

# Land, bankability and regulation - Southeast Asia's solar snags

**Region update** | Southeast Asia's PV markets are entering a post-subsidy phase, creating numerous policy and regulatory challenges for developers. But, as Tom Kenning heard at November's Solar and Off-Grid Renewable Southeast Asia event in Bangkok, there are still plenty of opportunities



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Once seen as a region guaranteed to deliver higher solar project returns than most other parts of the globe, Southeast Asia's margins are beginning to feel the squeeze with greater competition and the steady adoption of auctions over subsidy support. As the more mature market begins to grapple with the post-subsidy era, this article looks at the region's competitive tendering activity and where large-scale solar opportunities can be found amidst an apparent lull.

The case for solar remains strong in Southeast Asia since power demand is still growing rapidly in many of its markets, but traversing the unique regulations and policies of each country and knowing which PV segment is most suitable remain challenging.

In some countries, regulatory barriers on the utility-scale side are pushing the short-term opportunities into commercial and industrial (C&I) rooftop solar, but there

are hopes for Malaysia where the market is maturing with its Large-Scale Solar (LSS) auction programme, and Vietnam with its new feed-in tariff (FIT) for solar and wind.

Land remains a major issue, with one analyst at the Solar and Off-Grid Renewables Southeast Asia (SORSEA) 2017 conference in Bangkok, Thailand, in November noting that getting 500-plus hectares of contiguous plots of land is nigh on impossible in the ASEAN region. As a result, the corporate PPA market, mostly in rooftop solar, which is not constrained by land, looks set to fly, again excepting some regulatory challenges. Meanwhile, floating solar is the word on everyone's lips, with its much-hyped ability to bypass the land constraint issue. The region is of course, awash with bodies of water, from hydro dams and thermal power ponds to man-made reservoirs.

Ultimately, large-scale PV progress is still limited and the industry will be

**The 'SaCaSol' PV power plant in the Philippines. Southeast Asia's solar markets face numerous regulatory barriers**

hoping for an uptick in activity over the next 12 months, particularly as the capacities tendered so far have been tiny in comparison to the size and population of the countries involved. Indeed, Abhishek Rohatg, a Bloomberg New Energy Finance (BNEF) analyst notes that Southeast Asia is "far behind" other regions in auctioned capacity, while also having "comparatively higher" risks.

Many criticisms of utilities being reluctant to open up to renewables have been aired, although some including Meralco of the Philippines and TNB of Malaysia are pursuing renewables projects, which is seen as positive sign. Others such as PLN of Indonesia, are seen as "not having any money", which is a major drawback for budding solar developers.

Thailand's latest cooperative utility-scale programme is winding down and the Philippines has PPAs of all forms stuck at the regulator's office. But perhaps Malaysia

will push on with a third round of its LSS auctions and the big question marks around the highly promising Vietnamese market could start to get answered; if Vietnam's much touted multi-gigawatt pipeline – one government official recently put the figure at 17GW – actually goes from development into construction, then the industry might start to change its attitude towards the solar PPA, whose parameters have taken a battering in the media due to its infamous off-taker and curtailment risks. This would make Vietnam a bastion of strong project returns in the region due to the attractive subsidy, which is set to continue up until 2019, while most other markets have culled their FIT programmes.

### Thailand

With its large-scale solar ambitions constricted to a complex co-operative scheme, the other major hope for developers in Thailand is the country's recently announced hybrid 'firm' PPA scheme, which seeks to encourage energy storage being coupled with large-scale renewable energy projects to generate a fixed output from each system.

This tender had been four to five times oversubscribed, says Dave Edmonds, vice president, business, IMI Group, which demonstrates a high level of interest, but it's not clear yet whether these projects will be able to offer notable returns to investors.

Meanwhile, Franck Constant, founder and CEO of Constant Energy, says that corporate PPAs, particularly in solar rooftops, are set to boom over the next three to five years in Thailand, as well as much of the rest of the region. Despite current rules preventing such solar systems from feeding power back into the grid, significant power savings can already be offered to large corporates, without even the benefit of net metering regulations.

### Philippines

The Philippines has gone from a FIT at US\$0.17/kWh in early 2016 to a Competitive Selection Process (CSP) resulting in US\$0.058/kWh as the lowest price this year. It is one of the first countries in the region to grapple with the post-subsidy era.

