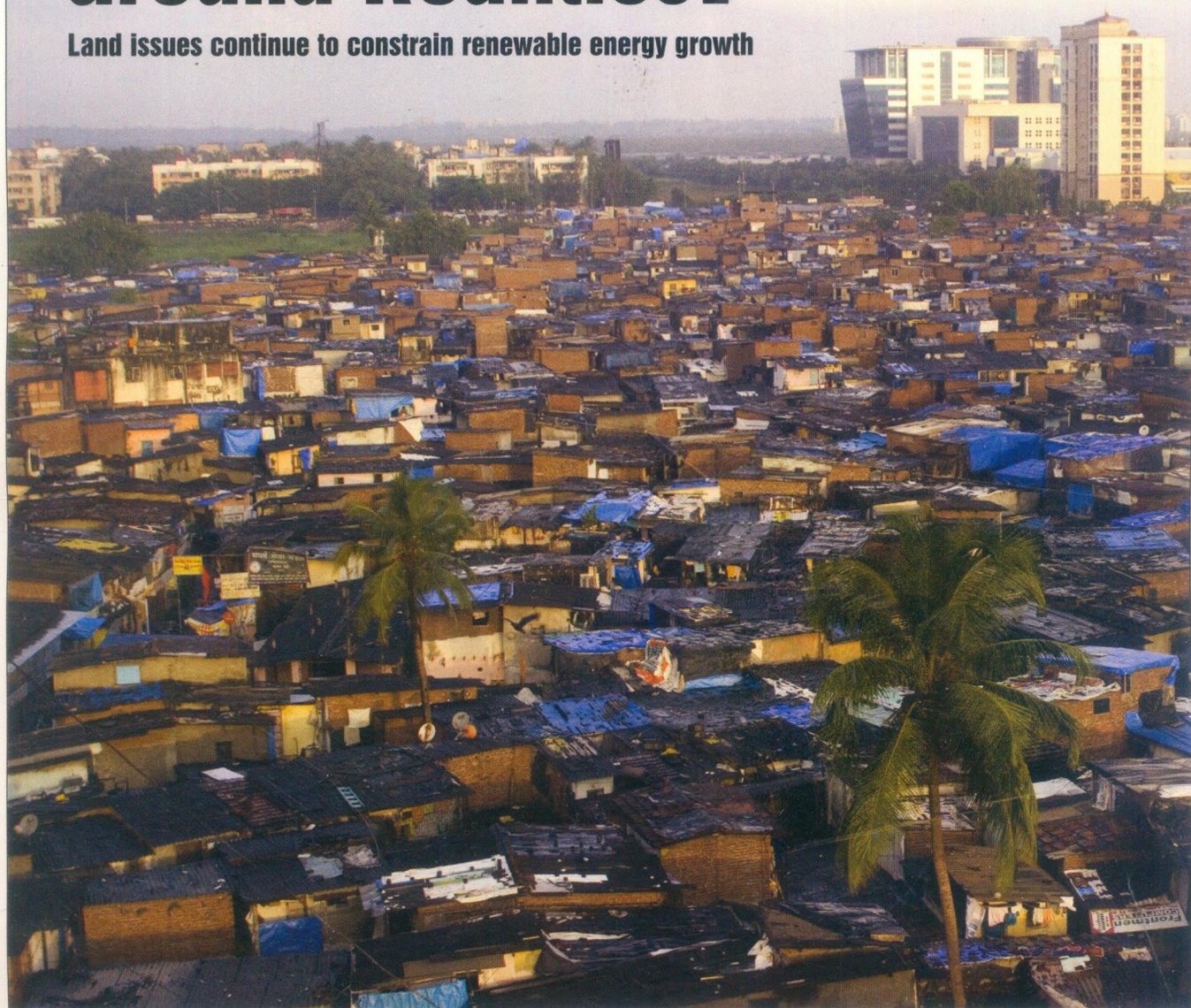


RenewableWatch

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Ground Realities¹⁶

Land issues continue to constrain renewable energy growth



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CleanMax Solar

Looking to increase its corporate customer base

Most states in India have significantly higher tariffs for commercial and industrial (C&I) consumers as compared to residential and public sector consumers. However, with solar power surpassing grid parity in recent years, C&I consumers have been increasingly migrating from grid power to solar power to lower their operating costs. In India, the C&I rooftop solar segment has seen more growth than the residential rooftop segment. To tap this opportunity, a large number of specialist developers have entered the solar market, primarily catering to C&I consumers. One such developer is CleanMax Solar, which began its journey as a rooftop solar developer in 2011 and has since grown into a specialised developer catering to the C&I solar segment.

Business philosophy

CleanMax Solar is a pioneer of the energy sale model, more popularly known as the opex model. In this model, a developer not only executes the project but also finances it for consumers. For C&I consumers, this model is particularly attractive, as they can get much cheaper power than grid power without any upfront capital investment. They will also be free from the hassle of operating and maintaining the solar plant.

Under this model, CleanMax Solar offers the on-site solution and the solar farm or open access solution. On-site solar energy solutions are based on the pay-as-you-go model, where C&I consumers only pay for solar power at the rate determined in the power purchase agreement (PPA). These on-site solar solutions can be used for rooftop systems, ground-mounted systems or carports. In 2015, CleanMax also introduced the opex model in its private

solar farms located in Karnataka and Tamil Nadu. These private solar farms supply power to large C&I consumers in open access mode through long-term PPAs. Apart from the opex model, CleanMax Solar provides engineering, procurement and construction services to consumers willing to set up their own solar power plants.

Market share

