

Solar Photovoltaic (SPV) Power

Maharashtra is rich in solar energy resource with substantial amounts of barren and uncultivable land. Solar irradiation are in the range of 5.5 to 6 kWh/m²/day. As per NISE estimates, the State has a solar power potential of ~64 GW. The State has a very progressive solar policy, which substantially incentivizes solar energy development while minimizing the red tape associated with regulations and permissions. Although the growth of solar in the state has been modest in the recent past, growing to around 2 GW by 2017, the State has firm plans to add substantial amounts of solar capacity into its system. Unlike many other states, Maharashtra has followed taluka-wise setting-up of solar capacity. The state has also set up a committee to study issues related to the development of a 1,000 MW floating solar power plant. The state government provides various incentives like exemption from electricity duty, discount on land, etc. for power generated from large-scale solar projects. It also facilitates development of supporting infrastructure such as transmission network, water supply, and internal roads for solar parks. In February 2018, MERC came out with draft regulations for Forecasting, Scheduling and Deviation settlement framework for solar and wind generation in Maharashtra which would provide a mechanism for integrating the RE capacity addition. Maharashtra has target to add around 7.5 GW of ground mounted solar capacity by FY22 to meet its RPO and contribute to the national target of 100 GW.

Level 1

Level 1 assumes that solar PV capacity addition will be significantly slower as compared to targets set for the State. Large scale integration of solar power could continue to remain a challenge and environment related externalities of conventional power will be un-priced. Capacity will reach around 8 GW by 2025 and then will gradually increase to 22 GW by 2050.

Level 2

Level 2 assumes that the state will achieve its target to add around 7.5 GW of ground mounted solar capacity between FY22 and FY25. Thereafter, the capacity addition would follow the same trajectory and capacity will increase and reach up to 23.9 GW by 2040 and 30 GW by 2050. Full potential of 64 GW will still not be realized, which could be owing to challenges related to large scale integration of solar power.

Level 3

Level 3 assumes that prices of solar modules could further decrease due to increased efforts of the government for integration of solar power. The state will capacity addition will achieve 9.6 GW of ground mounted solar capacity by 2025. Thereafter, trend will continue and installed capacity will reach 29.3 GW in 2040 and 38 GW by 2050.

Level 4

Level 4 is a more aggressive scenario assuming a large increase in solar capacity, which could be likely if technology costs continue to fall, fossil fuel prices increase, or supportive government policies. This level assumes no barriers to capacity additions in solar power. Ancillary markets will be developed to support large scale grid integration of renewable energy. The State will achieve 38 GW by 2040 and will reach near to its potential of 64 GW by 2050.

Installed Capacity - Solar PV

