Solar Photovoltaic (SPV) Power Plant

Andhra Pradesh has become not only a power surplus state but also the hub of renewable energy generation in India. The state has already established a number of large solar parks in the state and has a very progressive solar policy, which substantially incentivizes solar energy while minimizing the red tape associated with regulations and permissions. The total installed capacity in the state has already increased from 0.5 GW in 2015 to around 2 GW by 2017. The state solar policy set-up a target of minimum capacity addition of ~5 GW by 2020 to meet the growing demand for power in the state. The numbers have been recently revised to the target of 10 GW to be achieved by 2022 considering the huge available potential in the state. The state government is also facilitating development of infrastructure including power evacuation, water and internal road requirements for solar parks of capacity ~2,500 MW by 2020 in clusters of 500-1000 hectares. As per NISE estimates, the state has a potential of 38.5 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 will continue to remain a challenge and environment related externalities of conventional power will be un-priced. Capacity will reach around 6.5 GW by 2025 and then will gradually increase to 20.4 GW by 2050.

Level 2

Level 2 assumes that the capacity addition would follow the trajectory of 12 GW by 2029, as was planned in the AP vision document. Thereafter the capacity will increase as per historical trend and reach up to 20 GW by 2040 and 27 GW by 2050. Full potential of 38.5 GW will still not be realized owing to challenges related to large scale integration of solar power.

Level 3

Level 3 assumes that due to further decrease in prices of solar modules and increased efforts of the government for integration of solar power, capacity addition will follow the trajectory set by central government of achieving 10 GW by 2022. Thereafter historical trend will continue and full potential of 38.5 GW will be achieved 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 meet target of 10 GW by 2022 and will reach full potential of 38.5 GW by 2040.