

"India Wants to Install 40GW of Rooftop Solar by 2022 —What Will It Will Take to Hit That Goal?"



Mr. Neelesh Garg, Managing Director, Saatvik Green Energy

"When examined in isolation, this target appears daunting. However, viewing it in perspective of land size required, the ask is 4050 hectares of land. It still seems a far cry from reality. Now, consider it as one-third of the entire rooftop space available in Delhi. Does this sound more realistic? This is exactly what it takes to hit that goal, breaking down the numbers to a vision with high clarity and a strong sense of purpose. In a nutshell, once you can visualize it, you can achieve it. The government has launched the National Solar Mission and is providing subsidies, corporates are doing their best to market their product, yet all stakeholders are missing the mark because of one roadblock—awareness. The real challenge lies in the skepticism of people investing their hard earned money into something they don't quite understand. The quantum of investment is also a major factor affecting the purchase decision. Two surefire ways to tackle this problem are a provision for EMI by banks and a specialized insurance plan, although these added securities will come

at a premium. Once consumers know how to finance this technology, they need to understand the technology itself, its uses and its payback. Solar literacy camps organized by the government in collaboration with corporates to break down the complexities facing this technology will go a long way in imparting knowledge and dispelling misconceptions.

The secret is to try and sell the problem, not the product, because that is what a retail consumer understands. Consumers won't compare or even consider brands unless the need of the product is well established. To acknowledge the need, they have to understand the problem that commands its use. Unless consumers are convinced that the problem is big enough to look for a solution, the entire solar retail industry will remain stagnant. Keeping all these critical objectives in mind, Saatvik Green Energy believes that the aforementioned goal can certainly be achieved in a cohesive environment where all stakeholders contribute collaboratively towards advancing green energy."

Mr. Andrew Hines, Business Development Head, South India, CleanMax Solar

While India's 100 GW solar target is ambitious, many argue that its 40 GW rooftop solar target is unachievable, since it is starting from a smaller base (< 1 GW), and also because rooftop solar development is harder for the government to accelerate on its own. Even where the government has issued tenders for solar systems on the rooftops of government buildings, it has not seen a large enough response or follow-through from the industry to achieve the full potential.

As India's oldest and largest rooftop solar developer, we at CleanMax are well aware of the challenges of ramping up rooftop solar to the scale envisioned by the Government of India. However, I believe that the target is achievable, with a combination of the following measures:

1) Smart, enabling financing structures, rather than direct capital subsidies. This would include the extension of accelerated depreciation for solar – accelerated depreciation has been particularly crucial for the growth of the rooftop solar industry so far (more so than in utility scale projects), and scaling back the benefit now would sure dampen growth in this sector, as it did in the wind industry when it was temporarily withdrawn there. It is hard to

see the 40 GW target being achieved by 2022 without accelerated depreciation.

2) Sensible and well-implemented net metering schemes. Net metering is an important enabler for rooftop solar, and its rollout in many states in the past 12 months has been a promising development. However, the implementation has been slow in some states, and it can take many months to actually get the permission, with very different processes in different states. A standardized policy across India would be helpful.

Many states have arbitrary restrictions – for example, caps of 0.5 or 1 MW in many states, restrictions based on offtake voltage or transformer capacity, or unreasonable rules about meter locations – which prevent the easiest volumes from materializing. We hope to see these policies improve based on the experience to date.

3) Sensible tenders for government rooftops: To date, tenders for government rooftops have varied widely. Tenders run by SECI have been well conceived and well implemented, while some institutions have run their own independent processes, with mixed results. Government entities would be well-served by going with standard PPAs used by SECI, and with tighter eligibility criteria to weed out less serious vendors.

Mr. Chetan Shah, Director, Goldi Green

With more than 300 days of sunshine India stands at an advantage of getting maximum out of solar installations. It is also important for us to take corrective measures to secure a stable environment and overcome the disasters of climate change. India, in order to achieve an ambitious target of 40GW of Rooftop solar by 2022 will have to ponder upon the following factors:

POLICY:

We shall need a Nationwide Uniform Policy to overcome the hindrances faced by the present scenario.

1. There is no need to have cap on the sanctioned load. It should be allowed up to the average usage of the consumer. As per present policy the effective plant load factor is less than 20% which is very low when compared with the amount of capital expenditure on the plant.
2. We need to have proper mechanism for speedy execution of the project. Involvement of too many government agencies such as MNRE, State Nodal Agency, Electrical Inspector, DISCOM, PWD causes delay and demands unnecessary paper work. If MNRE and respective DISCOM are only involved with a single window clearance. It can simplify and speed up the process.
3. There should be a national policy to

make soft loans available without collateral from Nationalized and Private Banks.

