

Cracking the India solar nut

Business strategy | India's 100GW solar target has unsurprisingly attracted huge interest from foreign players, but the market is not an easy one for outsiders to access. Reporting back from Intersolar India, held in Mumbai in November, Tom Kenning explores some of the key barriers to entry for overseas investors



Credit: Welspun Renewables

With Indian prime minister Narendra Modi approving the most ambitious solar deployment target of any nation in the world, there has been no better moment to stake a claim in the Indian PV market. Higher irradiation levels than most geographies and a government making every effort to attract foreign investment have set a strong framework for entry. Meanwhile, the summer saw an influx of sizeable investments from large foreign players, indicating a favourable shift in market conditions. However, the sheer number of players now queuing up to bid for capacity in India's state solar auctions means that competition is intense, while rapid growth in the sector comes with no guarantee of sustainability.

PV Tech Power caught up with industry figures at the recent Intersolar India conference in Mumbai to gain a first-hand insight into the challenges that members of the solar sector face when looking to break into the promising but complex marketplace of the subcontinent.

"India is evolving," says Kamal Maheshwari, president, smart cities, at Indian integrated utility and solar developer Essel Infra, which is setting up the infrastructure for a 5GW solar park in the state of Rajasthan. "There are still a lot of ground-level challenges. To put up a large plant is not very easy for anybody – not even for Indian developers – and those companies who are coming from outside must be aware that the challenges may be much bigger than they have anticipated."

India's solar market presents opportunities and challenges in equal measure for foreign companies

Many bids for solar capacity have been awarded over the last five years, but real project execution has not reflected this, says Maheshwari. The government is working on solving many of the challenges, but issues remain because PV plants tend to be in remote areas, on barren land, and face problems ranging from land acquisition to evacuation, permits, local politics and finding off-takers.

The list of challenges is long, but the government's policy of setting up 25 ultra-mega solar power parks – many with multi-gigawatt capacities – across India will go a long way in eradicating the majority of project concerns for those developers that are successful in the tendering process.

Seeking finance

Nevertheless, financing remains one of the biggest barriers for an international developer entering the Indian solar market, says Rajnesh Trivedi, senior director of sustainable investment banking at Yes Bank, India. In terms of domestic finance, lenders are not comfortable with players developing projects in India for the first time.

However, developers can opt to acquire a solar company that is already operating in India, along with its associated cash flows, to give more assurance to lenders when proposing new projects. "Creating a first-time entity on your own is where you find challenges in financing," says Trivedi.

This is one of the key reasons why the majority of international players coming to India have sought to enter through a partnership or joint venture with an Indian company. The Indian partner is critical, not only to provide local expertise, but also because part of the credit can be predicated on the local developer's capabilities. A bank can be assured that if something goes wrong with a project, there is an Indian partner to communicate with.

On another note, Vikas Dawra, managing director of sustainable investment banking at Yes Bank, says equity for renewables is still limited in India and is largely dominated by private equity funds.

However, there are issues with traditional private equity investors, who have substantially higher threshold return expectations and lesser gestation periods than what a typical solar project can offer. These investors assumed they could build a solar project platform in India before selling it for a premium after three or four years. However, exit opportunities are becoming very difficult, says Dawra, because there are so many greenfield opportunities in India with a host of accomplished EPCs that are able to build new projects with little difficulty.

In other words, developers can achieve acceptable rates of return of around 14% or more at project level, but they come short on selling operational projects at a premium, because potential investors can easily develop new plants of their own accord. As an alternative, Moiz Saif, associate director, sustainable investment banking at Yes Bank, says: "Solar and wind really offer a return profile, which suits a long-term, low risk investor like a pension fund."

Unfortunately, these large pension funds invest on the basis of credit ratings and India's renewable energy project rating does not match due to poor off-taker

credit ratings – so it has been very difficult to attract that class of investors.

"Now the light at the end of the tunnel is here," says Saif. International utilities are now entering the market via Indian acquisitions or joint ventures. For example, EDF has partnered with Indian developer ACME; Sembcorp has acquired Green infra and Enel Green Power has acquired a majority stake in Bharat Light & Power. By attaining cash flows through local companies, these utilities find it much easier to raise capital in the Indian market.

"These global utilities have the ability to hold their assets for a long period of time," says Saif, "so with penetration of players like these in the country, we now believe that the right set of international investor classes are putting money in the [sector]."

