

Thailand

Solar PV Policy Paper 1/2018



1. Overall targets and status of PV in Thailand

The latest targets for solar PV in Thailand are outlined in the Alternative Energy Development Plan 2015-2036 ([AEDP 2015](#)), which was approved by the National Energy Policy Council (NEPC) on 17th September 2015 ([original document](#)). The overall renewable energy (RE) target to be achieved is a **30% share in final energy consumption by 2036**, including RE shares in electricity, heat and fuel consumption. For electricity, 15-20% of energy consumption shall be sourced from RE, which is supposed to equal a total installed RE capacity of 19,684.4 MW (including hydro power capacity). For solar energy, the target is to reach an installed capacity of **6,000 MWp by 2036**. A timeline for Thailand's solar target and policy is illustrated in [figure 2](#). The AEDP is currently being revised, higher targets are the likely outcome.

According to the Energy Regulatory Commission's (ERC) latest figures, the total installed capacity in Thailand today reaches 2,669 MWp. If including the potential projects which are in the pipeline of official programme and potential quota opening in the future, 3,447.52 MWp is expected. At the time of this factsheet publication,

details of the new net-metering scheme have not yet been officially announced. However, it is clear that the government plans to set the first round quota at 300 MWp. ([see Table 1](#)).

In 2017, the additional installed capacity from plants that enter into commercial operation is 223 MWp (data as of August 2017) ([see Figure 1](#)). This is considerably lower than the capacity added in 2016 which is a record breaking figure. This is because the Ministry of Energy set a firm deadline to clear out all un-built projects within 2016. Nevertheless, 2017 has been the transition year, the Rooftop PV Self-Consumption Pilot Scheme that was announced mid-2016 shows the policy maker's intention to move away from the Feed-in tariff (FiT) and towards a self-consumption driven market (See [chapter 3](#)). The net-metering/net-billing scheme has been confirmed but detailed implementing regulations & announcement are still to be made. It is expected that the scheme could trigger more investments in the already growing rooftop market.

2. Thailand's Solar Photovoltaic Hard Facts

Table 1. Current Status of Solar Programmes in Thailand (as of December 2017)

Type	Scheme	Installed capacity (potential)	Status
Ground-mounted solar PV	Adder Scheme	1,570	Complete
	Feed-in tariff (Phase 1 & 2)	969	Complete
	Government and Agricultural Cooperatives Phase 1	255	Complete
	Government and Agricultural Cooperatives Phase 2	154.52 (*) – Qualified projects for PPA signing	On-going
	Self-consumption	11	On-going
Rooftop	Feed-in tariff	131	Complete
	Pilot project	6	Complete
	Self-consumption	51	On-going
	Net-metering (1st round)	300 (**)	Not yet announced
Expected total installed capacity under current programs (see note)		3,447.52	
AEDP 2015 target		6,000	

Note:

All data are from ERC (July 2017) except stated otherwise

„Potential installed capacity“ includes solar PV installations which have already reached COD, in the process of reaching COD (PPA signing, qualified for the scheme, etc.), and officially announced quota from the government or relevant authorities

* Status as of November 2017: Based on a list of developer who is eligible to conclude PPA with power utilities)

