Emerging market briefing

Tom Kenning looks at the latest trends from some of the world's most promising emerging PV markets. This issue features Turkey, Algeria, Saudi Arabia and Malaysia

Malaysia's plays big with 460MW auction

Malaysia has made a play to revamp its large-scale solar sector by going large on a new tender. The Energy Commission of Malaysia (EC) issued a request for proposal (RfP) document hoping to auction up to 460MW(AC) of large-scale solar capacity in February this year.

Under the commission's second competitive bidding programme, it hopes to award projects of 1-30MW capacity to make up a total of 360MW in Peninsular Malaysia and 100MW in Sabah and Labuan in the east.

All solar plants will be connected to the grid, with power purchase agreements to be signed with the main utilities Tenaga Nasional Berhad (TNB) or Sabah Electricity Sdn. Bhd. (SESB).

The auction is still some way away with a deadline for submissions set for 1 August 2017.

Malaysia installed 31.78MW of solar PV under its feed-in tariff (FiT) scheme last year. This brought its cumulative installed solar capacity under the FiT regime to 294.85MW. Also under FiTs, the nation's cumulative renewable energy capacity has reached 458MW as of March 2017. Solar annual installations have declined each year from its 106.5MW peak in 2013.

In related news, major utility TNB signed 21-year power purchase agreements (PPAs) for two large-scale solar projects with UITM Solar Power and Sepang Solar. One 50MW project will be located at Gambang Pahang and the other 50MW plant will be at Sepang Selangor.

The Malaysian Investment Development Authority (MIDA) had also approved MYR2.42 billion of solar investments in the 12 months to the end of December. Roughly MYR1.77 billion was invested in seven PV manufacturing facilities last year, according to the Malaysian Investment Development Authority (MIDA), along with MYR650 million investments in 83 other renewable energy projects.

Malaysia's plays big with 460MW auction

Malaysia's Energy Commission has issued a request for proposals for up to 460MW of large-scale PV

Malaysia of course continues to be a major destination for PV manufacturers, but the new tender shows clear resolve to progress the downstream segment.

Turkey brings mega-scale to bustling market

Turkey's 'unlicensed' solar plants of below 1MW capacity have been installed at breakneck speed, but this year the country has put its ambitions into mega-scale having just completed a 1GW solar tender – the first of many.

Hakan Gazioglu, manager at Turkish PV manufacturer Gazioglu Solar Enerji and member of Turkish solar association Günder, who has been producing modules in the country for the last five years, says that most solar plants are located in the southern part of Turkey, but even the northern areas have 15-20% more irradiance than northern Europe.

Turkey's energy minister has expressed ambitions to make Turkey more self-sufficient in terms of energy, and solar is a key part of this, with 5GW of PV earmarked for a 2023 target of 30% renewables in Turkey's energy mix. As of February, Turkey was just short of a gigawatt, with 800-850MW installed.

However, these big ambitions come with a strong dose of protectionism. Gazioglu says local content rules have become very important, as the country already has 25 module manufacturers with around 1.5GW of annual production. It also has plentiful aluminium and steel producers and more than 100 EPC firms able to construct solar plants. It even has some of the raw materials needed for module production.

The main energy consumption centres are in the north, towards Istanbul, and this makes 1,000 kilometres of transmission from big plants in the south almost unfeasible, so the government is also pushing for distributed generation.

The unlicensed segment – projects that are less than 1MW in capacity – accounts for 90-95% of currently installed systems. They benefit from not having to pay for a licence fee, which can be very steep, yet they also get a feed-in tariff (FiT) of US$0.133/kWh. For this FiT, the purchase guarantee is for 10 years at the moment and eligible systems get connection priorities.

As of June 2016 there were 443MW of unlicensed projects, which rose to 848MW by February 2017, and this is expected to more than double to 2GW by the end of 2017.

The pipeline of the larger 'licensed' solar plants stood at 600MW in February.