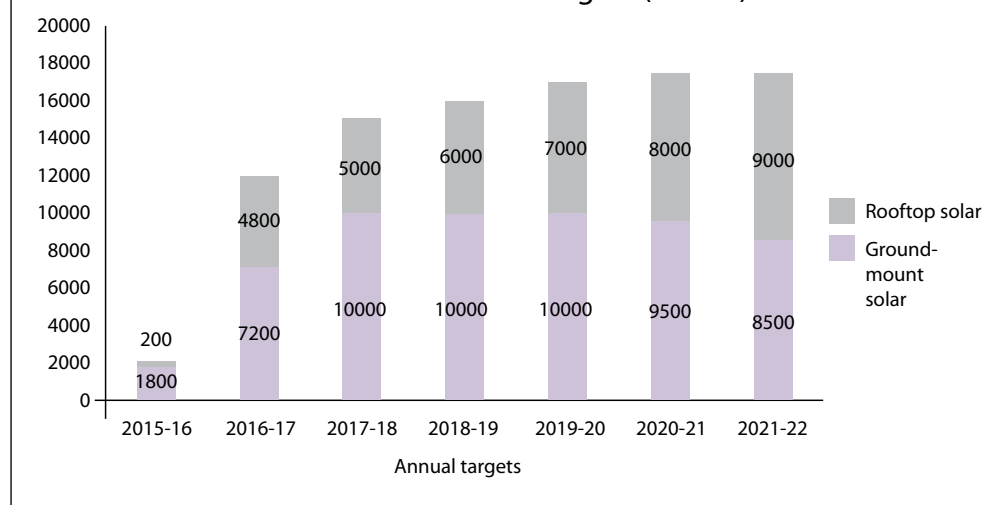
Other foreign companies trying to develop greenfield projects on their own are finding challenges in raising debt, because they do not have a local presence or local partner on the ground. "The track record shows that the partnership and JV route makes life much easier for you," adds Saif.

Developers, analysts, integrated utilities and EPCs approached on this issue during *PV Tech Power's* visit to Mumbai all reiterated the critical importance of having a local partner in India, but not necessarily in solar parks (see box, 'Solar Parks').

The Yes Bank representatives highlight the US\$20 billion market entrance of Japanese solar developer Softbank as a clear indicator of this. They claim Softbank has the resources to set up on its own anywhere in the world, yet it still chose to enter the India market via a joint venture with Indian company Bharti Enterprises.

The gradual emergence of green

MNRE annual solar targets (in MW)



Source: Ministry of New and Renewable Energy

Figure 1: The annual MW targets needed to reach 100GW of solar by 2022, according to the MNRE.

bonds is a positive for the sector, with capital raised by Indian state-run bank IDBI (US\$350 million) and Export-Import Bank of India (US\$500 million). Yes Bank also partnered with Hong Kong-listed utility CLP Group to raise US\$49 million as part of the IFC's US\$3 billion Masala bond programme.

Indian banks are not currently allowed to raise bonds overseas, says Dawra, but if the green bonds are liberalised they could become a very good way of financing renewable energy, because their duration and associated cost of capital fits renewables well.

Low tariffs

Another concern for newcomers is the low pricing of solar power in India at present. The latest state auction for solar capacity saw developer SunEdison win 500MW at a

Solar parks

India's multi-gigawatt solar parks reduce project development to simply winning a tender and constructing a plant, because the government solves all land acquisition, connectivity and local issues in one stroke, even diminishing the need for an Indian partner.

Mohua Mukherjee senior energy specialist at the World Bank (pictured) explains how the organisation is trying to improve developers' ease of doing business with a US\$1 billion injection into the solar sector this year. She says the World Bank is working on the request of the MNRE to fund solar parks anywhere in the country on a first-come, first-served basis. The bank funds the park infrastructure via long-term concessional loans. Consultations last year showed demand for security, lighting, water and communications at the parks. The World Bank has also worked to get Interstate Transmission Systems right to the border of parks to give developers an option to sign PPAs with the local utility or with the state-owned utility Powergrid Corporation of India, in order to improve the investment climate for solar parks.



record low tariff of INR4.63/kWh (US\$0.07).

In the summer, bids well below INR5.50/kWh in Telangana and Madhya Pradesh, also caused concern about project viability and quality. If the tariffs continue to go down, it raises the question of how new players, without extremely innovative cost-cutting solutions, will be able to enter the market.