** Status as of November 2017: Based on a CEPA's announcement for quota of net-metering (first round)

Figure 1. Thailand's Solar PV Installed Capacity

Source: 2002-2014 data from DEDE (Link), 2015&2016 data from ERC

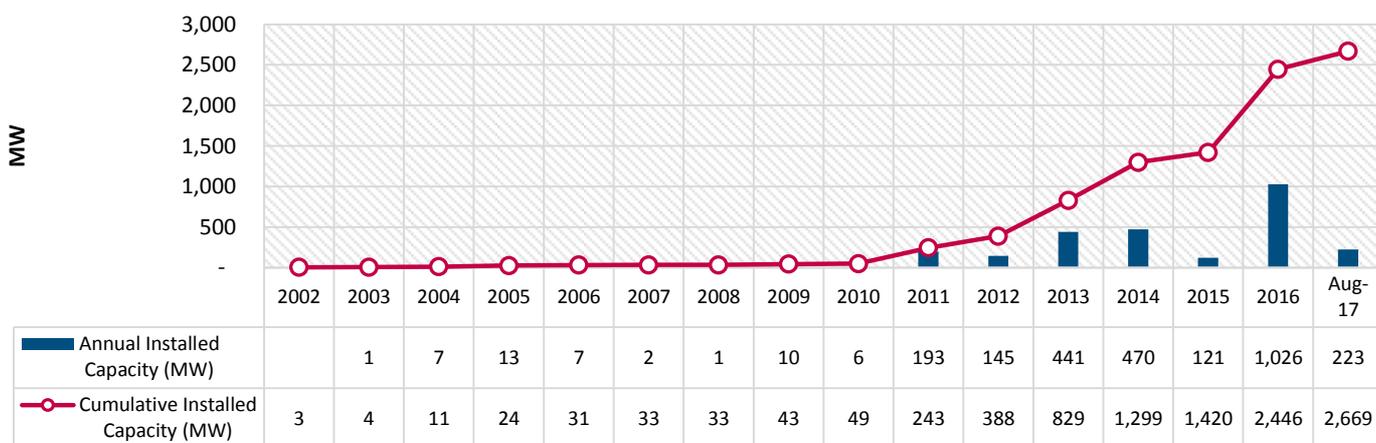
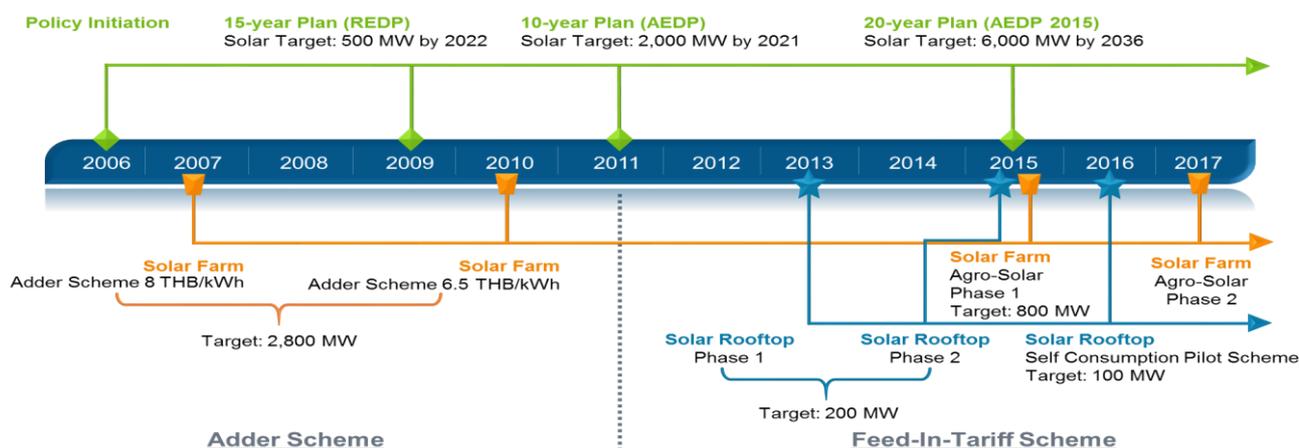


Figure 2. Thailand's Solar PV Policy Timeline



3. Solar PV Rooftop Net-metering

Current status

On the 4th of October 2017, the Committee on Energy Policy Administration (CEPA), chaired by the Ministry of Energy agreed on the principle and concept of a new net-metering policy for Thailand. However, DEDE, PEA/MEA will need to collaborate in order to finalize the details of the scheme. Details to be considered include: criteria for installation, scheme duration (start/end) and application procedure.

The DEDE in November 2017 announced the preliminary capacity and purchasing tariff for which PEA/MEA will remunerate electricity generated by solar PV rooftop systems. The quota for the scheme is tentatively 300MW per year which can potentially lead to 6,000 MW in 20 years.