The popularity of the opex or energy sale model has made CleanMax Solar a market leader in the distributed solar power generation segment for C&I consumers. As per company statistics, its solar capacity has been consistently growing since 2016-17 at a compound annual growth rate of 86 per cent. Its cumulative installed solar power capacity was just 35 MWp at the end of 2015-16, which has now reached 500 MWp. The company's reported revenues have also increased by almost 10 times from 2015-16 to 2017-18, while its profit after tax has increased by more than five times during the same period.

The rooftop solar market is quite fragmented with low entry barriers for new players, and each player offering the same services at competitive prices. During the period October 2016 to September 2017, CleanMax Solar was the leading rooftop solar project developer in terms of installed capacity, with a market share of 15.8 per



cent. However, it slipped to the second rank this year with a 15.6 per cent share (559 MW of capacity) during the period October 2017 to September 2018.

Existing portfolio

Of the company's 500 MWp of installed capacity, 170 MWp is rooftop solar and 330 MWp is installed at solar farms. Its solar rooftop projects include a 1 MW solar project in the National Institute of Technology (NIT), Surathkal, Karnataka; an 800 kWp solar project in Manipal University's Jaipur campus; and a 500 kWp solar project in Bangalore International Airport Limited. CleanMax Solar also has a 145 MWp solar farm in Sedam, Karnataka, a 30 MWp solar farm in Tumkur, Karnataka, and a 30 MW solar farm in Dindigul, Tamil Nadu.

CleanMax Solar has a wide range of corporate customers as its clients including automotive, food and beverage, and manufacturing industries. It also partners with top universities like Pune University, Manipal University, NIT (Surathkal) and Indian Institute of Technology (Banaras Hindu University), and government establishments like the central public works departments and environment ministries across India. Some of its key clients are Tata Motors, the Manipal Education and Medical Group, Bangalore International Airport Limited, Amity University, Adobe India, Mindtree Limited, ACC Limited, Volvo Group India, United Breweries Limited, Carlsberg India, Carl Zeiss, Konecranes, Knorr-Bremse, Chennai Metro and Hyderabad Metro.

