

## Pooling – an innovative way of releasing capital for renewable energy in India

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The Indian government's electrification plans offers major opportunities for renewable energies, with small and medium sized enterprises (SMEs) best placed to meet them. They, however, face challenges in raising sufficient capital at the right cost. Innovative mechanisms are needed, and here is presented one offering the possibility of pooling available capital and using it to finance green-energy SME expansion.

India's overall demand for energy has increased significantly in recent years, largely due to population growth, rapid industrialisation and rising standards of living. Energy supply, however, has been unable to keep pace with the growing demand, resulting in a persistent demand/supply mismatch. The Indian power sector has traditionally been dependent on thermal power,<sup>1</sup> but is now shifting towards renewable sources of energy. The government, faced with a persistent energy deficit and limited access to fossil fuels, is encouraging the renewable energy sector,<sup>2</sup> and, because of a progressive regulatory framework, renewable generation pricing is approaching grid parity.

Despite these promising conditions, the vigorous Indian renewables sector still faces challenges, the main one of which is a lack of adequate financing. Some innovative mechanisms have recently been introduced but if renewable energy projects are to be encouraged, others need to be developed.

### **Access to finance is vital**

It is estimated that India will need more than USD 200 billion in clean energy financing over the next 10 years if the country is to meet its targets for electrification and economic growth. In the solar sector, which offers the most promising opportunity for rapid electrification, raising finance, and especially equity capital, has been difficult. It is worth noting that although a renewable energy plant costs less to operate once it is up and running, it is more capital intensive to develop than a conventional (thermal) one. It is, therefore, crucial to ensure access to finance if renewable-energy projects are to be encouraged.

There are several reasons for the difficulty in accessing equity funding, some linked to Indian financial markets, others to the nature and small size of solar projects. To date, banks have preferred to finance projects with debt rather than equity, primarily because of the variable reliability of Indian off-takers. Despite the energy focus shifting from coal to solar and wind, most banks are over exposed to coal projects. Although specialised government financial institutions<sup>3</sup> as well as bilateral and multilateral development banks<sup>4</sup> financially support government policies, a deeper pool of funding is needed to sustain the enthusiasm of the Indian renewables industry, which requires a lot of small investments.

For a number of reasons, however, the financial markets do not favour investment in small and medium-sized enterprises (SMEs), which largely make up the renewables sector. Most investors prefer businesses that show considerable growth potential in a large market, whereas SMEs more

often focus on providing grass-roots solutions to a small number of consumers. Additionally, SMEs often sell into markets with weak or no credit ratings and are unable to insure the payment default risk as this is generally too expensive at small transaction levels as well as being too complex for SMEs implement. Furthermore, SMEs, by definition, have limited balance sheets and are thus often unable to attract low-cost capital. Similarly their limited liquidity and relative lack of formal systems and processes required by institutional investors hamper their access to commercial financing, increasing costs, constraining growth and limiting their ability to develop green energy projects.

Around the world, and especially in India and Africa, there are opportunities for SMEs to contribute to the growth of renewable energy, and particularly solar power. But because of a high perception of risk and limited scale, a large number of these opportunities have limited growth potential as capital is only available at prohibitive rates, if at all.

### **Yieldco, an inspiring funding mechanism**

It has already been proven in the grid-connected solar power market globally that companies that can aggregate small projects have not only been successful in meeting the challenge of prohibitive financing costs by scaling, but have also been able to mitigate the risks inherent in a diversified portfolio using the yieldco mechanism. A yieldco is usually created by a parent company, typically a large player with the necessary capital to purchase third-party assets or build projects themselves, that bundles long-term operating assets to generate predictable cash flows. Because they are composed of assets that are up and running, yieldcos present a lower risk profile than new projects typically exposed to construction risks. Investor returns are directly linked to the operating performance of the underlying assets with the resulting cash available for distribution, passed on as dividends. From a developer's perspective, the mechanism has proved successful in lowering the financing cost for the solar industry. The transfer of projects to a yieldco subsidiary enables companies to maximize project value by lowering the cost of capital, most of which in solar projects is required upfront, making that an extremely important metric for solar developers. Given a lifetime of 20–25 years for solar projects, yieldcos provide sustainable and reliable cash flows and help monetise projects – the capital raised can then be used to finance new projects at lower rates than those available through expensive equity finance or to pay off expensive long-term debt. Yieldcos serve as a valuable funding mechanism, and are being used by such renewable energy giants as Abengoa, ACS, NextEra Energy, NRG Energy, and SunEdison. All have set up yieldcos to raise millions of dollars through initial public offerings; indeed, since 2013, yieldcos have raised a total of USD 3.8 billion and acquired more than 8 GW of assets of which 78% are renewables.

