



Thailand

Solar PV Policy Update 10/15

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1. Overall targets and status of PV in Thailand

The latest Alternative Energy Development Plan 2015-2036 ([AEDP 2015](#)), proposed by the Department of Alternative Energy Development and Efficiency (DEDE) was approved by the National Energy Policy Council (NEPC) on 17th September 2015 ([original document](#)). The overall target to be achieved is a 30% share of renewable energy (RE) in final energy consumption by 2036, which is supposed to equal a total installed renewable energy capacity of 19,684.4 MW combined (including hydro power). Within the duration of the plan, Thailand aims to reach 6,000 MW of total installed solar PV capacity.

According to the Energy Regulatory Commission (ERC) there were 1,520 MW of free-field installations (solar farms) and approximately 82 MW of solar rooftop installed combining for a total of 1,601.36 MW (see Table 1). However, there are solar farm projects that are currently under construction or in planning process but have not yet reached the commercial operation date (COD). According to current legislation, these projects have to COD before December 31, 2015.

2. Governmental agency and agricultural co-operatives programme (Agro-Solar)

In August 2014 the Government announced the “Governmental Agency and Agricultural Cooperatives Programme” (Agro-Solar) with an overall target of 800 MW. This programme aims at realizing solar farms with up to 5 MW in size in the form of Public Private Partnerships with the governmental sector or agricultural cooperatives as public partners. However, the details were not revealed until 13th March 2015, when the Energy Regulatory Commission (ERC) published the regulation ([original document](#)) in the Government Gazette after NEPC’s approval. Following the approval ERC announced the detailed application process on 17th September 2015 ([original document](#)).

Table 1 Current Status of Solar Programmes in Thailand

Status of solar programmes in MWp			COD achieved	PPAs signed and accepted, but no COD yet	Total COD and PPA	Target	
1) Free-field installations (solar farms) ^[1]	Adder & FIT Scheme (2006-2015)		1,520	1,085	2,605	2,800	
	New! Government and Agricultural Cooperatives (2015-2018)		-	-	-	800	
2) Solar Rooftop ^[2]	Residential Rooftop Phase 1 (2013)	PEA	3.32	13.44	21.06	100	
		MEA	~2 ^[3]	~2 ^[3]			
	Commercial rooftop (2013)	PEA	41.04	18.95	98.98	100	
		MEA	~35 ^[3]	~4 ^[3]			
	Residential Rooftop Phase 2 (2015)	PEA	-	42.94	78.63	78.63	
		MEA	-	35.69			
	Total			1,601.36	1,202.02	2,803.67	3,800

Sources:

[1] ERC, PEA data as of 13 August 2015.

[2] confirmed PEA data as of 10th July 2015 unless marked as MEA estimate. Link to source (Thai)

[3] MEA data is a GIZ estimate derived by comparing ERC sources and PEA sources with older MEA data. Link to source (Thai)

Detailed regulation for Agro-Solar

The regulation from 13th March 2015 announces the purchase of power from solar free-field installations located on land owned by the government and agricultural cooperatives with an installed capacity of 5 MWp or less. Power will be purchased via a Feed-in Tariff (FiT) at a rate of 5.66 Baht/kWh. This rate is applicable for power sale which does not exceed a capacity factor of 16%¹.

The PPA term is 25 years starting from the SCOD specified in the PPA, the commercial operation date (COD), or the actual operation date, depending on which comes first. The PPA must be signed within 120 days from the date of notice from the electricity distribution authority. In case a PPA has already been signed but the project cannot dispatch power to the system, the SCOD can be postponed by sending a letter to the related distribution authority 30 days prior to the SCOD. The distribution authority will then consider to move the SCOD.

Following ERC's announcement on 17 September 2015, the application process will be separated into 2 phases. Phase 1 will have a total target of 600 MW for regions with transmission line

currently available (North, East, West and Central). The COD for all projects in phase 1 must not exceed 30 September 2016 (extended from 30 June 2016 by NEPC on the 13th August 2015, [original document](#)).

To fulfil the 800 MW quota, phase 2 will have a target of 200 MW and the SCOD will be between 1 January 2018 and 30 June 2018. For which the application process for phase 2 will be announced later.

Application and selection process – Phase 1

Project overview: Eligible applicants for projects are certain government agency or the cooperative which will function as project owner and PPA holder. The two groups will split the quota of 800 MW into 400 MW each. Each agency or cooperative will be allowed to host only one project per each depending department per one area. Projects can have project supporters through public private partnership. Project supporters must be Thai-registered companies, each company is allowed to support more than one project but no more than 50 MW in total.

¹ The capacity factor is meant to limit the amount of kWhs fed to the grid at the specified purchase price of the feed-in tariff. It expresses the percentage of the total energy produced annually compared with a multiple of installed capacity and number of hours in a year. With a capacity factor of 16% a maximum of 1,401,600 kWh per MW installed (in a year with 365 days) or 1,405,440 kWh per

MW installed in a year with 366 days) will be remunerated with the FiT. All exceeding kWhs will be remunerated with a 12 months average of the wholesale electricity rate that EGAT sells to PEA (Baht/unit) (at the voltage level of 11-33 kV) plus fuel tariff surcharge average wholesale (Baht/unit).