When the government awards capacity by issuing solar tenders, they could unintentionally be running the risk of blocking capacity from other developers, says Maheshwari. "If that capacity doesn't come out, ultimately it is a dual loss for the government: time is lost and the other players, who were serious, also will not get the opportunity."

This is a key disadvantage of aggressive pricing. However, nine companies willing to bid lower than INR5/kWh in the latest Andhra Pradesh auction indicates that many companies feel they now have the resources to make a decent return even at these prices. The industry is divided on whether there will be a market correction soon or whether prices will continue to tumble, but as Maheshwari points out, there is still 60GW of ground-mount capacity available, and once hungry players have taken their market share, there will space for serious and more cautious players waiting on the sidelines to enter the market.

One India, 29 states

The overall 100GW solar target will require an estimated US\$100 billion investment, but Vineet Mittal, vice chairman of India-based developer Welspun Renewables (pictured, above), claims that financing is the least of a developer's worries in the face of India's unique business climate.

Foreign companies have consistently failed in the infrastructure space in India, including in power, roads, water, transportation and real estate, because of the many local challenges they face, he says. India has unmatched diversity with 29 states, with different languages, cultures and native issues, so developers need to understand local nuances in each district.

"Doing corporate social responsibility at every location is not an easy thing for foreign companies," adds Mittal.

Local people are prone to object to and obstruct projects. "There are many examples across the country where the project has been ready but transmission

lines or rights-of-way have not come up, or the project has been split into 10 parts, because land is not getting consolidated," Mittal says.

Problems are far more likely to arise at a local level than at the federal or financing levels in India, adds Mittal. For this reason joint ventures and partnerships are the only way to succeed in the India market.

Reinhard Ling, managing director of Germany-based developer IBC Solar (pictured below), says that although there are no specific regulatory for foreign companies, there is a natural caution in India towards unknown foreign entities. "The challenge here is that if you start from zero, many Indian customers are hesitating, because many of them have had bad experiences [with foreign players] in the past," says Ling.

Developers need to demonstrate that they are in India to stay, either through a joint venture or some years of groundwork. They must also involve local people and build trusting relationships with communities to avoid strikes and access roads being blocked.

Ling adds: "It is the toughest solar market I have seen so far."

Acquiring land is also one of the key tests, remaining a controversial subject India after the Land Acquisition Act was hotly contested in parliament earlier this year. There are multiple reports of landowners artificially hiking up land prices on discovering that PV developers have become interested in a site. Finding land is tricky in agriculture-heavy states and there can be political barriers as well as poor quality soil.

Grid stability and evacuation

While grid stability may become an issue as more solar comes online, the government is investing in green energy corridors and

Who will buy the solar power?

With outstanding debt from India's distribution companies (Discoms) spiralling to US\$65.4 billion, it makes sense that they would be hesitant to purchase more expensive electricity from solar plants. The Renewable Purchase Obligation (RPO) mandates Discoms to buy a certain percentage of their electricity from renewables, but there has been a lack of enforcement.

A new government package named UDAY, which aims to alleviate the ballooning Discom debt, will make enforcing the RPO more feasible by financially restructuring the utilities and transferring their debt to the state governments. Furthermore MNRE joint secretary Tarun Kapoor has announced that the RPO will have to rise by up to 8-10% by 2022.

Project developers have previously seen payment delays from Discoms of up to nine months. Consequently, the government brought in state-owned utility NTPC and the Solar Energy Corporation of India (SECI) to act as off-takers and assure bidders there will be no payment delays. Lowering utility risk should also attract more foreign investment.

upgrading grids at village, district and state levels to minimise the threat, says Mittal.

Evacuation is a far larger problem, says Maheshwari, because many agencies – often government agencies – that are in charge of building and upgrading transmission lines to connect solar parks and projects to the grid are not able to complete in time.

Ministry of New and Renewable Energy (MNRE) joint secretary Tarun Kapoor targets 12GW of solar capacity to come online in the financial year 2016/17. He says that if India achieves this, then the "game really begins", because the country will then be competing with PV giants Germany and China in terms of record annual installations. With all its intricacies, it seems clear that building relationships in India or even having a local partner is a prerequisite to successful business, but if government projections for 100GW by 2022 are realistic (see Figure 1), then there will be a vast amount of capacity available for solar players and there is no doubt that the Indian government is probing for foreign investment.

Foreign solar companies must be aware of local sensitivities when developing projects.



Credit: Welspun Renewables