion is entering into a joint venture with a Thai partner who holds the majority of the company’s shares. In such cases, the restrictions of the FBA do not apply because the company will not be regarded as a “foreigner”. If this is not an option, a Foreign Business License (“FBL”) for certain

business activities can be applied with the Ministry of Commerce.

V. Outlook

Renewable energy is currently an important topic in Thai politics due to its contribution to global climate protection on one hand, and due to the goal of reducing dependencies on fossil fuels (and the import thereof) on the other hand.

The legal framework was rapidly developed in 2015, particularly for the AEDP that was originally drafted in early 2015 and was fundamentally revised and extended within half a year.

Besides the promotion of renewable energy investments, expanding the power grid capacity will be crucial for the success of the current energy policy, especially the PDP2018, for which the EGAT has allocated a budget of THB 600 billion (approx. € 164.700).

Against this backdrop, it remains to be seen if the ambitious goals of the Thai government are realised. However, it is already obvious that Thailand offers attractive possibilities due to the investment promotions and incentives, particularly for foreign investors. The BOI promotion remarkably reduces the usual obstacles of the foreign investment law, exposing the market to medium-sized businesses and from our 25 years of experience, it also actually functions quickly and effectively under BOI promotion.



*We hope that the information provided in this newsletter was helpful for you.
If you have any further questions please do not hesitate to contact us.*

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