Gazioglu expects 2017 to be a boom year for solar in Turkey as there is uncertainty around what will happen to the FiT at the end of the year. The connection fees may increase or in the worst case scenario the FiT could be reduced to around US$0.105/kWh. Due to this expected deployment rush, Turkish module manufacturers have a very tight schedule to produce. Gazioglu Solar Enerji production for example was fully booked for some

Algeria's 4GW solar ambitions

Algeria is set to launch a 4GW large-scale solar tender, catapulting it into the forefront of solar nations in North Africa.

The country has solid targets, aiming for 27% of its electricity demand to come from renewable energy by 2030. Of the 22GW of capacity needed, 13.5GW have been earmarked for solar. Meanwhile, 4GW has to be installed by 2020, hence the major tender. It will be held in three phases of 1,350MW each, with projects of average 100MW capacity being selected.

Arkab Mohamed, president and director general of Algerian gas and electricity company CEEG, which is part of state-owned utility Societe Nationale de l'Electricite et du Gaz (Sonelgaz), explained the tender parameters: "The projects will be owned and developed by special purpose vehicle, which will be responsible for financing, EPC works, grid connection and the sale of power. These vehicles will be owned 51% by a domestic investor and 49% by an international partner. Algerian government-owned oil company Sonatrach will hold a 40% stake in all of these SPV, while Sonelgaz and other public or private Algerian companies will hold the remaining 11%. For Algerian private investors the participation in the capital of each company will not exceed 6%. Financing for each project must be provided 30% with own funds and 70% with bank loans."

Winners of the tender will sign a PPA with the electricity distributor SDA, which is a subsidiary of the Sonelgaz group.

"The main actor is the special purpose vehicle (SPV), the project company that has been set up to implement the project," says Malek Drif, co-founder at Africa-focused renewables firm Al-Michkat Renewable Energy. "In several cases, the SPV is usually a subsidiary company with an asset or liability structure and legal status that makes its obligations secure even if the parent company goes bankrupt."

Drif adds that many foreign investors are hesitant because of the 51% to 49% ownership rules.

"Investors need visibility to be able to invest and meet the needs of the market," says Drif. "The immediate challenge is to harness the financial sector's potential to support diversification and economic growth. This will be helped by a broad range of reforms to promote finance. But in Algeria, state banks continue to play an important role in the financial sector."

The country has also made efforts to develop a solar component industry based on its current capabilities in base steel, float glass and electronics manufacturing.

Credit Hichem Merouche, Flickr

Algeria is set to become a regional leader for solar, with plans on the table for a 4GW tender

Back in April 2014, the Algerian government introduced a two-tiered feed-in tariff (FiT) programme, but during the second half of 2016 it chose to opt for the tender model instead of the FiT. Having seen solar prices plummet round the world through the competitive reverse auction model, Bouterfa Noureddine, the newly appointed head of the energy ministry, then announced the adoption of a decree relating to the tender for the 4,050MW of solar this year.

Drif says that the new specifications for the call for national and international partnership were "extremely unfavourable" to local developers as their projects ended up in stand-by. However, he admits that this is exactly the method needed to progress solar in the country, as it does not have the financial resources necessary to carry out an overall programme costing US$8 billion.

The government has expressed intentions of sorting out land availability issues. To reduce development costs, a selection of favourable zones for the reception of projects has already been made by the Algerian Electricity and Gas Regulatory Commission (CREG), the Algerian Electric System Operator and the 48 wilayas (provinces) of Algeria.

"This gives candidates the dual advantage of knowing approximately the cost of the connection as well as the capacities of the source station," says Drif.

Meanwhile, a specific auction mechanism for renewable energy quantities will also be set up specifically for domestic companies.

At the time of writing, local news outlets had reported that the Algerian energy minister Noureddine Boutarfa was expecting the reference price for the upcoming 4GW tender to not exceed DZD4/kWh (US$0.04/kWh), which would be competitive with some of the lowest solar prices seen globally.

time as of April.

