

## **Case Study: 100 kWp Rooftop Solution, AIRTEL, Lucknow**

### ***Largest Solar Installation in Telecom Sector***

# Producing Solar Energy While Saving Diesel

Producing Solar Power and Saving Diesel, thus providing Reliable Power during Grid Outage

Non Penetrating Delta Rack Structures for Zero Roof Damage

#### **Challenge: Delivering Power While Saving Diesel**

Telecom Sector has grown rapidly in the last two decades with a growth rate of 45% CAGR and is one of the fastest growing industries in India. The sector is expected to continue its growth trajectory and to sustain the momentum and growth also needs increased access to energy to increase the infrastructure and penetrate into the market.

Airtel is one of the leading players in Telecom Industry in India and requires uninterrupted power supply for a 24X7 uptime to meet the customers' expectations. Airtel approached us for a solar solution to reduce the diesel consumption and utilize the available and unused rooftop space without causing any kind of damage to the roof.

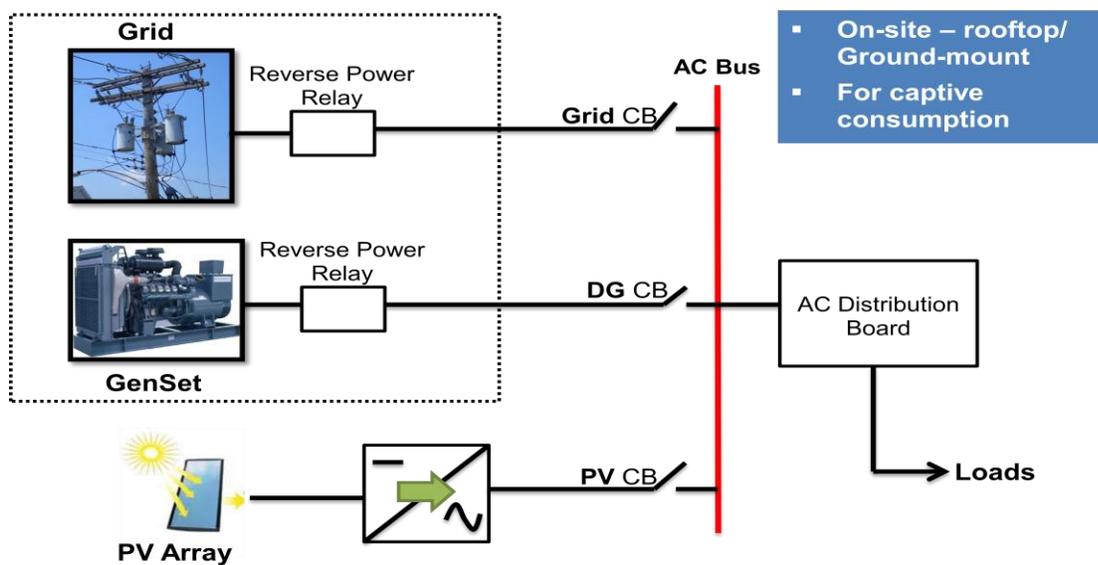
#### **Solution: Non Penetrating Solar Power Plant over the Roof**

SunEdison provided a unique roof top solution to Airtel by converting the existing roof into a power generating unit, which was earlier used to stock scrap material. The solution comprised of providing financial visibility in terms of cost savings with cheaper rate of per unit of electricity produced through solar and diesel abatement. SunEdison is a 1A MNRE Accredited Channel Partner and guarantees obtaining the 30% capital subsidy from MNRE. This leads to minimal upfront capital investment for the customer. The customer was against making any sort of penetration into the roof, thus challenging SunEdison for a non penetrating solution. We have innovatively designed Delta Rack Structures for rooftop installations, which ensure the roof is not damaged at all.

### SunEdison Delta Rack:

The fully ballasted structure ensures maximum solar energy production while maintaining your roof's warranty. Ballasted by bricks, sets of 4x3 panel structures innovatively use group weight to provide anchorage against high wind speed (upto 100 mph). It features solid corrosion resistant MS galvanized steel construction and 10 degree tilt, and reduces installation time and material waste. Designed to improve efficiency and ease of deployment, the durable, lightweight Delta Rack has been proven in over 100 SunEdison rooftop solar installations.

**Block diagram of the Hybrid system: Solar power generated on site offsets Diesel and Grid consumption.**



### Technical and Financial Details of the Installation:

- High Efficiency Mono Crystalline Photovoltaic Modules with a warranty of 25 years
- SMA String inverter
- Real Time monitoring with SunEdison's proprietary remote monitoring tool
- Fixed tariff of Rs 6/ kWh for a period of 20 years
- Efficient use of rooftop space – maintaining the roof aesthetics while leaving enough space to walk around to clean the panels and reach every single panel without difficulty

Some pictures from the installation:



**Impact: Saving Roof Space and Diesel and contributing to the Green Initiative for a cleaner Earth**

Major Environmental and Economic Benefits to the customer include:

- The Solar Plant will generate 3 million kWh over 20 years
- Diesel savings over 20 years will aggregate to 3.5 Lakhs Litres at Gangaganj MSC
- Equivalent to offsetting 2,000 tonnes of Carbon or taking 400 cars off the road
- Innovative financing solution: combination of part payment, capital subsidy and feed in tariff, with a per unit of cost of delivered electricity being cheaper than blended cost at MSC site of Rs 9.5/kWh
- Annual Benefit due to Solar Plant - >INR 5 Lakhs / year
- Annual Diesel Savings – 18,000 Litres of Diesel / year
- Land Savings due to utilization of unused roof space & reduction in transmission losses