Eligible applicants:

Group 1 - Government agencies:

- Governmental Agencies
- Universities regulated by the government
- Governmental organizations (excl. Public organization and state enterprises)
- Local administration

Group 2 – Agricultural cooperatives:

- Agricultural Cooperatives
- Land Settlement Cooperatives
- Fishing Cooperatives

Key dates:

21 Sep. – 15 Oct. 2015:	Connection point check with MEA/PEA
1-10 November 2015:	Submission of applications to ERC
11 December 2015:	Announcement of eligible projects
15 December 2015:	Drawing process and results
24 December 2015:	Official announce of selected projects
30 September 2016:	Phase 1 latest SCOD
1 Jan. - 30 Jun. 2018:	Phase 2 SCOD

Table 2 Targets for phase 1

Region	Phase 1 targets (1 MWp)
1. Metropolitan Electricity Authority (MEA)	200
2. Provincial Electricity Authority (PEA)	
North	5
North-East	-
South	-
East	87
West	159
Central	138
PEA Total	389
3. Sattahip Electricity Authority	11
Phase 1 Total	600

Source: ERC

It is not allowed to transfer the rights and obligations in the application or in the PPA itself to others, unless the applicant receives the consent of the electricity distribution authority according to its guidelines, and the transfer is approved by ERC.

However, if PPAs or rights and obligations are traded, it is not allowed to

- change the number of shareholders in a way that causes the original shareholders of the project to constitute less than one half of the project consortium.
- change the distribution of shares among the new shareholders in a way that causes the original shareholders to hold less than 51 percent of shares during the first 3 years after COD.

3. Solar Rooftop

Background: The first solar rooftop policy for the country was announced in 2013 with a target of 100 MW of commercial rooftops (10 kWp – 1,000 kWp) and 100 MW of residential (0-10 kWp) rooftop systems. While the quota for commercial rooftop PV was reached quickly (~106 MW is realized) and the programme closed for further applications. In the residential sector first systems that got approved to receive FiT from the first FiT application process amounted to around 21 MW. On 15th August 2014, the NEPC announced to reopen the residential programme for further applications to fulfil the 100 MW target by allocating 69.36 MW quota for the residential rooftop market, later raising it to 78.63 MW. Find an overview of the FiTs for these projects in table 3.

On 9th January 2015, ERC published the regulation ([original document](#)) of the residential rooftop programme in the Government Gazette. On 2nd February 2015, ERC announced the call for applications ([original document](#) and its [amendment](#)) which includes details on how to apply for the remaining residential PV rooftop capacity. The application process ended on 30 June 2015.

Current status: According to ERC, there were 3,293 projects (25.39 MW) applied with MEA and 8,352 projects (67.83 MW) applied with PEA ([original documents](#)). In total there were 11,645 projects combining for 93.21 MW which exceeded the 78.63 MW intended target. Accepted applicants have been announced on [MEA website](#) and [PEA website](#). The applicants are now in the process of signing the PPAs with MEA/PEA. All projects must achieve COD by 31st December 2015.

Table 3 Feed-in Tariff for Commercial and Residential Rooftop Installations

Capacity	FiT (Baht/kWh)	FiT Premium* (Baht/kWh)
Residential Rooftop 0-10 kWp	6.85 (18.44 €Cent)	0.50 (1.40 €Cent)
Commercial Rooftop 10-250 kWp	6.40 (17.23 €Cent)	0.50
Commercial Rooftop 250-1000 kWp	6.01 (16.19 €Cent)	0.50

(* Only for Southern border provinces including Yala, Pattani, Narathiwat and 4 districts in Songkla province (i.e. Chana, Thepa, Saba Yoi and Na Thawi),
Source: NEPC ([Original document](#))

4. "Solar Quick Win" initiative by the National Reform Committee

In January 2015, the National Reform Council (NRC) spoke in favour of a program that aims at simplifying the installation of rooftop equipment and allows all citizens to install rooftop equipment and connect it to the power network. The "Solar Quick Win" policy framework includes the proposal to implement a net-metering system in Thailand and setting a long-term target of 10,000 MW for rooftop solar. Find the [original proposal here](#) as well as an [unofficial GIZ translation here](#).

The rationale of the proposal is to put a greater emphasis on Solar PV rooftop systems, which are considered by NRC to be one of the solutions to Thailand's energy problem. NRC argues that PV rooftops aim "at enabling the public to generate power for self-consumption and sell an unused amount of power to off takers without any quantity or quota restrictions. This will present new market opportunities and eliminate the resale of power generation licenses. Home and building owners as well as housing and industrial estate operators should then be able to prepare long-term investment plans for the installation of PV rooftop systems."

This policy framework still has to go through several policy processes until to be finally adopted. As a first step, the Energy Policy Administration Committee charged DEDE, MEA and PEA to initiate the project by defining a pilot area for first installations of up to 10 kW in size for residential and up to 500 kW commercial buildings ([original document](#)). Along with those agencies, EPPO and EGAT will monitor the project and report the results back to the Energy Policy Administration Committee.

Current status: DEDE had initial meetings with stakeholders to draft the initial concepts for the net-metering scheme. Some initial concepts:

- Electricity that is produced must be initially consumed by the user, feeding excess electricity to the grid is possible but should be avoided.
- To avoid having a PPA with the utility, excess electricity (kWh) fed to the grid is proposed be offset via a crediting system with an annual billing period. No remuneration for electricity fed to the grid will be granted.
- No installation quota (up to maximum grid capacity). But there will be a system installation capacity limit determined by the users' annual demand.
- Application process will be streamlined, e.g. online application, less permits required, shorter timeframe

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