

## Distributed Solar Power (Solar Rooftop)

The state of Andhra Pradesh is among those few states which have issued a separate rooftop net metering policy. State policy emphasizes on development of distributed generation through solar rooftop systems in public buildings, domestic, commercial & industrial establishments on gross/net metering mode. This will help the power utilities in managing demand, reducing capital expenditure for network augmentation and improving performance. With development of smart cities and new state capital, penetration of solar rooftop plants is expected to increase significantly. Further, in-line with national target of 40 GW by 2022, MNRE has set a target of 2 GW of installed capacity of solar rooftop plants for the state.

### Level 1

Level 1 assumes slow growth in rooftop sector which could be due to various challenges related to grid integration, network constraints, and lack of required investment support. MNRE target of 2 GW by 2022 will be achieved only by 2050. The penetration rate of households will reach only up to 4.9% by 2050 leading to total installed capacity of 4.6 GW.

### Level 2

Level 2 assumes that a strong policy and regulatory support can increase the penetration rate from existing level of 0.02% to 10% by 2050. Measures like mandatory installation of solar rooftop plants in major cities might be in place. Smart grid systems can be adopted to overcome the challenges of grid integration. Penetration rate of 7.4% will lead to total installed capacity of 7 GW by 2050.

### Level 3

Level 3 assumes slightly higher growth rate of solar rooftop systems, which could be because of fall in prices of solar modules and smart grid systems which can assist in overcoming the challenges of grid integration. MNRE target of 3.2 GW capacity by 2022. Thereafter, historical trend will continue and the penetration rate will increase to 11.4% by 2050 resulting in installed capacity of 10.8 GW.

### Level 4

Level 4 is a heroic scenario, which assumes that there will be no technical and regulatory constraints. Policies for mandatory installation of solar rooftop systems can be in place which may be supported by decrease in prices of solar modules. The penetration rate of rooftop solar in households will reach up to 15.4% by 2050 leading to a total installed capacity of 14.6 GW.