Leandro Leviste, CEO of developer Solar Philippines, says the CSP winning price undermined claims of developers that regulation and policy support were needed to grow the PV industry, but not all developers can take this merchant risk and

Leviste admits that many developers have either stopped or left the Philippines due to regulatory barriers, such as the backlog of permit approvals at the Energy Regulatory Commission (ERC).

However, he also says: "This price should set a benchmark for the region, where high land costs, moderate irradiance and relatively high interest rates had previously led others to believe that Southeast Asia prices would remain higher than other regions."

Carlos Gatmaitan, chairman of MRC Allied, points out that the Wholesale Electricity Spot Market (WESM) is a welcome backup option to the regulated market for PV generators, and he notes that the demand for electricity per capita in the Philippines is rising at around 7% each year, which means solar should have a role to play to fill the gap between supply and demand.

Referring to the restriction of 40% foreign ownership on Filipino projects, Allard Nooy, CEO of Singapore-based InfraCo Asia Development, says that the Philippines has a number of credible partners available to alleviate the issue – adding: "The liquidity in the market is very high. It's got a pretty deep debt market at the moment, therefore usually international financing is not required, which helps, but in terms of being restricted to 40% you are able to get around that on a number of different arrangements."

### Malaysia

Malaysia's second round LSS auction results are due to be released soon, and they are widely expected to hit new lows for the country, having been heavily oversubscribed.

The auctions are due to procure up to 250MW each year to reach 1GW by 2020, says Dr Azhar Abd Rahman, project director of the renewables division at major utility TNB. This makes it one of the only ASEAN markets with active large-scale tendering activity at present. Rahman says securing a partnership is a difficult task and it is important to build up a presence in the market to succeed. He also hints that prices are continuing to go down.

However, Akmal Samah, COO of Malaysia's Sustainable Energy Development Authority (SEDA), the body which conducts the auctions, says that many of the incumbent energy firms and utilities have been reluctant to accept renewable energy. There have been no serious technical issues so far, but he warns that as

capacity closes in on 1GW that could create "some resistance" from the utilities.

The nation will also be hoping that the second auction does not see a repeat of the first, in which several projects have not gone ahead. The most high profile of these was a 50MW(AC) project by Malakoff, whose approval was withdrawn after a change in location.

The SEDA representative admits that the authority could have tightened its selection process in the early stages of its original FIT programme as well. Just 520MW of renewable energy capacity has been built so far out of 1.4GW that had been approved. SEDA has in fact been under pressure to cancel some of these approvals for delayed projects and to give the quota to other developers who are more ready and experienced to conduct these projects.

### Vietnam

Vietnam is now set to offer some of the best returns in the region, with the introduction of a generous US\$0.0935/kWh FIT for projects completed by June 2019 drawing many developers to the market.

The government is also considering auctions beginning in 2020, once the FIT comes to an end, says Dr Tuan Nguyen Anh, Renewable Energy Centre, Institute of Energy, at the Ministry of Industry and Trade (MOIT).

Nguyen gives the usual Vietnamese government line by announcing bombastic pipeline figures and claiming "huge" levels of interest from international developers, despite negligible reported action on the ground.

He says MOIT will also have completed a solar PV assessment study by January 2018. Land is already seen as a major constriction for solar in Vietnam, with conflicts looming in the agricultural and forestry sectors. PPA parameters are still a major concern, although Nguyen says that a kind of 'take-or-pay' PPA is being discussed, which could comfort some developers.

Dispute resolution and curtailments are inadequately addressed in the PPA, says Allard Nooy, however, in terms of the off-taker risk with the monopoly utility, EVN, he offers a refreshing alternative to the huge negativity around the issue to date, using his previous experience with EVN on other power projects.

"EVN is not a very creditworthy organisation – that's absolutely true," he says. "But the fact of the matter is that on foreign invested IPPs they have never ever

## Hopes are high that floating solar plants will overcome Southeast Asia's land constraints



Credit: Ciel et Terre

defaulted on a PPA. And given our most recent experience with a hydro project, they have paid us in the last 18 months every month on the dot. So our experience has been actually quite good for EVN."

