FOREIGN INVESTMENT FLOODS INTO INDIA

FOREIGN INVESTMENT IS FLOODING INTO INDIAN RENEWABLES PULLED BY A GREAT SOLAR RESOURCE, A SUPPORTIVE REGULATORY FRAMEWORK AND ONE OF THE MOST AMBITIOUS RENEWABLE PROGRAMMES IN THE WORLD. INVESTMENT IN INDIA'S RENEWABLES INDUSTRY INCREASED BY MORE THAN 22% IN 2015 TO REACH US$10.9BN. THIS RISE IS LARGELY ATTRIBUTED TO SOLAR, WHERE INVESTMENT REACHED US$5.6BN, UP 80% FROM US$3.1BN IN 2014. BY CHARLES YATES, MANAGING DIRECTOR, CMY CONSULTANTS LTD.

It is natural that the sunniest of the world's major economies is focusing on solar. Prime Minister Modi has targeted 175GW of renewables by 2022, including 100GW of solar, which is more than the current combined capacity of the world's top five solar-producing countries.

The renewables programme also targets 60GW of wind, 5GW of small hydro and 10GW of biomass, which is the source of about a third of total Indian primary energy. India is concentrating on decentralised energy solutions, including solar, biomass and solar-wind hybrid solutions to meet its energy demand, which is poised to increase by five times, with 300m people yet to get access to electricity.

There are economic and regulatory challenges but the scale of the opportunity is drawing in investment from equity investors such as EDF, the IFC and Lightsource. There is also an inflow of foreign debt provided mostly by international financial institutions such as the World Bank and export credit agencies and multilaterals such as OPIC.

The attractiveness of Indian renewables is confirmed independently by Ernst & Young in its latest Renewable Energy Country Attractiveness Index, which ranks India as the third most attractive country in the world for renewable investment, after the US and China, having risen three places in 2015. India is the leading member of the "Rising Star" category which is a "Growth market showing no signs of slowing down and continuing to offer far-reaching energy investment opportunities".

The Indian green programme is ambitious

The Indian government took a leading role in the global green movement at the Paris COP 21, where it committed to improving the emissions-intensity of its GDP by 33%–35% by 2030, compared with 2005 levels. The government also offered to generate 40% of its electricity from renewables by 2030 when the country is projected to be the world's most populous with 1.45bn people.

As India seems to have achieved about a 12%–15% reduction in its emission/GDP ratio in the last decade, it is on track to achieve its target. India led a Global Solar Alliance of 120 countries and industries at the climate summit to promote large-scale expansion of solar energy use in the

Maintenance engineers work on top of a power generating wind turbine at Suzlon wind farm in Surajbari village, about 275 km (171 miles) west of the western Indian city of Ahmedabad, December 14, 2009. REUTERS/Amit Dave (INDIA)

Workers carry a damaged photovoltaic panel inside a solar power plant in Gujarat, India, July 2, 2015. India's $100 billion push into solar energy over the next decade will be driven by foreign players as uncompetitive local manufacturers fall by the wayside, no longer protected by government restrictions on the sector. REUTERS/Amit Dave

tropics. The government funded the creation of the Alliance's headquarters in Delhi.

There are other recent manifestations of the government's drive to deliver renewable energy:

- The Indian Ministry of New & Renewable Energy (MNRE) announced a draft policy for repowering old wind turbines. This essentially calls for the replacement of all wind turbines with a rated capacity of less than 1MW. According to the ministry, a majority of the wind turbines installed before 2000 will have a capacity less than 500kW, and represent an estimated 3GW in total.

The draft policy includes incentives for project developers willing to replace old turbines. The Indian Renewable Energy Development Agency (IREDA) will provide loans to such developers with an additional interest rate rebate of 25 basis points. The projects will also be eligible for accelerated depreciation, as a consequence of a tax incentive for project developers.

- Late in 2015, the Indian Government approved a new national offshore wind energy policy to promote and streamline the process of implementing offshore wind energy projects. The policy provides that MNRE will be the nodal agency for the implementation of wind energy projects, while the National Institute of Wind Energy (NIWE) will be responsible for allocating project sites.

The British Government and the EU are supporting the development of an offshore wind tender process and subsidy scheme to deliver international participation in project development, as well as an assessment of the offshore wind resource. Indian turbine manufacturer Suzlon Energy is working on a 600MW offshore wind energy project off the coast of Gujarat. The company has undertaken a project feasibility study and intends to approach the government for the requisite approvals.

- An ambition for all cars to be electric by 2030 as a way to reduce air pollution and combat climate change. Power Minister Piyush Goyal announced that a working group including the country's Road Minister, Oil Minister, and Environment Minister had been established to work toward having all electric cars on Indian roads by 2030.

Goyal said the aggressive incentive scheme would allow citizens to obtain electric cars with no downpayment, and then use fuel savings to pay for the balance of the cars. Electric vehicles will drive a significant reduction in air pollution and support the integration of renewables into the power system by using the batteries for grid balancing and distributed energy storage

Competitive auctions are driving down costs

The ease and speed of investment in large ground-based PV projects means that this area has received most foreign investment. A key initiative by MNRE is a scheme to set up solar parks across various states, each with a capacity generally above 500MW.