INCENTIVES:

1. Presently subsidies are granted to residential and institutional consumers only. It should be made available to commercial and industrial applications because major share can come from this sector which can help to achieve National Target. Instead of depreciation benefits alone commercial and industrial use should be given subsidy at par with Residential Rooftop policy.

2. Honorable Prime Minister has initiated a very successful drive of providing subsidy benefits directly in the bank account of the consumer and it's his dream to give benefits directly to citizens, The solar subsidy should also be credited directly to the beneficiary in his bank account. This will help installers to be financially efficient to take up more projects.

The target will not only get achieved by asking third party players to install the solar system, bringing in investments but knowledge transfer and maintaining the project for longer number of years also becomes important for receiving all day and night power.

Mr. Vinay Goyal, CEO, Ganges Internationale Pvt. Ltd.

India is undergoing a massive transformation in energy generation. Renewable is considered as the fastest growing segment in the sector. For generating solar energy, one needs to install a solar farm for which he has to pay entire cost upfront. Looking at the fact that the cost is quite high for a residential customer, it becomes important to introduce variety of financing mechanisms under the solar program which will not only promote the marketability of the sector but and will also bring in innovation for the rooftop market in order to target 40GW by 2022.

Commercial and utility rooftop's will play a major role in achieving the target looking at the space availability, however the residential will also make an important part considering the fact that it makes bigger share but for that a common man needs to be educated and convinced to install rooftop solution.

Most importantly, the scope will go

beyond simply making finance available, it will also require better transmission and distribution infrastructure through out the country, seamless last mile connectivity from rooftop to the local grid, up-gradation of the grid to accept solar energy, right support structure to handle the entire network, whereas on the customer side government needs to focus on providing feed in tariff like programs which would help a customer to start gaining financially from his investments/ rooftops installations, provide training for long term existence of the project, provide value chain knowledge to handle out any issues / problems to local people. The policy must target each and every segment which will lead to transmission of stable power continuously.

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In a short span of time, solar energy has become an affordable and reliable clean source of electricity supply in India. For the huge solar energy potential that remains untapped, a considerable amount constitutes of rooftop. Rooftop PV projects offer on-site power generation and its consumption opportunity for consumers which help them reducing their electricity bills. This option is now available due to the considerable fall in the cost of generation of solar power compared to grid tariffs in many Indian states.

Two business models are being offered by solar companies such as CAPEX or OPEX with and without net metering, which provide options to rooftop owner/ consumer while decision making. In rural areas, off-grid solar power projects have immense possibilities. Under smart city initiative, there is immense possibility of using solar energy in India's urban area. A rooftop PV plant once installed could achieve breakeven in 5-7 years. But it needs high initial capital costs, enough to overshadow its benefits and keep it off-reach to rooftop consumers.

The plan of building renewable energy infrastructure by present government is indeed very ambitious considering the total installed capacity as on today. We possibly may not achieve the 40GW rooftop target, but would certainly install a very substantial renewable energy capacity in the country by 2022. However, to enable that several policy measures are required such as:

- 1) More rigorous campaigning for creating awareness among citizens about solar energy sector
- 2) Enabling provision for long term finance at low interest rates for renewable energy projects
- 3) Policy to create skilled/semi-skilled work force across the sector
- 4) Simplification of several procedural hurdles in obtaining permission at government agencies

MNRE has approved State Bank of India and several other nationalized banks to offer loan for installation of grid connected rooftop PV along with the applicable subsidy and directed them to encourage people "to install rooftop solar PVs and include the cost of such equipment in their home loan proposals"

COMPANY FEATURE

CleanMax has over 50 MW of operational onsite solar plants in all major states of India



COMPANY HISTORY:

CleanMax was founded in 2011, with the vision of enabling corporates to go green through solar adoption. CleanMax pioneered the rooftop PPA market in India, and remains the #1 rooftop solar developer by more than a 2-to-1 margin, as per the most recent data from Bridge to India. CleanMax has over 50 MW of operational onsite solar plants in all major states of India, with 5 offices across India. It also offers open access solar power for corporate customers in Karnataka and Tamil Nadu

What The Company Does:

CleanMax focuses primarily on the corporate sector, and counts most of the country's leading business houses as its customers, along with many large MNCs, across all sectors. It also includes many leading government entities as rooftop customers, for example NITK Surathkal and Bangalore airport, among others. It also provides open access power for corporate customers.