### Indonesia

Indonesia targets 5GW of solar by 2020 in its National Development Plan, but the utility PLN has come up with a 10-year plan, which more or less disregards solar. However, it does have an ongoing tender out, with a ceiling price of US\$0.07/kWh. This has been criticised for being unreasonably low by some developers, says Leandro Leviste, but despite this, at least 120 developers still applied to the tender.

Stefan Robertsson, senior advisor at economic consultancy the Lantau Group, says that there is "no doubt" the country will have plenty of solar deployment in the long term, but in the short term it is easy to be "cautiously pessimistic". The financial difficulties of PLN remain the key barrier, and the current minister appears very focused on keeping costs down for PLN, rather than raising electricity prices and making solar more viable.

"You have basically very poor regulation that goes back to the tariff setting in Indonesia," Robertsson adds.

He says the upcoming bid for 160MW in Sumatra could add some momentum, but this will depend on what tariffs come out of it and whether the awards get dragged out over a period of time. There are plans for a second tender for around 80MW in Kalimantan, but Robertsson says these capacities are very small in comparison to the size of Indonesia.

"For the next one to three years there will be progress, but it will be limited progress," he adds. "In the end it's very much tied to the economics. There's very little financial support or financial incentives above tax credits from the government."

Andre Susanto of Bluejay Energy offers a similar perspective: "The biggest issue is PLN doesn't have any money. They only have two income streams which is revenue from households and C&I clients and government subsidy, which is given directly to PLN."

Unless the consumer tariff is raised to provide PLN with more money, he says, then the larger-scale PV progress will remain stuck, but he did praise the country's progress in micro-grid deployment over the last 12 months.

### Emerging markets

Cambodia, Laos and Myanmar have tended to trudge behind other ASEAN markets in solar progress. But there are signs of progress with major utility-scale solar park plans for Cambodia in partnership with the Asian Development Bank (ADB) starting to take shape and a tender earmarked for June 2018, work beginning on a 220MW solar plant in Myanmar and talk of huge floating solar potential in Laos.

Cambodia was praised for its openness to foreign investment, but is still seen as risky. Kenneth Stevens, managing director of Leopard Capital, says: "A country like Cambodia, which is still a cowboy kind of place – Wild West – is open to foreigners coming in and open to foreigners doing it, sometimes too much. They expect the

ADBs to pay for the roads, to pay for the power, the IFCs [International Finance Corporation] to come in and do their thing..."

Nevertheless, as a AAA-rated body, ADB has the power to capitalise on first-of-kind projects across the region, such as the 10MW PV plant with Sunseap in Cambodia. The bank has also worked on rooftop investments in Thailand, is pursuing large-scale projects in Myanmar and is in discussions over floating solar in Laos, says Pradeep Tharakan, senior energy specialist, ADB.

Rooftop solar in Cambodia is currently under threat, however, as a draft regulation has been issued that has brought uncertainty over the legality of both completed and new PV projects, without a newly introduced permit.

### Floating PV

Floating solar is making its mark across the globe and Southeast Asia looks set to become a major market, after pioneer firm Ciel & Terre announced manufacturing plans in Thailand and Vietnam as well as more progress in Malaysia.

ADB's Tharakan says: "There's always a downside that comes along with [new power sources] and in solar it is land. Arable land is in short supply in Southeast Asia and so it's going to be hard to find hundreds and hundreds of acres each time to build these plants."

Due to these constraints, floating PV opportunities were cited for almost every Southeast Asian market during the SORSEA conference, particularly on hydro dams.

The Solar Energy Research Institute of Singapore (SERIS) is also pioneering with the world's largest test centre for floating solar. As it happens, Singapore continues to have a burgeoning rooftop solar industry, but as a market remains restricted by land.

In the long term, Southeast Asia still shines as a major opportunity for solar PV and in the meantime, the off-grid sector can capitalise on the huge number of islands and un-electrified populations, where major grids make less sense. Overall progress in the next 12 months could largely come down to regulators. Perhaps a good summary of the current predicament of the industry came from one delegate at SORSEA, discussing the Philippines, who said: "The GDP is growing and power demand is growing, which is perfect for solar, but there's nothing we can do about the regulations." ■