The scheme provides financial support from the Government of India to establish solar parks by creating the infrastructure necessary for the new projects, including allocation of land, power transmission and evacuation lines, access roads, water supplies and others required infrastructure. The investment by the government in preparing the solar parks significantly reduces project risk and allows rapid implementation, and so accelerates investor cashflow and reduces the returns required by investors. The programme has been very successful in cutting the cost of power from PV projects.

The tariffs bid in auctions of the right to build-out solar parks have declined due to a drop in capital costs and competitive bidding. The trend has been downward from the New Solar Mission 10MW project in December 2010 where the lowest bid was Rs12.16/kWh (US$0.183/kWh) to a 70MW park in Rajasthan in January 2016 where the lowest bid was Rs4.35/kWh (US$0.066/kWh). Solar parks are established in 22 states and low-cost solar power is widespread, as is shown by the lowest tariff bid in the following solar park tenders:

- Rajasthan: Rs4.34/kWh (US$0.065) for 70MW from Fortum

TABLE 1 - BARRIERS AND SOLUTIONS

Barrier	Solution
Long-term foreign investors are concerned by the rupee exchange risk	More options for hedging in addition to the rupee / US$ hedging facilities offered by OPIC and the IFC
Obtaining the land, evacuation connections and environmental permits required for renewable projects	Extend the programme of government shovel ready solar parks used successfully for large ground-based solar PV projects
Shortage of low cost debt with a term to match the long-life of renewable assets	Support local and foreign lenders (public and private sector) who can provide long-term, efficient debt

- Andhra Pradesh: Rs4.63/kWh (US$0.07) for 500MW from SunEdison and Rs4.63/kWh (US$0.07) for 350MW from SoftBank
- Haryana: Rs5/kWh (US$0.075) for 140MW from Acme
- Madhya Pradesh: Rs5.05/kWh (US$0.076) for 50MW from Sky Power

Of these five successful project developers, Acme is the only Indian firm as foreign developers have an advantage from a low cost of debt. Analysis of a typical solar park indicates that with a debt interest rate of 12% (typical of the interest rate on local bank debt) a tender bid of Rs5.9/kWh is justified but with a debt interest rate of 6% (typical of the interest rate on international debt) a much more competitive bid of Rs5.1/kWh is justified.

Recognising the importance of a low cost of capital, MNRE is in touch with a number of multilateral/bilateral financial institutions such as JICA, KfW, ADB, the World Bank, the EIB, AFD and US Exi-I to arrange low-cost capital for Indian renewable projects. Increasing availability of low-cost debt and the continuing fall in the cost of solar panels are expected to further drive down the cost of Indian PV and make it even more competitive against conventional power.

Investment barriers and solutions

While foreign investors recognise the size of the prize in India, barriers to investment remain. The British Government is seeking to promote British investment in Indian renewables and has asked CmY Consultants to assess the barriers to investment and to develop implementable solutions. An overview of some key barriers and potential solutions are provided in Table 1.

Investors are coming from all around the world

India's is attracting investment from all corners of the globe in a variety of forms:

- Local firms are attracting international finance. For example, Azure Power, an Indian firm that built the country's first grid-connected solar project in 2009, has attracted financing from the IFC and Silicon Valley-based venture capital firm Foundation Capital, as well as local banks.
- Global players such as EDF, Engie from France and First Solar from the USA are now active in the market.
- US renewables major SunEdison has been developing at scale in the country, which is one of its four key markets, along with the US, China and Latin America. However, SunEdison's financial difficulties including the possibility of bankruptcy may well mean that it will not invest in any further Indian projects.
- UK developer Lightsource Renewable Energy has made a US$3bn commitment to the Indian market. It announced a partnership with SREI Infrastructure Finance in November and will look to partner with other Indian companies.
- Other large corporates have also taken the plunge. Japanese telecoms firm SoftBank, Indian conglomerate Bharti and Taiwan-based electronics manufacturer Foxxconn are planning to invest US$20bn in Indian renewable energy through a joint venture

The foreign investors are bringing their debt finance with them in many cases and are developing approaches to manage the challenges. Key risk management techniques that are being successfully employed are:

- Managing the foreign exchange risk with a combination of forex change swaps (often used to hedge debt repayments) and/or including an allowance for rupee depreciation in the equity returns. The scale of the challenge is indicated by the 50% depreciation of the rupee against the US$ in the five years to April 7 2016, which is equivalent to average depreciation of 8.4% pa.

However, the exchange rate exhibited significant volatility over this period, for example in the 126 days ending on September 6 2013, the rupee depreciated by 21%, which is equivalent to 73.6% depreciation pa. A key issue with rupee-US dollar exchange swaps is the high cost, which can be significant (currently around 5% to 6% pa).

- Bidding for solar parks where government has taken the risk, cost and time required to acquire land, arrange environmental permits and build all of the required infrastructure including transmission links. Where government has not taken this responsibility, the private sector has to take the considerable risk and cost of project development.
- The cost of project debt is a key determinant of the competitiveness of a project developer in an auction but debt from local banks tends to be at a high cost and relatively short term. In many cases, successful foreign developers bring low-cost international debt, which is often provided by international financial institutions and export credit agencies that charge less than market rates for managing the foreign exchange risk.

India's unique combination of high levels of sunshine, high power prices – meaning PV can compete in some areas without subsidies – and the size of the market is attractive to global players. For investors, the opportunities come with risks but for a significant number they are too good to ignore. ■