

Net metering and central financial assistance will provide the ultimate push to **rooftop solar** installations in India

Rooftop solar systems provide clean energy, resulting in multiple environmental and monetary benefits. To actually enjoy these benefits, the Indian government should set up stricter norms to avoid heavy reliance on fossil fuels in the power industry. Besides, the government should step up its efforts on building mass awareness to ensure a smart transition towards a greener future. In an interaction with Potshangbam July of *Electronics Bazaar*, Animesh Manek, managing director of Avishakti Rooftop Solar Pvt Ltd, talks about how rooftop solar installations are not just about saving electricity but also play a big role in the larger picture of environment conservation.

► **ANIMESH MANEK**,
managing director of
Avishakti Rooftop Solar Pvt Ltd



EB: Tell us about your company and how your business model works?

Avishakti Rooftop Solar Pvt Ltd is one of Mumbai's fastest growing rooftop solar companies specialising in residential, commercial and institutional installations. Having started our operations in October 2016, we have already crossed an installed capacity of 220kWp in two-and-a-half years.

We are an EPC (engineering, procurement and construction) player in the rooftop solar segment—we provide end-to-end solutions for rooftop solar power plant installations including the design, engineering, procurement and commissioning.

We are a team of highly skilled, passionate professionals pursuing excellence at every level of our work. Instead of merely building a solar business or following a particular path as a means to an end, we live and breathe rooftop solar technology. This approach ensures only the highest quality output each and every time. Integrity is our core value, and we are driven by the vision of empowering our customers – that's our top business priority.

EB: How many projects have you completed so far? Is there a special project for which you believe you have extensively contributed towards building up sustainable and green energy-generating resources?

So far, we have completed 17 projects. Every project is the fruit of hard work and the pursuit of excellence. The results are out there to be seen, with our solar plants across Mumbai consistently performing beyond the industry average. All our projects are designed to optimise energy efficiency, thereby contributing not only to saving money for our customers but also to slashing CO₂ emissions substantially. This definitely

makes it very difficult for me to simply choose one particular project. It's like having to choose the best from among many of my children.

If I must talk about the projects that truly impressed me to begin with, it would be the residential societies like Mulund Darshan and Krishna Mahal in Mumbai. The members in these societies chose solar technology not to just focus on savings but to contribute to the broader cause of environment conservation. I was highly impressed by the society members who had been actively pursuing composting, electronic waste recycling and rain water harvesting as core initiatives, apart from solar power. Add rooftop solar to these and you get a highly sustainable way of living. It was such an honour to be a part of their mission.

The other projects that I feel are extremely important were the two temples at which we installed rooftop solar plants. When a spiritual institution adopts renewable and sustainable means of energy, it influences an entire community, and truly 'leads by example'. We were extremely impressed by the management's resolve to adopt sustainable means of energy for the electricity requirements of the temples.

EB: What are the biggest advantages of installing rooftop solar panels? How is the current solar rooftop market growing across India?

Rooftop solar is a cost-effective, efficient, simple, and low maintenance technology. Once you adopt it, you can forget about huge electricity bills for the next 25 years.

Unlike what it is perceived to be, rooftop solar is truly an 'easy on the pocket' technology. A rooftop solar plant is designed to provide you with free electricity, and it lasts for 25 years. You might have to pay a high cost as the initial investment, but you

recover this in a matter of three to four years, after which you pay nothing for your electricity for the next 21-22 years.

If you have any apprehensions about the solar plant lasting for 25 years, consider this: all those satellites going into space use solar panels for electricity. They stay in space for decades and there is barely any maintenance. It's the same with the panels used for your rooftop. Space technology is being used on your rooftop and has made using the sun's energy possible for one and all.

Also, adopting solar technology can be your bit towards contributing to making this earth a better place to live in. According to the US Energy and Information Administration's carbon footprint calculator, 18kWh of solar energy prevents 500g of CO₂ emissions. Imagine the impact you can make to saving our planet by adopting this clean and green form of energy.

EB: What changes do you envisage in the rooftop solar sector over the next five years?

Among the main concerns and challenges for the rooftop sector, the primary ones are faced while interfacing and liaising with government agencies and discoms. To a certain extent, the government has already successfully built the digital and physical infrastructure to deal with this challenge and we are seeing a lot of improvement in all the procedures associated with rooftop solar policies and approvals. In the next five years, I see these processes getting further streamlined, resulting in operators, discoms and customers interacting in a seamless way.

Another concern that the industry faces is that of financing options. For the projects that involve high

upfront costs, if more financing options are available, things will get easier. On this front, I see the next five years to be about exploring different financing mechanisms including the RESCO (renewable energy service company) model, leasing a roof, demand aggregation, credit risk guarantee mechanisms, etc.

EB: The Indian government has set a massive target of achieving 175GW of renewable energy by 2022, including 100GW of solar capacity in the country. However, many claim it as too ambitious a target. Do you think it is achievable?

It is indeed an ambitious target. So far we have achieved 41.6GW of installed solar capacity in the country. If we consider the tracking that is being carried out by various solar institutions, the estimates reflect that we are lagging behind the target and might not be able to meet it by 2022.

EB: There is a report that India has achieved only 10 per cent of its 40GW rooftop solar target till now, which is quite below expectations. What could be the reasons behind the sluggish progress of rooftop solar installations?