### **A new mechanism for the off-grid market**

Azure Power has designed an innovative mechanism on green energy finance, denominated Azure Life™, mimicking diversified portfolio ownership. It has the potential to do for the off-grid market what yieldcos have done for grid-connected solar. And the potential is great. In India around 880 million people live in villages (Indian census, 2011), an estimated 20,000 of which are unelectrified (ICEA, 2013). These rural people and more than 50% of the urban population use wood and coal as fuel for cooking. Given the supply and demand mismatch, the off-grid market has huge potential for growth and development. In 2014 the World Resources Institute estimated that, in India, the off-grid energy access market included 114 million households with an income of less than USD 2 a day (Bridge to India, 2014). Further, the International Energy Agency estimated that around half of those without access to electricity spend more than USD 60 billion annually on energy (IEA, 2010), primarily using inefficient fuels such as kerosene. This suggests that even in the base of the pyramid market, people are willing to pay for services and solutions such as solar lanterns, home lights, street lamps, solar water pumping systems and heating systems. Overall, decentralized renewable energy enterprises offer a market opportunity valued at more than USD 2.04 billion annually. Although there are several SME initiatives around the country to provide micro-solar solutions to the underserved population, each has limited access to capital, and therefore limited growth potential. A facility along the lines of a yieldco, however, could be extremely efficient in providing a larger pool

of efficient capital for such projects.

With such a facility as Azure Life™ that provides a constant pool of capital based on their potential to scale, SMEs could recycle cash by dropping their assets into Azure Life™, continuing both their own and the facility's growth. Azure Life™ would pool capital from individuals, multilateral development banks, pension funds and commercial financial institutions that are interested in climate-change mitigation and socio-economic development and have return expectations of 3-5% in emerging markets, while monitoring portfolio risk and performance over the term of the investment. At the same time, in welcoming SMEs into a family with a proven track record and assets, Azure Life™ could set technology and financing standards as well as manage assets, including legal and currency risks, across defined jurisdictions. With a standardised and efficient accreditation process, such as that established within agencies including the Small Industries Development Bank of India<sup>5</sup> for managing World Bank and Global Environment Facility grants, a facility similar to Azure Life™ could enable credible SME participation.<sup>6</sup> Once accredited, the SME's assets passed to the facility could act as a guarantee against a predefined, standard set of technical and financial parameters. With the payout from the drop down, the SMEs could then expand their activities, moving resulting new assets to the facility - with it paying a premium for the right of first offer on such assets.

Regular monitoring by the facility of the technical and financial parameters would ensure proper yield cover to the investors - the yield available, typically 85% of free cash from such assets set after taking into account all risks pertaining to distribution tax/costs and currency depreciation, would take all necessary provisions and safeguards into account.

The new Indian government's electrification plan to electrify every household by 2019 offers a major social and economic opportunity, implying almost 400 million new power consumers. In many ways, SME's are best suited to meeting the needs of electrification for widespread rural communities - key to meeting India's ambitious energy targets. This type of innovative facility could allow the private sector to involve itself in the development of climate-change friendly energy sources, provide SMEs with much needed but difficult to raise finance, and facilitate and speed up the provision of electricity to hundreds of millions of people.

#### Footnotes:

1 69% of the installed power capacity is generated from conventional sources of energy (coal, oil and natural gas) as of fiscal year 2014.

2 In 2010, the Indian government announced the National Solar Mission, which is a federal scheme to promote the renewable energy sector. The scheme announced a target of 20 GW by 2022, which has been recently updated to 100 GW by 2022 by the new government. At present, about 3.1 GW has been installed and new tenders for almost 2.7 GW were rolled out in the recent months.

3 Such as the Indian Renewable Energy Development Agency (IREDA) and PTC India Financial Services Ltd (PFS).

4 Including the International Finance Corporation (IFC) and the Agence Française de Développement group (AFD) including Proparco.

5 SIDBI is an independent financial institution aimed to support the growth and the development of micro, small and medium-scale enterprises in India.

6 The accreditation process entails working with accreditation experts that help prepare and process applications with information required by banks and Reserve Bank of India (RBI) approved rating agencies, thus handholding the Micro, Small and Medium Enterprises (MSME) through the process seamlessly.

**References / Bridge to India, 2014.** Beehives or elephants? How should India drive its solar transformation? Available online: [http://www.tatapowersolar.com/bti/Report\\_Beehives%20or%20elephants\\_September%202014.pdf](http://www.tatapowersolar.com/bti/Report_Beehives%20or%20elephants_September%202014.pdf) // **Indian census, 2011.** Database. Available online: <http://censusindia.gov.in/2011-common/censusdataonline.html> // **Indian Central Electricity Authority, 2013.** Annual Report 2012-13. Available online: [http://cea.nic.in/reports/yearly/annual\\_rep/2012-13/ar\\_12\\_13.pdf](http://cea.nic.in/reports/yearly/annual_rep/2012-13/ar_12_13.pdf) // **International Energy Agency, 2010.** World Energy Outlook. Available online: <http://www.worldenergyoutlook.org/media/weo2010.pdf>

