

Thailand off-grid solar

The first ASEAN (Association of Southeast Asian Nations) member state to institute the equivalent of a feed-in tariff (FiT), more solar power capacity has been installed in Thailand than in any other of the 10 ASEAN members. That's a diverse group that, along with Thailand, ranges from Cambodia, Laos and Myanmar, Indonesia and the Philippines to Brunei, Vietnam, Malaysia and Singapore.

Thailand's solar and renewable energy potential far exceeds what's been installed to date, however. Thailand has the one of the largest, and the most diverse, bases of renewable energy resources of any ASEAN nation, according to national and international assessments, which means there's plenty of room for growth.

Political instability in the wake of the military takeover of the government in 2014, a shifting, uncertain energy policy environment and a large surplus of natural gas and coal-fired power generation capacity installed during a period of large-scale utility grid investment and rapid expansion all cloud the outlook for solar and renewable energy growth and development, however. So do environmental concerns, most prominently air quality that seasonally reaches unhealthy, very unhealthy or even worse levels of particulate matter 2.5 (PM2.5) in Bangkok and other Thai cities.

Postponed several times, the first general elections since the military takeover of the Thai government is due to be held in March. Rules strictly limit its openness, but nonetheless, the election may help clear the air, reduce uncertainties and lead to the establishment of a more certain policy and institutional framework conducive to solar and renewable energy growth and development.

In addition to providing a snapshot of solar energy in Thailand, Solar Magazine spoke with two leading academic researchers and a senior partner in a law firm that advises and assists investors looking to put capital to work in Thailand's solar and renewable energy sector to gain insights regarding the outlook for industry growth and development going forward.

At the beginning of 2019, Thailand looks back to eight tumultuous years of mostly favorable solar energy developments and a few failures. While 2010 saw the first significant installations of solar panels, the year 2017 marked the achievement of a significant milestone, a total of 3 GW of solar installations in the Land of Smiles. This amounts to 50 percent of the 2036 target under the current 20-year road map (AEDP 2015).

Utility-scale solar power farms account for nearly all the solar power capacity that has been installed in Thailand to date -- well above 90 percent according to one study. Similar to an FiT, a "solar adder" fueled the rapid growth. Authorities abolished the solar adder in 2015 amid concerns about over-investment and over-expansion that would leave the government in a fiscal hole, as it did in Spain earlier this decade.

Government review of projects was put on hold, which has resulted in a backlog of solar power projects

awaiting approval. In the meantime, Thailand's Ministry of Energy shifted its focus to developing a policy framework and approving solar and renewable power projects that demonstrate grid parity.

We have proven in several pilot projects that we can expand on our success to promote more electricity generation from renewable resources at a price which we call grid parity at 8 cents (per kilowatt hour) on a wholesale basis.

"Unfortunately, the whole market has been in a wait-and-see modus for far too long," Eder told Solar Magazine. "The modernization backlog of Thailand's regulatory framework for solar energy development creates growing legal challenges. To base substantial investment decisions on drafts laws and governmental publications is not advisable. The uncertainties under the upcoming general election add a bitter taste to this."

Memory of the initial program's failure persisted nonetheless, leaving solar with a bad reputation in Thailand. Conditions didn't really start changing for the better until the fourth quarter of 2017 when the Energy Ministry ended a decades-long restriction prohibiting households and commercial buildings from selling electricity generated by on-site solar power and other distributed energy systems to Thailand's two state-run distribution utilities.

Utility customers had been selling surplus electricity generated by rooftop solar PV systems and other behind-the-meter generators to distribution utilities MEA or PEA, via small power producer (SPP) or very small power producer (VSPP) adder programs. The new FiT, at the time it was announced, reportedly allows behind-the-meter power generators to sell surplus power to MEA, the distribution utility for the Bangkok greater metropolitan area, or PEA, which serves the rest of the country, at a rate below 2.6 Thai baht (USD0.08) per kilowatt-hour (kWh).

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