Distributed Solar Power and Solar Water Heater

In 2015, AERC issued Regulations for Grid Interactive Solar PV Systems to promote the capacity of distributed solar generation in the state. As per the regulations, eligible consumers are allowed to set up solar rooftop systems up-to 40% of the sanctioned load, subject to the feasibility of interconnection. Existing solar rooftop capacity in Assam is ~1 MW. The state lacks subsidy and commercial models for promotion of de-centralized and distributed RE generation. With development of Guwahati as a smart city, 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 250 MW of installed capacity of solar rooftop plants for the state.

Level 1

Level 1 assumes slow growth in rooftop sector due to various challenges related to grid integration, network constraints and lack of required policy support. MNRE target of 250 MW will be achieved only by 2030. The penetration rate of households will reach only up to 2% by 2050 leading to total solar rooftop installed capacity of 0.6 GW. Solar water heater installations will also be slow, reaching to 0.4 GW (equivalent to collector space of 0.04 sq.km) in 2050 from 0.02 GW in 2015.

Level 2

Level 2 assumes that a strong policy and regulatory support will increase the penetration rate from existing level of almost zero to 3% by 2050, leading to total solar rooftop installed capacity of 0.9 GW by 2050. Measures like mandatory installation of solar rooftop plants in major cities will be in place. Smart grid systems will be adopted to overcome the challenges of grid integration. Owing to strict mandates for installation of solar water heaters, total collector space would reaches 0.14 sq. km. in 2050 (~0.07 GW).

Level 3

Level 3 assumes slightly higher growth rate of solar rooftop systems, owing to fall in prices of solar modules and smart grid systems which will assist in overcoming the challenges of grid integration. MNRE target of 250 MW will be achieved by 2025 and thereafter the historical trend will continue which will increase the penetration rate to 4% by 2050 resulting in increase in solar rooftop installed capacity to 1.2 GW. Further, total collector space of solar water heater would also increase to 0.25 sq. km (~ 0.12 GW) by 2050, due to changing lifestyle and increased urbanization.

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 and solar water heaters in all cities will be in place which will be supported by decrease in prices of solar modules. The penetration rate of households will reach up to 6% by 2050 leading to total solar rooftop installed capacity of rooftop to 2 GW. Further, total collector space of solar water heater would also increase to as high as 0.46 sq. km. (~0.23 GW) in 2050.