

Maharashtra's Leap Towards Solar-powered Agriculture

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On 7th March, 2024, Govt. of Maharashtra formally issued 'Letters of Award' to 95 project developers for a staggering 9,000 MW of 'shovel ready' distributed solar capacity dedicated to supplying reliable day-time electricity supply to agriculture. This is the largest aggregated project in terms of distributed solar capacity in India and possibly anywhere in the world. This is a program aimed at deploying solar capacity, of 2 to 10 MW, at the distribution substations that predominantly supply to agriculture. As explained later in this article, due to enormous preparatory work done before the award of LoAs, this capacity is expected to be commissioned in the next 18 months, by mid-2025.

While this Mukhyamantri Saur Krushi Vahini Yojana (MSKVY) (Chief Ministers Solar Agriculture Feeder Policy) was initially launched in 2017, only about 600 MW of solar capacity has been installed till date. MSKVY is also analogous to and part of PM-KUSUM component C launched by the central government in 2019. To give impetus to the pace and scale of solar capacity addition for agriculture, the GoM launched a substantially revamped MSKVY 2.0 and Mission 2025 in early 2023. It decided to aggressively pursue an initial target of 7,000 MW covering 30% of agriculture feeders.

Beyond the ambitious target setting, the real success of the MSKVY 2.0 lies in the preparatory work done by the energy department and energy companies in the State. This involved consultations with all the important stakeholders in the sector to understand what challenges and practical problems were preventing developers from deploying solar capacity under this erstwhile scheme. This resulted in Mission 2025 and MSKVY 2.0 providing an attractive incentive structure and support to all stakeholders. This included financial support of Rs 0.15-0.25/kWh for three years for the developers, a grant to MSEDCL of up to Rs. 25 lakh/substation for ensuring reliable project connectivity, a social benefit grant of Rs. 5 lakh / year for three years to Gram Panchayats where such projects will be deployed and finally the creation of a revolving fund of Rs. 700 Cr. to ensure timely payment to solar developers. Being part of PM-KUSUM, central financial assistance of about Rs. 1 Cr / MW is also being provided to developers.

Apart from this financial support, the GoM established a single window clearance portal (through MEDA) and IT Dashboard for project monitoring. Over 20 clearances for each project were issued even before project tendering. Crucially, and possibly most important was the support given by GoM in terms of identification and aggregation of Government and private land parcels within 5/10 km radius of sub-stations and further availing NOCs for identified land parcels and connectivity permissions to fasten implementation. This was only possible due to the leadership of ACS, Energy and the active involvement of all District Collectors and turned out to be a critical step to bolster the confidence of the developers in participating in the competitive bids. This work on land identification and availability among other aspects of the MSKVY 2.0 model was duly appreciated by the Central Govt./MNRE and elements of it are now incorporated in the modified PM-KUSUM guidelines.

Based on this framework, tenders, both in project and cluster mode were issued in the past few months which finally resulted in the 9,000 MW of projects awarded. The successful conclusion of this tendering process reflects the meticulous planning underpinning this initiative and highlights the efforts of the visionary leadership of the state's Energy Department and Distribution company and support provided by research groups like Prayas (Energy Group) and consulting agencies like, Idam Infrastructure, SBI Caps and CAM. This 9000 MW capacity will be deployed in a distributed manner across the state covering 1,368 sub-stations and 5,293 agriculture feeders (about 50% of total AG feeders). On 5th March, the state regulatory commission adopted the tariff for 7,783 MW capacity and the winning bids range from Rs 2.9-3.1/kWh. Similar or slightly lower winning bids were received for the balance capacity as well. This capacity is likely to generate 15 BU/year and save nearly Rs 2.5/kWh (avg. Power Purchase Cost of Rs 5.54/kWh – avg. winning tariff of ~ Rs 3.06/kWh) resulting in a nominal power purchase cost saving of Rs 1 lakh crore over the 25-year PPA period. This will go a long way in reducing the subsidy and cross-subsidy burden of GoM and MSEDCL respectively. The state will receive investments of nearly Rs. 36,000 Cr resulting in ~25,000 jobs distributed across the state. The distributed nature of projects connected close to consumption points will further reduce transmission losses and the solar energy thus generated will get counted towards the state's RPO requirement and in turn reduce annual CO2 emissions of ~ 12.5 million tonnes of CO2.

This represents not only a significant milestone for Maharashtra but also a monumental stride for India in addressing DISCOM finances while simultaneously increasing the share of clean energy at economical rates and for the benefit of farmers. At the heart of this initiative is a commitment to addressing the long-standing challenge of providing reliable day-time power to farmers, while catalysing socio-economic benefits such as rural job creation.

Maharashtra's vision, ambition and leadership in implementing the world's largest distributed solar program for agriculture has set a new benchmark and would serve as a beacon for other states to learn, appropriately emulate and innovate as per their specific context. As we move forward, the collective efforts of states across the nation will be crucial in embracing distributed renewable energy as one of the means of addressing the vexed issue of DISCOMs financial health.

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