CleanMax Solar's customer additions have grown at an average of 100 per cent year on year, from 34 in 2016 to 76 in 2017 and 140 in 2018. In 2017, it received a total of \$100 million in equity funding from Warburg Pincus, a global private equity firm, and the International Finance Corporation, a member of the World Bank Group.

Future plans and outlook

As more and more C&I consumers are expected to migrate to solar power in the face of rising grid tariffs, the company is

"The C&I solar market is not saturated yet"

Views of Andrew Hines, Co-Founder, CleanMax Solar

What are the key growth trends in the solar C&I segment?

Since the company's inception, we have seen very strong demand from the C&I segment. Many C&I consumers have migrated to cheaper solar power. The energy sale or opex model propelled the adoption of solar power in the C&I segment, as a lot of C&I consumers did not want to actually get into operating the project and take the risks that come with initial investments in order to adopt solar. Initially, only a small fraction of the total market adopted this model, but this has changed over time. The success of the opex model can be gauged from the fact that it has become the bedrock of accelerated growth in the solar industry, being adopted by the Ministry of New and Renewable Energy, Government of India, as the RESCO (renewable energy service company) model.

What has been CleanMax Solar's experience across various states? Which states do you find more conducive to work in?

Almost all states in India are conducive for rooftop solar development, which does not rely much on state policy. Moreover, most state policies are quite similar. Hence, our rooftop solar projects are very well distributed across the country. However, in the open access solar segment, there are significant differences in the policies of various states. For instance, the Karnataka Open Access Policy, 2014, was attractive for solar power generators as well as consumers. It not only had a provision for waiver of open access charges but also specified that the waiver is for a tenor of 10 years. By not only giving exemptions but also specifying the duration of exemptions, it provided long-term clarity, without which it is very difficult for customers or generators to enter into long-term contracts.



How has the risk profile of consumers changed over the course of years?

There are payment risks in the rooftop solar segment because we are setting up a project on the customer's rooftop, that is, our asset is on the consumer's premises. However, in an open access project we can always supply power to another customer from the same solar plant. As a company, we are very cautious in our choice of customers. Our approach from the beginning has been to focus on the top corporate customers of the country so as to lower the payment risks. Most of these consumers have a strong desire to become sustainable in their operations. Hence, we see a lot of opportunity in India in the coming years.

What is your outlook for the company and the C&I solar segment?

There is a pushback from discoms and state governments as solar power has become one of the cheapest power sources. Hence, there are doubts over the exemption of transmission, wheeling or cross-subsidy surcharges, and every state is responding differently to this. It is the job of the regulator to balance the concerns of the consumers, generators and discoms.

We currently operate in the C&I solar segment, and our clients are large corporate customers. While there is no precise estimation of what the total market size would look like, we are quite confident that the C&I solar market is not saturated yet. There are a lot of opportunities for both rooftop and open access. The positive thing is that customer awareness has really grown in the last three to four years, which saves our time, and helps get the contracting work completed in time. This has really helped us grow our business.

positive that the C&I solar market will grow manifold. However, the C&I rooftop solar segment is quite restricted with a very small market size compared to the utility-scale segment. Moreover, many state discoms are reluctant to provide approvals for open access and let go of their high-paying C&I consumers. With solar power tariffs crossing grid parity, the present exemptions of open access charges might also be cancelled in the future. This will definitely

limit the number of C&I consumers willing to pay for the more expensive solar power. As rooftop solar projects are significantly smaller in capacity than open access projects, the projected decrease in the open access solar market size might hamper the company's overall business.

Thus, CleanMax Solar is planning to venture into the micro, small and medium enterprises segment, the residential seg-

ment and educational institutions to increase its market opportunities. It is also depending on the increase in industrial electricity demand for its future growth. Apart from the existing solutions, the company is exploring energy storage solutions to complement its solar systems. CleanMax Solar is looking at aggressive capacity additions in 2019 and plans to reach the target of 300 corporate customers by 2020 from the existing 140 corporate clients. ■