The tariff for electricity fed back to the grid by solar PV system will depend on the type of producer. The potential tariff mentioned by the DEDE could look as per the following:

1. Private households will receive 2.30- 2.50 THB/kWh
2. Commercial, industrial and large industrial stakeholders will receive 1 THB/kWh

The next step in the process is for CEPA/DEDE to propose the scheme to the National Energy Policy Council (NEPC), chaired by the Prime Minister. After this, DEDE & ERC still need to determine quotas for each region. It is thus expected that the net-metering scheme will enter into force in 2018.

The net-metering program is currently being developed. Therefore, information provided here may change once it is finally announced. The policy factsheet will be updated as soon as there is new information regarding the process and status.

4. Governmental Agency and Agricultural Cooperatives 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 capacity up to 5 MW in the form of public-private partnerships (PPP) with the governmental sector or agricultural

cooperatives as public partners. The project was divided into two phases, phase 1 was completed with a total installed capacity of 255 MWp from 67 projects. Phase 2 is currently being implemented.

Current Status: Phase 2 of the scheme was announced on April 2017 to accommodate for 219 MW of capacity. Project developer were chosen by a lucky-draw process with 171.52 MWp in the pipeline. The quota for agricultural cooperatives of 119 MWp was fully subscribed. The quota for governmental agencies was set at 100 MWp, but only 52.52 MWp were subscribed. The names of selected project developers were announced on the 3rd of November 2017 ([listed names here](#)). Listed project developers must complete and sign their contracts by the 2nd of March 2018. If contracts are not completed by this time the application will be considered void.

Background: In March 2015, the Energy Regulatory Commission (ERC) published the details and regulations ([original document](#)) after NEPC’s approval for the Agro-Solar scheme. Following the approval, ERC announced the detailed application process on 17th September 2015 ([original document](#)). The program was split up into 2 phases, phase 1 opened for application rounds in Nov-Dec 2015. Due to some controversies with regards to selection criteria, the process was delayed which shifted the scheduled commercial operation date (SCOD) of the projects to 31st December 2016 ([original document](#)). Phase 2 was officially announced in April 2017. There was high demand for the scheme which resulted in applications of around 3,500 MWp from 750 developers.

Projects in phase 1 received a Feed-in Tariff (FIT) at a fixed rate of 5.66 THB/kWh for 25 years. Projects in phase 2 will receive a FIT rate of 4.12 THB/kWh for the same duration.

Applicants in phase 2 are either government agency or agricultural cooperatives that will function as project owners and PPA holders. Project owners can have project supporters through public- private partnerships (PPP). Project supporters can support more than one project and must be companies registered in Thailand, however, are not allowed to support more than 50MW in total.

Table 2 : Overview of Solar FIT in Thailand

	FIT /kWh	Period of support Years	FIT Premium Southern Provinces ¹ /kWh
1. Ground Mounted (2016) (Agro-solar scheme Phase 2)	4.12 THB (11.09 €Cent)	20	0.50 THB (1.35 €Cent)
2. Solar Rooftop (2015)			
Residential Rooftop (0-10 kW)	6.85 THB (18.44 €Cent)	20	-
Commercial Rooftop (10-250 kW)	6.40 THB (17.23 €Cent)	20	-
Commercial Rooftop (250-1000 kW)	6.01 THB (16.19 €Cent)	20	-

¹ Including the provinces of Yala, Pattani, Narathiwat and 4 districts in Songkla province (i.e. Chana, Thepa, Saba Yoi and Na Thawi)

Source: Compiled from NEPC Resolution 22 October 2014 ([Original document](#)) and NEPC Resolution
Exchange rate = 1 Euro : 37.14 THB

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Disclaimer

The information provided has been gathered in the context of the Thai German Climate Change Programme. The programme is implemented by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH. This project is part of the International Climate Initiative (IKI). The Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB) has been financing climate and biodiversity projects based on a decision taken by the German parliament (Bundestag). Liability claims through the use of incorrect or incomplete information are excluded.