



Kingdom of the Netherlands

# Solar Power in Thailand

**Thailand is the second economy of Southeast Asia with a population of 68 million people. With an installed power-generating capacity of 2,768 MW in January 2016, Thailand is the largest producer of solar energy in Southeast Asia. The country's high solar potential and supportive policy are providing interesting business opportunities for Dutch companies active in this sector.**

Thailand is an upper middle income country with an open, export orientated economy and a Gross Domestic Product of USD 405 billion (2015). Electrical power accounts for approximately 20 percent of Thailand's total energy consumption and plays an important role in the country's development. Although the growth of energy and electric power demand in Thailand has slowed temporarily due to lower economic growth, the power sector remains relatively attractive. The Thai market is open to electric power generation equipment using various types of fuels, and the energy industry is important to Thailand as the country strives to achieve economic growth while maintaining energy security.

The Thai government plans to gradually increase electricity generation capacity in the next 20 years under Thailand's Power Development Plan (PDP 2015). The PDP 2015 aims to increase generating capacity from 37,612 megawatts to 70,410 megawatts

by 2036, mainly through power plant construction and power purchases from Independent Power Producers (IPPs) and neighboring countries. Around 82 percent of the Thai population is connected to the electricity grid and transmission losses are significantly lower than in other Southeast Asian countries. The Electricity Generating Authority of Thailand (EGAT) owns and operates the national transmission network, and is obliged to sell virtually all output from its generation facilities and private sources at fixed prices to the Metropolitan Electricity Authority (MEA) and the Provincial Electricity Authority (PEA).

Thailand is emerging as an attractive destination for renewable energy investment, as the government looks to reduce the country's reliance on gas-fired power generation. Currently, gas-fired power generation accounts for around 65 percent of the electricity mix, which the country seeks to reduce to 40 percent by 2036 according to its PDP 2015. Thailand's own gas reserves in Thailand have been declining since 2002 and Myanmar – supplying a quarter of Thailand's gas imports – is likely to cut down on export volumes due to a surge in domestic demand. Thailand is expected to offset this reduction partly by using reserves from producers in the Gulf of Thailand and onshore fields as well as seek more liquefied natural gas. In addition, it would like to increase the share of coal and renewables. Around 20 percent (19,635 MW) of the Thai electricity mix in 2036 should come from renewable sources. To realize these

Fuel type	2014 (MW)	AEDP Target 2036 (MW)
Waste	66	550
Biomass	2,452	5,570
Biogas	312	600
Energy Crop	-	680
Small Hydro	110	376
Wind	220	3002
Solar	1,570	6,000



ambitious targets, the government has introduced a number of policies to support growth in the industry and encourage investment, including feed-in-tariffs, tax incentives (tax holidays) and energy production payments.

## Solar power

Thailand has great solar potential, especially in the middle and north-eastern part of the country, which benefit from strong year-round solar radiation levels. Compared to radiation levels in other countries, Thailand has more potential than other countries in the region and only closely lags behind the United States and Australia. Solar capacity has grown from 2 MW in 2010 to 2,768 MW in January 2016, which is higher than all other ASEAN countries combined. The target of the Alternative Energy Development Plan 2015-2036 (AEDP) is to increase the producing capacity from 1,570 MW in 2014 to 6,000 MW in 2036. Business Monitor International (BMI) expects solar power to contribute over 51% to the total renewable power mix in 2025.

Because of Thailand's experience with large solar farms and its promoting policies, it forms a hub for PV testing services in high temperature regions and a fruitful source of information for other ASEAN countries. Consequently, for companies specializing in the development and incorporation of PV-technology Thailand could be a springboard to surrounding countries.

Solar energy projects are offered the highest feed-in-tariff (measured in THB/kWh) subsidies, followed by wind. In the past years, several FiT programs were created with especially high rates for smaller solar energy projects. By giving the highest FiTs to the smallest producers, the Thai government aimed to promote green energy communities and small scale rooftop programs. Currently, there is no more room for new FiT applications and the surge of emerging projects seems to be decreasing. However, there still is an expected annual growth in the solar capacity of 4.9% between 2016 and 2025, which means that yearly around 200 MW of new solar capacity will be completed.

Different from the earlier form of acquiring a license through a 'first come, first serve' system, there is a bidding system instead that follows the guidelines of the Terms of Reference drafted by the Board of Investment (BOI). The new bidding regulations include terms and conditions regarding the reliability of the bidder, possible transmission lines and sufficient feedstock. Furthermore, after



acquiring the general BOI license, a power production permit and a controlled energy production license (which can be acquired from the Energy Regulatory Commission) is needed in order to start constructing a solar plant.

In order to apply for subsidies, a Power Purchase Agreement has to be concluded with the PEA, EGAT or MEA. If the projects are found eligible by the Energy Policy and Planning Office (EPPO), they enter into a long-term contract with the local utility and sell electricity at a prespecified rate with the possible addition of a feed-in-tariff. The BOI will decide if incentives in the form of a Corporate Income Tax exemption, an exemption of import duties on machinery and non-tax incentives will be granted. The duration of the incentives is dependent on the added value to the country's energy mix.

## Trade fairs

- [ASEAN Sustainable Energy week](#)  
Bangkok, 1-4 June 2016
- [Solar Tech-Asia](#)  
Bangkok, 17-19 November 2016
- [Solar & Off grid Renewables Southeast Asia](#)  
Bangkok, 29 November-1 December 2016

## We support your business

The Netherlands Embassy in Bangkok offers active support to Dutch companies interested in doing business in Thailand. If your company is in need of support, do not hesitate to [contact](#) us.

## Links and contacts

### 'NL exporteer' App

A free export app, designed for entrepreneurs with international ambitions. It provides information on events, the do's and don'ts of doing business, economic data and financing possibilities. Download the app in the [App Store](#) (iOS) or in [Google Play](#).

- [Netherlands Enterprise Agency \(RVO.nl\)](#)
- [Board of Investment \(BOI\)](#)
- [Energy Policy & Planning Office \(EPPO\)](#)

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