The government has opened up anti-dumping duty measures and importing modules to Turkey has become more difficult for now, says Gazioglu. Yet, even Turkey's glass suppliers are struggling to produce enough to keep up.

Turkey is also planning for multiple mega-scale solar parks, with 1.5GW at Nigde and 4GW at Konya. The first tender for 1GW was won by a consortium of local companies including Kaylon and Korea's Hanwha Q CELLS. The project must sell electricity at US$0.0699/kWh. Hanwha must produce cells in Turkey and the group must set up an R&D centre. The project also needs to use locally made cables, inverters and support systems.

These projects are a huge step up from previous large-scale ambitions, given that only last November, Phoenix Solar and its Turkish partner Asunim Turkey brought a 9.1MW PV plant online, which was the largest ever system in the country at that time. On the rooftop PV side, Turkey is targeting 100,000 rooftops by March 2019 under a scheme supported by Günder.

Turkey has of course made headlines round the world for various highly controversial political actions, but the positivity around solar seems to be undiminished.

Turkey has just completed a tender for 1GW of large-scale solar

Credit Solar Frontier

On schedule Saudi tender brings hope

After a couple of damp-squib solar announcements, Saudi Arabia has generated a huge amount of interest among big foreign players following its recently announced 300MW solar tender.

"Saudi Arabia doesn't really have a good track record for renewables policy and certainly for tenders, which is in theory its main mechanism for procuring this renewables capacity," says Victoria Cuming, head of policy, EMEA, at Bloomberg New Energy Finance. "That is why everyone is on tenterhooks to see whether this tender will actually go ahead."

However, with 27 big-name companies – "the usual suspects" as BNEF calls them – shortlisted to go through to the next phase of the tender, it is clear that the industry feels more confident on this occasion.

An initial 500-800MW tender for both wind and solar in 2013 involved a call for interest, which was then followed by silence and then cancellation, says Cuming. Last year there was another tender for two 50MW solar projects that went through a brief qualification period and RfP before being cancelled again.

However, it is encouraging that the newly formed Renewable Energy Project Deployment Office (REPDO), part of the energy ministry, has set out a clear schedule and so far kept to the deadlines, adds Cuming.

The tender will be carried out on a build, own, operate basis with 100% ownership for the winning bidder and no mandatory government stake, which is different to a lot of countries in the MENA region and different even to fossil fuel-based plants in Saudi Arabia.

"The participation criteria were pretty tough including the local content requirement," says Cumming. "That's one of the reasons why the vast majority of the shortlisted candidates are big international players with established supply chains and a lot of experience in doing these auctions and undertaking projects in emerging markets."

Developers will also have to source 30% of their supply chain locally, says Cuming.

Credit Francisco Anzola, Flickr

Hopes are high that Saudi Arabia's latest plans for a solar push will bear fruit after several false starts

REPDO has now qualified 27 companies for the 300MW solar PV project, along with 24 companies for a 400MW wind farm. The qualified companies will now move on to the RFP stage as either managing members, technical members, or both, with the titles based on the group's track record when it comes to delivering IPP projects of this scale.

At the time of the qualifications, Khalid Al Falih, Saudi's minister of energy, industry and mineral resources, said: "The market response to the Kingdom's invitation to its first renewable energy projects has been overwhelmingly positive, demonstrating market confidence in our vast renewable energy potential and investment environment.

For example, Riyadh-based firm ACWA Power, which has been awarded projects at record low prices in the UAE, has received a request for proposals from Saudi Arabia's energy ministry to develop the 300MW solar project in Sakaka, Rajit Nanda.

Bids are due on 11 September, with awards expected as early as November.

Saudi Arabia targets generation of close to 10GW of renewables by 2023, mainly through solar and wind power. After that it aims for 30% of its energy mix to come from renewables by 2030.