STRATEGY

a. Vision Statement:
Enable a Renewable World

b. Mission Statement:
To enable corporate India to go green through solar adoption. This means providing high-performance, zero capex and zero hassle solar solutions for our customers.

c. Business Goals & Objectives:
CleanMax aims to maintain and build on its status as industry leader, and provide an ever larger fraction of its customers' energy needs through renewable energy. This objective has led to our expansion

from rooftop to open access solar, and may include other solutions – such as energy storage – in future, while maintaining its focus on corporate customers. We also see government rooftops as an important segment, and look to build on our recent successes there.

BUSINESS CONCEPT

List Company's Products & Services

CleanMax Solar provides rooftop solar power on a build-own-operate basis, either through onsite plants (rooftop or ground mounted), or through open access in select states, currently Karnataka and Tamil Nadu.

CleanMax has also begun pilots in advanced energy storage, and sees this as a potential growth area in future.

Business Competitiveness

In Bridge to India's recent Rooftop Solar Map, CleanMax was again ranked #1 among rooftop solar developers, with a more than 2 to 1 margin over the second largest competitor. We are also the only developer with a truly national reach, and with staying power, having been the leading developer since we pioneered the concept in India.

In the open access segment we are a newer entrant, but in March 2016 we commissioned Karnataka's first solar farm, and are now providing open access solar power to leading IT companies, industries and 5-star hotels in Bangalore

Quality Policy Of The Company: ISO ratings, standards & specifications etc.

CleanMax deals with only the highest quality customers, and our entire culture is driven towards meeting and exceeding our customers' highest expectations. This means not only the highest standards in engineering and component selection, but also areas such as safety, compliance and O&M, all of which are widely neglected in

the Indian solar industry, and which we see as important differentiators. As 95% of our business is in the PPA segment, we have a 25-year approach to all of our plants, and we do not take shortcuts in plant design or operation.

A recent example of our performance orientation is our development of a customised remote monitoring system, which we are rolling out across our more than 200 rooftop projects, in partnership with a leading international provider. While most vendors deploy some sort of remote monitoring system today, most will go with the off-the-shelf product offered by the inverter manufacturer, even though these have major shortcomings, particularly for PPA projects. Our new system enables us to standardise our O&M and monitoring across all of our projects, and to seamlessly monitor the parameters that matter to our business and to our customers.

TEAM & MANAGEMENT

CleanMax is owned and led by leading industry professionals, notably its Managing Director Mr. Kuldeep Jain, who was earlier a Partner with McKinsey and Company, and head of its Oil & Gas Practice in India. CleanMax takes great pride in its deep management team of industry leads, who hail from leading industry players such as Mahindra, Thermax, Tata, SunEdison, Solaire Direct, to name a few. CleanMax believes in recruiting and retaining the highest quality talent at all levels, and sees its competitive advantage as stemming in large part from its culture and ability to attract and retain the best talent in the industry.

CUSTOMERS & PROJECTS

List details of customers & projects

Over 50 MW of operational onsite projects in India on a PPA basis, across more than 200 rooftops, and in all major states in India. Our onsite projects range from 50 kWp to 4 MWp, and every possible build-

ing and roof type, and for all segments of the corporate market.

We also operate Karnataka's largest solar farm, and will be commissioning two additional solar farms, in Karnataka and Tamil Nadu, in the next 6 months, all for supply of power to corporate customers.

AMBITIOUS PROJECTS

1) Asia's largest private sector PPA – 30 MW in Tamil Nadu. This is a project for a leading IT company, which will have a major impact on the client's energy cost and its carbon footprint. This is a tracker-based project, currently under construction, and will also feature the latest in outdoor inverter technology from TMEIC. We aim to make this a showcase project for utility scale solar in India

2) Largest onsite solar project in India on a PPA basis – 3.6 MW in Maharashtra. This was one of our earliest solar projects, and has since expanded to become India's largest. It includes both rooftop and ground mounted portions, and again has a major impact on our client's sustainability objectives.

3) Largest rooftop solar project in Karnataka – 2.0 MW, for a major automobile manufacturer.

4) Largest rooftop solar project in Gujarat – 2.0 MW, for a major automobile manufacturer

5) Largest rooftop solar project in Tamil Nadu – 2.6 MW, for an MNC automotive component manufacturer

6) #1 and #2 largest private university rooftop solar projects in India, for Manipal University (Karnataka) and Manipal University Jaipur (~1 MW each). We are about to add the #3 largest, in north India, coming soon.