

Solar Installation on Curved Rooftop - Epitome Components

Case study of solar rooftop installation by Sunshot at Epitome Components

Case Study

Epitome Components is a leading Printed Circuit Board (PCB) manufacturer. The factory is located at Supa MIDC, Ahmednagar District. The factory has advanced infrastructure and huge manufacturing capacity. In the context of procuring costly power through MSEDCL, the company opted to install solar power plant on rooftops of available factory sheds in the premises.

The facility has multiple buildings having different kind of roofs - flat metal roof, RCC roof and curved roof. To maximize capacity, Sunshot made use of all roofs, including curved roof, for project installation.

The major challenge faced during installation on curved roof was the safety of workers. Working on the roof was highly risky as the slope of the curve is up to 35 degrees. Refer (Figure 1). Before beginning installation, specially designed walkways were installed. Safety harnesses were also installed alongside the walkways. Trained man power was employed for installation of the solar power plant.

Another challenge was about module stringing. Each row of modules is arranged at different tilt and azimuth as per roof curvature. The power generation pattern is different for modules placed at different orientation. To address this issue, module strings were designed to optimize power generation. High-performance string inverters of Huawei with maximum 4 MPPTs were used



Figure 1: Factory roof of Epitome Components

The solar power plant is synchronized with diesel generator sets along with grid through Sunshot's proprietary controllers. The system is also monitored online through Sunshot's cloud based IOT platform.

The 184 kWp solar power plant generates about 800 units per day on a bright sunny day. Annually it is expected to generate about 2.6 Lakh units of electricity.

The system will help in reducing about 220 tonnes of carbon emissions annually. This is equivalent to reducing

smoke emitted by 160 small cars and planting more than 36,000 mango trees in a year.



Figure 2: Slope of the curve is up to 35 degrees



Figure 3: Installation at Epitome Components