India has set a target to achieve a capacity of 100GW from renewable energy sources through grid-connected solar energy, out of which 40GW is estimated to come through rooftop solar installations by 2022. Unfortunately, we haven't been able to stick to the target so far. The Union Ministry of New and Renewable Energy (MNRE) has stated that only 2.16GW of rooftop solar systems had been installed in the country till December 2018.

The sluggish progress of rooftop solar installations

can be attributed to a few challenges that we are facing as an industry. As of now, the commercial and industrial sector dominates this segment, accounting for the maximum rooftop installations, while the residential consumers are barely catching up. If we want to see the rooftop solar sector booming, we will also have to focus on expanding the adoption of the technology by the residential sector, which forms a big chunk of the potential market.

The solar rooftop segment also faces challenges like lack of awareness, lack of innovative government policies or attention, liaising and bureaucratic hassles, as well as the lack of whole-hearted support of discoms.

EB: So why is the residential segment still lagging behind?

Given the benefits of adopting solar power, it is fast becoming a financially viable choice for industrial and commercial customers. Also, these consumers have several advantages that encourage them to go for solar. For example, they have the financial resources to cover the sizable investments needed to install rooftop solar systems.

Moreover, they can also sign on a renewable energy service company (RESCO). In this model, the developers install the system on the consumers' premises and sign a long-term contract to sell them electricity; so this does not require the owner of the plant/premises to make any investments.

But this does not mean that the residential rooftop solar systems don't come with great benefits for the consumers. However, they do face some difficulty in the process of getting net metering approval, and subsidies are not exactly

streamlined yet—which results in a lot of hiccups for individual consumers. Also, residential consumers don't always have the required funding readily available and, as of now, they don't have the best of options for loans and other financial assistance schemes.

Another challenge could be the lack of expert players catering to small scale projects. While there is a lot of expertise available for MW scale projects all over the country, residential projects, being small, are not viable for the big players, which can't carry out these kW level projects without incurring huge expenses. Also, the smaller players currently operating in the industry are not exactly rooftop solar experts. They are more or less the electrical services suppliers who have expanded into the solar industry. Since they are not competent enough, residential projects lack quality. For a residential customer, it can be a huge deterrent to see poor quality output after spending such a high amount as the initial investment. According to me, this is a huge gap that we need to address. We need more expertise among the residential rooftop solar services providers, who can provide the same quality that big industries get from the MW level operators. Residential customers need a true value proposition to see the benefits of rooftop solar. The operators catering to this segment must not only be experts in the technology but also play a bigger role in educating the consumers about the benefits of solar technology.

EB: What do you have to say about the government incentives and policies to push rooftop solar installations?

The two government policies that will provide the ultimate push to rooftop solar installations in India will be 'net metering' and 'CFA (Central

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Financial Assistance)', also commonly known as the central and state subsidies on solar installations.

The access to rooftop solar was made easy by a technology that our government launched three years ago. The technology is backed by what is called the 'net metering policy' – another term for on-grid rooftop solar PV systems. Earlier, solar technology was primarily battery based. This meant very high costs of installation as well as maintenance and replacement. With net metering, you can connect the rooftop system to your existing electricity connection that's coming to you from your electricity service provider. Rooftop PV plants generate electricity as per the system's capacity. If they generate more power than you need, that power gets fed into the grid. If the system generates less than what you need, electricity is consumed from the grid. At the end of the year, you pay only for the net usage.

The Cabinet Committee on Economic Affairs (CCEA) has given its approval for the second phase of the grid-connected rooftop solar programme with central financial support to the tune of ₹ 118.14 billion (~\$1.66 billion) to achieve a cumulative capacity of 40GW projects by the year 2022. **

The central financial assistance (CFA) for the residential sector has been restructured in Phase-II of the rooftop solar programme. For rooftop systems of up to 3kW, 40 per cent of CFA will be available, whereas for rooftop systems beyond 3kW and up to 10kW, 20 per cent of CFA will be available.

In the case of group housing societies or residential welfare associations, the maximum capacity eligible for government assistance is 500kW, and CFA will be limited to 20 per cent for rooftop solar projects for the

supply of power to common facilities.

EB: What are the main challenges faced by the domestic solar industry today?

One of the biggest challenges faced is on the manufacturing side. Too many manufacturers of solar components are entering the market without adhering to strict due diligence and quality checks. This is leading to a clutter of multiple brands with average features and performance. When it comes to a solar power plant, it needs to function for 25 years. Compromised quality cannot be an option. If the market does have cheap and poor quality products, this may lead to slowing down the market five years down the line when the solar plants currently installed will start malfunctioning.

The poor quality of solar products and equipment also leads to fewer buyers of domestic products. For example, we don't have a lot of options for domestic inverters, so we have to import these. Our markets need products that can compete with international standards, giving an edge to 'Make in India' solar equipment and component manufacturers.

EB: How does the future of Indian solar energy look to you?

The Indian solar energy industry is on the fast lane, on its way to a bright future. Yes, we do have challenges and struggles ahead but, overall, the future of the industry looks very promising. ☑

***Note: The data for CFA has been sourced from <https://mercomindia.com/financial-support-worth-n118-billion-rooftop-solar/>.*